



AIA[®] Document A101[™] – 2007

AT 12:00 FILED
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AUG 29 2017
ARTURO GUAJARDO, JR. COUNTY CLERK
HIDALGO COUNTY, TEXAS
BY [Signature] DEPUTY

Standard Form of Agreement Between Owner and Contractor where the Basis of payment is a Stipulated Sum

AGREEMENT made as of the 25th day of July in the year 2017
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

County of Hidalgo
2812 S. Business Hwy 281
Edinburg, Texas 78539

and the Contractor:
(Name, legal status, address and other information)

NM Contracting LLC, a Texas limited liability company
2022 Orchid Ave.
McAllen, Texas 78504

for the following Project:
(Name, location and detailed description)

Hidalgo County Precinct No. 2 County Wide Service Shop
4011 S. Veteran Blvd.
San Juan, Texas 78589

The Architect:
(Name, legal status, address and other information)

Nassri-Warren Group Architects, Inc., a Texas corporation, also doing business as The Warren Group Architects, Inc.
1801 South 2nd Street, Ste. 330
McAllen, Texas 78503

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

AIA Document A201[™]-2007, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

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ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.

(Insert the date of commencement if it differs from the date of this Agreement or, if applicable, state that the date will be fixed in a notice to proceed.)

The date of commencement shall be the date specified in a notice to proceed, the form of which is attached hereto as Exhibit "D", to be given by Owner to Contractor.

If, prior to the commencement of the Work, the Owner requires time to file mortgages and other security interests, the Owner's time requirement shall be as follows:

3.1.1 Liquidated Damages: Owner and Contractor recognize that time is of the essence in this Agreement and that Owner will suffer financial loss if the Work is not completed within the time specified in this Article 3, plus any extension thereof allowed in accordance with Article 8 of the General Conditions. They also recognize the delays, expense and difficulties involved in proving in a legal proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring such proof, Owner and Contractor agree that as liquidated damages for delay (but not as penalty) Contractor shall pay Owner One Thousand Dollars (\$1,000.00) for each day that expires after the time specified in this Article 3 for Substantial Completion until the work is substantially complete.

§ 3.2 The Contract Time shall be measured from the date of commencement.

§ 3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than two hundred and twenty (220) days from the date of commencement, or as follows:
(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work.)

Portion of Work	Substantial Completion Date
-----------------	-----------------------------

, subject to adjustments of this Contract Time as provided in the Contract Documents.
(Insert provisions, if any, for liquidated damages relating to failure to achieve Substantial Completion on time or for bonus payments for early completion of the Work.)

See Section 3.1.1 above

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be one million one hundred eighty thousand three hundred dollars and zero cents (\$ 1,180,300.00), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:
(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

- Alternate No. 1-Remove hoist on existing facility, transport and install at new Service Shop Building;
- Alternate No. 2-Paving (and concrete curbs and wheel stops);
- Alternate No. 3-Water line;
- Alternate No. 4-Onsite sewage facility; and
- Alternate No. 5-Drainage/Storm Sewer.

§ 4.3 Unit prices, if any:
(Identify and state the unit price; state quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price Per Unit (\$0.00)
------	-----------------------	-------------------------

§ 4.4 Allowances included in the Contract Sum, if any:
(Identify allowance and state exclusions, if any, from the allowance price.)

Item	Price
Power Allowance (This allowance is shown on Addendum No. 5, which is part of Exhibit "A" attached hereto)	\$40,000.00

§ 4.5 Commitment of Current Revenues Only. In the event that, during any term hereof, the governing body of Owner does not appropriate sufficient funds to meet the obligations of such party under this Agreement, then Owner may terminate this Contract upon ninety (90) days written notice to Contractor. Each of the parties hereto agrees, however, to use its best efforts to secure funds necessary for the continued performance of this Contract. The parties

intend this provision to be a continuing right to terminate this Agreement at the expiration of each budget period of Owner pursuant to the provisions of Tex. Loc. Govt. Code Ann. §271.903.

ARTICLE 5 PAYMENTS

§ 5.1 PROGRESS PAYMENTS

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the 30th day of a month, the Owner shall make payment of the certified amount to the Contractor not later than the fifth day following approval by Commissioners' Court.

(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form and supported by such data to substantiate its accuracy as the Owner and the Architect may require. This schedule, unless objected to by the Architect or the Owner, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

- .1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage often percent (10 %). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201™-2007, General Conditions of the Contract for Construction;
- .2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of ten percent (10 %);
- .3 Subtract the aggregate of previous payments made by the Owner; and
- .4 Subtract amounts, if any, for which the Architect has withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A201-2007.

§ 5.1.7 The progress payment amount determined in accordance with Section 5.1.6 shall be further modified under the following circumstances:

- .1 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the Architect shall determine for incomplete Work, retainage applicable to such work and unsettled claims; and
(Section 9.8.5 of AIA Document A201-2007 requires release of applicable retainage upon Substantial Completion of Work with consent of surety, if any.)
- .2 Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 9.10.3 of AIA Document A201-2007.

§ 5.1.8 Reduction or limitation of retainage, if any, shall be as follows:

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(If it is intended, prior to Substantial Completion of the entire Work, to reduce or limit the retainage resulting from the percentages inserted in Sections 5.1.6.1 and 5.1.6.2 above, and this is not explained elsewhere in the Contract Documents, insert here provisions for such reduction or limitation.)

Not Applicable

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 FINAL PAYMENT

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 12.2.2 of AIA Document A201-2007, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect. The Architect may not issue the final Certificate for Payment until it has been reviewed and approved by the Owner.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment and upon acceptance by the Owner, and Architect and after satisfactory evidence has been given by the Contractor that all Contractor's bills have been paid and the entire project is free from liens.

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 INITIAL DECISION MAKER

The Architect will serve as Initial Decision Maker pursuant to Section 15.2 of AIA Document A201-2007, as modified by Owner and attached hereto as Exhibit "C", unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker.

(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

§ 6.2 BINDING DISPUTE RESOLUTION

For any Claim subject to, but not resolved by, mediation pursuant to Section 15.3 of AIA Document A201-2007, the method of binding dispute resolution shall be as follows:

(Check the appropriate box. If the Owner and Contractor do not select a method of binding dispute resolution below, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.)

Arbitration pursuant to Section 15.4 of AIA Document A201-2007

Litigation in a court of competent jurisdiction

Other *(Specify)*

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201-2007.

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201-2007.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 All references in this Agreement to AIA Document A201-2007 (including to the A201, the A201-2007, and the general conditions), shall mean to the modified A201-2007 attached hereto as Exhibit "C". Where reference is made in this Agreement to a provision of AIA Document A201-2007 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

(Insert rate of interest agreed upon, if any.)

The legal rate established by the Texas Government Code, currently Section 2251.025, as amended.

§ 8.3 The Owner's representative:

(Name, address and other information)

Armando Garza, Jr., Chief Administrator
Hidalgo County Precinct No. 2
300 W Hall Acres, Suite G
Pharr, Texas 78577

and Hidalgo County Commissioner's Court, as referenced in Section 2.1.1 of AIA Document A201-2007.

§ 8.4 The Contractor's representative:

(Name, address and other information)

Noel Munoz, Jr., President
NM Contracting LLC.
2022 Orchid Ave
McAllen, Texas 78504
Tel.: (956) 631-5667

§ 8.5 Neither the Owner's nor the Contractor's representative shall be changed without ten days written notice to the other party.

§ 8.6 Other provisions:

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 9.1.1 The Agreement is this executed AIA Document A101-2007, Standard Form of Agreement Between Owner and Contractor.

§ 9.1.2 The General Conditions are AIA Document A201-2007, General Conditions of the Contract for Construction, as modified by the Owner and attached hereto as Exhibit "C".

§ 9.1.3 The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
Not Applicable			

§ 9.1.4 The Specifications:

(Either list the Specifications here or refer to an exhibit attached to this Agreement.)

Section	Title	Date	Pages
---------	-------	------	-------

§ 9.1.5 The Drawings:

(Either list the Drawings here or refer to an exhibit attached to this Agreement.)

The drawing is included with the Project Manual, which is attached hereto as Exhibit "B".

Number	Title	Date
--------	-------	------

§ 9.1.6 The Addenda, if any:

Number	Date	Pages
1	02/17/17	5
2	02/21/17	3
3	05/15/17	167
4	06/02/17	18
5	06/05/17	7

The addenda are attached hereto as part of Exhibit "A". Portions of Addenda relating to bidding requirements are not part of the Contract Documents unless the bidding requirements are also enumerated in this Article 9.

§ 9.1.7 Additional documents, if any, forming part of the Contract Documents:

- .1 AIA Document E201™-2007, Digital Data Protocol Exhibit, if completed by the parties, or the following:

- .2 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201-2007 provides that bidding requirements such as advertisement or invitation to bid, Instructions to Bidders, sample forms and the Contractor's bid are not part of the Contract Documents unless enumerated in this Agreement. They should be listed here only if intended to be part of the Contract Documents.)
 - 1.
 2. Exhibit "A" Bid Form and Addenda
 3. Exhibit "B" Project Manual (Specifications) and Drawing
 4. Exhibit "C" AIA Document A201-2007, General Conditions of the Contract for Construction, as modified by the Owner
 5. Exhibit "D" Form of Notice to Proceed
 6. Exhibit "E" Certificate of Insurance
 7. Exhibit "F" Performance and Payment Bonds

ARTICLE 10 INSURANCE AND BONDS

The Contractor shall purchase and maintain insurance and provide bonds as set forth in Article 11 of AIA Document A201-2007. The initial insurance certificates and the bonds are attached hereto as Exhibits E and F, respectively. *(State bonding requirements, if any, and limits of liability for insurance required in Article 11 of AIA Document A201-2007.*

(Table Deleted)

This Agreement entered into as of the day and year first written above and is executed in three (3) originals copies, of which one is to be delivered to the Contractor, one to the Architect for use in the administration of the Contract, and the remainder to the Owner.

HIDALGO COUNTY

NM CONTRACTING LLC

By: Ramon Garcia
OWNER (Signature)

Ramon Garcia, County Judge
(Printed name and title)

By: [Signature]
CONTRACTOR (Signature)

Noel Munoz, Jr., President
(Printed name and title)

APPROVED BY
COMMISSIONERS' COURT
ON: 7/25/17

**APPROVED AS TO FORM FOR COUNTY:
ATLAS, HALL & RODRIGUEZ, LLP**

ATTEST:

By: [Signature]
OWNER (Signature)

Stephen L. Crain
(Printed name and title)

By: [Signature]
(Signature)

Arturo Guajardo Jr., County Clerk
(Printed name and title)

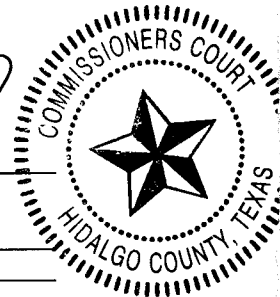


EXHIBIT B

to

Agreement dated July 25, 2017 between
Hidalgo County and NM Contracting LLC
(Hidalgo County Precinct No. 2 County Wide Service Shop)

AIA Document A201-2007 General Conditions of the Contract for Construction, as revised

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Document A201™ – 2007

General Conditions of the Contract for Construction

For the following PROJECT:

(Name and location or address)

8,000 S.F. County Wide Service Shop, Pharr, Texas 78577

THE OWNER:

(Name, legal status and address)

County of Hidalgo

2812 South Business Highway 281

Edinburg, Texas 78539

THE ARCHITECT:

(Name, legal status and address)

Nassri-Warren Group Architects, Inc., a Texas corporation, also doing business as The

Warren Group Architects, Inc.

Laura N. Warren, AIA, Principal

1801 South 2nd Street

Ste. 330

McAllen, Texas 78503

PH: (956) 994-1900

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

§ 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications (including specifications included in the RFP), Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect pursuant to Section 7.4. At the Owner's option, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding requirements.

§ 1.1.1.1 Contractor acknowledges and warrants that it has closely examined all the Contract Documents and is unaware of any instance where the documents are not suitable or are insufficient, to enable the Contractor to complete the Work in a timely manner for the Contract Sum, and that they include all Work, whether or not shown or described, which reasonably may be inferred or useful for the completion of the Work in full compliance with all applicable codes, laws, ordinances, and regulations.

§ 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor except as provided in Sections 5.3 and 5.4 hereof, (3) between the Owner and the Architect or the Architect's consultants or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations of the Contractor under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 THE WORK

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

§ 1.1.3.1 The Work shall include the obligation of the Contractor to visit the site of the project before submitting a proposal. Such site visit shall be for the purpose of familiarizing Contractor with the conditions as they exist and the character of the operations to be carried on under the Contract Documents, including all existing site conditions, access to the site, physical characteristics of the site and surrounding areas. It also includes all supplies, skill, supervision, transportation services and other facilities and things necessary, proper or incidental to the carrying out and completion of the terms of the Contract and all other items of cost or value needed to produce, construct and fully complete the public work identified by the Contract Documents.

§ 1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by separate contractors.

§ 1.1.5 THE DRAWINGS

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

§ 1.1.6 THE SPECIFICATIONS

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

§ 1.1.7 INSTRUMENTS OF SERVICE

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 INITIAL DECISION MAKER

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results. Any differences between the requirements of the Drawings and the Specifications or any differences noted within the Drawings themselves or within the Specifications themselves have been referred to Owner and Architect by Contractor prior to the submission of bids and have been clarified by an Addendum issued to all bidders.

If such differences or conflicts were not called to Owner's and Architect's attention prior to submission of bids, Architect shall decide which of the conflicting requirements will govern based upon the following: the most stringent of the requirements will take precedence over the less stringent; the most expensive item will take precedence over the less expensive, and subject to the approval of Owner, Contractor shall perform the Work at no additional cost and/or time to Owner in accordance with the Architect's decision. Work not covered in the Contract Documents will not be required unless it is consistent therewith and is reasonably inferable as being necessary to produce the intended results.

§ 1.2.1.1 In the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following priorities:

- .1 The Agreement;
- .2 Addenda, with those of later date having precedence over those of earlier date;
- .3 Supplemental Conditions;
- .4 The General Conditions of the Contract for Construction;
- .5 Specifications;
- .6 Drawings, and in the case of inconsistency between the Drawings and Specifications or within

either document, not clarified by Addendum, the better quality or greater quantity of Work shall be included in the Contract Documents. Clarifications of the inconsistency will be accomplished with the Contractor and, if necessary, an appropriate reduction in the contract will be accomplished by Change Order. Figures given on drawings govern scale measurements. Large scale drawings take precedence over small scale drawings. Written words, take precedence over numbers. Handwritten documents take precedence over typewritten documents. Existing conditions take precedence over drawings and specifications for dimensions and shall be verified by the Contractor. The Contractor proceeds at his own risk if conflicts or discrepancies are not resolved prior to the execution of the Work.

§ 1.2.1.2 If Work is required in a manner to make it impossible to produce Work of the quality required by or reasonably inferred from the Contract Documents, or should discrepancies appear among the Contract Documents, Contractor shall request in writing an interpretation from Architect before proceeding with the Work. If Contractor fails to make such request, no excuse will thereafter be entertained for failure to carryout Work in the required manner or provide required guarantees, warranties, or bonds, and Contractor shall not be entitled to any change in the Contract Sum or the Contract Time on account of such failure.

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

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

§ 1.3 CAPITALIZATION

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 INTERPRETATION

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

§ 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 1.5.1 Instruments of Service, including the Drawings, Specifications, and other similar or related documents and copies thereof are furnished to Contractor for the purpose of performing the Work and are, and shall remain, the property of Owner and Owner will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Owner or Owners' consultants reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

ARTICLE 2 OWNER

§ 2.1 GENERAL

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Commissioners Court of Owner, by majority vote, is the only representative of Owner, having the power to enter into a Contract, to execute a change order requiring an increase in the Contract Sum, or agree to an extension of the contractual completion date. The Commissioners Court shall designate, as appropriate, an authorized representative(s) to act on its behalf during the course of construction. In the event that an emergency changes the scope of the Work before the next regular meeting or in order to facilitate and expedite the timely completion of the Work, the Commissioners Court's authorized representative(s) may approve construction changes that do not exceed \$10,000.00 in increased costs. Any such changes shall be confirmed in writing between the Contractor and the Commissioner Court's authorized representative(s) and notice of such approved changes shall be given to the Commissioners Court at its next regular meeting. The Commissioners Court will act as soon as reasonably possible to avoid undue delays in the construction completion date.

§ 2.1.2 DELETED.

§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 2.2.1 Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or

the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.2 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.2.3 The Owner shall furnish surveys describing physical characteristics and utility locations, and legal limitations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work. In connection with the foregoing, Contractor shall be solely responsible for locating (and shall locate prior to performing any Work) all utilities lines, telephone company lines and cable, sewer lines, water pipes, gas lines, electrical lines, including without limitation, all buried pipelines and buried telephone cables and shall perform the Work in such a manner so as to avoid damaging any such lines, cables, pipes and pipelines. Under this provision the Architect and Engineer are in no way relieved of their responsibilities outlined in the Contract or other attached contracts for identification of existing conditions.

§ 2.2.4 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2 for use on this Project. All costs of reproduction are the responsibility of Contractor.

§ 2.3 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents or fails to remove and discharge (within ten (10) days) any lien filed upon Owner's or Landlord's property by anyone claiming by, through, or under Contractor or disregards the instructions of Architect or Owner when based on the requirements of the Contract Documents. The Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated. However, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3, and any delay resulting from such Work stoppage shall not extend any Milestone Date identified in the Contract for Construction or the required dates of Substantial or Final Completion.

§ 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

§ 2.4.1 The rights stated in Article 2 shall be in addition to and not in limitation of any other rights of Owner granted in the Contract Documents or at law or in equity.

ARTICLE 3 CONTRACTOR

§ 3.1 GENERAL

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the

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jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

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

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect and Owner in writing any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for design information in such form as the Architect may require.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect and Owner in writing any nonconformity discovered by or made known to the Contractor as a request for design information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities unless the Contractor recognized or reasonably should have recognized such error, inconsistency, omission or difference and knowingly failed to report it to the Architect and Owner.

§ 3.2.5 The Contractor shall not be entitled to additional compensation for the "rework portion" of any additional work caused by his failure to carefully study and compare the Contract Documents prior to execution of the Work.

§ 3.2.6 The Contractor shall make reasonable attempt to interpret the Contract Documents before asking the Architect for assistance in interpretation. The Contractor shall not ask the Architect for observation of work prior to the Contractor's field superintendent's personal inspection of the work and his determination that the work complies with the Contract Documents.

§ 3.2.7 If, in the opinion of the Architect, the Contractor does not make a reasonable effort to comply with the above requirements of the Contract Documents and this causes the Architect or Architect's consultants to expend an unreasonable amount of the time in the discharge of the duties imposed on him by the Contract Documents, then the Contractor shall bear the cost of compensation for the Architect's additional services made necessary by such failure. The Architect will give the Contractor prior notice of intent to bill for additional services related to Sections 3.2.6, 3.2.7, and 3.12 before additional services are performed.

§ 3.2.8 If the Contractor has knowledge that any of the products or systems specified will perform in a manner that will limit the Contractor's ability to satisfactorily perform the work or to honor the Contractor's Warranty, Contractor shall promptly notify the Architect in writing, providing substantiation for the position. Any necessary changes, including substitutions of materials, shall be accomplished by appropriate Modification.

§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.3.4 Contractor shall be responsible to Owner for acts and omissions of Contractor's employees, Subcontractors, and their agents and employees, and other persons performing portions of the Work under Contract Documents or other arrangements with Contractor.

§ 3.3.5 Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations, and lawful orders of public authorities bearing on the Work, including those with respect to the safety of persons and property and their protection from damages, injury, or loss. Contractor shall promptly remedy damage and loss to property at the site caused in whole or in part by Contractor, its Subcontractor, or anyone directly or indirectly employed by any of them or by anyone for whose acts they may be liable, except for damage or loss attributable solely to acts or omissions of Owner or Architect or by anyone for whose acts either of them may be liable and not attributable to the fault or negligence of Contractor, its Subcontractor, or anyone directly or indirectly employed by them. The foregoing obligations of Contractor are in addition to Contractor's obligations under other provisions hereunder.

§ 3.3.6 Contractor shall be responsible for inspection of portion of Work already performed under the Contract for Construction to determine that such portions are in proper condition to receive subsequent Work.

§ 3.3.7 Contractor has the responsibility to ensure that all material suppliers and Subcontractors, their agents, and employees adhere to the Contract Documents, and that they order materials on time, taking into account the current market and delivery conditions, and that they provide materials on time. Contractor shall coordinate its Work with that of all others on the Project, including of construction utilities.

§ 3.3.8 Contractor shall establish and maintain benchmarks and all other grades, lines, and levels necessary for the Work; report errors or inconsistencies to Owner and Architect before commencing Work; and, if applicable, review the placement of the buildings and permanent facilities on the site with Owner and Architect after all lines are staked out and before foundation Work is started. Contractor shall provide access to the Work for Owner, Architect, other persons designated by Owner, and governmental inspectors. Any encroachments made by Contractor or its Subcontractors on adjacent properties caused by construction as revealed by an improvements survey, except for encroachments arising from errors or omissions not reasonably discoverable by Contractor in the Contract Documents, shall be the sole responsibility of Contractor, and Contractor shall correct such encroachments within thirty (30) days of the improvement survey (or as soon thereafter as reasonably possible), at Contractor's sole cost and expense, either by the removal of the encroachment (and subsequent reconstruction on the Project site) or agreement with the adjacent property owner(s) (in form and substance satisfactory to Owner in its sole discretion) allowing the encroachments to remain.

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§ 3.3.9 Contractor shall verify at the Work site the measurements indicated on the Drawings and Specifications and shall establish correctly the lines, levels, and positions for the Work and be responsible for their accuracy and proper correlation with control lines, monuments, and data, as established by surveys furnished by Owner. Work shall be erected square, plumb, level, true to line and grade, in the exact plane and to the correct elevation and/or sloped to drain as indicated. To ensure the proper execution of its subsequent Work, Contractor shall measure all Work already in place (including but not limited to utilities and grades installed or prepared by others) and shall at once report to Architect and Owner any discrepancy between said Work and the Drawings and Specifications for the Work.

§ 3.3.10 Any discrepancy or omission in the dimensions or elections shown on the Drawings and Specifications or found in previous Work which may prevent accurate layout or construction of the Work, shall immediately be reported by Contractor to Owner and Architect. If Contractor performs, permits, or causes performance of any Work when Contractor knows or reasonably should have known that such discrepancy or omission exists, without first obtaining further instruction from Architect or Owner, Contractor shall bear any and all costs arising therefrom including, without limitation, the costs of correction thereof without increase or adjustment in the Contract Sum. Omissions from the Drawings or Specifications, or the misdescription of details of Work which are reasonably inferable in order to carry out the intent of the Drawings and Specifications, or which are customarily performed, shall not relieve contractor from performing such omitted or mis-described details of the Work, and they shall be performed as if fully and correctly set forth and described in the Drawings and Specifications, at no additional cost to Owner.

§ 3.3.11 Contractor shall engage workers who are skilled in performing the Work, and all Work shall be performed with care and skill and in a good workmanlike manner under the full-time supervision of an approved engineer or foreman. Contractor shall be liable for all property damage, including repairs and replacements of the Work and economic losses, which proximately result from the breach of this duty. Contractor shall advise Architect:

1. if a specified product deviates from good construction practices;
2. if following the Specifications will affect any warranties; or
3. any objections which Contractor may have the Specifications.

Nothing contained in Section 1.1.3 shall alter the responsibilities established in this Section.

§ 3.4 LABOR AND MATERIALS

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

§ 3.4.2 Except in the case of minor changes in the Work authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive. By making requests for substitutions based on Section 3.4.2, Contractor:

- .1 represents that Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;
2. represents that Contractor will provide the same warranty for the substitution that Contractor would for that specified;
3. certifies that the cost data presented is complete and includes all related costs under this Contract except Architect's redesign costs, and waives all claims for additional costs related to the substitution which subsequently become apparent; and
- .4 will coordinate the installation for the accepted substitute, making such changes as may be required for the Work to be complete in all respects.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them. Contractor shall also be responsible for labor peace on the Project and shall at all

times make its best efforts and judgments as an experienced Contractor to adopt and implement policies and practices designed to avoid Work stoppages, slowdowns, disputes, or strikes where reasonably possible and practical under the circumstances and shall at all times maintain Project-wide labor harmony. Except as specifically provided in Section 8.3 hereof, Contractor shall be liable to Owner for all damages suffered by Owner.

§ 3.4.4 Materials shall conform to manufacturer's standards in effect at the date of execution of the Agreement and shall be installed in strict accordance with manufacturer's directions. Contractor shall, if required by Owner or Architect, furnish satisfactory evidence as to the kind and quality of any materials. All packaged materials shall be shipped to the site in the original containers clearly labeled, and delivery slips shall be submitted with bulk materials identifying thereon the source, and warranting quality and compliance with Contract Documents.

§ 3.4.5 When the Contract Documents require the Work, or any part of same, to be above the standards required by applicable laws, ordinances, rules and regulations, and other statutory provisions pertaining to the Work, such Work shall be performed and completed by Contractor in accordance with the Contract Documents.

§ 3.4.6 When the manufacturer's name, patent numbers, underwriter's labels, model numbers or similar identifying marks are required, such markings shall be located as inconspicuously as possible.

§ 3.5 WARRANTY

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of the best quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects. Work, materials, or equipment not conforming to these requirements may be considered defective. If required by the Architect or Owner, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 ALL WARRANTIES SHALL INCLUDE LABOR AND MATERIALS AND THE MANUFACTURER'S WARRANTY SHALL BE SIGNED BY SUBCONTRACTOR AND COUNTERSIGNED BY CONTRACTOR. ALL WARRANTIES SHALL BE ADDRESSED TO OWNER AND DELIVERED TO ARCHITECT UPON COMPLETION OF THE WORK AND BEFORE OR WITH THE SUBMISSION OF REQUEST FOR FINAL PAYMENT.

§ 3.5.3 Contractor shall issue in writing to Owner as a condition precedent to final payment a "general warranty" reflecting the terms and conditions of this Section 3.5 for all Work under the Contract.

§ 3.5.4 The warranties provided in Section 3.5 shall be in addition to and not in limitation of any other warranty or remedy required by law or by the Contract Documents, and such warranty or remedy required by law or by the Contract Documents, and such warranty shall be interpreted to require Contractor to replace defective materials and equipment and re-execute defective Work which is disclosed to the Contractor by the Owner within a period of one (1) year after final completion of the entire Work unless a longer time is specifically called for in the specifications. The Contractor shall assign all components, equipment and fixture warranties to the Owner and will deliver all manuals to the Owner at the completion of construction.

§3.5.5 Except when a longer warranty time is specifically called for in the Specification Sections or is otherwise provided by law, the General Warranty shall be for twelve (12) months and shall be in form and content otherwise satisfactory to Owner.

§3.5.6 Warranties shall become effective on a date established by Owner and Architect in accordance with the Contract Documents. This date shall be the Date of Substantial Completion of the entire Work, unless otherwise provided in any Certificate of Partial Substantial Completion approved by the parties.

§3.5.7 If the Architect considers it impractical, because of unsuitable test conditions or some other factors, to execute simultaneous final acceptance of all equipment, portions of properly installed and functioning equipment may be certified by Architect for final acceptance, subject to Owner's approval, when that portion of the system is complete and ready for operation as called for under Section 9.8.1.

§3.5.8 Contractor shall warrant for a period of twelve (12) months that the building(s) shall be watertight and leak

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proof at every point and in every area, except where leaks can be attributed to damage to the building(s) by external forces beyond Contractor's control. Contractor shall, immediately upon notification by Owner of water penetration, determine the source of water penetration and, at its own expense, do any Work necessary to make the building(s) watertight. Contractor shall also, at its own expense, repair or replace any other damaged material, finishes, and furnishings, damaged as a result of this water penetration, to return the building(s) to its (their) original condition.

§3.5.9 In addition to the foregoing stipulations, Contractor shall comply with all other warranties referred to in any portions of the Contract Documents or otherwise provided by law or in equity, and where warranties overlap, the more stringent requirement shall govern.

§3.5.10 If for any reason Contractor cannot warrant any part of the Work using material or construction methods that have been specified, or shown, it shall notify Owner and Architect in writing before the Contract is signed, giving reasons, together with the name of product and data on a substitution it can warrant.

§ 3.6 TAXES

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 PERMITS, FEES, NOTICES, AND COMPLIANCE WITH LAWS

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall make application, secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract including, without limitation, street openings, sidewalk, and other obstructions, access over public ways and storage necessary for proper execution of the Contract and which are, legally required at the time bids are received or negotiations concluded.

§3.7.1.1 The Contractor shall also obtain all permits and approvals, and pay all fees and expenses, if any, associated with National Pollutant Discharge System (NPDS) regulations administered by the Environmental Protection Agency and state and local authorities, that require completion of documentation and/or acquisition of all permits for the Project. Contractor's obligations under this section do not require it to perform engineering services during the pre-construction phase to prepare proper drainage for the construction sites. However, any drainage alterations made by Contractor during construction phase which modifies the original site drainage plan and requires the issuance of a permit shall be at Contractor's sole cost.

- a. The Owner shall pay directly to the governing authority the cost of all permanent property utility assessments and similar utility connection charges.
- b. The Contractor shall be responsible for obtaining and paying for all City and County Building Permits, Inspection Fees and Plan Checking Fees; temporary utility charges, tap charges and water meter charges and any other similar fees assessed by jurisdictional authorities having control over the Project.
- c. The Owner shall pay fees payable to the Texas Department of Licensing and Regulations (TDLR) for document review relative to the Elimination of Architectural Barriers Act and the Architect will submit the documents to the TDLR for review and approval.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders and all other requirements of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work (including, without limitation, the installation of any materials or equipment) that it knows or reasonably should have known would be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions. If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend to the Owner in writing, an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15. No adjustment in the Contract Time or Contract Sum shall be permitted in connection with a concealed or unknown condition that does not differ materially from those conditions disclosed or based on data provided to Contractor and by the Contractor's prior inspections, tests, reviews, and pre-construction services for the Project; or by the Contractor's inspections, tests, reviews and pre-construction services that Contractor had the opportunity and obligation to make in connection with the Project but did not do so.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect in writing. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 ALLOWANCES

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness. If a decision is needed to avoid a delay, Contractor shall notify Architect, Construction manager and Owner in writing sufficiently in advance of needed date to allow reasonable time for selections to be made.

§ 3.9 SUPERINTENDENT

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Superintendent shall be satisfactory to the Owner and shall not be changed except with the consent of the Architect, unless the Superintendent leaves the employment of the Contractor. No increase in Contract Time or Contract Sum shall be

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allowed in the event the Owner or Architects object to any nominated superintendent. Such approval by the Owner shall not be unreasonably withheld.

§ 3.9.3 DELETED.

§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's review and approval a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised as required herein and at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work. The schedule shall indicate the proposed starting and completion dates for the various subdivisions of the Work as well as the totality of the Work. The schedule shall be updated every thirty (30) days and submitted to Architect with Contractor's Applications for Payment. Each schedule shall contain a comparison of actual progress with the estimated progress for such point in time stated in the original schedule. If any schedule submitted sets such a date for Substantial Completion for the Work or any phase of the Work beyond the date(s) of Substantial Completion established in the Contract (as the same may be extended as provided in the Contract Documents), then Contractor shall submit to Architect and Owner for their review and approval a narrative description of the means and methods that Contractor intends to employ to expedite the progress of the Work to ensure timely completion of the various phases of the Work as well as the totality of the Work. To ensure such timely completion, Contractor shall take all necessary action including, without limitation, increasing the number of personnel and labor on the Project and implementing overtime and double shifts. In that event, Contractor shall not be entitled to an adjustment in the Contract Sum or the schedule.

§ 3.10.2 The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect's and Owner's approval. The Architect's and Owner's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.10.4 The process of approving Contractor's schedules and updates to Contractor's schedule shall not constitute a warranty by the Owner that any non-Contractor milestones or activities will occur as set out on Contractor's schedule. Approval of a Contractor's schedule does not constitute a commitment by the Owner to furnish any Owner-furnished information or material any earlier than Owner would otherwise be obligated to furnish that information or material under the Contract Documents. Failure of the Work to proceed in the sequence scheduled by Contractor shall not alone serve as the basis for a Claim for additional compensation or time. In the event there is interference with the Work, which is beyond its control, Contractor shall attempt to reschedule the Work in a manner that will hold resulting additional time and cost to a minimum. The construction schedule shall be in a detailed format satisfactory to the Owner and the Architect and shall also:

- .1 Provide a graphic representation of all activities and events that will occur during performance of the Work;
- .2 identify each phase of construction and occupancy; and
- .3 set forth dates that are critical in ensuing the timely and orderly completion of the Work in accordance with the requirements of the Contract Documents hereinafter referred to as Milestone Dates.

§ 3.10.5 The Owner shall have the right to reschedule the time of day for the performance of any part of the Work that may interfere with the operation of the Owner's premises or any tenants or invitees thereof. The Contractor shall, upon the Owner's request, reschedule any portion of the Work affecting operation of the premises during hours when the premises are not in operation. Any rescheduling of performance of the Work under this Section 3.10.5 may be grounds for an extension of the Contract Time, if permitted under Section 8.3.1 and an equitable adjustments in the Contract Sum, if: (1) the performance of the Work was properly scheduled by the Contractor in

compliance with the requirements of the Contract Documents, (2) such rescheduling is required for the convenience of the Owner and is not attributable to any act of omission of Contractor, and (3) if Owner agrees to the Contract Sum adjustment prior to any rescheduling.

§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections (all changes and selections to be approved by Owner and Architect in advance) made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.11.1 At the Date of Substantial Completion and as a condition precedent to final payment, Contractor shall furnish the following documents to Architect for submittal to Owner: Record Drawings showing the field changes and selections (all changes and selections to be approved by Owner and Architect in advance) affecting the general construction, mechanical, electrical, plumbing, and all other Work, and indicating the Work as actually installed. These shall consist of carefully drawn markings on a set of reproducible prints of Architect's Drawings obtained and paid for by Contractor. Contractor shall maintain at the job site one (1) set of Architect's Drawings and indicate thereon each field change as it occurs. The Contractor shall post all Addenda on Construction Documents prior to commencing work on the site.

§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is to demonstrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors. If, in the opinion of the Architect, the Shop Drawings, Product Data, Samples and similar submittals are incomplete, indicate an inadequate understanding of the work covered by the submittals, or indicate a lack of study and review by the Contractor prior to submittal to the Architect, the submittals will be returned, unchecked, to the Contractor for correction of these three deficiencies and subsequent re-submittal. Additional service charges as outlined in Section 3.2.7 may be charged by the Architect in this event.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional and who shall comply with requirements of Owner regarding qualifications and insurance and, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 3.12.11 The Contractor shall submit Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents to the Architect at least 30 days prior to the date the Contractor needs the reviewed submittals returned. Where colors are to be selected by the Architect, the Contractor shall submit all Samples in adequate time to allow the Architect to prepare a complete selection schedule. In general, all submittals requiring color selection shall be submitted to the Architect within four weeks of the date of the Contract for construction.

§3.12.12 The Contractor shall submit the number of copies of Shop Drawings, Product Data, Samples and similar submittals which the Contractor and his Subcontractors need for their use plus two additional sets for the Architect and one additional set for each of the Architect's consultants involved with the particular section of work. Where shop drawings are involved, the Contractor shall submit one high quality reproducible transparency and one opaque print of the shop drawing for the Architect plus one additional opaque print for each of the Architect's consultants involved with the particular section of work. The reproducible transparency will be marked by the Architect and/or his consultants and returned to the Contractor for his use, distribution, correction or re-submittal as required. The Architect and his consultants will retain the marked up prints. After final review and correction of the submittal, the Contractor shall send two corrected sets to the Architect, and one to each of the Architect's consultants involved with the particular section of work.

§ 3.13 USE OF SITE

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§3.13.1 Only materials and equipment which are to be used directly in the Work shall be brought to and stored on the Project site by the Contractor. After equipment is no longer required for the Work, it shall be promptly removed from the Project site. Protection of construction materials and equipment stored at the Project site from weather, theft, damage and all other adversity is solely the responsibility of the Contractor.

§3.13.2 The Contractor and any entity for which the Contractor is responsible shall not erect any sign on the Project site without written consent of the Owner.

§3.13.3 Contractor shall ensure that the Work, at all times, is performed in a manner that affords reasonable access, both vehicular and pedestrian, to the site of the Work and all adjacent areas. The Work shall be performed to the fullest extent reasonably possible, in such a manner that public areas adjacent to the site of the Work shall be free from all debris, building materials and equipment likely to cause hazardous conditions. Without limitation of any other provision on the Contract Documents, Contractor shall use its best efforts to minimize any interference with the occupancy or beneficial use of: (1) any area and buildings adjacent to the site or the Work or (2) the Building in the event of partial occupancy.

§3.13.4 Without prior approval of the Owner, the Contractor shall not permit any workers to use any existing facilities at the Project site, including without limitation, lavatories, toilets, entrance and parking areas other than those designated by Owner. Without limitation of any other provisions of the Contract Documents, the Contractor shall use its best efforts to comply with all rules and regulations promulgated by the Owner in connection with the use and occupancy of the Project site and the Building, as amended from time to time.

§ 3.14 CUTTING AND PATCHING

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

§ 3.15 CLEANING UP

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from the Contractor.

§ 3.15.3 Prior to the Architect's inspection for Submittal Completion the Contractor shall clean exterior and interior surfaces exposed to view; remove temporary labels, stains, and foreign substances; polish transparent and glossy surfaces; clean equipment and fixtures to a sanitary condition; replace air filters in mechanical equipment; clean roof, gutters and downspouts; remove obstructions and flush debris from drainage systems; clean site; sweep paved areas and rake clean other surfaces; remove trash and surplus materials from the site.

§ 3.16 ACCESS TO WORK

The Contractor shall provide the Owner and Architect access to the Work in preparation and progress wherever located.

§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.

§ 3.18 INDEMNIFICATION

§ 3.18.1 To the fullest extent permitted by law, Contractor shall indemnify, defend, and hold harmless Owner, the Commissioners Court of Owner, all elected officials, employees and agents of Owner and of any of the above mentioned parties (the "Indemnified Parties") from and against any and all loss, cost, expense, damage, injury, liability, claim, demand, penalty, or cause of action (including attorneys' fees), directly or indirectly arising out of, resulting from, or related to (in whole or in part), (1) the Work performed hereunder, (2) the Contract, or (3) the act or omission of Contractor, a Subcontractor, or an individual, partnership, joint venture, corporation or other entity (a) directly or indirectly employed by Contractor or a Subcontractor, or (b) for whose acts or omissions Contractor or a Subcontractor may be liable (excluding property damage to the Work itself to the extent covered by Owner's all-risk builder's risk insurance, subject to Contractor's liability for any deductible amounts thereunder). The obligations of Contractor under this indemnification shall apply to all matters except those arising solely from the wanton and willful negligence or the malicious acts or omissions of Owner. Further, the obligations of Contractor under this indemnification shall not extend to the liability of Architect, its agents, or employees, arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, Change Orders, designs, or Specifications, (2) the giving of or failure to give directions or instructions by Architect, its agents, or employees, provided such giving or failure to give is the primary cause of the injury or damage, or (3) any matter prohibited by Section 130.002, Texas Civil Practice and Remedies Code. Contractor shall promptly advise Owner in writing of any action, administrative or legal proceeding, or investigation as to which this indemnification may apply, and Contractor, at Contractor's expense, shall assume on behalf of Owner and conduct with due diligence and in good faith the defense thereof with counsel satisfactory to Owner; provided, Owner shall have the right to be represented therein by advisory counsel of its own selection and at its own expense; and provided further, that if the defendants in any such action include both Contractor and Owner, and Owner shall have reasonably concluded that there may be legal defenses available to it or the other Indemnified Parties that are different from, or additional to, or inconsistent with, those available to Contractor, then Owner shall have the right to select separate counsel to participate in the defense of such action on its own and the other Indemnified Parties behalf at Contractor's expense. In the event of failure by Contractor to fully perform in accordance with this indemnification section. Owner, at its option, and without relieving Contractor of its obligations hereunder, may so perform, but all costs and expenses so incurred by Owner in that event shall be reimbursed by Contractor to Owner, together with interest on the same from the date any such expense was paid by Owner until reimbursed by Contractor, at the rate of interest provided to be paid on judgments, by the law of the jurisdiction to which the interpretation of the Contract is subject. The obligations of Contractor under this Section shall survive the expiration of the Contract and specifically shall survive the limitations contained in Section 15.1 hereof.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

§ 3.19 SUBSTITUTIONS OF PRODUCTS AND SYSTEMS, "OR EQUAL" BRANDS

§ 3.19.1 The materials, products and the systems covered by these specifications have been selected as a standard because of quality, particular suitability, or record of satisfactory performance. It is not intended to preclude the use of equivalent or better materials, products or systems provided that it meet the requirements of the particular project and have been approved in an addendum as a substitution prior to the submission of bids. If prior written approval in an addendum has not been obtained, it will be assumed that the Bid is based upon the materials, products, and systems described in the Bidding Documents and no substitutions will be permitted, except as provided hereinafter.

§3.19.2 If, after award of contract, the Contractor or one of his Subcontractors or Suppliers determines that any of the products or systems specified will perform in a manner that will limit the Contractor's ability to satisfactorily perform the work or to honor the Warranty, the Contractor shall promptly notify the Architect, in writing, providing detailed substantiation for his position. Any changes deemed necessary by the Owner and Architect, including substitution of materials and change in Contract Sum, either upward or downward, if any, shall be accompanied by appropriate modification.

§3.20 RECORD DRAWINGS

§3.20.1 At the completion of the project, the Contractor shall submit one complete set of blue lines showing all changes and routing of utilities made during construction, excluding Architect made CAD changes, to the Architect. Drafting shall be legible to the Architect's satisfaction. The Contractor shall pay for the cost of the required recording/drafting. The record set shall be kept up to date on a daily basis and the Architect shall review its status at the project meetings. The Architect shall furnish the Contractor with a blueline set at contract award which shall have all Addenda incorporated. The Owner will pay for the printing of the blueline set. The Architect will incorporate any record information into the construction (CAD) documents and provide the Owner with an electronic copy of the record information on the Construction documents that have all bid and construction changes incorporated. The cost for incorporating the record information into the CD will be paid for by the Owner. The Architect will transmit the electronic CD to the Owner with a copy of the transmittal to the Contractor's construction manager.

ARTICLE 4 ARCHITECT

§ 4.1 GENERAL

§ 4.1.1 The Owner shall retain an architect lawfully licensed to practice architecture or an entity lawfully practicing architecture in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 4.1.2 Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Architect. Consent shall not be unreasonably withheld.

§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a successor architect whose status under the Contract Documents shall be that of the former Architect.

§ 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate For Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect as a representative of the Owner, will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. The Architect will be required to make on-site inspections as necessary to keep the Owner informed of the progress of the Work and as necessary to guard the Owner against defects and deficiencies in the Work. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. Architect shall not have control over or charge of and shall not be responsible for safety precautions and programs in connection with the Work. Architect shall be responsible for promptly

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notifying Contractor of the failure of Contractor, Subcontractors or any other persons performing any of the Work, in failing to use proper construction means, methods, techniques, sequences, procedures, safety precautions and programs, but only to the extent Architect becomes aware of, or should, exercising due professional diligence, be aware of, same. Architect shall also promptly notify Owner in writing of the failure of any of the foregoing parties to carry out the Work in accordance with the Contract Documents.

§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority and responsibility to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve or reject, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data and Samples, for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 DELETED.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 DEFINITIONS

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site or to otherwise furnish labor, material, or other services with respect to a portion of the Work. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site or to otherwise furnish labor, material, or other services with respect to a portion of the Work. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, but no later than 10 days prior to the submittal date for the Contractor's first Application for Payment, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the 14 day period shall constitute notice of no reasonable objection. Failure of the Contractor to submit the subject names in a timely manner may delay processing of the Contractor's Application for Payment.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 SUBCONTRACTUAL RELATIONS

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor,

prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.3.1 All subcontracts shall be in written form and shall specifically provide that Owner is an intended third-party beneficiary of the subcontract.

§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity.

§ 5.5 Contractor shall promptly notify Owner and Architect of any material defaults by any Sub-contractor. Notwithstanding any provision contained in Article 5 to the contrary, it is hereby acknowledged and agreed that Owner has in no way agreed, expressly or implicitly, nor will Owner agree, to allow any Sub-contractor or other materialman or workman employed by Contractor the right to obtain a personal judgment or to create a lien against Owner for the amount due from the Contractor.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

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§ 6.2 MUTUAL RESPONSIBILITY

§ 6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 DELETED.

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor causes to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 OWNER'S RIGHT TO CLEAN UP

If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 GENERAL

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be only based upon agreement among the Owner, Contractor and Architect; a Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect and is subject to the approval of Owner.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work. Except as permitted in Sections 7.3 and 9.7, a change in the Contract Sum or the Contract Time shall be accomplished only by Change Order. Accordingly, no course of conduct or dealings between the parties, nor express or implied acceptance of alterations or additions to the Work and no claim that Owner has been unjustly enriched by any alteration of or addition to the Work, whether or not there is, in fact, any unjust enrichment to the Work, shall be the basis of any claim to an increase in any amounts due under the Contract Documents or a change in any time period provided for in the Contract Documents.

§ 7.2 CHANGE ORDERS

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.2.2 Agreement on any Change Order shall constitute a final settlement of all matters relating to the change in the Work that is the subject of the Change Order, including, but not limited, to all direct and indirect costs associated with such change and any and all adjustments to the Contract Sum and the construction schedule.

§ 7.2.3 Contractor shall keep and periodically submit to Owner copies of a log for all Change Orders.

§ 7.3 CONSTRUCTION CHANGE DIRECTIVES

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly. Contractor shall keep and periodically submit to Owner copies of a log for all Construction Change Directives and a log for all requests for information.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.7.

§ 7.3.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.6 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit not to exceed a total maximum of **fifteen percent (15%)** for all Work, and further limited to as follows, not to exceed five percent (5%) for Work done by Contractor's employees and **ten percent (10%)** of such Work's actual cost to be apportioned between any and all Subcontractors and Sub-subcontractor. "*Actual cost*" does not include any item that could be deemed to be a general conditions cost or overhead, such as, but not limited to, the cost of Contractor and Subcontractor supervisory personnel assigned to the Work, and field office and related expenses. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

- .1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- .2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and
- .5 Additional costs of supervision and field office personnel directly attributable to the change.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 MINOR CHANGES IN THE WORK

The Architect has authority after having obtained Owner's approval to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.

ARTICLE 8 TIME

§ 8.1 DEFINITIONS

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.1.1 The Work shall be fully completed within the time limit and/or date stated in the Contract between Owner and Contractor.

§ 8.1.1.2 **Liquidated Damages:** If the Contractor should fail to fully complete the Work within the stated time (subject however to extension of time duly granted in the manner and for the causes specified in the General Conditions), Contractor shall be charged by and shall pay to Owner, as liquidated damages, the sum specified in Section 3.1.1 of the modified AIA Document A101 – 2007, Standard Form of Agreement Between Owner and Contractor, to which this AIA Document A201-2007, General Conditions of the Contract for Construction, is attached as an exhibit (such modified AIA A101-2007, the "A101-2007"), per calendar day that the Work remains incomplete beyond the time fixed for completion. Contractor hereby agrees that from the nature of the project it would be impracticable and extremely difficult to fix the actual damage that would or will be suffered in the event that Contractor should fail to fully complete the Work by the time limit or date stated and the amount of the liquidated damages are fair and reasonable. The parties agree that the liquidated damages are a reasonable forecast of just compensation for the harm done to Owner that would be caused by Contractor's failure to timely complete the Work. Contractor agrees that the amount of liquidated damages due Owner may be deducted by Owner from any monies that might otherwise be or become payable to Contractor.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 PROGRESS AND COMPLETION

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

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§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation, provided, however, that such extension of Contract Time shall be net of any delays caused by or due to the fault or negligence of Contractor or that are otherwise the responsibility of Contractor and shall also be net of any contingency or "float" time allowance included in Contractor's construction schedule. Contractor shall, in the event of any occurrence likely to cause a delay, cooperate in good faith with Architect and Owner to minimize and mitigate the impact of any such occurrence and do all things reasonable under the circumstances to achieve this goal; or by other causes that the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents. Contractor shall not be entitled to damages of any type for delays caused by Owner, his servant, agents, employees, or separate Contractors hired or retained by Owner. Contractor may receive an extension or extensions for additional time in which to complete the Contract but shall not receive any damages of any type for such delays. Changes in the Work, regardless of the extent or number of such Changes or Owner's exercise of any of its remedies of suspension of the Work or requirement of correction or re-execution of any defective Work, shall not under any circumstances be construed as intentional interference with Contractor's performance of the Work.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 CONTRACT SUM

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.1 **Commitment of Current Revenues Only.** As provided in Section 4.5 of A101 – 2007, in the event that, during any term hereof, the governing body of the Owner does not appropriate sufficient funds to meet the obligations of the Owner under this Contract, then the Owner may terminate this Contract upon ninety (90) days written notice to the other party. Each of the parties hereto agrees, however, to use its best efforts to secure funds necessary for the continued performance of this Agreement. The parties intend this provision to be a continuing right to terminate this Agreement at the expiration of each budget period of the Owner pursuant to the provisions of Tex. Loc. Govt. Code Ann. §271.903.

§ 9.2 SCHEDULE OF VALUES

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit to the Owner and to the Architect, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work which in the aggregate equals the total Contract Sum, divided so as to facilitate payments to Subcontractors, supported by such evidence of correctness as Architect may direct or as required by Owner. This schedule, when approved by Architect and Owner, shall be used to monitor the progress of the Work and as a basis for Certificates for Payment. All items with entered values will be transferred by Contractor to the "Application and Certificate for Payment," and shall include the latest approved Change Orders and Construction Change Directives. Change Order values and Construction Change Directives values shall be broken down to show the various subcontracts. The Application for Payment shall be on a form as provided by Architect and approved by Owner. Each item shall show its total scheduled value, value of previous applications, value of the application, percentage completed, value completed, and value yet to be completed. All blanks and

columns must be filled in, including every percentage complete figure. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 9.3 APPLICATIONS FOR PAYMENT

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents. Any allowances included in the Application for Payment shall be separately itemized with supporting data attached. The Application for Payment shall be accompanied by a certification by an officer of Contractor to the effect that:

There are no known mechanics', materialman's or laborers' liens or claims, or any other liens or claims, legal or equitable, contractual, statutory, or constitutional, outstanding or known to exist at the date of this Application; all due and payable bills with respect to the Work have been paid to date or are included in the amount requested in the current Application and there is no known basis for the filing of any mechanics', materialman's or laborers' lien or claim, or any other lien or claim, legal or equitable, contractual, statutory, or constitutional, on the Work; and waivers and releases from all Subcontractors, laborers, and material men for Work done and materials furnished have been obtained in such form as to constitute an effective waiver and release of all such liens and claims under the laws of the state within which the Project is located and shall be delivered to Architect together with Contractor's waiver and release of liens and claims at the time of submission of the Application for Payment.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing by the Owner and Surety. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site. Under no circumstances will the Owner reimburse the Contractor for down payments, deposits, or other advance payments for materials or equipment.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work. The vesting of such title shall not impose any obligations on Owner or relieve Contractor of any of its obligations under the Contract, that Contractor shall remain responsible for damage to or loss of the Work, whether completed or under construction, until responsibility for the Work has been accepted by Owner in the manner set forth in the Contract Documents.

§ 9.4 CERTIFICATES FOR PAYMENT

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines

is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and on all other information available to Architect including, without limitation, the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified and that the aggregate amount theretofore paid to Contractor plus any applicable retention does not exceed the value of the completed portion of the Work. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, or (3) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a separate contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, or that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.3 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Architect will reflect such payment on the next Certificate for Payment.

§ 9.5.4 Notwithstanding any provision contained within this Article, if the Work has not attained Substantial Completion within the Contract Time, subject to extensions of time allowed under these Conditions, Architect may withhold any further payment to Contractor to the extent necessary to preserve sufficient funds to complete the construction of the Project and to cover liquidated damages assessed against Contractor up to the time of the Application for Payment and to the time it is reasonably anticipated that Substantial Completion will be achieved.

§ 9.6 PROGRESS PAYMENTS

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect. Owner may refuse to make payment on any Certificate for Payment for any default of the Contract, including, but not limited to, those defaults set forth in Sections 9.5.1.1 through 9.5.1.7. Owner shall not be deemed in default by reason of withholding payment while any of such defaults remain uncured.

§ 9.6.2 The Contractor shall pay each Subcontractor no later than seven days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor.

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 DELETED.

§ 9.7 FAILURE OF PAYMENT

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not, for reasons other than a default of the Contract, including, but not limited to, those defaults set forth in Sections 9.5.1.1 through 9.5.1.7 pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Architect, then the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.7.1 If Owner is entitled to reimbursement or payment from Contractor under or pursuant to the Contract Documents, such payment shall be made promptly upon demand by Owner. Notwithstanding anything contained in the Contract Documents to the contrary, if Contractor fails to promptly make any payment due Owner, or if Owner incurs any costs and expenses to cure any default of Contractor or to correct defective Work, Owner shall have an absolute right to offset such amount against the Contract Sum and may, in Owner's sole discretion, elect either to (i) deduct an amount equal to that which Owner is entitled from any payment then or thereafter due Contractor from Owner, or (ii) issue a written notice to Contractor reducing the Contract Sum by an amount equal to that which Owner is entitled.

§ 9.8 SUBSTANTIAL COMPLETION

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof (which Owner agrees to accept separately) is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of

items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of issuance of the certificate of final payment by Architect unless otherwise provided in the Certificate of Substantial Completion. The Work will not be considered suitable for Substantial Completion review until all Project systems included in the Work are operational as designed and scheduled, all designated or required governmental inspections and certifications have been made and posted, designated instruction of Owner's personnel in the operation of systems has been completed, and all final finishes within the Contract are in place. In general, the only remaining Work shall be minor in nature, so that Owner and/or Owner's employees and if applicable, the public, could occupy the building on that date and the completing of the Work by Contractor would not materially interfere or hamper Owner's or Owner's employees and if applicable, the public, (or those claiming by, through, or under Owner) from normal County operations. As a further condition of Substantial Completion acceptance, Contractor shall certify that all remaining Work will be completed within thirty (30) consecutive calendar days or as agreed upon following the Date of Substantial Completion. If Contractor requests a Substantial Completion review, and Architect, after performing the Substantial Completion review, finds that the Project was not ready for the Substantial Completion review, then Contractor shall pay the Architect's fees for any additional Substantial Completion reviews.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§9.8.6 In order for the project or a major portion thereof to be considered substantially complete, the following conditions must be met: (1) All inspections by governmental authorities have jurisdiction over the project must have been finalized, any remedial work required by those authorities must have been completed, and Certificates of Occupancy and similar governmental approval forms must have been issued and copies delivered to the Owner and Architect. (2) All work, both interior and exterior, shall have been completed and cleaned except minor items which if completed after occupancy, will not, in the Owner's opinion, cause interference to the Owner's use of the building or any portion thereof. A significantly large number of items to be completed or corrected will preclude the Architect from issuing a Certificate of Substantial Completion. The Owner and Architect will be the sole judge of what constitutes a significantly large number of items.

§9.8.7 After the date of Substantial Completion of the Project, as evidenced by the Certificate of Substantial Completion, the Contractor will be allowed a period of thirty (30) days, unless extended by mutual agreement or provision of the Contract, within which to correct all deficiencies attached to the Certificate of Substantial Completion. Failure of the Contractor to complete such corrections within the stipulated time will be reported to the Contractor's surety. In this report, the Contractor and surety will be informed that, should correction remain incomplete for fifteen (15) days, the Owner may initiate action to complete corrective work out of the remaining Contract funds in accordance with Article 14.

§ 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the

Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 FINAL COMPLETION AND FINAL PAYMENT

§ 9.10.1 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 faulty or defective Work appearing after Substantial Completion.

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§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 SAFETY OF PERSONS AND PROPERTY

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

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

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

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities. The Contractor shall also be responsible, at the Contractor's sole cost and expense, for all measures necessary to protect any property adjacent to the project and improvements therein. Any damage to such property or improvements shall be promptly repaired by the Contractor.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.1.8.

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

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 HAZARDOUS MATERIALS

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

§ 10.3.3 DELETED.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents.

§ 10.3.5 The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 DELETED.

§ 10.4 EMERGENCIES

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 CONTRACTOR'S LIABILITY INSURANCE

§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor and Owner from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
- .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 Claims for damages insured by usual personal injury liability coverage;
- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;

- .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7 Claims for bodily injury or property damage arising out of completed operations; and
- .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's Consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 11.1.5 SCHEDULE OF INSURANCE COVERAGES

§ 11.1.5.1 Contractor shall carry and keep in full force for the duration of the project the following Coverage.

Coverage	Minimum Amounts and Limits
Worker's Compensation	Statutory Limits
Employer's Liability:	
Bodily Injury by Accident	\$500,000.00/each accident
Bodily Injury by Disease	\$500,000.00/each employee
Bodily Injury by Disease	\$500,000.00/Policy Limit
Commercial General Liability	
Bodily Injury/Property Damage	\$1,000,000.00 per occurrence \$2,000,000.00 aggregate
(Premises Operations, Independent Contractors, Product/Completed Operations, Personal Contractual Liability, Explosion, Collapse, Underground and Broad Form Property Damage).	Injury,
Comprehensive Automobile Liability	\$1,000,000.00 Combined Single Limit per Occurrence

Auto liability insurance shall be on a standard form written to cover all owned, hired, and non-owned automobiles. The policy shall be endorsed to include the Indemnified Parties (Section 3.18) as additional insured, contain cross-liability and severability of interest endorsements, and state that this insurance is primary insurance as regards to any other insurance carried by the Indemnified Parties (see Section 3.18).

§11.1.5.2 All policies shall contain special endorsements to include:

- .1 The Owner as an additional insured (except for Worker's Compensation) and all other parties identified in Section 3.18 (Indemnified Parties);
- .2 Waiver of Subrogation in favor of Owner under the Worker's Compensation and Employer's Liability policies.
- .3 A statement that a notice shall be given to Owner by certified mail thirty (30) days prior to cancellation or upon any material changes in coverage.
4. Contain cross-liability and severability of interest endorsements;
5. state that this insurance is primary insurance in regard to any other insurance carried by the an Indemnified Party (see Section 3.18);
- .6 the following coverage:
 - a. Premises/Operations;
 - b. Independent Contractors;
 - c. Completed Operations for a period of two years following the acceptance of Contractor's Work;
 - d. Comprehensive General Liability Endorsement to include Blanket Contractual Liability (specifically covering, but not limited to, the contractual obligations assumed by Contractor, Broad Form Property Damage, and Personal Injury Liability with employee and contractual exclusions removed;
 - e. Deletion of exclusions relative to Collapse, Explosion, and Underground Property Damage Hazards;
 - f. Personal Injury Liability with the contractual exclusions removed;
 - g. Cross Liability Endorsement.

§11.1.5.6 Umbrella Excess Liability Insurance

Bodily Injury and	\$2,000,000.00 per occurrence
Property Damage	\$2,000,000.00 aggregate

This policy shall be written on an umbrella excess basis above, the coverage described in this Article 11. The policy shall be endorsed to include the Indemnified Parties (3.18) as additional insureds. The policy shall contain cross-liability and severability of interest endorsements and shall state, as regard the Indemnified Parties that the insurance is primary insurance as to any other insurance carried by any Indemnified Party. The policy shall be endorsed to provide the defense coverage obligation.

§11.1.6 Further, Contractor shall require all Subcontractors to carry similar insurance coverage and limits of liability as required under this Article 11, adjusted to the nature of Subcontractor's operations and submit same to Owner for approval before any Work commences.

§11.1.7 In the event Contractor fails to obtain the required certificates of insurance from the Subcontractor and a claim is made or suffered, Contractor shall indemnify, defend, and hold harmless the indemnified parties from any and all claims for which the required insurance would have provided coverage.

§ 11.2 OWNER'S LIABILITY INSURANCE

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

§ 11.2.1 By signing the Contract or providing or causing to be provided a Certificate of Coverage, the Contractor is representing to the Owner that all employees of the Contractor who will provide services on the Project will be covered by workers' compensation coverage for the duration of the Project, that coverage will be based on proper reporting or 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.

§11.2.2 Optionally, the Owner may require the Contractor to purchase and maintain Project Management Protective Liability insurance from the Contractor's usual sources as primary coverage for the Owner's, Contractor's and Architect's vicarious liability for construction operations under the contract. Unless otherwise required by the Contract Documents, the Owner shall reimburse the Contractor by increasing the Contract Sum to pay the cost of purchasing and maintaining such optional insurance coverage and the Contractor shall not be responsible for purchasing any other liability insurance on behalf of the Owner. The minimum limits of liability purchased with such coverage shall be equal to the aggregate of the limits required for Contractor's Liability Insurance under Article 11.

§ 11.3 PROPERTY INSURANCE

§ 11.3.1 Contractor shall obtain a builder's risk "all-risk" or equivalent policy in the amount of the initial Contract Sum (or, if applicable Guaranteed Maximum Price), plus value of subsequent Contract modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. The policy must also name its subcontractors and the Owner as additional insured, as their respective interests may appear. Coverage shall include material stored on-site and in transit. Such insurance will be with a company or companies lawfully authorized to do business in Texas. The policy must have the following endorsement: "This insurance shall be specific as to coverage and not considered as contributing insurance with any permanent insurance maintained on the present premises."

§ 11.3.1.1 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.

§ 11.3.1.1.1 For any claim made against Contractor's Builder's Risk Insurance, the deductible shall not exceed \$2,500.00 for a Contract Sum of less than \$4 million. For a Contract Sum of \$4 million or more, the deductible shall not exceed \$5,000.00.

§11.3.1.1.2 The Contractor waives all rights against (1) Owner, the Subcontractors, Sub-subcontractors, agents, and employees, and (2) the Architect, Architect's consultants, separate contractors, if any, and any of their Subcontractors, Sub-subcontractors, agents, and employees, for damages caused by fire or other perils to the extent covered by property insurance obtained pursuant to this section or other property insurance applicable to the Work, except such rights as Contractor has to proceeds of such insurance held by the Contractor as a fiduciary. The Contractor, as appropriate, shall require of any separate contractors, Subcontractors, Sub-subcontractors, agents, and employees of any of them by appropriate written agreements, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§11.3.1.1.3 The Contractor as fiduciary shall have power to adjust and settle a loss with insurers. The Contractor shall pay all Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements shall require Subcontractors to make payment to their Sub-subcontractors in similar manner. If required in writing by a party in interest, the Contractor as fiduciary shall, upon occurrence of insured loss, give bond for proper performance of the Contractor's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Contractor shall deposit in a separate account proceeds so received, which the Contractor shall distribute in accordance with such agreement as the parties in interest may reach. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor under the insurance proceeds.

§ 11.3.1.2 DELETED.

Init.

§ 11.3.1.3 DELETED.

§ 11.3.1.4 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

§ 11.3.1.5 Partial occupancy or use shall not affect the validity or coverage of property insurance.

§ 11.3.2 BOILER AND MACHINERY INSURANCE
DELETED.

§ 11.3.3 LOSS OF USE INSURANCE
DELETED.

§ 11.3.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ 11.3.5 DELETED.

§ 11.3.6 DELETED.

§ 11.3.7 WAIVERS OF SUBROGATION

The Contractor waives all rights against (1) Owner, the Subcontractors, Sub-subcontractors, agents, and employees, and (2) the Architect, Architect's consultants, separate contractors, if any, and any of their Subcontractors, Sub-subcontractors, agents, and employees, for damages caused by fire or other perils to the extent covered by property insurance obtained pursuant to Article 11 or other property insurance applicable to the Work, except such rights as Contractor has to proceeds of such insurance held by the Contractor as a fiduciary. The Contractor, as appropriate, shall require of any separate contractors, Subcontractors, Sub-subcontractors, agents, and employees of any of them by appropriate written agreements, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 DELETED.

§ 11.3.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers.

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 The Contractor shall furnish a Performance Bond in an amount equal to one hundred percent (100%) of the Contract Sum, as security for the faithful performance of the Contract and also a one hundred percent (100%) Payment Bond, as security for the payment of all persons performing labor on the Project under this Contract and furnishing materials in connection with the Contract. The Performance Bond and the Payment Bond may be in one or in separate instruments in accordance with local law. Surety companies must be authorized to write surety bonds in Texas and any such surety bond must comply with the requirements of Subchapter A of Chapter 3503 of the Texas Insurance Code

§11.4.1.1 The Contractor shall deliver the required Bonds to the Owner not later than the date of the preconstruction meeting. All Bonds will be reviewed by the Architect for compliance with the Contract Documents prior to the execution of the Contract. In the event that Architect has any questions concerning the sufficiency of the bonds, Architect shall refer the bonds to Owner or Owner's representative for decision.

§11.4.1.2 All bonds shall be originals. The Contractor shall require the attorney-in-fact who executes the required Bonds on behalf of the Surety to affix thereto a certified and current copy of the power-of-attorney. The name, address, and telephone number of a contact person for the Bonding Company shall be provided.

§ 11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.4.3 The Bonds shall be provided to comply with the terms and provisions of Chapter 2253 of the Texas Government Code. Bonds shall be signed by an agent resident in the State of Texas and date of bond shall be on or after the date of execution of the Contract but prior to the date of the notice to proceed. If at any time during the continuance of the Contract, the surety of the Contractor's bonds becomes insufficient, the Owner shall have the right to require additional and sufficient sureties which the Contractor shall furnish to the satisfaction of the Owner within ten (10) days after notice to do so. In default thereof, the Contractor may be suspended, and all payment or money due to the Contractor withheld until sufficient bonds are provided by Contractor.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 UNCOVERING OF WORK

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time or Contract Sum.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

§ 12.2 CORRECTION OF WORK

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

The Contractor shall promptly correct Work rejected by the Architect as incomplete, defective, or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the entire Work (unless otherwise provided in any Certificate of Partial Substantial Completion approved by the parties), or within such longer period of time as may be prescribed by law or in equity, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be defective or otherwise not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. This corrective period shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual performance of the Work. Corrective Work shall be warranted to be free from defects for a period equal to the longer of six (6) months after the completion of the corrective Work or one (1) year after the Date of Substantial Completion (subject to extension as previously described) or such longer period of time as may be prescribed by law or in equity, or expiration of the term of any applicable special warranty, if applicable, required by the Contract Documents. Any defect in such Work shall be corrected again by Contractor promptly upon notice of the defect from Owner. This obligation under this Subsection 12.2.2.1 shall survive acceptance of the Work under the Contract and termination of the Contract by the Owner. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§12.2.2.4 Just before the termination of the various guarantee periods, Contractor shall accompany Owner's agent and Architect on an inspection tour of the building and shall note any defects and shall start remedying these defects within ten (10) days of the inspection tour and shall prosecute the Work without interruption until accepted by Owner and Architect, even though such prosecution should extend beyond the limit of the guarantee period.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused in whole or in part by the Contractor's correction or removal of Work that is defective or otherwise not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents or under law or in equity. Establishment of the period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 ACCEPTANCE OF NONCONFORMING WORK

If the Owner prefers to accept Work that is defective or otherwise not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 GOVERNING LAW

The Contract shall be governed by the law of the place where the Project is located.

§ 13.2 SUCCESSORS AND ASSIGNS

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

§ 13.3 WRITTEN NOTICE

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation or other entity for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice or if delivered by facsimile to the offices of the person or corporation for which it was intended. Facsimiles received after 5:00 p.m. on a business day, or on a weekend or legal holiday on which the recipient's offices are closed, notice shall be deemed to have been duly served on the next business day.

§ 13.4 RIGHTS AND REMEDIES

§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law or in equity or by any other agreement, and any such rights and remedies shall survive the acceptance of the Work and/or any termination of the Contract Documents.

§ 13.4.2 No action or failure to act by the Owner, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach there under, except as may be specifically agreed in writing.

§ 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Architect, Owner and Contractor shall be afforded a reasonable opportunity to attend, observe, and witness all inspections and tests of the Work. Architect or Owner may at any time request and receive from Contractor satisfactory evidence that materials, supplies, or equipment are in conformance with the Contract Documents. The conduct of any inspection or test and the receipt of any approval shall not operate to relieve Contractor from its obligations under the Contract Documents unless specifically so stated by Owner in writing.

§ 13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, or reveal faulty or otherwise defective Work, or if the necessity of any such testing, inspection, or approval procedures arises out of the fault, neglect, or omission of Contractor, Contractor shall bear all costs of such testing, inspection, and approval procedures and all other costs made necessary by Contractor's failures, including, without limitation, those costs of repeated and additional procedures and compensation for Architect's services and expenses of Owner's personnel and consultant fees and expenses. Such costs shall be paid by Contractor within ten (10) days of receipt of invoice from Owner with supporting data attached.

§ 13.5.4 Required certificates of testing, inspection or approval shall, be secured by the Contractor and delivered to Owner, unless such testing or inspection services are arranged by Owner.

§ 13.5.5 If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.6 INTEREST

An overdue payment bears interest at the rate of zero percent (0%) each month, or at the legal rate established by the Texas Government Code, currently in Section 2251.025. Any such payment shall be deemed overdue on the thirty-first (31st) day after Owner receives an invoice from Contractor.

§ 13.7 TIME LIMITS ON CLAIMS

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract within the time period specified by applicable law.

§ 13.8 EQUAL OPPORTUNITY

§ 13.8.1 The Contractor shall maintain policies of employment as follows: "The Contractor and the Contractor's Subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, or national origin. Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, religion, color, sex, or national origin. Such action shall include, but not be limited to, the following: employment, promotion, demotion, or transfer; recruitment, or recruitment advertising; lay-off or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants, notices setting forth the nondiscrimination policies."

§13.8.1.1 The Contractor and the Contractor's Subcontractors shall, in all solicitations or advertisements for employees placed by them or on their behalf; state that all qualified applicants will receive consideration for employment without regard to race, religion, color, sex, or national origin.

§13.9 CERTIFICATION OF ASBESTOS-FREE PROJECT

§13.9.1 Contractor shall submit to the Architect a letter addressed to the Owner certifying that all materials used in the construction of this Project contain less than 0.10 by weight of asbestos and for which it can be demonstrated that, under reasonably foreseeable job site conditions, will not release asbestos fibers in excess of 0.1 fibers per cubic centimeter. Certification letters shall be dated, shall reference this specific Project, and shall be signed by not less than two (2) officers of the construction company.

§13.9.2 Certification shall further state that should asbestos fibers be found at this Project in concentrations greater than 0.1 fibers per cubic centimeter, that Contractor shall be responsible for determining which materials contain asbestos fibers and shall take corrective action to remove those materials from the Project at no additional cost to the Owner.

§13.9.3 Final payment shall not be made until this letter of certification has been received.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency that requires all Work to be stopped;

(Paragraphs deleted)

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work properly executed in accordance with the Contract Documents.

§ 14.1.4 Owner shall not be responsible for damages for loss of anticipated profits on Work not performed on account of any termination described in Sections 14.1.1 and 14.1.2.

§ 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 refuses or fails to supply enough properly skilled workers or proper materials and equipment;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;

- .3 disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority;
- .4 disregards the instructions of Architect or Owner (when such instructions are based on the requirements of the Contract Documents);
- .5 is adjudged bankrupt or insolvent, or makes a general assignment for the benefit of Contractor's creditors, or a trustee or receiver is appointed for Contractor or for any of its property, or files a petition to take advantage of any debtor's act, or to reorganize under bankruptcy or similar law; or
- .6 otherwise does not fully comply with the Contract Documents.

§ 14.2.2 When any of the above reasons exist, the Owner, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 To the extent the costs of completing Work, including compensation for additional professional services and expenses, exceed those costs that would have been payable to Contractor to complete the Work except for Contractor's default, Contractor will pay the difference to Owner, and this obligation for payment shall survive termination of the Contract. Such costs incurred by Owner will be determined by Owner and confirmed by Architect.

§14.2.5 In addition to Owner's right to remove Contractor from any part of Work pursuant to the Contract Documents, Owner may, at any time, at will and without cause, terminate any part of Work or any subcontract or all remaining Work for any reason whatsoever by giving seven (7) days' prior written notice to Contractor specifying the part of Work or subcontract to be terminated and the effective date of termination. Contractor shall continue to prosecute the part of Work not terminated. If any part of Work or subcontract is so terminated, Contractor shall be entitled to payment for Work properly executed in accordance with the Contract Documents (the basis for such payment shall be as provided in the Contract) and for costs directly related to Work thereafter performed by Contractor in terminating such Work or subcontract including reasonable demobilization and cancellation charges provided said Work is authorized in advance by Architect and Owner. No payment shall be made by Owner, however, to the extent that such Work or subcontract is, was, or could have been terminated under the Contract Documents or an equitable adjustment is made or denied under another provision of the Contract. In case of such termination, Owner will issue a Construction Change Directive or authorize a Change Order making any required adjustment to the Date of Substantial Completion and/or the Contract Sum. For the remainder of the Work, the Contract Documents shall remain in full force and effect.

§14.2.6 Owner shall not be responsible for damages for loss of anticipated profits on Work not performed on account of any termination described in Section 14.2.5.

§14.2.7 Upon a determination by a court of competent jurisdiction that termination of Contractor pursuant to Section 14.2.1 was wrongful, such termination will be deemed converted to a termination for convenience pursuant to Section 14.2.5 and Contractor's remedy for wrongful termination shall be limited to the recovery of the payments permitted for termination for convenience as set forth in Section 14.2.5

§ 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 CLAIMS

§ 15.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right adjustment or interpretation of the Contract Terms, payment of money, extension of time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. Claims must be by written notice.

§ 15.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Said written notice of Claims shall state specifically the reason for the Claim, the date or dates of the cause or causes of the Claim, and if any extension of time is requested, the number of days of extension requested.

§ 15.1.3 CONTINUING CONTRACT PERFORMANCE

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

§ 15.1.4 CLAIMS FOR ADDITIONAL COST

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Said notice shall itemize all Claims and shall contain sufficient detail and substantiating data to permit evaluation of same by Owner and Architect. No such claim shall be of value unless so made. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.5 CLAIMS FOR ADDITIONAL TIME

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction. Extensions of time may be requested for any month of construction for days lost due to adverse weather in excess of the normally expected lost time; provided, however, if Architect determines that the seasonal average of adverse weather days during construction is less than would be normally expected, no Change Order shall be issued and the request for extension of time shall be denied.

§ 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

(Paragraph deleted)

Contractor shall not be entitled to claims for additional time and/or increase in Contract Sum due to a problem or non-performance of a subcontractor.

§ 15.1.7 In the event the Contractor fails to achieve substantial completion by the date indicated in the Contract, and extended by approved Change Order, the Owner shall be entitled to liquidated damages in the amount as stated in Section 3.1.1 of the A101 – 2007 per day until the Work is substantially completed. It is expressly understood that the said sum per day is agreed upon as a fair estimate of the pecuniary damages, which will be sustained by Owner in the event that the Work is not completed within the agreed time, or within the legally extended time, if any. Said sum shall be considered as liquidated damages only, the exact ascertainment of which is difficult, and in no sense be considered a penalty.

§ 15.2 INITIAL DECISION

§ 15.2.1 Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim in whole or in part, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to litigation.

| § 15.2.6 DELETED.

| § 15.2.6.1 DELETED.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

| § 15.2.8 DELETED.

§ 15.3 MEDIATION

| § 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract shall be subject to mediation as a condition precedent to litigation.

| § 15.3.2 The parties shall endeavor to resolve their Claims by mediation. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation.

| § 15.3.3 The parties shall share the mediator's fee. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 ARBITRATION

| The parties expressly agree that disputes or claims arising under the Contract Documents shall not be subject to arbitration unless mutually agreed by the parties in writing.

| § 15.4.1 DELETED..

| § 15.4.1.1 DELETED.

| § 15.4.2 DELETED.

| § 15.4.3 DELETED.

§ 15.4.4 CONSOLIDATION OR JOINDER

| § 15.4.4.1 DELETED.

| § 15.4.4.2 DELETED.

| § 15.4.4.3 DELETED.




CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
07/14/2017

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER State Farm  Raul Resendez State Farm 200 S Sugar Rd Edinburg, Tx 78539	CONTACT NAME: Cipriano Gonzalez PHONE (A/C No. Ext): 956-383-2886 E-MAIL ADDRESS: cipriano.gonzalez.k9wn@statefarm.com	FAX (A/C No.): 956-467-5527
	INSURER(S) AFFORDING COVERAGE	
INSURED NM Contracting LLC 1901 Camella Ave McAllen, Tx 78501	INSURER A: State Farm Mutual Automobile Insurance Company NAIC # 25178	
	INSURER B:	
	INSURER C:	
	INSURER D:	
	INSURER E:	
	INSURER F:	

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

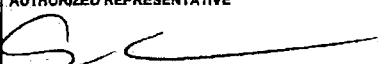
THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PROJECT <input type="checkbox"/> LOC OTHER:						EACH OCCURRENCE \$ DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COM/POP AGG \$ OTHER \$
X	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input checked="" type="checkbox"/> OWNED AUTOS ONLY <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS ONLY	X		178 1350-F06-53F	06/06/2017	06/06/2018	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ OTHER \$
	UMBRELLA LIAB <input type="checkbox"/> OCCUR EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED RETENTION \$						EACH OCCURRENCE \$ AGGREGATE \$ OTHER \$
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N	Y	0001233585	02/04/2017	02/04/2018	PER STATUTE OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

SHOULD ANY OF THE ABOVE POLICIES BE CANCELLED BEFORE EXPIRATION DATE THERE OF THE ISSUING INSURER WILL MAIL 30 WRITTEN NOTICE.

Hidalgo County Precinct 2 wide service shop

CERTIFICATE HOLDER Hidalgo County 2812 S. Business Hwy 281 Edinburg, Tx 78539	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE 
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CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
07/14/2017

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PRODUCER Ball Insurance Agency 514 E Van Buren Ave Harlingen, TX 78550		CONTACT NAME: Danny Longoria PHONE (A/C No., Ext): (956) 428-4031 FAX (A/C No.): (956) 412-7010 E-MAIL ADDRESS: danny@ballrgv.com	
INSURED NM Contracting LLC 2022 Orchid Avenue McAllen TX 78504		INSURER(S) AFFORDING COVERAGE INSURER A: Gemini Insurance Company INSURER B: Evanston Insurance Company INSURER C: INSURER D: INSURER E: INSURER F:	

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

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A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PROJECT <input type="checkbox"/> LOC OTHER:	Y	Y	VGGP002212	08/06/2016	08/06/2017	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 50,000 MED EXP (Any one person) \$ EXCLUDED PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 \$
	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS						COMBINED SINGLE LIMIT (Ea accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
B	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED RETENTION \$	Y	Y	MKL4EUL100168	08/06/2016	08/06/2017	EACH OCCURRENCE \$ 2,000,000 AGGREGATE \$ 2,000,000 \$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N	N/A				PER STATUTE OTHER E.L. EACH ACCIDENT \$ E.L. DISEASE - EA EMPLOYEE \$ E.L. DISEASE - POLICY LIMIT \$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
Project Name: Hidalgo County Pct-2 County Wide Service Shop

CERTIFICATE HOLDER Hidalgo County 2812 S. Business Highway 281 Edinburg TX 78539	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE Daniel C Longoria
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CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
07/14/2017

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PRODUCER State Farm Raul Resendez State Farm 200 S Sugar Rd Edinburg, Tx 78539	CONTACT NAME: Cipriano Gonzalez PHONE (A/C, No, Ext): 956-383-2886 FAX (A/C, No): 956-467-5527 E-MAIL ADDRESS: cipriano.gonzalez.k9wm@statefarm.com																				
	<table border="1"> <tr> <th colspan="2">INSURER(S) AFFORDING COVERAGE</th> <th>NAIC #</th> </tr> <tr> <td>INSURER A:</td> <td>State Farm Mutual Automobile Insurance Company</td> <td>25178</td> </tr> <tr> <td>INSURER B:</td> <td></td> <td></td> </tr> <tr> <td>INSURER C:</td> <td></td> <td></td> </tr> <tr> <td>INSURER D:</td> <td></td> <td></td> </tr> <tr> <td>INSURER E:</td> <td></td> <td></td> </tr> <tr> <td>INSURER F:</td> <td></td> <td></td> </tr> </table>	INSURER(S) AFFORDING COVERAGE		NAIC #	INSURER A:	State Farm Mutual Automobile Insurance Company	25178	INSURER B:			INSURER C:			INSURER D:			INSURER E:			INSURER F:	
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INSURED NM Contracting LLC 1901 Camellia Ave McAllen, Tx 78501																					

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INSR LTR	TYPE OF INSURANCE	ADL SUBR INSD WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
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X	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO OWNED AUTOS ONLY <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> SCHEDULED AUTOS NON-OWNED AUTOS ONLY	X	178 1350-F06-63F	06/06/2017	06/06/2018	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
	UMBRELLA LIAB <input type="checkbox"/> OCCUR EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED RETENTION \$					EACH OCCURRENCE \$ AGGREGATE \$ \$
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N Y	0001233585	02/04/2017	02/04/2018	PER STATUTE OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

SHOULD ANY OF THE ABOVE POLICIES BE CANCELLED BEFORE EXPIRATION DATE THERE OF THE ISSUING INSURER WILL MAIL 30 WRITTEN NOTICE.

Hidalgo County Precinct 2 wide service shop

CERTIFICATE HOLDER Hidalgo County 2812 S. Business Hwy 281 Edinburg, Tx 78539	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE
---	--

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EXHIBIT C

to

Agreement dated July 25, 2017 between
Hidalgo County and NM Contracting LLC
(Hidalgo County Precinct No. 2 County Wide Service Shop)

Project Manual (Specifications) and Drawing

Init.

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User Notes:

(3B9ADA24)

EXHIBIT D

to

Agreement dated July 25, 2017 between
Hidalgo County and NM Contracting LLC
(Hidalgo County Precinct No. 2 County Wide Service Shop)

Form of Notice to Proceed

Init.

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User Notes:

(3B9ADA24)



2802 S. Bus. Hwy 281
Edinburg, Texas 78539
Phone: (956) 318-2626
Fax: (956) 318-2629
www.co.hidalgo.tx.us/purchasing

DRAFT

August

Noel Munoz, Jr., President
NM Contracting, LLC
2022 Orchid Ave
McAllen, Texas 78504

RE: C-17-027-07-25-HIDALGO COUNTY PRECINCT NO. 2 COUNTY WIDE SERVICE SHOP

"NOTICE TO PROCEED"

Dear Mr. Munoz,

Let this serve as a formal notice to proceed for the construction of the above referenced project.

According to the terms of the contract, you have ten (10) days to initiate the work. After the ten (10) day period, you are to fully complete the construction according to the plans, specifications and terms discussed at the pre-construction meeting within 220 Executive calendar days. Therefore, you are hereby notified to commence work by _____.

Please review and abide by the construction plans and specifications prior to commencing with work. Any deviations must be approved in writing by the engineer/architect Halff Associates, Inc. and Hidalgo County.

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is HEREBY ACKNOWLEDGED BY:

Signature: _____

Name and Title: _____

Sincerely,

Rocio Villarreal, Contract Manager

Hidalgo County Purchasing Department

EXHIBIT E

to

Agreement dated July 25, 2017 between
Hidalgo County and NM Contracting LLC
(Hidalgo County Precinct No. 2 County Wide Service Shop)

Certificate of Insurance



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
08/08/2017

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

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PRODUCER Ball Insurance Agency 514 E Van Buren Ave Harlingen, TX 78550	CONTACT NAME: Danny Longoria PHONE (A/C, No, Ext): (956) 428-4031 E-MAIL ADDRESS: danny@ballrgv.com	FAX (A/C, No): (956) 412-7010
	INSURER(S) AFFORDING COVERAGE	
INSURED NM Contracting LLC 2022 Orchid Ave McAllen TX 78504	INSURER A: Gemini Insurance Company	
	INSURER B: Evanston Insurance Company	
	INSURER C:	
	INSURER D:	
	INSURER E:	

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:	Y	Y	VGGP002212	08/06/2017	08/06/2018	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 50,000 MED EXP (Any one person) \$ Excluded PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 \$
	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS						COMBINED SINGLE LIMIT (Ea accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
B	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED RETENTION \$	Y	Y	MKLV4EUL10068	08/07/2017	08/07/2018	EACH OCCURRENCE \$ 1,000,000 AGGREGATE \$ 1,000,000 \$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N	N/A				PER STATUTE OTH-ER E.L. EACH ACCIDENT \$ E.L. DISEASE - EA EMPLOYEE \$ E.L. DISEASE - POLICY LIMIT \$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
Project: Hidalgo County Pct. 2 Wide Service Shop

CERTIFICATE HOLDER Hidalgo County 2812 S. Business Highway 281 Edinburg, TX 78539	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE Daniel C Longoria
---	---

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CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

08/04/2017

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER State Farm RAUL RESENDEZ, AGENT STATE FARM INSURANCE 200 S SUGAR RD EDINBURG TX 78539	CONTACT NAME: VERONICA CAMPOS PHONE (A/C, No, Ext): 956.383.2886 FAX (A/C, No): 956.467.5527 E-MAIL ADDRESS: VERONICA.CAMPOS.KLIV@STATEFARM.COM																				
	<table border="1"> <tr> <th colspan="2">INSURER(S) AFFORDING COVERAGE</th> <th>NAIC #</th> </tr> <tr> <td>INSURER A:</td> <td>State Farm Mutual Automobile Insurance Company</td> <td>25178</td> </tr> <tr> <td>INSURER B:</td> <td></td> <td></td> </tr> <tr> <td>INSURER C:</td> <td>TEXAS MUTUAL INSURANCE</td> <td></td> </tr> <tr> <td>INSURER D:</td> <td></td> <td></td> </tr> <tr> <td>INSURER E:</td> <td></td> <td></td> </tr> <tr> <td>INSURER F:</td> <td></td> <td></td> </tr> </table>	INSURER(S) AFFORDING COVERAGE		NAIC #	INSURER A:	State Farm Mutual Automobile Insurance Company	25178	INSURER B:			INSURER C:	TEXAS MUTUAL INSURANCE		INSURER D:			INSURER E:			INSURER F:	
INSURER(S) AFFORDING COVERAGE		NAIC #																			
INSURER A:	State Farm Mutual Automobile Insurance Company	25178																			
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INSURER C:	TEXAS MUTUAL INSURANCE																				
INSURER D:																					
INSURER E:																					
INSURER F:																					
INSURED NM CONTRACTING, LLC 2022 ORCHID AVE MCALLEN TX 78539																					

COVERAGES**CERTIFICATE NUMBER:****REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSD WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC <input type="checkbox"/> OTHER					EACH OCCURRENCE \$ DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COM/PROP AGG \$ \$
A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO OWNED AUTOS ONLY <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS NON-OWNED AUTOS ONLY		178 1350-F06-53C-001	06/06/2017	06/06/2018	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
	UMBRELLA LIAB <input type="checkbox"/> OCCUR EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED RETENTION \$					EACH OCCURRENCE \$ AGGREGATE \$ \$
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N Y	N/A Y 0001233585	02/04/2017	02/04/2018	PER STATUTE OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

PROJECT: Hidalgo County Pct. 2 Wide Service Shop

CERTIFICATE HOLDER**CANCELLATION**

HIDALGO COUNTY 2812 S BUISNESS HIGHWAY 281 EDINBURG TX 78539	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE
--	---

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EXHIBIT F

to

Agreement dated July 25, 2017 between
Hidalgo County and NM Contracting LLC
(Hidalgo County Precinct No. 2 County Wide Service Shop)

Performance and Payment Bonds

Init.

Philadelphia Indemnity Insurance Company
One Bala Plaza, Suite 100
Bala Cynwyd, PA 19004
(610) 617-7900

TEXAS STATUTORY PAYMENT BOND
(Public Works)

Bond No.: PB11509801136

KNOW ALL MEN BY THESE PRESENTS:

THAT, NM CONTRACTING LLC , 2022 Orchid Avenue , McAllen, TX 78504 (hereinafter called the Principal), as principal, and Philadelphia Indemnity Insurance Company, One Bala Plaza, Suite 100, Bala Cynwyd, PA 19004, a corporation organized and existing under the laws of the State of Pennsylvania, licensed to do business in the State of Texas and admitted to write bonds, as surety, (hereinafter called the Surety), are held and firmly bound unto Hidalgo County , 2802 South Business Hwy 281 , Edinburg, TX 78539 (hereinafter called the Obligee), in the amount of ONE MILLION ONE HUNDRED EIGHTY THOUSAND THREE HUNDRED AND 00/100 Dollars (\$1,180,300.00) 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 contract with the Obligee, dated the 25th day of July , 2017 for Hidalgo County Precinct No. 2 County Wide Service Shop , which contract is hereinafter referred to as the "Contract".

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, then, this obligation shall be null and void; otherwise to remain in full force and effect;

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Chapter 2253 of the Texas Government Code and all liabilities on this bond shall be determined in accordance with the provision, conditions and limitations of said Chapter to the same extent as if it were copied at length herein.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this 13th day of July , 2017 .

Principal: NM CONTRACTING LLC

By: _____

Surety: Philadelphia Indemnity Insurance Company

By: Fred A. Thetford III
Fred A. Thetford, III , Attorney-in-Fact

Philadelphia Indemnity Insurance Company
One Bala Plaza, Suite 100
Bala Cynwyd, PA 19004
(610) 617-7900

TEXAS STATUTORY PERFORMANCE BOND
(Public Works)

Bond No.: PB11509801136

KNOW ALL MEN BY THESE PRESENTS:

THAT, NM CONTRACTING LLC , 2022 Orchid Avenue , McAllen, TX 78504 (hereinafter called the Principal), as principal, and Philadelphia Indemnity Insurance Company, One Bala Plaza, Suite 100, Bala Cynwyd, PA 19004, a corporation organized and existing under the laws of the State of Pennsylvania, licensed to do business in the State of Texas and admitted to write bonds, as surety, (hereinafter called the Surety), are held and firmly bound unto Hidalgo County , 2802 South Business Hwy 281 , Edinburg, TX 78539 (hereinafter called the Obligee), in the amount of ONE MILLION ONE HUNDRED EIGHTY THOUSAND THREE HUNDRED AND 00/100 Dollars (\$1,180,300.00) 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 contract with the Obligee, dated the 25th day of July , 2017 for Hidalgo County Precinct No. 2 County Wide Service Shop , which contract is hereinafter referred to as the "Contract".

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal shall faithfully perform the work required by the Contract then this obligation shall be null and void; otherwise to remain in full force and effect;

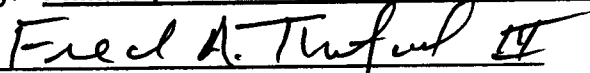
PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Chapter 2253 of the Texas Government Code and all liabilities on this bond shall be determined in accordance with the provision, conditions and limitations of said Chapter to the same extent as if it were copied at length herein.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this 13th day of July , 2017 .

Principal: NM CONTRACTING LLC

By: _____


Surety: Philadelphia Indemnity Insurance Company

By: _____

Fred A. Thetford, III , Attorney-in-Fact

PHILADELPHIA INDEMNITY INSURANCE COMPANY
One Bala Plaza, Suite 100
Bala Cynwyd, PA 19004-0950

Power of Attorney

KNOW ALL PERSONS BY THESE PRESENTS: That PHILADELPHIA INDEMNITY INSURANCE COMPANY (the Company), a corporation organized and existing under the laws of the Commonwealth of Pennsylvania, does hereby constitute and appoint Jared Young, Fred A. Theftford, Jr., Tobin Tucker, Tom Young and Fred A. Theftford, III of Contract Bond Agency, LLC., its true and lawful Attorney-in-fact with full authority to execute on its behalf bonds, undertakings, recognizances and other contracts of indemnity and writings obligatory in the nature thereof, issued in the course of its business and to bind the Company thereby, in an amount not to exceed \$25,000,000.

This Power of Attorney is granted and is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of PHILADELPHIA INDEMNITY INSURANCE COMPANY on the 14th of November, 2016.

RESOLVED: That the Board of Directors hereby authorizes the President or any Vice President of the Company: (1) Appoint Attorney(s) in Fact and authorize the Attorney(s) in Fact to execute on behalf of the Company bonds and undertakings, contracts of indemnity and other writings obligatory in the nature thereof and to attach the seal of the Company thereto; and (2) to remove, at any time, any such Attorney-in-Fact and revoke the authority given. And, be it

FURTHER RESOLVED: That the signatures of such officers and the seal of the Company may be affixed to any such Power of Attorney or certificate relating thereto by facsimile, and any such Power of Attorney so executed and certified by facsimile signatures and facsimile seal shall be valid and binding upon the Company in the future with respect to any bond or undertaking to which it is attached.

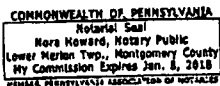
IN TESTIMONY WHEREOF, PHILADELPHIA INDEMNITY INSURANCE COMPANY HAS CAUSED THIS INSTRUMENT TO BE SIGNED AND ITS CORPORATE SEAL TO BE AFFIXED BY ITS AUTHORIZED OFFICE THIS 14TH DAY OF NOVEMBER, 2016.



(Seal)

Robert D. O'Leary Jr., President & CEO
Philadelphia Indemnity Insurance Company

On this 14th day of November, 2016, before me came the individual who executed the preceding instrument, to me personally known, and being by me duly sworn said that he is the therein described and authorized officer of the PHILADELPHIA INDEMNITY INSURANCE COMPANY; that the seal affixed to said instrument is the Corporate seal of said Company; that the said Corporate Seal and his signature were duly affixed.



(Notary Seal)

Notary Public:

Nora Howard

residing at:

Bala Cynwyd, PA

My commission expires:

January 8, 2018

I, Edward Sayago, Corporate Secretary of PHILADELPHIA INDEMNITY INSURANCE COMPANY, do hereby certify that the foregoing resolution of the Board of Directors and this Power of Attorney issued pursuant thereto on this 14th day of November, 2016 are true and correct and are still in full force and effect. I do further certify that Robert D. O'Leary Jr., who executed the Power of Attorney as President, was on the date of execution of the attached Power of Attorney the duly elected President of PHILADELPHIA INDEMNITY INSURANCE COMPANY,

In Testimony Whereof I have subscribed my name and affixed the facsimile seal of each Company this 13th day of July, 20 17.



Edward Sayago, Corporate Secretary
PHILADELPHIA INDEMNITY INSURANCE COMPANY

IMPORTANT NOTICE

To obtain information or make a complaint:
You may call the Surety's toll free telephone
number for information or to make a
complaint at:

1-877-438-7459

You may also write Philadelphia Indemnity
Insurance Company at:

One Bala Plaza, Suite 100
Bala Cynwyd, PA 19004
Attention: Senior Vice President and
Director of Surety

You may contact the Texas Department of
Insurance to obtain information on
companies, coverage, rights or complaints
at:

1-800-252-3439.

You may write the Texas Department of
Insurance at:

P.O. Box 149104
Austin, TX 78714-9104
Fax# 512-475-1771
Web: <http://www.tdi.state.tx.us>
Email: ConsumerProtection@tdi.state.tx.us

PREMIUM OR CLAIM DISPUTES: Should
you have a dispute concerning your
premium or about a claim, you should
contact the Surety first. If the dispute is not
resolved, you may contact the Texas
Department of Insurance.

ATTACH THIS NOTICE TO YOUR POLICY:
This notice is for information only and does
not become a part or condition of the
attached document.

ADVISO IMPORTANTE

Para obtener informacion o para someter una
queja: Usted puede llamar al numero de
telefono gratis de para informacion o para
someter una queja al:

1-877-438-7459

Usted tambien puede escribir a Philadelphia
Indemnity Insurance Company at:

One Bala Plaza, Suite 100
Bala Cynwyd, PA 19004
Attention: Senior Vice President and
Director of Surety

Puede comunicarse con el Departamento de
Seguros de Texas para obtener informacion
acerca de companias, coberturas, derechos
o quejas al:

1-800-252-3439

Puede escribir al Departamento de Seguros
de Texas:

P.O. Box 149104
Austin, TX 78714-9104
Fax# 512-475-1771
Web: <http://www.tdi.state.tx.us>
Email: ConsumerProtection@tdi.state.tx.us

**DISPUTAS SOBRE PRIMAS O
RECLAMOS:** Si tiene una disputa
concerniente a su prima o a un reclamo,
debe comunicarse con el Surety primero. Si
no se resuelve la disputa, puede entonces
comunicarse con el departamento (TDI).

UNA ESTE AVISO A SU POLIZA: Este
aviso es solo para proposito de informacion
y no se convierte en parte o condicion del
documento adjunto.

- 2. **AI-60843** a. Requesting exemption from competitive bidding requirements under the Texas Local Government Code, Section 262.024 (A) (4) a professional services;

On motion by COMMISSIONER PCT. 2, EDUARDO "EDDIE" CANTU, seconded by COMMISSIONER PCT. 4, JOSEPH PALACIOS, the Court made a UNANIMOUS vote of approval.

Vote: 4 - 0 -Unanimously

- b. Presentation of scoring grid (for the purpose of ranking by CC) of the firms graded & evaluated through the County's approved "pool" in connection with geo-technical and construction material testing services required for Precinct No. 2 Projects (on an as needed basis):

	Terracon Consultants, Inc.	Earth Co.	Personal Service Industries, Inc. (PSI)
Evaluator #1	97	95	94
Ranking	1	2	3

On motion by COMMISSIONER PCT. 1, DAVID FUENTES, seconded by COMMISSIONER PCT. 2, EDUARDO "EDDIE" CANTU, the Court made a UNANIMOUS vote of approval.

Vote: 4 - 0 – Unanimously

- c. Authority for the Purchasing Department to negotiate a professional engineering services agreement commencing with the No. 1 ranked firm of **Terracon Consultants, Inc.** for geo-technical and construction material testing services (on call as needed basis) Pct. 2 .

On motion by COMMISSIONER PCT. 1, DAVID FUENTES, seconded by COMMISSIONER PCT. 4, JOSEPH PALACIOS, the Court made a UNANIMOUS vote of approval.

Vote: 4 - 0 - Unanimously

- 3. **AI-60687**

- a. Approval of Final AIA Document A 101 form of agreement & form A 201 subject to legal review] between Hidalgo County-Owner and NM Contracting, LLC-Contractor for the construction of the "County Wide Service Shop" located in Pct. 2 including authority for project architect, Nassari-Warren Group Architects, Inc., to issue and send formal Notice to Proceed;

On motion by COMMISSIONER PCT. 4, JOSEPH PALACIOS, seconded by COMMISSIONER PCT. 1, DAVID FUENTES, the Court made a UNANIMOUS vote of approval.

Vote: 4 - 0 - Unanimously

b. Requesting approval to rescind action taken on 6/27/17 (AI#60412-B.) regarding: "Pursuant to TXLGC 262.031 and in the interest of expediting a project's progress, requesting authority/approval for the Precinct Commissioner or designee: Armando Garza, Jr., to execute change orders that involve ...'an increase or decrease in cost of \$50,000.00 or LESS and in no event to exceed the Change Order's statutory limits...'. The original contract price may not be decreased by 18 % or more without the consent of the contractor".

On motion by COMMISSIONER PCT. 4, JOSEPH PALACIOS, seconded by COMMISSIONER PCT. 1, DAVID FUENTES, the Court made a UNANIMOUS vote of approval.

Vote: 4 - 0 - Unanimously

c. Pursuant to TXLGC 262.031 and in the interest of expediting a project's progress, requesting authority/approval for the Precinct Commissioner or designee: Armando Garza, Jr., to execute change orders that involve ...'an increase or decrease in cost of \$10,000.00 or LESS and in no event to exceed the Change Order's statutory limits...'. The original contract price may not be decreased by 18 % or more without the consent of the contractor".

On motion by COMMISSIONER PCT. 4, JOSEPH PALACIOS, seconded by COMMISSIONER PCT. 1, DAVID FUENTES, the Court made a UNANIMOUS vote of approval.

Vote: 4 - 0 - Unanimously

- 4. AI-60682** Approval of payment for Invoice #003 in the amount of \$862.40 for professional services, submitted by project architect, The Warren Group Architects Inc. through Contract C-15-159-09-15 for the Countywide Mechanic Shop Facility Project.

On motion by COMMISSIONER PCT. 4, JOSEPH PALACIOS, seconded by COMMISSIONER PCT. 1, DAVID FUENTES, the Court made a UNANIMOUS vote of approval.

Vote: 4 - 0 - Unanimously

E. Pct. 3

- 1. AI-60733** Approval to purchase Three (3) 2017 CPS Steel End Dump Trailers through the County's membership/participation with TASB-BuyBoard Cooperative Purchasing Program's awarded vendor-Cleveland Mack Sales DBA Performance Trailer for Commissioner Pct. 3 (Contract# 516-16 Exp: 11/30/2019) through requisition# 346439 in the amount of \$124,080.00.

On motion by COMMISSIONER PCT. 4, JOSEPH PALACIOS, seconded by COMMISSIONER PCT. 1, DAVID FUENTES, the Court made a UNANIMOUS vote of approval.

DOCUMENT 00 41 13
BID FORM - STIPULATED SUM (SINGLE-PRIME CONTRACT)

OPENED
9:49 6-1-17

1.1 BID INFORMATION

- A. Bidder: NM Contracting, LLC
- B. Project Name: Hidalgo County Pct. 2 County Wide Service Shop.
- C. Project Location: 4011 S. Veterans Blvd.,
San Juan, Texas 78589
- D. Owner: County of Hidalgo
2812 S. Business Highway 281
Edinburg, Texas 78539
- E. Architect: Laura Nassri Warren, AIA/Principal, The Warren Group Architects, Inc.,
1801 S. 2nd Street, Suite 330, McAllen, Texas 78503.
- F. Architect Project Number: 1341501.

Witnessed



1.2 CERTIFICATIONS AND BASE BID

- A. Base Bid, Single-Prime (All Trades) Contract: The undersigned Bidder, having carefully examined the Procurement and Contracting Requirements, Conditions of the Contract, Drawings, Specifications, and all subsequent Addenda, as prepared by The Warren Group Architects, Inc. and Architect's consultants, having visited the site, and being familiar with all conditions and requirements of the Work, hereby agrees to furnish all material, labor, equipment and services, including all scheduled allowances, necessary to complete the construction of the above-named project, according to the requirements of the Procurement and Contracting Documents, for the stipulated sum of:

1. One million Thirty Thousand Dollars Dollars
(\$ 1,030,000).

2. The above amount may be modified by amounts indicated by the Bidder on the attached Document 004323 "Alternates Form."

1.3 BID GUARANTEE

- A. A Bid Bond is required by Owner.

1.4 SUBCONTRACTORS AND SUPPLIERS

A. The following companies shall execute subcontracts for the portions of the Work indicated:

1. General Conditions:

NM Contracting, LLC

2. Site Work:

Total Commitment Construction

3. Masonry Work:

N/A

4. Structural Steel Work:

Strong Structural Steel

5. Masonry Work:

N/A

6. Roofing Work:

Tadco Roofing

7. Plumbing Work:

Padron Plumbing

8. HVAC Work:

Continental Refrigeration

9. Electrical Work:

Longoria's Electric

1.5 TIME OF COMPLETION

A. The undersigned Bidder proposes and agrees hereby to commence the Work of the Contract Documents on a date specified in a written Notice to Proceed to be issued by Architect, and shall fully complete the Work within 150 calendar days.

1.6 ACKNOWLEDGEMENT OF ADDENDA

- A. The undersigned Bidder acknowledges receipt of and use of the following Addenda in the preparation of this Bid:

1. Addendum No. 1, dated 02/17/17.
2. Addendum No. 2, dated 02/21/17.
3. Addendum No. 3, dated 05/15/17.
4. Addendum No. 4, dated 06/02/17.
5. Addendum No. 5, dated 06/05/17.

1.7 BID SUPPLEMENTS

- A. The following supplements are a part of this Bid Form and are attached hereto.
1. Bid Form Supplement - Instructions to Bidders (AIA Document A701).
 2. Bid Form Supplement - CSI Form 1.5C Substitution Request

1.8 CONTRACTOR'S LICENSE

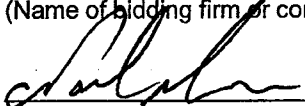
- A. The undersigned further states that it is a duly licensed contractor, for the type of work proposed, in the State of Texas and that all fees, permits, etc., pursuant to submitting this proposal have been paid in full.

1.9 DOCUMENT CONTINUES

1.10 SUBMISSION OF BID

Respectfully submitted this 7th day of June, 2017.

Submitted By: NM Contracting, LLC
(Name of bidding firm or corporation)

Authorized Signature: 
(Handwritten signature)

Signed By: Noel Munoz, Jr
(Type or print name)

DOCUMENT 00 43 23
ALTERNATES FORM

1.1 BID INFORMATION

- A. Bidder: NM Contracting, LLC
- B. Prime Contract: Noel Munoz, Jr.
- C. Project Name: Hidalgo County Pct. 2 County Wide Service Shop
- D. Project Location: 4011 S. Veterans Blvd., San Juan, Texas 78589
- E. Owner: County of Hidalgo
South Business Highway 281, Suite D
Edinburg, Texas 78539
- F. Architect: Laura Nassri Warren, AIA/Principal, The Warren Group Architects, Inc.,
1801 S. 2nd Street, Suite 330, McAllen, Texas 78503.
- G. Architect Project Number: 1341501.

1.2 BID FORM SUPPLEMENT

- A. This form is required to be attached to the Bid Form.

1.3 DESCRIPTION

- A. The undersigned Bidder proposes the amount below be added to or deducted from the Base Bid if particular alternates are accepted by Owner. Amounts listed for each alternate include costs of related coordination, modification, or adjustment.
 - 1. Cost-Plus-Fee Contract: Alternate price given below includes adjustment to Contractor's Fee.
- B. If the alternate does not affect the Contract Sum, the Bidder shall indicate "NO CHANGE."
- C. If the alternate does not affect the Work of this Contract, the Bidder shall indicate "NOT APPLICABLE."
- D. The Bidder shall be responsible for determining from the Contract Documents the affects of each alternate on the Contract Time and the Contract Sum.
- E. Owner reserves the right to accept or reject any alternate, in any order, and to award or amend the Contract accordingly within 60 days of the Notice of Award unless otherwise indicated in the Contract Documents.

- F. Acceptance or non-acceptance of any alternates by the Owner shall have no effect on the Contract Time unless the "Schedule of Alternates" Article below provides a formatted space for the adjustment of the Contract Time.

1.4 SCHEDULE OF ALTERNATES

- A. **Alternate No. 1: General Contractor to offer add cost alternate to provide as separate item the following: Remove hoist on existing facility, transport and install at new Service Shop Building.**

1. ADD DEDUCT ___ NO CHANGE ___ NOT APPLICABLE ___.
2. Eighteen Thousand Four Hundred Dollars Dollars
(\$ 18,400.⁰⁰).
3. ADD DEDUCT ___ calendar days to adjust the Contract Time for this alternate.
14 DAYS

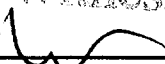
Alternate No. 2: General Contractor to offer add cost alternate to provide as separate item the following: Paving (and concrete curbs and wheel stops).

4. ADD DEDUCT ___ NO CHANGE ___ NOT APPLICABLE ___.
5. One Hundred Thirteen Thousand Two Hundred Dollars Dollars
(\$ 113,200.⁰⁰).
6. ADD DEDUCT ___ calendar days to adjust the Contract Time for this alternate.
14 DAYS

Alternate No. 3: General Contractor to offer add cost alternate to provide as separate item the following: Water Line.

1. ADD DEDUCT ___ NO CHANGE ___ NOT APPLICABLE ___.
2. Six Thousand Five Hundred Dollars Dollars
(\$ 6,500.⁰⁰).
3. ADD DEDUCT ___ calendar days to adjust the Contract Time for this alternate.
14 DAYS

OPENED
9:496-7-17

Witnessed


Alternate No. 4: General Contractor to offer add cost alternate to provide as separate item the following: Onsite sewage facility.

1. ADD DEDUCT ___ NO CHANGE ___ NOT APPLICABLE ___.
2. Four Thousand Two Hundred Dollars Dollars
(\$ 4,200.00).
3. ADD DEDUCT ___ calendar days to adjust the Contract Time for this alternate.
14 DAYS

Alternate No. 5: General Contractor to offer add cost alternate to provide as separate item the following: Drainage/Storm Sewer.

1. ADD DEDUCT ___ NO CHANGE ___ NOT APPLICABLE ___.
2. Eight Thousand Dollars Dollars
(\$ 8,000.00).
3. ADD DEDUCT ___ calendar days to adjust the Contract Time for this alternate.
14 DAYS

Alternate No. 6: General Contractor to offer add cost alternate to provide as separate item the following: A new hoist to be equal to Jet 10 Ton hand chain hoist with 15' lift and double girder overhead crane to fit crane support. Ref. Structural Drawings.

1. ADD DEDUCT ___ NO CHANGE ___ NOT APPLICABLE ___.
2. Ninety Four Thousand Four Hundred Dollars Dollars
(\$ 94,400.00).
3. ADD DEDUCT ___ calendar days to adjust the Contract Time for this alternate.
14 DAYS

OPENED

9-19-14-7-14

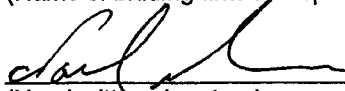
Witnessed



1.5 SUBMISSION OF BID SUPPLEMENT

Respectfully submitted this 7th day of June, 2017.

Submitted By: NM Contracting, LLC
(Name of bidding firm or corporation)

Authorized Signature: 
(Handwritten signature)

Signed By: Noel Munoz, Jr.
(Type or print name)

Title: President
(Owner/Partner/President/Vice President)

END OF DOCUMENT



PURCHASING DEPARTMENT
County Of Hidalgo

February 17, 2017

RE:
ADDENDUM NO. 1
FOR BID No.: 2017-027-02-22-YSS
"Hidalgo County Pct 2 County Wide Service Shop"

Dear Gentlemen:

Attached you will find **ADDENDUM NO. 1**, in connection with request for bids for: **HIDALGO COUNTY PRECINCT NO. 2-County Wide Service Shop.**

Please add this **ADDENDUM NO. 1** to your bid packet so as to permit your company to submit a complete bid. See original bid packet LEGAL NOTICE page 3 paragraph 9.

Acknowledge receipt of **ADDENDUM NO. 1** by signing and returning this notice via email to nperez@twgarch.com and/or marking receipt in your bid form.

If you do not receive all pages of **ADDENDUM NO. 1** please notify us immediately at 956-994-1900.

Please be advised that this **ADDENDUM NO. 1** will complete your bid packet for **Hidalgo County Precinct No. 2-County Wide Service Shop.**

Thank you for your prompt attention to this matter.

Martha L. Salazar

Martha L. Salazar, CPPB
Hidalgo County Purchasing Agent

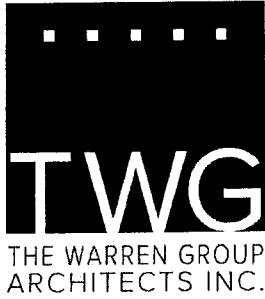
BY:

ADDENDUM NO. 1
ACKNOWLEDGMENT OF RECEIPT

NOTE: PLEASE SUBMIT THIS ADDENDUM WITH YOUR BID PACKET, IN ORDER TO COMPLETE THE BID.

Enclosures

MLS/yss



1801 South 2nd Street, Ste. 330 McAllen, TX 78503

Addendum No. 1

DATE: Friday, February 17, 2017
PROJECT: Hidalgo County PC-2 County Wide Service Shop
PROJECT NO: 1341501
LOCATION: Pharr, Texas
FROM: Laura N. Warren, The Warren Group Architects, Inc.

The following revisions and clarifications shall be considered part of the record contract documents dated July 01, 2016 for the above referenced project and included in the contract amount. All general notes and specifications shall apply to this addendum. Where provisions of the following supplementary data differ from those of the original Contract Documents, this Addendum shall govern and take precedence.

Specifications

- Item No. 1:** Refer Project Manual Section 01 50 00 Temporary Facilities and Controls section 3.04E dated 07/01/2016. Section 3.04E has been deleted from this specification. Refer attached specification 01 50 00 Temporary Facilities and Controls ADD 1 dated 02/17/2017. Insert this section.
- Item No. 2:** Clarification. There are no allowances on this project.
- Item No. 3:** Refer Project Manual section 00 22 13 Supplementary Instructions to Bidders dated 07/01/2016. Clarification, Schedule of values will be accepted up to 48 hours after the bid opening.

Drawings

- Item No. 1:** Refer Construction Document sheet 2/A1.01 dated 07/01/2016. Chain link fence has been removed altogether from this project.
- Item No. 2:** Refer Construction Document sheet A6.11 General Notes dated 07/01/2016. Sheets A1.41 and A1.42 are not applicable for this project, disregard items 5 and 6 on the General Notes.



PURCHASING DEPARTMENT
County Of Hidalgo

February 21, 2017

RE:
ADDENDUM NO.2
FOR BID No.: 2017-027-02-22-YSS
"Hidalgo County Pct 2 County Wide Service Shop"

Dear Gentlemen:

Attached you will find **ADDENDUM NO. 2**, in connection with request for bids for: **HIDALGO COUNTY PRECINCT NO. 2-County Wide Service Shop.**

Please add this **ADDENDUM NO. 2** to your bid packet so as to permit your company to submit a complete bid. See original bid packet LEGAL NOTICE page 3 paragraph 9.

Acknowledge receipt of **ADDENDUM NO. 2** by signing and returning this notice via email to nperez@twgarch.com and/or marking receipt in your bid form.

If you do not receive all pages of **ADDENDUM NO. 2** please notify us immediately at 956-994-1900.

Please be advised that this **ADDENDUM NO. 2** will complete your bid packet for **Hidalgo County Precinct No. 2-County Wide Service Shop.**

Thank you for your prompt attention to this matter.

Martha L Salazar

Martha L. Salazar, CPPB
Hidalgo County Purchasing Agent

BY:

ADDENDUM NO. 2
ACKNOWLEDGMENT OF RECEIPT

NOTE: PLEASE SUBMIT THIS ADDENDUM WITH YOUR BID PACKET, IN ORDER TO COMPLETE THE BID.

Enclosures

MLS/yss



1801 South 2nd Street, Ste. 330 McAllen, TX 78503

Addendum No. 2

DATE: Wednesday, February 22, 2017
PROJECT: Hidalgo County PC-2 County Wide Service Shop
PROJECT NO: 1341501
LOCATION: Pharr, Texas
FROM: Laura N. Warren, The Warren Group Architects, Inc.

The following revisions and clarifications shall be considered part of the record contract documents dated July 01, 2016 for the above referenced project and included in the contract amount. All general notes and specifications shall apply to this addendum. Where provisions of the following supplementary data differ from those of the original Contract Documents, this Addendum shall govern and take precedence.

Specifications

Item No. 1: *Section 00 11 16: INVITATION TO BID: To allow more time for bidders to adequately prepare their bid, the bid opening date has been postponed till further notice, new bid date to be determined.*

ISSUED BY:


Laura N. Warren, AIA
The Warren Group Architects, Inc.



Attachments:

Distribution:

Eduardo "Eddie" Cantu Commissioner
Armando Pompa Director of Field Operations
Jorge Hinojosa Asst. Director of Field Operations
Erika Zamora-Torres Director of Administration

CITY OF PHARR
SOUTH PHARR DEVELOPMENT AND RESEARCH CENTER
971601

THE WARREN GROUP ARCHITECTS, INC.

Bidding General Contractors
File



PURCHASING DEPARTMENT
County Of Hidalgo

May 15, 2017

RE:

ADDENDUM NO. 3

FOR BID No.: 2017-027-02-22-YSS

"Hidalgo County Pct 2 County Wide Service Shop"

Hidalgo County Precinct No. 2

Dear Gentlemen:

Attached you will find **ADDENDUM NO. 3**, in connection with **HIDALGO COUNTY PRECINCT NO. 2** request for bids for **"Hidalgo County Pct 2 County Wide Service Shop"**.

Please add this **ADDENDUM NO. 3** to your bid packet so as to permit your company to submit a complete bid. See original bid packet LEGAL NOTICE page 3 paragraph 9.

Acknowledge receipt of **ADDENDUM NO. 3** by signing and returning this notice via email to nperez@twgarch.com and/or marking receipt in your bid form.

If you do not receive all pages of **ADDENDUM NO. 3** please notify us immediately at 956-994-1900.

Please be advised that this **ADDENDUM NO. 3** will complete your bid packet for Hidalgo County Precinct No. 2 – **"Hidalgo County Pct 2 County Wide Service Shop"**.

Thank you for your prompt attention to this matter.

Martha L. Salazar

Martha L. Salazar, CPPB

Hidalgo County Purchasing Agent

BY:

ADDENDUM NO. 3

ACKNOWLEDGMENT OF RECEIPT

Enclosures

MLS/yss

ADDENDUM NO. 3

May 15, 2017

“Hidalgo County Pct 2 County Wide Service Shop”

Precinct No. 2

BID NO.: 2017-027-02-22-YSS

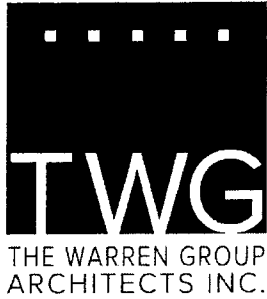
**PLEASE NOTE CHANGES AS NOTED ON THE ATTACHED
ARCHITECTURAL ADDENDUM.**

I, _____, acknowledge receipt of ADDENDUM NO. 3 dated, May 15, 2017,
for **2017-027-02-22-YSS - HIDALGO COUNTY Pct. No. 2 “Hidalgo County Pct 2 County Wide
Service Shop”**.

Printed Bidder Name

Date

**NOTE: PLEASE SUBMIT THIS ADDENDUM WITH YOUR
BID PACKET, IN ORDER TO COMPLETE THE BID.**



1801 South 2nd Street, Ste. 330 McAllen, TX 78503

Addendum No. 3

DATE: Monday, May 15, 2017
PROJECT: Hidalgo County PC-2 County Wide Service Shop
PROJECT NO: 1341501
LOCATION: Pharr, Texas
FROM: Laura N. Warren, The Warren Group Architects, Inc.

The following revisions and clarifications shall be considered part of the record contract documents dated July 01, 2016 for the above referenced project and included in the contract amount. All general notes and specifications shall apply to this addendum. Where provisions of the following supplementary data differ from those of the original Contract Documents, this Addendum shall govern and take precedence.

Specifications

- Item No. 1:** Refer to Section 00 11 16 Invitation To Bid dated July 01, 2016; As requested by Owner; The Bid due date has been extended from February 22th to **Wednesday, June 7th, 2017 at 9:30 am.** The place remains the same. Pre bid meeting will be held May 30th at 10:00 am at the job site. RFI deadline is May 30th at 5:00pm.
- Item No. 2:** *Clarification: **General Contractor must provide their own project construction completion deadline.***
- Item No. 3:** *Clarification: **This project is not Tax Exempt.***
- Item No. 4:** *Refer to Project Manual dated July 01, 2016, Section 00 43 23 Alternates Form. Section **1.4 Schedule of Alternates has been revised-updated as shown in attached specification 00 43 23 Alternates Form ADD 3 dated May 08, 2017. G.C. to reference attached PC-2 List of Alternates for breakdown.***
- Item No. 5:** *Refer Project Manual section 08 33 23 Overhead Coiling Doors dated 07/01/2016. **Replace this section with attached specification 00 83 30 Overhead Coiling Service Doors dated 02/27/2017. Insert this section.***

Item No. 6: Refer to Project Manual Specification section 002213 – Supplementary Instructions to bidders, dated July 01, 2016 and Section 00 43 73- Proposed Schedule of Values Form dated July 01, 2016 Section 1.1 A.

General Contractor is to provide a cost breakdown on their own company format to include the following divisions:

01. General Conditions
02. Site Work
03. Concrete
04. Masonry
05. Structural Steel
06. Carpentry
07. Thermal and Moisture
08. Doors and Windows
09. Finishes
10. Miscellaneous/Specialties
11. Mechanical/Plumbing
12. Electrical

A more detailed cost breakdown will be requested from the awarded Bidder as part of the Contract review procedures.

Item No. 7: Please reference MEP Drawings dated 08/12/21016 note #5 on Sheet E1.02.
Cord Reels to be GRACO 24M522 Single Industrial Receptacle 50ft SD Series, 12AWG, 20Amp, 50' cord.

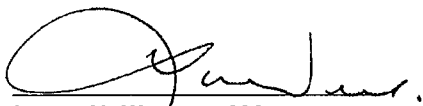
Item No. 8: Preference MEP Drawings dated 08/12/21016 note #5 on Sheet E1.00.
G.C. to provide cost for temporary power as part of base bid.

Item No. 9: Clarification:
Electrical Contractor is to provide backbox and conduit for special systems. Fire Alarm, Intrusion, CCTV, and access control to be furnished by owner.

Item No. 10: Please reference attached Civil Construction Documents and Specificatopns.

Item No. 11: Please reference attached Geo-technical Report.

ISSUED BY:



Laura N. Warren, AIA
The Warren Group Architects, Inc.



Attachments:

- PDF Format – 8.5"x11" Project Manual Section 00 43 23 ADD3 dated 05/08/2017
- PDF Format – 8.5"x11" Project Manual Section 00 83 30 ADD3 revised dated 02/27/2017
- PDF Format – 24"x36" Civil Construction Documents and Specifications
- PDF Format – 8.5"x11" Geotechnical Report
- PDF Format – 8.5"x11" PC-2 Bid Tabulation of Alternates

Distribution:

Eduardo "Eddie" Cantu Commissioner
Armando Pompa Director of Field Operations
Jorge Hinojosa Asst. Director of Field Operations
Erika Zamora-Torres Director of Administration
Bidding General Contractors
File

DOCUMENT 00 43 23
ALTERNATES FORM

1.1 BID INFORMATION

- A. Bidder: _____
- B. Prime Contract: _____
- C. Project Name: Hidalgo County Pct. 2 County Wide Service Shop
- D. Project Location: 4011 S. Veterans Blvd., San Juan, Texas 78589
- E. Owner: County of Hidalgo
South Business Highway 281, Suite D
Edinburg, Texas 78539
- F. Architect: Laura Nassri Warren, AIA/Principal, The Warren Group Architects, Inc., 1801 S. 2nd Street, Suite 330, McAllen, Texas 78503.
- G. Architect Project Number: 1341501.

1.2 BID FORM SUPPLEMENT

- A. This form is required to be attached to the Bid Form.

1.3 DESCRIPTION

- A. The undersigned Bidder proposes the amount below be added to or deducted from the Base Bid if particular alternates are accepted by Owner. Amounts listed for each alternate include costs of related coordination, modification, or adjustment.
 - 1. Cost-Plus-Fee Contract: Alternate price given below includes adjustment to Contractor's Fee.
- B. If the alternate does not affect the Contract Sum, the Bidder shall indicate "NO CHANGE."
- C. If the alternate does not affect the Work of this Contract, the Bidder shall indicate "NOT APPLICABLE."
- D. The Bidder shall be responsible for determining from the Contract Documents the affects of each alternate on the Contract Time and the Contract Sum.
- E. Owner reserves the right to accept or reject any alternate, in any order, and to award or amend the Contract accordingly within 60 days of the Notice of Award unless otherwise indicated in the Contract Documents.

- F. Acceptance or non-acceptance of any alternates by the Owner shall have no effect on the Contract Time unless the "Schedule of Alternates" Article below provides a formatted space for the adjustment of the Contract Time.

1.4 SCHEDULE OF ALTERNATES

- A. **Alternate No. 1: General Contractor to offer add cost alternate to provide as separate item the following: Remove hoist on existing facility, transport and install at new Service Shop Building.**

1. ADD ___ DEDUCT ___ NO CHANGE ___ NOT APPLICABLE ___.
2. _____ Dollars
(\$ _____).
3. ADD ___ DEDUCT ___ calendar days to adjust the Contract Time for this alternate.

- Alternate No. 2: General Contractor to offer add cost alternate to provide as separate item the following: Paving.**

4. ADD ___ DEDUCT ___ NO CHANGE ___ NOT APPLICABLE ___.
5. _____ Dollars
(\$ _____).
6. ADD ___ DEDUCT ___ calendar days to adjust the Contract Time for this alternate.

- Alternate No. 3: General Contractor to offer add cost alternate to provide as separate item the following: Water/Sewer/Utilities.**

1. ADD ___ DEDUCT ___ NO CHANGE ___ NOT APPLICABLE ___.
2. _____ Dollars
(\$ _____).
3. ADD ___ DEDUCT ___ calendar days to adjust the Contract Time for this alternate.

Alternate No. 4: General Contractor to offer add cost alternate to provide as separate item the following: Storm Sewer/Detention

1. ADD ___ DEDUCT ___ NO CHANGE ___ NOT APPLICABLE ___.
2. _____ Dollars
(\$ _____).
3. ADD ___ DEDUCT ___ calendar days to adjust the Contract Time for this alternate.

Alternate No. 5: General Contractor to offer add cost alternate to provide as separate item the following: drainage.

1. ADD ___ DEDUCT ___ NO CHANGE ___ NOT APPLICABLE ___.
2. _____ Dollars
(\$ _____).
3. ADD ___ DEDUCT ___ calendar days to adjust the Contract Time for this alternate.

Alternate No. 6: General Contractor to offer add cost alternate to provide as separate item the following: Sidewalks and Curbs

1. ADD ___ DEDUCT ___ NO CHANGE ___ NOT APPLICABLE ___.
2. _____ Dollars
(\$ _____).
3. ADD ___ DEDUCT ___ calendar days to adjust the Contract Time for this alternate.

Alternate No. 7: General Contractor to offer add cost alternate to provide as separate item the following: Concrete Areas.

1. ADD ___ DEDUCT ___ NO CHANGE ___ NOT APPLICABLE ___.
2. _____ Dollars
(\$ _____).
3. ADD ___ DEDUCT ___ calendar days to adjust the Contract Time for this alternate.

1.5 SUBMISSION OF BID SUPPLEMENT

Respectfully submitted this ____ day of _____, 2017.

Submitted By: _____
(Name of bidding firm or corporation)

Authorized Signature: _____
(Handwritten signature)

Signed By: _____
(Type or print name)

Title: _____
(Owner/Partner/President/Vice President)

END OF DOCUMENT

SECTION 00 83 30
OVERHEAD COILING SERVICE DOORS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Overhead coiling service doors.

1.2 RELATED SECTIONS

- A. Section 05500 - Metal Fabrications: Support framing and framed opening.
- B. Section 06200 - Finish Carpentry: Wood jamb and head trim.
- C. Section 08710 - Door Hardware: Product Requirements for cylinder core and keys.
- D. Section 09900 - Painting: Field applied finish.
- E. Section 16130 - Raceway and Boxes: Conduit from electric circuit to door operator and from door operator to control station.
- F. Section 16150 - Wiring Connections: Power to disconnect.

1.3 REFERENCES

- A. NFRC 102 - Test Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems.
- B. ASTM E 90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Element.
- C. ASTM E 330 - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
- D. ASTM A 653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- E. ASTM A 666 - Standard Specification for Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
- F. ASTM A 924 - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
- G. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- H. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).

I. NEMA MG 1 - Motors and Generators.

1.4 DESIGN / PERFORMANCE REQUIREMENTS

- A. Overhead coiling service doors:
 - 1. Wind Loads: Design door assembly to withstand wind/suction load of 20 psf (958 Pa) without damage to door or assembly components in conformance with ASTM E 330.
 - 2. Operation: Design door assembly, including operator, to operate for not less than 20,000 cycles.
- B. Single-Source Responsibility: Provide doors, tracks, motors, and accessories from one manufacturer for each type of door. Provide secondary components from source acceptable to manufacturer of primary components.
- C. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories, Inc. acceptable to authority having jurisdiction as suitable for purpose specified.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Details of construction and fabrication.
 - 4. Installation instructions.
- C. Shop Drawings: Include detailed plans, elevations, details of framing members, anchoring methods, required clearances, hardware, and accessories. Include relationship with adjacent construction.
- D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) long, representing actual product, color, and patterns.
- F. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
- G. Operation and Maintenance Data: Submit lubrication requirements and frequency, and periodic adjustments required.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in performing Work of this section with a minimum of five years experience in the fabrication and installation of security closures.
- B. Installer Qualifications: Installer Qualifications: Company specializing in performing Work of this section with minimum three years and approved by manufacturer.

-
- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish areas designated by Architect.
 - 2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
 - 3. Refinish mock-up area as required to produce acceptable work.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Protect materials from exposure to moisture. Do not deliver until after wet work is complete and dry.
- C. Store materials in a dry, warm, ventilated weathertight location.

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.9 COORDINATION

- A. Coordinate Work with other operations and installation of adjacent materials to avoid damage to installed materials.

1.10 WARRANTY

- A. Warranty: Manufacturer's limited door and operator system, except the counterbalance spring and finish, to be free from defects in materials and workmanship for 3 years or 20,000 cycles, whichever occurs first.
- B. Warranty: Manufacturer's limited door warranty for 2 years for all parts and components.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Overhead Door Corp., 2501 S. State Hwy. 121, Suite 200, Lewisville, TX 75067. ASD. Tel. Toll Free: (800) 275-3290. Phone: (469) 549-7100. Fax: (972) 906-1499. Web Site: www.overheaddoor.com. E-mail: info@overheaddoor.com.
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 OVERHEAD COILING SERVICE DOORS

- A. Heavy Duty Industrial Doors: Overhead Door Corporation, Model 620 Stormtite Service Doors.
1. Curtain: Interlocking roll-formed slats as specified following. Endlocks shall be attached to each end of alternate slats to prevent lateral movement.
 - a. Flat profile type F-265 for doors up to 18 feet 4 inches (5.59 m) wide, fabricated of:
 - 1) 20 gauge galvanized steel.
 2. Finish:
 - a. Galvanized Steel: Slats and hood galvanized in accordance with ASTM A 653 and receive rust-inhibitive, roll coating process, including 0.2 mils thick baked-on prime paint, and 0.6 mils thick baked-on polyester top coat.
 - 1) Powder coat: PowderGuard
 - (a) PowderGuard Premium: Weather resistant polyester powder coat color as selected by the Architect.
 - b. Aluminum: Slats and hood shall be aluminum finished as follows.
 - 1) Finish: Mill finish.
 3. Weatherseals:
 - a. Vinyl bottom seal, exterior guide and internal hood seals.
 - b. Interior guide weatherseal.
 - c. Lintel weatherseal.
 4. Bottom Bar:
 - a. Two primed steel angles for doors over 15 feet 4 inches (4.67 m) wide.
 5. Guides: Three structural steel angles.
 - a. Finish: PowderGuard Weathered finish with iron/black powder.
 6. Brackets:
 - a. Hot rolled prime painted steel to support counterbalance, curtain and hood.
 7. Counterbalance: Helical torsion spring type housed in a steel tube or pipe barrel, supporting the curtain with deflection limited to 0.03 inch per foot of span. Counterbalance is adjustable by means of an adjusting tension wheel.
 8. Hood: Provide with internal hood baffle weatherseal.
 - a. 24 gauge galvanized steel with intermediate supports as required.
 9. Electric Motor Operation: Provide UL listed electric operator, size as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second.
 - a. Sensing Edge Protection:
 - 1) Pneumatic sensing edge.
 - b. Operator Controls:
 - 1) Push-button operated control stations with open, close, and stop buttons.
 - 2) Controls for interior location.
 - 3) Controls surface mounted.
 - c. Motor Voltage: 115/230 single phase, 60 Hz.
 10. Windload Design:
 - a. Standard windload shall be 20 PSF.
 11. Locking:
 - a. Interior slide bolt lock for electric operation with interlock switch.
 12. Wall Mounting Condition:

-
- a. Face-of-wall mounting.
 - 13. Vision Lites: Provide with uniformly spaced openings.
 - a. Size: 10 inch by 1 inch (254 mm by 25.4 mm)
 - b. Provide with Plexiglas covers over openings.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify opening sizes, tolerances and conditions are acceptable.
- B. Examine conditions of substrates, supports, and other conditions under which this work is to be performed.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Use anchorage devices to securely fasten assembly to wall construction and building framing without distortion or stress.
- C. Securely and rigidly brace components suspended from structure. Secure guides to structural members only.
- D. Fit and align assembly including hardware; level and plumb, to provide smooth operation.
- E. Coordinate installation of electrical service with Section 16150. Complete wiring from disconnect to unit components.
- F. Coordinate installation of sealants and backing materials at frame perimeter as specified in Section 07900.
- G. Install perimeter trim and closures.
- H. Instruct Owner's personnel in proper operating procedures and maintenance schedule.

3.4 ADJUSTING

- A. Test for proper operation and adjust as necessary to provide proper operation without binding or distortion.

- B. Adjust hardware and operating assemblies for smooth and noiseless operation.

3.5 CLEANING

- A. Clean curtain and components using non-abrasive materials and methods recommended by manufacturer.
- B. Remove labels and visible markings.
- C. Touch-up, repair or replace damaged products before Substantial Completion.

3.6 PROTECTION

- A. Protect installed products until completion of project.

END OF SECTION

SECTION 00113

SOILS AND SUBSURFACE INVESTIGATION

PART 1 - GENERAL

- 1.01** Depending on the project requirements, the ENGINEER may have obtained geotechnical information, which may include subsurface data, logs of soil borings and recommendations from geotechnical consultants.
- 1.02** Any information obtained is solely for use by the ENGINEER in the design of the project and are not part of the contract. If soil borings have been prepared they will be included in the section or on the plans.
- 1.03** Any geotechnical information included is for information only. The COUNTY and the ENGINEER do not guarantee the accuracy or validity of the data, nor do they assume any responsibility for the CONTRACTOR'S interpretation or conclusions drawn from the data.
- 1.04** The CONTRACTOR may, at his option, perform additional subsurface investigations at his own expense.

*****END OF SECTION*****

SECTION 02101

PREPARATION OF RIGHT-OF-WAY

PART 1 - GENERAL

1.01 GENERAL DESCRIPTION OF WORK:

- A. Removal and disposal of all obstructions from the right-of-way and from designated easements, as noted in the plans.
- B. Obstructions shall include:
 - 1. Remains of houses not completely removed by others.
 - 2. Concrete, foundations, floorslabs curb and gutter, driveways, and sidewalk.
 - 3. Building materials such as brick, lumber and plaster.
 - 4. Water wells, septic tanks, manholes, inlets , utility pipes and conduits.
 - 5. Underground service station tanks, equipment or other foundations.
 - 6. Fencing and retaining walls.
 - 7. Paved parking areas.
 - 8. Abandoned railroad tracks, ties, and scrap iron.
 - 9. Ancillary structures such as shacks and outhouses.
 - 10. Trees, stumps, bushes, shrubs, roots, limbs and logs.
 - 11. All rubbish and debris whether above or below ground.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Provide materials required to perform work as specified.

PART 3 - EXECUTION

3.01 GENERAL

- A. Clear entire project right-of-way and such other areas, including public or corporate lands, specified in the plans of all structures and obstructions.
- B. Trim carefully all trees and shrubs designated for preservation and protect from scarring or other injuries during construction operation.
- C. Removal of all foundations and underground obstructions, unless otherwise specified, shall be removed to the following depths:
 - 1. In embankment areas, two (2) feet below natural ground.
 - 2. In excavation areas, two (2) feet below the lower elevation of excavation.
 - 3. In all other areas, one (1) foot below natural grade.

- D. Backfill all holes, as directed by the ENGINEER, resulting from all removals.
- E. Complete the preparation of right-of-way such that prepared right-of-way is free of holes, ditches and other abrupt changes in elevations and irregularities to contours.
- F. Plug the remaining ends of all abandoned storm sewers, culverts, sanitary sewers, conduits and utility pipes with concrete, as specified by the ENGINEER, to form a tight closure.
- G. On existing concrete where only a portion is to be removed, care shall be exercised to avoid damage to remaining concrete. Where concrete reinforcement is encountered in removed portions, a minimum of one (1) foot of such reinforcement shall be cleaned of old concrete and left in place to tie into new construction. Concrete to be preserved, but subsequently destroyed by the CONTRACTOR'S operations, shall be replaced by the CONTRACTOR'S operations, shall be replaced by the CONTRACTOR at his expense in accordance with County Specifications, or as directed by the ENGINEER.

PART 4 - MEASUREMENT AND PAYMENT

4.01 PREPARATION OF RIGHT-OF-WAY

- A. Preparation of right-of-way shall be measured on a lump-sum basis with measurement for payment made only on areas indicated and classified on the plans as preparation of right-of-way.
- B. When not listed as a separate contract pay item, preparation of right-of-way shall be considered as incidental work, and the cost thereof shall be included in such contract pay item(s) as are provided in the proposal contract.
- C. Compensation, whether by contract pay item or incidental work will be for furnishing all materials, labor, equipment, tools and incidentals required for the work, all in accordance with the plans and these specifications.

*****END OF SECTION*****

SECTION 02102

CLEARING AND GRUBBING

PART 1 - GENERAL

1.01 GENERAL DESCRIPTION OF WORK:

- A. Clearing and grubbing on project site of trees, stumps, brush, roots, vegetation, logs, rubbish and other objectionable matter within limits described in specifications or as shown on plans.
- B. Clearing and grubbing shall be in advance of grading operation except that in cuts over 3 feet in depth, grubbing may be done simultaneously with excavation, provided objectionable matter is removed as specified.
- C. Disposal of all debris resulting from clearing and grubbing work.

1.02 PROTECTION OF ADJACENT WORK:

- A. Protect all areas outside indicated construction areas.
- B. Protect existing improvements, adjacent property, utilities and other facilities, and trees and plants not to be removed from injury or damage.

PART 2 - PRODUCTS

2.01 MATERIALS:

- A. Provide materials required to perform work as specified.

PART 3 - EXECUTION

3.01 CLEARING:

- A. Clear all areas covered by dikes, roads, structures and embankments within project limits unless otherwise shown in plans.
- B. Remove all saplings, brush, down-timber and debris unless shown or directed otherwise.
- C. Use tree wound paint to treat scars, gashes or limb stubs on trees not removed.

3.02 GRUBBING:

- A. Trees, stumps, root systems, rocks and other obstructions shall be removed to the depths shown when they fall within the construction templates for the following items:
 - 1. Footings 18" below bottom of footing
 - 2. Sidewalks (or other types of walks) 12" below bottom of walk
 - 3. Roadways or Streets 18" below bottom of sub-grade
 - 4. Parking Areas 18" below bottom of sub-grade
 - 5. Grassed Areas 18" below top soil
 - 6. Fills 24" below bottom of fill
- B. Blasting not permitted.

3.03 REMOVAL OF DEBRIS AND CLEANUP:

- A. Burn as permitted by regulating agencies or the ENGINEER as work progresses.
- B. Unguarded fires will not be permitted.
- C. Permits will be obtained, where required, for necessary burning or disposal sites.
- D. Dispose of all waste materials not burned by removal from site.
- E. Materials cleared and grubbed shall be the property of the CONTRACTOR and shall be his responsibility for disposal.

PART 4 - MEASUREMENT AND PAYMENT

4.01 CLEARING AND GRUBBING:

- A. Clearing and Grubbing shall be measured for payment either in acres or by lump sum only for areas indicated on the plans, or as provided in the proposal and contract.
- B. When not listed as a separate contract pay item, Clearing and Grubbing shall be considered as incidental work, and the cost thereof shall be included in such contract pay items as are provided in the proposal contract.
- C. Compensation, whether by contract pay items or incidental work will be furnishing all materials, labor, equipment, tools and incidentals required for the work, all in accordance with the plans and these specifications.

*****END OF SECTION*****

SECTION 02210

SUBGRADE PREPARATION

PART 1 - GENERAL

1.01 GENERAL DESCRIPTION OF WORK:

- A. This work shall consist of scarifying, blading and rolling the sub-grade to obtain a uniform texture and provide as nearly as practical a uniform density for the 6-inches of the sub-grade.

PART 2 - PRODUCTS

PART 3 - EXECUTION

3.01 CONSTRUCTION METHODS:

- A. All preparing of the right-of-way and/or clearing and grubbing shall be complete before starting the sub-grade preparation.
- B. The sub-grade shall be scarified and shaped in conformity with the typical sections and the lines and grades indicated or as established by the ENGINEER by the removal of existing material or addition of approved material.
- C. All unsuitable material shall be removed and replaced with approved material.
- D. All foundations, walls or other objectionable material shall be removed to a minimum depth of 18-inches under all structures and 12-inches under areas to be vegetated. All holes, ruts and depressions shall be filled with approved material.
- E. The surface of the sub-grade shall be finished to the lines and grades as established and be in conformity with the typical sections indicated.
- F. Any deviation in excess of 1/2 inch cross section and in a length of 10 feet measured longitudinally shall be corrected by loosening, adding or removing material, reshaping and compacting by sprinkling and rolling.
- G. Sufficient sub-grade shall be prepared in advance to insure satisfactory prosecution of the work.
- H. The CONTRACTOR will be required to set blue tops for the sub-grade on centerline, at quarter points and curb lines or edge of pavement at intervals not exceeding 50 feet.
- I. All suitable material removed may be utilized in the sub-grade with the approval of the ENGINEER. All other material required for completion of the sub-grade shall also be subject to approval by the ENGINEER.

- J. Sub-grade materials on which structures shall be placed shall be compacted by approved mechanical tamping equipment to a dry density of the total material of not less than 95 percent nor more than 100 percent of the maximum dry density as determined in accordance with SDHPT test method tex-114-E.
- K. Sub-grade materials on which planting or turf will be established shall be compacted to a minimum of 85 percent of the maximum dry density as determined in accordance with SDHPT test method tex-114-E.
- L. Tests for density will be made as soon as possible after compacting operations are completed. If the material fails to meet the density specified, it shall be reworked as necessary to obtain the density required.
- M. Just prior to placing any base materials, density and moisture content of the top 6-inches of compacted sub-grade shall be checked and if tests show the density to be more than 2 percent below the specified minimum or the moisture content to be more than 3 percent above or below the optimum, the sub-grade shall be reworked as necessary to obtain the specified compaction and moisture content.
- N. When lime stabilization of the sub-grade is specified, the lime is to be added in accordance with Section 02240, Lime Stabilization.

PART 4 - MEASUREMENT AND PAYMENT

4.01 MEASUREMENT:

- A. All acceptable sub-grade preparation will be measured by the square yard.
- B. The measured area includes the entire width of the roadway for the entire length as indicated.

4.02 PAYMENT

- A. The accepted quantities of sub-grade preparation will be paid for at contract unit bid price per square yard.
- B. When not listed as a separate contract pay item, sub-grade preparation shall be considered as incidental work, and the cost thereof shall be included in such contract pay item (s) as are provided in the proposal contract.
- C. Compensation, whether by contract pay item or incidental work will be for furnishing all materials, labor, equipment, tools and incidentals required for the work, all in accordance with the plans and these specifications.

***** END OF SECTION *****

SECTION 02240

LIME STABILIZATION

PART 1 - GENERAL

1.01 GENERAL DESCRIPTION OF WORK:

- A. Treating of subgrade, sub-base, and base courses by the pulverization, addition of lime, mixing and compacting the mixed material to the required density.
- B. Application to natural ground, embankment, existing pavement, base or sub-bases under this contract, or as directed by the ENGINEER, which shall be constructed as specified herein and in conformity with the typical section, lines, grades as shown on the plans.

1.02 QUALITY ASSURANCE:

- A. Comply with the latest published edition (or addended portions thereof) of the following standards and codes:
 - 1. ASTM c-207 or Type N - Requirements for Hydrated Lime
 - 2. ASTM Designation C5 - Quick Lime for Structural Purposes
 - 3. Texas SDHPT Test Method Tex-600-J - Hydrated Lime
 - 4. ASTM D-1557 - Density of Compacted Materials
 - 5. ASTM D-2049 - Density of Compacted Materials
 - 6. Texas SDHPT Test Method Tex 113-E - Density of Compacted Materials
 - 7. AASHTO T-99, Method C - Density of Compacted Materials
 - 8. AASHTO M-216 - Hydrated Lime

PART 2 - PRODUCTS

2.01 HYDRATED (DRY) LIME:

- A. Use, for stabilization of soils, a dry powder consisting primarily of calcium hydroxide ($\text{Ca}(\text{OH})_2$).
- B. Provide Material in accordance with Texas SDHPT Test Method TEX-600-J and conforming to the following chemical composition:

Hydrate Alkalinity, Percent by Weight $\text{Ca}(\text{OH})_2$	90% Min.
Un-hydrate Lime Content, Percent by Weight CaO	5% Max.
"Free Water" Content, Percent by Weight H_2O	4% Max.

And with the following residue retainage:

Residue Retained on No 6 Sieve	None
Residue Retained on No. 10 Sieve	1% Max.
Residue Retained on No. 30 Sieve	2.5% Max.

- C. Store and handle hydrated lime in closed, weather proof containers, storage bins, or bags until immediately before application to the road.
- D. Furnish hydrated lime in trucks, as applicable, with weight of lime measured on certified scales and clearly marked on the truck or stamped on a haul ticket.
- E. Furnish hydrated lime in bags, as applicable, bearing the manufacturer's certified weight. Bags varying more than five percent may be rejected.

2.02 HYDRATED LIME SLURRY:

- A. Provide a pumpable suspension of solids, principally composed of hydrated lime, in water.
- B. Provide material with a "Solids Content" having a hydrated alkalinity $\text{Ca}(\text{OH})_2$ of not less than 90 percent by weight and a residue retainage equal to the retainage specified in Part 2.01 above.
- C. Supply Type B, commercial lime slurry, with a "dry solids content" of at least 31% by weight of the slurry (Grade 1).
- D. Procure mixing water only from County of Hidalgo water mains. The Contractor shall make arrangements with the Water Department to obtain a meter and subsequent payment for water used.

2.03 QUICKLIME (MASON'S LIME):

- A. Provide quicklime, as a dry powder in a tank, to form a lime slurry.

PART 3 - EXECUTION

3.01 GENERAL:

- A. Provide a completed course of treated materials containing a uniform lime mixture, free from loose or segregated areas, of uniform density and moisture content, well bound for its full depth, and with a smooth surface and suitable for placement of subsequent courses.
- B. Regulate sequence work, use proper amounts of lime, maintain the work and rework the courses as necessary to meet the requirements of this specification.
- C. Construct and shape roadbed to conform with typical sections, lines and grades as shown on the plans, or as directed by the ENGINEER.
- D. Excavate materials to be treated to the proposed bottom of lime treatment grade, or secondary grade and remove or window to expose.

- E. Correct any wet or unstable material below the secondary grade by scarifying, adding lime and compacting until uniform stability is achieved.
- F. Use a cutting or pulverizing machine, as applicable, to remove subgrade material accurately to secondary grade and to pulverize the material at the same time. When cutting or pulverizing machine is used, the requirement for exposing and windowing the material is waived.
- G. Roll subgrade before use of pulverizing machinery and correct any soft areas that rolling operations shall reveal.
- H. Materials for new bases and sub-bases shall be delivered, placed and spread in the required amount per station. The material shall be thoroughly mixed prior in the same working day.
- I. Lime shall be spread only on that area where first mixing operation can be completed in the same working day.

3.02 SLURRY PLACING:

- A. Mix lime, in amounts as shown on plans or as specified by the Materials Engineering Laboratory, with water in trucks or approved distributors and apply as a thin water suspension or slurry.
- B. The distribution of lime at the rates shown on the plans, as directed herein, and/or as directed by the ENGINEER. Shall be attained by successive passes over a measured surface of roadway until the proper moisture and lime content is achieved.
- C. Lime slurry distributors shall be equipped with an agitator for maintaining lime and water in a uniform mixture.

3.03 DRY PLACING:

- A. Spread lime by an approved screw type spreader box or by bag distribution at the rate shown in the plans.
- B. Distribute lime at a uniform rate and in such a manner as to reduce scattering of lime to a minimum. Lime shall not be applied when wind conditions, in the opinion of the ENGINEER, will cause objectionable blowing of lime to traffic or adjacent properties.
- C. Motor graders shall not be used to spread lime.
- D. Sprinkle material until proper moisture and lime content has been secured.

3.04 MIXING

- A. Mixing procedures shall be the same for "Dry Placing" or "Slurry Placing" or lime.
- B. Treatment for Materials in Place:

1. Thoroughly mix material and lime using approved road mixers or other approved equipment, until a homogeneous, friable mixture of material is obtained, free from all clods and lumps.
2. Mix as thoroughly as possible at the time of lime application of materials containing plastic clay or other materials not readily mixed with lime, bring to proper moisture content, seal with a pneumatic roller, and leave to cure one to four days, as directed by the ENGINEER.
3. During curing period, material shall be kept moist by method(s) approved by the ENGINEER.
4. Uniformly mix, after required curing time, using approved methods.
5. Clods in soil binder - Lime mixture shall be reduced in size by raking, blading, dicing, harrowing, scarifying or by other approved pulverization methods such that non-slaking aggregates obtained on the No. 4 sieve are removed. The remainder of the material shall meet the following requirements when test dry by laboratory sieves:

Minimum Passing 1 3/4 inch	100%
Minimum Passing No. 4 Sieve	60%

C. Treatment of New Material

1. Thoroughly mix and blend, using approved road mixers or other approved equipment, the base or sub-base material, lime and required water until a homogeneous, friable mixture is obtained.
2. When lime is placed as a slurry and mixed by use of blades, the material shall be bladed as the lime water mixture is applied.

- D. During the time between application and mixing, hydrated lime that has been exposed to the open air for a period of six hours or more, or to excessive loss due to washing or blowing, shall not be accepted for payment.

3.05 COMPACTION:

- A. Compaction of the mixture shall begin immediately after final mixing and in no case later than three calendar days after final mixing.
- B. Aerate or sprinkle material as required to provide optimum moisture.
- C. Compaction shall begin at the bottom and shall continue until entire depth of mixture is uniformly compacted to 95% of maximum density as determined by AASHTO T-99, Method C.
- D. If any portion fails to meet the density specified, it shall be reworked as required to obtain specified density.

3.06 FINISHING, CURING, AND PREPARATION FOR SURFACING:

- A. Shape surface after compaction to the required lines, grades, and cross sections, followed by thorough rolling sufficiently light to prevent hair-line cracking.
- B. Complete section shall be moist cured for a minimum of seven days before further courses are added or any traffic permitted, other than sprinkling equipment.
- C. The surface or compacted layer shall be kept moist until covered by other base or paving material, or until an application of CSS-1 or SS-1 emulsified asphalt as a curing seal. Curing seal shall be applied as soon as possible after final rolling at a rate of 0.10 to 0.20 gallons per square yard. The exact rate will be as directed by the ENGINEER.

No equipment or traffic will be permitted on lime treated materials for 72 hours after application of curing seal.

3.07 MAINTENANCE:

- A. Maintain the completed lime treated material within the limits of contract, in condition satisfactory to the ENGINEER as to grade, crown and cross section until surface course is constructed.
- B. Immediately repair all irregularities and defects that may occur at no cost to the County and as directed by the ENGINEER.

PART 4 - MEASUREMENT AND PAYMENT

4.01 MEASUREMENT AND PAYMENT:

- A. Lime treatment shall be measured for payment in square yards for the thickness of material shown on the plans for the surface area of completed and accepted work. Lime treatment shall be paid for at the contract unit price per square yard.
- B. Lime will be measured by the ton 2000 pounds dry weight. Lime will be paid for at the contract unit cost per ton of 2000 pounds dry weight.
- C. The contract unit price for lime treatment shall be the total compensation for preparing roadbed; for loosening, pulverizing, application of lime, water content of slurry mixture and the mixing water; mixing, shaping, sprinkling, compacting, finishing, curing and maintaining; for manipulations required, for all labor, equipment, fuels, tools and incidentals necessary to complete the work.
- D. The contract unit price for lime shall be full compensation for furnishing the material; for all freight involved; for all unloading, storing and hauling; and for all labor, equipment, fuels, tools, and incidentals necessary to complete the work.

***** END OF SECTION *****

SECTION 02556

WATER TRANSMISSION LINES AND/OR PRESSURE SEWER LINES

PART 1 - GENERAL

1.01 RELATED REQUIREMENTS SPECIFIED ELSEWHERE:

- A. Trenching, Backfilling and Compacting: Section 02221.
- B. Pipe Boring and Jacking: Section 02224.

1.02 SUBMITTALS:

- A. Manufacturer's Literature: Manufacturer's descriptive literature and recommended method of installation.
- B. Certificates: Manufacturer's certification that products meet specification requirements.

1.03 PRODUCT DELIVERY, STORAGE, AND HANDLING:

- A. Deliver materials on manufacturer's original skids or in original unopened protective packaging. OWNER reserves the right to reject material left from another job.
- B. Store materials to prevent physical damage.
- C. Protect materials during transportation and installation to avoid physical damage.

1.04 GENERAL DESCRIPTION OF WORK COVERED:

- A. Furnish and install all pipe, fittings, structures and accessories required for water transmission line and/or pressure sewer lines.

1.05 QUALITY ASSURANCE:

- A. Comply with the latest published edition of American Water Works Association (AWWA) Standards:
 - 1. AWWA C110 & C110a - Gray Iron and Ductile-Iron Fittings, 2 inch through 48 inch for water and other liquids.
 - 2. AWWA C111 - Rubber Gasket Joints for Cast Iron Pressure Pipe and Fittings.
 - 3. AWWA C150 - Thickness Design of Ductile-Iron Pipe.
 - 4. AWWA C151 - Ductile-Iron Pipe, centrifugally cast in metal mold or sand lined molds, for water or other liquids.
 - 5. AWWA C153 - Ductile-Iron Compact fittings, 3 inch through 12 inch for water and other liquids.

6. AWWA C900 - Polyvinyl Chloride (PVC) Pressure Pipe 4 inch through 12 inch for water.
 7. AWWA C301-79 - Pre-stressed Concrete Pressure Pipe - Steel Cylinder Type, for water and other liquids.
- B. Comply with the latest published editions of the American Society for Testing and Materials (ASTM) Standards:
1. D 2241 - Polyvinyl chloride (PVC) Plastic Pipe (SDR-PR).
 2. D 3139 - Joints for PVC Pressure Pipes using Flexible Elastomeric Seals.

PART 2 - PRODUCTS

2.01 GENERAL REQUIREMENTS:

- A. Pipe furnished may be either PVC or steel cylinder as specified herein for water mains unless shown other wise on the plans or bid documents.
- B. Use PVC pipe for all pressure sewer lines unless shown otherwise on the plans.
- C. All pipe shall be marked in accordance with the applicable standard specification under which the pipe is manufactured unless otherwise specified.
- D. Steel cylinder pipe manufactured shall have had a successful experience record in the design and manufacture of steel cylinder pipe with substantial footage in successful operation for at least five years.

2.02 POLYVINYL CHLORIDE PIPE (PVC):

- A. Provide pipe meeting AWWA C900 PVC 1120 or ASTM D2241 Type 1 Grade 1 PVC 1120 Standards.

1. Minimum requirements

<u>Std.</u>	<u>Size</u>	<u>SDR/ DR</u>	<u>Pressure Class (psi)</u>	<u>Pressure Rating(psi)</u>
C900	4"-12"	18	150	150
D2241	2"- 4"	26	95	160
D2241	6"-12"	21	120	200

2. Use pipe meeting minimum requirements unless shown otherwise on plans.
- B. Provide push-on joints with bell integrally cast into pipe or with coupling of same material as pipe.
 - C. Use elastomeric gaskets, as provided in AWWA C900 or ASTM D3139.
 - D. Provide either cast-iron or PVC 1120 fittings as indicated or required. Use long radius fittings where possible.

- E. Provide fittings with materials and pressure class equal to or greater than that specified for pipe.
- F. Provide sleeve type or anchored coupling where indicated or required to join pipe or provide restraint to offset internal or hydrostatic test pressures.
- G. Provide pipe marked to indicate the following:
 - 1. Nominal Pipe Size.
 - 2. Material Code Designation.
 - 3. Standard Dimension Ratio.
 - 4. Pressure Rating.
 - 5. Manufacturer's name or trademark.
 - 6. National Sanitation Foundation Seal.
 - 7. Appropriate ASTM designation number.

2.03 STEEL CYLINDER PIPE (SCP):

- A. Provide pipe meeting AWWA C301-79.
- B. All pipe and fittings shall have the approval of the Underwriter's Laboratories, Inc.
- C. Provide pipe with minimum pressure class of 150 psi or as shown on plans or in Special Conditions.
- D. Provide fittings with materials and pressure class equal to or greater than that specified for pipe.
- E. Joint wrappers:
 - 1. Shall be of quality manufactured by Mar-Mac-Manufacturing Company or approved equal.
 - 2. Shall be hemmed at each edge to allow threading with a steel strap to securely fasten the wrapper around the pipe by means of a stretcher and sealer.
 - 3. Minimum width of 7 inches for pipe with diameter of 33 inches or smaller; 9 inches for pipe with diameter greater than 33 inches.
 - 4. Length sufficient to circle pipe.
- F. Cement Mortar:
 - 1. Mortar used at joint shall consist of 1 part portland cement to 2 1/2 parts fine, sharp clean sand mixed with water.
 - 2. Interior joint mortar shall be mixed with as little water as possible to produce a very stiff but workable mixture.
 - 3. Exterior joint mortar shall be mixed with water to a consistency of thick cream.

- G. Provide pipe marked to indicate the following:
1. Pressure for which the pipe or fitting is designed.
 2. Identification marks to show proper location.
 3. All beveled pipe shall be marked with the amount of the bevel.
 4. Manufacturer's name.
 5. Material code designation.
 6. National Sanitation Foundation Seal.

2.04 DUCTILE IRON PIPE FITTINGS (DIP):

- A. Shall be in accordance with AWWA C110 with pressure rating of not less than that specified for adjacent pipe.
- B. Shall be compatible with joint type of adjacent pipe.
- C. All specials, taps, plugs, flanges and wall fittings shall be as required.
- D. Shall have cement mortar lining in accordance with AWWA C104.
- E. Shall be coated with manufacturer's standard coating.

2.05 VALVES, HYDRANTS AND METERS

A. Gate Valves:

1. Design: AWWA C509, CRS-80 by American Darling, Metroseal by U.S. Pipe, Mueller, or equal.
2. Type: Compression Resilient Seated.
3. Material: Cast iron body with epoxy coated interior.
4. Rating: 200 psi working pressure class.
5. Stem: Double "O" ring stem seal.
6. Operators: Open counterclockwise with 2 inch square operating nut.
7. Flange: x push-on valves must be used on all fire hydrants installed on water main 10 inches or larger.

B. Valve Boxes:

1. Provide for all buried valves.
2. Use nominal 6 inch cast-iron sliding type pipe shaft with cover and base casting.
3. Set box top at finished grade.
4. Furnish drop cover appropriately marked "WATER".

C. Corporation Stops:

1. Conform with AWWA C800.
2. Use 3/4 inch unless indicated otherwise.

D. Hydrants:

1. Design: latest edition of AWWA C502, traffic model with break flange.
 - a. Mueller Centurion - A423
 - b. American-Darling - B-84-B
 - c. Kennedy Guardian - K-81A
 - d. U.S. Pipe - Metropolitan
 - e. Others as approved by OWNER in writing
2. Provide 6 inch inlet, 2 - 2½ inch hose nozzles, 1 - 4½ inch pumper.
3. Provide compression type main valve, minimum size 5 inches.
4. Pentagon operating nut.
5. Design to open counterclockwise.
6. Provide mechanical joint bell on footpiece.
7. Furnish depth as noted on plans.
8. Furnish National (American) Standard Fire Hose Coupling Screw Thread (NH).

F. Polyethylene Wrapping:

1. Material: AWWA C105.
2. Thickness: 8mils.

G. Polyethylene Plastic Pipe (PE):

1. Material: ASTM D2737.
2. Fittings: ASTM D2683.
3. Size: ¾ inch unless shown otherwise on plans.

PART 3 - EXECUTION

3.01 GENERAL:

- A. Provide all labor, equipment and materials and install all pipe fittings, special and appurtenances as indicated or specified.

3.02 PIPE INSTALLATION:

A. Handling:

1. Handle in a manner to insure installation in sound and undamaged condition.
 - a. Do not drop or bump.
 - b. Use slings, lifting lugs, hooks and other devices designed to protect pipe, joint elements, and coatings.
2. Ship, move and store with provisions to prevent movement or shock contact with adjacent units.

3. Handle with equipment capable of work with adequate factor of safety against overturning or other unsafe procedures.

B. Installation:

1. Utilize equipment, methods, and materials insuring installation to lines and grades as indicated.
 - a. Do not lay on blocks unless pipe is to receive total concrete encasement.
 - b. Accomplish horizontal and vertical curve alignments of ductile iron pipe with bends, bevels or deflection joints.
 1. Limit joint deflection with ductile iron pipe to conform with AWWA C600.
 2. Use short specials preceding curves as required.
 - c. Obtain approval of ENGINEER of method proposed for transfer of line and grade from control to the work.
2. Install pipe of size, material, strength class, and joint type with embedment as shown on plans or specified herein.
3. Clean interior of all pipe, fittings, and joints prior to installation. Exclude entrance of foreign matter during discontinuance of installation.
 - a. Close open ends of pipe with snug fitting closures.
 - b. Do not let water fill trench. Include provisions to prevent flotation should water control measures prove inadequate.
 - c. Remove water, sand, mud and other undesirable materials from trench before removal of end cap.
4. Pipe shall be inspected prior to installation to determine if any pipe defects are present.
5. Brace or anchor as required to prevent displacement after establishing final position.
6. Perform only when weather and trench conditions are suitable. Do not lay in water.
7. Observe extra precaution when hazardous atmospheres might be encountered.
8. Sanitary sewer relation to water mains:
 - a. Maintain 9 feet horizontal separation whenever possible.
 - b. When conditions prevent a lateral separation of 9 feet, sewer may be installed closer to a water main if:

1. sewer constructed of PVC pipe meeting AWWA Specifications and having a minimum working pressure rating of 150 psi or greater and equipped with pressure type joints, and
 2. the sewer line and water main are separated by a minimum vertical distance of 2 feet and a minimum horizontal distance of 4 feet, measured between the nearest outside diameters of the pipes.
- c. When a sanitary sewer crosses a water line and that portion of the sewer is constructed as described in 3.02 B.9.b. (1), the sewer may be placed no closer than 6 inches from the water line. The separation distance must be measured between the nearest outside pipe diameters. The sewer line shall be located at a lower elevation than the water line whenever possible and one length of the sewer pipe must be centered on the water line.
9. Separation of water mains from sewer manholes:
- a. No water pipe shall pass through or come in contact with any part of a sewer manhole.
 - b. A minimum horizontal separation of 9 feet shall be maintained.
10. Construct service lines where shown on plans in accordance with Standard Detail Drawing D-48 or D-49. Use pipe material specified on plans or in contract documents.
11. Wrap pipe, fittings and tie rods with polyethylene where shown on plans in accordance with AWWA C105.

C. Jointing:

1. General requirements:
 - a. Locate joint to provide for differential movement at changes in type of pipe embedment, at changes from rock to soil trench bottom, and structures.
 1. Not more than 18 inches from structure wall, or
 2. Support pipe from wall to first joint with concrete cradle structurally continuous with base slab or footing of structure.
 - b. Perform in accordance with manufacturer's recommendations.
 - c. clean and lubricate all joint and gasket surfaces with lubricant recommended.
 - d. Utilize methods and equipment capable of fully homing or making up joints without damage.
 - e. Check joint opening and deflection for specification limits.
2. Special provisions for jointing cast-iron and ductile iron pipe:
 - a. Conform to AWWA C600.

- b. Visually examine while suspended and before lowering into trench.
 - 1. Paint bell, spigot, or other suspected portions with turpentine and dust with cement to check for cracks invisible to the eye.
 - 2. Remove turpentine and cement by washing when test is satisfactorily completed.
 - 3. Reject all defective pipe.
- 3. Special provisions for jointing and laying PVC pipe:
 - a. Conform to AWWA C600 and ASTM D2321.
 - b. Allow pipe to reach trench soil temperature prior to installation in ditch.
- 4. Special provisions for jointing steel cylinder pipe:
 - a. Before laying each joint, the bell and spigot rings shall be cleaned by wire brush and wiped clean and dry.
 - b. Inside cement mortar joint:
 - 1. the inside recess shall be filled immediately prior to placing the pipe together by buttering the bell end with mortar.
 - 2. the joint mortar of pipe 18 inch diameter and smaller shall be smoothed and cleaned with a swab.
 - 3. the joint mortar of pipe diameters larger than 18 inches shall be finished off smooth by hand trowel.
 - c. Outside cement mortar joint:
 - 1. encircle joint with wrapper after joint found satisfactory.
 - 2. leave enough space between wrapper ends to allow cement mortar to be poured.
 - 3. the entire joint shall be poured with cement mortar and consolidated and rodded or agitated to eliminate voids.

D. Cutting:

- 1. Cut in neat workman like manner without damage to pipe.
- 2. Cut cast-iron with Carborundum saw or other approved method.
 - a. Smooth cut by power grinding to remove burrs and sharp edges.
 - b. Repair lining as required and approved by ENGINEER.

E. Closure Pieces:

- 1. Connect two segments of pipelines or a pipeline segment and existing structure with short sections of pipe fabricated for the purpose.
- 2. Observe specifications regarding location of joints, type of joints and pipe materials and strength classifications.
- 3. May be accomplished with sleeve coupling for water pipe:

- a. Of length such that gaskets are not less than 3 inches from pipe ends.
- b. Include spacer ring identical to pipe end such that clear space does not exceed 1/4 inch.

F. Temporary Plugs:

- 1. Install whenever installed pipe is left unattended.
- 2. Use water tight plug.

G. Thrust Blocks:

- 1. Provide for all horizontal or vertical turns utilizing fittings.
- 2. Use on all dead-end and tee fittings.
- 3. Install as indicated on Standard Detail Drawing D-7
- 4. Construct to undisturbed edge of trench for bearing.
- 5. Provide minimum bearing area in S.F. as follows based on 150 psi test pressure and 2000 psf soil bearing.

<u>Pipe Size</u>	<u>Tee Deadends</u>	<u>Bend 11<⁰</u>	<u>Bend 22>⁰</u>	<u>Bend 45⁰</u>	<u>Bend 90⁰</u>
4"	1.0	0.5	0.5	0.8	1.3
6"	2.2	0.5	0.9	1.6	3.0
8"	3.8	0.8	1.5	2.9	5.3
10"	6.0	1.2	2.3	4.5	8.4
12"	8.5	1.7	3.3	6.5	12.1
14"	11.6	2.3	4.5	8.9	16.4
16"	15.2	3.0	5.9	11.6	21.4

3.03 VALVE AND APPURTENANCE INSTALLATION:

A. Valves:

- 1. Install with stems vertical when installation is horizontal.
- 2. Set valves on concrete thrust block having four (4) square feet of bearing area on undisturbed earth.

B. Valve Boxes:

- 1. Center on valves.
- 2. Carefully tamp earth around each valve box to a distance of 4 feet on all sides of box or to undisturbed trench face, if less than 4 feet.

C. Hydrants:

- 1. Set hydrants where shown on plans in accordance with Standard Detail Drawing D-12.
- 2. Install gravel, blocks and anchors in accordance with Standard Detail Drawing D-12.

3. Set reference elevation 3 inches above existing grade or to elevation established by ENGINEER (not to exceed 6 inches).
4. Break-a-way flange to be either ground level where applicable or between 3 inches and 6 inches above curb as established by ENGINEER.

3.04 ACCEPTANCE TESTS FOR PRESSURE MAINS:

- A. Perform hydrostatic pressure and leakage test.
 1. Conform to AWWA C600 procedures.
 - a. As modified herein.
 - b. Shall apply to all pipe materials specified.
 2. Perform after backfilling.
- B. Test separately in segments between sectionalizing valves, between a sectionalizing valve and a test plug, or between test plugs.
 1. CONTRACTOR to furnish and install test plugs, including all anchors, braces and other temporary or permanent devices to withstand hydrostatic pressure on plugs, at no additional cost to the OWNER.
 2. CONTRACTOR responsible for any damage to public or private property caused by failure of plugs.
- C. Limit fill rate of line to available venting capacity. Fill rate shall be regulated to limit velocity in lines when flowing full to not more than 1 fps.
- D. OWNER will make water for testing available to contractor at nearest source. Valves of existing system will at all times be operated by COUNTY personnel **only**.
- E. Pressure Test:
 1. Conduct at pressure at least 1.5 times than normal working pressure (not less than 150 psi test pressure).
 2. Maintain pressure for a minimum of two (2) hours.
 3. Test pressure shall not vary by more than +5 psi.
- F. Leakage Test:
 1. Conduct concurrently with the pressure test.
 2. Maintain pressure for a minimum of two (2) hours.
 3. Acceptable when leakage does not exceed that determined by the following formula.

$$L = \frac{ND \cdot P}{7400}$$

L = Maximum permissible leakage in gallons per hour.
 N = Number of pipe joints in segment under test.
 D = Nominal internal diameter of pipe being tested in inches.
 P = Average actual leakage test pressure, psig.

4. Repeat leakage test as necessary.
 - a. After location of leaks and repair or replacement of defective joints, pipe or fittings.
 - b. Until satisfactory performance of test.
 - c. At no increase in cost to the OWNER.
- G. Refit and replace all pipe not meeting the leakage or pressure requirements. Repair clamp is not permitted.
- H. Repair all visible leaks regardless of the amount of leakage.
- I. OWNER or ENGINEER will observe all tests.

3.05 DISINFECTION OF PIPELINES FOR CONVEYING POTABLE WATER:

- A. CONTRACTOR provide all equipment and materials and perform in accordance with AWWA C601.
 1. As modified herein.
 2. Include chlorination and final flushing.
- B. Add chlorine to attain an initial concentration of 50 mg/1 chlorine with 10 mg/1 remaining after 24 hours.
- C. Flush main until concentration is 2 mg/1 or less prior to placing main in service.
- D. Obtain approval of materials and methods proposed for use.
- E. May be conducted in conjunction with acceptance tests.
- F. Dispose of flushing water without damage to public or private property.
- G. Repeat disinfection procedure should initial treatment fail to yield satisfactory results.
 1. At no additional cost to the OWNER.
 2. OWNER will provide water under terms specified for acceptance tests.
- H. Do not exceed 500 gpm rate in flushing.
- I. Provide safe bacterial sample results before placing main into service.

PART 4 - MEASUREMENT AND PAYMENT

4.01 PRESSURE LINES:

- A. Line shall be measured along the center of the pipe without considering fittings or

other pipe connections. The line will be paid at the contract bid price per linear feet.

- B. Compensation will be for furnishing all materials, labor, equipment, tools and incidental work required by the construction of the pressure line, all in accordance with the plans and these specifications.
- C. If pressure line fails any test procedure, trouble spot is to be corrected all as incidental to the construction of the pressure line.

*** * * END OF SECTION * * ***

SECTION 02558

WATER VALVES

PART 1 - GENERAL

1.01 GENERAL DESCRIPTION OF WORK:

- A. This work shall consist of furnishing and installing valves as indicated on the plans or as directed by the ENGINEER in accordance with these specifications.
- B. Unless otherwise noted, all valves 4-inches and larger shall be AWWA-type valves of suitable design and fully equipped for service buried in the earth, with our need for further modification and shall be wrapped with 8-mil polyethylene film with all edges and laps securely taped to provide a continuous wrap.
- C. Valve ends on valves 4-inches and larger shall be flanged or mechanical joint. All mechanical joints shall conform to AWWA Specification C111. Flanges shall be dimensioned, faced, and drilled to the 125-pound "American Standard".
- D. Valves shall be carefully installed in their respective positions, accessible for operation and repair. Unless shown on the plans otherwise, valves shall be of the same sizes as the pipelines in which they are installed. Stems shall be installed pointing straight upward. The operating nut of all valves or valve stem extensions shall be no deeper than 18-inches below the top of the valve box cover. Valves shall be left in satisfactory operating condition, free from all distortion and strain.
- E. All valve operators shall turn in a counterclockwise direction to open the valve.

PART 2 - PRODUCTS

2.01 VALVE TYPES

- A. Gate Valves
 - 1. Gate valves shall only be used for pipe sizes of 12-inches and smaller, unless otherwise noted on the plans.
 - 2. Resilient seat gate valve shall be used and shall conform to AWWA C 509. The gate valve shall be a non-rising stem type with inside screw and "O" ring seals. The valve shall have a standard hub equipped with a square operating nut. The body-to-bonnet and bonnet-to-bonnet cover shall use "O" rings as seals.
 - 3. The resilient seat shall be mechanically retained or bonded on the valve gate (wedge disc).

4. The gate valve shall have a protective coating inside and outside of fusion-bonded epoxy approved for potable water.
5. The valve stem shall comply with AWWA C 509. The material for the valve stem shall be brass or bronze, and shall have a minimum yield strength of 20,000 psi and minimum tensile strength of 60,000 psi. The valve stem shall be compatible and interchangeable with the equivalent sized double disc gate valve models.
6. Gate valves shall have a 2-inch square operating hub nut.
7. The number of turns to open the valve shall be the same or less than the equivalent sized double disc gate valve models. Maximum input torque to open and/or close the valve shall be 200 foot pounds for a 4-inch valve and 300 foot pounds for 6-inch under a working pressure of 200 psi.
8. Before the Work will be accepted, the CONTRACTOR shall provide the ENGINEER with a completed "Water Valve Data Card".
9. Gate valves shall be American Darling, Metroseal by U.S. Pipe, Mueller, or approved equal.

B. Rubber Seated Butterfly Valves

1. Butterfly valves will be used in lieu of gate valves for sizes of 14-inches and larger, the butterfly valve shall be of the rubber-seated tight closing type conforming to AWWA C504.
2. The valve body shall be cast iron having integral hubs for the housing shaft bearings and seals. The body ends shall be flanged per AWWA C504 with the flanges designed for installation between Class 125 cast iron flanges or mechanical joint meeting the requirements of AWWA C111.
3. The butterfly valve disc shall be cast iron.
4. The seat shall be buna-n rubber and shall be mechanically retained on the disc edge by means of 18-8 stainless steel bolts. Seat must also be capable of being replaced in the field without chipping, grinding, or burning out of the old seat or retaining substance. The body seat mating surface shall be 18-8 stainless steel, type 304 mechanically retained.
5. Valve shafts shall be 18-8 stainless steel, type 304 and shall be securely attached to the disc by means of bolts, dowel pins, or taper pins. All butterfly valves shall be side operated. Valve actuator shall be integrally mounted on the valve mounting flange and shall be of the self locking traveling nut type in complete accordance with AWWA C504 requirements. Actuators shall be furnished with a standard 2" operating nut and must be designed to permit the adjustment of the valve disc seating without the removal of the housing cover.

6. All butterfly valves shall be tested per AWWA C504.
7. Before the work will be accepted, the CONTRACTOR shall provide the ENGINEER with a completed "Water Valve Data Card".

C. Valve Stem Extension

1. Extension stems shall be provided as necessary to situate the operating nut no greater than 18-inches below the valve cover.
2. Extension stems shall be equipped with stem guides affixed to the valve box at intervals not to exceed ten feet.
3. Stem guides shall be considered a part of the extension. Extension stems and stem guides shall be manufactured items or approved equal.

D. Air and Vacuum Valves

1. Air and vacuum valves shall be of the type that automatically exhaust large quantities of air during the filling of a pipeline and allow air to re-enter during draining or when a negative pressure occurs.
2. The inlet and outlet of the valve shall have the same cross-sectional area. The floats shall be guided by a stainless steel guide shaft and seat against a synthetic seat.
3. Valves shall have N.P.T. inlets and outlets.
4. All air and vacuum valves shall be constructed of cast iron with stainless steel trim and buna-n seating. Valve shall be as manufactured by Val-Matic Valve & Mfg. Corp., Series 100.

E. Fire Hydrants

1. Fire hydrants and their extensions shall be in accordance with AWWA C 502, traffic type.
2. Fire hydrants shall have one 5 1/4 inch diameter valve opening; 6-inch mechanical joint of slip-on inlet connection; two 2 1/2 inch hose nozzle connections; and one 4 1/2 inch steamer nozzle with National Standard Fire Hose coupling Screw Threads or as specified by the OWNER.
3. Fire Hydrants shall have a bronze or cast iron, pentagon, operating nut, be designed for 150 psi., working pressure service, and have a normal bury of 4 to 4 1/2 feet unless field conditions require a deeper bury, in which case extensions will be used so as to bring the bottom of the break-off flange 2 to 8 inches above the top of finished grade.
4. The pipe fittings and fire hydrants starting at the street main and ending at the fire hydrant itself shall be lying in a line perpendicular to the street's

centerline or radially on a curvilinear installation.

5. Fire hydrants shall be installed in as near a vertical position as possible and shall have no more than 1/2 inch variation from a vertical line between the breakway flange and the top of the fire hydrant.
6. Hydrants shall be dry barrel, post-type with compression main valve closing with pressure. They shall have a field lubrication capability. Hydrants shall have a bronze seat ring threaded into a bronze drain ring or bronze or cast iron bushing.
7. Hydrant interior and exterior below the ground line shall be coated with asphalt varnish, and the exterior painted from the top to a point one foot below the ground level flange, consisting of one coat rust inhibitive primer.
8. The bottom plate of the main valve shall be epoxy coated. The shoe of the fire hydrant shall have a 6-inch mechanical joint connection. The inside shall be epoxy coated to prevent corrosion.
9. The nozzle shall be threaded in-place and retained by stainless steel locks.
10. Hydrant body shall be threaded to receive the threaded nozzle. Nozzle shall be secured by a stainless steel locking device.
11. Fire hydrant shall contain two drain outlets. The drain outlets shall be constructed of bronze. Hydrant shall be provided with a pentagon operation nut to open counter clockwise and shall have an anti-friction washer between the hold-down nut and the operating nut.
12. Fire hydrants shall be installed at locations as shown on construction plans and in accordance with Standard Detail Drawings.
13. No project will be accepted by the OWNER until all hydrants are operational, accessible and have been tested by the McAllen Fire Department.
14. Before the work will be accepted, the CONTRACTOR shall provide the ENGINEER with a completed "Fire Hydrant Data Card".
15. Hydrants shall be limited the following unless prior written approval is provided by the ENGINEER:
 - a) Mueller Centurion A-423
 - b) American Darling B-84-B
 - c) Kennedy Guardian K-81A
 - d) U.S. Pipe Metropolitan

F. Valve Boxes

1. Valve boxes, rings and covers shall be the type, size and material as shown in Standard Detail Drawings.
2. No valve box shall be paved over without the permission of the ENGINEER. Paving material shall not remain on valve box covers overnight.
3. Valve boxes shall be fabricated using 6-inch cast-iron sliding type pipe shaft with cover and base casting.
4. Drop covers for valve boxes shall be marked "water" using lettering casted in the cover by the manufacturer.
5. Top of valve box shall be set at finished grade unless otherwise noted.

2.02 WATER VALVE DATA CARD:

- A. Water Valve Data Card, as shown on Figure 02558-1 and 02558-2, shall be prepared for all types of valves (Gate Valves, Butterfly Valves, Air Release Valves, etc) according to the following instructions:
1. The Valve Number will be assigned by the OWNER at a later date.
 2. Valve Size is the nominal diameter of the valve, i.e., 6-inch, 14-inch or 48-inch. In the case of compound valves give size of main valve and by-pass valve, i.e., 24-inch and 4-inch, or 36-inch and 6-inch.
 3. Valve Type is the general description of the valve, such as: Vertical Gate Valve, Horizontal Gate Valve, Vertical Gate Valve with by-pass, Horizontal Gate Valve with by-pass, Butterfly Valve, Globe Valve, Check Valve, etc.
 4. Make and Model refers to the manufacturer, make and model number to identify the valve for replacement parts, such as Mueller No. A-2308-6. This information should be available from the shop drawings.
 5. Number of Turns and Direction to Open is the number of revolutions of the operating nut to make the valve travel from fully closed to fully open, and the direction is either clockwise or counter-clockwise, i.e., 54 turns counter-clockwise. All standard valves shall open counter clockwise. Operation, turn count, and direction to open will be verified by the ENGINEER prior to installation.
 6. Under Project Name is the assigned work order number or name shown on plans.
 7. Date Warranty expires is the expiration date, under the contract, for requiring warranty repairs.

8. Street Location: Give both block number and street name. For valves in intersections give both streets.
9. The section on coordinate location shall be completed by the ENGINEER.
10. All applicable items on the "Water Valve Data Card" should be filled in. However, accuracy is more important than filling blank spaces. Therefore, if an item is unknown and cannot be determined, leave the space blank.
11. Depth to "Operator" is vertical distance to the top of actual valve operating nut to top of valve box cover.
12. Extension length is self explanatory.

2.03 FIRE HYDRANT DATA CARD:

- A. A fire hydrant data card, as shown on Figure 02558-3, shall be prepared for all installations of fire hydrants, in accordance with the following instructions:
 1. Fire hydrant number will be assigned by the OWNER at a later date.
 2. Fire hydrant type refers to the manufacturer's make and model. For example: Mueller Centurion, A 423 Model.
 3. Location. Indicate both block number and street name. At intersections indicate both street names.
 4. Date Installed. Indicate actual date the hydrant was installed.
 5. Depth. Indicate the actual depth in feet of the lower barrel of the fire hydrant. This depth is measured from the shoe to the breakaway flanges of the hydrant.
 6. On the reverse side of the card indicate the location of fire hydrant on the sketch.

PART 3 - EXECUTION

3.01 SETTING VALVES, DRAINS AND AIR RELEASES:

- A. Unless otherwise indicated, main line valves, drain valves and piping, air and vacuum release assemblies and other miscellaneous accessories shall be set and jointed in the manner described for cleaning, laying, and jointing pipe.
- B. Unless otherwise indicated, valves shall be set in line with the radius point and the corresponding point of curvature or point of tangency of adjacent curbs or right of way lines.

- C. Valves shall be installed and the stems adjusted so that the top operating stems will be at the proper depth required for the piping at the location indicated above.
- D. Valve boxes and valve stem casings shall be firmly supported and maintained, centered and aligned plumb over the valve or operating stem, with the top of the box or casing installed flush with the finished ground or pavement in existing streets and installed with the top of the box or casing approximately 6-inches below the standard street subgrade in streets which are excavated for paving construction or where such excavation is scheduled or elsewhere as directed by the ENGINEER.
- E. Drainage branches or air blow-offs shall not be connected to any sanitary sewer or submerged in any stream or be installed in any other manner that will permit back siphonage into the distribution.
- F. Every drain line and every air release line shall have a full sized independent gate valve flanged directly to the main.
- G. Flap-valves, shear gates, etc., will not be accepted.

3.02 SETTING FIRE HYDRANTS:

- A. Fire hydrants shall be located in a manner to provide accessibility and in such a manner the possibility of damage from vehicles or injury to pedestrians will be minimized.
- B. Unless otherwise directed, the setting of a hydrant shall conform to the following:
 - 1. When placed behind a curb, the hydrant barrel shall be set so that no portion of the pumper or hose nozzle cap will be less than 12 nor more than 24-inches from the gutter face of the curb or less than 20 feet from the curb line intersection of any street.
 - 2. If set between streets, the hydrant shall be placed as directed by the ENGINEER.
 - 3. When set in the lawn space between the curb and the sidewalk or between the sidewalk and property line, no portion of the hydrant or nozzle cap shall be within 6-inches of the sidewalk.
- C. All hydrants shall stand plumb and shall have their nozzles parallel with or at right angles to the curb with the pumper nozzle pointing normal to the curb. They shall conform to the finish grade with the hydrant bury mark approximately level with the ground or other finish grade, with the large pumper nozzle approximately 18-inches above grade as indicated without the use of hydrant extensions except where authorized by the ENGINEER.
- D. Each hydrant shall be connected to the main pipe with the 6-inch Ductile Iron branch.
- E. Below each hydrant, a drainage pit 2 feet in diameter and 2 feet deep shall be excavated and filled compactly with coarse gravel or broken stone mixed with

coarse sand under and around the blow of the hydrant, except where thrust blocking is situated and to a level 6-inches above the hydrant drain opening.

- F. No hydrant drainage pit shall be connected to a sanitary sewer.
- G. The bowl of each hydrant shall be well braced against unexcavated earth at the end of the trench with concrete thrust blocking (taking care not to obstruct the hydrant drain holes) or it shall be tied to the pipe with approved metal harness rods and clamps.
- H. Hydrants shall be thoroughly cleaned of dirt or foreign matter before setting.

3.03 PROTECTIVE COVERING:

- A. Unless otherwise indicated, all flanges, nuts, bolts, threaded outlets and all other steel components buried and in contact with earth or backfill shall be wrapped with 8-mil (minimum) polyethylene film meeting ANSI/AWWA Specification C-105-current, with all edges and laps taped securely to provide a continuous and watertight wrap.

3.04 VALVE BOX REHABILITATION:

- A. This item shall include replacement of the valve can and collar only where the work connects to an existing valve that is to be left in place.
- B. This work shall be done only if the existing valve box does not have the required concrete collar around the can.
- C. The work and materials shall include the following:
 - 1. Replacement of the original can regardless of its condition, with the new 12-inch diameter corrugated metal culvert pipe.
 - 2. Install concrete collar.
 - 3. The existing ring and cover shall be reused if in good condition.
 - 4. Removal and replacement of the pavement.
 - 5. Excavation, backfill, and compaction.
 - 6. All materials, labor, and equipment necessary to do the work.

PART 4 - MEASUREMENT AND PAYMENT

4.01 MEASUREMENT:

- A. Measurement of accepted material, complete in place shall be made as follows:
 - 1. Valves - Per each including valve stem casting and cover, excavation, setting and adjusting to grade and anchoring in place.
 - 2. Air and Vacuum Valves - Per each including threaded valve and corporation cock, pipe, fittings, meter box and cover.

3. Fire Hydrants - Per each not including pipe, fittings and valves between main line and fire hydrant.
4. Fire Hydrant Extensions - Per vertical foot, in cases where the bury of the fire hydrant is greater than 4 feet, complete in place, including rod extensions, bolts and all other required accessories.
5. Valve Boxes - Per each when not incidental to another item, including cover, excavation, setting and adjusting to grade and anchoring in place, complete in place.
6. Valve Box Rehabilitation - Per each including all applicable materials.

4.02 PAYMENT

- A. Payment for items measured above shall be made at the unit bid price as follows:
- B. Compensation, whether by contract pay item or incidental work will be for furnishing all materials, labor, equipment, tools and incidentals required for the work, all in accordance with the plans and these specifications.

***** END OF SECTION *****

SECTION 02580

STORM SEWER APPURTENANCES

PART 1 - GENERAL

1.01 GENERAL DESCRIPTION OF WORK:

- A. This work shall consist of furnishing and installing appurtenances except manholes, for storm sewers in accordance with details on the plans and as specified herein as directed by the ENGINEER.
- B. The various types of structures and appurtenances such as inlets, headwalls, energy dissipators, etc. are designated on the plans by letters or by numbers indicating the particular design of each. Each type shall be constructed in accordance with the details indicated and to the depth required by the profiles and schedules given.

PART 2 - PRODUCTS

2.01 GENERAL:

- A. The construction plans will specify the size and material for the pipe between the storm sewer main and the storm water collection structure.
- B. The various types of storm inlets and their relation to curb and gutter, or valley gutter are shown on the Standard Detail Drawings. Construction plans will identify the type to be constructed.
- C. Grating size, material, and configuration shall conform to the Standard Detail Drawings.

2.02 MATERIALS:

A. Concrete

- 1. Concrete for cast in place miscellaneous structures shall be Class A concrete when used with precast pipe sewer construction and Class C concrete when used with monolithic pipe sewer construction.
- 2. Concrete for precast structures shall be 4000 psi and comply with the applicable requirements of ASTM C 478.

B. Mortar:

- 1. Mortar shall be composed of 1 part Portland Cement and 2 parts clean, sharp mortar sand suitably graded for the purpose by conforming in other respects to the provisions of Section 03300 for fine aggregate.

2. Hydrated lime or lime putty may be added to the mix, but in no case shall it exceed 10 percent by weight of the total dry mix.

C. Reinforcement:

Reinforcing Steel shall conform to Item 440.

D. Brick:

1. Bricks shall be of first quality, sound, hard-burned brick. Shale bricks, if used, shall be homogeneous, thoroughly and uniformly burned.
2. Bricks shall not absorb more than 17 percent of water by weight submerged in water for 24 hours, having been in a completely dry state prior to placing in water.
3. Clay brick shall conform to the requirements of ASTM C 62, Grade SW. concrete brick meeting the requirements of ASTM C 55, Grade A, shall be acceptable.

E. Concrete Block:

Concrete blocks when indicated shall conform to ASTM C 139.

F. Frames, Grates, Rings and Covers:

Frames, grates, rings and covers shall conform to Section 02575 and 02577.

G. Miscellaneous Items:

Cast iron for supports, steps and inlet units shall conform to the shape and dimensions indicated. The casting shall be clean and perfect, free from sand or blow holes or other defects. Cast iron casting shall meet the requirements of ASTM A 48, Class 30. Steel for temporary covers when used with Stage Construction shall be adequate for the loads imposed.

PART 3 - EXECUTION

3.01 INSTALLATION OF DRAINAGE FACILITIES:

- A. Excavation and backfilling for the storm inlet shall be accomplished in accordance with Section 02221.
- B. Trenching, backfilling, and compaction for the connecting pipe between the storm sewer main and the storm inlet shall conform to the specifications contained in Section 02221. Pipe shall be installed in accordance with Section 02572.
- C. All pipe and structures shall be installed per location and elevations, as shown on the construction plans. If during the course of installation, an underground obstruction (i.e., existing utility line) the work shall stop and the ENGINEER shall be immediately notified so that the problem can be resolved.

- D. Direct connection to storm sewer main will be permitted if the main is a minimum of 36 inches in diameter (I.D.) and the connecting line is not greater than 12-inches (I.D.). If storm sewer mains are 48 inches (I.D.) or larger, the connecting line diameter may be increased to 18 inches (I.D.). For connecting line sized greater than those specified above, the connecting to the main will be made into a manhole or by inserting into the main a factory constructed way. Connection to the main will comply with the Standard Detail Drawings.
- E. Removal of curb and gutter and sidewalk for installation of a storm inlet shall be made at a scored or full depth joint.
- F. Existing pavement removal and replacement shall conform to Section 02572, 02575, 02601 and 02612 and shall conform to residential or arterial pavement sections of the same material (asphalt or Portland Cement concrete) as the existing pavement.
- G. No width greater than 1/2 inch will be permitted between the inlet grate and the roadside portion of the inlet frame.
- H. Private drainage facility installations, which are to be constructed under the authorization of "Drainage Facilities within Public Right-of-Way," shall comply with the Standard Detail Drawings and appropriate sections of this publication.
- I. The construction inlets shall be done as soon as is practicable after sewer lines into the inlet are complete. All sewers shall be cut neatly at the inside face of the walls of the inlet and pointed up with mortar.
- J. Bases for cast in place inlets may be placed prior to or at the CONTRACTOR'S option after the sewer is constructed.
- K. The inverts passing out or through an inlet shall be shaped and grout across the floor of the inlet as indicated. This shaping may be accomplished by adding shaping mortar or concrete after the base is cast or by placing the required additional material with the base.
- L. All miscellaneous structures shall be completed in accordance with the details indicated. Backfilling to original ground elevation shall be in accordance with the provisions of the appropriate items and as directed by the ENGINEER.

PART 4 - MEASUREMENT AND PAYMENT

4.01 MEASUREMENT:

- A. Pavement removal and replacement will be measured by the square yard.
- B. Trenching, backfilling and compaction will not be measured or paid, but will be considered incidental to other items.
- C. Frame, grates, rings and covers will not measured or paid, but will be considered

incidental to other items.

- D. Connecting pipe shall be measured by the linear foot along centerline of pipe from the main side wall of the inlet to the centerline of the main.
- E. Storm sewer inlets shall be measured per each for the type and size specified.
- F. All miscellaneous structures satisfactorily completed in accordance with the plan and specifications will be measured as complete units per each.

4.02 PAYMENT:

- A. The accepted quantities of pavement removal and replacement shall be paid for at the unit bid price per square yard per type of replacement paving material.
- B. The accepted quantities of connecting pipe shall be paid at the unit bid price per linear foot per type and size of pipe, and shall include pipe in place and all necessary jointing materials.
- C. The accepted quantities of storm inlets will be paid at the unit price per each per type of storm inlet, and shall include: structure, grating, excavation, backfilling and compaction, and curb removal and replacement, as defined in Bid Proposal.
- D. The accepted quantities of special complete structures shall be paid at the unit bid price per each.
- E. Compensation, whether by contract pay item or incidental work will be for furnishing all material, labor, equipment, tools and incidentals required for the work, all in accordance with the plans and these specifications.

****** END OF SECTION ******

SECTION 02601

FLEXIBLE BASE

PART I - GENERAL

1.01 GENERAL DESCRIPTION OF WORK:

- A. This work shall consist of furnishing and placing a foundation course for surface courses or for other base courses.
- B. Flexible base shall be composed of either caliche (argillaceous limestone, calcareous or calcareous clay particles, with or without stone, conglomerate, gravel, sand or other granular materials), crushed stone, gravel, iron ore topsoil, shell, or crushed slag.
- C. Flexible base shall be constructed as specified herein in one or more courses in conformance with details, lines and grades shown on the plans, and as established by the ENGINEER.

PART 2 -PRODUCTS

2.01 MATERIALS:

- A. Materials for flexible base shall be crushed or un-crushed as necessary to comply with the requirements hereinafter specified.
- B. Materials shall consist of durable course aggregate particles mixed with approved binding materials.

2.02 LIME STABILIZATION:

- A. Where shown on the plans, or directed by the ENGINEER, material for flexible base shall be lime stabilized in accordance with the provisions of Section 02240.

2.03 TYPES:

- A. Type A - Crushed or broken aggregate (excluding gravel aggregate).
- B. Type B - Gravel Aggregate
- C. Type C - Iron Ore Topsoil
- D. Type D - Shell Aggregate with Sand Admixture
- E. Type E - Shell Aggregate with Sand and Caliche Admixture
- F. Type F - Caliche

G. Type G - Crushed Slag

H. Unless otherwise noted on the plans, the CONTRACTOR may use any one type of these types provided the material used meet the requirements set forth in the specification test limits herein.

2.04 GRADES:

A. Unless otherwise shown on the plans or directed by the ENGINEER, the final course of base material shall consist of Grades 1,2,3, or 4, as specified in Table 02601-1.

B. Base courses or sub-base materials, unless otherwise noted on the plans or directed by the ENGINEER, may consist of Grades 1, 2, 3, or 4, as specified in Table 02601-1.

C. All grades shall, when tested in accordance with standard laboratory test procedures, meet the physical requirements set forth in Table 02601-1.

D. Testing of flexible base materials shall be in accordance with the following test procedures:

<u>TEST</u>	<u>TESTING PROCEDURE</u>
Preparation for soil constants and sieve analysis	TEX-101-E
Liquid Limit	TEX-104-E
Plastic Limit	TEX-105-E
Plasticity Limit	TEX-106-E
Sieve Analysis	TEX-110-E
Wet Ball Mill	TEX-116-E
Triaxial Tests	TEX-117-E (Part I or II)

E. Unless otherwise specified on the plans, samples for testing the material for Soil constants, Gradation and Wet Ball Mill shall be taken prior to the compaction operations.

F. Unless otherwise specified on the plans, samples for triaxial tests shall be taken from the stockpile or from production, as directed by the ENGINEER, where stockpiling is required and from production where stockpiling is not required.

TABLE 02601-1

PHYSICAL REQUIREMENTS FOR FLEXIBLE BASE MATERIALS

GRADES				
TYPES	GRADE 1:	GRADE 2:	GRADE 3:	GRADE 4:
	(Triaxial Class 1 Min compressive strength, psi: 45 at 0 psi lateral pressure and 175 at 15 psi lateral pressure.	(Triaxial class 1 to 2.3) Min. compressive strength, psi: 35 at 0 psi lateral pressure and 175 at 15 psi lateral pressure.	(Unspecified Triaxial Class)	
TYPE A	Retained on Sq. Sieve %	Retained on Sq. Sieve %	Retained on Sq. Sieve %	
Crushed or Broken Aggregate (excluding gravel aggregate)	1-3/4".....0 7/8".....10-35 3/8".....30-50 No. 4.....45-65 No. 40.....70-85 Max LL.....35 Max PI.....10 Wet Ball Mill Max Amt.....40 Max Increase in Passing No. 40.....20	1-3/4"..... 0-10 No. 4..... 45-75 No. 40..... 60-85 Max LL..... 40 Max PI 12 Wet Ball Mill Max. Amt. 50 Max Increase in Passing No. 40..... 20	1-3/4".....0-10 No. 40..... 60-85 Max LL..... 45 Max PI 15 Wet Ball Mill Max. Amt. 55 Max. Increase in Passing No. 40..... 20	As Shown On Plans
TYPE B	Retained on Sq. Sieve %	Retained on Sq. Sieve %	Retained on Sq. Sieve %	
Gravel Aggregate		1-3/4"..... 0-10 No. 4..... 30-75 No. 40..... 70-85 Max LL..... 35 Max PI 12	1-3/4"..... 0-5 No. 4..... 30-75 No. 40..... 65-85 Max. LL..... 35 Max. PI 12	As Shown On Plans
TYPE C	Retained on Sq. Sieve %	Retained on Sq. Sieve %	Retained on Sq. Sieve %	
Iron Ore Topsoil		2-1/2"..... 0 No. 40..... 50-85 Max. LL..... 35 Max. PI 12	2-3/4"..... 0 No. 40..... 45-85 Max. LL..... 35 Max. PI 12	As Shown On Plans

TABLE 02601-1 CONT'D

TYPE D	Retained on Sq. Sieve	%	Retained on Sq. Sieve	%	
Sand-Shell	1-3/4"	0-10	1-3/4"	0-10	As Shown On Plans
	No. 4	45-65	No. 40	45-65	
	No. 40	50-70	Max. LL	35	
	Max. LL	35	Max. PI	12	
	Max. PI	12			
TYPE E	Retained on Sq. Sieve	%	Retained on Sq. Sieve	%	
Shell with Sand and Caliche	1-3/4"	0	1-3/4"	0	As Shown On Plans
	No. 40	45-65	No. 40	45-65	
	Max. LL	35	Max. LL	35	
	Max. PI	10	Max. PI	12	
TYPE F	Retained on Sq. Sieve	%	Retained on Sq. Sieve	%	
Caliche	1-3/4"	0	1-3/4"	0	As Shown On Plans
	No. 4	45-75	No. 40	50-85	
	No. 40	50-85	Max. LL	40	
	Max. LL	40	Max. PI	12	
	Max. PI	12			
TYPE G					
Crushed Blast Furnace Slag					As Shown On Plans

- G. The limits establishing reasonable close conformity with the specified gradation and plasticity index are defined by the following:
1. The ENGINEER may accept the material, providing not more than 2 of 10 consecutive gradation tests performed are outside the specified limits on any individual or combination of sieves by no more than 5% and where no two consecutive tests are outside the specified limits.
 2. The ENGINEER may accept the material providing not more than 2 of 10 consecutive plasticity index samples tested are outside the specified limit by no more than two points and where no two consecutive tests are outside the specified limit.

2.05 STOCKPILING:

- A. When specified on the plans, the material shall be stockpiled prior to delivery on the road. The stockpile shall be not less than the height indicated and shall be made up of layers of material not to exceed the depth shown on the plans.
- B. After a sufficient stockpile has been constructed as specified on the plans, the CONTRACTOR may proceed with loading from the stock- pile for delivery to the road.
- C. In loading from the stockpile for delivery to the road, the material shall be loaded by making successive vertical cuts through the entire depth of the stockpile.
- D. If the CONTRACTOR elects to produce the Type a material from more than one material or more than one source, each material shall be crushed separately and placed in separate stockpiles so that at least 75 percent of the material in the course aggregate stockpiles will be retained on the No. 4 sieve and at least 70 percent of the material in the fine aggregate stockpile will pass the No. 4 sieve.
- E. The materials shall be combined in a central mixing plant in the proportions determined by the ENGINEER to produce a uniform mixture which meets all of the requirements of the specification. In the event that combinations of the materials produced fail to meet all of the specification requirements, the CONTRACTOR will be required to secure other materials which will meet specifications requirements.
- F. The central mixing plant shall be either the batch or continuous flow type, and shall be equipped with feeding and metering devices which will add the materials into the mixer in the specified quantities.
- G. Mixing shall continue until a uniform mixture is obtained.

PART 3 - EXECUTION

3.01 PREPARATION OF SUBGRADE:

- A. Type roadbed shall be excavated and shaped in conformity with the typical sections shown on the plans and to the lines and grades as established by the ENGINEER.
- B. All unstable or otherwise objectionable material shall be removed from the sub-grade and replaced with approved material.
- C. All holes, ruts and depressions shall be filled with approved material and, if required, the sub-grade shall be thoroughly wetted with water and reshaped and rolled to the extent directed in order to place the sub-grade in an acceptable condition to receive the base material.
- D. The surface of the sub-grade shall be finished to line and grade as established and in conformity with the typical section shown on plans, and any deviation in

excess of 1/2 inch in cross section and in a length of 16-feet measured longitudinally shall be corrected by loosening, adding or removing material, reshaping and re-compacting by sprinkling and rolling.

- E. Sufficient sub-grade shall be prepared in advance to insure satisfactory prosecution of the work.
- F. Material excavated in the preparation of the sub-grade shall be utilized in the construction of adjacent shoulders and slopes or otherwise disposed on as directed, and any additional material required for the completion of the shoulders and slopes shall be secured from sources indicated on plans or as directed by the Engineer.

3.02 PLACEMENT OF FIRST COURSE - TYPE A, TYPE B, TYPE C, TYPE F, AND TYPE G MATERIAL:

- A. Immediately before placing the base material, the sub-grade shall be checked as to conformity with grade and section.
- B. The material shall be delivered in approved vehicles of a uniform capacity, and it shall be the charge of the CONTRACTOR that the required amount of specified material shall be delivered in each 100- foot station.
- C. Material deposited upon the sub-grade shall be spread and shaped the same day.
- D. In the event inclement weather or other unforeseen circumstances render impractical the spreading of the material during the first 24-hour period, the materials shall be scarified and spread as directed by the Engineer.
- E. The material shall be sprinkled, if directed, and shall then be bladed, dragged and shaped to conform to typical sections as shown on plans.
- F. All areas and "nests" of segregated coarse or fine material shall be corrected to removed and replaced with well graded material, as directed by the ENGINEER.
- G. If additional binder is considered desirable or necessary after the material is spread and shaped, it shall be furnished and supplies in the amount directed by the ENGINEER. Such binder material shall be carefully and evenly incorporated with the material in place by scarifying, harrowing, brooming or by other approved methods.
- H. The course shall be compacted by method of compaction hereinafter specified as the "Ordinary Compaction" method or the "Density Control" method of compaction as indicated on the plans, or as directed by the ENGINEER.
 - 1. When the "Ordinary Compaction" method is to be used, the following provisions shall apply:
 - a) The course shall be sprinkled as required and rolled as directed until a uniform compaction is secured. Throughout this entire operation,

the shape of the course shall be maintained by blading and the surface upon completion shall be smooth and in conformity with the typical sections shown on plans and to the established lines and grades.

- b) In that area on which pavement is to be placed, any deviation in excess of 1/4 inch in cross section in a length of 16-feet measured longitudinally shall be corrected by loosening, adding or removing material, reshaping and re-compacting by sprinkling and rolling.
- c) All irregularities, depressions or weak spots which develop shall be corrected immediately by scarifying the areas affected, adding suitable material as required, reshaping and re-compacting by sprinkling and rolling.

2. When the "Density Control" method of compaction is to be used, the following provisions shall apply:

- a) The course shall be sprinkled as required and compacted to the extent necessary to provide not less than the percent density as hereinafter specified under "Density".
- b) In addition to the requirement specified for density, the full depth of the flexible base shown on the plans shall be compacted to the extent necessary to remain firm and stable under construction equipment.
- c) After each section of flexible base is completed, tests as necessary will be made by the ENGINEER. If the material fails to meet the density requirements, it shall be reworked as necessary to meet these requirements.
- d) Throughout this entire operation, the shape of the course shall be maintained by blading, and the surface upon completion shall be smooth and in conformity with the typical sections shown on the plans and to established lined and grades.
- e) In that area on which pavement is to be placed, any deviation in excess of 1/4 inch in cross section in a length of 16 feet measured longitudinally shall be corrected by loosening, adding or removing material, reshaping and re-compacting by sprinkling and rolling.
- f) All irregularities, depressions or weak spots which develop shall be corrected immediately by scarifying the areas affected, adding suitable material as required, reshaping and re-compacting by sprinkling and rolling.

- I. Should the base course, due to any reason or cause, lose the required stability, density or finish before the surfacing is complete, it shall be re-compacted and refinished at the sole expense of the CONTRACTOR.

- J. Where Type C material is used, the material shall be scarified, thoroughly wetted, mixed, manipulated, and bladed so as to secure a uniformly wetted material, and pulled in over the sub-grade in courses and set under the action of blading and rolling. The work of mixing, blading, rolling, shaping, and subsequent maintenance shall be performed by the continuous use of sufficient number of satisfactory rollers and power maintainers with adequate scarifier attachments.

3.03 PLACEMENT OF FIRST COURSE - TYPE D MATERIAL:

- A. Immediately before placing the base material, the sub-grade shall be checked as to conformity with grade and section, and corrections made if necessary.
- B. All materials shall be delivered in approved vehicles of a uniform capacity.
- C. The required amount of shell shall be uniformly spread across the section and allowed to dry sufficiently to insure proper slaking and mixing of the binder material. Immediately upon completion of the drying period, as determined by the ENGINEER, the specified amount of sand admixture as required to produce a combined material meeting the requirements hereinbefore specified, shall be spread uniformly across the shell.
- D. The material shall then be sprinkled as required and thoroughly mixed by blading and harrowing, or other approved methods.
- E. Failure to proceed with the placing of sand admixture or mixing and placing operations will be grounds for the suspension of placing of shell.
- F. Under no conditions will the CONTRACTOR be allowed to place an excessive amount of shell without proceeding with the mixing and placing operations.
- G. The course shall be compacted by the method of compaction hereinafter specified as the "Ordinary Compaction" method or the "Density Control" method of compaction as indicated on the plans, or as directed by the ENGINEER.
 - 1. When the plans indicate that the "Ordinary Compaction" method is to be used, the following provisions shall apply:
 - a) After mixing, all material shall be windrowed, and then spread over the section in layers.
 - b) The layer shall not exceed 2 inches in loose depth.
 - c) If necessary to prevent segregation, the material shall be wetted in the window prior to spreading.
 - d) After each lift is spread, it shall be sprinkled and rolled to secure maximum compaction as directed by the ENGINEER. Succeeding layers shall then be placed similarly until the course is completed.

- e) All areas and "nest of segregated coarse or fine material shall be corrected or removed and replaced with well graded material, as directed by the ENGINEER.
 - f) The course shall then be sprinkled as required and rolled as directed until a uniform compaction is secured.
 - g) Throughout this entire operation, the shape of the course shall be maintained by blading; and the surface, upon completion, shall be smooth and in conformity with the typical sections shown on plans, and to the established lines and grades.
 - h) In that area on which pavement is to be place, any deviation in excess of 1/4 inch in cross section in a length of 16-feet measured longitudinally shall be corrected by loosening, adding or removing material, reshaping and re-compacting by sprinkling and rolling.
 - i) All irregularities, depressions or weak spots which develop shall be corrected immediately by scarifying the areas affected, adding suitable material as required, reshaping and re-compacting by sprinkling and rolling.
2. When the plans indicate that the "Density Control" method of compaction is to be used, the compaction method shall be the same as prescribed for Type A, Type B, Type C, Type F and Type G material.
- H. When indicated on the plans or permitted by the ENGINEER, Type D material may be mixed in a central mixing plant and delivered to the road as a combined mixture. When this method is used, the combined mixture shall meet the requirements for type D material as hereinbefore specified and the placing and compaction requirement shall be the same as prescribed for Type A, Type B, Type C, Type F and Type G material.

3.04 PLACEMENT OF FIRST COURSE - TYPE E MATERIAL:

- A. The construction methods for placing the first course of Type E material shall be the same as prescribed for Type D material except that after the shell and sand have been placed, the prescribed amount of caliche shall then be spread across the sand and shell.
- B. The composite mixture shall then be sprinkled as required and thoroughly mixed by blading and harrowing or other approved methods.
- C. Compaction of the first course of Type E material shall be the same as prescribed above for Type D material.
- D. Failure to proceed with placing the sand and caliche admixture or mixing and placing operations will be grounds for the suspension of placing of shell.

- E. Under no conditions will the CONTRACTOR be allowed to place an excessive amount of shell without proceeding with the mixing and placing operations.

3.05 PLACEMENT OF SUCCEEDING COURSES - ALL MATERIAL TYPES:

- A. Construction methods shall be the same as prescribed for the first course.
- B. Prior to placing the surfacing on the completed base, the base shall be "dry cured" to the extent directed by the ENGINEER.

3.06 DENSITY CONTROL:

- A. When the "Density Control" method of compaction is indicated on the plans, each course of flexible base shall be compacted to the percent density shown on the plans.
- B. The testing will be as outlined in Test Method Tex-114-E.
- C. It is the intent of this specification to provide in that part of the base included in the top 8 inches immediately below the finished surface of the roadway not less than 100 percent of the density as determined by the compaction ratio method.
- D. Field density determination shall be made in accordance with Test Method Tex-115-E.

3.07 TOLERANCES:

- A. When tolerances are permitted by the plans, the limits establishing reasonable close conformity with percent density specified are defined by the following:
 - 1. The ENGINEER may accept the work providing not more than 25 percent of the density tests performed each day are outside the specified density by no more than three pounds per cubic foot and where no two consecutive tests on continuous work are outside the specified limits.

PART 4 - MEASUREMENT AND PAYMENT

4.01 MEASUREMENT:

- A. Flexible base will be measure by the square yard of surface area of completed and accepted work based on the width of flexible base as shown on the plans.
 - 1. The flexible base shall be measured for depth by the units of 2000 square yards, with one measurement taken at a location selected by the ENGINEER.
 - 2. In that unit where flexible base is deficient by more than 1/2 inch in thickness, the deficiency shall be corrected by scarifying, adding material as required, reshaping and re-compacting by sprinkling and rolling.

3. No additional payment over the contract unit price will be made for any flexible base of a thickness exceeding that required by plans.
- B. The CONTRACTOR shall schedule his operations in such a manner as to facilitate the measurement of the pay item.
- C. The ENGINEER may accept the work provided no more than 2 out of 10 depth tests performed are deficient by not more 1/2 inch and where no two consecutive tests on continuous work are outside the specified depth.

4.02 PAYMENT:

- A. The accepted quantities of flexible base of the type, grade, and compaction method specified will be paid at the contract unit bid price per square yard, complete in place.
- B. Where "Ordinary Compaction" is used, all sprinkling, rolling, and manipulation required will not be paid for directly, but will be incidental to other bid items.
- C. The unit prices bid shall each be full compensation for shaping and fine grading the roadbed; for securing and furnishing all materials, including all royalty and freight involved; for furnishing scales and labor involved in weighing the material when required; for loosening, blasting, excavating, screening, crushing and temporary stockpiling when required; for loading all materials for all hauling and delivering. on the road; for spreading, mixing, blading, dragging, shaping and finishing and for all manipulation, labor, tools and incidentals necessary to complete the work.

***** END OF SECTION *****

SECTION 02610

PRIME COAT

PART 1 - GENERAL

1.01 GENERAL DESCRIPTION:

- A. Prime coat shall consist of application of asphaltic materials on completed base course and/or other approved area, which shall be applied in accordance with these specifications, as shown on the plans, and as directed by the ENGINEER.

1.02 QUALITY ASSURANCE:

- A. Test and Certification of Bituminous Materials.
 - 1. Bituminous material is to be tested in accordance with the requirements of AASHTO M-82 and sampled in conformance with AASHTO T-40.
 - 2. Supply, at the time of delivery of each shipment of asphalt, two certified copies of test reports, from supplying vendor, to the ENGINEER.
 - 3. Test reports shall indicate name of vendor, type and grade of asphalt delivered, date and point of delivery, quantity delivered, delivery ticket number, purchase order number, and result of specified tests.

The test report, signed by an authorized representative of the vendor, shall certify that the product delivered conforms to the specifications for type and grade indicated.

Certified test reports and the testing required in the preparation of such report shall be at no cost to the COUNTY.

- 4. Final acceptance of bituminous materials shall be dependent on the determination by the ENGINEER that the material meets prescribed standards.

PART 2- PRODUCTS

2.01 MEDIUM CURING CUTBACK ASPHALT:

- A. Medium-curing liquid asphalt, designated by the letters MC, shall consist of an uncracked petroleum base stock, produced by the processing of asphaltic or semi-asphaltic base crude petroleum, blended with a kerosene-type solvent. The base stock for all MC materials shall be straight run asphalt produced within the penetration range of 100 to 300, and the end point of the kerosene type solvent shall not exceed 525 degrees F. Medium curing liquid cutback asphalt shall be free from water and show no separation.
- B. Medium curing cutback asphalt shall consist of materials specified above and

conforming to the requirements set forth in Table 2610-1.

- C. Unless otherwise noted on the plans or directed by the ENGINEER, cutback asphalt Grade MC-30 shall be used.

2.02 BLOTTER MATERIAL:

- A. Supply blotter material consisting of native sand and/or sweepings from base course.
- B. Native sand shall be local material obtained from approved sources as approved by the ENGINEER.

PART 3 - EXECUTION

3.01 CONSTRUCTION METHODS:

- A. Unless otherwise specified on the plans or, required by the ENGINEER, only asphaltic material shall be used. Where required, a combination of asphaltic and blotter material shall be used.
- B. Application of Asphaltic Materials Only.
 - 1. Apply prime coat to prepared surface when ambient air temperature is above 40 degrees F. and is rising and shall not be applied when the ambient air temperature is below 50 degrees F. and falling.
 - 2. Apply prime coat to surfaces that have been cleaned by sweeping or other approved methods and where base is thoroughly dry and satisfactory for receiving prime coat.
 - 3. Apply prime coat to cleaned base, at a rate of 0.2 to 0.5 gallons per square yard of surface area, using an approved type of self-propelled pressure distributor so constructed and operated to distribute the material evenly and smoothly.
 - 4. Provide necessary facilities for the determination of temperature of asphaltic material in all heating equipment and distributors; and for determination of rate at which it is applied; and for securing uniformity at the junction of two distributor loads.
 - 5. Keep in clean and good working condition all storage tanks, piping, reports, booster tanks and distributors used in the storage and handling of asphaltic materials.
 - 6. Operate all associated equipment in a manner such that there is no contamination of asphaltic material with foreign material.
 - 7. Calibrate distributor and furnish ENGINEER with an accurate and satisfactory record of such calibrations.

TABLE 2610-1

Specification Designation	Test	AASHTO	ASTM	Grade					
		Test Method	MC Method	MC 30	MC 70	MC 250	800	MC 3000	
Flash Point (Open Cleve) oF, Min.		T 48	D 92	100	100	150	150	150	
Viscosity 140oF, Kinematic, CS		T 201	D 2170	60	30 to 140	70 to 500	250 to 1600	800 to 6000	3000 to
Furol Viscosity at 77 F. (Secs.) at 122 F. (Secs.) at 140 F. (Secs.) at 180 F. (Secs.)		T 72	D 88		75-150 60-120 125-250 100-200	300 to			600
Distillation Distillate (% of Total Distillate to 680 F) to 437 F) to 500 F to 600 F		T 78	D 402		0-25 40-70 75-93	0-20 25-60 75-90	0-10 20-55 70-85	-0- 10-35 65-80	-0- 15-15 50-75
Residue from Distillation to 680 F Volume % by Difference Min.					50	55	67	75	80
Tests on Residue From Distillation Penetration at 77 F		T 49	D 5		120 to 250	120 to 250	120 to 250	120 to 250	120 to 250
*Ductility 77 F cm., Min.		T 51	D 113		100	100	100	100	100
Solubility in CC1 4, % Min.		T44	NONE	99.5	99.5	99.5	99.5	99.5	

Water, % Min.	T 55	D 95	0.2	0.2	0.2	0.2	0.2
Reaction to Spot Test	T 102**	-0-	-0-	-0-	-0-	-0-	-0-

* If penetration of residue is more than 200 and its ductility at 77 F is less than 100, the material will be acceptable if the ductility at 60 F is greater than 100.

** Using 85% Standard Naphtha and 15% Xylene.

NOTE: Viscosity tests may be made by either Kinematic or Furol test methods.

8. Recalibrates distributor, in a manner satisfactory to the ENGINEER, after the beginning of work, should the yield on the asphaltic material applied appear to be in error.
9. No traffic, hauling or placing of subsequent courses shall be permitted over freshly applied prime coat until authorized by the ENGINEER.
10. Apply asphaltic material at a temperature within 15 F of temperature of application selected by the ENGINEER based on temperature viscosity relationship noted in Table 2610-1.
11. Maintain surface until work is Blotter Material.

C. Application of Asphaltic and Blotter Material

1. Haul blotter material in vehicles of uniform capacity and placed on shoulders at spacings designated by the ENGINEER.
2. After application of asphaltic material as specified above, cover surface with blotter material as directed by the ENGINEER.
3. After application of blotter material, drag surface with approved drag broom, evenly and smoothly distributing the blotter material. Brooming or dragging operation shall continue, as directed by the ENGINEER, until the course has properly cured under traffic.

PART 4 - MEASUREMENT AND PAYMENT

4.01 PRIME COAT:

- A. Asphaltic material for prime coat will be measured for payment at point of delivery on the project in gallons at applied temperature. Payment will be paid at the unit bid price for "Prime Coat".
- B. When not listed as a separate contract pay item, prime coat shall be considered as incidental work, and the cost thereof shall be included in such contract pay item(s) as are provided in the proposal contract.
- C. Compensation, whether by contract pay item or incidental work will be for furnishing all material, labor, equipment, tools and incidentals required for the work, all in accordance with the plans and these specifications.

4.02 BLOTTER MATERIALS:

- A. Blotter mater will be considered incidental to asphaltic material for prime coat with no direct payment or payment therefor.

*** * * * END OF SECTION * * * ***

SECTION 02612

HOT MIX ASPHALT CONCRETE PAVEMENT

PART 1 - GENERAL

1.01 DESCRIPTION:

- A. Hot mix asphalt concrete (HMAC) pavement shall consist of a binder course, a leveling up course, a surface course or a combination of the courses as shown on the plans, or as directed by the ENGINEER.
- B. HMAC pavement shall be composed of a compacted mixture of mineral aggregate and asphaltic material, constructed on previously completed and approved sub-grade, sub-base course, base course, or existing pavement.
- C. HMAC pavement shall be in accordance with the specifications herein and in conformity with the lines, grades, quantities and typical sections in the contract and/or as directed by the ENGINEER.

1.02 QUALITY CONTROL:

- A. HMAC pavement and its constituent part shall conform to the ASTM, AASHTO and/or Texas SDHPT test methods noted below.

PART 2 PRODUCTS

2.01 ASPHALTIC MATERIALS

- A. Asphalt cement binders shall be un-cracked petroleum asphalt and shall be carefully refined, by steam, vacuum, or solvent, from asphaltic or semi-asphaltic base crude petroleum at a temperature not to exceed 700 degrees F. Asphalt cements shall be free from thermal decomposition products and shall not be blended with any materials which have been subjected to cracking or produced from a crude petroleum source other than that of the original material. The asphalt cement shall not contain residues from non-asphaltic sources. Asphalt cement shall be homogeneous, free from water, and shall not foam when heated to 347 degrees F.
- B. Paving asphalt shall be classified by penetration or viscosity and shall conform to the requirements set forth in one of the following tables as designated by the ENGINEER. The CONTRACTOR may supply asphalt meeting the requirements of one of the following tables provided that he obtains prior approval of the ENGINEER and with the provision that once approval has been obtained, that the CONTRACTOR will remain with that grade throughout the project.

TABLE 02612-1

	AASHTO	ASTM	40	60	85	120	150	200
Specification	Test	Test	to	to	to	to	to	to
Designation	Method	Method	50	70	100	150	200	250
Flash Point (Open Cup Min.)	T48	D92		450	450	450	425	350
Penetration of Original Sample at 77 F	T49	D5	40 to 50	60 to 70	85 to 100	120 to 150	150 to 200	200 to 250
Thin-Film Oven Loss Hours at 325 F, % Max	T179	D1754	0.7 5	0.7 5	0.7 5	0.7 5	1.0 0	1.0 0
Test of Residue from Thin-Film Oven Test % or Orig. Pen., Min.	T49	D5	52	50	50	50	50	50
Ductility at 77 F, cm. after Loss at 325 F, Min.	T51	D113	50	50	100	100	100	100
Solubility in CC1 4 Min.	T44*	None	99. 5	99. 5	99. 5	99. 5	99. 5	99. 5
Reaction to Spot Test	T102**	None	-0-	-0-	-0-	-0-	-0-	-0-

* Procedure No. 1 with CC1 4 substituted for CS2.

** Using 85% Standard Naphtha Solvent and 15% xylene,

TABLE 02612-2

TYPE-GRADE	OA-30		OA-175*8		OA-400	
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
Penetration at 32 F, 200g., 60 sec.	15	--	--	--	--	--
Penetration at 77 F, 100g., 5 sec.	25	35	150	200	--	--
Penetration at 115 F, 50g., 5 sec.	--	65	--	--	--	--
Ductility at 77 F, 5 Original OA	2	--	70	--	--	--
Flash Point C.O.C., F	450	--	425	--	425	--
Softening Point, R. & B., F	185	--	95	130	--	--
Thin Film Oven Test, 1/8 in. Film 50g., 5 hrs., 325 F, % Loss by Wt.	--	0.4	--	1.4	--	2.0
Penetration of Residue, at 77 F, 100g., 5 sec. % of Original Pen	--	--	40	--	--	--
Ductility of Residue at 77 F, 5 cm/min., cms	--	--	--	100	--	--
Solubility in Trichloroethylene, %	99.0	---	99.0	---	99.0	---
Spot Test on Original OA	Neg.		Neg.		Neg.	
Float Test at 122 F, sec.	--	--	--	--	120	150
Test on 85 to 115 Pen. Residue* Residue by Wt., %	--	--	--	--	--	75
Ductility, 77 F, 5 cm/min.: Original Res., cms.	--	--	--	--	100	---
Subjected to Thin Film Test, cms	--	--	--	--	100	--

* Determined by Vacuum Distillation (by evaporation if unable to reduce by vacuum).

** For use with Latex Additive only

TABLE 02612-3

PROPERTIES	AC-1.5		AC-3		AC-5		AC-10		AC-20		AC-20	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
Viscosity, 140 F stokes...	150	50	300	100	500	100	1000	200	2000	400	4000	800
Viscosity, 275 F stokes.....	0.7	--	1.1	--	1.4	--	1.9	--	2.5	--	3.5	--
Penetration, 77 F 100 g, 5 sec	250	--	210	--	135	--	85	--	55	--	35	--
Flash Point, C.O.C., F...	425	--	425	--	425	--	450	--	450	--	450	--
Solubility in trichloroethylene percent.....	99.0	--	99.0	--	99.0	--	99.0	--	99.0	--	99.0	--
Test on residues from thin film oven test:												
Viscosity, 140 F stokes.....	--	450	--	900	1500	--	3000	--	6000	--	--	12000
Ductility, 77 F, 5 cms per min, cms	100	--	100	--	100	--	70	--	50	--	30	--
Spot Test. . . .	Negative for all grades											

- C. A minimum of two percent, by weight, latex additive (solid basis) shall be added to the OA-175 Asphalt or to AC-5 Asphalt when specified in the contract. The latex additive shall be governed by the following specifications:

The latex is to be an anionic emulsion of butadiene-styrene low-temperature copolymer in water, stabilized with fatty-acid soap so as to have good storage stability, and possessing the following properties:

- Monomer ration, B/S..... 70/30
- Minimum solids content 67%
- Solids content per gal. @ 67%..... 5.3 lbs.
- Coagulum on 80-mesh screen 0.01% max.
- Type Anti-oxidant staining
- Mooney viscosity of Polymer(M/L 4@212F) 100 min.

PH of Latex 9.4 - 10.5
 Surface tension 28 - 42 dynes/cm²

The finished latex-asphalt blend shall meet the following requirements:

Viscosity at 140 F, stokes..... 1500 max.
 Ductility at 39.2 F. 1 cm. per., cm..... 100 min.

D. Asphalt content shall be within the limits noted below:

HMAC Type	Percent of Mixture by Weight	Percent of Mixture by Volume
"A"	3.5 - 7.0	8.0 - 16.0
"B"	3.5 - 7.0	8.0 - 16.0
"C"	3.5 - 7.0	8.0 - 16.0
"D"	4.0 - 8.0	9.0 - 19.0
"F"	3.5 - 6.5	8.0 - 16.0

- E. At the time of delivery of each shipment of asphalt, the vendor supplying the material shall deliver to the purchaser certified copies of the test report which shall indicate the name of the vendor, type and grade of asphalt delivered, date and point of delivery, quantity delivered, delivery ticket number, and results of the above-specified tests. The test report shall be certified and signed by an authorized representative of the vendor that the product delivered conforms to the specifications for the type and grade indicated.
- F. Until the certified test reports and samples of the material have been checked by the ENGINEER to determine their conformity with the prescribed requirements, the material to which such report relates an any work in which it may have been incorporated as an integral component will be only tentatively accepted by the COUNTY. Final acceptance will be dependent upon the determination of the ENGINEER that the material involved fulfills the requirements prescribed therefor. The certified test reports and the testing required in connection with the reports will be at the expense to the COUNTY.
- G. Unless otherwise specified in these specifications or in the Supplementary Specifications, the various grades of paving asphalt shall be applied at a temperature range of from 210 F, the exact temperature to be determined by the ENGINEER.
- H. Paving asphalt shall be heated in such a manner that steam or hot oils will not be introduced directly into the paving asphalt during heating. The CONTRACTOR shall furnish and keep on the site, at all times, an accurate thermometer suitable for determining the temperature of the paving asphalt.
- I. HMAC asphalt shall be the grade having the highest penetration, within specified

limits, to produce a mix having a maximum stability of the compacted mixtures.

- J. Only one (1) grade of asphalt shall be required unless otherwise shown on the plans or as required by the ENGINEER.

2.02 AGGREGATES:

- A. HMAC aggregate will be tested in accordance with the following test:

AASHTO T-30	Mechanic Testing
AASHTO T-27	Passing No. 200 Sieve
AASHTO T-89	Liquid Limit
AASHTO T-96	Los Angeles Abrasion
AASHTO T-104	Soundness (Magnesium Sulfate)
ASTM C - 131	Resistance to Degradation
ASTM C - 136	Sieve Analysis
ASTM C -2419	Sand Equivalence Value
SDHPT Tex - 416 - E	Method of Calculating Plasticity Index of Solids
SDHPT Tex - 217 - F	(I & II) Determination of Deleterious Materials and Decantation Test
SDHPT Tex - 203 - F	Quality Test for Mineral Aggregates

- B. Aggregates shall have an abrasion of not more than 40 for all course except the non-skid surface course, which shall have an abrasion of not more than 35.
- C. When property proportioned, HMAC aggregate shall produce a gradation which will conform to the limitations for classification for HMAC type shown below, or as directed by the ENGINEER.
- D. Course aggregate to be crushed limestone rock or crushed gravel with hydrated lime or limestone filler. (Crushed gravel shall be per Highway Department Specifications.)
- E. Binder aggregate to be composed of 15% crushed limestone screening or as directed by the ENGINEER.

1. Type "A" - Course Graded Base Course

Percent Aggregate by

Weight or Volume

Passing 2" sieve	100
Passing 1-3/4" sieve	95 to 100
Passing 1-3/4" sieve, retained on 7/8" sieve.....	16 to 42
Passing 7/8" sieve, retained on 3/8" sieve.....	16 to 42
Passing 3/8" sieve, retained on No. 4 sieve	10 to 26
Passing No. 40 sieve, retained on No. 10 sieve	5 to 21
Total retained on No. 10 sieve.....	68 to 84
Passing No. 10 sieve, retained on No. 40 sieve	5 to 21
Passing No. 40 sieve, retained on No. 80 sieve	3 to 16
Passing No. 80 sieve, retained on No. 200 sieve	2 to 16
Passing No. 200 sieve	1 to 8

2. Type "B" - Fine Graded or Leveling-Up Course

Percent Aggregate by
Weight or Volume

Passing 1" sieve	100
Passing 7/8" sieve	95 to 100
Passing 7/8" sieve	21 to 53
Passing 3/8" sieve, retained on 3/8" sieve.....	11 to 42
Passing No. 4 sieve, retained on NO. 10 sieve	5 to 26
Total retained on No. 10 sieve.....	58 to 74
Passing No. 10 sieve, retained on No. 40 sieve	6 to 32
Passing No. 40 sieve, retained on NO. 80 sieve	4 to 21
Passing No. 80 sieve, retained on No. 200 sieve	3 to 21
Passing No. 200 sieve	1 to 8

3. Type "C" - Course Graded Surface Course

Percent Aggregate by
Weight or Volume

Passing 7/8" sieve.....	100
Passing 5/8" sieve, retained on 3/8" sieve	95 to 100
Passing 3/8" sieve, retained on No. 4 sieve.....	11 to 37
Passing No. 4 sieve, retained on No. 10 sieve	11 to 32
Total retained on No.10 sieve	54 to 74
Passing No. 10 sieve, retained on No. 40 sieve	6 to 32
Passing No. 40 sieve, retained on No. 80 sieve	4 to 27
Passing No. 80 sieve, retained on No. 200 sieve	3 to 27
Passing No. 200 sieve	1 to 8

4. Type "D" - Fine Graded Surface Course

Percent Aggregate by
Weight or Volume

Passing 1/2" sieve.....	to 100
Passing 3/8" sieve.....	85 to 100
Passing 3/8" sieve, retained on No. 4 sieve.....	21 to 53
Passing No. 4 sieve, retained on No. 10 sieve	11 to 32
Total retained on No. 10 sieve	54 to 74
Passing No. 10 sieve, retained on No. 40 sieve	6 to 32
Passing No. 40 sieve, retained on No. 80 sieve	4 to 27
Passing No. 80 sieve, retained on No. 200 sieve	3 to 27
Passing No. 200 sieve	1 to 8

5. Type "F" - Fine Graded Surface Course

Percent Aggregate by
Weight or Volume

Passing 3/8" sieve.....	100
Passing No. 4 sieve	95 to 100
Passing No. 4 sieve, retained on No.10 sieve	58 to 73
Passing No. 10 sieve, retained on No. 40 sieve	6 to 26
Passing No. 40 sieve, retained on No. 80 sieve	3 to 13
Passing No. 80 sieve, retained on No. 200 sieve	2 to 11
Passing No. 200 sieve	1 to 8

2.03 PRIME COAT:

- A. Prime coat, when specified on the plans, or as directed by the ENGINEER, shall be in accordance with Section 02610 - Prime Coat, and as specified herein.
- B. Prime coat shall be applied to surfaces of bases at least 12 hours prior to placing the HMAC unless otherwise directed by the ENGINEER.
- C. Asphalt prime shall be applied uniformly at the rate of 0.10 to 0.30 gallon per square yard or as directed by the ENGINEER. It shall be applied only when permitted by the ENGINEER and when the air temperature is not less than 40 F.
- D. In order to prevent lapping at the junction of two applications, the distributor shall be promptly shut off. A hand spray shall be used to touch up all spots unavoidably missed by the distributor.
- E. Immediately prior to application of the asphalt prime, an inspection will be made by the ENGINEER to verify that the base course has been constructed as specified. Also, all loose and foreign material shall be removed by light sweeping. Material so removed shall not be mixed with cover aggregate.

- F. The surface to be primed shall be in a smooth and well-compacted condition, true to grade and cross section, and free from ruts and inequalities.
- G. The pressure distributor used for applying prime coat material shall be equipped with pneumatic tires and shall be so designed and operated as to distribute the prime material in a uniform spray without atomization, in the amount and between the limits of temperature specified. It shall be equipped with a speed tachometer registering feet per minute and so located as to be visible to the truck driver to enable him to maintain the constant speed required for application at the specified rate.
- H. The pressure distributor shall be equipped with a tachometer registering the pump speed, pressure gauge, and a volume gauge. The rates of application shall not vary from the rates specified by the ENGINEER by more than 10%. Suitable means for accuracy indicating at all times the temperature of the prime material shall be provided. The thermometer well shall be so placed as not to be in contact with a heating tube.
- I. The distributor shall be so designed that the normal width of application shall not be less than 6 feet, with provisions for the application of lesser width when necessary. If provided with heating attachments, the distributor shall be so equipped and operated that the prime material shall be circulated or agitated through the entire heating process.
- J. The asphalt prime coat should preferably be entirely absorbed by the base course and, therefore, require no sand cover. If, however, it has not been completely absorbed prior to the start of placing the asphalt concrete mixture and in the meantime it is necessary to permit traffic thereon, just sufficient sand shall be spread over the surface to blot up the excess liquid asphalt and prevent picking it up under traffic. Also, sand shall be used in areas where traffic may pass over the prime coat. Prior to placing the asphalt concrete, loose or excess sand shall be swept from the base. If a sand cover is specified in the Supplementary Specifications or noted on the plans to cover asphalt prime, it shall be applied within 4 hours after the application of said prime coat, unless otherwise ordered by the ENGINEER.
- K. Liquid asphalt shall be prevented from spraying upon adjacent pavements, structures, guard rails, guide posts, culvert markers, trees, and shrubbery that are not to be removed; adjacent property and improvements; and other facilities or that portion of the traveled way being used by traffic.
- L. The CONTRACTOR shall protect the prime coat against all damage and markings, both from and other traffic. Barricades shall be placed where necessary to protect the prime coat. If, after prime coat has been applied to the satisfaction of the ENGINEER and has been accepted by him, it is damaged by negligence on the part of the CONTRACTOR, it shall be restored at his expense to its condition at the time of acceptance. No material shall be placed until the prime coat is in a condition satisfactory to the ENGINEER.

2.04 TACK COAT:

- A. If the asphalt concrete pavement is being constructed directly upon an existing hard-surfaces pavement, a tack coat shall be evenly and uniformly applied to such existing pavement preceding the placing of the asphalt concrete. The surface shall be free of water, all foreign material, or dust when the tack coat is applied. No greater area shall be treated in any one day than will be covered by the asphalt concrete during the same day. Traffic will not be permitted over tack coating.
- B. Tack coat for HMAC shall consist of either rapid curing cut-back asphalt RC-2 diluted by addition of (not to exceed 15 percent by volume) an approved grade of gasoline and/or kerosene; emulsified asphalt, EA-11M diluted with 50 percent water, or a cut-back asphalt made by combining 50 to 70 percent of the asphaltic materials specified for the paving mixture with 30 to 50 percent gasoline and/or kerosene by volume.
- C. Tack coat shall conform to the requirements of Section 02620 - Tack Coat, or as specified herein.
- D. Application rate shall be 0.10 to 0.15 gallons per square yard as directed by the ENGINEER.
- E. A similar tack coat shall be applied to the surface of any course if, in the opinion of the ENGINEER, the surface is such that a satisfactory bond cannot be obtained between it and the succeeding course.
- F. When required, the contact surfaces of all cold pavement joints, curbs, gutters, manholes, and the like shall be painted with a tack coat immediately before the adjoining asphalt concrete is placed. Asphalt tack coat shall be applied in controlled amounts as shown on the plans or determined by the ENGINEER. Surfaces where a tack coat is required shall be cleaned to the satisfaction of the ENGINEER before the tack coat is applied.

2.05 MINERAL FILLER:

- A. Mineral filler, other than hydrated lime, shall consist of a thoroughly dry stone dust, portland cement or other mineral dust approved by the ENGINEER.
- B. The mineral filler shall be free from foreign or other deleterious matter.
- C. When tested by the method outlines in SDHPT Test Method Tex-200-F (Part 1 or 3), mineral filler shall meet the following gradations by weight:

Passing No. 30 Sieve	95 to 100%
Passing No. 80 Sieve	75%
Passing No. 200 Sieve	55%

2.06 Anti-Stripping compound, as required in the job mix formula, shall be furnished in the amounts calculated therein.

2.07 JOB MIX FORMULA:

- A. A job mix formula based on representative samples, including filler if required, shall be determined by the ENGINEER, or submitted by the CONTRACTOR for approval of the ENGINEER.
- B. The resultant job mix formula shall be within the master range for the specified type of HMAC.
- C. The job mix formula for each mixture shall be established a single percentage of aggregate passing each required sieve size, and a single percentage of bituminous material to be added to the aggregate and shall provide for 3 to 5% air voids in the resultant design mix. During the mix design process the ENGINEER will consider other factors, in addition to air voids and Marshall stability, such as durability, water resistance and asphalt film thickness when developing the mix design.
- D. After the job mix formula is established, mixtures for the project shall conform thereto within the following tolerances which may fall outside of the specified master range:

Passing 1-3/4" sieve, retained on 7/8" sieve	Plus or minus 5
Passing 7/8" sieve, retained on 3/8" sieve	Plus or minus 5
Passing 5/8" sieve, retained on 3/8" sieve	Plus or minus 5
Passing 3/8" sieve, retained on No. 4 sieve	Plus or minus 5
Passing No. 4 sieve, retained on No. 10 sieve	Plus or minus 5
Total retained on No. 10 sieve	Plus or minus 5
Passing No. 10 sieve, retained on No. 40 sieve	Plus or minus 3
Passing No. 40 sieve, retained on No. 80 sieve	Plus or minus 3
Passing No. 80 sieve, retained on No. 200 sieve	Plus or minus 3
Passing No. 200 sieve	Plus or minus 3

Asphaltic Material..... Plus or minus 0.05 by weight or 1.2 by volume

Mixing Temperature Plus or minus 20 F

- E. Asphaltic mixture shall be tested in accordance with SDHPT Test Method Tex-200-4 (Part I or Part III) and shall have the following laboratory values:

	<u>Surface Course</u>	<u>Base Course</u>
Density - Minimum	95%	95%
Maximum	99%	99%
Optimum	97%	97%

Stability - (Hveem)		
Minimum	30%	30%
Maximum	45%	45%
Stability (Marshall - 75 Blow Briquette)	1500 lbs.	1500 - lbs.
Voids	3 - 7%	4 - 7%
Voids Filled With Asphalt	75 - 85%	65 - 80%
Sand Equivalent	40	40

2.08 EQUIPMENT:

- A. All equipment for the handling of all material, mixing, and placing of HMAC shall be in accordance with the provisions of Texas SDHPT Item 340.

2.09 STOCKPILING, STORAGE, PROPORTIONING AND MIXING:

- A. Stockpiling, storage proportioning and mixing operations shall be in accordance with the Provisions of Texas SDHPT Item 340.

PART 3 - EXECUTION

3.01 WEATHER AND TEMPERATURE LIMITATIONS:

- A. Asphaltic mixture, when placed with a spreading and finishing machine, or the tack coat shall not be placed when the air temperature is 50 F and falling, but may be placed when the air temperature is 40 F and rising.
- B. Asphaltic mixture, when placed with a motor grader, shall not be placed when the air temperature is 60 F and falling, but may be placed when the air temperature is 50 F and rising.
- C. Mat thicknesses of 1 > inches or less shall not be placed when the temperature on which the mat is to be laid is below 50 F.
- D. No tack coat or asphaltic mixture shall be placed when the humidity, general weather conditions and temperature and moisture condition of the base, in the opinion of the ENGINEER, are unsuitable.
- E. If, after being discharged from the mixer and prior to placing, the temperature of the asphaltic mixture is 50 F or more below the temperature established by the ENGINEER, all or any part of the load may be rejected and payment will not be made for the rejected material.

3.02 EQUIPMENT

A. Hauling Equipment:

1. Trucks used for hauling asphaltic mixtures shall have tight, clean, smooth metal beds which have been thinly coated with a minimal amount of paraffin oil, lime slurry, lime solution or other approved material to prevent mixture adhesion to the bed.
2. The dispatching of hauling equipment shall be arranged so that all material delivered may be placed and all rolling completed during daylight hours, unless otherwise directed by the ENGINEER.
3. All trucks shall be equipped with a cover of canvas, or other suitable material to protect the mixture from weather or on hauls where the temperature of the mixture will fall below specified level. Use of covers will be as directed by the ENGINEER.

B. Rollers:

1. Pneumatic Tire Roller. This roller shall consist of not less than seven pneumatic tire wheels, running on axles in such manner that the rear group of tires shall cover the entire gap between adjacent tires of the forward group; mounted in a rigid frame; and provided with a loading platform or body suitable for ballast loading. The front axle shall be attached to the frame in such manner that the roller may be turned within a minimum circle. The tire shall afford surface contact pressures up to 90 pounds per square inch or more. The roller shall be so constructed as to operate in both a forward and a reverse direction with suitable provisions for moistening the surface of the tires while suitable provisions for moistening the surface of the tires while operating; and shall be approved by the ENGINEER.
2. Two Axle Tandem Roller. This roller shall be acceptable power-driven, steel-wheel, tandem roller weighing not less than eight tons. It must operate in forward and reverse directions; contain provision for moistening the surface of the wheels while in motion; and shall be approved by the ENGINEER.
3. Three Wheel Roller. This roller shall be an acceptable power-driven, all steel three wheel roller weighing not less than 10 tons. It must operate in forward and reverse directions; contain provisions for moistening the surface of the wheel while in motion; and shall be approved by the ENGINEER.
4. Vibratory Steel Wheel Roller. If approved for use by the OWNER, this roller shall have a minimum weight of six tons. The compactor shall be equipped with amplitude and frequency controls and shall be specifically designed to compact the material on which it is used. It shall be operated in accordance with the manufacturer's recommendations.

C. Straight Edges:

1. The CONTRACTOR shall provide an acceptable 16-foot straight-edges for surface testing. Satisfactory templates shall be provided as required by the ENGINEER.

D. Spreading and Finishing Machine:

1. Bituminous pavers shall be self-contained, power-propelled units, provided with an activated screed or a strike-off assembly, heated if necessary, and capable of spreading and finishing courses of bituminous plant mix material in lane widths applicable to the specified typical section and thickness shown on the plans.
2. The paver shall be equipped with a receiving hopper having sufficient capacity for a uniform spreading operation. The hopper shall be equipped with a distribution system to place the mixture uniformly in front of the screed. Design will be such that no part of the truck weight will be supported by the paver.
3. The screed or strike-off assembly shall effectively produce a finished surface of the required evenness and texture without tearing, shoving or gouging the mixture. When laying mixtures, the paver shall be capable of being operated at forward speeds consistent with satisfactory laying of the mixture. The screed shall be adjustable for both height and crown and shall be equipped with a controlled heating device.
4. The bituminous paver shall be equipped with an automatic leveling device controlled from an external guide. The initial pass for each course shall be made using a paver equipped with a 40-foot minimum external reference, except that this requirements will not apply when asphalt concrete is placed adjacent to portland cement concrete pavement. Subsequent passes may utilize the matching device of one foot minimum length riding on the adjacent lay.

3.03 CONSTRUCTION METHODS:

A. Spreading and Finishing:

1. The asphalt concrete mixture shall be laid on the approved surface, spread and struck off to the grade and elevation established. It shall be spread and compacted in layers as shown on the plans or as directed by the ENGINEER. Bituminous pavers shall be used to distribute the mixture either over the entire width or over such partial width as may be practicable.
2. The ENGINEER will determine a minimum placement temperature, which is measured immediately behind the laydown machine, shall not vary more than 20 F.
3. A conventional paver or suitable equipment approved by the ENGINEER may be used to place asphalt concrete material on shoulders depressed from the traveled lanes in order to establish a uniform typical section. Approval of the equipment used will be based upon the results obtained.
4. The asphalt concrete may be dumped from the hauling vehicles directly into the paving machine or it may be dumped upon the surface being paved and subsequently loaded into the paving machine; however, no asphaltic concrete shall be dumped from the hauling vehicles at a distance greater than 250 feet in

front of the paving machine. When asphaltic concrete is dumped first upon the surface being paved, the loading equipment shall be self-supporting and shall not exert any vertical load on the paving machine. Substantially all of the asphaltic concrete dumped shall be picked up and loaded into the paving machine.

5. To achieve, as far as practicable, a continuous operation, the speed of the paving machine shall be coordinated with the production of the plant. Sufficient hauling equipment shall be available to insure continuous operation.
6. The control system shall control the elevation of the screed at each end by controlling the elevation of one end directly and the other indirectly either through controlling the transverse slope or alternately when directed, by controlling the elevation of each end independently, including any screed attachment used for widening, etc. Failure of the control system to function properly shall be cause for the suspension of the asphaltic concrete operations.
7. When dumping directly into the paving machine from trucks, care shall be taken to avoid jarring the machine or moving it out of alignment.
8. All courses of asphaltic concrete shall be placed and finished by means of self-propelled paving machines except under certain conditions or at certain locations where the ENGINEER deems the use of self-propelled paving machines impracticable.
9. Self-propelled paving machines shall spread the asphaltic concrete without segregation or tearing within the specified tolerances, true to the line, grade, and crown indicated on the plans. Pavers shall be equipped with hoppers and augers which will place the asphaltic concrete evenly in front of adjustable screeds without segregation. Screeds shall include any strike-off device operated by tamping or vibrating action which is effective without tearing, shoving or gouging the asphaltic concrete and which produces a finished surface of an even and uniform texture for the full width being paved. Screeds shall be adjustable as to height and crown and shall be equipped with a controlled heating device for use when required.
10. On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impracticable, the mixture shall be spread, raked, fluted and compacted with hand tools. For such areas the mixture shall be dumped, spread and screed to give the required compacted thickness.

B. Compaction:

1. Rolling with the 3-wheel and tandem roller shall start longitudinally at the sides and proceed toward the center of the surface course, overlapping on successive trips by at least half the width of the rear wheels.
2. Alternate trips of the roller shall be slightly different in length.
3. Rolling with a pneumatic tired roller shall be as directed by the ENGINEER.
4. Rolling shall continue with no further compression can be obtained and all roller marks are eliminated
5. The motion of the roller shall be slow enough at all times to avoid displacement of asphaltic materials. If displacement occurs, it shall be

corrected immediately by use of rakes and fresh asphaltic mixtures, where required.

6. The roller shall not be allowed to stand on the surface course when it has not been fully compacted and allowed to cool.
7. To prevent adhesion of the surface course to the roller, the wheels shall be kept thoroughly moistened with water; however, excess water shall not be allowed.
8. All precautions shall be taken to prevent dripping of gasoline, oil, grease, or other foreign substances on the surface or base courses during rolling operations or while rollers are standing.
9. With the approval of the ENGINEER, a vibratory steel wheeled roller may be substituted for the 3-wheel roller and tandem roller.
10. Along forms, curbs, headers, walls and other places not accessible to the rollers, the mixture shall be thoroughly compacted with hot hand tampers, smoothing irons, or with mechanical tampers. On depressed areas, a trench roller may be used or cleated compression strips may be used under the roller to transmit compression to the depressed area.
11. Any mixture that becomes loose, broken, mixed with dirt, segregated, or is in any way defective shall be removed and replaced with fresh hot bituminous mixture, which shall be compacted to conform with the surrounding area. Any area showing excess or deficiency of bituminous material shall be corrected immediately as directed by the ENGINEER.

C. In-Place Density:

1. In-place density shall be required for all mixtures except thin irregular depth leveling courses.
2. Each course, after final compaction, shall have a density of not less than 95 percent of the density developed in the laboratory test method outlines in Texas SDHPT Bulletin C-14.
3. Density shall be determined with a portable nuclear test device in conformity with ASTM D-2950.76.
4. Calibration of the portable nuclear device will be established by the ENGINEER from cut pavement samples tested in accordance with AASHTO T-166 (weight, volume method). The density readings of the cut pavement samples determined in accordance with AASHTO T-166 (weight, volume method), and the density readings of the pavement samples determined by the portable nuclear test device in conformity with ASTM D 2950 will be correlated by the ENGINEER.
5. Other methods of determining in-place density may be used as deemed necessary by the ENGINEER.
6. It is intended that acceptance density testing will be done while the bituminous mixture is hot enough to permit further compaction if necessary. If the density of an acceptance section does not meet the specified requirements, the CONTRACTOR shall continue the compaction effort until the optimum density is obtained, but rolling for any compactive effort will not be allowed when the temperature of the mix is below 175 F unless authorized in writing by the ENGINEER. Rerolling the paved surface after it has initially cooled will not be allowed.

7. If in-place density tests of the mixture produce a value lower than specified and in the opinion of the ENGINEER is not due to a change in the quality of the material, production may proceed with subsequent changes in the mix and/or construction procedures until in-place density equals or exceeds the specified density.
8. In-place density tests will be provided by the ENGINEER unless otherwise specified.

D. Joints:

1. Placing of the asphalt concrete shall be as continuous as possible. Rollers shall not pass over the unprotected end of a freshly laid mixture unless authorized by the ENGINEER.
2. When plant mix bituminous pavement is placed over plant mix bituminous treated base or when plant mixed seal coat is placed over plant mix bituminous pavement, longitudinal joints shall be staggered at least 6 inches with relation to the longitudinal joints of the underlying course.
3. Transverse joints shall have two foot or 12:1 minimum taper. Longitudinal joints shall have a one foot or 6:1 minimum taper. All transverse tapers shall be cut and squared off prior to commencing new work. Tapered longitudinal joints from previous operations shall be cleaned and tack coated if directed by the ENGINEER. All joints shall be completely bonded. The surface of each course at all joints shall be smooth and shall not show any deviations in excess of 3/16 of an inch when tested with a 10-foot straightedge in any direction.
4. When paving under traffic the CONTRACTOR shall plan his daily surfacing operations on a schedule which will result in not more than one (1) day's operation of exposed longitudinal joints. The longitudinal joints shall not have a height greater than two (2) inches and shall not be left exposed longer than 24 hours.

E. Surface Tolerance:

1. Upon completion, the pavement shall be true to grade and cross section. Except at intersections or any changes of grade, when a 16 foot straight edge is laid on the finished surface parallel to the centerline of the roadway, the surface shall not vary from the edge of the straight edge more than 1/16-inch per foot. Areas that are not within this tolerance shall be brought to grade immediately following the initial rolling. After the completion of final rolling, the smoothness of the course shall be checked, and the irregularities that exceed the specified tolerances or that retain water on the surface shall be corrected by removing the defective work and replacing with new material as directed by the ENGINEER at the expense of the CONTRACTOR.

F. Manholes and Valve Covers:

1. Manhole frames and valve covers shall be adjusted prior to placing the surface course.

G. Compacted Thickness of HMAC surface and Base Courses:

1. Surface Courses. The compacted thickness or depth of the asphaltic concrete surface course shall be as shown on the plans. Where the plans require a depth or thickness of the surface course greater than two inches compacted depth, same shall be placed in multiple courses of equal depth, each of which shall not exceed two inches compacted depth. If, in the opinion of the ENGINEER, an additional tack coat is considered necessary between any of the multiple courses, it shall be applied at the rate as directed.
2. Base Courses. The compacted thickness or depth of each base course shall be as shown on the plans. Where the plans require a depth or thickness of the course greater than 4 inches, same shall be accomplished by constructing multiple lifts of approximately equal depth, each of which shall not exceed these maximum compacted depths. If, in the opinion of the ENGINEER, an additional tack coat is considered necessary between any of the multiple lifts, it shall be applied as herein before specified and at the rate as directed.

H. Pavement Thickness Tests:

1. Pavement Thickness Test. Upon completion of the work and before final acceptance and final payment shall be made, pavement thickness test shall be made by the ENGINEER or his authorized representative unless otherwise specified in the special provisions or in the plans. The number and location of tests shall be at the discretion of the OWNER. The cost for the initial pavement thickness test shall be at the expense of the ENGINEER. In the event a deficiency in the thickness of pavement is revealed during normal testing operations, subsequent tests necessary to isolate the deficiency shall be at the CONTRACTOR's expense. The cost for the additional coring test shall be at the same rate charged by commercial laboratories.

I. Price Adjustment for Roadway Density:

1. The pavement of the unit price will be adjusted for roadway density as outlined in the following table. The adjustment will be applied on a lot by lot basis for each lift. The adjustment will be based on the average of five density tests. The price adjustment will be applied to the entire asphalt concrete mix which includes the HMAC aggregate, the asphalt cement and anti-stripping compound, is used.

<u>Average Density</u> <u>% of Lab Density</u>	<u>Percent of Contract</u> <u>Price To Be Paid</u>
Above 95%	100%
94.0 to 94.99	96%
93.0 to 93.99	91%

92.0 to 92.99

85%

Less than 92.0

*

* This lot shall be removed and replaced to meet specification requirements as ordered by the ENGINEER. In lieu thereof, the CONTRACTOR and the ENGINEER may agree in writing that for practical purposes, the lot shall not be removed and will be paid for at 50% of the contract price.

PART 4 - MEASUREMENT AND PAYMENT

4.01 INCIDENTAL WORK:

- A. Prime coat, anti-stripping compound, where used and tack coat shall not be measured for direct payment, but shall be considered as subsidiary work pertaining to the placing of asphaltic mixtures of the contract price.

4.02 MEASUREMENT:

- A. Hot-mix asphalt concrete material shall be measured by the ton of 2,000 pounds or by the square yard of the type or types used in the completed and accepted work.
- B. Weight shall be determined by a certified scale approved by the OWNER and recorded serially numbered weight tickets, identifying the vehicle and presented to the ENGINEER's representative on the job.

4.03 PAYMENT:

- A. Work performed and materials furnished, as prescribed by this item, measured as provided herein, shall be paid at the unit bid price per ton or square yard for the type or types of hot mix asphalt concrete pavement shown on the proposal.
- B. Unit bid price shall be payment in full for quarrying; furnishing all materials; for all heating; mixing; hauling; cleaning existing base course or pavement; placing asphaltic mixtures; rolling and finishing; and for all labor, tools, equipment and incidentals necessary to complete the work, including the work and materials involved in the application of prime coat and tack coat.

***** END OF SECTION *****

SECTION 02780

FLAT WHEEL ROLLING

PART 1- GENERAL

1.01 GENERAL DESCRIPTION OF WORK:

- A. This work shall consist of the compaction of subgrade, embankment, flexible base, surface treatments and asphalt surfaces by the operation of approved power roller as herein specified and as directed by the ENGINEER.

PART 2 - PRODUCTS

2.01 EQUIPMENT:

A. Embankments and Flexible Bases

- 1. Power rollers shall be of the 3-wheel, self-propelled type, weighing not less than 10 tons and shall provide a compression on the rear wheels of not less than 325 pounds per linear of wheel width. All wheels shall be flat.
- 2. The rear wheels shall have a diameter of not less than 48 inches and each shall have a wheel width of not less than 20 inches.

B. Surface Treatments and Pavements

- 1. Power rollers shall be the 3-wheel or tandem, self-propelled type, weighing not less than 3 tons nor more than 6 tons. All wheels shall be flat.
- 2. Rollers shall be equipped with an adequate scraping or cleaning device on each wheel.
- 3. Rollers used to compact asphalt mixture shall be equipped with a water system which will keep all tires uniformly wet.
- 4. In lieu of the rolling equipment specified, the CONTRACTOR may, upon written permission from the ENGINEER, operate other compacting in the same period of time as the specified equipment. If the substituted compaction within the same period of time as would be expected of the specified equipment, as determined by the ENGINEER, its use shall be discontinued.
- 5. Rollers shall be maintained in good repair and operating condition and shall be approved by the ENGINEER.

PART 3 - EXECUTION

3.01 CONSTRUCTION METHODS:

A. Subgrades, Embankments and Flexible Base

1. The subgrade or embankment layer or the base course shall be sprinkled if directed and rolling with a power roller shall start longitudinally at the sides and proceed towards the center, overlapping on successive trips by at least 1/2 the width of the rear wheel of the power roller.
2. On super-elevated curves, rolling shall begin at the low sides and progress toward the high sides. Alternate trips of the roller shall be slightly different in length.
3. The rollers, unless otherwise directed, shall be operated at a speed between 2 and 3 miles per hour.

B. Surface Treatments and Pavements

1. Rolling shall be done to produce a satisfactory surface as called for in surface treatment and pavement items.
2. The sequence of work shall be as indicated for embankment layer or base course.
3. The operating speed shall be determined by the CONTRACTOR.

PART 4 - MEASUREMENT AND PAYMENT

4.01 MEASUREMENT AND PAYMENT:

- A. No additional compensation will be made for materials, equipment or labor required by this item, but shall be considered incidental to the other items included in the contract.

***** END OF SECTION *****

SECTION 02782

PNEUMATIC TIRE ROLLING

PART 1 - GENERAL

1.01 GENERAL DESCRIPTION OF WORK:

- A. This work shall consist of the compaction of embankment, flexible base, surface treatments or pavements by the operation of approved pneumatic tire rollers.

PART 2 - PRODUCTS

2.01 GENERAL REQUIREMENTS:

- A. When used on seal coats, asphaltic surface treatments and bituminous mixture pavements, the roller shall be self propelled and equipped with smooth tread tires with 45 psi tire pressure.
- B. The roller shall be so constructed as to be capable of being operated in both a forward and a reverse direction.
- C. When used on bituminous mixture pavements, the roller shall have suitable provision for moistening the surface of the tires while operating.
- D. When turning is impractical or detrimental to the work and when specifically directed by the ENGINEER, the roller shall be of the self-propelled type.
- E. In lieu of the rolling equipment specified, the CONTRACTOR may operate other compacting equipment that will produce equivalent relative compaction in the same period of time as the specified equipment. If the substituted compaction equipment fails to produce the desired compaction within the same period of time, its use shall be discontinued.
- F. Rollers shall be maintained in good repair and operating condition and shall be approved by the ENGINEER.

2.02 LIGHT PNEUMATIC TIRE ROLLER:

- A. The light pneumatic tire roller shall consist of not less than 9 pneumatic tire wheels, running on axles in such manner that the rear group of tires will cover the entire gap between adjacent tires of the forward group and mounted in a rigid frame and provided with a loading platform or body suitable for ballast loading.
- B. The front axle shall be attached to the frame in such manner that the roller may be turned within a minimum circle.

- C. The pneumatic tire roller under working conditions shall have an effective rolling width of approximately 60 inches and shall be so designed that by ballast loading the total load be varied uniformly from 9,000 pounds or less to 18,000 pounds or more.
- D. The roller shall be equipped with tires that will afford ground contact pressures to 45 pounds per square inch or more. The operating load and tire air pressure shall be within the range of the manufacturer's chart. The roller under working conditions shall provide a uniform compression under all wheels.
- E. Individual tire inflation pressures shall be within +5 psi of each other.
- F. The pneumatic tire roller shall be drawn by either a suitable crawler type tractor, a pneumatic tired tractor, a truck of adequate tractive effort or may be of the self-propelled type and the roller, when drawn or propelled by either type of equipment, shall be considered a light pneumatic tire roller unit.

2.03 MEDIUM PNEUMATIC TIRE ROLLER (TYPE A):

- A. The medium pneumatic tire roller (Type A) shall consist of not less than 7 pneumatic tired wheels, running on axles in such manner that the rear group of tires will cover the entire gap between adjacent tires of the forward group and mounted in a rigid frame and provided with a loading platform or body suitable for ballast loading.
- B. The front axles shall be attached to the frame in such a manner that the roller may be turned within a minimum circle. The pneumatic tire roller, under working conditions, shall have an effective rolling width of approximately 84 inches and shall be so designed that, by ballast loading, the total load may be varied uniformly from 23,500 pounds or less to 50,000 pounds or more.
- C. The roller shall be equipped with tires that will afford ground contact pressures to 80 pounds per square inch or more. Individual tire inflation pressures shall be within +5 psi of each other.
- D. The operating load and tire air pressure shall be within the range of the manufacturer's chart.
- E. The pneumatic tire roller shall be drawn by either a suitable crawler type tractor, a pneumatic tired tractor, a truck of adequate tractive effort or may be of the self-propelled type.
- F. The roller, when drawn or propelled by any type of equipment, shall be considered a medium pneumatic tire roller unit.
- G. The power unit shall have adequate tractive effort to properly move the operating roller at variable uniform speeds up to approximately 5 miles per hour.

2.04 MEDIUM PNEUMATIC TIRE ROLLER (Type B):

- A. The medium pneumatic tire roller (Type B) shall conform to the requirements for Medium Pneumatic Tire Roller (Type A) as specified above, except that the roller shall be equipped with tires that will afford ground contact pressures to 90 psi or more.

PART 3 -EXECUTION

3.01 CONSTRUCTION METHODS:

- A. The embankment layer or the base course be sprinkled if directed and rolling with a pneumatic tire roller shall start longitudinally at the sides and proceed towards the center, overlapping on successive trips by at least 1/2 of width of the pneumatic tire roller.
- B. On super-elevated curves, rolling shall begin at the low sides and progress towards the high sides.
- C. Alternative trips of the roller shall be slightly different in length.
- D. The light pneumatic tire roller shall be operated at speeds between 2 and 6 miles per hour for asphalt surfacing work and all other work.
- E. The medium pneumatic tire roller shall be operated at speeds which produce a satisfactory product.
- F. Sufficient rollers shall be provided to compact the material in a satisfactory manner. When operations are so isolated from one another that 1 roller unit cannot perform the required compaction satisfactorily, additional roller units shall be provided.

PART 4 - MEASUREMENT AND PAYMENT

4.01 MEASUREMENT AND PAYMENT:

- A. No additional compensation will be made for materials, equipment or labor required by this item, but shall be considered subsidiary to the various items of the contract.

*** * * END OF SECTION * * ***

SECTION 02784

TAMPING ROLLING

PART 1 - GENERAL

1.01 GENERAL DESCRIPTION OF WORK:

- A. This work shall consist of the compaction of embankment by the operation of approved tamping rollers as herein specified and as directed by the ENGINEER.

PART 2 - PRODUCTS

2.01 EQUIPMENT:

- A. The tamping rollers shall consist of two metal rollers, drums or shells of 40 inches minimum diameter; each not less than 42 inches in length and unit mounted in a rigid frame in such a manner that each roller may oscillate independently of the other.
- B. Each roller, drum or shell be surmounted by metal studs with tamping feet projecting not less than 7 inches from the surface and spaced not less than 6 inches nor more than 10 inches, measured diagonally center to center and the cross sectional area of each tamping foot, measured perpendicularly to the axis of the stud, shall not be less than 5 nor 8 square inches.
- C. The roller shall be supplemented with cleaning teeth to provide self cleaning.
- D. The roller shall be so designed that, by ballast loading, the load on each tamping foot may be varied uniformly from 125 to 175 psi of cross sectional area. The load per tamping foot will be determined by dividing the total weight of the roller by the number of tamping feet in 1 row parallel to or approximately parallel to the axis of the roller.
- E. The compression to be provided at any time shall be as directed by the ENGINEER. The tamping roller shall be drawn by suitable power equipment of adequate tractive effort.
- F. Two tamping roller, consisting of 4 cylinders, conforming to the above prescribed requirements, drawn by approved power equipment, shall be considered a roller unit.
- G. Where turning is impractical or detrimental to the work and when specifically directed by the ENGINEER, 1 tamping roller consisting of 2 cylinders fastened to the front end of approved power equipment, shall be considered a roller unit.

- H. In lieu of the rolling equipment specified, the CONTRACTOR may, upon written permission from the ENGINEER, operate other compacting equipment that will produce equivalent relative compaction in the same period of time as the specified equipment. If the substituted compaction equipment fails to produce the desired compaction within the same period of time as would be expected of the specified equipment, as determined by the ENGINEER, its use shall be discontinued.
- I. Rollers shall be maintained in good repair and operating condition and shall be approved by the ENGINEER.

PART 3 - EXECUTION

3.01 CONSTRUCTION METHODS:

- A. This work shall be done only when ordered by the ENGINEER.
- B. The embankment layer or the base courses shall be sprinkled if directed and rolling with a tamping roller unit shall start longitudinally at the sides and proceed toward the center, overlapping on successive trips by at least 1/2 of the width of the tamping roller unit.
- C. On super-elevated curves, rolling shall begin at the low sides and progress toward the high sides. Alternate trips of the unit shall be slightly different in length.
- D. The tamping roller unit, unless otherwise directed, shall be operated at a speed between 2 and 3 miles per hour.
- E. Sufficient roller shall be provided to compact the material in a satisfactory manner.
- F. The minimum number of rolling units shall be governed by the progress in placing the material to be compacted. The quantity of material placed per hour shall be determined by averaging the total quantity of material placed within any 1 working day.
- G. When operations are so isolated from one another that one roller cannot perform the required compaction satisfactorily, additional roller shall be provided and operated as directed by the ENGINEER.

PART 4 - MEASUREMENT AND PAYMENT

4.01 MEASUREMENT AND PAYMENT:

- A. No additional payment will be made for the materials, equipment or labor required by this item, but shall be considered subsidiary to the various items included in the contract.

***** END OF SECTION *****

SECTION 03300

CAST-IN-PLACE-CONCRETE

PART 1 - GENERAL

1.01 GENERAL DESCRIPTION OF WORK COVERED:

- A. Mixing, placing, finishing and providing all related services necessary to construct all cast-in-place concrete work indicated on plans.

1.02 QUALITY ASSURANCE:

- A. Comply with the latest published edition of the American Concrete Institute (ACI) and American Society of Testing and Materials (ASTM) standards and codes:
 - 1. ACI 315 - Manual of Standard Practice for Detailing.
 - 2. ACI 318 - Building Code Requirements for Reinforced Concrete.
 - 3. ACI 347 - Recommended Practice for Concrete Formwork.
 - 4. ASTM A36 - Structural Steel.
 - 5. ASTM C33 - Concrete Aggregates.
 - 6. ASTM C39 - Concrete Strength of Molded Concrete Cylinders.
 - 7. ASTM C94 - Ready-Mixed Concrete.
 - 8. ASTM C143 - Slump of Portland Cement Concrete.
 - 9. ASTM C150 - Portland Cement.
 - 10. ASTM C309 - Liquid Membrane-Forming Compounds for Curing Concrete.
 - 11. ACI 304 - Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
 - 12. ACI 301 - Specification for Structural Concrete for Building.
- B. Submit compliance submittals as specified in Division 1, including but not limited to the following: bar schedule, bar details, shop drawings including size and location of openings, water stops, joint systems and curing method.
- C. Submit proposed concrete mix proportions to ENGINEER prior to placing concrete.

PART 2 - PRODUCTS

2.01 PORTLAND CEMENT:

- A. Type I, Type II or Type III conforming to ASTM C150 as modified by Texas Department of Highways and Public Transportation, 1982 Standard Specifications.
- B. Type I or Type II cement may be used unless Type II is specified.
- C. Except when Type II specified, Type III may be used when the anticipated air temperature for the succeeding 12 hours will not exceed 60°F.

- D. Type III may be used in all precast pre-stressed concrete except in piling when Type II cement is required for substructure concrete.
- E. All cement used in a monolithic placement shall be of the same type.
- F. May be either bagged or bulk. Partially set or caked cement will be rejected.
- G. All types of cements shall be "low-alkali" cements.

2.02 WATER:

- A. Clear, fresh, free from injurious amounts of oil, alkaline, acid or organic matter or other deleterious substances and shall not contain more than 1000 parts per million of chlorides as CL nor more than 1000 parts per million of sulfates as SO₄.
- B. The sand, or mixture of sand, comprising a single fine aggregate, shall consist of clean, hard, durable, un-coated grains and shall be essentially free from clay lumps, salt or alkali, and other foreign material.
- C. The maximum permissible percentage, by weight, of deleterious substances shall not exceed the following:

Material removed by decantation	3.0%
Other deleterious substances such as coal, shale, coated grains and soft flaky particles	3.0%

An additional loss of 2% by decantation may be allowed, provided this new additional loss is material of the same quality as specified for fine aggregate or mineral filler.

- D. Gradation, percent of weight retained:

<u>Sieve Size</u>	<u>% Retained</u>
3/8 inch	0
No. 4	0 - 5
No. 8	0 - 20
No. 16	0 - 50
No. 30	0 - 75
No. 50	0 - 90
No. 100	0 - 100
No. 200	0 - 100

- E. Fineness Modulus: for Grade 1 only - 2.3 minimum, 3.1 maximum.
- F. Miner Filler:
 - 1. May be added upon written authorization of ENGINEER.
 - 2. Shall be stone dust or clean crushed sand, or other approved inert material.
 - 3. Shall not exceed 5% of the fine aggregate.
 - 4. Shall meet the following requirements:

Passing No. 30 sieve	95 to 100%
Passing No. 100 sieve	70 to 100%

2.04 COARSE AGGREGATE:

- A. Crushed stone, gravel, crushed gravel, crushed blast furnace slag or a combination of these.
- B. Gravel and crushed gravel shall consist of clean, hard durable particles, free from adherent coating, thin or elongated pieces, soft or disintegrated particles, dirt, organic or deleterious substances, salt or alkali, and other foreign material.
- C. Crushed stone shall consist of the clean, dust free product resulting from crushing of stone. There shall be no adherent coatings, clay, loam organic or deleterious substance, salt or alkali, and other foreign material.
- D. The maximum permissible percentage, by weight, of deleterious substances shall not exceed the following:

Material removed by decantation	1.0%
Shale, slate or other similar material	1.0%
Clay lumps	0.25%
Soft fragments	3.0%
Other deleterious substances, including friable, thin, elongated or laminated pieces	3.0%

- E. Course aggregates shall have a percent wear of not more than 45 when tested in accordance with Test Method Tex-410-A.
- F. Gradation, percent of weight retained on:

<u>Grade No. 1 - Maximum Nominal Size 2 1/2 in. (63 MM)</u>	
<u>Sieve</u>	<u>Percentage Retained</u>
2 1/2 in.	0%
2 in.	0 - 20%
1 1/2 in.	15 - 50%
3/4 in.	60 - 80%
No. 4	95 - 100%
<u>Grade No. 2 - Maximum Nominal Size 1 1/2 in. (37.5 mm)</u>	

<u>Sieve</u>	<u>Percentage Retained</u>
2 in.	0%
1 1/2 in.	0 - 5%
3/4 in.	30 - 65%
3/8 in.	7 - 90%
No. 4	95 - 100%

Grade No. 4 - Maximum Nominal Size 3/8 in. (9.5mm)

<u>Sieve</u>	<u>Percentage Retained</u>
1/2 in.	0 - 5%
3/8	5 - 30%
No. 4	75 - 100%

- G. Gradation Requirements - maximum size of aggregate for structural concrete shall not exceed three inches, and shall be reduced in size to meet the following conditions:
1. One-sixth of the least dimension between forms of that part of the structure in which concrete is to be placed;
 2. Three-fourths of the clear space between reinforcement.
 3. The maximum size aggregate is defined as the clear space between the sides of the smallest square opening through which 95 percent of the weight of the aggregate can be passed.
 4. Unless otherwise noted or restricted by above Grade No. 2, gradation shall be used.

2.05 PIT-RUN AGGREGATE:

- A. Pit-run aggregate is the natural gravel and sand obtained from pits without the addition of other fine or coarse aggregates, and shall consist of hard, durable, uncoated pebbles or stone particles mixed with sand.
- B. Pit-run aggregate shall be free from lumps of clay and injurious amounts of dust, shale, soft or flaky particles, salt and alkali.
- C. Pit-run aggregate shall not be used for high-strength concrete of 3000 psi and above.
- E. Pit-run aggregate may be used only for concrete cushion, cradle and protection for pipe.

2.06 ADMIXTURES:

- A. Concrete admixtures shall comply with Section 03320.

2.07 REINFORCING STEEL:

- A. Reinforcing steel shall comply with Section 03320.

2.08 CURING MATERIALS:

- A. Liquid Membrane: white pigmented chlorinated rubber, ASTM C309.
- B. Liquid Membrane: resin base, clear compound, permitting application of paint, Serviced Products Corp. - Code 2802 or equal.
- C. Plastic Film: white pigmented, 0.00085" (minimum) thick.
- D. Burlap: jute fabric, lean, free of impurities.
- E. Surface Hardener: gray crystal, acidic fluosilicate base, slightly hygroscopic chemical surface hardener, SIKA Chemical Corp. or equal.

2.09 JOINT MATERIALS:

- A. Joint Sealer: hot poured, non-extruding, elastic, ASTM D1190.
- B. Preformed Expansion Joint Filler: non-extruding, bituminous fiber, ASTM D1751.

2.10 WATERSTOP:

- A. Polyvinyl chloride or rubber, center bulb.
- B. Size to suit joints, minimum 6".

2.11 FORM MATERIALS:

- A. Use plywood, metal, metal framed plywood faced or other acceptable panel-type material.
- B. Coat forms with non-bonding, non-staining commercial compounds.

2.12 MOISTURE BARRIER:

- A. Polyethylene sheet, minimum 8 mil., ASTM E154.

2.13 CONCRETE MIX DESIGN AND CONTROL:

- A. Submit not less than 10 days prior to the start of concreting operations, to the ENGINEER.
 - 1. Mix design, using a course aggregate factor acceptable to the Engineer.
 - 2. Sufficient samples of all materials to be incorporated into the mix for testing.
 - 3. Full description of the source of supply of each material component.
- B. Course aggregate factor:
 - 1. Not more than 0.82 when voids less than 48%.
 - 2. Not more than 0.85 when voids exceed 48%.

- 3. Not less than 0.68.
- C. No changes or deviations from proportions or sources of supply without approval of ENGINEER.
- D. No concrete may be placed on the job site until the mix design has been approved by ENGINEER in writing to the CONTRACTOR.

2.14 CONCRETE QUALITY:

- A. Consistency:
 - 1. Mortar shall cling to the coarse aggregate.
 - 2. The aggregate shall not segregate during transport.
 - 3. The concrete and mortar shall show no free water when removed from the mixer.
- B. The consistency should allow the completion of all finishing operations with the addition of water to the surface.
- C. The concrete shall be uniform, workable, cohesive, possess satisfactory finishing qualities and be of the stiffest consistency that can be placed and vibrated into a homogeneous mass.
- D. Excessive bleeding shall be avoided.
- E. Slump requirements shall be as follows:

	<u>Structural Concrete</u>	<u>Avg. Slump</u>	<u>Max. Slump</u>
(a)	Cased Drilled Shafts and thin-walled Sections (9 inches or less)	4	5
(b)	Slabs, Caps, Columns, Piers, Wall Sections Over 9 inches, etc.	3	4
(c)	Slip Form Paving Underwater or seal concrete		2 1/2
(d)	Rip-Rap, curb, Gutter and other Miscellaneous Concrete	As Specified	By Owner

Note: No concrete shall be permitted with slump in excess of the maximums shown. Any concrete mix failing to meet the above consistency requirements, although meeting the slump requirements shall be considered unsatisfactory; and the mix shall be changed to correct such unsatisfactory conditions.

- F. The concrete shall comply with Table 1 below:

TABLE 1 - CLASSES OF CONCRETE

CLASS OF CONCRETE	MIN.-MAX. SX. CEMENT	MIN. BEAM STRENGTH 28-DAY PSI	MIN. BEAM STRENGTH 7-DAY PSI	MAX. WATER CEMENT RATIO ITEM 2.1.1.	COARSE NO.
A.	5.0	3000	500	6.5	2-3-4
B	4.0	2000	330	8.0	2-3-4
C*	6.0	3600	600	6.0	1-2-3-***
D	3.0	1500	250	11.0	2-3-4
E	6.0	3000	500	7.0	2-3
F	6.5	4200	700	5.5	2-3
H***	6.5-8.0	AS SPECIFIED ON PLANS	N/A	5.5	3

* Entrained Air:

** No. 1 course aggregate may be used in foundations only (except cased drilled shafts).

*** Pre-stressed Concrete.

**** ASTM C 293 (Center Point).

2.15 GROUT:

A. Non-Shrink:

1. Use pre-mix non-shrink, Embeco Premixed Grout or Embeco Pre Mixed Mortar by Master Builders Company or equal.
2. Keep water to a minimum for placing by the dry packing method.

B. Grout for Bonding:

1. 1 part cement to 1 1/2 parts sand by weight.
2. Keep water to a minimum.

PART 3 - EXECUTION

3.01 SUBGRADE:

A. Insure sub-grade is true to line and grade and compacted as specified.

- B. Fill and re-compact any ruts or depressions.
- C. Check cross section with a template.
- D. Place moisture barrier or moisten sub-grade prior to placing of concrete. Method to be approved by the ENGINEER.

3.02 FORMS:

- A. Provide forms for all concrete work including footings and base slabs.
- B. Construct forms so that completed concrete will conform to shapes, lines, grades and dimensions indicated and required.
- C. Forms shall be true, plumb and level with reasonable tight joints. Adequately support and brace forms.
- D. Place anchors, inserts, bolts, sleeves and other device indicated or required for the various portions of all the work.
- E. Oil temporary forms with non-staining form oil before reinforcing steel is placed.
- F. Rough form finish as defined by ACI 301 permitted for concealed concrete.
- G. Smooth form finish as defined by ACI 301 permitted for concealed concrete.
- H. Provide 3/4 inch chamfer on exposed corners and edges, and 1-foot below ground level.

3.03 REMOVAL OF FORMS:

- A. Do not remove forms or supports until concrete has acquired sufficient strength to safely support its own weight and the superimposed loads.
- B. Mixing shall be done in a mixer of adequate size and type to produce uniform distribution of the material throughout the mass.
- C. The mixer shall have a plate affixed showing the manufacturer's recommended operating data and it shall be operated within the speed and capacity limits stated thereon.
- D. The absolute volume of the concrete batch shall not exceed the rated capacity of the mixer.
- E. The entire contents of the drum shall be discharged before any materials are placed.
- F. Improperly mixed concrete will not be placed.
- G. The mixing time shall be in accordance with the recommendations of the mixer manufacturer.

H. Transix Mix Concrete:

1. Sufficient transit mix equipment shall be assigned exclusively to the project as required for continuous operation.
2. Satisfactory evidence shall be furnished so that the delivery of concrete shall be continuous at regular and uniform intervals, without stoppage or interruption.
3. Concrete shall not be placed on the job after a period of 1 hours after the cement has been placed in the mixer, with mixer turning; 30 minutes without mixer turning.

I. Continuous Volumetric Mix Concrete:

1. A mobile, continuous, Volumetric mixer of the rotating puddle type may be used for when approved by ENGINEER.
2. Mixers shall be designed to receive all the concrete ingredients, including admixtures, required by the mix design in a continuous uniform rate and mix them to the required consistency before discharging.
3. The mixers shall adequate water supply and metering devices.
4. Calibration of these mixers will be required.

3.04 PLACING CONCRETE:

- A. The minimum temperature of all concrete at the time of placement shall not be less than 50° F.
- B. Clean transporting equipment, reinforcing and embedded items before placing concrete.
- C. Batch trucks or paving equipment not permitted on prepared sub-grade unless authorized by the ENGINEER based on actual job conditions.
- D. Place no concrete until after inspection of forms by ENGINEER.
- E. The maximum time interval between the addition of cement to the batch, and the placing of concrete in the forms shall not exceed the following:

<u>AIR OR CONCRETE TEMPERATURE</u>	<u>NON-AGITATED CONCRETE</u>	<u>MAXIMUM TIME</u>
80 deg. F or Above	(26.6 deg. C)	15 minutes
35 deg. F or 79 deg. F	(1.6 to 26.1 deg. C)	30 minutes

AGITATED CONCRETE

90 deg. F or Above	(32.2 deg. C)	45 minutes
75 deg F to 89 deg. F	(23.9 to 31.6 deg. C)	60 minutes
35 deg. F to 74 deg. F	(1.6 to 23.3 deg. C)	90 minutes

- F. Prevent segregation during placing.
- G. Consolidate flat work with one pass of mechanical vibrator moving parallel to centerline. Unusual sections and widths may be hand puddled and finished.
- H. Place concrete continuously so that each pour unit will be monolithic in construction and will terminate at expansion, contraction or construction joint. Permit not more than 30 minutes between depositing adjacent batches.
- I. Place slab concrete over membrane waterproofing before waterproofing has become damaged or dirty.
- J. Concrete placement will not be permitted when impending weather conditions will impair the quality of work.
- K. Slope horizontal surfaces of exterior concrete for drainage.
- L. Deposit concrete in forms in horizontal layers not deeper than 24 inches. Avoid inclined construction joints. Place each layer while preceding layer is still plastic to avoid cold joints.
- M. Consolidate concrete by mechanical vibrating equipment supplemented by hand-spreading, rodding or tamping. Use equipment and procedures for consolidation of concrete in accordance with ACI 309.
- N. Do not use vibrators to transport concrete inside of forms. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than visible effectiveness of machine. Place vibrators to penetrate placed layer of concrete and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. Limit vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing segregation of mix.

3.05 PLACING CONCRETE IN WATER:

- A. Concrete shall be deposited in water only when specified on the plans or with written permission of the ENGINEER.
- B. The forms or cofferdams shall be sufficiently tight to prevent any water current passing through the space in which the concrete is deposited.

- C. Pump will not be permitted during the concrete placing, nor until it has set for at least 36 hours.
- D. The concrete shall be placed with a tremie, closed bottom-dump bucket or other approved method.
- E. The concrete shall not be allowed to fall freely through the water nor shall it be disturbed after it has been placed. Its surface shall be kept approximately level during placement.
- F. The tremie shall consist of a water tight tube 14 inches or less in diameter. It shall be constructed so that the bottom can be sealed and opened after it is in place and fully charged with concrete. It shall be supported so that it can be easily moved horizontally to cover all the work area and vertically to control the concrete flow. The lower end of the tremie shall be submerged in the concrete at all times.
- G. Bottom-dump buckets used for underwater placing shall have a capacity of not less than one-half cubic yard. It shall be lowered gradually and carefully until it rests upon the concrete already gradually and carefully until it rests upon the concrete already placed and raised very slowly during the upward travel; the intent being to maintain still water at the point of discharge and to avoid agitating the mixture.
- H. The placing operations shall be continuous until the work is complete.
- I. Unless otherwise specified all concrete placed under water, except seal concrete, shall contain an additional sack of cement per cubic yard.

3.06 JOINTS:

A. CONTRACTOR:

- 1. Extend entirely across flat slabs at locations shown.
- 2. Location where not shown; maximum spacing is:
 - a. Driveways: 10'
 - b. Sidewalks: 4'
 - c. Other flat slabs: 20 times slab thickness.
- 3. Saw depth not less than 1/4 slab thickness.

B. Expansion:

- 1. Install where shown on the plans.
- 2. Locations where not shown: all structures and features which project through, into or against slab.
- 3. Install according to manufacturer's recommendations, set material securely before placing concrete.
- 4. Install 1 inch width unless shown otherwise.

C. Filling Joints:

1. Fill not later than 14 days after sawing.
2. Fill immediately following cleaning.
3. Fill to 1/8" of surface.
4. Remove excess while material is still pliable.
5. Refill low areas where necessary.
6. Omit filling sidewalk joints.

3.07 FINISHING EXTERIOR FLAT WORK:

- A. Strike off and float as required.
- B. Check surface with ten foot straight edge, maximum variance allowed - 1/8".
- C. Drag concrete surface longitudinally with double thickness burlap drag after completion of straight edging unless noted otherwise.
- D. Use edger on edges of slab.

3.08 CURING:

- A. CONTRACTOR shall inform the ENGINEER fully of the methods and procedures proposed for curing; shall provide proper equipment and material in adequate amounts; shall have approval of the proposed method, equipment and material prior to placing concrete.
- B. All concrete shall be cured for a period of 4 curing days except as noted herein.

EXCEPTIONS TO 4-DAY CURING

<u>Description</u>	<u>Required Curing</u>
Upper Surfaces of Bridge Roadway, Median and Sidewalk Slabs and Top Slabs of Direct Traffic Culverts	8 Curing Days

A curing day is defined as a calendar day when the ambient temperature, taken in the shade

***** END OF SECTION *****

SECTION 03320

CONCRETE ADMIXTURES

PART 1 - GENERAL

1.01 GENERAL DESCRIPTION OF WORK:

- A. This work shall consist of furnishing materials for use as admixtures in concrete.

PART 2 - PRODUCTS

2.01 AIR ENTRAINING ADMIXTURE

- A. An "Air Entraining Admixture" is defined as a material which, when added to a concrete mixture in the correct quantity, will entrain uniformly dispersed microscopic air.
- B. This admixture shall conform to ASTM C 260, modified as follows:
 - 1. The cement used in any series of tests shall be either the cement proposed for specific work or a reference" Type I cement from one mill.
 - 2. Unless otherwise indicated, the minimum relative durability factor shall be 80.
- C. The air entraining admixture used in the reference concrete shall be high quality neutralized Vinsol Resin.

2.02 WATER - REDUCING, RETARDING ADMIXTURE

- A. A "Water-reducing, Retarding Admixture" is defined as a material which, when added to a concrete mixture in the correct quantity, will reduce the quantity of mixing water required to produce concrete of a given consistency and retard the initial set of the concrete.
- B. This mixture shall conform to ASTM C 494, Type A or D, modified as follows:
 - 1. The water-reducing retarder shall retard the initial set of the plastic concrete a minimum of 2 hour and a maximum of 4 hours when the materials are at a temperature of 90 F, the dosage rate specified by the manufacturer.
 - 2. The cement used in any series of tests shall be either the cement proposed for specific work or a "reference" Type I cement for one mill.
 - 3. All concrete tested shall contain entrained air.

2.03 WATER-REDUCING ADMIXTURE

- A. "Water-reducing Admixture" is defined as a material which when added to a concrete mixture in the correct quantity, will reduce the quantity of mixing water required to produce concrete of a given consistency and required strength.
- B. This admixture shall conform to ASTM C 494, Type A.

2.04 ACCELERATING ADMIXTURE

- A. In "Accelerating Admixture" is defined as an admixture that accelerates the setting time and the early strength development of concrete.
- B. This admixture shall conform to ASTM C 494, Type C, modified as follows:
 - 1. This accelerating admixture will contain no chlorides and shall be used in the liquid form only.

2.05 HIGH RANGE WATER REDUCING ADMIXTURES

- A. A "High-range Water Reducing Admixture," referred to as a super plaster size, is defined as a synthetic polymer material which, when added to a low slump concrete mixture increases the slump without segregation, impermeability and durability of the mix.
- B. This admixture shall conform to ASTM C 494, Type F or G, modified as follows:
 - 1. It shall reduce the required water by a minimum of 15 percent.
 - 2. It shall increase the 7 day compressive strength of the concrete by a minimum of 25 percent.
- C. The admixture when added to the mix shall produce the following:
 - 1. Modify a low slump concrete, without the addition of water, to produce a slump which conforms to the range indicated.
 - 2. It shall prevent a temperature rise of the mix above 100 F during high ambient conditions.
 - 3. It shall not increase the chloride content of mix.

2.06 CERTIFICATION

- A. The CONTRACTOR shall submit the name of the admixture proposed and manufacturer's certification that products selected meet the requirements of this item and of ASTM C 260 and C 494 as required.

- B. If more than one admixture is proposed in the concrete mix, a statement of compatibility of components shall accompany certification.
- C. The ENGINEER may request additional information to be submitted such as infrared spectrophotometry scan, solids content, ph value, etc., for further identification.
- D. A change in formulation discovered by any of the tests prescribed herein or other means and not reported and re-tested, may be cause to permanently bar the manufacturer from furnishing admixtures for COUNTY work.
- E. The ENGINEER reserves the right to perform any or all of the tests required by ASTM C 260 and C 494 as a check on the tests reported by the manufacturer.
- F. In case of any variance, the ENGINEER tests will govern.

2.07 APPROVAL

- A. The ENGINEER shall approve all admixtures and dosage. Approval of admixtures shall be based on previous performance of the admixture.
- B. The dosage will be determined from the manufacturer's recommendations, trial mixes or current job approved mix designs, if it is shown that no substantial change in any of the proposed ingredients has been made.
- C. Should the CONTRACTOR desire to change the admixture or dosage approved during the progress of the work, the CONTRACTOR shall perform trial mixes at his own expense and submit the new mix design for approval.

PART 3 - EXECUTION

3.01 CONSTRUCTION METHODS

- A. No concrete shall be delivered to the project until the mix design is approved. All concrete delivered shall conform to the approved job mix formula. Unless otherwise indicated, all concrete shall be air entrained. All admixtures will be added at the Batch Plant. All admixtures shall be in the liquid state. No admixtures shall be dispensed on dry aggregates. Each admixture shall be dispensed separately, but at the same time as the mixing water.
- B. An approved job mix formula for normal hot weather concreting may not perform satisfactorily for extended retardation, in which case its use will not be permitted.
- C. The rotation of the mixer shall be sufficient to thoroughly mix the admixture into the concrete.
- D. Admixtures shall be agitated as required to prevent separation or sedimentation of solids. Air agitation of Neutralized Vinsol Resin will not be permitted.

- E. Normally air entraining agents shall be charged into the mixer at the beginning of the batch and retarding or water reducing admixtures shall be charged into the mixer during the last part (approximately 1/3) of the batch when an air-entraining agent is used.
- F. Accelerating admixtures will not be used only on the written approval of ENGINEER. Accelerating admixtures will not be permitted in bridge decks, direct traffic culvert slabs at any time nor when Type II cement is specified.
- G. All admixtures shall be of the same brand from only one manufacturer for the entire project, unless otherwise approved by the ENGINEER.
- H. Accelerators will be used only to meet special project requirements and will require the approval of the ENGINEER.
- I. For individual placements of concrete of 25 cubic yards or more and for all ready-mix concrete, the admixture shall be measured and dispensed by a readily adjustable dispenser. When set to a predetermined volume, the dispenser shall fill to the preset amount and hold it positively without leakage until the operator releases the content into the mixing water by some positive means. Unless otherwise indicated, completely automatic dispensing will not be required, except for use with a full automatic plant.
- J. The calibrated container shall be a measuring reservoir of the type where the level of the admixture is visible at all times. A strip gauge with one ounce increments for air entraining admixtures, ten ounce increments for dispersing admixtures, shall be attached securely to the measuring apparatus. This strip shall be a material possessing weather resistant qualities. The accuracy equipment shall visibly show the total amount to be dispensed for ready check by the ENGINEER.
- K. When individual placements of less than 25 cubic yards and with the concrete batched on the job site, the ENGINEER may waive the requirements for mechanical dispensing equipment.
- L. When high range water reducing admixtures are indicated the following will be observed:
 - 1. Ready-mixed concrete shall be delivered in transit mixers and the capacity of the transit mixture shall be reduced for each batch by 25 percent of the rated capacity to assure proper mixing.
 - 2. If during the placement of concrete, a change in slump resulting in a slump loss in excess of 3 inches is noted, the remaining concrete shall be rejected.
 - 3. The addition of water will not be permitted at the job site.
 - 4. Only one liquid admixture shall be used to achieve the desired results, except where air entrainment is indicated, the air entrainment agent will be

permitted.

5. The concrete design shall meet the following requirements:

<u>ITEM</u>	<u>TEST</u>	<u>VALUE</u>
Air entrainment	ASTM C 260	3 to 6 percent
High range water reducing Admixture	ASTM C 494 Type F or G	
Water cement ratio Gal/.Sack Max.		6.25
Minimum cement content in Sacks (94 lb. sack)		6.0
Coarse aggregate factor		6.5
Slump Maximum, inches		10
Flexural strength @ 7 days, psi		650
Maximum concrete temperature F		100

PART 4 - MEASUREMENT AND PAYMENT

- 4.01** No additional compensation will be made for the materials, equipment test or methods required by this item, but shall be considered subsidiary to various items included in the contract.

***** END OF SECTION *****

Geotechnical Engineering Report

Hidalgo County Precinct 2
Countywide Mechanic Shop Facility

San Juan, Texas

April 19, 2017

Terracon Project No. 88175036

Prepared for:

Hidalgo County

Pharr, TX

Prepared by:

Terracon Consultants, Inc.

Pharr, TX

terracon.com

Terracon

Environmental

Facilities

Geotechnical

Materials

April 19, 2017



Hidalgo County Precinct 2
300 West Hall Acres, Suite G
Pharr, Texas 78577

Attn: Ms. Erika Zamora
Director of Management Operations
P: [956] 787 1891 Ext. 2015
E: erika.zamora@co.hidalgo.tx.us

Re: Geotechnical Engineering Report
Hidalgo County Pct. 2 - Countywide Mechanic Shop Facility
4011 S. Veterans Boulevard
San Juan, Texas
Terracon Project No. 88175036

Dear Ms. Zamora,

Terracon Consultants, Inc. (Terracon) is pleased to submit our Geotechnical Engineering Report for the above referenced project in San Juan, Texas. We trust that this report is responsive to your project needs. Please contact us if you have any questions or if we can be of further assistance.

We appreciate the opportunity to work with you on this project and look forward to providing additional Geotechnical Engineering and Materials Testing services in the future.

Sincerely,

Terracon Consultants, Inc.
(Texas Firm Registration No.: F-3272)


Martin Reyes
Senior Staff Engineer




Alfonso A. Soto, P.E., D.GE
Principal

4/19/17

Enclosures

Copies Submitted: Addressee: (1) Electronic

Terracon Consultants, Inc. 1506 Mid Cities Drive Pharr, TX 78577
P [956] 283 8254 F [956] 283 8279 terracon.com

Environmental ■ Facilities ■ Geotechnical ■ Materials

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Exhibit A-3	Field Exploration Description
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Exhibit B-1	Laboratory Testing
Exhibit B-2 and B-3	Swell Test Results

APPENDIX C – SUPPORTING DOCUMENTS

Exhibit C-1	General Notes
Exhibit C-2	Unified Soil Classification System

Geotechnical Engineering Report

Hidalgo County Precinct 2 - Countywide Mechanic Shop Facility ■ San Juan, TX
April 19, 2017 ■ Terracon Project No. 88175036

Terracon

EXECUTIVE SUMMARY

A geotechnical exploration has been performed for the proposed countywide mechanic shop facility to be located at 4011 S. Veterans Boulevard in San Juan, Texas. Two test borings, designated B-1 and B-2, were drilled to depths of approximately 20 feet below existing grade (grade at the time of our field program) within the area of the proposed building along with one test boring, designated P-1 to a depth of about 5 feet within the area of the proposed pavements.

Based on the information obtained from our subsurface exploration, the site can be developed for the proposed project. A summary of our findings and recommendations are provided below:

- Stripping should include surface vegetation, loose topsoil, debris or other unsuitable materials in the building area.
- Proofrolling should be performed to detect weak areas.
- Groundwater was not observed at the boring locations during and upon completion of the drilling operations.
- The subsurface soils at this site generally consist of Fat Clay (CH).
- The surface soils are moisture sensitive.
- A shallow or deep foundation system would be appropriate to support the structural loads of the proposed structure associated to the new building, provided the pad is prepared as recommended in this report.
- Grade beams for a slab-on-grade foundation system should be sized for a net total load allowable bearing pressure of 3,000 psf.
- The existing Potential Vertical Rise (PVR) of the native soils within the proposed building area in their present condition is about 2½ to 3 inches. However, this value may be higher, if water is allowed to infiltrate beneath the structure.
- The subsurface conditions within the site are consistent with the characteristics of Site Class D as defined in the International Building Code (IBC) Site Classification.
- A minimum of 3½ feet of native Fat Clay (CH) soils should be over-excavated within the building area and replaced with compacted fill soils to achieve final grade, about 1½ feet above existing grade. The select fill building pad should also extend a minimum 3 feet beyond the edge of the proposed building.

Geotechnical Engineering Report

Hidalgo County Precinct 2 - Countywide Mechanic Shop Facility ■ San Juan, TX
April 19, 2017 ■ Terracon Project No. 88175036



- Flexible and reinforced concrete pavement systems will be considered for this project. We anticipate traffic may consist primarily of passenger vehicles in the parking areas and passenger vehicles combined with occasional large multi-axle delivery trucks in the driveways.

- Flexible pavement sections vary from 2 to 2½ inches of asphaltic concrete over 6 to 8 inches of granular base material with treated subgrade. The rigid pavement system varies from 5 to 7 inches of reinforced concrete with moisture conditioned subgrade.

This summary should be used in conjunction with the entire report for design purposes. It should be recognized that details were not included or fully developed in this section, and the report must be read in its entirety for a comprehensive understanding of the items contained herein. The section titled **GENERAL COMMENTS** should be read for an understanding of the report limitations.

**GEOTECHNICAL ENGINEERING REPORT
HIDALGO COUNTY PRECINCT 2
COUNTYWIDE MECHANIC SHOP FACILITY
SAN JUAN, TEXAS**

Terracon Project No. 88175036
April 19, 2017

1.0 INTRODUCTION

Terracon is pleased to submit our Geotechnical Engineering Report for the proposed countywide mechanic shop facility to be located at 4011 S. Veterans Boulevard in San Juan, Texas. This project was authorized by Ms. Erika Zamora, Director of Management Operations with the Hidalgo County Precinct 2 through issuance of Purchase Order No. 759567 on April 3, 2017. The project scope was performed in general accordance with Terracon Proposal No. P88175036, dated March 21, 2017.

The purpose of this report is to describe the subsurface conditions observed at the borings drilled for this study, analyze and evaluate the test data, and provide recommendations with respect to:

- subsurface soil conditions
- groundwater conditions
- earthwork
- foundation design and construction
- floor slab design and construction
- seismic considerations
- pavements

2.0 PROJECT INFORMATION

2.1 Project Description

Item	Description
Site layout	See Appendix A, Exhibit A-2, Boring Location Plan
Building and Pavements	The project will include the construction a new single-story building with a footprint area of approximately 8,720 square feet (sf) and associated pavements.
Building Construction	Information was not provided at this time. However, we anticipate that the building may consist of pre-engineered metal structure with CMU and metal exterior panels.
Finished Floor Elevation (FFE)	Unknown. Assumed to be about 2 feet above existing grade.

Item	Description
Maximum Loads (assumed)	Columns: 50 kips Walls: 3 klf Slab: 150 psf

2.2 Site Location and Description

Item	Description
Location	This project will be located at 4011 S. Veterans Boulevard in San Juan, Texas. Boring B-1: Latitude: 26.140176°, Longitude: -97.174159°
Existing Improvements	Existing Hidalgo County Pct. 2 Field Operations Facility.
Current Ground Cover	The site is vacant and covered with native grasses and bare soils.
Existing Topography	The site is relatively flat and level.

3.0 SUBSURFACE CONDITIONS

3.1 Geology

Based on the Geologic Atlas of Texas, McAllen – Brownsville prepared by The University of Texas, the site is located on the Alluvium Formation of the Holocene (Recent) Period of the Quaternary Age. Floodplain deposits, lower course of Rio Grande, are divided into areas dominantly mud, Qam, and areas dominantly silt and sand, Qas. All other areas are alluvium undivided, Qal, except for some areas where tidal flat areas are mapped. The soils are mostly composed of clay, silt, sand, gravel and organic matter. The silt and sand are described as calcareous and dark gray to dark brown in color. The sand is mostly quartz and the gravel along Rio Grande include sedimentary rocks from the Cretaceous and Tertiary and a wide variety of igneous and sedimentary rocks from Trans-Pecos Texas, Mexico, and New Mexico including agate. The gravel in side streams of the Rio Grande is mostly Tertiary rocks and chert derived from Uvalde Gravel which caps divide.

3.2 Typical Profile

Based on the results of the borings, subsurface conditions on the project site can be generalized as follows:

Geotechnical Engineering Report

Hidalgo County Precinct 2 - Countywide Mechanic Shop Facility ■ San Juan, TX
April 19, 2017 ■ Terracon Project No. 88175036



Description	Depth (ft)	Plasticity Index (%)	In-situ Moisture Content (%)	Moisture content vs. Plastic limit ¹ (%)		SPT N-Value ² (bpf)	Fines ³ (%)
				Dry	Wet		
Fat Clay (CH)	0 - 20	33 - 52	8 - 28	1 - 7	1 - 2	9 - 24	95 - 98

1. The difference between a soil sample's in-situ moisture content and its corresponding plastic limit.
2. bpf = blows per foot.
3. Percent passing the No. 200 sieve.

Conditions encountered at each boring location are indicated on the individual boring logs. Stratification boundaries on the boring logs represent the approximate location of changes in soil types; in-situ, the transition between materials may be gradual. Details for each of the borings can be found on the boring logs in Appendix A of this report.

3.3 Groundwater

The boreholes were drilled to their full depths using dry drilling techniques to aid in the observation of groundwater. Groundwater was not observed in the borings while drilling, or for the short duration that the borings were allowed to remain open.

Groundwater level fluctuations occur due to seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the borings were performed. Therefore, groundwater levels during construction or at other times in the life of the pavements may be higher or lower than the levels indicated on the boring logs. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

The contractor should check the groundwater conditions prior to foundation excavation activities. The boreholes were backfilled with on-site soil cuttings upon completion of the drilling activities.

4.0 RECOMMENDATIONS FOR DESIGN AND CONSTRUCTION

The following recommendations are based upon the data obtained in our field and laboratory programs, project information provided to us, and on our experience with similar subsurface and site conditions.

4.1 Geotechnical Considerations

Finished Floor Elevation (FFE) and grading information were not provided at this time. However, we anticipate that FFE will be set about 2 feet above existing grade.

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The proposed building may be supported by a shallow and/or deep foundation system. The desired foundation system may be used at this site provided the structure pad and foundations are designed and constructed as recommended in this report.

Expansive soils are present at the site. This report provides recommendations to help mitigate the effects of soil shrinkage and expansion. However, even if these procedures are followed, some movement and at least minor cracking in the structures should be anticipated. The severity of cracking and other cosmetic damage such as uneven floor slabs will probably increase if any modification of the site results in excessive wetting or drying of the expansive soils. Eliminating the risk of movement and cosmetic distress may not be feasible, but it may be possible to further reduce the risk of movement if significantly more expensive measures are used during construction. We would be pleased to discuss other construction alternatives that could further reduce the potential for movement with you upon request. Recommendations to minimize excessive movements are discussed in the "**4.2 Earthwork Considerations**" and "**4.4.1 Design Recommendations**" sections of this report.

4.1.1 Swell Test Results

Swell tests were performed on soil samples from the borings drilled at the site. After surcharge pressures were applied the samples were inundated with water for about 72 to 96 hours while measurements of vertical displacement were taken. The magnitude of swell is recorded as a function of the change in thickness during the test in relation to the initial thickness of the sample.

Based on our laboratory results, the sample tested exhibited a free swell of 2.2 percent at a depth of 8 feet. When equivalent overburden pressure was applied, the resulting swell was negligible. The summary of test results is presented in Appendix B, Exhibits B-2 and B-3.

4.2 Earthwork

The following presents recommendations for site preparation, excavation, subgrade preparation and placement of engineered fills on the project. The recommendations presented for design and construction of earth supported elements including foundations, slabs and pavements are contingent upon following the recommendations outlined in this section. Earthwork on the project should be observed and evaluated by Terracon. The evaluation of earthwork should include observation and testing of engineered fill, subgrade preparation, foundation bearing soils, and other geotechnical conditions exposed during the construction of the project.

4.2.1 Site Preparation

We anticipate construction will be initiated by stripping vegetation, soft or other unsuitable materials. Stripped materials consisting of vegetation and organic materials should be wasted off site or used for landscaped areas.

After stripping, the exposed subgrade should be carefully proofrolled with a 15-ton pneumatic roller or a fully loaded dump truck to detect weak zones in the subgrade. A geotechnical engineer or his representative should observe proofrolling to aid in locating unstable subgrade materials.

Proofrolling should be performed after a suitable period of dry weather to avoid degrading an otherwise acceptable subgrade and to reduce the amount of undercutting / remedial work required. Unstable materials located should be stabilized as directed by the engineer based on conditions observed during construction. Undercut and replacement and densification in place are typical remediation methods.

Subsequent to proofrolling, and just prior to placement of fill, the exposed subgrade within the construction area should be evaluated for moisture and density. If the moisture, density, and/or the requirements do not meet the criteria described in the table below, the subgrade should be scarified to a minimum depth of 8 inches, moisture adjusted and compacted to at least 95 percent of the Standard Effort (ASTM D 698) maximum dry density.

4.2.2 Material Requirements

Engineered fill should consist of approved materials, free of organic material, debris (if any) and particles larger than about 2 inches. The maximum particle size criteria may be relaxed by the geotechnical engineer of record depending on construction techniques, material gradation, allowable lift thickness and observations during fill placement. Soils for use as engineered fill material should conform to the following specifications:

Fill Type ¹	USCS Classification	Acceptable Location for Placement
Aggregate base course ²	SC, GC, Caliche, Crushed Limestone Base	Top 6 inches of building pad.
Select Fill	CL and/or SC (7 ≤ PI ≤ 20)	Must be used to construct the building pad under the floor slab and for all grade adjustments within the building area.
On-Site Soils	CH	The on-site soils are not suitable for use as fill within the building area, but may be used within the pavement areas as long as they are free from organics and construction debris.

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1. Prior to any filling operations, samples of the proposed borrow and on-site materials should be obtained for laboratory moisture-density testing. The tests will provide a basis for evaluation of fill compaction by in-place density testing. A qualified soil technician should perform sufficient in-place density tests during the filling operations to evaluate that proper levels of compaction, including dry unit weight and moisture content, are being attained.
2. Crushed limestone and crushed concrete material should meet the requirements of 2014 TxDOT Item 247, Type A, or D, Grades 1 through 3. The select fill materials should be free of organic material and debris, and should not contain stones larger than 2 inches in the maximum dimension. The clayey gravel and caliche materials should meet the gradation requirements of Item 247, Type B, Grades 1 through 3 as specified in the 2014 TxDOT Standard Specifications Manual and a Plasticity Index between 7 and 20.

If imported, blended or mixed soils are intended for use to construct the building pad, Terracon should be contacted to provide additional recommendations. Blended or mixed soils do not occur naturally. These soils are a blend of sand and clay and will require mechanical mixing at the site. If these soils are not mixed thoroughly to break down the clay clods and blend-in the sand to produce a uniform soil matrix, the fill material may be detrimental to the slab performance. If blended soils are used, we recommend that additional samples of the blended soils, as well as the clay clods, be obtained prior to and during earthwork operations to evaluate if the blended soils can be used in lieu of select fill. The actual type and amount of mechanical mixing at the site will depend on the amount of clay and sand, and properties of the clay.

4.2.3 Compaction Requirements

Item	Description
Fill Lift Thickness	All fill should be placed in thin; loose lifts of about 8 inches, with compacted thickness not exceeding 6 inches.
Compaction Requirements (On-site Soils)	The on-site soils (subgrade) should be compacted to at least 95 percent of the Standard Effort (ASTM D 698) maximum dry density from optimum to 4 percent wet of the optimum moisture content.
Compaction Requirements (Select Fill)	The select fill soils should be compacted to at least 95 percent of the Standard Effort (ASTM D 698) maximum dry density within 2 percentage points of the optimum moisture content.

4.2.4 Wet Weather/Soft Subgrade Considerations

Construction operations may encounter difficulties due to the wet or soft surface soils becoming a general hindrance to equipment due to rutting and pumping of the soil surface, especially during and soon after periods of wet weather.

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If the subgrade cannot be adequately compacted to minimum densities as described above, one of the following measures will be required: 1) removal and replacement with select fill, 2) chemical treatment of the soil to dry and increase the stability of the subgrade, or 3) drying by natural means if the schedule allows.

In our experience with similar soils in this area, chemical treatment is the most efficient and effective method to increase the supporting value of wet and weak subgrade. Terracon should be contacted for additional recommendations if chemical treatment of the soils is needed.

Prior to placing any fill, all surface vegetation, topsoil, possible fill material and any otherwise unsuitable materials should be removed from the construction areas. Wet or dry material should either be removed or moisture conditioned and recompacted. After stripping and grubbing, the subgrade should be proof-rolled where possible to aid in locating loose or soft areas. Proof-rolling can be performed with a 15-ton roller or fully loaded dump truck. Soft, dry and low-density soil should be removed or compacted in place prior to placing fill.

4.2.5 Grading and Drainage

Positive drainage should be provided during construction and maintained throughout the life of the development. Infiltration of water into utility trenches or foundation excavations should be prevented during construction. Planters and other surface features which could retain water in areas adjacent to the building should be sealed or eliminated. In areas where sidewalks or paving do not immediately adjoin the structure, we recommend that protective slopes be provided with a minimum grade of approximately 3 percent for at least 10 feet from perimeter walls, except in areas where ADA ramps are required, these areas should comply with state and local regulations. Backfill against exterior walls, and in utility and sprinkler line trenches, should be well compacted and free of all construction debris to reduce the possibility of moisture infiltration.

Downspouts, roof drains or scuppers should discharge into extensions when the ground surface beneath such features is not protected by exterior slabs or paving. Consideration should be given to extending drainage piping to day light at the face of curbs then empty onto pavement surfaces. Sprinkler systems should not be installed within 5 feet of foundation walls. Landscaped irrigation adjacent to the foundation systems should be minimized or eliminated.

Where paving or flatwork abuts the structure, effectively seal and maintain joints to prevent surface water infiltration. The joint between the sidewalk curb and building should be sealed. The sidewalk curb along the building line is recommended to prevent water from standing over the joint between the building and sidewalk should the outside edge of the slab rise due to soil swelling at the sidewalk edge.

Utility trenches are a common source of water infiltration and migration. All utility trenches that penetrate beneath the building should be effectively sealed to restrict water intrusion and flow through the trenches that could migrate below the building.

We recommend constructing an effective clay “trench plug” that extends at least 5 feet out from the face of the building exterior. The plug material should consist of clay compacted at a water content at or above the soils optimum water content. The clay fill should be placed to completely surround the utility line and be compacted in accordance with recommendations in this report.

4.3 Foundation Systems

Design recommendations for slab-on-grade and drilled pier foundation systems for the proposed building are presented in the following paragraphs. Terracon would be pleased to discuss other foundation alternatives with you upon request.

Expansive soils are present at this site, and spread footings are not recommended due to the increased chance of excessive differential movement. Thickened and widened sections of the slab may be constructed for areas of concentrated loads, if needed. The settlement is usually the controlling factor in the decision to use spread footings. Settlement may increase depending on the type of soils, moisture content, and the applied stress.

4.3.1 Design Recommendations – Slab-on-grade Foundation System

The foundation design parameters presented below are based on our evaluation using published theoretical and empirical design methods.

These were developed based on our understanding of the proposed project, our interpretation of the information and data collected as a part of this study, our area experience and the results of our evaluation. The structural engineer should select the appropriate slab design method and code for the amount of anticipated slab movement indicated.

The slab-on-grade foundation may be designed using the following parameters provided the subgrade is prepared as outlined in the “4.2 Earthwork” and “4.4.1 Design Recommendations” sections of this report:

Description	Design Parameters
Select Fill Pad	Minimum 5 feet over moisture conditioned and compacted on-site soils
Allowable Bearing Pressure ¹ ■ Compacted select fill	Net Total Load - 3,000 psf
Climatic Rating	15
Design Plasticity Index	31

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Soil Support Index	0.83
Estimated PVR²	About 1 inch
Approximate total settlement³	About 1 inch
Estimated differential settlement³	Approximately ½ of total settlement
Min. perimeter grade beam embedment⁴	24 inches below finished grade

1. The net allowable bearing pressure provided above include a factor of safety of at least 2.
2. The slab-on-grade foundation system should be designed to tolerate the anticipated soil movement and provide satisfactory support to the proposed structure. The foundation should have adequate exterior and interior grade beams to provide sufficient rigidity to the foundation system such that the slab deflections that result are considered tolerable to the supported structure.
3. This estimated post-construction settlement is assuming proper construction practices are followed.
4. To bear within the select fill. The grade beams may be thickened and widened where necessary to support column loads.

4.3.1.1 Slab-on-grade Foundation Construction Considerations

Excavations for grade beams should be performed with equipment capable of providing a relatively clean bearing area. The bottom 6 inches of the excavations should be completed with a smooth-mouthed bucket or by hand labor. The excavations should be neatly excavated and properly formed. Debris in the bottom of the excavation should be removed prior to reinforcing steel placement. Water should not be allowed to accumulate at the bottom of the excavation.

To reduce the potential for groundwater seepage into the excavations and to minimize disturbance to the bearing area, we recommend that concrete and reinforcing steel be placed as soon as possible after the excavations are completed. Excavations should not be left open for more than 36 hours. The bearing surface of the grade beams should be evaluated after excavation is completed and immediately prior to placing concrete.

4.3.2 Drilled Pier Foundation

We anticipate that a drilled pier foundation system may support the structural loads of the proposed building. The drilled pier foundation system will consist of straight-sided piers bearing at a minimum depth of 15 feet below existing grade at time of drilling operations. This depth would allow adequate development of bearing capacity, resisting lateral loading conditions and to install the piers into competent stratum. Recommendations for straight sided piers are provided below.

4.3.2.1 Design Recommendations - Straight-Sided Drilled Pier Foundation System

Drilled pier foundations may be designed using the following design parameters for the planned structure.

Description	Design Parameters
Minimum Embedment Below Existing Grade ¹	15 feet
Maximum Embedment Below Existing Grade ^{1,8}	18 feet
Net Allowable Bearing Pressures (Total Load) ^{1,2,4}	
15 feet	6,000 psf
Net Allowable Side-Shear ⁴	
4 - 15 feet	500 psf
Minimum Percentage of Reinforcing Steel ³	As required by structural engineer
Approximate Total Settlement ^{4,5}	1 inch
Estimated Differential Settlement ^{5,6}	Approximately ½ of total settlement
Allowable Passive Pressure ⁶	800 psf
Estimated Uplift Pressure (kips) ^{6,7}	12 • d
Estimated Uplift Resistance (kips) ⁶	$2.8 \cdot d \cdot D_p + 0.9W_p + P_{DL}$
Uplift Resistance ⁶	Foundation Weight (150 pcf) & Soil Weight (120 pcf)

1. For drilled piers to bear into the native soils.
2. Whichever condition yields a larger bearing area. These bearing pressures include a factor of safety against a bearing capacity failure of approximately 2.
3. The structural engineer should determine the required reinforcing steel throughout the entire shaft length of drilled pier to resist the axial and lateral forces.
4. A minimum center-to-center spacing between the piers equal to three times the pier diameter should be provided to develop the recommended allowable capacities for a single pier and to control settlements of the pier. If this clearance cannot be maintained for a given pair or within a single line of piers, the above allowable capacities for a single pier may need to be reduced. Also, large concentrated of group of piers may have a reduced efficiency (decrease in load carrying capacity) even with the minimum pier spacing recommended previously. It is not recommended to have pier groups with elements closer than 2½ times the pier diameter (center-to-center). The final foundation plan should be reviewed by Terracon to re-evaluate, if applicable, load carrying capacity and settlements, including the efficiency of pier groups. These allowable skin friction values include a minimum factor of safety of 2. The side shear should be neglected for the upper 4 feet of soil in contact with the pier shaft.
5. Will result from variances in subsurface conditions, loading conditions and construction procedures, such a cleanliness of the bearing area or flowing water in the shaft. Settlements provided for single, isolated piers only.
6. For piers placed against an undisturbed vertical face of the in-situ soils. Lateral resistance of the drilled piers is primarily developed by passive resistance of the soils against the side of the pier. Due to surface effects, the lateral resistance of the upper 4 feet from existing grade of the soils at the surface for exterior

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- piers should be neglected unless area paving is provided around the piers.
7. The magnitude of uplift is difficult to predict and will vary with in-situ moisture contents. Additionally, structural uplift loads on the piers will be resisted by the dead weight of the piers and supported structure. For uplift resistance, we recommend total unit weights of 120 pounds per cubic foot (pcf) for soil and 150 pcf for reinforced concrete be utilized. The diameter of the pier shaft in feet should be used in place of "d".
 8. Piers for the structure should bear no deeper than 18 feet below existing grades without contacting our office.
-

The drilled pier parameters provided above are for calculating single pier capacities only.

For single, isolated drilled piers, total settlements, based on the indicated bearing pressures, should be about 1 inch for properly designed and constructed drilled piers. Settlement beneath individual piers will be primarily elastic with most of the settlement occurring during construction. Differential settlement may also occur between adjacent piers. The amount of differential settlement between adjacent piers could approach 50 to 75 percent of the total pier settlement. Settlement response of drilled piers is impacted more by the quality of construction than by soil-structure interaction. Improper pier installation could result in differential settlements significantly greater than we have estimated. In addition, larger magnitudes of settlement should be expected, if the soil is subjected to bearing pressures higher than the allowable values presented in this report.

4.3.2.2 Drilled Pier Installation

The pier excavations should be augered and constructed in a continuous manner. Reinforcing steel and concrete should be placed in the pier excavations immediately following drilling and evaluation for proper bearing stratum, embedment, and cleanliness. Under no circumstances should the pier excavations remain open overnight.

Groundwater was not encountered in the borings either during or upon completion of the drilling operations. Groundwater levels are influenced by seasonal and climatic conditions, which result in fluctuations in groundwater elevations. The contractor should be prepared to utilize casing techniques to control sloughing of the strata or groundwater influx during excavation if they occur. Prior to any excavation, the contractor should verify the groundwater levels. The contractor should consider performing a "test" pier excavation to determine the constructability of a drilled pier with the dry auger process. The casing method of pier construction is presented below. High torque and high powered drilling and excavation equipment may be required at the site.

Casing Method- Casing should provide stability of the excavation walls and should reduce water influx; however, casing may not completely eliminate groundwater influx potential or stability of the pier excavation bottom unless the casing penetrates below any pervious soils. In order for the casing to be effective, a "water tight" seal must be achieved between the casing and surrounding clay

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soils. The drilling subcontractor should determine casing depths and casing procedures. Water that accumulates in excess of 3 inches in the bottom of the pier excavation should be pumped out prior to reinforcing steel and concrete placement. If the water is not pumped out, a closed-end tremie should be used to place the concrete completely to the bottom of the pier excavation in a controlled manner to effectively displace the water during concrete placement. If water is not a factor, concrete may be placed with a short tremie, so the concrete is directed to the bottom of the pier excavation.

The concrete should not be allowed to ricochet off the walls of the pier excavation nor off the reinforcing steel. If this operation is not successful or to the satisfaction of the foundation contractor, the pier excavation should be flooded with fresh water to offset the differential water pressure caused by the unbalanced water levels inside and outside of the casing. The concrete should be tremied completely to the bottom of the excavation with a closed-end tremie.

Removal of casing should be performed with extreme care and under proper supervision to reduce mixing of the surrounding soil and water with the fresh concrete.

Rapid withdrawal of casing or the auger may develop suction that could cause the soil to intrude into the excavation. An insufficient head of concrete in the casing during its withdrawal could also allow the soils to intrude into the wet concrete. Both of these conditions may induce "necking", a section of reduced diameter, in the pier.

All aspects of concrete design and placement should comply with the American Concrete Institute (ACI) 318-14 Code Building Code Requirements for Structural Concrete; ACI 336.1-01 entitled Reference Specification for the Construction of Drilled Piers, and ACI 336.3R-14 entitled Report on Design and Construction of Drilled Piers. Concrete should be designed to achieve the specified 28-day strength when placed at a 7 inch slump with a ± 1 inch tolerance. Adding water to a mix that has been designed for a lower slump does not meet the intent of this recommendation. If a high range water reducer is used to achieve this slump, the span of slump retention for the specific admixture under consideration should be thoroughly investigated. Compatibility with other concrete admixtures should also be considered. A technical representative of the admixture supplier should be consulted on these matters.

Successful installation of drilled piers is a coordinated effort involving the general contractor, design consultants, subcontractors and suppliers. Each must be properly equipped and prepared to provide their services in a timely fashion. Several key items of major concern are:

- Proper drilling rig with proper equipment (including casing and augers) High torque drilling equipment may be required;

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- Reinforcing steel cages tied to meet project specifications;
- Proper scheduling and ordering of concrete for the piers; and
- Monitoring of installation by design professionals.

Pier construction should be carefully monitored to assure compliance of construction activities with the appropriate specifications. Particular attention to the referenced publication is warranted for pier installation. A number of items of concern for pier installation include those listed below.

- Pier locations
- Vertical alignment
- Competent bearing
- Reinforcement steel placement
- Concrete properties and placement
- Proper casing seal for groundwater control
- Casing removal
- Slurry viscosity (if required)

If the contractor has to deviate from the recommended foundations, Terracon should be notified immediately, so additional engineering recommendations can be provided for an appropriate foundation type.

4.3.3 Flatwork

Grade supported flatwork adjacent to the building will be subjected to the movements of swelling soils unless proper measures are taken. Differential movement between the flatwork and building may result in a trip hazard. Consideration should be given to supporting the flatwork on select fill. The existing Potential Vertical Rise (PVR) is about 2½ to 3 inches in present condition. Heave of flatwork could be greater due to the moderate surcharge imposed on the subgrade. Preparing the flatwork as recommended for the building area and placement of select fill will reduce the PVR to about 1 inch.

If measures are not taken to address differential movement in the design stage, this issue may become a constant maintenance issue during the life of the building. Proper drainage of the sites is also important and is addressed in this report.

4.3.4 Foundation Construction Monitoring

The performance of the foundation system for the proposed structure will be highly dependent upon the quality of construction. Thus, we recommend that fill pad compaction and foundation installation be monitored full time by an experienced Terracon soil technician under the direction of our Geotechnical Engineer.

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During foundation installation, the base should be monitored to evaluate the condition of the subgrade. We would be pleased to develop a plan for compaction and foundation installation monitoring to be incorporated in the overall quality control program.

4.4 Seismic Considerations

Code Used	Site Classification
2012 International Building Code (IBC) ¹	D ²

1. In general accordance with the *2012 International Building Code*, Section 1613.3.2.
2. The *2012 International Building Code (IBC)* requires a *site soil* profile determination extending a depth of 100 feet for seismic site classification. The current scope requested does not include the required 100 foot soil profile determination. Borings for the building extended to a maximum depth of approximately 20 feet, and this seismic site class definition considers that competent soil continues below 20 feet, the maximum depth of subsurface exploration. Additional exploration to deeper depths could be performed to confirm the conditions below the current depth of exploration.

4.5 Floor Slab

Finished Floor Elevation (FFE) and grade information were not provided at this time. However, we anticipate that final grade will be set at a minimum 1½ feet above existing grade in the building area.

4.5.1 Design Recommendations

The subsurface soils at this site generally exhibit a moderate to high expansion potential. Based on the information developed from our field and laboratory programs and on method TEX-124-E in the Texas Department of Transportation (TxDOT) Manual of Testing Procedures, we estimate that the subgrade soils at this site exhibit a Potential Vertical Rise (PVR) of about 2½ to 3 inches in present condition. The actual movements could be greater if poor drainage, ponded water, and/or other sources of moisture are allowed to infiltrate beneath the structure after construction.

A select fill building pad of at least 5 feet of select fill over a minimum of 6 inches of moisture conditioned and compacted native soils should be constructed directly below the floor slab and should also extend a minimum of 3 feet beyond the edge of the proposed building. The final exterior grade adjacent to the building should be sloped to promote positive drainage away from the structure.

The subgrade and select fill soils should be prepared as outlined in the “**4.2 Earthwork**” section of this report, which contains material and placement requirements for select fill, as well as other subgrade preparation recommendations. The floor slab should be designed using the following recommendations.

Item	Description
Excavation	Min. 3½ feet
Floor Slab Support	Min. 5 feet of select fill (as needed to achieve FFE) over a minimum of 6 inches of moisture conditioned and compacted native soils. This recommendation applies to building and flatwork that abuts the structure such as sidewalks.
Modulus of Subgrade Reaction	125 pounds per cubic inch (pci)
Estimated Potential Vertical Rise (PVR)	About 1 inch

4.6 Pavements

Both flexible and rigid pavements will be considered for main access lanes and parking areas. Pavement subgrade preparations are included in this section to limit changes in soil moisture conditions to help mitigate the effects of soil movement. However, even if these recommendations are followed some pavement distress could still occur.

4.6.1 Subgrade Preparation

On most project sites, the site grading is accomplished relatively early in the construction phase. Fills are placed and compacted in a uniform manner. However, as construction proceeds, excavations are made into these areas, rainfall and surface water saturates some areas, heavy traffic from concrete trucks and other delivery vehicles disturbs the subgrade and many surface irregularities are filled in with loose soils to improve trafficability temporarily.

As a result, the pavement subgrades, initially prepared early in the project, should be carefully evaluated as the time for pavement construction approaches.

We recommend the moisture content and density of the top 6 inches of the subgrade be evaluated and the pavement subgrades be proofrolled within two days prior to commencement of actual paving operations. Areas not in compliance with the required ranges of moisture or density should be moisture conditioned and re-compacted.

Particular attention should be paid to high traffic areas that were rutted and disturbed earlier and to areas where backfilled trenches are located. Areas where unsuitable conditions are located should be repaired by removing and replacing the materials with properly compacted fills.

If a significant precipitation event occurs after the evaluation or if the surface becomes disturbed, the subgrade should be reviewed by qualified personnel immediately prior to paving. The subgrade should be in its finished form at the time of the final review.

Based on the subsurface conditions, we anticipate that the pavement subgrade will generally consist of the on-site soils. The top 6 inches of the finished subgrade soils directly beneath the

pavements may be chemically treated. Chemical treatment will increase the supporting value of the subgrade and decrease the effect of moisture on subgrade soils. These 6 inches of treatment should be considered as required part of the pavement design and is not a part of site and subgrade preparation for wet/soft subgrade conditions.

If chemical treatment of the subgrade is chosen, we anticipate that the on-site surficial soils should be treated with about 7 percent of lime. This percentage is given as application by dry weight and is typically equivalent to about 33 pounds modifier per square yard per 6-inch depth. The recommended percentage of modifier is for estimating and planning. The actual quantity of lime required should be determined at the time of construction by laboratory tests on bulk samples of the subgrade soils. Specifications for treated subgrade are presented later in this section.

After proofrolling and repairing deep subgrade deficiencies, the entire subgrade should be scarified and developed as recommended in Section "4.2 Earthwork" section this report to provide a uniform subgrade for pavement construction. Areas that appear severely desiccated following site stripping may require further undercutting and moisture conditioning. If a significant precipitation event occurs after the evaluation or if the surface becomes disturbed, the subgrade should be reviewed by qualified personnel immediately prior to paving. The subgrade should be in its finished form at the time of the final review.

4.6.2 Design Considerations

Traffic patterns and anticipated loading conditions were not available at the time that this report was prepared. However, we anticipate that traffic loads will be produced primarily by light traffic, moderate to heavy traffic, delivery and trash removal trucks. Pavement thickness can be determined using AASHTO, Asphalt Institute and/or other methods if specific wheel loads, axle configurations, frequencies, and desired pavement life are provided.

Terracon can provide thickness recommendations for pavements subjected to loads other than the above mentioned traffic if this information is provided.

Pavement performance is affected by its surroundings. In addition to providing preventive maintenance, the civil engineer should consider the following recommendations in the design and layout of pavements:

- Final grade adjacent to parking lots and drives should slope down from pavement edges at a minimum 2%;
- The subgrade and the pavement surface should have a minimum ¼ inch per foot slope to promote proper surface drainage;
- Install pavement drainage surrounding areas anticipated for frequent wetting (e.g., garden centers, wash racks);
- Install joint sealant and seal cracks immediately;

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- Seal all landscaped areas in, or adjacent to pavements to reduce moisture migration to subgrade soils;
- Place compacted, low permeability backfill against the exterior side of curb and gutter; and,
- Place curb, gutter and/or sidewalk directly on low permeability subgrade soils rather than on unbound granular base course materials.

4.6.3 Estimated Minimum Pavement Thickness

As a minimum, we recommend the following typical pavement sections be considered.

Pavement Area	Traffic Design Index	Description
Automobile Parking Areas	DI-1	Light traffic (Few vehicles heavier than passenger cars, no regular use by heavily loaded two axle trucks). (EAL ⁽¹⁾ < 6)
Driveways (Light Duty)	DI-2	Light to medium traffic (Similar to DI-1 including not over 50 loaded two axle trucks or lightly loaded larger vehicles per day. No regular use by heavily loaded trucks with three or more axles). (EAL = 6-20)
Driveways and Truck Traffic Areas (Medium Duty)	DI-3	Medium to heavy traffic (Including not over 300 heavily loaded two axle trucks plus lightly loaded trucks with three or more axles and no more than 30 heavily loaded trucks with more than three axles per day). (EAL = 21-75)

1. Equivalent daily 18-kip single-axle load applications.

Listed below are pavement component thicknesses, which may be used as a guide for pavement systems at the site for the traffic classifications stated herein. These systems were derived based on general characterization of the subgrade. Specific testing (such as CBR's, resilient modulus tests, etc.) was not performed for this project to evaluate the support characteristics of the subgrade.

Minimum Recommended <u>Flexible</u> Pavement Section Thickness, inches		
Component	DI-1	DI-2
Hot Mix Asphaltic Concrete (HMAC)	2	2½
Granular Base Material	8	10
Treated Subgrade	6	6

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Minimum Recommended Rigid Pavement Section Thickness, inches			
Component	DI-1	DI-2	DI-3
Reinforced Concrete	5	6	7
Granular Base Material	4	4	4
Moisture Conditioned Subgrade	6	6	6

The listed pavement component thicknesses should be used as a guide for pavement systems at the site for the traffic classifications stated herein.

These recommendations assume a 20-year pavement design life. If pavement frequencies or loads will be different than that specified Terracon should be contacted and allowed to review these pavement sections.

We recommend a Portland Cement Concrete (PCC) pavement be utilized in the main access lanes, parking lots, dumpster pads or other areas where extensive wheel maneuvering are expected.

We recommend that waste dumpster areas be constructed of at least 7-inches of reinforced concrete pavement. The concrete pad areas should be designed so that the vehicle wheels of the collection truck are supported on the concrete while the dumpster is being lifted to support the large wheel loading imposed during waste collection.

Although not required for structural support of rigid pavement systems, a base course layer may be considered to help reduce potentials for slab curl, shrinkage cracking, and subgrade “pumping” through joints.

Proper joint spacing will also be required to prevent excessive slab curling and shrinkage cracking. All joints should be sealed to prevent entry of foreign material and dowelled where necessary for load transfer.

Presented below are our recommended material requirements for the various pavement sections.

Reinforced Concrete Pavement – The materials and properties of reinforced concrete pavement shall meet applicable requirements in the ACI Manual of Concrete Practice. The Portland cement concrete mix should have a minimum 28-day compressive strength of 4,000 psi.

Reinforcing Steel - Reinforcing steel should consist of the following:

DI-1: #3 bars spaced at 18 inches or #4 bars spaced at 24 inches on centers in both directions.

DI-2: #3 bars spaced at 12 inches or #4 bars spaced at 18 inches on centers in both directions.

DI-3: #4 bars spaced at 12 inches on centers in both directions.

Control Joint Spacing – ACI recommendations indicate that control joints should be spaced at about 30 times the thickness of the pavement. Furthermore, ACI recommends a maximum control joint spacing of 12.5 feet for 5-inch pavements and a maximum control joint spacing of 15 feet for 6-inch or thicker pavements. Saw cut control joints should be cut within 6 to 12 hours of concrete placement.

Expansion Joint Spacing – ACI recommendations indicate that regularly spaced expansion joints may be deleted from concrete pavements. Therefore, the installation of expansion joints is optional and should be evaluated by the design team.

Dowels at Expansion Joints – The dowels at expansion joints should be spaced at 12-inch centers and consist of the following:

DI-1: 5/8-inch diameter, 12-inches long with 5-inch embedment

DI-2: 3/4-inch diameter, 14-inches long with 6-inch embedment

DI-3: 7/8-inch diameter, 14-inches long with 6-inch embedment

Hot Mix Asphaltic Concrete Surface Course – The asphaltic concrete surface course should be plant mixed, hot laid Type D (Fine Graded Surface Course) meeting the specifications requirements in 2014 TxDOT Standard Specifications Item 340. Specific criteria for the job specifications should include compaction to within an air void range of 5 to 9 percent calculated using the maximum theoretical gravity mix measured by TxDOT Tex-227-F. The asphalt cement content by percent of total mixture weight should be within ± 0.5 percent asphalt cement from the job mix design.

Granular Base Material: Base material should be composed of crushed limestone or crushed concrete meeting the requirements of 2014 TxDOT Standard Specifications Item 247, Type A or D, Grade 1.

As an alternate to the Type A base, treated “caliche” material meeting the requirements of 2014 TxDOT Standard Specification Manual Item 247, Type B, Grade 1 or 2 may be used.

The granular base should be compacted to at least 95 percent of the maximum dry density determined in accordance with the modified moisture-density relationship (ASTM D 1557) at moisture content within 2 percentage points of the optimum moisture content.

Treated Subgrade: The subgrade soils should be treated with lime in accordance with 2014 TxDOT Standard Specifications Item 260. The recommended percentage of lime is for estimating and planning. The actual quantity of lime required should be determined at the time of construction by laboratory tests on bulk samples of the subgrade soils.

If chemical treatment of the subgrade is chosen, we anticipate that the on-site surficial soils be treated with about 7 percent lime. This percentage is given as application by dry weight and is

typically equivalent to about 33 pounds of lime per square yard per 6-inch depth. The subgrade should be compacted to a minimum of 95 percent of the Standard Effort (ASTM D 698) maximum dry density within 2 percentage points of the optimum moisture content. Preferably, traffic, should be kept off the treated subgrade for about 3 to 5 days to facilitate curing of the soil - chemical mixture; in addition, the subgrade is not suitable for heavy construction traffic prior to paving.

Post-construction subgrade movements and some cracking of the pavements are not uncommon for subgrade conditions such as those observed at this site. Although chemical treatment of the subgrade will help to reduce such movement/cracking, this movement/cracking cannot be economically eliminated.

Moisture Conditioned Subgrade: The subgrade should be scarified to a depth of 8 inches and moisture conditioned from optimum to 4 percent wet of the optimum moisture content. The subgrade should then be compacted to at least 95 percent of the maximum dry density determined in accordance with ASTM D 698. This should result in a compacted, moisture conditioned layer about 6 inches thick.

4.6.4 Pavement Drainage

Pavements should be sloped to provide rapid drainage of surface water. Water allowed to pond on or adjacent to the pavements could saturate the subgrade and contribute to premature pavement deterioration. In addition, the pavement subgrade should be graded to provide positive drainage within the granular base section. Appropriate sub-drainage or connection to a suitable daylight outlet should be provided to remove water from the granular subbase.

4.6.5 Pavement Maintenance

The pavement sections provided in this report represent minimum recommended thicknesses and, as such, periodic maintenance should be anticipated. Therefore preventive maintenance should be planned and provided for through an on-going pavement management program.

Maintenance activities are intended to slow the rate of pavement deterioration and to preserve the pavement investment. Maintenance consists of both localized maintenance (e.g. crack and joint sealing and patching) and global maintenance (e.g. surface sealing). Preventive maintenance is usually the first priority when implementing a pavement maintenance program. Additional engineering observation is recommended to determine the type and extent of a cost effective program. Even with periodic maintenance, some movements and related cracking may still occur and repairs may be required.

5.0 GENERAL COMMENTS

Terracon should be retained to review the final design plans and specifications so comments can be made regarding interpretation and implementation of our geotechnical recommendations in the design and specifications. Terracon also should be retained to provide observation and testing services during grading, excavation, foundation construction and other earth-related construction phases of the project.

The analysis and recommendations presented in this report are based upon the data obtained from the borings performed at the indicated locations and from other information discussed in this report. This report does not reflect variations that may occur between borings, across the site, or due to the modifying effects of weather. The nature and extent of such variations may not become evident until during or after construction.

If variations appear, we should be immediately notified so that further evaluation and supplemental recommendations can be provided.

The scope of services for this project does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No warranties, either expressed or implied, are intended or made. Site safety, excavation support, and dewatering requirements are the responsibility of others. In the event that changes in the nature, design, or location of the project as outlined in this report are planned, the conclusions and recommendations contained in this report shall not be considered valid unless Terracon reviews the changes and either verifies or modifies the conclusions of this report in writing.

APPENDIX A
FIELD EXPLORATION

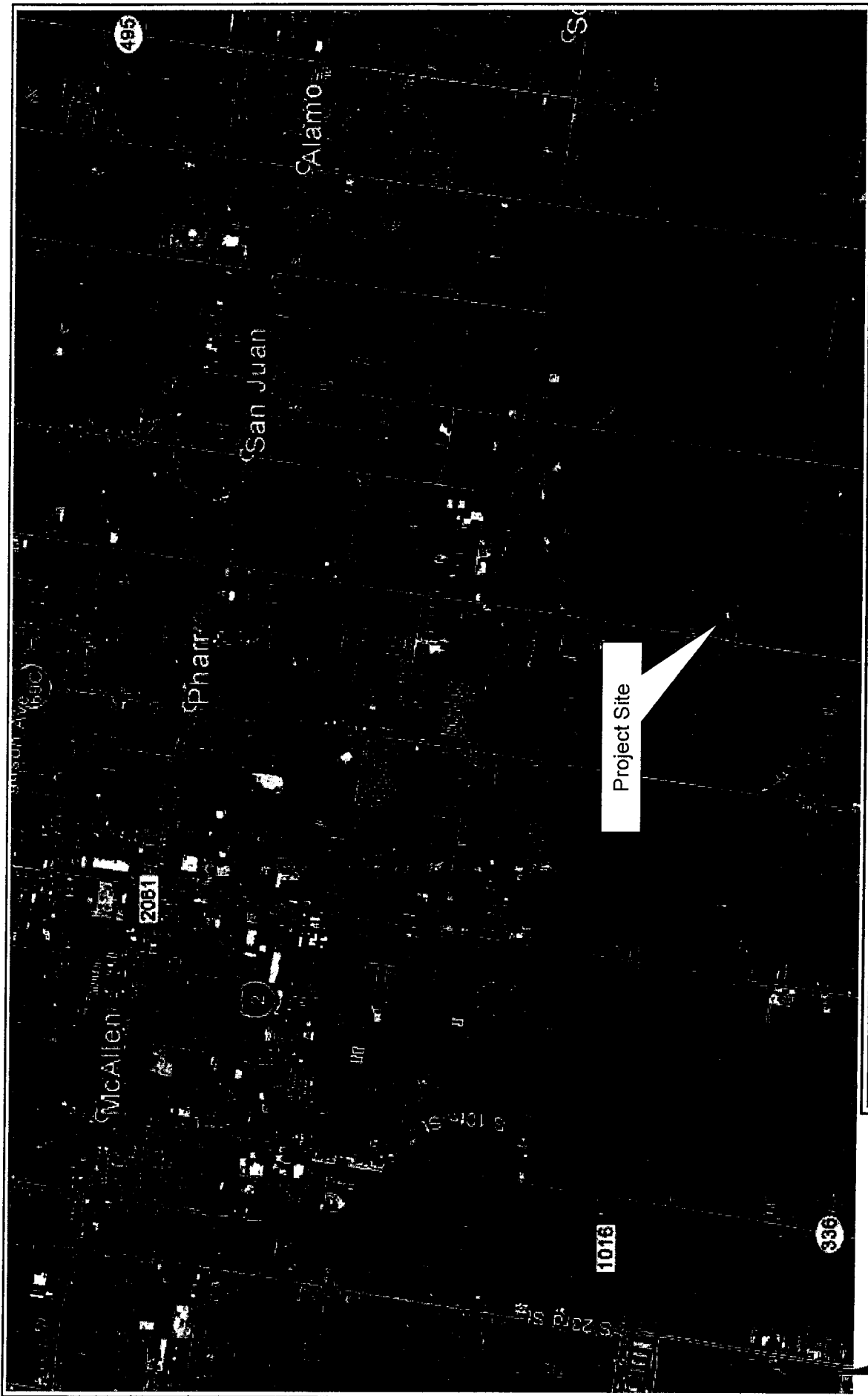


Exhibit
A-1

Site Location Plan
Hidalgo County Pct. 2 – Countywide Mechanic Shop Facility
4011 S. Veterans Boulevard
San Juan, Texas

Terracon
1505 Mid Cities Drive
Pharr, Texas 78577
PH. (956) 283-0254 FAX. (956) 283-9278

Project Manager:	AAS	Project No.:	88175036
Drawn by:	MR	Scale:	N.T.S.
Checked by:	AAS	File Name:	88175036
Approved by:	AAS	Date:	4/18/2017

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

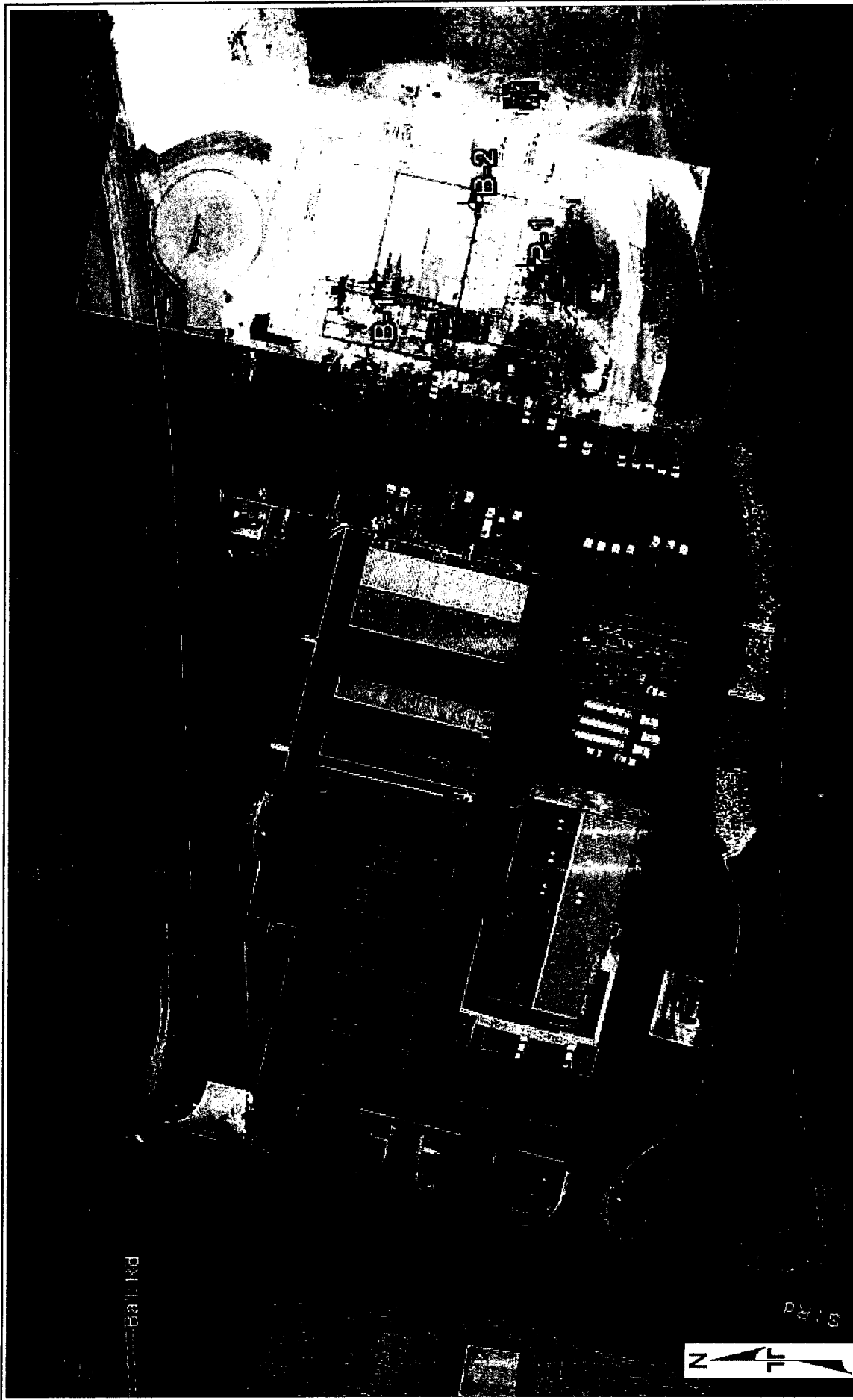



Exhibit
A-2

Boring Location Plan
Hidalgo County Pct. 2 – Countywide Mechanic Shop Facility
4011 S. Veterans Boulevard
San Juan, Texas

Terracon
1506 Mid Cities Drive
Pharr, Texas 78577
PH. (956) 283-6254 FAX. (956) 283-8279

Project Manager:	AAS	Project No.:	88175036
Drawn by:	MR	Scale:	N.T.S.
Checked by:	AAS	File Name:	88175036
Approved by:	AAS	Date:	4/18/2017

LEGEND:
 **Approximate Bore Locations**
 DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Geotechnical Engineering Report

Hidalgo County Precinct 2 - Countywide Mechanic Shop Facility ■ San Juan, TX
April 19, 2017 ■ Terracon Project No. 88175036

Terracon

Field Exploration Description

Subsurface conditions were evaluated by drilling two test borings to depths of 20 feet below the existing grade within the area of the proposed building along with one boring to a depth of about 5 feet within the areas of the proposed pavements. The borings were drilled using truck-mounted drilling equipment at the approximate location shown on the Plan of Borings, Exhibit A-2 of Appendix A. The borings were located by measuring from existing site features shown on the drawing provided to us without the use of surveying equipment. The boring depths were measured from the existing ground surface at the time of our field activities. At the completion of our field activities, the borings were backfilled with soil cuttings.

The Logs of Borings, presenting the subsurface soil descriptions, type of sampling used, and additional field data, are presented on Exhibits A-4 through A-9 of Appendix A. The General Notes, which defines the terms used on the log, are presented on Exhibit C-1. The Unified Soil Classification System is presented on Exhibit C-2 of Appendix C.

Granular and cohesive soils were sampled by means of the Standard Penetration Test (SPT). This test consists of measuring the number of blows (N) required for a 140-pound hammer free falling 30 inches to drive a standard split-spoon sampler 12 inches into the subsurface material after being seated six inches. This blow count or SPT N-value is used to evaluate the stratum. In the Shelby tube sampling procedure, a thin wall seamless steel tube with a sharp cutting edge is pushed into the soil by hydraulic pressure to obtain a relatively undisturbed sample of cohesive soil.

Samples were removed from samplers in the field, visually classified, and appropriately sealed in sample containers to preserve their in-situ moisture contents. Samples were returned to our laboratory in Pharr, Texas.

BORING LOG NO. B-1

PROJECT: Hidalgo County Pct. 2 - Countywide
Mechanic Shop Facility

CLIENT: Hidalgo County
Pharr, Texas

SITE: 4011 S. Veterans Blvd.
San Juan, TX

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 26.140176° Longitude: -98.174159°	DEPTH (FL)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST			WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS	PERCENT FINES
						TEST TYPE	COMPRESSIVE STRENGTH (tsf)	STRAIN (%)				
DEPTH	FAT CLAY (CH) , brown, stiff to very stiff			X	5-6-6 N=12				22		75-23-52	
					4.0 (HP)	UC	2.93	10	22	108		95
		5			4.0 (HP)				22		60-20-40	
					4.0 (HP)				22			
					4.0 (HP)	UC	1.79	9.5	21	105	55-22-33	
					4-4-8 N=12				28			
					6-8-10 N=18				24		65-23-42	
20.0		20		X								

Boring Terminated at 20 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Dry augered to 20 feet.

See Exhibit A-3 for description of field procedures.
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

WATER LEVEL OBSERVATIONS

Groundwater was not encountered



1506 Mid Cities Dr
Pharr, TX

Boring Started: 4/7/2017

Boring Completed: 4/7/2017

Drill Rig: CME 55

Driller: SWD

Project No.: 88175036

Exhibit: A-4

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 88175036 HIDALGO COUNTY PC.GPJ TERRACON2015.GDT 4/17/17

BORING LOG NO. B-2

PROJECT: Hidalgo County Pct. 2 - Countywide
Mechanic Shop Facility

CLIENT: Hidalgo County
Pharr, Texas

SITE: 4011 S. Veterans Blvd.
San Juan, TX

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 26.139962° Longitude: -98.173957°	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST			WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
						TEST TYPE	COMPRESSIVE STRENGTH (ksf)	STRAIN (%)				

FAT CLAY (CH), brown, stiff to very stiff



7-10-10 N=20				18		70-22-48	
6-7-7 N=14				19			
7-7-9 N=16				16		61-23-38	
6-5-4 N=9				19			98
4-5-4 N=9				19			
9-10-12 N=22				24		74-27-47	
7-11-13 N=24				28			

Boring Terminated at 20 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Dry augered to 20 feet.

See Exhibit A-3 for description of field procedures.
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

Groundwater was not encountered



1506 Mid Cities Dr
Pharr, TX

Boring Started: 4/7/2017

Boring Completed: 4/7/2017

Drill Rig:

Driller: SWD

Project No.: 88175036

Exhibit: A-5

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO. WELL: 88175036 HIDALGO COUNTY PC.GPJ TERRACON\2015.GDT 4/17/17

BORING LOG NO. P-1

PROJECT: Hidalgo County Pct. 2 - Countywide
Mechanic Shop Facility

CLIENT: Hidalgo County
Pharr, Texas

SITE: 4011 S. Veterans Blvd.
San Juan, TX

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 26.139839° Longitude: -98.174117°	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST			WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
						TEST TYPE	COMPRESSIVE STRENGTH (tsf)	STRAIN (%)				
DEPTH												
5.0	FAT CLAY (CH) , brown, stiff to very stiff	5		X	8-8-10 N=18			8				
5.0	Boring Terminated at 5 Feet			X	7-6-6 N=12			20		74-23-51		

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Dry augered to 20 feet.

See Exhibit A-3 for description of field procedures.
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

Groundwater was not encountered



1506 Mid Cities Dr
Pharr, TX

Boring Started: 4/7/2017

Boring Completed: 4/7/2017

Drill Rig:

Driller: SWD

Project No.: 88175036

Exhibit: A-6

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. 88175036 HIDALGO COUNTY PC.GPJ TERRACON2015.GDT 4/17/17

APPENDIX B
SUPPORTING INFORMATION

Geotechnical Engineering Report

Hidalgo County Precinct 2 - Countywide Mechanic Shop Facility ■ San Juan, TX

April 19, 2017 ■ Terracon Project No. 88175036

Terracon

Laboratory Testing

Soil samples were tested in the laboratory to measure their dry unit weight and natural water content. Selected samples were also classified using the results of Atterberg limits and sieve analysis testing. The test results are provided on the boring logs included in Appendix A.

Descriptive classifications of the soils indicated on the boring logs are in accordance with the enclosed General Notes and the Unified Soil Classification System. Also shown are estimated Unified Soil Classification Symbols. A brief description of this classification system is attached to this report.

Hidalgo County Pct. 2 - Countywide Mechanic Shop Facility
4011 S. Veterans Boulevard
San Juan, Texas

Project No.: 88175036

SWELL TEST SUMMARY

Boring No.	Depth (feet)	Overburden Pressure (psf)	INITIAL CONDITIONS		FINAL CONDITIONS			Percent Swell
			Moisture Content (%)	γ_d (pcf)	Moisture Content (%)	γ_d (pcf)	Moisture Gain (%)	
B-1	7.0	100	21.7	98.7	26.5	76.4	4.9	2.20

Hidalgo County Pct. 2 - Countywide Mechanic Shop Facility
4011 S. Veterans Boulevard
San Juan, Texas

Project No.: 88175036












SWELL TEST SUMMARY

Boring No.	Depth (feet)	Overburden Pressure (psf)	INITIAL CONDITIONS		FINAL CONDITIONS			Moisture Gain (%)	Percent Swell
			Moisture Content (%)	γ_d (pcf)	Moisture Content (%)	γ_d (pcf)	Moisture Gain (%)		
B-1	7.0	940	20.2	103.3	22.8	84.5	2.6	0.00	

APPENDIX C
SUPPORTING DOCUMENTS

GENERAL NOTES

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

SAMPLING			WATER LEVEL		Water Initially Encountered	FIELD TESTS	(HP) Hand Penetrometer
	Auger	Split Spoon			Water Level After a Specified Period of Time		(T) Torvane
					Water Level After a Specified Period of Time		(b/f) Standard Penetration Test (blows per foot)
	Shelby Tube	Macro Core		Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.			(PID) Photo-Ionization Detector
							(OVA) Organic Vapor Analyzer
Ring Sampler	Rock Core						
							
Grab Sample	No Recovery						

DESCRIPTIVE SOIL CLASSIFICATION

Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

LOCATION AND ELEVATION NOTES

Unless otherwise noted, Latitude and Longitude are approximately determined using a hand-held GPS device. The accuracy of such devices is variable. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

STRENGTH TERMS	RELATIVE DENSITY OF COARSE-GRAINED SOILS (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance Includes gravels, sands and silts.			CONSISTENCY OF FINE-GRAINED SOILS (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance			
	Descriptive Term (Density)	Standard Penetration or N-Value Blows/Ft.	Ring Sampler Blows/Ft.	Descriptive Term (Consistency)	Unconfined Compressive Strength, Qu, psf	Standard Penetration or N-Value Blows/Ft.	Ring Sampler Blows/Ft.
	Very Loose	0 - 3	0 - 6	Very Soft	less than 500	0 - 1	< 3
	Loose	4 - 9	7 - 18	Soft	500 to 1,000	2 - 4	3 - 4
	Medium Dense	10 - 29	19 - 58	Medium-Stiff	1,000 to 2,000	4 - 8	5 - 9
	Dense	30 - 50	59 - 98	Stiff	2,000 to 4,000	8 - 15	10 - 18
	Very Dense	> 50	≥ 99	Very Stiff	4,000 to 8,000	15 - 30	19 - 42
				Hard	> 8,000	> 30	> 42

RELATIVE PROPORTIONS OF SAND AND GRAVEL

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 15
With	15 - 29
Modifier	> 30

GRAIN SIZE TERMINOLOGY

Major Component of Sample	Particle Size
Boulders	Over 12 in. (300 mm)
Cobbles	12 in. to 3 in. (300mm to 75mm)
Gravel	3 in. to #4 sieve (75mm to 4.75 mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm)
Silt or Clay	Passing #200 sieve (0.075mm)

RELATIVE PROPORTIONS OF FINES

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 5
With	5 - 12
Modifier	> 12

PLASTICITY DESCRIPTION

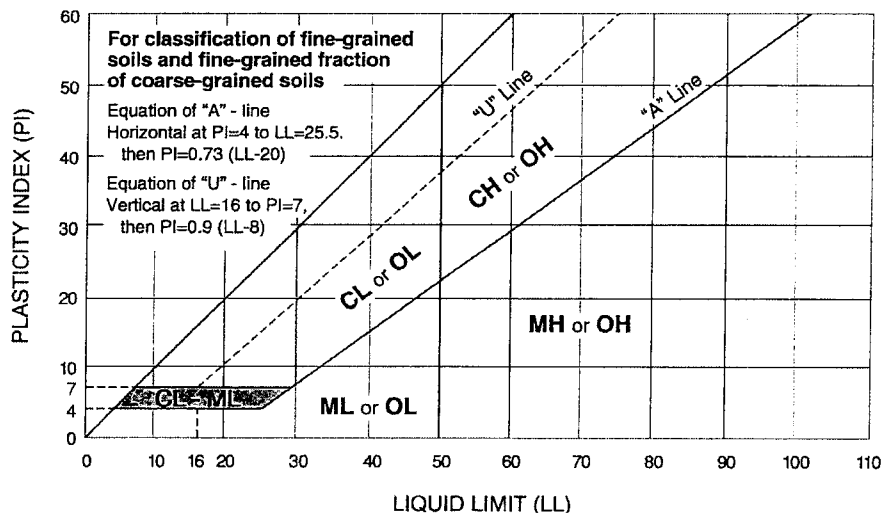
Term	Plasticity Index
Non-plastic	0
Low	1 - 10
Medium	11 - 30
High	> 30

UNIFIED SOIL CLASSIFICATION SYSTEM

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests ^A				Soil Classification		
				Group Symbol	Group Name ^B	
Coarse Grained Soils: More than 50% retained on No. 200 sieve	Gravels: More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels: Less than 5% fines ^C	$Cu \geq 4$ and $1 \leq Cc \leq 3$ ^E $Cu < 4$ and/or $1 > Cc > 3$ ^E	GW	Well-graded gravel ^F	
		Gravels with Fines: More than 12% fines ^C	Fines classify as ML or MH	GM	Silty gravel ^{F,G,H}	
			Fines classify as CL or CH	GC	Clayey gravel ^{F,G,H}	
		Sands: 50% or more of coarse fraction passes No. 4 sieve	Clean Sands: Less than 5% fines ^D	$Cu \geq 6$ and $1 \leq Cc \leq 3$ ^E	SW	Well-graded sand ^I
	$Cu < 6$ and/or $1 > Cc > 3$ ^E			SP	Poorly graded sand ^I	
	Sands with Fines: More than 12% fines ^D		Fines classify as ML or MH	SM	Silty sand ^{G,H,I}	
			Fines Classify as CL or CH	SC	Clayey sand ^{G,H,I}	
	Fine-Grained Soils: 50% or more passes the No. 200 sieve	Silts and Clays: Liquid limit less than 50	Inorganic:	$PI > 7$ and plots on or above "A" line ^J	CL	Lean clay ^{K,L,M}
$PI < 4$ or plots below "A" line ^J				ML	Silt ^{K,L,M}	
Organic:			Liquid limit - oven dried	< 0.75	OL	Organic clay ^{K,L,M,N}
			Liquid limit - not dried		OH	Organic silt ^{K,L,M,O}
Silts and Clays: Liquid limit 50 or more		Inorganic:	PI plots on or above "A" line	CH	Fat clay ^{K,L,M}	
			PI plots below "A" line	MH	Elastic Silt ^{K,L,M}	
		Organic:	Liquid limit - oven dried	< 0.75	OH	Organic clay ^{K,L,M,P}
			Liquid limit - not dried		OH	Organic silt ^{K,L,M,Q}
Highly organic soils:	Primarily organic matter, dark in color, and organic odor			PT	Peat	

- ^A Based on the material passing the 3-in. (75-mm) sieve
- ^B If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.
- ^C Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.
- ^D Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay
- ^E $Cu = D_{60}/D_{10}$ $Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$
- ^F If soil contains $\geq 15\%$ sand, add "with sand" to group name.
- ^G If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

- ^H If fines are organic, add "with organic fines" to group name.
- ^I If soil contains $\geq 15\%$ gravel, add "with gravel" to group name.
- ^J If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.
- ^K If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.
- ^L If soil contains $\geq 30\%$ plus No. 200 predominantly sand, add "sandy" to group name.
- ^M If soil contains $\geq 30\%$ plus No. 200, predominantly gravel, add "gravelly" to group name.
- ^N $PI \geq 4$ and plots on or above "A" line.
- ^O $PI < 4$ or plots below "A" line.
- ^P PI plots on or above "A" line.
- ^Q PI plots below "A" line.



Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, clients can benefit from a lowered exposure to the subsurface problems that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed below, contact your GBA-member geotechnical engineer. Active involvement in the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Geotechnical-Engineering Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared solely for the client. *Those who rely on a geotechnical-engineering report prepared for a different client can be seriously misled.* No one except authorized client representatives should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one – not even you – should apply this report for any purpose or project except the one originally contemplated.*

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read it *in its entirety*. Do not rely on an executive summary. Do not read selected elements only. *Read this report in full.*

You Need to Inform Your Geotechnical Engineer about Change

Your geotechnical engineer considered unique, project-specific factors when designing the study behind this report and developing the confirmation-dependent recommendations the report conveys. A few typical factors include:

- the client's goals, objectives, budget, schedule, and risk-management preferences;
- the general nature of the structure involved, its size, configuration, and performance criteria;
- the structure's location and orientation on the site; and
- other planned or existing site improvements, such as retaining walls, access roads, parking lots, and underground utilities.

Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.*

This Report May Not Be Reliable

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, that it could be unwise to rely on a geotechnical-engineering report whose reliability may have been affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If your geotechnical engineer has not indicated an "apply-by" date on the report, ask what it should be, and, in general, if you are the least bit uncertain about the continued reliability of this report, contact your geotechnical engineer before applying it.* A minor amount of additional testing or analysis – if any is required at all – could prevent major problems.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface through various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing were performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgment to form opinions about subsurface conditions throughout the site. Actual site-wide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team from project start to project finish, so the individual can provide informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, *they are not final*, because the geotechnical engineer who developed them relied heavily on judgment and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* revealed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a full-time member of the design team, to:

- confer with other design-team members,
- help develop specifications,
- review pertinent elements of other design professionals' plans and specifications, and
- be on hand quickly whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction observation.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for informational purposes only*. To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report, but they may rely on the factual data relative to the specific times, locations, and depths/elevations referenced. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may

perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely*. Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures*. If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. As a general rule, *do not rely on an environmental report prepared for a different client, site, or project, or that is more than six months old*.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, none of the engineer's services were designed, conducted, or intended to prevent uncontrolled migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, *proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration*. Confront the risk of moisture infiltration by including building-envelope or mold specialists on the design team. *Geotechnical engineers are not building-envelope or mold specialists*.



Telephone: 301/565-2733

e-mail: info@geoprofessional.org www.geoprofessional.org

BID TAB
HIDALGO COUNTY PRECICNT NO. 2
RFB NO.
COUNTY WIDE SHOP - SITE CIVIL IMPROVEMENTS
ESTIMATOR: NOE SALDIVAR, PE DATE:5/1/17



SAMPLE

Item No.	Estimate Quantity	Unit	Description	UNIT BID PRICE IN WORDS	Unit Price in Figures	Total Extension in Figures
1	150	LF	PIPE	TWENTY FIVE DOLLARS FIFTY CENTS	\$25.50	\$3,825.00

ALTERNATE 1 - ASPHALT						
Item No.	Estimate Quantity	Unit	Description	UNIT BID PRICE IN WORDS	Unit Price in Figures	Total Extension in Figures
1	920	SY	2" HMAC	DOLLARS CENTS		
2	1,602	SY	1.5" HMAC	DOLLARS CENTS		
3	2,422	SY	PRIME COAT (MC-30)	DOLLARS CENTS		
4	1,066	SY	8" COMPACTED CALICHE	DOLLARS CENTS		
5	2,407	SY	10" COMPACTED CALICHE	DOLLARS CENTS		
6	2,855	SY	STABILIZE 6" SUBGRADE (7% LIME)	DOLLARS CENTS		
7	1	LS	TEMPORARY EROSION, SEDIMENTATION & ENVIRONMENTAL CONTROL	DOLLARS CENTS		
				ADD ALTERNATE NO. 1 BID PRICE IN WORDS	DOLLARS	
					CENTS	\$

ALTERNATE 2 - WATER LINE						
Item No.	Estimate Quantity	Unit	Description	UNIT BID PRICE IN WORDS	Unit Price in Figures	Total Extension in Figures
1	1	LS	1.5" WATER LINE INCLUDING CONNECTION TO EXISTING 8" WATER LINE	DOLLARS CENTS		
				ADD ALTERNATE NO. 2 BID PRICE IN WORDS	DOLLARS	
					CENTS	\$

ALTERNATE 3 - OSSF						
Item No.	Estimate Quantity	Unit	Description	UNIT BID PRICE IN WORDS	Unit Price in Figures	Total Extension in Figures
1	1	LS	ON SITE SEWAGE FACILITY	DOLLARS CENTS		
				ADD ALTERNATE NO. 3 BID PRICE IN WORDS	DOLLARS	
					CENTS	\$

ALTERNATE 4 - DRAINAGE						
Item No.	Estimate Quantity	Unit	Description	UNIT BID PRICE IN WORDS	Unit Price in Figures	Total Extension in Figures
	40	LF	18" HIGH PERFORMANCE POLYPROPYLENE STORM DRAIN PIPE	DOLLARS CENTS		
	1	EA	CONCRETE HEADWALL FOR 18" PIPE	DOLLARS CENTS		
	3	EA	18" SAFETY END TREATMENT	DOLLARS CENTS		
				ADD ALTERNATE NO. 4 BID PRICE IN WORDS	DOLLARS	
					CENTS	\$

- LF - LINEAR FEET
- EA - EACH
- SY - SQUARE YARD(S)
- CY - CUBIC YARD(S)
- LS - LUMP SUM

COMPANY: _____
 PHONE NUMBER: _____
 AUTHORIZED SIGNATURE: _____
 PRINTED NAME: _____
 TITLE: _____

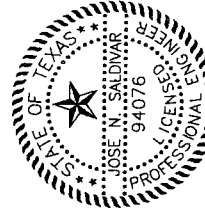


**HIDALGO COUNTY
PRECINCT No. 2
COMMISSIONER EDUARDO "EDDIE" CANTU**

300 W. HALL ACRES, SUITE G

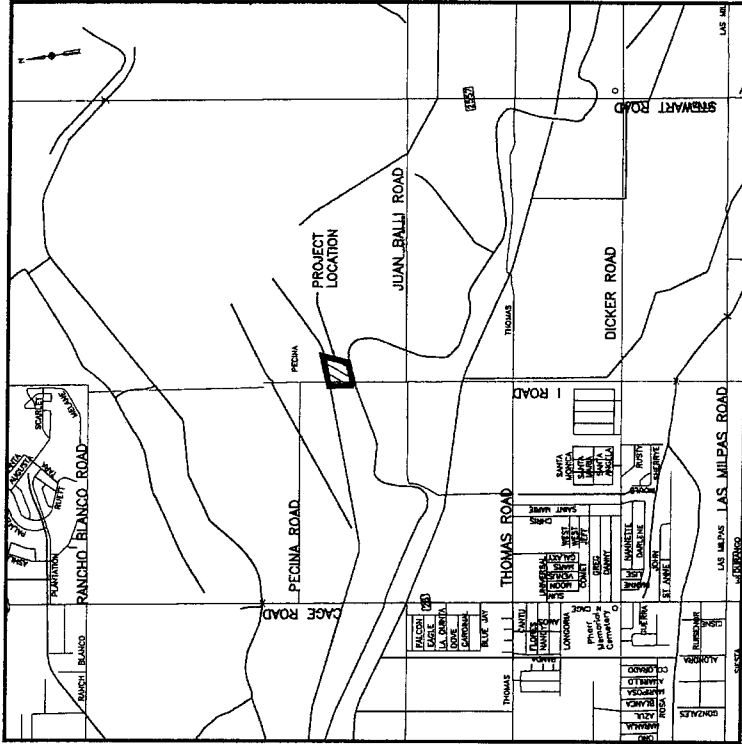
PHARR, TX 78577
TEL: (956) 787-1891 * FAX: (956) 787-4683
www.co.hidalgo.tx.us

RAUL E. SESIN, P.E., C.F.M.
HIDALGO COUNTY DRAINAGE DISTRICT No. 1 GENERAL MANAGER
HIDALGO COUNTY FLOODPLAIN ADMINISTRATOR

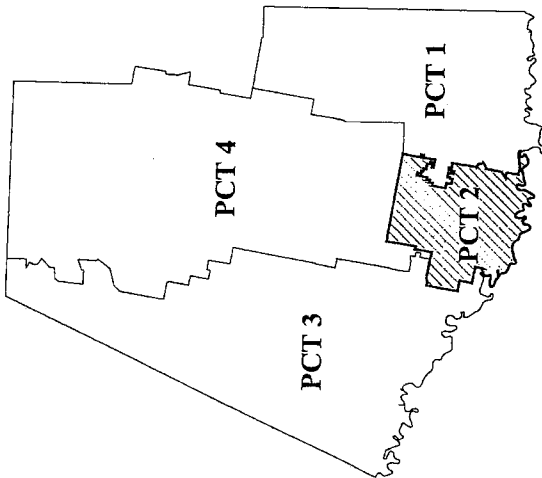


This seal appearing on this document was authorized by Jose N. Saldivar P.E. No. 94076 on the above designated date.

Jose N. Saldivar
JOSE N. SALDIVAR - P.E. No. 94076
05/11/17



LOCATION MAP - SCALE: 1" = 3000'



JUDGE RAMON GARCIA

COUNTY JUDGE

COMMISSIONER DAVID L. FUENTES

PRECINCT No. 1

COMMISSIONER EDUARDO "EDDIE" CANTU

PRECINCT No. 2

COMMISSIONER JOE M. FLORES

PRECINCT No. 3

COMMISSIONER JOSEPH PALACIOS

PRECINCT No. 4

**HIDALGO COUNTY PRECINCT No. 2
COUNTY WIDE SERVICE SHOP - ON-SITE CIVIL IMPROVEMENTS**

REVISIONS

DATE:	COMMENTS:



LEGEND

W	WATER PIPE
SS	SANITARY SEWER PIPE
SD	STORM DRAIN PIPE
IRR	IRRIGATION PIPE
TEL	TELEPHONE LINE
FO	FIBER OPTIC CABLE
GAS	GAS LINE
OHE	OVERHEAD ELECTRICAL LINE
//	WOOD FENCE
XX	HOG-WIRE FENCE
X	CHAINLINK FENCE
---	RIGHT-OF-WAY LINE

NOTE

THE HORIZONTAL AND/OR VERTICAL LOCATION OF EXISTING UNDERGROUND UTILITIES AS ILLUSTRATED ON THESE PLANS IS APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION IN THE AREA OF SAID UTILITIES. CONTRACTOR SHALL CONTACT THE FOLLOWING AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION/EXCAVATING IN THE AREA OF EXISTING UTILITIES

UTILITY COMPANY:	CONTACT PERSON:	PHONE:
DIG-TESS	Carmen Morales	800-DIG-TESS
MAGIC VALLEY	Acosta	956-283-2369
TIME WARNER COMMUNICATION	Ryan	956-289-5040
ATT SWBT	Lucy Salinas	956-430-8266
HIDALGO COUNTY DRAINAGE DISTRICT #1	Nae Soldivar	956-292-7080
ALAMO UTILITY DEPARTMENT	Daisy Alonzo	956-787-8321
MILITARY HIGHWAY WATER SUPPLY CORP.	Alex	956-565-2491
HIDALGO COUNTY IRRIGATION DISTRICT No. 2	Bert Weesling	956-787-1422
TESSA WATER SERVICE	Mike Martinez	956-444-3926
SPECTRA ENERGY (TESSAS EASTERN CORP.)	Freddy Pottolan	956-607-6255

QUANTITY ABBREVIATIONS

AC	ACRE
CF	CUBIC FEET
CY	CUBIC YARD(S)
EA	EACH
LF	LINEAR FEET
LS	LUMP SUM
SF	SQUARE FEET
SY	SQUARE YARD(S)

SYMBOLS

Iron Pipe	Iron Rod
Tree	Sign
HL&P Tower	Mh&P (Manhole electric)
Power pole	Patrn (Power Pole w/transformer)
Guy (Down guy)	Gas meter (Gr)
Gv (Gas valve)	Mhsh (Sanitary sewer manhole)
Sncv (Clean out)	Culv (Culvert pipe)
Grnt (Grate inlet)	Mhst (Storm sewer manhole)
Signst (Stop sign)	Trip (Traffic junction box)
Fhp (Fire hydrant)	Fhp (Fire hydrant)
Wm (Water meter)	Wv (Water valve)
Shrub	Acop (Aluminum cap)
Blask (Grass disk)	Fnd ip (Iron pipe found)
Nnd IR (Iron Rod found)	Nnd (Benchmark)
Bm (Benchmark)	Rowmkr (R.O.W. marker)
Irr Box	Irr standpipe
Irr gate valve	Cdtpst (Guardrail post)
Mailbox	Stisgn (Street sign)
Palm	Catbox (Cable Tv box)
Ebox (Electrical box)	Eltirn (Electrical transformer)
Emkr (Electrical marker)	Lp (Light Pole)
Ppnt (Power pole w/light)	Pipe
Gasreg (Gas regulator)	Mhgs (Manhole Gas)
Pipvnt (Pipe vent/stand pipe)	Wrmkr (Water valve marker)
Crblnl (Curb inlet)	Trit (Traffic light)
Itrsn (Traffic signal)	Tsbx (Traffic signal pole)
Mhfl (Manhole telephone)	Pbxx (Telephone pedestal)
Phmkr (Telephone marker)	Tlbox (Telephone box)
Tlnc (Telephone junction box)	Tipol (Telephone pole)
Sprkhd (Sprinkler head)	Wirwell (Water well)
Water Bibb	Cps (Cotton Picker Spindle)

ABBREVIATIONS


ADR	ASPHALT DRIVE
APV	ASPHALT PAVEMENT
AVE	AVENUE
BM	BENCHMARK
BOC	BACK OF CURB
CONC.	CONCRETE
CONST.	CONSTRUCT
CL	CENTER LINE
CDR	CONCRETE DRIVE
CPV	CONCRETE PAVEMENT
CA	CALICHE DRIVE
CARD	CALICHE ROAD
CFN	CHAIN LINK FENCE
CI	CURB INLET
CLV	CULVERT
CP	CONTROL POINT
CPV	CONCRETE PAVEMENT
CR	CENTER OF ROAD
CRB	CURB
CSM	CABLE SPOT MARKING
D	DIRT
DDR	DIRT DRIVE
DT	DITCH
DTB	DITCH BOTTOM
DTBB	DITCH BOTTOM OF BERM
DIE	DITCH EDGE
DIFL	DITCH FLOW LINE
DIT	DITCH TOP
DTTB	DITCH TOP OF BERM
DTTOE	DITCH TOE
EXIST.	EXISTING
ESMT.	EASEMENT
EBX	ELECTRIC BOX
ECCA	EDGE OF CALICHE
EOP	EDGE OF PAVEMENT
EW	EDGE OF WATER
EWL	END WALL
FC	FINISHED GRADE
FH	FIRE HYDRANT
FL	FLOW LINE
FM	FARM-TO-MARKET
FN	FENCE
FOC	FIBER OPTIC CABLE
FOCM	FIBER OPTIC CABLE MARKING
G	GRAVEL
GDR	GRAVEL DRIVE
GL	GAS LINE
GLMKR	GAS LINE MARKER
GLSM	GAS LINE SPOT MARKING
GM	GAS METER
GV	GAS VALVE
GW	GUY WIRE
HCDR	HIDALGO COUNTY DEED RECORDS
HCCR	HIDALGO COUNTY OFFICIAL RECORDS
HCMR	HIDALGO COUNTY MAP RECORDS
HCR	HANDICAP RAMP
HDW	HEADWALL
HWM	HIGH WATER MARK
IR	IRON ROD
IRS	IRON ROD SET
IGW	IRRIGATION GATE VALVE
ISP	IRRIGATION STAND PIPE
INV	INVERT
IV	IRRIGATION VENT
LOT	LOT CORNER
MB	MAIL BOX
MH	MANHOLE
MON	MONUMENT
N.T.S.	NOT TO SCALE
NAIL	NAIL
NAMSC	NORTH ALAMO WATER SUPPLY CORPORATION
NG	NATURAL GROUND
OHE	OVERHEAD ELECTRICAL LINE
PFL	PIPE FLOW LINE
PGL	PROPOSED GRADE LINE
PL	PROPERTY LINE
PP	PROPOSED
PROP	PROPOSED
PV	PAVEMENT
PVC	PVC PIPE
RT	RIGHT
RCP	REINFORCED CONCRETE PIPE
RIP	RIP-RAP
RD	ROAD
RM	REFERENCE MARKER
ROW	RIGHT-OF-WAY
RR	RAIL ROAD
RSD	ROAD SIDE DITCH
RW	RETAINING WALL
SBOT	SWALE BOTTOM
SDL	STORM DRAIN LINE
SEP	SEPTIC TANK COVER
SET	SAFETY-END TREATMENT
SP	SERVICE POLE
SPOL	SIGNAL POLE TRAFFIC
STOP	SWALE TOP
STA	STATION
SW	SIDEWALK
TELBX	TELEPHONE BOX
TBX	TRAFFIC CONTROL BOX
TKMR	TELEPHONE MARKER
TOA	TOP OF ASPHALT
TOW	TOP OF CURB
TOW	TOP OF WATER
TR	TREE
TRNS	TRANSFORMER
TSL	TRAFFIC SIGNAL LIGHT
TSM	TELEPHONE LINE SPOT MARKING
VA	VALVE
WB	WATER BIBB
WDFN	WOODEN FENCE
WFN	WIRE FENCE
WL	WATER LINE
WLSM	WATER LINE SPOT MARKING
WM	WOODEN METER
WP	WOODEN POST
WV	WATER VALVE
WWSM	WASTE WATER LINE SPOT MARKING
YD	YARD DRAIN

GENERAL NOTES:

- ALL WORK SHALL BE COMPLETED TO THE SATISFACTION OF THE HIDALGO COUNTY PRECINCT No. 2, AND MILITARY HIGHWAY WATER SUPPLY CORPORATION.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT MS ALEX CANO WITH MILITARY HIGHWAY WATER SUPPLY CORP. (M.H.W.S.C.) 48 HOURS PRIOR TO COMMENCEMENT OF WORK @ (956) 565-2491 TO COORDINATE AND MEET ANY ADDITIONAL REQUIREMENTS AND/OR SPECIFICATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO CALL DIG TESS 48 HOURS PRIOR TO COMMENCEMENT OF WORK FOR UTILITY SPOTTING @ (1-800-DIG-TESS).
- THE CONTRACTOR TO NOTIFY ALL UTILITY COMPANIES FOR VERIFICATION OF LOCATION OF EXISTING FACILITIES PRIOR TO BEGINNING ANY EXCAVATION.
- LOCATIONS OF UNDERGROUND FACILITIES ARE FROM BEST INFORMATION AVAILABLE. NEITHER THE OWNER OR ENGINEER WARRANT THE ACCURACY OF THE INFORMATION PROVIDED. ANY DEVIATIONS SHALL BE CALLED TO THE ENGINEER'S ATTENTION IMMEDIATELY.
- THE CONTRACTOR SHALL PROVIDE ACCESS TO EXISTING RESIDENCES AT ALL TIMES.
- ANY NEW DAMAGES TO FENCES, WALKS, OR PRIVATE PROPERTY SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.
- THE CONTRACTOR SHALL REMOVE ALL FENCES LOCATED WITHIN THE EASEMENTS, INTERFERING WITH CONSTRUCTION OPERATION AND PROVIDE TEMPORARY FENCING DURING CONSTRUCTION. REMOVED FENCES SHALL BE REPLACED WITH A NEW FENCE OR UNDAMAGED ORIGINAL FENCING. REMOVAL AND REPLACEMENT OF EXISTING AND TEMPORARY FENCES SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST AND REFLECTED IN THE UNIT BID PRICES FOR VARIOUS ITEMS LISTED IN THE PROPOSAL.
- NO OPEN EXCAVATION SHALL BE LEFT OPEN OVERNIGHT. ALL EXCAVATIONS WHICH CANNOT BE BACKFILLED OVERNIGHT SHALL BE COVERED. AS A MINIMUM, WITH STEEL PLATING WHEN IN PAVED AND UNPAVED AREAS SUBJECT TO VEHICULAR LOADING; ¾ PLYWOOD, WOOD PLANKING WITH O.S.H.A. ORANGE PLASTIC EXPANDED MESH BARRIER AROUND PERIMETER IN UNPAVED AREAS NOT SUBJECT TO VEHICULAR LOADING, OR AS APPROVED BY THE ENGINEER.
- THE PREPARATION OF THESE PLANS REFLECTS INFORMATION, PROVIDED BY OTHERS, ON THE APPROXIMATE LOCATION AND EXISTENCE OF EXISTING UTILITY AND ADJACENT PHYSICAL FEATURES. HOWEVER, THEY DO NOT IMPLY OR AFFIRM THAT ALL UTILITIES OR PHYSICAL FEATURES ARE SHOWN. GENERALLY, UTILITY SERVICE CONNECTIONS ARE NOT INDICATED ON THESE PLANS. CONTRACTOR IS RESPONSIBLE FOR NOTIFICATIONS OF THE OWNER IMMEDIATELY UPON ENCOUNTERING UNFORESEEN CONFLICTS.
- THE APPROXIMATE LOCATIONS OF KNOWN EXISTING UTILITIES ARE SHOWN. CONTRACTOR SHALL DETERMINE THE EXACT HORIZONTAL AND VERTICAL LOCATIONS IN THE FIELD PRIOR TO COMMENCING WORK. CONTRACTOR TO BE FULLY RESPONSIBLE FOR DAMAGES WHICH MIGHT OCCUR BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE EXISTING UTILITIES.
- PUBLIC AND PRIVATE UTILITY LINES AND CUSTOMER SERVICE LINES MAY EXIST THAT ARE NOT SHOWN ON THE CONSTRUCTION DRAWINGS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE, MAINTAIN AND PROTECT THE INTEGRITY OF THESE LINES. HAND EXCAVATION MAY BE REQUIRED. THE CONTRACTOR SHALL RESTORE RELOCATED OR DIVERTED UTILITY TO ITS ORIGINAL CONDITION AND LOCATION WHEN APPLICABLE UPON COMPLETION OF CONSTRUCTION. SAID RESTORATION SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST AND REFLECTED IN THE UNIT BID PRICES FOR VARIOUS ITEMS LISTED IN THE PROPOSAL.
- THE CONTRACTOR SHALL ADJUST EXISTING M.H.W.S.C. WATER LINES AS REQUIRED TO INSTALL DRAINAGE IMPROVEMENTS. ADJUSTMENTS SHALL BE COORDINATED WITH M.H.W.S.C. PRIOR TO COMMENCEMENT OF WORK. SAID WATER LINE ADJUSTMENT SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST AND REFLECTED IN THE UNIT BID PRICES FOR VARIOUS ITEMS LISTED IN THE PROPOSAL.
- NINE FEET (I.E., WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES, OR WATER LINES NEXT TO MANHOLES) THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC 3.17 (DESIGN OF SEWAGE SYSTEMS) OR 30 TAC 280 (WATER HYGIENE).
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING WATER AND SEWER CONNECTIONS TO ALL HOMES AND BUSINESSES IN WORKING ORDER AT ALL TIMES, EXCEPT FOR BRIEF INTERRUPTIONS IN SERVICE FOR CONNECTIONS TO BE REINSTALLED. IN NO CASE SHALL SERVICES BE ALLOWED TO REMAIN OUT OF SERVICE OVERNIGHT. CONTRACTOR IS RESPONSIBLE FOR DAMAGES TO SAID SERVICES.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ADEQUATE DRAINAGE OF PROPOSED FACILITIES AT ALL TIMES DURING CONSTRUCTION.
- THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES DURING THE INSTALLATION OF THE STRUCTURES DRAINAGE, IRRIGATION AND ROAD IMPROVEMENTS. DEWATERING OF THE TRENCH MAY BE REQUIRED DURING THE INSTALLATION OF THE DRAINAGE AND IRRIGATION FACILITIES/STRUCTURES. SAID DEWATERING SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST AND REFLECTED IN THE UNIT BID PRICES FOR VARIOUS ITEMS LISTED IN THE PROPOSAL.

- THE CONTRACTOR SHALL CLEANUP AND RESTORE THE AREA OF OPERATIONS TO A CONDITION AS GOOD AS OR BETTER THAN THAT WHICH EXISTED PRIOR TO INSTALLATION OF ALL ITEMS TO BE CONSTRUCTED.
- ALL NEW DEBRIS, VEGETATION AND SURPLUS MATERIAL RESULTING FROM DEMOLITION AND/OR CLEARING OF THE RIGHT-OF-WAY IN PREPARATION OF PROPOSED IMPROVEMENTS SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF AT A SITE ACCEPTABLE TO HIDALGO COUNTY PRECINCT No. 2. THE CONTRACTOR SHALL PROVIDE A LETTER STATING SO. THIS SHALL BE INCIDENTAL AND NOT SEPARATE PAY ITEM UNLESS STATED SO. NO EXCESS EXCAVATED MATERIAL SHALL BE DEPOSITED IN LOW AREAS OR ALONG NATURAL DRAINAGE WAYS WITHOUT WRITTEN PERMISSION FROM THE AFFECTED PROPERTY OWNER AND THE HIDALGO COUNTY PRECINCT No. 2. IF THE CONTRACTOR PLACES EXCESS MATERIAL IN THE AREAS WITHOUT WRITTEN PERMISSION, HE WILL BE RESPONSIBLE FOR ALL DAMAGE RESULTING FROM SUCH FILL AND CONTRACTOR SHALL REMOVE THE MATERIAL AT OWN COST.
- THE CONTRACTOR IS RESPONSIBLE FOR THE PREPARATION AND SUBMITTAL OF THE TRENCH EXCAVATION PROTECTION PLAN. CONTRACTOR SHALL SUBMIT CONSTRUCTION DETAILS AND DESIGN CALCULATIONS BEARING THE SEAL OF A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS BEFORE CONSTRUCTING THE SHORING AND/OR UTILIZING A TRENCH PROTECTION SYSTEM (BOX). THE ENGINEER RESERVES THE RIGHT TO REJECT DESIGNS NOT MEETING THE REQUIREMENTS OF SECTION ITEM 402 AND 403.
- THE CONTRACTOR SHALL PROVIDE STORM WATER POLLUTION PREVENTION PLAN (SWP3) PRIOR TO COMMENCEMENT OF CONSTRUCTION AS REQUIRED BY HIDALGO COUNTY AND OR TCEQ.
- FLEXIBLE BASE AGGREGATE SHALL MEET THE REQUIREMENTS IN THE TABLE BELOW. NEW CALICHE MATERIAL SHALL BE TREATED WITH 0.5% LIME BY DRY WEIGHT OF MATERIAL IF THE PLASTICITY INDEX OF SAID MATERIAL IS GREATER THAN 12.

TYPE E (CALICHE)	
PROPERTY	TEST METHOD REQUIREMENT
2-1/2" SIEVE (CUMULATIVE, % RET)	Tex-110-E 0
1-3/4" SIEVE (CUMULATIVE, % RET)	Tex-110-E 0-10
#4 SIEVE (CUMULATIVE, % RET)	Tex-110-E 45-75
#40 SIEVE (CUMULATIVE, % RET)	Tex-110-E 50-85
LIQUID LIMIT, % MAX	Tex-104-E 40
PLASTICITY INDEX, % MAX	Tex-106-E 12
WET BALL MILL, % MAX	Tex-116-E 50
WET BALL MILL, % MAX INCREASE PASSING #40 SIEVE	Tex-116-E 20




HIDALGO COUNTY
PRECINCT NO. 2
300 W. HALL ST. SUITE C
PHARR, TX 77577
TEL: (956) 787-1981 FAX: (956) 787-4643
WWW.CO.HIDALGO.TX.US

GENERAL NOTES

**HIDALGO COUNTY PCT. 2
ON-SITE CIVIL IMPROVEMENTS**

EDUARDO "EDDIE" CANTU
COMMISSIONER
HIDALGO COUNTY PCT. 2
IMPROVEMENT PROJECTS



EDUARDO "EDDIE" CANTU
REGISTERED PROFESSIONAL ENGINEER
NO. 12486
STATE OF TEXAS
EXPIRES 12/31/2017

DATE: 05/11/2017
SCALE: AS SHOWN
SHEET NO.: J.R.
SHEET BY: ELLIENS
DRAWN BY: EDGAR L.
PROJECT: G01-04

GENERAL NOTES (CONT):

23. THE CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR ANY SURFACE IRREGULARITIES, AS DIRECTED BY THE ENGINEER, CAUSED BY THE CONTRACTOR'S WORKING OPERATIONS.
24. THE COUNTY WILL PROVIDE CONTROL POINTS (BENCHMARK AND PROPERTY CORNERS) FOR THE WORK TO BE PERFORMED BY THE CONTRACTOR. CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION STAKING INCLUDING BUT NOT LIMITED TO HORIZONTAL & VERTICAL GRADE CUTS FOR ROADWAY, BASE AND SUB GRADE SHALL HAVE A MINIMUM CROSS SLOPE OF 2.5%.
25. ALL PERMANENT PAVEMENT MARKINGS FOR THIS PROJECT SHALL BE 0.100 INCHES (100 MIL) THICK THERMOPLASTIC. ANY PERMANENT PAVEMENT MARKINGS OR NON-REMOVAL WORK ZONE PAVEMENT MARKINGS LACKING REFLECTIVITY IN ACCORDANCE WITH TEST METHOD TEX 828-B, WILL NOT BE PAID FOR AS PER COUNTY POLICY. THE ROADWAY WILL BE RE-STRIPED AT NO ADDITIONAL COMPENSATION.
26. PAVEMENT SURFACE PREPARATION FOR MARKINGS AND MARKERS WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST REFLECTED IN THE UNIT BID PRICES FOR VARIOUS ITEMS LISTED ON THE PROPOSAL.
27. THE CONTRACTOR SHALL COORDINATE AN ONSITE MEETING BETWEEN ALL PARTIES INVOLVED, PRIOR TO COMMENCING ANY STRIPING OPERATION. SAID MEETING WILL BE REQUIRED TO REVIEW STRIPING DETAILS AND ANY REQUIREMENTS TO ENSURE QUALITY WORK.
28. THE INSTALLATION OF THE NEW WATER LINE AND OSSF SHALL CONFORM TO THE CURRENT HIDALGO COUNTY REGULATION AS WELL AS T.C.E.C. REGULATION WHICH INCLUDES THE TEXAS ADMINISTRATIVE CODE (TAG) TITLE 30, CHAPTER 285 (OSSF) AND 290 (PUBLIC DRINKING WATER)
29. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LIMITS OF WORK DEFINED IN THE PLANS COORDINATION WITH HIDALGO COUNTY PRECINCT No. 2 AND THE BUILDING CONTRACTOR SHALL BE REQUIRED PRIOR TO FINALIZING THE WORK AREA WITHIN THE PROJECT LIMITS WHICH IS 5 FT. FROM THE BUILDING, INCLUDING INSTALLING WATER AND SANITARY SEWER LINES TO BUILDING PROJECT LIMITS
30. DIRT FILL (SELECT FILL) WILL NEED TO BE BROUGHT IN TO BRING THE SITE ELEVATION TO GRADE. DIRT FILL SHALL MEET THE RECOMMENDATION REQUIREMENT OF THE GEOTECHNICAL ENGINEERING REPORT (SEE SEC. 4.2 EARTHWORK).

HIDALGO COUNTY
PRECINCT No. 2
300 W. HALL ADRESS SUITE C
9408 N. 283RD
MCKINNEY, TX 75069
TEL: (972) 787-1581 • FAX: (972) 787-6563
www.co.hidalgo.tx.us



COMMISSIONER
EDUARDO "EDDIE" CANTU
HIDALGO COUNTY PCT 2
IMPROVEMENT PROJECTS

HIDALGO COUNTY PCT. 2
COUNTY WIDE SERVICE SHOP
ON-SITE CIVIL IMPROVEMENTS
GENERAL NOTES

5/11/15

Project: 15012121 - CIVIL IMPROVEMENTS (GENERAL NOTES) (REVISED)
Project File: 03 DATE: 03/09/2017 TIME: 01:24:00 PM

DESIGN BY:	N.T.S.
CHECKED BY:	J.R.
TITLE BY:	E.I./N.S.
DATE:	EDGAR I.
PROJECT:	G01-05

The seal and stamp on this drawing are the property of the Engineer and shall not be used on any other drawing without the written consent of the Engineer.

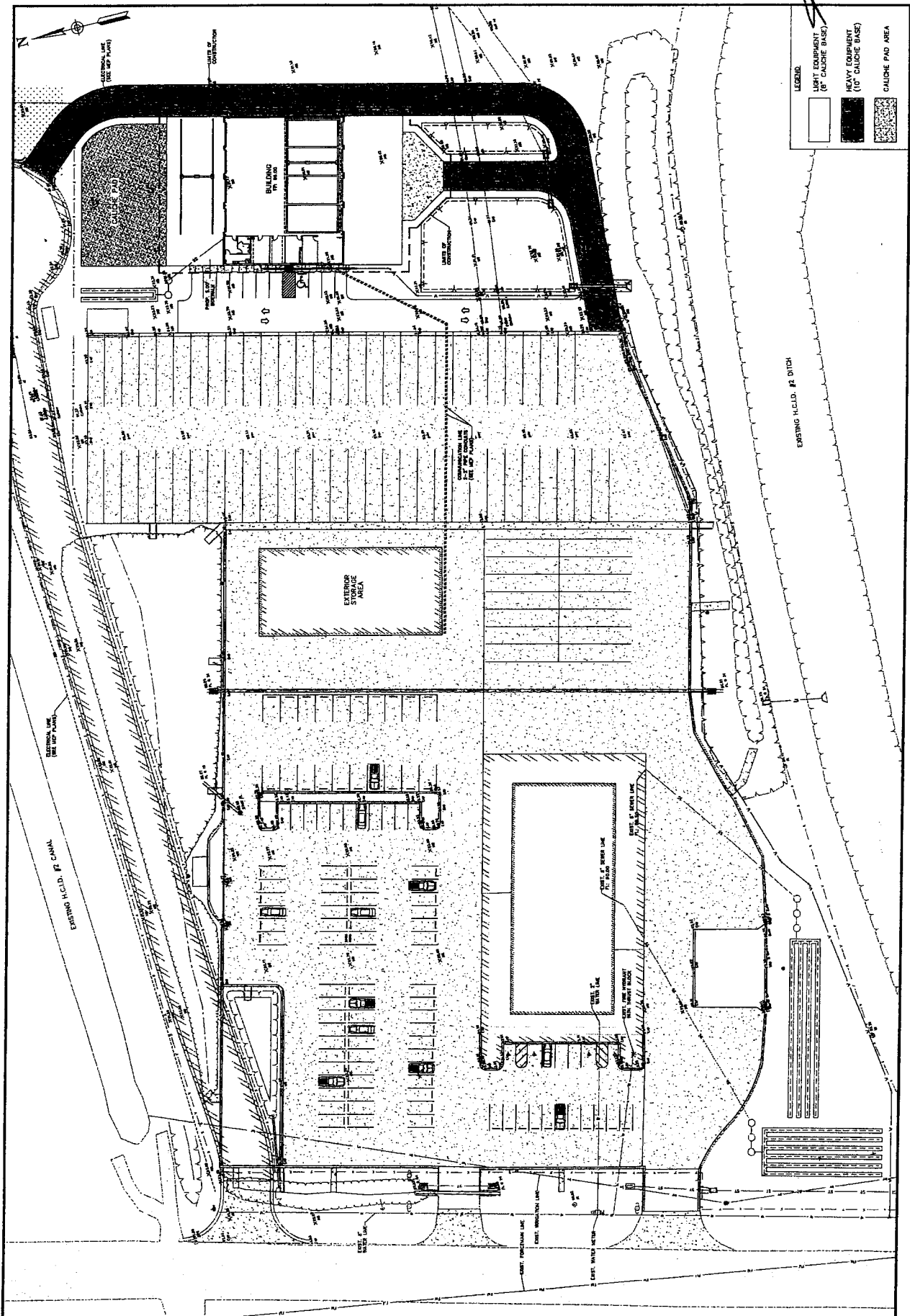
HIDALGO COUNTY PCT. 2
 ON-SITE CIVIL IMPROVEMENTS
 PROPOSED SITE LAYOUT
 AND TOPOGRAPHY
 COMMISSIONER
 HIDALGO COUNTY PCT 2
 EDUARDO "EDDIE" CANTU
 IMPROVEMENT PROJECTS

HIDALGO COUNTY
 PRECINCT No. 2
 300 W. HALL ACRES, SUITE G
 PHOENIX, TX 75037
 TEL: (956) 787-1961 FAX: (956) 787-6683
 www.co.hidalgo.tx.us



DATE: 05/17/11
 DRAWN BY: H.L.'30
 CHECKED BY: J.R.
 DESIGNED BY: E.L./J.S.
 DATE: 05/17/11
 BY: EDGAR L.
 TITLE:

C01-01



LEGEND

[Stippled Pattern]	LIGHT EQUIPMENT (8" CALICHE BASE)
[Solid Black]	HEAVY EQUIPMENT (10" CALICHE BASE)
[Cross-hatched Pattern]	CALICHE PAD AREA



HIDALGO COUNTY
PRECINCT No. 2
300 W. HALL ACRES, SUITE C
PHOENIX, TX 75087
TEL: (940) 787-1881 FAX: (940) 787-4883
WWW.CO.HIDALGO.TX.US

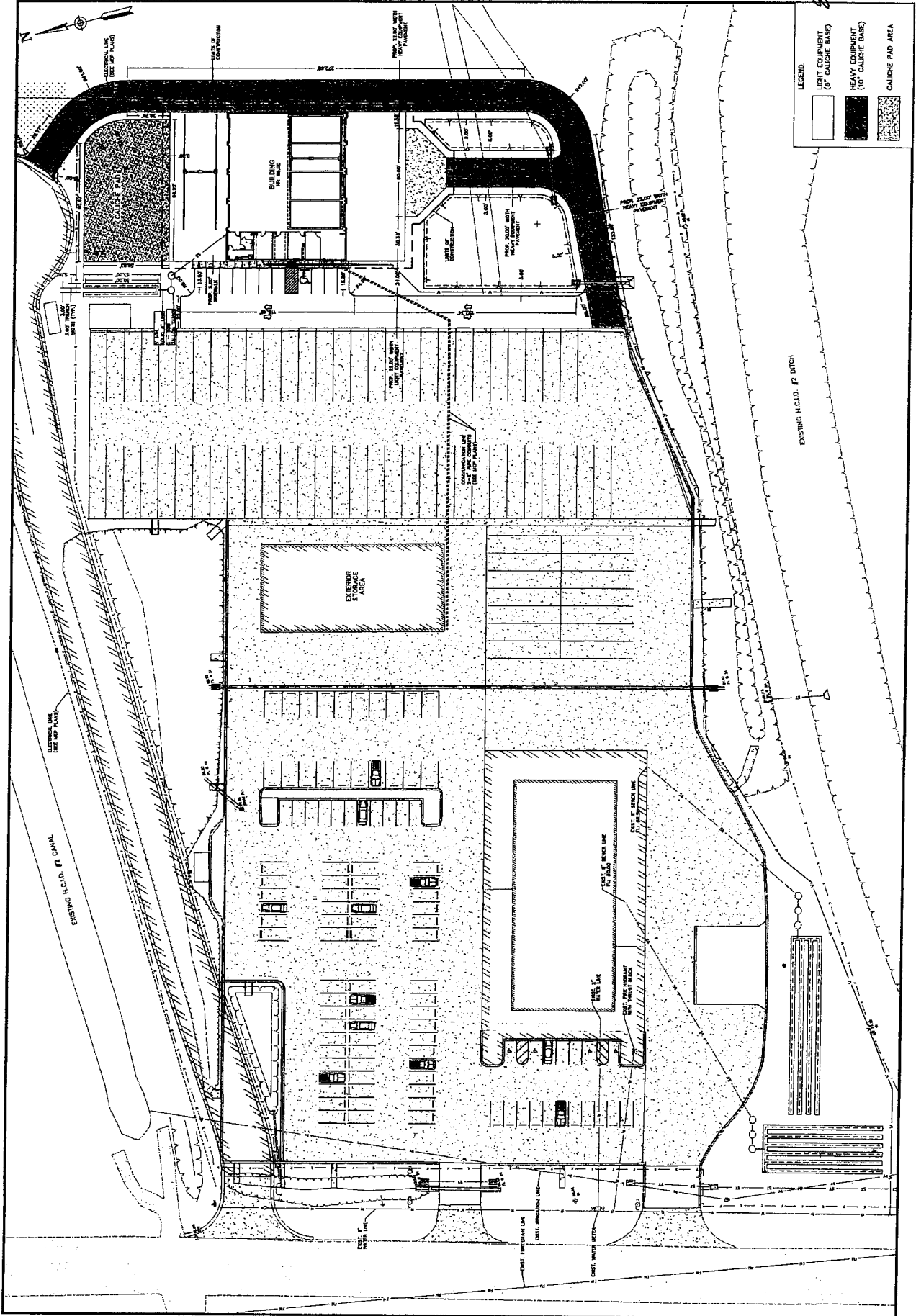


COMMISSIONER
EDUARDO "EDDIE" CANTU
HIDALGO COUNTY PCT 2
IMPROVEMENT PROJECTS

HIDALGO COUNTY PCT. 2
COUNTY WIDE SERVICE SHOP
ON-SITE CIVIL IMPROVEMENTS
DIMENSIONAL PLAN



DATE: 05/12/17
SCALE: AS SHOWN
DRAWN BY: H1-307
CHECKED BY: E.J./N/S
PROJECT: EDGAR I.
SHEET: C01-02



LEGEND

	LIGHT EQUIPMENT (8' CALICHE BASE)
	HEAVY EQUIPMENT (10' CALICHE BASE)
	CALICHE PAD AREA

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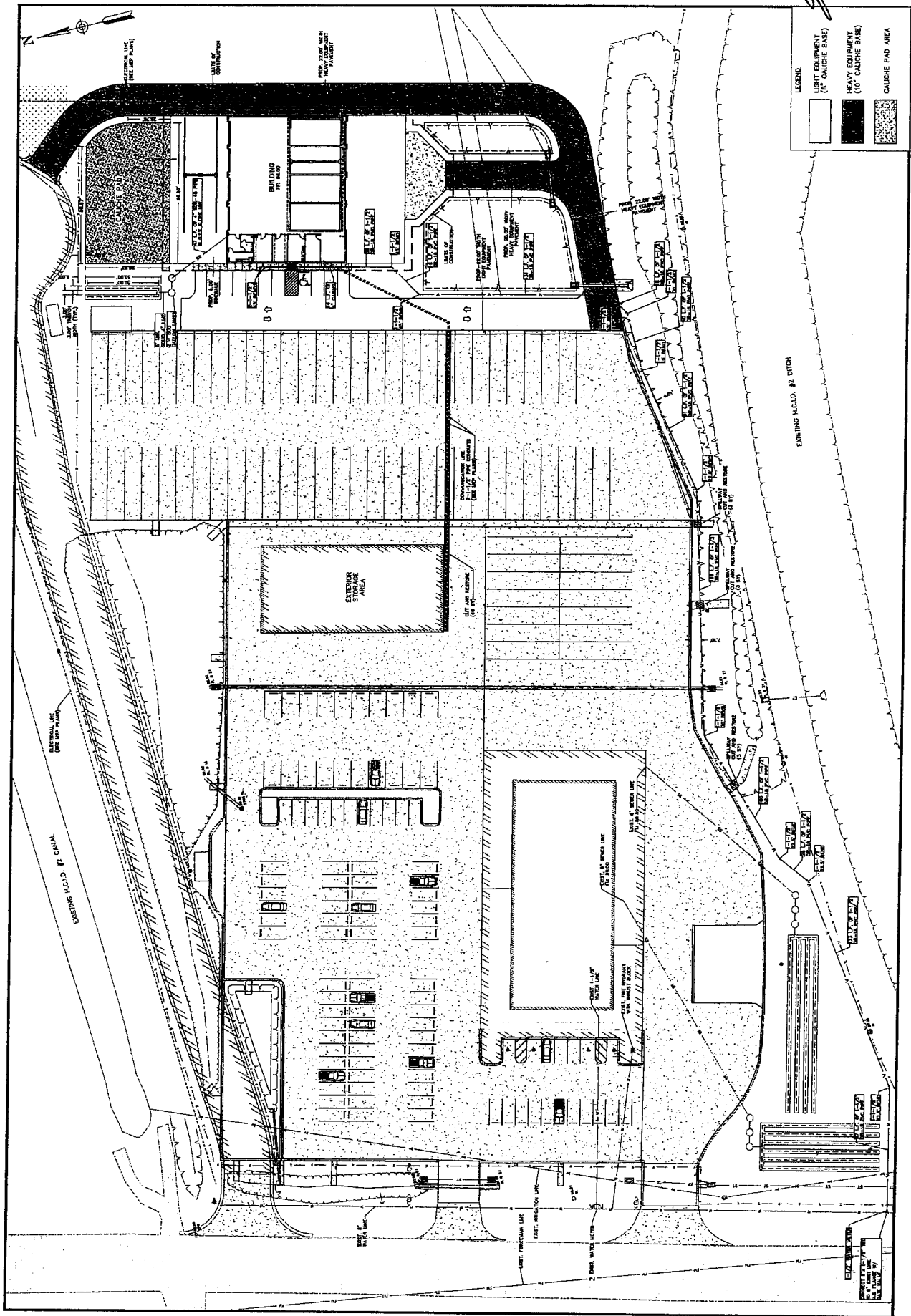
HIDALGO COUNTY PUBLIC WORKS DEPARTMENT
 300 W. WALL ACRES, SUITE C
 PRECINCT NO. 2
 PHOENIX, TX 75227
 TEL: (956) 787-1981 * FAX: (956) 787-4883
 WWW.CO.HIDALGO.TX.US



COMMISSIONER
 EDUARDO "EDDIE" CANTU
 HIDALGO COUNTY PCT 2
 IMPROVEMENT PROJECTS

**HIDALGO COUNTY PCT. 2
 ON-SITE CIVIL IMPROVEMENTS
 UTILITIES LAYOUT**

SHEET NO. H-1-507
 DESIGNED BY: J.R.
 DRAWN BY: E.L./N.S.
 CHECKED BY: EDGAR L.
 SHEET: C01-03



HIDALGO COUNTY
PRECINCT NO. 2
300 W. HALL ADRES, SUITE G
PHOENIX, TX 75577
TEL: (956) 782-1981 FAX: (956) 782-4643
WWW.CO.HIDALGO.TX.US



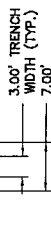
COMMISSIONER
EDUARDO "EDDIE" CANTU
HIDALGO COUNTY PCT 2
IMPROVEMENT PROJECTS

HIDALGO COUNTY PCT. 2
COUNTRY WIDE SERVICE SHOP
ON-SITE CIVIL IMPROVEMENTS
AND TYPICAL SECTIONS
OSSSF DETAILS

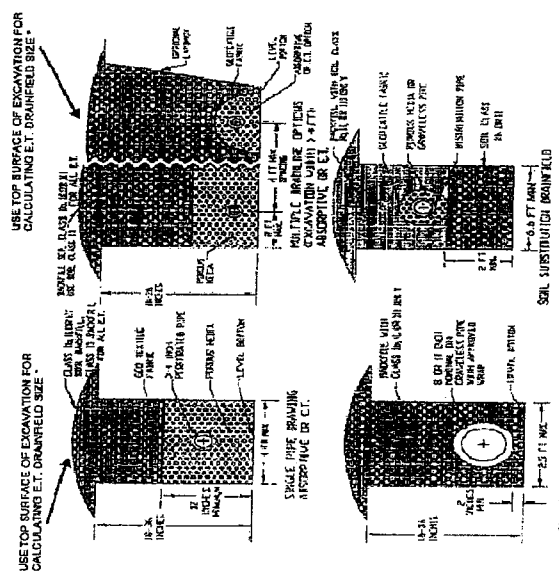
DATE: 02/27/2013
DRAWN BY: J.R.
CHECKED BY: E.L./A.S.
SCALE: AS SHOWN
SHEET: EDGAR 1
C02-01



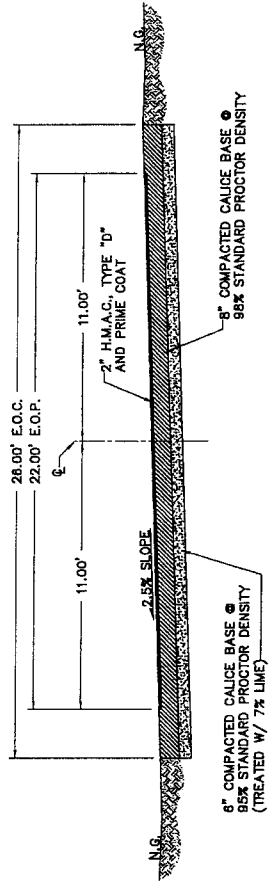
SYSTEM DESIGN FOR COUNTY WIDE SHOP BUILDING: SEPTIC TANK
WASTEWATER USAGE RATE (30 TAC \$285.91(3)).
DAILY SEWAGE FLOW FOR SERVICE STATION, Q = 10 GPD/VEHICLE
NUMBER OF VEHICLE: 8
Q = 10 x 8 = 80 GPD
MINIMUM LIQUID CAPACITY (30 TAC \$285.91(2)).
FOR Q < 250 GAL/DAY V = 750 GALLONS
USE 2 - 500G TANKS IN SERIES
EFFLUENT LOADING REQUIREMENTS BASED ON SOIL CLASSIFICATION
SOIL CLASS III
ABSORPTIVE AREA = 400
A = 80/0.20 = 400
USE 2' BOTTOM TRENCH WITH 1' ON EACH SIDE WALL (GRAVEL-LESS PIPE)
EXCAVATION LENGTH = 400/4 = 100 LF
PROVIDE 2-50 FT LONG TRENCHES WITH 2-500 GAL TANKS IN SERIES



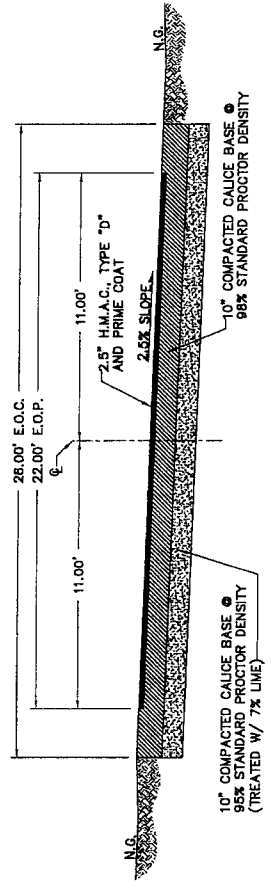
QSSD DETAIL
N.T.S.



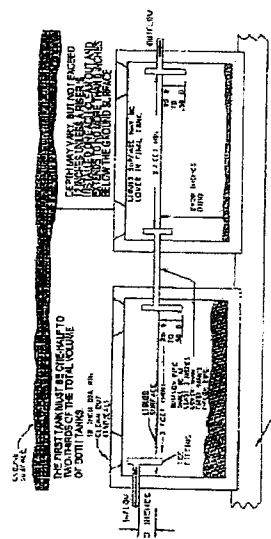
TYPICAL DRAINFIELDS
N.T.S.



PROPOSED TYPICAL SECTION
(LIGHT DUTY EQUIPMENT)
N.T.S.



PROPOSED TYPICAL SECTION
(HEAVY DUTY EQUIPMENT)
N.T.S.



TWO SEPTIC TANKS IN SERIES
N.T.S.

HIDALGO COUNTY
PRECINCT No. 2
300 W. HALL AVENUE, SUITE G
PHARR, TX 78877
TEL: (361) 787-1981 * FAX: (361) 787-4423
WWW.CO.HIDALGO.TX.US



COMMISSIONER
EDUARDO "EDDIE" CANTU
HIDALGO COUNTY PCT 2
IMPROVEMENT PROJECTS

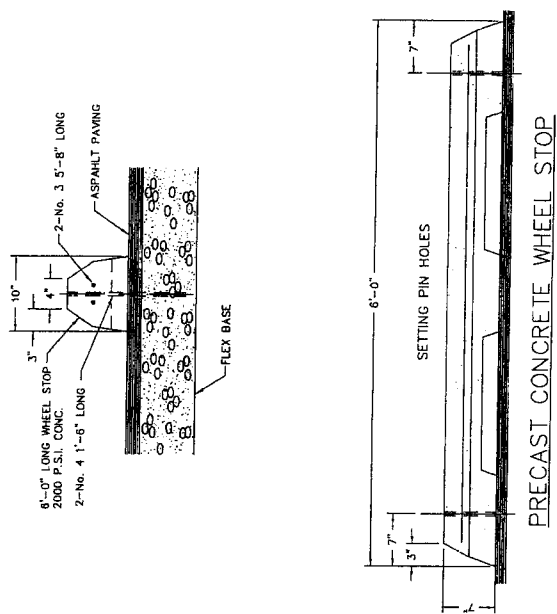
HIDALGO COUNTY PCT. 2
ON-SITE CIVIL SERVICE SHOP
PARKING AREA DETAILS

APPROVED FOR CONSTRUCTION BY: [Signature]

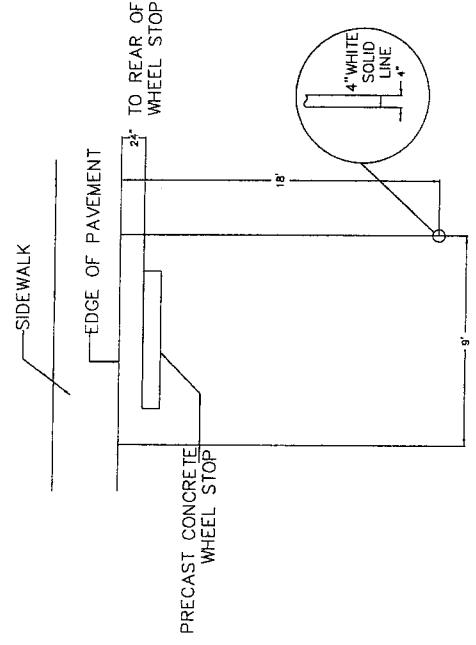
DATE: 07/11/2017 TIME: 11:42:22 AM

PROJECT: [Signature]

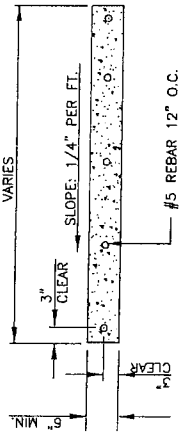
DESIGNED BY: N.T.S.
CHECKED BY: J.R.
DRAWN BY: ELLIANS
DATE: EDGAR L.
SHEET: C02-02



PRECAST CONCRETE WHEEL STOP



PRECAST CONCRETE WHEEL STOP



CONCRETE PAD SECTION

CONCRETE PAD NOTES:
CONC. PAD GRADIENT SHALL NOT EXCEED 1:20.
CONCRETE PAD SHALL BE 5 SACK CEMENT MIX AND SHALL
HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI.



PURCHASING DEPARTMENT
County Of Hidalgo

June 02, 3017

RE:
ADDENDUM NO.4
FOR BID No.: 2017-027-07-22-YSS
"Hidalgo County Pct 2 County Wide Service Shop"
Hidalgo County Precinct No. 2

Dear Gentlemen:

Attached you will find **ADDENDUM NO. 4**, in connection with **HIDALGO COUNTY PRECINCT NO. 2** request for bids for **"Hidalgo County Pct 2 County Wide Shop"**.

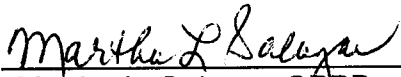
Please add this **ADDENDUM NO. 4** to your bid packet so as to permit your company to submit a complete bid. See original bid packet LEGAL NOTICE page 3 paragraph 9.

Acknowledge receipt of **ADDENDUM NO. 4** by signing and returning this notice via email to nperez@twgarch.com and/or marking receipt in your bid form.

If you do not receive all pages of **ADDENDUM NO. 4** please notify us immediately at 956-994-1900.

Please be advised that this **ADDENDUM NO. 4** will complete your bid packet for Hidalgo County Precinct No. 2 –**"Hidalgo County Pct 2 County Wide Shop"**.

Thank you for your prompt attention to this matter.



Mattha L. Salazar, CPPB
Hidalgo County Purchasing Agent

BY: _____
ADDENDUM NO. 4
ACKNOWLEDGMENT OF RECEIPT

Enclosures

MLS/yss

ADDENDUM NO. 4

June 02, 2017

“Hidalgo County Pct 2 County Wide Service Shop”

Precinct No. 2

BID NO.: 2017-027-02-22-YSS

PLEASE NOTE CHANGES AS FOLLOWS IN THE AS NOTED ON THE FOLLOWING:

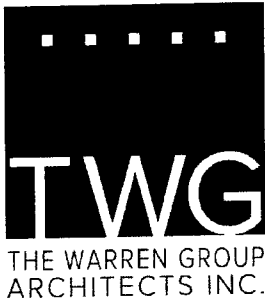
PLEASE NOTE CHANGES AS NOTED ON THE ATTACHED ARCHITECTURAL ADDENDUM.

I, _____, acknowledge receipt of ADDENDUM NO. 4 dated, June 02, 2017, for RFB-HIDALGO COUNTY PCT No. 2 “Hidalgo County Pct 2 County Wide Shop”.

Printed Bidder Name

Date

NOTE: PLEASE SUBMIT THIS ADDENDUM WITH YOUR BID PACKET, IN ORDER TO COMPLETE THE BID.



1801 South 2nd Street, Ste. 330 McAllen, TX 78503

Addendum No. 4

DATE: Monday, June 01, 2017
PROJECT: Hidalgo County PC-2 County Wide Service Shop
PROJECT NO: 1341501
LOCATION: Pharr, Texas
FROM: Laura N. Warren, The Warren Group Architects, Inc.

The following revisions and clarifications shall be considered part of the record contract documents dated July 01, 2016 for the above referenced project and included in the contract amount. All general notes and specifications shall apply to this addendum. Where provisions of the following supplementary data differ from those of the original Contract Documents, this Addendum shall govern and take precedence.

Specifications

- Item No. 1:** Refer to Project Manual dated May 08, 2017, Section 00 43 23 ADD 3 **Alternates Form. Section 1.4 Schedule of Alternates has been revised-updated as shown in attached specification 00 43 23 Alternates Form ADD 4 dated June 01, 2017.**
- Item No. 2:** Refer to Project Manual dated May 08, 2017, Section 00 08 30 ADD 3 **Overhead Coiling Service Doors. Finish selections have been noted as shown in attached specification 00 43 23 Alternates Form ADD 4 section 2.2 A2 dated June 01, 2017.**
- Item No. 5:** Clarification: **Geotechnical report dated October 3, 2013 to be substituted by Geotechnical report dated April 19, 2017 as provided on Addendum No. 3.**
- Item No. 4:** Clarification: **Cost breakdown to be as noted on Addendum 3 Item No 6.**

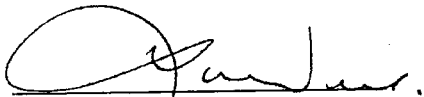
Drawings

- Item No. 6:** Refer to Construction Documents dated July 01, 2017. **Soffit panels have been added on exterior covered areas and Eave details have provided. G.C. to provide all required accessories and weather sealing as**

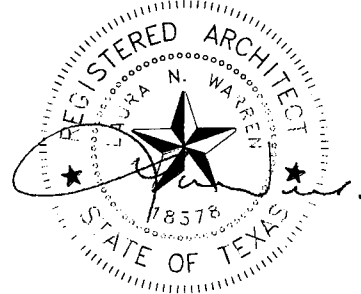
recommended by the manufacturer. Please reference attached 30x42
Sheets A1.21, A1.31, A2.11, and A5.11 dated June 1, 2017.

Item No. 3: *Clarification: Building slab to be 6" as recommended by the crane manufacturer
and as noted on structural sheet S-1.*

ISSUED BY:



Laura N. Warren, AIA
The Warren Group Architects, Inc.



Attachments:

PDF Format – 8.5"x11" Project Manual Section 00 43 23 ADD4 dated 06/01/2017
PDF Format – 8.5"x11" Project Manual Section 00 08 30 ADD4 dated 06/01/2017
PDF Format – 30"x42" A1.21 ADD4 dated 06/01/2017
PDF Format – 30"x42" A1.31 ADD4 dated 06/01/2017
PDF Format – 30"x42" A2.11 ADD4 dated 06/01/2017
PDF Format – 30"x42" A5.11 ADD4 dated 06/01/2017

Distribution:

Eduardo "Eddie" Cantu Commissioner
Armando Pompa Director of Field Operations
Jorge Hinojosa Asst. Director of Field Operations
Erika Zamora-Torres Director of Administration
Bidding General Contractors
File

DOCUMENT 00 43 23
ALTERNATES FORM

1.1 BID INFORMATION

- A. Bidder: _____
- B. Prime Contract: _____
- C. Project Name: Hidalgo County Pct. 2 County Wide Service Shop
- D. Project Location: 4011 S. Veterans Blvd., San Juan, Texas 78589
- E. Owner: County of Hidalgo
South Business Highway 281, Suite D
Edinburg, Texas 78539
- F. Architect: Laura Nassri Warren, AIA/Principal, The Warren Group Architects, Inc.,
1801 S. 2nd Street, Suite 330, McAllen, Texas 78503.
- G. Architect Project Number: 1341501.

1.2 BID FORM SUPPLEMENT

- A. This form is required to be attached to the Bid Form.

1.3 DESCRIPTION

- A. The undersigned Bidder proposes the amount below be added to or deducted from the Base Bid if particular alternates are accepted by Owner. Amounts listed for each alternate include costs of related coordination, modification, or adjustment.
 - 1. Cost-Plus-Fee Contract: Alternate price given below includes adjustment to Contractor's Fee.
- B. If the alternate does not affect the Contract Sum, the Bidder shall indicate "NO CHANGE."
- C. If the alternate does not affect the Work of this Contract, the Bidder shall indicate "NOT APPLICABLE."
- D. The Bidder shall be responsible for determining from the Contract Documents the affects of each alternate on the Contract Time and the Contract Sum.
- E. Owner reserves the right to accept or reject any alternate, in any order, and to award or amend the Contract accordingly within 60 days of the Notice of Award unless otherwise indicated in the Contract Documents.

-
- F. Acceptance or non-acceptance of any alternates by the Owner shall have no effect on the Contract Time unless the "Schedule of Alternates" Article below provides a formatted space for the adjustment of the Contract Time.

1.4 SCHEDULE OF ALTERNATES

- A. **Alternate No. 1: General Contractor to offer add cost alternate to provide as separate item the following: Remove hoist on existing facility, transport and install at new Service Shop Building.**

1. ADD ___ DEDUCT ___ NO CHANGE ___ NOT APPLICABLE ___.
2. _____ Dollars
(\$ _____).
3. ADD ___ DEDUCT ___ calendar days to adjust the Contract Time for this alternate.

- Alternate No. 2: General Contractor to offer add cost alternate to provide as separate item the following: Paving (and concrete curbs and wheel stops).**

4. ADD ___ DEDUCT ___ NO CHANGE ___ NOT APPLICABLE ___.
5. _____ Dollars
(\$ _____).
6. ADD ___ DEDUCT ___ calendar days to adjust the Contract Time for this alternate.

- Alternate No. 3: General Contractor to offer add cost alternate to provide as separate item the following: Water Line.**

1. ADD ___ DEDUCT ___ NO CHANGE ___ NOT APPLICABLE ___.
2. _____ Dollars
(\$ _____).
3. ADD ___ DEDUCT ___ calendar days to adjust the Contract Time for this alternate.

Alternate No. 4: General Contractor to offer add cost alternate to provide as separate item the following: Onsite sewage facility.

1. ADD ___ DEDUCT ___ NO CHANGE ___ NOT APPLICABLE ___.
2. _____ Dollars
(\$ _____).
3. ADD ___ DEDUCT ___ calendar days to adjust the Contract Time for this alternate.

Alternate No. 5: General Contractor to offer add cost alternate to provide as separate item the following: Drainage/Storm Sewer.

1. ADD ___ DEDUCT ___ NO CHANGE ___ NOT APPLICABLE ___.
2. _____ Dollars
(\$ _____).
3. ADD ___ DEDUCT ___ calendar days to adjust the Contract Time for this alternate.

Alternate No. 6: General Contractor to offer add cost alternate to provide as separate item the following: A new hoist to be equal to Jet 10 Ton hand chain hoist with 15' lift and double girder overhead crane to fit crane support. Ref. Structural Drawings.

1. ADD ___ DEDUCT ___ NO CHANGE ___ NOT APPLICABLE ___.
2. _____ Dollars
(\$ _____).
3. ADD ___ DEDUCT ___ calendar days to adjust the Contract Time for this alternate.

1.5 SUBMISSION OF BID SUPPLEMENT

Respectfully submitted this ____ day of _____, 2017.

Submitted By: _____
(Name of bidding firm or corporation)

Authorized Signature: _____
(Handwritten signature)

Signed By: _____
(Type or print name)

Title: _____
(Owner/Partner/President/Vice President)

END OF DOCUMENT

SECTION 00 83 30
OVERHEAD COILING SERVICE DOORS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Overhead coiling service doors.

1.2 RELATED SECTIONS

- A. Section 05500 - Metal Fabrications: Support framing and framed opening.
- B. Section 06200 - Finish Carpentry: Wood jamb and head trim.
- C. Section 08710 - Door Hardware: Product Requirements for cylinder core and keys.
- D. Section 09900 - Painting: Field applied finish.
- E. Section 16130 - Raceway and Boxes: Conduit from electric circuit to door operator and from door operator to control station.
- F. Section 16150 - Wiring Connections: Power to disconnect.

1.3 REFERENCES

- A. NFRC 102 - Test Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems.
- B. ASTM E 90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Element.
- C. ASTM E 330 - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
- D. ASTM A 653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- E. ASTM A 666 - Standard Specification for Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
- F. ASTM A 924 - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
- G. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- H. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).

I. NEMA MG 1 - Motors and Generators.

1.4 DESIGN / PERFORMANCE REQUIREMENTS

- A. Overhead coiling service doors:
 - 1. Wind Loads: Design door assembly to withstand wind/suction load of 20 psf (958 Pa) without damage to door or assembly components in conformance with ASTM E 330.
 - 2. Operation: Design door assembly, including operator, to operate for not less than 20,000 cycles.
- B. Single-Source Responsibility: Provide doors, tracks, motors, and accessories from one manufacturer for each type of door. Provide secondary components from source acceptable to manufacturer of primary components.
- C. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories, Inc. acceptable to authority having jurisdiction as suitable for purpose specified.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Details of construction and fabrication.
 - 4. Installation instructions.
- C. Shop Drawings: Include detailed plans, elevations, details of framing members, anchoring methods, required clearances, hardware, and accessories. Include relationship with adjacent construction.
- D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) long, representing actual product, color, and patterns.
- F. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
- G. Operation and Maintenance Data: Submit lubrication requirements and frequency, and periodic adjustments required.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in performing Work of this section with a minimum of five years experience in the fabrication and installation of security closures.
- B. Installer Qualifications: Installer Qualifications: Company specializing in performing Work of this section with minimum three years and approved by manufacturer.

- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish areas designated by Architect.
 - 2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
 - 3. Refinish mock-up area as required to produce acceptable work.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Protect materials from exposure to moisture. Do not deliver until after wet work is complete and dry.
- C. Store materials in a dry, warm, ventilated weathertight location.

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.9 COORDINATION

- A. Coordinate Work with other operations and installation of adjacent materials to avoid damage to installed materials.

1.10 WARRANTY

- A. Warranty: Manufacturer's limited door and operator system, except the counterbalance spring and finish, to be free from defects in materials and workmanship for 3 years or 20,000 cycles, whichever occurs first.
- B. Warranty: Manufacturer's limited door warranty for 2 years for all parts and components.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Overhead Door Corp., 2501 S. State Hwy. 121, Suite 200, Lewisville, TX 75067. ASD. Tel. Toll Free: (800) 275-3290. Phone: (469) 549-7100. Fax: (972) 906-1499. Web Site: www.overheaddoor.com. E-mail: info@overheaddoor.com.
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 OVERHEAD COILING SERVICE DOORS

- A. Heavy Duty Industrial Doors: Overhead Door Corporation, Model 620 Stormtite Service Doors.
1. Curtain: Interlocking roll-formed slats as specified following. Endlocks shall be attached to each end of alternate slats to prevent lateral movement.
 - a. Flat profile type F-265 for doors up to 18 feet 4 inches (5.59 m) wide, fabricated of:
 - 1) 20 gauge galvanized steel.
 2. Finish:
 - a. Galvanized Steel: Slats and hood galvanized in accordance with ASTM A 653 and receive rust-inhibitive, roll coating process, including 0.2 mils thick baked-on prime paint, and 0.6 mils thick baked-on polyester top coat.
 3. Weatherseals:
 - a. Vinyl bottom seal, exterior guide and internal hood seals.
 - b. Interior guide weatherseal.
 - c. Lintel weatherseal.
 4. Bottom Bar:
 - a. Two primed steel angles for doors over 15 feet 4 inches (4.67 m) wide.
 5. Guides: Three structural steel angles.
 - a. Finish: PowderGuard Weathered finish with iron/black powder.
 6. Brackets:
 - a. Hot rolled prime painted steel to support counterbalance, curtain and hood.
 7. Counterbalance: Helical torsion spring type housed in a steel tube or pipe barrel, supporting the curtain with deflection limited to 0.03 inch per foot of span. Counterbalance is adjustable by means of an adjusting tension wheel.
 8. Hood: Provide with internal hood baffle weatherseal.
 - a. 24 gauge galvanized steel with intermediate supports as required.
 9. Electric Motor Operation: Provide UL listed electric operator, size as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second.
 - a. Sensing Edge Protection:
 - 1) Pneumatic sensing edge.
 - b. Operator Controls:
 - 1) Push-button operated control stations with open, close, and stop buttons.
 - 2) Controls for interior location.
 - 3) Controls surface mounted.
 - c. Motor Voltage: 115/230 single phase, 60 Hz.
 10. Windload Design:
 - a. Standard windload shall be 20 PSF.
 11. Locking:
 - a. Interior slide bolt lock for electric operation with interlock switch.
 12. Wall Mounting Condition:
 - a. Face-of-wall mounting.
 13. Vision Lites: Provide with uniformly spaced openings.
 - a. Size: 10 inch by 1 inch (254 mm by 25.4 mm)
 - b. Provide with Plexiglas covers over openings.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify opening sizes, tolerances and conditions are acceptable.
- B. Examine conditions of substrates, supports, and other conditions under which this work is to be performed.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Use anchorage devices to securely fasten assembly to wall construction and building framing without distortion or stress.
- C. Securely and rigidly brace components suspended from structure. Secure guides to structural members only.
- D. Fit and align assembly including hardware; level and plumb, to provide smooth operation.
- E. Coordinate installation of electrical service with Section 16150. Complete wiring from disconnect to unit components.
- F. Coordinate installation of sealants and backing materials at frame perimeter as specified in Section 07900.
- G. Install perimeter trim and closures.
- H. Instruct Owner's personnel in proper operating procedures and maintenance schedule.

3.4 ADJUSTING

- A. Test for proper operation and adjust as necessary to provide proper operation without binding or distortion.
- B. Adjust hardware and operating assemblies for smooth and noiseless operation.

3.5 CLEANING

- A. Clean curtain and components using non-abrasive materials and methods recommended by manufacturer.
- B. Remove labels and visible markings.
- C. Touch-up, repair or replace damaged products before Substantial Completion.

3.6 PROTECTION

- A. Protect installed products until completion of project.

END OF SECTION

THESE CHANGES AND MODIFICATIONS TO THE ORIGINAL DRAWING ARE THE PROPERTY OF TWAG ARCHITECTS, INC. AND ARE NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF TWAG ARCHITECTS, INC.

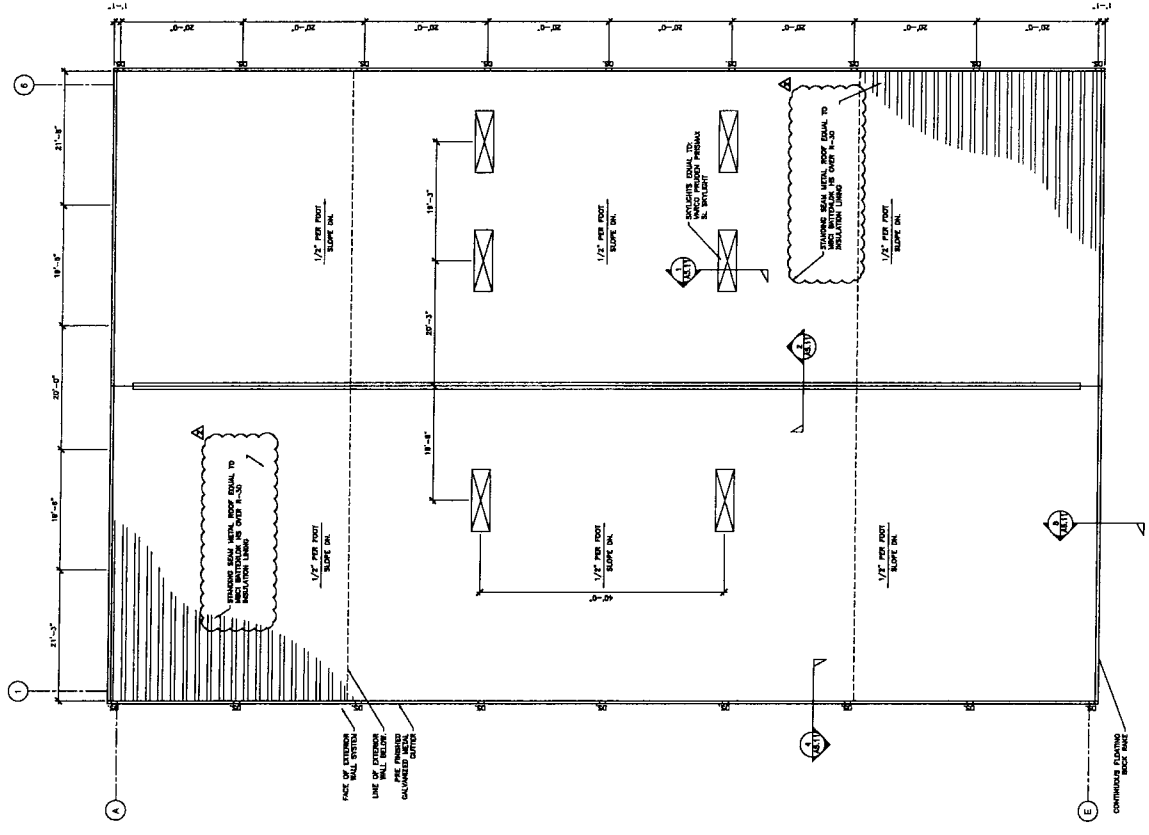
NO.	DATE	DESCRIPTION
1	11/17/2017	ISSUED FOR PERMIT
2	12/17/2017	ISSUED FOR PERMIT
3	01/17/2018	ISSUED FOR PERMIT
4	02/17/2018	ISSUED FOR PERMIT



PROJECT: HIDALGO COUNTY PCT. 2 COUNTY WIDE SERVICE SHOP
 501 N. JENNY JONES BLVD
 DENVER, COLORADO 80202

PROJECT NO: 13-1301
 DRAWING NO: A1.31 ADD4
 SHEET TITLE: ROOF PLAN

SHEET NOTES
 1. REFER STRUCTURAL DRAWINGS FOR TOP OF STEEL HEIGHTS.
SHEET LEGEND
 DSB DOWN SLOPES
 W/P WALL PACE



1 ROOF PLAN
 SCALE 1/8"=1'-0"
 NORTH



PURCHASING DEPARTMENT
County Of Hidalgo

June 05, 3017

RE:
ADDENDUM NO.5
FOR BID No.: 2017-027-07-22-YSS
"Hidalgo County Pct 2 County Wide Service Shop"
Hidalgo County Precinct No. 2

Dear Gentlemen:

Attached you will find **ADDENDUM NO. 5**, in connection with **HIDALGO COUNTY PRECINCT NO. 2** request for bids for **"Hidalgo County Pct 2 County Wide Shop"**.

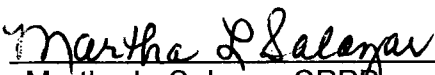
Please add this **ADDENDUM NO. 5** to your bid packet so as to permit your company to submit a complete bid. See original bid packet LEGAL NOTICE page 3 paragraph 9.

Acknowledge receipt of **ADDENDUM NO. 5** by signing and returning this notice via email to nperez@twgarch.com and/or marking receipt in your bid form.

If you do not receive all pages of **ADDENDUM NO. 5** please notify us immediately at 956-994-1900.

Please be advised that this **ADDENDUM NO. 5** will complete your bid packet for Hidalgo County Precinct No. 2 –**"Hidalgo County Pct 2 County Wide Shop"**.

Thank you for your prompt attention to this matter.



Martha L. Salazar, CPPB
Hidalgo County Purchasing Agent

BY: _____
ADDENDUM NO. 5
ACKNOWLEDGMENT OF RECEIPT

Enclosures

MLS/yss

ADDENDUM NO. 5

June 05, 2017

**“Hidalgo County Pct 2 County Wide Service Shop”
Precinct No. 2
BID NO.: 2017-027-02-22-YSS**

PLEASE NOTE CHANGES AS FOLLOWS IN THE AS NOTED ON THE FOLLOWING:

PLEASE NOTE CHANGES AS NOTED ON THE ATTACHED ARCHITECTURAL ADDENDUM.

I, _____, acknowledge receipt of ADDENDUM NO. 5 dated, June 05, 2017, for RFB-HIDALGO COUNTY PCT No. 2 “Hidalgo County Pct 2 County Wide Shop”.

Printed Bidder Name

Date

NOTE: PLEASE SUBMIT THIS ADDENDUM WITH YOUR BID PACKET, IN ORDER TO COMPLETE THE BID.



1801 South 2nd Street, Ste. 330 McAllen, TX 78503

Addendum No. 5

DATE: Monday, June 05, 2017
PROJECT: Hidalgo County PC-2 County Wide Service Shop
PROJECT NO: 1341501
LOCATION: Pharr, Texas
FROM: Laura N. Warren, The Warren Group Architects, Inc.

The following revisions and clarifications shall be considered part of the record contract documents dated July 01, 2016 for the above referenced project and included in the contract amount. All general notes and specifications shall apply to this addendum. Where provisions of the following supplementary data differ from those of the original Contract Documents, this Addendum shall govern and take precedence.

Request for Information

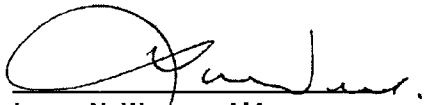
- Item No. 1:** **Refer G.C. Question:** *"As per corrected plan (Terracon Report page 15, 5 foot select fill), we will include the select fill for the building pad in the base bid but do we include the select fill for the parking lot, caliche area and the heavy duty drive in the base bid or in the alternate paving bid?"*
Yes, G.C. to include select fill for parking, caliche, and drive areas.
- Item No. 2:** **Refer G.C. Question:** *"How much space does the owner want between the edge of the asphalt drive and the top of slope?"*
G.C. to provide 3' between edge of asphalt drive and slope.
- Item No. 3:** **Refer G.C. Question:** *"What slope is preferred to bring the new pad down to the natural ground?"*
G.C. to provide 3 to 1 slope
- Item No. 4:** **Refer G.C. Question:** *"What type of select fill is needed to bring the pad up to the proposed grade and what compaction heights will be allowed?"*
G.C. is to follow Geo-Tech Report submitted by Terracon on April 19, 2017, Section 4.0 as provided on Addendum 3.

- Item No. 5:** Refer G.C. Question: "Will PC-2 bring the water line to the building site? If so, will the G.C. be required to provide a bid for the entire water line?"
Yes, the general contractor needs to provide bid for entire water line including any connections needed.
- Item No. 6:** Refer G.C. Question: "See Civil sheet C02-01 Proposed Typical Sections. This compositions calls for 8" compacted caliche base over 6" compacted caliche base lime treated for light duty and 10" caliche base over 10 caliche lime treated base for heavy duty. Is this composition correct?"
See attached revised Civil C02-01.
- Item No. 7:** Refer G.C. Question: "What type of water line will be used? its calling for dr18 1 1/2 but the smallest size pipe they make for a dr 18 pipe is 4 inch do they want to use sch 40 pipe please let me know?"
Yes, schedule 40 pipe can be used.

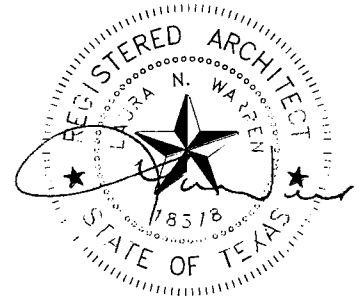
Specifications

- Item No. 1:** Refer to Project Manual dated May 08, 2017, Section 00 43 21 ADD 5 Allowance Form dated June 05, 2017 has been added. **A \$40,000 allowance has been provided for primary power only.**

ISSUED BY:



Laura N. Warren, AIA
The Warren Group Architects, Inc.



Attachments:

- PDF Format – 8.5"x11" Project Manual Section 00 43 21 ADD5 dated 06/05/2017
PDF Format – 24"x36" Civil Sheet C02-01 ADD5 dated 06/02/2017

Distribution:

Eduardo "Eddie" Cantu Commissioner
Armando Pompa Director of Field Operations
Jorge Hinojosa Asst. Director of Field Operations
Erika Zamora-Torres Director of Administration
Bidding General Contractors
File

DOCUMENT 00 43 21
ALLOWANCE FORM

1.1 BID INFORMATION

- A. General Contractor: _____
- B. Project Name: Hidalgo County Pct. 2 County Wide service Shop
- C. Project Location: 4011 S. Veterans Blvd., San Juan, Texas 78589
- D. Owner:
County of Hidalgo
Owner Representative: Mr. Armando Pompa
3100 South Business Highway 281, Suite D
Edinburg, Texas 78539
- E. Architect: Laura Nassri Warren, AIA/Principal
The Warren Group Architects, Inc.
1801 S. 2nd Street, Suite 330
McAllen, Texas 78503
lwarren@twgarch.com
Cc: nperez@twgarch.com
Office 956.994.1900
- F. Architect Project Number: 1341501

1.2 BID FORM SUPPLEMENT

- A. This form is required to be attached to the Bid Form.
- B. The undersigned Bidder certifies that Base Bid submission to which this Bid Supplement is attached includes those allowances described in the Contract Documents and scheduled in Section 012100 "Allowances."

Allowance No. 1: Power Allowance: General Contractor to include the sum of \$40,000.00 for Primary Power.

1.3 SUBMISSION OF BID SUPPLEMENT

A. Respectfully submitted this ____ day of _____, 2017.

Submitted By: _____
(Insert name of bidding firm or corporation)

Authorized Signature: _____
(Handwritten signature)

Signed By: _____
(Type or print name)

Title: _____
(Owner/Partner/President/Vice President)

END OF DOCUMENT

