



**REQUEST FOR  
PROPOSALS**

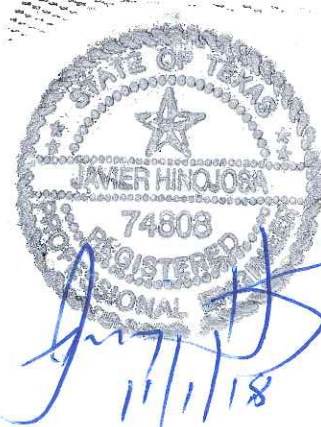
**CITY OF EDINBURG – NORTHEAST ORIGINAL  
TOWNSITE DRAINAGE IMPROVEMENTS – KUHN  
STREET**

**RFP #2019-07**

**RFP DUE DATE: Monday, November 19, 2018**

**RFP DUE TIME: 3:00 pm**

**Prepared By:  
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TBPE FIRM NO. F-1295**



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The City of Edinburg is soliciting sealed Request for Proposals; hereinafter referred to as RFP, to be received by the City Secretary's Office located at 415 W. University Drive, Edinburg, Texas 78541. City of Edinburg normal business days are Monday through Friday between the hours of 8:00 a.m. to 5:00 p.m. and shall be closed on recognized holidays.

RFP'S will be received until **3:00 p.m. Central Time**, on **Monday, November 19, 2018**, shortly thereafter all submitted RFP'S will be gathered and taken to the Edinburg City Hall Community Room, 1<sup>st</sup> Floor, to be publicly opened and read aloud. Any RFP received after the closing time will not be accepted and will be returned to the submitter unopened. It is the responsibility of the submitter to see that any RFP submitted shall have sufficient time to be received by the City Secretary's Office prior to the RFP opening date and time. The receiving time in the City Secretary's Office will be the governing time for acceptability of the RFP's. RFP's will not be accepted by telephone or facsimile machine. All RFP'S must bear original signatures and figures. The RFP shall be for:

### **RFP #2019-07**

#### **North East Original Townsite Drainage Improvements – Kuhn Street**

A pre-proposal meeting is scheduled for Tuesday, November 13, 2018 at 9:30 am at Edinburg City Hall Community Room, 1<sup>st</sup> Floor. If you have any questions or require additional information regarding this RFP, please contact Ms. Lorena Fuentes, Purchasing Agent, at (956) 388-1895 or at the following e-mail address: [lfuentes@cityofedinburg.com](mailto:lfuentes@cityofedinburg.com). **If you have any questions or require additional information regarding specifications for this proposal, please contact Javier Hinojosa, P.E. at (956) 668-1588.**

Hand Delivered RFP'S:

415 W. University Drive  
C/o City Secretary Department (1<sup>st</sup> Floor)

If using Land Courier (i.e. FedEx, UPS):

City of Edinburg  
C/o City Secretary  
415 W. University Drive  
Edinburg, Texas 78541

If Mailing Proposals:

City of Edinburg  
C/o City Secretary  
P.O. Box 1079  
Edinburg, Texas 78540-1079

RFP Documents will be posted to the City of Edinburg Website at [www.cityofedinburg.com](http://www.cityofedinburg.com) or may be picked up at the office of Javier Hinojosa Engineering at 416 E. Dove Avenue, McAllen, Texas 78504 (956) 668-1588 for a non-refundable fee of \$150.00.

The City of Edinburg reserves the right to refuse and reject any or all RFP's and to waive any or all formalities or technicalities and to accept the RFP deemed most advantageous to the City, and hold the RFP's for a period of **90** days without taking action. RFP's must be submitted in an envelope sealed with tape and prominently marked on the lower left hand corner of the envelope with corresponding RFP number and title.

Please read your requirements thoroughly and be sure that the RFP offered complies with all requirements/specifications noted. Any variation from the solicitation requirements/specifications must be clearly indicated by letter, on a point by point basis, attached to and made a part of your RFP. If no exceptions are noted, and you are the successful respondent, it will be required that the service(s) be provided as specified.

## **PURPOSE**

(1) The purpose of these solicitation documents is to provide a proposal for construction of storm sewer improvements consisting of drainage pipe, inlets and manholes installation for:

### **North East Original Townsite Drainage Improvements – Kuhn Street**

## **INTENT**

(2) The services to be provided under this RFP shall be in accordance with and shall meet all specifications and/or requirements as shown in this solicitation for RFP. There is no intention to disqualify any respondent who can meet the requirements.

## **SUBMITTAL OF RFP**

(3) RFPs shall be submitted in sealed envelopes as referenced on the attached solicitation. Three (3) complete sets of the response, one (1) original marked "**ORIGINAL**," and two (2) copies marked "**COPY**". RFPs submitted by facsimile (fax) or electronically shall **NOT** be accepted. Submittal of an RFP in response to this solicitation constitutes an offer by the respondent. Once submitted, RFP's become the property of the City of Edinburg and as such the City reserves the right to use any ideas contained in any RFP regardless of whether that respondent/firm is selected. Submission of a RFP in response to this solicitation, by any respondent, shall indicate that the respondent(s) has/have accepted the conditions contained in the RFP, unless clearly and specifically noted in the RFP submitted and confirmed in the contract between the City and the successful respondent otherwise. RFPs which do not comply with these requirements may be rejected at the option of the City. RFPs must be filed with the City of Edinburg before the deadline day and hour. No late RFPs will be accepted. They will be returned to respondent unopened (if properly identified). Failure to meet RFP requirements may be grounds for disqualification.

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c/o City Secretary  
415 W. University Drive  
Edinburg, Texas 78541

#### If Mailing RFP's:

City of Edinburg  
c/o City Secretary  
P.O. Box 1079  
Edinburg, Texas 78540-1079

## **TIME ALLOWED FOR ACTION TAKEN**

(4) The City of Edinburg may hold RFP/s 90 days after deadline without taking action. Respondents are required to hold their RFP/s firm for same period of time.

## **RIGHT TO REJECT/AWARD**

(5) The City of Edinburg reserves the right to reject any or all RFPs, to waive any or all formalities or technicalities, and to make such awards of contract as may be deemed to be the best and most advantageous to the City of Edinburg.



**ASSIGNMENT**

(6) Respondents are advised that the City of Edinburg shall not allow the successful respondent to sell, assign, transfer, or convey any part of any contract resulting from this RFP in whole or in part, to a third party without the written approval of the City of Edinburg.

**AWARD**

(7) Respondents are advised that the City of Edinburg is soliciting RFPs and award shall be made to the respondent that in the opinion of the City of Edinburg is the best qualified.

**NUMBER OF CONTRACTS**

(8) THE CITY reserves the right to award one or no contract in response to this RFP.

**STATUTORY REQUIREMENTS**

(9) It shall be the responsibility of the successful respondent to comply with all applicable State & Federal laws, Executive Orders and Municipal Ordinances, and the Rules and Regulations of all authorities having jurisdiction over the work to be performed hereunder and such shall apply to the contract throughout, and that they will be deemed to be included in the contract as though written out in full in the contract documents.

**ALTERATIONS/AMENDMENTS TO RFP**

(10) RFP **CANNOT** be altered or amended after opening time. Alterations made before opening time must be initiated by respondent guaranteeing authenticity. No RFP may be withdrawn after opening time without acceptable reason in writing and only after approval by the City of Edinburg.

**NO RESPONSE TO RFP**

(11) If unable to submit a RFP, respondent should return inquiry giving reasons.

**LIST OF EXCEPTIONS**

(12) The respondent shall attach to his/her RFP a list of any exceptions to the specifications/ requirements.

**PAYMENT**

(13) The City of Edinburg will execute payment by mail in accordance with the State of Texas Pay Law after SERVICES have been completed, introduced to the City, and found to meet City of Edinburg specifications/requirements. No other method of payment will be considered.

**SYNONYM**

(14) Where in this solicitation package SERVICES is used, its meaning shall refer to the request for North East Original Townsite Drainage Improvements – Kuhn Street as specified.

**RESPONDENT'S EMPLOYEES**

(15) Neither the Respondent nor his/her employees engaged in fulfilling the terms and conditions of this Service Contract shall be considered employees of the City. The method and manner of performance of such undertakings shall be under the exclusive control of the vendor on contract. The City shall have the right of inspection of said undertakings at any time.

**INDEMNIFICATION CLAUSE**

(16) The Respondent agrees to indemnify and save harmless the City, from all suits and actions of every nature and description brought against them or any of them, for or on account of the use of patented appliances, products or processes, and he shall pay all royalties and charges which are legal and equitable. Evidence of such payment

or satisfaction shall be submitted upon request of the Purchasing Agent, as a necessary requirement in connection with the final estimate for payment in which such patented appliance, products or processes are used

### **INTERPRETATIONS**

(17) Any questions concerning the project and/or specifications/requirements with regards to this solicitation for statement(s) of qualifications shall be directed to the designated individuals as outlined in the RFP. Such interpretations, which may affect the eventual outcome of this request for statements of qualifications, shall be furnished in writing to all prospective Respondents via Addendum. No interpretation shall be considered binding unless provided in writing by the City of Edinburg in accordance with paragraph entitled "Addenda and Modifications".

### **VERBAL THREATS AND OFFICIAL CONTACT**

(18) Any threats made to any employee of the City, be it verbal or written, to discontinue the providing of item/material/services for whatever reason and/or reasons shall be considered a breach of contract and the City will immediately sever the contract with the Respondent/Consultant on contract.

Respondents shall not offer gratuities, favors or any monetary value to any official or employee of the City for purpose of influencing the selection. Any attempt by any Respondent to influence the selection process by any means, other than disclosure of qualifications and credentials through the proper channels, shall be grounds from exclusion from the selection process. Once the project is advertised, there shall be no contact with any city official or employee unless using the formal process through the Purchasing Department. Failure to comply will result in the firm being disqualified from the process.

Questions and answers that change or substantially clarify the Request for Proposals will be affirmed in writing and copies will be provided to all firms on record responding to RFP. Any inquiries to this RFP must be submitted Ms. Lorena Fuentes, Purchasing Agent, at (956) 388-1895 or at the following e-mail address: lfuentes@cityofedinburg.com no later than August 13, 2018.

### **CONFIDENTIAL INFORMATION**

(19) Any information deemed to be confidential by the respondent should be clearly noted on the pages where confidential information is contained; however, the City cannot guarantee that it will not be compelled to disclose all or part of any public record under Texas Public Information Act, since information deemed to be confidential by the respondent may not be considered confidential under Texas Law, or pursuant to a Court order.

### **PAST PERFORMANCE**

(20) Respondent's past performance shall be taken into consideration in the evaluation of RFP submittal.

### **JURISDICTION**

(21) Contract(s) executed as part of this solicitation shall be subject to and governed under the laws of the State of Texas. Any and all obligations and payments are due and performable and payable in Hidalgo County, Texas.

### **RIGHT TO AUDIT**

(22) The City of Edinburg reserves the right to audit the vendor's books and records relating to the performance of this contract. The City of Edinburg, at its own expense, shall have the right at all reasonable times during normal business hours and upon at least twenty-four (24) hours' advance notice, to audit, to examine, and to make copies of or extracts from the books of account and records maintained by the vendor(s) with respect to the Supply/Service and/or Purchase Contract. If such audit shall disclose overpayment by City to vendor, written notice of such overpayment shall be provided to the vendor and the amount of overpayment shall be promptly reimbursed by



vendor to the City. In the event any such overpayment is not paid within ten (10) business days after receipt of such notice, the unpaid amount of such overpayment shall bear interest at the rate of one percent (1%) per month from the date of such notice until paid.

#### **VENUE**

(23) The parties agree that venue for purposes of any and all lawsuits, cause of action, arbitration, and/or any other dispute(s) shall be in Hidalgo County, Texas.

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

#### **CONFLICT OF INTEREST**

(24) CHAPTER 176 OF THE TEXAS LOCAL GOVERNMENT CODE

Effective January 1, 2006, Chapter 176 of the Texas Local Government Code requires that any vendor or person considering doing business with a local government entity disclose in the Questionnaire Form CIQ, the vendor or person's affiliation or business relationship that might cause a conflict of interest with a local government entity. By law, this questionnaire must be filed with the records administrator of the City of Edinburg not later than the 7<sup>th</sup> business day after the date the person becomes aware of facts that require the statement be filed. See Section 176.006, Local Government Code. A person commits an offense if the person violates Section 176.006, Local Government Code. An offense under this section is a Class C misdemeanor. For more information or to obtain Questionnaire CIQ go to the Texas Ethics Commission web page at [www.ethics.state.tx.us/forms/CIQ.pdf](http://www.ethics.state.tx.us/forms/CIQ.pdf).

#### **CERTIFICATE OF INTERESTED PARTIES (Form 1295)**

(25) In 2015, the Texas Legislature adopted [House Bill 1295](#), which added section 2252.908 of the Government Code. The law states that a governmental entity or state agency may not enter into certain contracts with a business entity unless the business entity submits a disclosure of interested parties to the governmental entity or state agency at the time the business entity submits the signed contract to the governmental entity or state agency. The law applies only to a contract of a governmental entity or state agency that either (1) requires an action or vote by the governing body of the entity or agency before the contract may be signed or (2) has a value of at least \$1 million. The disclosure requirement applies to a contract entered into on or after January 1, 2016. For more information go to the Texas Ethics Commission web page at [www.ethics.state.tx.us/forms/CIQ.pdf](http://www.ethics.state.tx.us/forms/CIQ.pdf).

#### **CONFIDENTIALITY OF INFORMATION AND SECURITY**

(26) Should the successful respondent become the holder of and have access to confidential information in the process of fulfilling its responsibilities in connection with an awarded contract the successful respondent agrees that it shall keep such information confidential and will comply fully with the laws and regulations of the State of Texas, ordinances and regulations of the City, and any applicable federal laws and regulations relating to confidentiality.

#### **TERMINATION OF CONTRACT**

(27) The City of Edinburg reserves the right to terminate the contract if, in the opinion of the City of Edinburg, the successful vendor's performance is not acceptable, no funds are available, or if the City wishes, without cause, to discontinue this contract. Termination will be in written form allowing a 30-day notice.

#### **RESPONSE DEADLINE**

(28) Responses to the RFP must be addressed to City Secretary, City of Edinburg, 415 W. University Drive by **Monday, November 19, 2018 until 3:00 p.m.** for consideration. An (1) original and two (2) copies of complete sets



of the response must be submitted no later than this date and time in a **sealed envelope** indicating that its contents are in response to the RFP for **"North East Original Townsite Drainage Improvements – Kuhn Street"**. **Respondents are advised that all confidential records must be submitted in a separate sealed envelope and marked accordingly.**

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Edinburg, Texas 78541

If Mailing RFPs:

City of Edinburg  
c/o City Secretary  
P.O. Box 1079  
Edinburg, Texas 78540-1079

#### **ADDENDA AND MODIFICATIONS**

(29) Any changes, additions, or clarifications to the RFP are made by amendments (addenda). Any respondent in doubt as to the true meaning of any part of the RFP or other documents may request an interpretation from the Purchasing Division. At the request of the respondent, or in the event the Purchasing Division deems the interpretation to be substantive, the interpretation will be made by written addendum. Said Addenda shall be mailed, e-mailed, hand delivered and/or faxed, to all prospective respondents. All Addenda issued in respect to this RFP shall be considered official changes to the original documents. Verbal statements in response to inquiries and/or requests for explanations shall not be authoritative or binding. It shall be the respondent's responsibility to ensure that they have received all Addenda in respect to this project. Furthermore, respondents are advised that they must recognize, comply with, and attach a signed copy of each Addendum which shall be made part of their RFP Submittal. Respondent(s) signature on Addenda shall be interpreted as the respondent's "recognition and compliance to" official changes as outlined by the City of Edinburg and as such are made part of the original solicitation documents. Failure of any respondent to receive any such addendum or interpretation shall not relieve such respondent from its terms and requirements. The City may issue a written addendum no later than five calendar days prior to the date bids must be received. Addendums are available online at [www.cityofedinburg.com](http://www.cityofedinburg.com).

#### **RFP PREPARATION COSTS**

(30) The City of Edinburg shall not be held liable for any costs incurred by any respondent for work performed in the preparation of and production of a RFP or for any work performed prior to execution of contract.

#### **EQUAL EMPLOYMENT OPPORTUNITY**

(31) Respondent agrees that they will not discriminate in hiring, promotion, treatment, or other terms and conditions of employment based on race, sex, national origin, age, disability, or in any way violate Title VII of 1964 Civil Rights Act and amendments, except as permitted by said laws.

#### **AUTHORIZATION TO BIND RESPONDENT TO RFP**

(32) RFPs MUST give full firm name and address of respondent, and be manually signed. Failure to do so will disqualify your RFP. Person signing bid must show title or **AUTHORITY TO BIND HIS/HER FIRM IN A CONTRACT**. Firm name and authorized signature must appear on each page that calls for this information. The legal status of

the Respondent whether corporation, partnership, or individual, shall also be stated in the RFP. A corporation shall execute the RFP by its duly authorized officers in accordance with its corporate by-laws and shall also list the state in which it is incorporated. A partnership Respondent shall give full names and addresses of all partners. All partners shall execute the RFP. Partnership and Individual Respondent shall state in the proposal the names and addresses of all persons with a vested interest therein. The place of residence of each Respondent, or the office address in the case of a firm or company, with county and state and telephone number, shall be given after the signature.

#### **BRAND OR MANUFACTURER REFERENCE**

(33) Unless otherwise specified, any catalog or manufacturer's reference or brand name used in describing an item is merely descriptive, and not restrictive, and is used only to indicate type and style of product desired. Proposals on alternate brands will be considered if they meet specification requirements. If a bidder quotes on equipment other than the one(s) specified in the bid, sufficient specifications and descriptive (pictured literature) data must accompany same to permit thorough evaluation. In the absence of these qualifications, he/she will be expected to furnish the product called for.

#### **COOPERATIVE PRICING**

(34) Bidders are advised that in addition to responding to our "local" solicitation for bids/Bids with Dealer pricing, vendors/contractors are encouraged to provide pricing on the below referenced items/products/services based on BuyBoard, TX-MAS, H-GAC and/or any other State of Texas recognized and approved cooperative which has complied with the bidding requirements for the State of Texas. If bidding other than or in addition to "dealer" pricing, kindly duplicate the bid forms for each bid being provided from a cooperative contract. Any and all applicable fees must be included. All cooperative pricing must be submitted on or before bid opening date and hour.

#### **HB 89**

(35) The 85th Texas Legislature approved new legislation, effective Sept. 1, 2017, which amends Texas Local Government Code Section 1. Subtitle F, Title 10, Government Code by adding Chapter 2270 which states that a governmental entity may not enter into a contract with a company for goods or services unless the contract contains a written verification from the company that it:

- 1) does not boycott Israel; and
- 2) will not boycott Israel during the term of the contract

**Confidential Information** Respondents are advised that all confidential records must be submitted in a separate sealed envelope and marked accordingly.



## **SECTION I SCOPE OF THE PROPOSAL**

### **INTRODUCTION**

The purpose of the RFP is to solicit and obtain from interested parties (also referred to herein as "Vendor" or "Vendors") the best possible proposal to construct the required drainage improvements as shown on the plans and specifications for the North East Original Townsite Drainage Improvements – Kuhn Street. The City of Edinburg intends to select the most competitive proposal that meets the City's requirements and specifications listed within the proposal and then enter into negotiations with the Vendor/s for purposes of reaching a satisfactory agreement for the City of Edinburg North East Original Townsite Drainage Improvements – Kuhn Street.

### **BACKGROUND**

The City of Edinburg North East Original Townsite Drainage Improvements – Kuhn Street will mitigate drainage issues occurring within the project area.

### **SCOPE OF WORK**

The City is soliciting competitive proposals from experienced and qualified companies to construct the required drainage improvements as shown on the plans and specifications for the North East Original Townsite Drainage Improvements – Kuhn Street.

### **ADDITIONAL INFORMATION**

The City of Edinburg is requesting that RFP's (Request for Proposal) be routed to: The CITY Secretary, at 415 West University, Edinburg, Texas 78541.

### **NON-COLLUSION**

Submitters, by submitting a signed submission, certify that the accompanying submission is not the result of, or affected by, any unlawful act of collusion with any other person or company engaged in the same line of business or commerce, or any other fraudulent act punishable under Texas or United States law.

### **NON-DISCRIMINATION**

Submitters, during the performance of this contract, will not discriminate against any employee or applicant for employment because of race, religion, sex, national origin or disability except where religion, sex, national origin or disability is a bona fide occupational qualification reasonably necessary to the normal operation of the contractor.

### **PROCESSING TIME FOR PAYMENT**

Submitters are advised that a minimum of thirty (30) days is required to process invoices for payment.

### **ELECTRONIC SUBMISSION OF BIDS**

The City of Edinburg's City Secretary Department will not accept telegraphic or electronically transmitted submissions.

### **PROOF OF FINANCIAL AND BUSINESS CAPABILITY**

Submitters must, upon request, furnish satisfactory evidence of their ability to furnish products or services in accordance with the terms and conditions of these requirements. The CITY will make the final determination as to the submitter's ability.





### **SUBMITTER DEFAULT**

The City of Edinburg reserves the right, in case of submitter default, to procure the articles or services from other sources and hold the defaulting submitter responsible for any excess costs occasioned thereby.

### **RESTRICTIVE OR AMBIGUOUS REQUIREMENTS**

It is the responsibility of the submitter to review the Request for Proposals (RFP) packet and to notify the City Engineering Department if the requirements are formulated in a manner that would unnecessarily restrict competition. Any such protest or question regarding the requirements or bidding procedures must be received in the City Secretary Department not less than seventy-two hours prior to the time set for the opening. These criteria also apply to requirements that are ambiguous.

### **RFP DELIVERY**

The City of Edinburg requires submitters, when hand-delivering proposals, to have a City Secretary Department representative time/date stamp and initial the envelope.

### **SIGNING OF PROPOSALS**

In order to be considered, all submittals **must** be signed.

### **WAIVING OF INFORMALITIES**

THE CITY reserves the right to waive minor informalities or technicalities when it is in the best interest of THE CITY.

### **SUBCONTRACTING**

The successful submitter may not subcontract the award without the written consent of the City.

### **BIDDER RESPONSIBILITY**

It is the responsibility of each vendor before submitting a proposal:

- To examine thoroughly the contract documents and other related data identified in the proposal documents.
- To visit the site to become familiar with and satisfy vendor as to the general, local, and site conditions that may affect cost, progress, performance, etc.
- To consider federal, state, and local laws and regulations that may affect costs, progress, performance or furnishing of the work.
- To study and carefully correlate vendor's knowledge and observations with the contract documents and such other related data.
- To promptly notify THE CITY Purchasing of all conflicts, errors, ambiguities, or discrepancies which vendor has discovered in or between the contract documents and such other related documents.



## **TERMINATION**

THE CITY has the authority and express right to terminate any Agreement awarded under this RFP or any Work Order resulting from the Agreement at any time for any reason, including but not limited to, instances where THE CITY finds that the Contractor's work is negligent, not satisfactory, or not in accordance with the Agreement requirements.



## **SECTION II RFP REQUIREMENTS**

### **PURPOSE**

The intent of this Request for Proposal and resulting contract is to obtain proposals to construct the required drainage improvements as shown on the plans and specifications for the North East Original Townsite Drainage Improvements – Kuhn Street.

### **REQUEST FOR PROPOSALS**

The required contents and limitations for the preparation of the RFP are described in this section. Failure to provide the requested information or adhere to any of The CITY limitations will result in disqualification of the submitted RFP. A total of **one (1) original and two (2) copies** of the RFP shall be submitted to the address on the cover letter. Letter of Intent from Surety Company to provide Payment and Performance Bonds shall also be required from the proposer as part of RFP.

### **SUBMITTAL**

For proper comparison and evaluation, THE CITY requests that proposals address, at a minimum, the following format.

- 1) **Cover Letter** - A brief introductory letter of representation.
- 2) **Executive Summary** - A brief summary highlighting the most important points of the proposal. If used, the Summary should not exceed five pages.
- 3) **Degree of Compliance** - A statement that all products and services quoted in proposal is in full accord with the specifications or a brief listing of all those specification sections to which the Proposer takes exception. All explanations, exceptions, comments, etc., pertaining to the specific sections of the specifications shall be listed and numbered in order of the respective article of the specification.

### **CONTENTS**

The required contents for the RFP are presented below in the order they should be incorporated into the submitted document.

- 1) **UNDERSTANDING OF THE PROJECT:** This section should demonstrate the submitter's understanding of the project's needs, the work required, and any local issues or concerns. This description should be concise, candid, and limited to 2 pages in length.

**FIRM QUALIFICATIONS, PERSONNEL AND STAFFING:** The CITY is seeking a contract with a competent firm(s); with a minimum of 5 years' experience of installation to construct the required drainage improvements as shown on the plans and specifications for the North East Original Townsite Drainage Improvements – Kuhn Street.





2)

**a) Qualifications:**

- i) List Firm's qualifications and ability to perform the service requirements.
- ii) List qualifications of key personnel to be assigned to this project, including but not limited to education, training, registrations, certifications and licenses.

**b) Experience:**

- i) Number of years of experience as a General Contractor.
- ii) Relevant experience with projects of similar size and scope performed over the past five (5) years. For each project listed, date services provided and name, titles, and telephone numbers of each client or client's representative.
- iii) Specific experience with public entity clients, especially large municipalities. If company submitting proposal for new construction has provided services to the CITY in the past, identify the name of the project and the department for which services were provided.
- iv) If company submitting proposal for this project is submitting as a team or joint venture, provide the same information for each member of the team or joint venture.
- v) Provide the following information for key personnel to be assigned to this project:
  - (1) Total years' experience.
  - (2) Primary work assignment for the projects outlined in this RFP.
  - (3) Relevant experience with projects of similar size and scope.

**c) Previous Project Performance:**

- i) Provide evidence of satisfactory performance on past projects
- ii) List past assignments over the past five (5) years
- iii) Provide copies of outstanding service letters, letters of commendation, service awards, etc.
- iv) Provide five recent references who may be contacted to verify performance of similar services. For each reference, provide a current phone number and e-mail address. References may not be present or former CITY employees.

**d) Quality of Service:**

- i) Company submitting proposal for the North East Original Townsite Drainage Improvements – Kuhn Street availability: Identify any concurrent or near future commitment that would impede the firm's ability to perform this contract.
- ii) Describe company submitting proposal for the North East Original Townsite Drainage Improvements – Kuhn Street policies, procedures and plans to ensure quality services (continuing education, on-going training, internal quality practices, etc.)





- iii) If company submitting proposal for a new Waste Water Treatment Plant Office has ever had a contract terminated or has been dismissed due to alleged unsatisfactory performance, state when, where and why the contract was terminated and/or Security Consultant dismissed, the client's name, and the contact person's phone number.
- 3) **Proposal Pricing/Delivery** - Pricing shall be inclusive for all items requested in this proposal. Brief notes referencing specific line items may be included, if necessary, for explanation. Proposal shall state all labor, materials and equipment necessary to complete the project as stated in the SCOPE OF WORK (Page 2).
- 4) **Contractor Background Information** - This section should include a description of the Proposer experience with other services similar to the one described herein. This information should include scope of several similar jobs including magnitude and cost, customer contacts and other information that THE CITY can use as a basis for performance evaluation. This section should also include information on your organization and staff assigned to the project.
- 5) **References** - Proposer shall submit with this proposal a list of at least three (3) references where like services or similar projects have been performed by their firm. Include name of firm, address, telephone number and name of representative.
- 6) **Schedule** – Proposer shall submit the amount of working days that will take company to complete project.



## **SECTION III SELECTION AND SCHEDULES**

### **SELECTION PROCEDURES**

The RFP shall be submitted according to the schedule below.

### **PROPOSAL RANKING**

A selection committee will evaluate and rank the written RFPs on a per project basis. After the RFPs have been ranked, the committee will make a recommendation to the CITY Council.

### **RFP SUBMITTED TO**

An original and two (2) copies of RFPs should be submitted to:

**City of Edinburg  
c/o City Secretary  
415 West University  
P.O. Box 1079  
Edinburg, Texas 78541**

RFPs must be submitted by **no later than** 3:00 p.m. on Monday, November 19, 2018.



## SECTION IV FIRM and RFP EVALUATION

### RFP – EVALUATION

The evaluation system consists of a 100 Point system. The RFP will be ranked after evaluation. All RFP's submitted will be ranked and evaluated based on specified RFP criteria. The submittal evaluation will be based on the following criteria.

- **40 Points: Proposer's itemized and total proposed price**
  - Total estimated cost for base bid submitted\*

\*Alternates might be included based on what is most advantageous to City.
- **40 Points: Proposer's qualifications/experience and performance/references**
  - Demonstrated prior experience for similar projects (20 points)
  - Number of years in business (5 points)
  - Litigation History/Lawsuit History (5 points)
  - References (10 points)
- **10 Points: The Proposer's Team and Subcontractors.**
  - Resumes for Key Individuals (5 points)
    - Project Superintendent
    - Project Manager
  - List of Subcontractors (5 points)
- **10 Points: Schedule.**
  - Lowest total days (10 points)
  - Within 30 days of lowest (8 points)
  - Within 60 days of lowest (6 points)
  - More than 60 days from lowest (5 points)

### **Proposed Price (40 points):**

The price will be evaluated and scored based on the main proposal cost. The City reserves the right to include any and all alternate price proposals in the price evaluation process. The established budget will determine which, if any, alternates will be recommended and accepted as part of the overall price ranking evaluation. After the highest ranked firm is selected, negotiations on price and changes on the scope of work may occur with the firm that provides the best value to the City.

Points will be awarded based upon the total number of offers submitted. The lowest offeror will receive the maximum number of points and the highest offeror will receive the minimum number of points. A point spread system will be established once all the offers are tabulated. The closer the prices of the offers, the larger the point spread will be.

SAMPLE: Utilizing the 80% Spread Formula

Contractor	Price	Points
Offeror No. 01	\$1,000,000.00	40.0





Offeror No. 02	\$1,050,000.00	37.33
Offeror No. 03	\$1,100,000.00	34.67
Offeror No. 04	\$1,150,000.00	32.0

70% spread: $40 \times 70\% = 28.0$ points	Results: 12 points spread
75% spread: $40 \times 75\% = 30.0$ points	Results: 10 points spread
80% spread: $40 \times 80\% = 32.0$ points	Results: 8 points spread
85% spread: $40 \times 85\% = 34.0$ points	Results: 6 points spread
90% spread: $40 \times 90\% = 36.0$ points	Results: 4 points spread
95% spread: $40 \times 95\% = 38.0$ points	Results: 2 points spread

If the committee decided to utilize the 90% spread formula, Offeror No. 04 is only 4 points away from Offeror No. 1. The committee may feel that a 4 point difference is too close, and is unfair to the lowest price offeror. A 70% spread, or 12 point difference, may be too far spread out and may be considered unfair to the highest price offer. Especially since the prices are not too far apart on a \$1 Million project. The point spread could be very different on a \$300,000.00 project budget versus a \$30 million project budget.

After the percentage spread is agreed upon, in this case the 80% formula, the lowest offeror gets the maximum 40 points and the highest offeror gets 32 points. Everyone else in the middle will get their points scored proportionately (extrapolated). This is the scoring system which will be utilized by the ranking committee on the price category for all construction projects. The point system will vary from project to project depending on the project budget ranges, on the number of offers submitted, and on the price spread differences between all offerors.

#### **RESPONDENT – EVALUATION**

The evaluation system consists of a 100-point system. The firms will be ranked after evaluation. Categories under the 100-point system include response to RFP. RFP submittal evaluation will be based on the following criteria.

#### **STAFFING OF PROJECT TEAM**

The firms should provide information on their proposed professional team members, i.e., applicable certifications/registrations and other pertinent information that demonstrates their qualifications to perform the contract. The professional team members shall have experience in performing similar contracts for counties, cities, irrigation districts, TX DOT or other clients as stated in the Request for Proposals (RFP). Similar experience gained through other clients should be substantiated by reference. A list and scope of the various projects for comparative purposes shall be included in an appendix.

#### **EXPERIENCE OF PROJECT TEAM/ABILITY TO COMMIT RESOURCES**

The provider shall designate experienced staff to completely and efficiently perform the work. Also, in this section, outline the firm's contingency plans for servicing the project in the event that one or more key personnel are not available for any reason during the period of performance.

#### **METHODOLOGY**

The RFP should provide a description of the firm's approach to the methodology and management to the scope of services for the project.





## **UNDERSTANDING OF PROJECT/SIMILAR PROJECTS**

The proposal shall include the following:

1. Address appropriate Federal/State/Local regulations and policies
2. Identify information to be gathered or obtained

The respondents should provide as much background information as to its experience in providing similar services to State, CITY, County or any other governmental agencies. Reference information should be as current as possible, especially contact persons and telephone numbers.

## **FAMILIARITY WITH APPLICABLE RULES AND REGULATIONS**

The RFP should indicate, through past experience of the proposed Team, that they possess sufficient knowledge of governmental regulations, appropriate codes, guidelines, professional standards and policies (as required).



## **SECTION V**

### **AWARD OF CONTRACT, RESERVATION OF RIGHTS**

#### **Number of Contracts**

The CITY reserves the right to award one or no contract(s) in response to this RFP.

#### **Advantageous Contract**

The Contract/s, if awarded, will be awarded to the vendor/s submitting proposal for the North East Original Townsite Drainage Improvements – Kuhn Street whose Submittal(s) is/are deemed most advantageous to the CITY and, as determined by the selection committee, upon approval of the CITY Council.

#### **Final Selection and City Council Approval**

The CITY may accept any Submittal in whole or in part. If subsequent negotiations are conducted, they shall not constitute a rejection or alternate RFP on the part of THE CITY. However, final selection of a company submitting proposal for the North East Original Townsite Drainage Improvements – Kuhn Street is subject to City Council approval.

#### **Remedy of Technical Errors**

The CITY reserves the right to accept one or more submittals or reject any or all submittals received in response to this RFP, and to waive informalities and irregularities in the submittals received. The CITY also reserves the right to terminate this RFP, and reissue a subsequent solicitation, and/or remedy technical errors in the RFP process.

#### **Preparation Costs**

This RFP does not commit the CITY to enter into a Contract, award any services related to this RFP, nor does it obligate the CITY to pay any costs incurred in preparation or submission of a submittal or in anticipation of a contract.

#### **Insurance and Indemnity**

If selected, vendor/s submitting proposal for North East Original Townsite Drainage Improvements – Kuhn Street will be required to comply with the Insurance and Indemnity Requirements established herein.

#### **Independent Contractor**

The company/s submitting proposal for the North East Original Townsite Drainage Improvements – Kuhn Street agrees and understands that, if selected, it and all persons designated by it to provide services in connection with a contract, is (are) and shall be deemed to be (an) independent contractor(s), responsible for its (their) respective acts or omissions, and that THE CITY shall in no way be responsible for company submitting proposal for the North East Original Townsite Drainage Improvements – Kuhn Street actions, and that none of the parties hereto will have authority to bind the other or to hold out to third parties.

#### **Purchase Orders, As Needed**

Execution of a contract does not obligate the CITY to engage any delivery orders, Purchase Orders, or other commitments for services. Service delivery shall be at the CITY's discretion, as needed, and will be communicated to the company submitting proposal for the North East Original Townsite Drainage Improvements – Kuhn Street through individual Purchase Orders.





## **ATTACHMENT I**

### **Insurance Requirements**

The Respondent awarded the contract shall furnish proof of insurance, which will also include any subcontractor that is subcontracted by the bidder in at least the following limits, to be in place prior to providing any services under this Contract and to continue in effect at all times during the term of this Contract:

- 1 Professional liability insurance policy with limits of at least One Million Dollars (\$1,000,000) per occurrence, or limited to claims made, include at least a five (5) year extended reporting period.
- 1 Automobile liability insurance policy with limits of at least Three Hundred Thousand Dollars (\$300,000) per person and \$500,000 per occurrence consistent with potential exposure to The CITY under the Texas Tort Claims Act. Coverage should include injury to or death of persons and property damage claims (with limits up to \$500,000) arising out of the services provided to The CITY hereunder.
- 1 Uninsured/Underinsured motorist coverage in an amount equal to the bodily injury limits set forth immediately above;
- 1 A Five Hundred Thousand Dollar (\$500,000) Comprehensive General Liability insurance policy providing additional coverage to all underlying liabilities of The CITY consistent with potential exposure of The CITY under the Texas Tort Claims Act;
- 1 Workers' compensation insurance in amounts established by Texas law, unless the Bidder is specifically exempted from the Texas Workers' Compensation Act, Texas Labor Code Chapter 401, et. Seq.

Certificates of insurance naming The CITY as an additional insured shall be submitted to The CITY for approval prior to any services being performed by Contractor. Each policy of insurance required hereunder shall extend for a period equivalent to, or longer than the term of the Contract, and any insurer hereunder shall be required to give at least thirty (30) days written notice to The CITY prior to the cancellation of any such coverage on the termination date, or otherwise. This Contract shall be automatically suspended upon the cancellation, or other termination, of any required policy of insurance hereunder, and such suspension shall continue until evidence that adequate replacement coverage is provided to The CITY. If replacement coverage is not provided within thirty (30) days following suspension of the Contract, the Contract shall automatically terminate.



**ATTACHMENT II**  
**Insurance Requirement Acknowledgement**

I, \_\_\_\_\_, authorized representative for \_\_\_\_\_,  
Company/Vendor

Hereby acknowledge the receipt of The CITY's required insurance limits. Said requirements:

- ☐ Will be acquired within 10 working days after notification from the Department of Utilities of proposal awarded by The CITY of Edinburg; (\*An insurance certificate for the required insurance limits shall be provided to the Director of Utilities in order to qualify for award of bid and to execute a contract between the Company and The CITY.)
- ☐ Will acquire additional amount needed to meet The CITY's requirements within 10 working days after notification from the Department of Utilities of bid awarded by The CITY of Edinburg; currently carry the following:

Professional Liability (Errors & Omissions): \$ \_\_\_\_\_

Automobile Liability: \$ \_\_\_\_\_ General Liability: \$ \_\_\_\_\_

(\* An insurance certificate for the required insurance limits shall be provided to the Director of Utilities in order to qualify for award of bid and to execute a contract between the Company and The CITY.) **OR**

- ☐ Have already been met (see attached copy of insurance certificate).

\_\_\_\_\_  
Authorized Representative

\_\_\_\_\_  
Date

**Notice to Bidder:** Failure to provide Certificates of Insurance to the Director of Utilities will cause the bid award to be rescinded and then awarded to next lowest bidder. Certificates of Insurance will be monitored/verified on a **quarterly basis** to ensure that coverage policy is in place. It is the Company's obligation to maintain the appropriate insurance coverage throughout the term of the contract.





THIS FORM MUST ACCOMPANY BID PACKET  
ATTACHMENT III

**Project Requirements  
Acknowledgement**

This is to certify that I, \_\_\_\_\_, possess all of the **APPLICABLE:**

1. Licenses: \_\_\_\_\_
2. Bonds: \_\_\_\_\_
3. Certificates: \_\_\_\_\_
4. Permits: \_\_\_\_\_
5. Other: \_\_\_\_\_

necessary to carry out the required project. Furthermore, I am providing copies of the required documentation, so that if my company is awarded the bid, I may be eligible to enter a contract with the CITY and proceed to complete the project in a timely manner.

**\* Any license, bonds, certificates, permits, etc. which are required must be presented as part of the bid packet in order to expedite the bid evaluation process. Failure to provide said documentation will result in the disqualification of your bid.**

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Company

\_\_\_\_\_  
Address

\_\_\_\_\_  
City, State, Zip



## ATTACHMENT IV

### LITIGATION DISCLOSURE FORM

**Failure to fully and truthfully disclose the information required by this Litigation Disclosure form may result in the disqualification of your submittal from consideration or termination of the contract, once awarded.**

1. Have you or any member of your Firm or Team to be assigned to this engagement ever been indicted or convicted of a felony or misdemeanor greater than a Class C in the last five (5) years?

**Circle One**

YES

NO

2. Have you or any member of your Firm or Team to be assigned to this engagement ever been terminated (for cause or otherwise) from any work being performed for the CITY or any other Federal, State or Local Government, or Private Entity?

**Circle One**

YES

NO

3. Have you or any member of your Firm or Team to be assigned to this engagement ever been involved in any claim or litigation with the CITY or any other Federal, State or Local Government, or Private Entity during the last ten (10) years?

**Circle One**

YES

NO

**If you have answered "Yes" to any of the above questions, please indicate the name(s) of the person(s), the nature, and the status and/or outcome of the information, indictment, conviction, termination, claim or litigation, as applicable. Any such information should be provided on a separate page, attached to this form and submitted with your submittal.**





## ATTACHMENT V

### VENDOR/S PROVIDING PROPOSAL FOR NORTH EAST ORIGINAL TOWNSITE DRAINAGE IMPROVEMENTS – KUHN STREET QUALIFICATIONS GENERAL QUESTIONNAIRE

- 1 Name/Name of Agency/Company: \_\_\_\_\_  
(Full, correct legal name)
- 2 Address: \_\_\_\_\_  
\_\_\_\_\_
3. Telephone/Fax: \_\_\_\_\_
4. Does your Company anticipate any mergers, transfer of organization ownership, management reorganization, or departure of key personnel within the next twelve (12) months that may affect the organization's ability to carry out its submittal?  
  
Yes\_\_\_\_ No\_\_\_\_
5. Is your Company authorized and/or licensed to do business in Texas?  
Yes\_\_\_\_ No\_\_\_\_
6. Where is the Company's corporate headquarters located? \_\_\_\_\_
7. a. Does the Company have an office located in Edinburg, Texas?  
  
Yes\_\_\_\_ No\_\_\_\_  
  
b. If the answer to the previous question is "yes", how long has the Company conducted business from its Edinburg office?  
  
\_\_\_\_ (years)      \_\_\_\_ (months)  
  
c. State the number of full-time employees at the Edinburg office. \_\_\_\_\_
8. a. If the Company does not have an Edinburg office, does the Company have an office located in Hidalgo County, Texas?  
  
Yes\_\_\_\_ No\_\_\_\_  
  
b. If the answer to the previous question is yes, how long has the Company conducted business from its Hidalgo County office?  
  
\_\_\_\_ (years)      \_\_\_\_ (months)  
  
c. State the number of full-time employees at the Hidalgo County office. \_\_\_\_\_



9. Has the Company or any of its principals been debarred or suspended from contracting with any public entity? Yes\_\_\_\_\_ No\_\_\_\_\_

If yes, identify the public entity and the name and current phone number of a representative of the public entity familiar with the debarment or suspension, and state the reason for or circumstances surrounding the debarment or suspension, including but not limited to the period of time for such debarment or suspension. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

10. Indicate person whom The CITY may contact concerning your submittal or setting dates for meetings.

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Telephone: \_\_\_\_\_  
Fax: \_\_\_\_\_  
Email: \_\_\_\_\_

#### 11. Surety Information

Have you or the Company ever had a bond or surety instrument "called," canceled, or forfeited?

Yes ( ) No ( ).

If yes, state the name of the bonding company, date, amount of bond and reason for such bond being "called," or its cancellation or forfeiture. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

#### 12. Bankruptcy Information

Have you or the Company ever been declared bankrupt or filed for protection from creditors under state or federal proceedings? Yes ( ) No ( )

If yes, state the date, court, jurisdiction, cause number, amount of liabilities and amount of assets. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

13. Provide any other names under which your business has operated within the last 10 years.

\_\_\_\_\_  
\_\_\_\_\_





**ATTACHMENT VI**  
**HOUSE BILL 89 VERIFICATION**

I, \_\_\_\_\_, the undersigned representative of  
\_\_\_\_\_, (Company or Business name) (hereafter referred to as company) being an adult over the age of eighteen (18) years of age, verify that the company named-above, under the provisions of Subtitle F, Title 10, Government Code Chapter 2270:

1. Does not boycott Israel currently; and
2. Will not boycott Israel during the term of the contract.
- 3) Is not currently listed on the State of Texas Comptroller's Companies that Boycott Israel List located at <https://comptroller.texas.gov/purchasing/publications/divestment.php>

Pursuant to Section 2270.001, Texas Government Code:

1. "Boycott Israel" means refusing to deal with, terminating business activities with, or otherwise taking any action that is intended to penalize, inflict economic harm on, or limit commercial relations specifically with Israel, or with a person or entity doing business in Israel or in an Israeli-controlled territory, but does not include an action made for ordinary business purposes; and

2. "Company" means a for-profit sole proprietorship, organization, association, corporation, partnership, joint venture, limited partnership, limited liability partnership, or any limited liability company, including a wholly owned subsidiary, majority-owned subsidiary, parent company or affiliate of those entities or business associations that exist to make a profit.

\_\_\_\_\_  
SIGNATURE OF COMPANY REPRESENTATIVE:

\_\_\_\_\_  
TYPE/PRINT NAME AND TITLE:

\_\_\_\_\_  
DATE:



## ATTACHMENT VII

### SUBMITTAL CHECKLIST

**This checklist is to help the company submitting proposal for the North East Original Townsite Drainage Improvements – Kuhn Street ensure that all required documents have been included in its submittal.**

Document and Location in Submittal	Check or Initial to Indicate Document is Attached to Submittal
Tab A – Interest Statement	
Tab B – Company submitting proposal for the North East Original Townsite Drainage Improvements – Kuhn Street Qualification General Questionnaire (Attachment VI in RFP)	
Tab C – *Project Requirements Acknowledgement (Attachment V in RFP)	
Tab D – Litigation Disclosure (Attachment IV in RFP)	
Tab E – Proof of Insurability (Letter from Insurance Provider and copy of current Insurance Certificate)	
Tab F – *Insurance Requirement Acknowledgement (Attachment II in RFP)	
Tab G – Letter of Intent from Surety Company to provide Payment and Performance Bonds. (Section II in RFP Requirements)	
Tab H – Submittal Checklist (Attachment VI in RFP)	
Tab I - *House Bill 89 Verification (Attachment VI)	
Tab J- *Formal Proposal for the North East Original Townsite Drainage Improvements – Kuhn Street	
1 Original* and 2 Copies of Submittal	

**\*Documents marked with an asterisk on this checklist require a signature. Be sure they are signed prior to submittal.**





## **INSTRUCTIONS TO BIDDERS**

Bids will be submitted in sealed envelopes upon the blank form of proposal attached hereto, and marked in the upper left hand corner with the name of Bidder and Title of Project.

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

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

The successful bidder, to whom the contract is awarded, will required to carry the hereinafter listed types and amounts of insurance, which will protect the Owner, and furnish acceptable proof of payment of premiums thereon:

- 1. Water Lines,**
- 2. Sanitary Sewer,**
- 3. Storm Drainage and**
- 4. Excavation**

Commercial General Liability \$500,000 Occurrence Limit  
Broad Form Endorsement  
Combined Single Limit (Bodily Injury & Property Damage)  
Personal Injury  
Products/Completed Operations  
Blanket "XCU" – Explosion, Collapse & Underground  
Independent Contractors  
Care, Custody and Control  
Contractual Liability  
Worker's Compensation\*  
Statutory Limits  
Business Automobile Liability \$500,000  
Bodily Injury

Personal Injury Protection  
Hired/Non-Owned  
Property Damage \$250,000

**5. Commercial Buildings**

Same coverage as above to include Builders Risk Coverage to construction limit.

**6. Paving**

Commercial General Liability \$500,000 Occurrence Limit  
Combined Single Limit –CSL- (Bodily Injury and Property Damage)  
Personal Injury  
Premises – Completed Operations  
Independent Contractors  
Worker's Compensation\*  
Statutory Limits  
Business Automobile Liability \$500,000  
Bodily Injury  
Hired/Non-Owned  
Property Damage \$250,000

**7. Trucking – Loading/Hauling**

The following coverage is applicable as long as no fragile or perishable products are transported; otherwise Cargo Insurance must be required.

Commercial General Liability \$500,000 Occurrence Limit  
Premises/Operations  
Business Automobile Liability \$500,000 Occurrence Limit  
Bodily Injury  
Hired/Non-Owned  
Property Damage \$250,000  
Trailers  
Fifteen (15) day cancellation provision on all policies.

**Insurance**

The City of Edinburg will accept the accord form as the Certificate of Insurance only. It shall be the responsibility of the contractor to have his/her insurance carrier name the City of Edinburg as "an additional insured" and included a "waiver of subrogation endorsement" in favor of the City of Edinburg. These documents are to accompany the certificate of insurance at time of execution of contracts.

**\*Successful contractor must provide the City of Edinburg with proof of worker's compensation insurance prior to award of contract as stated in Section K "Supplemental General Conditions of Contract for Engineer/Architectural Construction":**



## **Requirements**

Prime contractor shall assign a project superintendent who is directly employed by the prime contractor, that superintendent will be required to be on the job on a daily basis. No subcontractors will be allowed to act as project superintendents at any point during the construction of this project.

80% of the proposed construction shall be completed by the prime contractor, only 20% of the work can be subcontracted.

Prime Contractor shall have a significant business presence with the Rio Grande Valley Area, the business must be headquartered in either Hidalgo, Cameron, or Starr County or a local office must be located in either of the three counties (Hidalgo, Cameron, Starr) with at least 30% of the total company workforce employed at the local office. City reserves the right to request payrolls and any necessary documentation to confirm that the local office meets these requirements.

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

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

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

Sales Tax Requirements – It shall be mandatory requirement of this contract that the successful contractor be the holder of a “Sales Tax Permit” issued by the Comptroller of Public Accounts State of Texas. The successful contractor for purposes of this contract shall be a seller of materials incorporated into this project.

This contract shall be a “Separated Contract” and the successful contractor shall provide the City of Edinburg with the following information when executing the contract documents:

Materials (Permanent part of Project): \$\_\_\_\_\_

Materials (Not permanent part of Project): \$\_\_\_\_\_

Service: \$\_\_\_\_\_

Total: \$\_\_\_\_\_



## PROPOSAL

TO OWNER:

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

The Bidder shall attach to his bid sheet a list of any exceptions to the specifications.

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

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

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

The bid security accompanying this proposal shall be returned to the bidder, unless in case of the acceptance of the proposal the bidder shall fail to execute a contract and file a performance bond and payment bond within the ten (10) days after its acceptance, in which case the bid security shall become the property of the OWNER, and shall be considered as a payment for damages due to delay and other inconveniences suffered by the Owner on account of such failure of the bidder. It is understood that the Owner reserves the right to reject any and all bids.

BIDDER'S BOND in the amount of \$ 5% in compliance with the INSTRUCTION TO BIDDERS.

The above check or Bidder's Bond is to become the property of the City of Edinburg, Texas, in the event the construction contract (when offered by Owner) and bonds are not executed within the time set forth.

**ENGINEER'S ESTIMATE OF QUANTITIES – APPROXIMATE ONLY:**

**CITY OF EDINBURG  
NORTH EAST ORIGINAL TOWNSITE DRAINAGE IMPROVEMENTS –  
KUHN STREET**

ITEM DESCRIPTION	QUANTITY	UNIT PRICE	ITEM TOTAL
<b>A. <u>North East Original Townsite Drainage Improvements - Kuhn Street</u></b>			
1. 30" HPP	400 LF	@ \$_____	= \$_____
2. 24" HPP	40 LF	@ \$_____	= \$_____
3. Trench Protection	440 LF	@ \$_____	= \$_____
4. 7' Dia. Manhole	2 EA	@ \$_____	= \$_____
5. Tie To Exist. 48" Drain Line with 7' Dia. Manhole	1 EA	@ \$_____	= \$_____
6. Tie To Exist. 30" Line with 7' Dia. Manhole	1 EA	@ \$_____	= \$_____
7. Saw Cut Pavement and Patch with 8" Flex Base and 2" HMA (20' Wide)	420 LF	@ \$_____	= \$_____
8. Adjust Manhole Top	2 EA	@ \$_____	= \$_____
9. Tie To Exist. Curb Inlet with 24" Line	2 EA	@ \$_____	= \$_____
10. Replace Curb & Gutter	30 LF	@ \$_____	= \$_____
11. 18" Plug and Cap	4 EA	@ \$_____	= \$_____



12. Remove approx. 25 sand      Lump Sum   @    \$\_\_\_\_\_ = \$\_\_\_\_\_  
bags from exist. manhole  
located along U.S. 281 East Frontage Road  
Approx. 200' south of Kuhn Street.  
(Manhole depth approximately 10' deep)

13. Remove and Replace      Lump Sum   @    \$\_\_\_\_\_ = \$\_\_\_\_\_  
30" Gate Valve on 9' X 9'  
Concrete Structure located along  
U.S. 281 East Frontage Road at Kuhn Street.

14. Erosion Control              Lump Sum   @    \$\_\_\_\_\_ = \$\_\_\_\_\_

\*15. Utility Adjustments      Stated Amount   @    \$40,000.00      =    \$40,000.00

**Total Base Bid (Item A): \$\_\_\_\_\_**

**\*Note: Any part of the Stated Allowance for the Utility Adjustments shall only be utilized if authorized by the Engineer in writing. A cost proposal for this item must be submitted by the Contractor and approved by the Engineer prior to work performed.**

Number of calendar days to complete contract **90**.

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

Bidder hereby agrees to commence work under this contract within 10 days after notice to proceed is issued and complete the work within **90** calendar days.

Receipt is acknowledged of the following addenda:

No. \_\_\_\_\_ Dated \_\_\_\_\_

No. \_\_\_\_\_ Dated \_\_\_\_\_

Bidder agrees that the Owner has the right to accept or reject any or all bids and to waive all formalities.

DATE: \_\_\_\_\_

Respectfully submitted,

By: \_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Type or Print Name)

**(SEAL – IF BIDDER IS A CORPORATION)**

\_\_\_\_\_  
(Company)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Phone Number)

\_\_\_\_\_  
(Fax Number)

\_\_\_\_\_  
(E-mail)



## BID BOND

KNOW ALL MEN BY THESE PRESENTS, That we, the undersigned \_\_\_\_\_  
\_\_\_\_\_ as Principal, and \_\_\_\_\_  
\_\_\_\_\_ as Surety, are hereby held and firmly bound  
unto \_\_\_\_\_ as Owner in the penal sum of \_\_\_\_\_  
\_\_\_\_\_ for the payment of which, well and truly to be  
made, we hereby jointly and severally bind ourselves, our heirs, executors,  
administrators, successors and assigns.

Signed, the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

The condition of the above obligation is such that whereas the Principal  
has submitted to \_\_\_\_\_ a certain Bid, attached hereto and  
hereby made a part hereof to enter into a contract in writing for the \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NOW, THEREFORE,

- (a) If said Bid shall be rejected, or in the alternate,
- (b) If said Bid shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said Bid) and shall furnish a bond for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said Bid, then this obligation shall be void, otherwise the same shall remain in force and affect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation is herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the Owner may accept such Bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

\_\_\_\_\_(L.S.)  
Principal

By: \_\_\_\_\_

\_\_\_\_\_  
Surety

SEAL

By: \_\_\_\_\_



## **SPECIAL PROVISIONS**

1. The City of Edinburg reserves the right to remove any item within the proposal in order to meet the budget.
2. It shall be the Contractor's responsibility to locate underground utilities, whether shown or not shown on the drawings, sufficiently in advance of operations to preclude damage to same.
3. Water, sewer, or other utility services shall not be interrupted. Any damages to existing utilities will be Contractor's responsibility.
4. In the event of damage to underground facilities, whether shown or not shown in the drawings, the Contractor shall make the necessary repairs to place the facilities back in service at no increase in the Contractor's price and all such repairs shall conform to the requirements of the company or agency servicing the facility.
5. The Contractor shall exercise extra care to prevent damage to all other structures in the area including buildings, fence, roads, pipelines, utilities, etc., whether publicly or privately owned.
6. Until acceptance by the Engineer of any part or all of the construction, as provided for in the plans and these specifications, it shall be under the charge and care of the contractor, and he shall take every necessary precaution against injury or damage to any part of the work. The Contractor shall rebuild, repair, restore and make good, at his own expense, all injuries or damage to any portion of the work before its completion and acceptance.
7. In case the Contractor deems extra compensation is due him for proposed work not covered in the contract, the Contractor shall notify the Engineer in writing of his claim for such extra compensation before he begins the work. Failure on the part of the Contractor to give such notification shall constitute a waiver of claim for such extra compensation. The Contractor shall not proceed until a written Change Order is approved by the Owner, Engineer, and Contractor.

8. Upon failure of the Contractor to satisfactorily repair or to remove and replace) rejected work or materials immediately after receiving formal notice from the Engineer, the Owner may recover for such defective work or materials on the Contractor's bond, or by action a court having proper jurisdiction over such matters, or may employ labor and equipment and satisfactorily repair or remove and replace such work and charge the cost of the same to the Contractor, which cost will be deducted from any money due him from this contract.
9. Prospective bidders should make a careful examination of the project sites. Contractor to examine existing manhole with sand bags and existing 30" gate valve to be replaced in order to properly bid these items.
10. Contractor shall review his overall method and schedule of construction with the City Prior to construction for proper coordination of inspection.
11. Contractor shall repair all asphalt pavement and concrete curb, gutter, sidewalk, or drainage structures damaged during construction.
12. The Contractor shall repair any landscaped areas, fences, etc. damaged during construction.
13. The Contractor shall at all times provide access to existing homes.
14. No open trenches or excavation shall be left open overnight.
15. The Contractor to provide proper traffic control during the construction approved by the City of Edinburg and Engineer to insure the safety of the public.
16. The Contractor to provide any and all temporary graphic construction signs, directional signs and other signs that may be required during construction.
17. Contractor to be responsible for preparing a traffic control plan for all construction work to be approved by the City of Edinburg and Engineer.
18. Contractor to provide proper erosion control methods for the project including inlet protection for all curb inlets in the area of construction.



THE STATE OF TEXAS   §  
COUNTY OF HIDALGO   §  
SERVICE CONTRACT   §

AGREEMENT FOR THE NORTH EAST  
ORIGINAL TOWNSITE DRAINAGE  
IMPROVEMENTS – KUHN STREET  
BETWEEN THE CITY OF EDINBURG AND  
\_\_\_\_\_.

The **City of Edinburg** (hereinafter called "City"), and **XXXXXX**(herein called "Contractor"), entered into an agreement for the Labor, Materials, permits, Traffic Control, Disposal, SWP3, and Equipment, necessary for the Construction of the **North East Original Townsite Drainage Improvement – Kuhn Street**.

**RECITALS**

**WHEREAS**, the City desires to engage the Contractor for certain services in connection therewith; and,

**WHEREAS**, Contractor represents that it has the knowledge, ability, and personnel to properly provide construction and concrete services needed by the City;

**NOW, THEREFORE**, the City and Contractor do mutually agree as follows:

**SECTION I**  
**EMPLOYMENT OF CONTRACTOR**

City agrees to employ Contractor to provide the following basic services as stated in the following sections and upon receipt of such satisfactory services, City agrees to pay Contractor as stated in the sections to follow.

**SECTION II**  
**BASIC SERVICES OF CONTRACTOR**

The Contractor agrees to the provide the Labor, Materials, permits, Traffic Control, Disposal, SWP3, and Equipment necessary for the construction of the **North East Original Townsite Drainage Improvements – Kuhn Street**; at his/her (it's or their) own proper cost and expense to furnish all the labor, insurance and other accessories and services necessary to complete the said tasks in accordance with the conditions and prices stated in Exhibits "A & C" Scope of Works and Notice to Bids and Bid Form pertaining to **Bid #2019-07 North East Original Townsite Drainage Improvements – Kuhn Street**.

**SECTION III**  
**TIME OF PERFORMANCE**

The Contractor shall perform services as identified in Exhibit "A & C". Work shall be completed upon request of the City and during the course of the City's fiscal year 2018-2019, with the contract terminating **90** calendar days from the Notice to Proceed. Contractor and City shall not be liable for any delay due to force majeure circumstance beyond its control.

#### **SECTION IV**

#### **STANDARD OF PERFORMANCE**

Contractor warrants to City that all labor furnished to perform the Work under the Contract Documents will be competent to perform the tasks undertaken, that the product of such labor will yield only first-class results, that materials and /or equipment furnished will be of good quality and new unless otherwise permitted by the Contract Documents, and that the Work will be of good quality and workman like manner, free from faults and defects, and in strict conformance with the Contract Documents. Any Work not strictly conforming to these requirements shall be considered defective.

#### **SECTION V**

#### **TERMS OF PAYMENT**

City agrees to pay Contractor for services herein contracted for as follows:

- A. Payment for basic services shall be upon thirty (30) days of receipt of invoice by City. Invoice shall be submitted to City upon completion and inspection of each project in accordance with the contract Documents in as per unit prices stated in the contract for work completed that month.
- B. Invoice shall be completed and processed in accordance with City regulations. Contractor shall submit Applications for Payment in accordance with the City policies. Application for Payment will be processed by the Department of Public Works.
- C. City shall authorize all payments made for services rendered. Payment terms shall be net thirty (30) days from receipt of invoice.
- D. If changes in plans or specifications are necessary after the performance of the contract is begun or if it is necessary to decrease or increase the quantity of work to be performed or of materials, equipment, or supplies to be furnished, the governing body of the municipality must approve change orders before making the changes in accordance with City Code of Ordinance and applicable sections of the Texas Local Government Code and Texas Government Code.
- E. The total contract price may not be increased because of the changes unless additional money for increased costs is appropriated for that purpose from available funds or is provided for by the authorization of the issuance of time warrants.

#### **SECTION VI**

#### **TIME OF COMPLETION**

City and the Contractor recognize that time is of the essence of this agreement and that the City may suffer financial loss if the WORK is not completed within the time specified in Section III herein, plus any extensions thereof allowed in accordance with



**Bid #2019-07 North East Original Townsite Drainage Improvements – Kuhn Street.** Accordingly, instead of requiring any such proof, the City and the Contractor agree that not as a penalty, but as added expense for Engineering/Architectural supervision the Contractor shall pay the City for each day that expires after the time specified in Section III herein the amount corresponding below:

<u>FOR AMOUNT OF CONTRACT</u>	<u>COST PER DAY</u>
\$ 5,000.00 to \$ 25,000.00	\$100.00
\$ 25,001.00 to \$ 100,000.00	\$200.00
\$ 100,001.00 to \$ 500,000.00	\$250.00
\$ 500,001.00 to \$1,000,000.00	\$300.00
\$1,000,001.00 to \$2,000,000.00	\$400.00
\$2,000,001.00 to \$3,000,000.00	\$500.00
\$3,000,001.00 to \$4,000,000.00	\$600.00
\$4,000,001.00 to \$5,000,000.00	\$700.00
\$5,000,001.00 and over	\$800.00

#### **SECTION VII** **SCHEDULE REQUIREMENTS**

Whenever, in the opinion of City, the Work falls behind schedule, the Contractor shall, to the extent necessary to meet said schedule, increase its labor force and/or provide overtime, Saturday, and Sunday and/or holiday work, and shall have each Subcontractor do likewise, all at no additional cost to or compensation from City. Further, City shall have the right to offset against any amounts then or thereafter due to the Contractor, or to be reimbursed by the Contractor for, any additional costs City may incur as a direct result of said increase in labor force or overtime, Saturday, Sunday, and/or holiday work.

#### **SECTION VIII** **WRITTEN NOTICE OF ISSUE**

In the event that any issue arises relating to any of the provisions contained in this Agreement, including, but not limited to potential delays, change orders, time extensions, weather delays, etc., Contractor agrees to notify the City, in writing, immediately, relating to such issue and proposed resolution. Failure to give such notice shall constitute a waiver of any other remedies available to Contractor hereunder.

#### **SECTION IX** **NO DAMAGE FOR DELAY**

In the event of any delay, not the fault of the Contractor, the Contractor shall be entitled to an extension of time for completion only, and shall not be entitled to any additional payment on account of such delay. Without limiting the foregoing, the Contractor shall not be entitled to payment or compensation of any kind from the City for direct, indirect or impact damages, and/or consequential damages, including but not limited to costs of acceleration arising because of hindrance or from any cause or whatsoever, whether such hindrances or delays be reasonable or unreasonable,



foreseeable or unforeseeable, or avoidable or unavoidable.

## **SECTION X**

### **UNREASONABLE SITE INSPECTION REQUIREMENTS**

The Contractor acknowledges that it has taken steps necessary to ascertain the nature and location of the Work and that it has investigated and satisfied itself as to the general and local conditions which can affect the Work and its costs. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered or difficulties or access insofar as this information is ascertainable from an inspection of the site, and available documents, including all information from exploratory work done by the City and its design consultants as well as from the Drawings and Specifications made a part of this Contract. The Contractor has the right to make any additional tests necessary to assure itself that the site conditions are satisfactory for the work contemplated.

## **SECTION XI**

### **DUTY TO COORDINATE AMONG SEPARATE PRIME CONTRACTORS**

The City reserves the right to engage separate contractors to perform aspects of the Project other than the Work under this Agreement. In such case, contractor shall coordinate sequence and schedule its work together and in cooperation with such other contractors. In the event of any difficulties caused by any such other separate contractor, this contractor shall look solely for relief to such other contractors and shall not make claim against City.

## **SECTION XII**

### **CONTRACT DOCUMENTS**

The Contract Documents which comprise the entire agreement between City and Contractor concerning the WORK consist of this Agreement and the following attachments to this Agreement:

- Notice to Bidders
- Addenda (Index)
- Instructions to Bidders
- Bid Proposal Forms including the Bid, Bid Schedule(s), Information Required of Bidder, Bid Bond, and all required certificates and affidavits
- Special Provisions
- Agreement for Engineering/Architectural Construction
- Performance Bond
- Payment Bond
- General Conditions of Contract for Engineer/Architectural Construction
- Affidavit and Waiver of Lien Prime Contractor
- Affidavit of Release and Waiver by Subcontractor and Material Vendor
- Contractor's Affidavit as to Status of Lien
- Technical Specifications, as listed in the Table of Contents.
- Drawings

- Change Orders which may be delivered or issued after Effective Date of the Agreement and are not attached hereto.

Said attachments to be delivered before final payment is due. There are no Contract Documents other than those listed in this Section. The Contract Documents may only be amended by Change Order pursuant to the City's policies and or regulations.

### **SECTION XIII** **ASSIGNMENT**

No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation monies that may become due and monies that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

### **SECTION XIV** **NON-APPROPRIATIONS**

Notwithstanding anything in the contract documents to the contrary, any and all payments which the City is required to make under this contract shall be subject to annual appropriation or other availability of funds, as certified by the Director of Finance.

If the City cannot appropriate sufficient funding, then either party has the right to terminate the contract by providing (10) ten days written notice to the other party.

Furthermore, execution of this contract does not automatically guarantee a renewal of contract upon expiration.

### **SECTION XV** **MINIMUM INSURANCE REQUIREMENTS**

In accordance with City ordinances, Contractor shall be required to hold the following minimum insurance coverage throughout the duration of this Agreement:

A. Workers Compensation-  
In accordance with the State statute

B. Employer's Liability

Bodily Injury by Accident: \$100,000 each accident

Bodily Injury by Disease: \$100,000 each employee  
\$500,000 policy limits



C. Comprehensive General Liability

Bodily Injury        \$250,000 each person  
                             \$500,000 each occurrence  
Property Damage   \$100,000 each occurrence  
                             \$100,000 aggregate

-or-    \$500,000 combined single limits

D. Comprehensive Auto Liability

Bodily Injury        \$250,000 each person  
                             \$500,000 each occurrence  
Property Damage   \$100,000 each occurrence  
                             \$100,000 each aggregate

-or-    \$500,000 combined single limits

E. City's Protective Liability

Bodily Injury        \$250,000 each person  
                             \$500,000 each occurrence  
Property Damage   \$100,000 each occurrence  
                             \$100,000 each aggregate

-or-    \$500,000 combined single limits

Evidence of the above insurance coverage shall be required prior to final execution of the agreement. The City shall be listed as an additional insured.

Contractor warrants that it is adequately insured and carries liability, worker's compensation, and automobile insurance for injury to its employees and others incurring loss or injury as a result of the acts of Contractor or its employees.

Contractor shall not commence work under this agreement until all insurance requirements have been obtained and proof of such insurance shall have been provided to the City, nor shall Contractor allow any Sub-Contractor to commence work until all insurance as noted above has been so obtained and provided to the City. Approval of the insurance by City shall not relieve or decrease the liability of the Contractor.

**SECTION XVI**  
**TERMINATION OF CONTRACT**

Either party to this agreement shall have the right to terminate this contract at any time, and for any reason, after 30 days' written notice and any payment requested shall be made on work completed and/or goods delivered and as provided for in the contract.



## **SECTION XVII**

### **SEVERABILITY**

If any term or provision of this Agreement is held by a court of competent jurisdiction to be invalid, void, or unenforceable, the remainder of the provisions of this Agreement shall remain in full force and effect and shall in no way be affected, impaired or invalidated.

## **SECTION XVIII**

### **ALTERNATE DISPUTE RESOLUTION/NEUTRAL PARTY**

- A. Any controversy, claim or dispute between the parties arising out of or relating to the provisions of this Agreement or the breach, termination or validity thereof shall, upon written request of either party, immediately be referred jointly for resolution of the controversy by non-binding mediation.
- B. The mediation must be concluded within any period mutually agreed upon by the parties but in no event no later than within forty-five (45) days after written notice is given by either party of its intent to proceed to mediation. Unless the parties expressly agree otherwise, each party shall bear its own costs, legal and expert fees incurred in the mediation, and evenly share the costs of the mediator. If, after proceeding in good faith the parties, with the assistance of a neutral mediator, do not resolve the dispute within the forty-five (45) day period, the parties may proceed in accordance with paragraph (C) below.
- C. After exhausting the procedures set forth above, either party may initiate litigation to resolve the dispute. The Law of the State of Texas shall control the matter in controversy. Venue is mandatory in a State Court Hidalgo County, Texas.

## **SECTION XIX**

### **NOTICE**

All notices or other communications required under this Agreement may be affected either by personal delivery in writing or by Certified Mail, Return Receipt Requested. Notice shall be deemed to have been given when delivered or mailed to the parties at their respective addresses as set forth below or when mailed to the last address provided in writing to the other party by the addressee.

## **SECTION XX**

### **IDEMNIFICATION**

- A. Contractor agrees to and shall indemnify and hold harmless and defend the City of Edinburg, Texas, its elected and appointed officers, agents and employees from any and all claims, losses, causes of action and damages, suits and liability of every kind, including all expenses of litigation, court costs, and attorney's fees for injury to or death to any person or for damage to any property, arising out of or directly connected with the negligent operation of the Contractor, its agents, officers and employees, carried out in furtherance of this agreement.

- B. Contractor agrees to assist City in defense of claims or litigation brought against the City related to this agreement, including any claims related to services.

**SECTION XXI**  
**CONFLICT OF TERMS**

In the Event that there is any conflict or inconsistency between the terms and conditions of this Agreement, and those of the exhibits and attachments to this agreement, the terms and conditions of this Agreement, shall control and govern the rights and obligations of the parties. All other provisions of exhibits and attachments to this agreement not specifically in conflict with this Agreement shall remain the same.

**SECTION XXII**  
**MISCELLANEOUS**

Any changes to this document must be approved by City and signed by both parties to the agreement.

EXECUTED by the parties in triplicate originals on this \_\_\_\_\_ day of \_\_\_\_\_, 2018.

**CITY OF EDINBURG:**

BY: \_\_\_\_\_  
Juan G Guerra, CPA, City Manager  
City of Edinburg  
415 W. University Dr.  
Edinburg, Texas 78541  
Phone: (956)383-5661  
Fax: (956)383-7111

**ATTEST:**

BY: \_\_\_\_\_  
Ludivina Leal, City Secretary

**APPROVED AS TO FORM:**

**OXFORD AND GONZALEZ**

BY: \_\_\_\_\_  
Ricardo Gonzalez,  
City Attorney



**NAME OF COMPANY**

**BY:** \_\_\_\_\_

Name

Title

Address

Ctiy, State, Zipcode

Phone:

Fax:

Email:

**ATTACHMENTS:** Exhibit A: Scope of Work  
Exhibit B: Certificates of Insurance  
Exhibit C: Bid 2019-07  
Exhibit D

REQUEST BY CONTRACTOR FOR CERTIFICATE OF  
EXEMPTION FROM TEXAS LIMITED SALES, EXCISE  
AND USE TAX

TO: City of Edinburg

DATE: \_\_\_\_\_

RE: Owner Contract For: **North East Original Townsite Drainage  
Improvements - Kuhn Street**

The undersigned contractor hereby requests a Certificate of Exemption from payment of taxes under Chapter 20, Title 122a, Revised Civil Statutes of Texas, in amount of \$\_\_\_\_\_, which is an amount not exceeding the contract price of all materials and other tangible personal property to be furnished in connection with the subject project.

The undersigned hereby represent that such materials and property have been or will be utilized in the performance of the contract to the contract to the full extent of the amount for which such Certificate of Exemption is required.

\_\_\_\_\_  
Contractor

By: \_\_\_\_\_  
(Name & Title)



**NON-COLLUSION AFFIDAVIT OF PRIME BIDDER**

State of \_\_\_\_\_  
County of \_\_\_\_\_

\_\_\_\_\_, being first duly sworn, deposes and says that:

- (1) He is \_\_\_\_\_, of \_\_\_\_\_, the Bidder that has submitted the attached Bid;
- (2) He is fully informed respecting the preparation and contents of this attached bid and of all pertinent circumstances respecting such bid;
- (3) Such bid is genuine and is not a collusive or sham Bid;
- (4) Neither the said Bidder nor any of its officers, partners, owners, agents, representative:, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit or cost element of the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the Owner or any person interested in the proposed Contract; and
- (5) The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

(Signed) \_\_\_\_\_

\_\_\_\_\_  
(Title)

Subscribed and sworn to before me on this \_\_\_\_\_

day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Notary Public

My Commission expires: \_\_\_\_\_

**PERFORMANCE BOND**

STATUTORY PERFORMANCE BOND PURSUANT TO ARTICLE 2253  
OF THE TEXAS LOCAL GOVERNMENT CODE AS AMENDED BY ACTS OF THE 1993,  
73<sup>RD</sup> LEGISLATURE, CH. 268 §1, EFF. SEPT. 1, 1993  
\*\*\*\*\*

KNOW ALL MEN BY THESE PRESENTS, THAT\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(hereinafter called the Principal(s), as Principal(s), and\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(hereinafter called the Oblige), in the amount of\_\_\_\_\_

\_\_\_\_\_ Dollars (\$\_\_\_\_\_)

for the payment whereof the said Principal and Surety bind themselves, and their heirs,

administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written contract with the Oblige, dated the

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_, for the\_\_\_\_\_

\_\_\_\_\_

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

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal shall faithfully perform the work in accordance with plans, specifications and contract documents, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Article 5160 of the Revised Civil Statutes of Texas as amended by the Acts of the 56<sup>th</sup> Legislature, Regular Session, 1959, and provisions of said Article to the same extent as if it were copied at length herein.

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

**ATTEST:**

\_\_\_\_\_  
Principal

\_\_\_\_\_  
(Principal) Secretary  
(SEAL)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Witness as to Principal

\_\_\_\_\_  
(Print/Type Name)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Address)

**ATTEST:**

\_\_\_\_\_  
Surety

\_\_\_\_\_  
(Surety) Secretary  
(SEAL)

\_\_\_\_\_  
Attorney-in-Fact (Signature)

\_\_\_\_\_  
Witness as to Surety

\_\_\_\_\_  
(Print/Type Name)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Address)

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

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



**PAYMENT BOND**

STATUTORY PAYMENT BOND PURSUANT TO ARTICLE 2253  
OF THE TEXAS LOCAL GOVERNMENT CODE AS AMENDED BY ACTS OF THE 1993,  
73<sup>RD</sup> LEGISLATURE, CH. 268 §1, EFF. SEPT. 1, 1993

\*\*\*\*\*

KNOW ALL MEN BY THESE PRESENTS, that \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(hereinafter called the Principal(s), as Principal(s), and \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(hereinafter called the Obligee), in the amount of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_)

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

WHEREAS, the Principal has entered into a certain written contract with the Obligee,  
dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_, to \_\_\_\_\_

\_\_\_\_\_

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

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal shall pay all claimants supplying labor and material to him or a subcontractor in the prosecution of the work provided for in said contract, then, this obligation shall be void; otherwise to remain in full force and affect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Article 5160 of the Revised Civil Statutes of Texas as amended by the Acts of the 56<sup>th</sup> Legislature, Regular Session, 1959, and all liabilities on this bond shall be determined in accordance with the provisions of said Article to the same extent as if it were copied at length herein.

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

**ATTEST:**

\_\_\_\_\_  
Principal

\_\_\_\_\_  
(Principal) Secretary  
(SEAL)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Witness as to Principal

\_\_\_\_\_  
(Print/Type Name)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Address)

**ATTEST:**

\_\_\_\_\_  
Surety

\_\_\_\_\_  
(Surety) Secretary  
(SEAL)

\_\_\_\_\_  
Attorney-in-Fact (Signature)

\_\_\_\_\_  
Witness as to Surety

\_\_\_\_\_  
(Print/Type Name)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Address)

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

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

## Implementation of House Bill 1295

### Certificate of Interested Parties (Form 1295):

In 2015, the Texas Legislature adopted House Bill 1295, which added section 2252.908 of the Government Code. The law states that a governmental entity or state agency may not enter into certain contracts with a business entity unless the business entity submits a disclosure of interested parties to the governmental entity or state agency at the time the business entity submits the signed contract to the governmental entity or state agency. The law applies only to a contract of a governmental entity or state agency that either (1) requires an action or vote by the governing body of the entity or agency before the contract may be signed or (2) has a value of at least \$1 million. The disclosure requirement applies to a contract entered into on or after January 1, 2016.

The Texas Ethics Commission was required to adopt rules necessary to implement that law, prescribe the disclosure of interested parties form, and post a copy of the form on the commission's website. The commission adopted the Certificate of Interested Parties form (Form 1295) on October 5, 2015. The commission also adopted new rules (Chapter 46) on November 30, 2015, to implement the law. The commission does not have any additional authority to enforce or interpret House Bill 1295.

### Filing Process:

Starting on January 1, 2016, the commission will make available on its website a new filing application that must be used to file Form 1295. A business entity must use the application to enter the required information on Form 1295 and print a copy of the completed form, which will include a certification of filing that will contain a unique certification number. An authorized agent of the business entity must sign the printed copy of the form and have the form notarized. The completed Form 1295 with the certification of filing must be filed with the governmental body or state agency with which the business entity is entering into the contract.

The governmental entity or state agency must notify the commission, using the commission's filing application, of the receipt of the filed Form 1295 with the certification of filing not later than the 30th day after the date the contract binds all parties to the contract. The commission will post the completed Form 1295 to its website within seven business days after receiving notice from the governmental entity or state agency.

Information regarding how to use the filing application will be available on this site starting on January 1, 2016.

### Additional Information:

HB 1295

Certificate of Interested Parties (Form 1295)

New Chapter 46, Ethics Commission Rules:

46.1. Application



46.3. Definitions

46.5. Disclosure of Interested Parties Form

*Last Revision: February 16, 2016*

**CERTIFICATE OF INTERESTED PARTIES****FORM 1295**

Complete Nos. 1 - 4 and 6 if there are interested parties.  
Complete Nos. 1, 2, 3, 5, and 6 if there are no interested parties.

**OFFICE USE ONLY**

1 Name of business entity filing form, and the city, state and country of the business entity's place of business.

2 Name of governmental entity or state agency that is a party to the contract for which the form is being filed.

3 Provide the identification number used by the governmental entity or state agency to track or identify the contract, and provide a description of the goods or services to be provided under the contract.

4 Name of Interested Party	City, State, Country (place of business)	Nature of Interest (check applicable)	
		Controlling	Intermediary

5 Check only if there is NO Interested Party. ☐

**6 AFFIDAVIT**

I swear, or affirm, under penalty of perjury, that the above disclosure is true and correct.

\_\_\_\_\_  
Signature of authorized agent of contracting business entity

AFFIX NOTARY STAMP / SEAL ABOVE

Sworn to and subscribed before me, by the said \_\_\_\_\_, this the \_\_\_\_\_ day  
of \_\_\_\_\_, 20 \_\_\_\_\_, to certify which, witness my hand and seal of office.

\_\_\_\_\_  
Signature of officer administering oath

\_\_\_\_\_  
Printed name of officer administering oath

\_\_\_\_\_  
Title of officer administering oath

**ADD ADDITIONAL PAGES AS NECESSARY**

## CERTIFICATE OF OWNER'S ATTORNEY

I, the undersigned, \_\_\_\_\_, the duly  
authorized and acting legal representative of \_\_\_\_\_.

\_\_\_\_\_, do hereby certify as follows:

I have examined the attached contract(s) and surety bonds and the manner of execution thereof, and I am of the opinion that each of the aforesaid agreements has been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representative have full power and authority to execute said agreements on behalf of the respective parties named thereon; and that the foregoing agreements constitute valid and legally binding obligations upon the parties executing the same in accordance with terms, conditions and provisions thereof.

Date: \_\_\_\_\_

\_\_\_\_\_  
Signature

By: \_\_\_\_\_  
Print Name



## **GENERAL CONDITIONS OF CONTRACT FOR ENGINEERING CONSTRUCTION**

### **SEC. 1 – Definitions**

(a) The Contract Documents shall consist of the Advertisement for Bids, Instructions to Bidders, The Proposal, The Contract Agreement, Performance Bond, Payment Bond, General Conditions of the Contract, Special Conditions of the Contract, Construction Specifications, Construction Drawings, Addendas, Change Orders and the Construction Plans including all modifications thereof incorporated in any of the documents before the execution of the Agreement.

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

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

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

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

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

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

## **SEC. 2 – Execution and Correlation of Documents**

The contract Documents shall be signed in duplicate by the Owner and the Contractor.

The contract Documents are complementary and what is called for by any one shall be as binding as if called for by all. In case of conflict between Drawings, and Specifications, the Specifications shall govern. Materials or work described in words which so applied have a well-known technical or trade meaning shall be held to refer to such recognized standards.

## **SEC. 3 – Design, Drawings and Instructions**

It is agreed that the Owner will be responsible for the adequacy of design and sufficiency of the Drawings and Specifications. The Owner, through the Engineer, or the Engineer as the Owner's representative, shall furnish Drawings and Specifications which adequately represent the requirements of the work to be performed under the contract. All such Drawings and instructions shall be consistent with the Contract Documents and shall be true developments thereof. In the case of lump-sum Contracts, Drawings and Specifications which adequately represent the work to be done shall be furnished prior to the time of entering into the Contract. The Engineer may, during the life of the Contract, and in accordance with Section 18, issue additional instructions by means of Drawings or other media necessary to illustrate changes in the work.

## **SEC. 4 – Copies of Drawings Furnished**

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

## **SEC. 5 – Order of Completion**

The contractor shall submit, at such times as may be reasonably requested by the Engineer, schedules which shall show the order in which the Contractor proposed to carry on the work, with dates at which the Contractor will start the several part of the work, and estimated dates of completion of the several parts.

## **SEC. 6 – Ownership of Drawings**

All drawings, Specifications and copies thereof furnished by the Engineer shall not be reused on other work and, with the exception of the signed Contract, sets are to be returned to him on request, at the completion of the work. Owner may keep one set of Drawings for future use on the Project, including for maintenance of the Project.



## **SEC. 7 – Familiarity with Work**

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

## **SEC. 8 – Change Conditions**

The Contractor shall promptly, and before such conditions are disturbed, notify the Owner in writing of: (1) Subsurface or latent physical conditions at the site differing materially from those indicated in this Contract; or (2) previously unknown physical or other conditions at the site, or an unusual nature, differing materially from those ordinarily encountered and generally recognized as ingherent in work of the character provided for in this Contract. The Engineer shall promptly investigate the conditions, and if he finds that such conditions, do so materially differ and cause an increase or decrease in the cost of, or the time required for, performance of this Contract, an equitable adjustment shall be made and the Contract modified in writing accordingly. Any claim of the Contractor for adjustment hereunder shall not be allowed unless he has given notice as above required; provided that the Engineer may, if he determines the facts so justify, consider and adjust any such claims asserted before the date of final settlement of the Contract. If the parties fail to agree upon the adjustment to be made, the dispute shall be determined as provided in Section 39 hereof.

## **SEC. 9 – Materials and Appliances**

Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, water, tools, equipment, light, power transportation and other facilities necessary for the execution and completion of the work. Unless otherwise specified, all materials incorporated in the permanent work shall be new and both workmanship and materials shall be of good quality. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials.

## **SEC. 10 – Employees**

The Contractor shall at all times enforce strict discipline and good order among his employees, and shall seek to avoid employing on the work any unfit person or anyone not skilled in the work assigned to him.



## **SEC. 11 – Royalties and Patents**

The Contractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof except that the Owner shall be responsible for all such loss when a particular process or the project of a particular manufacturer or manufactures is specified, unless the Owner has notified the Contractor prior to the signing of the contract that the particular process or product is patented or is believed to be patented.

## **SEC. 12 – Surveys**

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

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

## **SEC. 13 – Permits, Licenses and Regulations**

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

## **SEC. 14 – Protection of the Public and of Work and Property**

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

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

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

#### **SEC. 15 – Inspection of Work**

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

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

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

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

#### **SEC. 16 – Superintendence**

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



## **SEC. 17 – Discrepancies**

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

## **SEC. 18 – Changes in the Work**

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

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

The Contractor shall proceed with the work as changed and the value of any such extra work or change shall be determined as provided in the Agreement.

## **SEC. 19 – Extension of Time**

Extension of time stipulated in the Contract for completion of the Work will be made when changes in the work occur, as provided in Section 18; when the work is suspended as provided in Section 23; and when the work of the Contractor is delayed on account of conditions which could not have been foreseen, or which were beyond the control of the Contractor, his subcontractor or suppliers, and which were not the result of their fault or negligence. Extension of time for completion shall also be allowed for any delays in the progress of the work caused by any act (except as provided elsewhere in these General Conditions) or neglect of the Owner or of his employees or by other contractors employed by the Owner, or by any delay in the furnishing of Drawings and necessary information by the Engineer, or by any other case which in the opinion of the Engineer entitled the Contractor to an extension of time, including but not restricted to, acts of the public enemy, acts of any government in either its sovereign or any applicable contractual capacity, acts of another contractor in the performance of a contract with the Owner, fires, floods, epidemics, quarantine restriction, freight embargoes, unusually severe weather, or labor disputes.

The Contractor shall notify the Engineer promptly of any occurrence or conditions which in the Contractor's opinion entitle him to an extension of time. Such notice shall be in writing and shall be submitted in ample time to permit full investigation and evaluation of the Contractor's claim. The Engineer shall acknowledge receipt of the Contractor's notice within 5 days of its receipt. Failure to provide such notice shall constitute a waiver by the Contractor of any claim.



## **SEC. 20 – Claims**

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

## **SEC. 21 – Deductions for Uncorrected Work**

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

## **SEC. 22 – Correction of Work Before Final Payment**

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

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

## **SEC. 23 – Suspension of Work**

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

The contractor may at the Owner's option, be allowed an increase in the contract price or an extension of the contract time, or both; directly attributable to any suspension if Contractor demonstrates an approved claim. Any increases or decreases in the contract price shall be governed by all state and local laws, statutes, codes, ordinances, rules and regulations governing competitive bidding or sealed proposals and change orders.

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

#### **SEC. 24 – The Owner’s Right to Terminate Contract**

If the Contractor should be adjudged as bankrupt, or if he should make a general assignment for the benefit of this creditors, or if a receiver should be appointed as a result of his insolvency, or if he should be guilty of a substantial violation of the contract, then the Owner, upon the certificate of the Engineer that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Contractor and his Surety seven days’ written notice terminate the employment of the Contractor and take notice terminate the employment of the Contractor and take possession of the premises and of all materials, tools, equipment and other facilities installed on the work and paid for by the Owner, and finish the work by whatever method he may deem expedient. In such case the Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the Contract price shall exceed the expense of finishing the work, including compensation for additional managerial and administrative services, such excess shall be paid to the Contractor. If such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the Owner. The expense incurred by the Owner as herein provided, and the damage incurred through the Contractor’s default, shall be certified by the Engineer.

#### **SEC. 25 – Contractor’s Right to Stop Work or Terminate Contract**

If the work should be stopped under an order of any court, or other public authority, for a period of more than three months, through no act or fault of the contractor or of anyone employed by him, or if the Engineer should fail to issue any estimate for payment within seven days after it is due, or if the Owner should fail to pay the Contractor within seven days of its maturity then the Contractor may, upon seven days’ written notice to the Owner and the Engineer, stop work.

#### **SEC. 26 – Removal of Equipment**

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



## **SEC. 27 – Responsibility for Work**

The Contractor assumes full responsibility for the work. Until its final acceptance, the Contractor shall be responsible for damage to or destruction of the work (except for any part covered by partial acceptance as set forth in Sec. 28): He agrees to make no claims against the Owner for damages to the work from any cause.

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

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

Detours : The contractor shall do such work as may be necessary to provide and maintain a detour adjacent to all road structures for public travel. The Contractor shall maintain the detours in such condition that the public can travel over same in comfort and safety, and shall at his own expense perform such work as may be required to keep said detours open to the public at all times. The Contractor shall cooperate with the Engineer in the regulation of traffic and shall so govern his work that when it becomes necessary to suspend construction for a considerable period of time, the roadways will be re-opened to public travel. Material and equipment shall be stored and work shall be so conducted as to obstruct public travel as little as possible, and in no case shall there be less than eighteen (18) foot in width of obstructed roadway for the use of traffic shall be protected with barricades, flags and markers in conformance with the Texas Manual of Uniform Traffic Control Devices. (TMUTCD)

Barricades and Danger Warning and Detour Signs : When any section of the construction site is closed to traffic, the Contractor shall furnish and maintain at each end of the closed section and at all intersecting barricades, adequate warning directional signs. If at any time the barricades are not, in the opinion of the Engineer, sufficient to prevent traffic from entering the closed portions of the street-road-construction site, the Contractor shall provide and maintain watchmen at such points and for such periods of time as the Engineer may direct. When directed by the Engineer or required by the (TMUTCD), the Contractor shall provide and maintain such standard barricades, signs, lights and flags within the closed portion of the street-road- construction site as may be necessary to protect the work and safeguard local traffic.

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



## **SEC. 28 – Partial Completion and Acceptance**

If at any time prior to the issuance of the final certificate referred to in Section 42 hereinafter, any portion of the permanent construction has been satisfactorily completed, and if the Engineer determines that such portion of the permanent construction is not required for the operations of the Contractor but is needed by the Owner, the Engineer shall issue to the Contractor a certificate of partial completion, and thereupon or at any time thereafter the Owner may take over and use the portion of the permanent construction described in such certificate, and exclude the Contractor therefrom.

The issuance of a certificate of partial completion shall not be constructed to constitute an extension of the Contractor's time to complete the portion of the permanent construction to which it relates if he has failed to complete it in accordance with the terms of this contract. The issuance of such a certificate shall not operate to release the Contractor or his sureties from any obligations under this contract or the performance bond.

If any prior use increases the cost of or delay the work, the Contractor shall be entitled to extra compensation, or extension of time, or both, as the Engineer may determine, unless otherwise provided.

## **SEC. 29 – Payments Withheld Prior to Final Acceptance of Work**

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

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

When the above grounds are removed or the Contractor provides a Surety Bond satisfactory to the Owner which will protect the Owner in the amount withheld, payment shall be made for amounts withheld, because of them.

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

### **SEC. 30 – Assignment**

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

### **SEC. 31 – Rights of Various Interests**

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

### **SEC. 32 – Separate Contracts**

The Owner reserves the right to let other contracts in connection with this project. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work, and shall properly connect and coordinate his work with theirs.

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

### **SEC. 33 – Subcontracts**

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

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

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

#### **SEC. 34 – Engineer's Status**

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

#### **SEC. 35 – Engineer's Decisions**

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

#### **SEC. 36 – Land of Work**

The Contractor shall provide as indicated on Drawings No. – N/A and not later than the date when needed by the Contractor the lands upon which the work under this Contract is to be done, rights of way for access to same, and such other lands which are designated on the Drawings for the use of the Contractor. Such lands and rights of ways shall be adequate for the performance of the Contract. Any delay in the furnishing of these lands by the Owner shall be deemed proper cause for an equitable adjustment in both Contract price and time of completion.

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

#### **SEC. 37 – Cleaning Up**

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



### **SEC. 38 – General Guaranty**

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

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

### **SEC. 39 – Shop Drawings**

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

### **SEC. 40 – Testing**

A testing allowance will be a part of the contract to cover costs of testing authorized by the Engineer. All tests that meet specifications will be paid out of this allowance. All failing tests will be paid directly by the Contractor.

### **SEC. 41 – Additional Insureds**

The Contractor shall name the OWNER & ENGINEER as added insured on all insurance policies required under the contract. The Contractor shall hold the OWNER & ENGINEER harmless for claims resulting from the Contractors' work. The Contractor shall defend all claims against the OWNER & ENGINEER resulting from the Contractor's work.

### **SEC. 42 – Contractor's Duty and Superintendence**

The CONTRACTOR shall give adequate attention to the faithful prosecution and completion of this contract and shall keep on the work, during its progress, a competent superintendent and any necessary assistants. The superintendent shall represent the CONTRACTOR in his absence and all direction given to him shall be as binding as if given to the CONTRACTOR.

The CONTRACTOR is and at all times shall remain an independent contractor, solely responsible for the manner and method of completing his work under this contract, with full power and authority to select the means, method and manner of performing such work, so long as such methods do not adversely affect the completed improvements, the OWNER and ENGINEER being interested only in the result obtained and conformity of such completed improvements to the plans, specifications and contract.

Likewise, the CONTRACTOR shall be solely responsible for the safety of himself, his employees and other persons, as well as for the protection of the safety of the improvements being erected and the property or himself or any other person, as a result of his operations hereunder. Engineering construction drawings, and specifications and as well as any additional information concerning the work to be performed passing from or through the ENGINEER shall not be interpreted as requiring or allowing CONTRACTOR to deviate from the plans and specifications, the intent of such drawings, specifications and any other such instruction being to define with particularity the agreement of the parties as to the work the CONTRACTOR is to perform. CONTRACTOR shall be fully and completely liable, at his own expense, for design, construction, installation and use, or non-use, of all items and methods incident to performance of the contract, and for all loss, damage or injury incident thereto, either to person or property, including, without limitation, the adequacy of all temporary supports, shoring, bracing, scaffolding, machinery or equipment, safety precautions or devices, and similar items or devices used by him during construction.

Any review of work in process, or any visit or observation during construction, or any clarification of plans and specifications, by the ENGINEER, or any agent, employee, or representative of either of them, whether through personal observation on the project site or by means of approval of shop drawings for temporary construction or construction processes, or by other means or method, is agreed by the CONTRACTOR to be for the purpose of observing the extent and nature of work completed or being performed, as measured against the drawings and specifications purpose of enabling CONTRACTOR to more fully understand the plans and specifications so that the completed construction work will conform thereto, and shall in no way relieve the CONTRACTOR from full and complete responsibility for the proper performance of his work on the project, including but without limitation the propriety of means and methods of the CONTRACTOR in performing said contract, and the adequacy of any designs, plans or other facilities for accomplishing such performance. Deviation by the CONTRACTOR from plans and specification that may have been in evidence during any such visitation or observation by the ENGINEER, or any of his representatives, whether called to the CONTRACTOR'S attention or not shall in no way relieve CONTRACTOR from his responsibility to complete all work in accordance with said plans and specifications.



## PREVAILING WAGE LEGAL REQUIREMENTS

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

### ARTICLE 5159A;

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

SECTION 2. The Public body awarding any contract for public work on behalf of the State, or on behalf of any County, City and County, City, Town, District or other political subdivision thereof, or otherwise undertaking any public work, shall ascertain the general prevailing rate of per diem wages in the locality in which the work is to be performed for each craft or type of workmen or mechanic needed to execute the contract, and shall specify in the call for bids for said contract, and in the contract itself, what the general prevailing rate of per diem wages in the said locality is for each craft or type of workmen needed to execute the contract, and shall specify in the call for bids for said contract, and in the contract itself, what the general prevailing rate of per diem wages in the said locality is for each craft or type of workmen needed to execute the contract, also the prevailing rate for legal holiday and overtime work, and it shall be mandatory upon the Contractor to whom the contract is awarded, and upon any subcontractor under him, to pay not less than the said specified rates to all laborers, workmen and mechanics employed for each calendar day, or portion thereof, such laborer, workman or mechanics is paid less than the stipulated rates for any work done under said contract, by paid less than the stipulated rates for any work done under said contract, by him, or by any subcontractor under him, and the said public body awarding the contract shall cause to be inserted in the contract a stipulation to this effect. It shall be the duty of such public body awarding the contract, and its agents and officers to take cognizance of complaints of all violations of the provisions of this Act committed in the course of the execution of the contract, and when making payments to the contractor of moneys becoming due under said contract to withhold and retain therefrom all sums and amounts which shall have been forfeited pursuant to the herein said stipulation and the terms of this Act; provided, however, that no sum shall be so withheld, retained or forfeited, except from the final payment, without a full investigation by the awarding body.



It shall be lawful for any contractor to withhold from any subcontractor under him sufficient sums to cover any penalties withheld from him by the awarding body on account of said subcontractor's failure to comply with the terms of this Act, and if payment has already been made to him the contractor may recover from him the amount of the penalty or forfeiture in a suit at law.

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

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

#### ARTICLE 5160. Bond for Wages:

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

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

Provided further, that after completion and acceptance of completed project all moneys due contractor under said contract shall be held by the state or it's counties or school districts or other subdivision, thereof or an affidavit made by Contractor that all just bills for labor and material under this contract has been paid in full by the Contractor.

Acts 1913, P. 185; Acts 1929, 41st leg., P. 4881, Ch. 22 paragraph 1.



General Decision Number: TX180008 01/05/2018 TX8

Superseded General Decision Number: TX20170008

State: Texas

Construction Types: Heavy and Highway

Counties: Cameron, Hidalgo and Webb Counties in Texas.

## HEAVY &amp; HIGHWAY CONSTRUCTION PROJECTS

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.35 for calendar year 2018 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.35 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2018. The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at [www.dol.gov/whd/govcontracts](http://www.dol.gov/whd/govcontracts).

Modification Number	Publication Date
0	01/05/2018

\* SUTX2011-003 08/02/2011

	Rates	Fringes
CEMENT MASON/CONCRETE		
FINISHER (Paving & Structures)...	\$ 12.46	
FORM BUILDER/FORM SETTER		
(Structures).....	\$ 12.30	
FORM SETTER (Paving & Curb).....	\$ 12.16	
LABORER		
Asphalt Raker.....	\$ 10.61	
Flagger.....	\$ 9.10	
Laborer, Common.....	\$ 9.86	
Laborer, Utility.....	\$ 11.53	
Pipelayer.....	\$ 11.87	
Work Zone Barricade		
Servicer.....	\$ 12.88	
POWER EQUIPMENT OPERATOR:		
Asphalt Distributor.....	\$ 13.48	
Asphalt Paving Machine.....	\$ 12.25	
Broom or Sweeper.....	\$ 10.33	
Crane, Lattice Boom 80		
Tons or Less.....	\$ 14.39	
Crawler Tractor.....	\$ 16.63	
Excavator, 50,000 lbs or		

less.....\$ 12.56  
 Excavator, over 50,000 lbs..\$ 15.23  
 Foundation Drill, Truck  
 Mounted.....\$ 16.86  
 Front End Loader Operator,  
 Over 3 CY.....\$ 13.69  
 Front End Loader, 3 CY or  
 less.....\$ 13.49  
 Loader/Backhoe.....\$ 12.77  
 Mechanic.....\$ 15.47  
 Milling Machine.....\$ 14.64  
 Motor Grader Operator,  
 Rough.....\$ 14.62  
 Motor Grader, Fine Grade....\$ 16.52  
 Scraper.....\$ 11.07

Servicer.....\$ 12.34

Steel Worker (Reinforcing).....\$ 14.07

#### TRUCK DRIVER

Lowboy-Float.....\$ 13.63  
 Single Axle.....\$ 10.82  
 Single or Tandem Axle Dump..\$ 14.53  
 Tandem Axle Tractor with  
 Semi Trailer.....\$ 12.12

WELDER.....\$ 14.02

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

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

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

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The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage



determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

#### Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

#### Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

#### Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION



## PARTIAL/FINAL WAIVER OF LIEN

THE STATE OF TEXAS

COUNTY OF \_\_\_\_\_

The undersigned contracted with \_\_\_\_\_  
\_\_\_\_\_ to furnish \_\_\_\_\_  
in connection with certain improvements to real property located in \_\_\_\_\_  
County, Texas, and owned by \_\_\_\_\_  
Which improvements are described as follows:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

In consideration of Pay Estimate No \_\_\_\_\_ in the amount of \_\_\_\_\_  
\_\_\_\_\_ DOLLAR(\$ \_\_\_\_\_) and other good and  
valuable consideration, the receipt and sufficiency of which is hereby acknowledged and  
confessed, the undersigned does hereby waive and release any mechanic's lien or materialmen's  
lien or claims of lien that the undersigned has or hereafter has on the above mentioned real  
property on account of any labor performed or materials furnished or to be furnished or labor  
performed and materials furnished by the undersigned pursuant to the above-mentioned contract  
or any constitutional lien that the undersigned may have.

Undersigned hereby guarantees that all bids for labor performed and/or materials furnished in the  
erection and construction of such improvements on the Property have been fully paid and  
satisfied and Undersigned does further guarantee that if for any reason a lien or liens are filed for  
material or labor against said Property arising out of any bills for material or labor in connection  
with the erection or construction of said improvements thereon, Undersigned will obtain a  
settlement of such lien or liens and a proper release thereof shall be obtained.

\_\_\_\_\_  
CONTRACTOR

BY: \_\_\_\_\_  
TITLE

SWORN TO AND SUBSCRIBED BEFORE ME, on this the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_ to  
certify which witness my hand and seal of office.

\_\_\_\_\_  
NOTARY PUBLIC in and for the State of Texas  
My Commission Expires: \_\_\_\_\_

## TECHNICAL SPECIFICATIONS

02101	Preparation of Right of Way
02220	Subgrade Preparation
02221	Trench Excavation Backfill & Compaction
02223	Trench Excavation Protection
02225	Unclassified Street Excavation
02240	Lime Stabilization
02580	Storm Sewer Appurtenances
02590	Reinforced Concrete Pipe
02595	Concrete Box Culverts and Sewers
02601	Flexible Base
02610	Prime Coat
02612	Hot Mix Asphaltic Concrete
02620	Concrete Curb & Gutter
02660	Concrete Curb & Gutter and Valley Gutter
03300	Cast in Place Concrete



## **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 for construction operations, by removing and disposing of all obstructions when removal of such obstructions is not specifically shown on the plans to be paid by other items.
- B. Obstructions shall include, but are not limited to:
  - 1. Remains of houses not completely removed by others.
  - 2. Concrete, foundations, floor slabs, 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 grounds.
  - 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 at his expense in accordance with City 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 by one of the following methods: on a lump-sum basis; by the acre; or by the linear foot along the centerline of construction (regardless of the width of the right of way). The 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 02220 SUBGRADE PREPARATION**

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### **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 - EXECUTION**

#### **3.01 CONSTRUCTION METHODS:**

- A. All preparing of the right-of-way and/or clearing and grubbing shall be completed 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 ½ 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. Proof Rolling is require before placing base material in conformity with Item 02686 "Proof Rolling"
- 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**

## **02221 TRENCH EXCAVATION, BACKFILL AND COMPACTION**

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### **PART 1 - GENERAL**

#### **1.01 GENERAL DESCRIPTION OF WORK**

- A. Excavation, shoring, dewatering, pipe bedding, trench backfill, compaction, grading and cleanup of all pipeline trenching.
- B. All work must be performed in accordance with these specifications and the safety requirements of the State and OSHA standards.

#### **1.02 JOB CONDITIONS**

##### **A. Site Acceptance**

- 1. Contractor shall accept the site conditions existing during the Contract Time.
- 2. Ground water and surface water are conditions of the contract and the responsibility of Contractor.

##### **B. Adverse Weather**

- 1. Place no backfill that is wet or frozen.
- 2. Place no backfill in wet or frozen trenches.

### **PART 2 - PRODUCTS**

#### **2.01 PIPE BEDDING AND BACKFILL**

The types of material to be used for bedding and backfill are identified on the Drawings or in the Special Provisions of the contract documents. Material types are defined either by class in accordance with ASTM D2321, or by product description. Contractor is responsible for determination of source of materials and shall submit characterization analysis and physical sample of proposed bedding material for approval prior to construction.

- A. Class Designations Based on Laboratory Testing (ASTM D2321 and by reference ASTM D2487 and D653).
  - 1. Class IA: Manufactured aggregates (angular crushed rock/gravel), open-graded, clean.
    - a. Plasticity Index: Non-plastic.



- b. Gradation: 100% passing 1½" sieve, ≤ 10% passing No. 4 sieve, and < 5% passing No. 200 sieve.
- 2. Class IB: Mixture of manufactured aggregates (Class 1A) and sand, dense-graded, clean.
  - a. Plasticity Index: Non-plastic.
  - b. Gradation: 100% passing 1½" sieve, ≤ 50% passing No. 4 sieve, and < 5% passing No. 200 sieve.
- 3. Class II: Well and poorly graded gravels and sands, clean or with little to moderate fines (silt and clay).
  - a. Plasticity Index: Non-plastic.
  - b. Gravel: 100% passing 1½" sieve, < 5% passing No. 200 sieve (i.e. <5% fines), and < 50% of the non-fines passing a No. 4 sieve.
  - c. Sand: 100% passing 1½" sieve, < 5% passing No. 200 sieve (i.e. <5% fines), and > 50% of the non-fines passing a No. 4 sieve.
  - d. Gravel, Sand with Fines: 100% passing 1½" sieve, and 5% to 12% passing No. 200 sieve (i.e. 5% to 12% fines).
- 4. Class III: Silty/clayey gravels and sands, gravel-sand-silt/clay mixtures.
  - a. Plasticity Index: (Refer to ASTM D2321)
  - b. Gradation: 100% passing 1½" sieve, 12% to 50% passing No. 200 sieve.

\* Note: Dense-graded (i.e. well graded) and open-graded (i.e. poorly graded) materials are defined on the basis of the coefficient of uniformity,  $C_u = D_{60}/D_{10}$ , and the coefficient of curvature,  $C_c = (D_{30})^2/(D_{10} \times D_{60})$ , where  $D_{60}$ ,  $D_{30}$ , and  $D_{10}$  represent the sieve opening dimensions through which 60%, 30%, and 10% of the material would pass, respectively:

Dense-graded:  $1 \leq C_c \leq 3$  for both gravel and sand, plus  $C_u \geq 4$  for gravel;  $C_u \geq 6$  for sand.  
 Open-graded: Either  $C_c$  or  $C_u$  criteria for dense gradation are not met.

**B. Designations Based on Product Descriptions:**

1. **Excavated Material Backfill:** Excavated material may be used in the trench backfill, provided that all hard rock and stones having any dimensions greater than 6" and frozen earth, debris and roots larger than 2" are removed for the initial backfill. Plasticity Index shall be less than 30. Excavated backfill material must be approved by Engineer.
2. **Select Backfill:** Select Backfill shall be gravel, fine rock cuttings, sand, sandy loam or loam free from excessive clay. Rock cuttings shall have no dimensions greater than 2 inches. Plasticity Index shall be between 7 and 22. Select backfill must be approved by Engineer.
3. **Sand Backfill:** Sand backfill shall be clean, hard, durable, uncoated grains, free from lumps and organic material. All materials must pass a No. 8 sieve with less than 5% passing a No. 200 sieve (equivalent to ASTM 2321 Class II Sand Gradation excluding material captured on No. 8 sieve).
4. **Granular Backfill:** Granular backfill shall be free flowing, such as sand or hydraulically graded stone fines, or mixed sand and gravel, or sandy loam. The material shall be free from lumps, stones over 2 inches in diameter, clay and organic matter.
5. **Controlled Density Fill:** Use high slump mixture of portland cement, fly ash and fine aggregate formulated, licensed and marketed as K-Krete or equal. Provide mixture having 28-day compressive strength of 70 psi minimum and 150 psi maximum with no measurable shrinkage or surface settlement.

**2.02 CRADLING ROCK**

- A. Use crushed rock or stone with 70-100% passing 1½ inch sieve and no more than 50% passing 1 inch sieve.

**2.03 GEOTEXTILE MATERIAL FOR UNSTABLE TRENCHES**

- A. Where unstable wall or trench bottom conditions are present as determined by the Engineer, a geotextile material shall be installed.
- B. The geotextile shall be designed to prevent loss of trench support caused by migration of sand and fines into the embedment matrix and secure the embedment around the pipe.
- C. The geotextile shall be a nonwoven, needle point construction and shall consist of long-chain polyethylene or polyamide. The fibers shall be oriented into a stable network whereby they retain their positions with each other. The textile shall be free of any chemical treatment commonly found in soil. The geotextile

shall conform to the following properties:

Tensile Strength: ASTM D 4632	130 LBS.
Elongation: ASTM D 4632	50%
Mullen Burst Strength: ASTM D 3786	250 psi
Coefficient of Permeability: K-cm/sec. (20 CFMC-GET-2, Constant Head) ASTM D 4491	0.10cm/sec.
Puncture Strength:	80 LBS.

- D. The geotextile shall be furnished in protective wrapping to protect the material from ultraviolet radiation, contamination from other substances, and abrasion or shipping damage. Any material received damaged, shall be rejected.

### **PART 3 - EXECUTION**

#### **3.01 GENERAL**

##### **A. Dewatering**

1. Execute work "dry". No pipe or conduits shall be laid or concrete poured on wet soil.
2. Prevent surface water from flowing into excavation.
3. Provide equipment for handling water encountered as required. Obtain Engineer's prior approval of proposed method of dewatering.
4. No sanitary sewer shall be used for disposal of trench water.

##### **B. Protection of Existing Utilities**

1. Notify all utility companies of location and schedule of work.
2. Locations and elevations of utilities shown on plans are to be considered approximate only. Notify utility companies and Engineer of conflicts between existing and proposed facilities.



3. Repair, relay or replace existing utilities damaged, destroyed or disrupted during work. Unless specified otherwise, replacement will be at the Contractor's expense.

#### C. Sheet piling, Shoring and Bracing

1. All sheet piling, shoring, and bracing shall be in accordance with the Contractor's Excavation Safety System Plan and the safety requirements of the State and OSHA Standards.
2. Provide as necessary to hold walls of excavation, prevent damage to adjacent structures, and to protect workmen and property.
3. Leave Sheet piling and shoring in place where removal might cause personal injury or damage to the work.
4. When movable trench shield is used below spring line of pipe, it shall be lifted prior to any forward movement to avoid pipe displacement.

#### D. Changes in Grade

1. Grades may be adjusted by written field order from the Engineer to suit unforeseen construction conflicts or conditions. Where the bid includes a single bid price for all depths, no additional compensation will be made for adjustments within 1.5 feet of the plan grades.

### 3.02 EXCAVATION AND TRENCHING

#### A. General

1. Method of excavation is Contractor's option.
2. Allow no more than 300 feet of trench to be open at one time.
3. Excavate by hand under and around structures, utilities, and roots of trees required to be left in place.
4. Stockpile and replace topsoil to a minimum of 8 inches for surface restoration in grassed or agricultural areas.

#### B. Trench Characteristics

1. Depth: As indicated for pipe installation to lines and grades required with proper allowance for thickness of pipe and type of bedding specified.
2. Width: Trench width shall be no less than pipe O.D. plus 16 inches or pipe

O.D.  $\times 1.25 + 12$  inches, whichever is greater.

3. Trench walls must be vertical below top of pipe and may be vertical or sloped above pipe to conform to excavation codes.
4. Trench boxes and shoring shall not be set below the top of the embedment zone.
5. Provide bell holes for each pipe joint where pipe bears on undisturbed earth.
6. Trench bottom shall be free of large stones and other foreign material.

### 3.03 SOFT, SPONGY OR UNSTABLE MATERIALS (e.g. peat, muck, and highly expansive soils)

- A. Stop work and notify Engineer.
- B. Perform remedial work as directed.
- C. If material is judged unsuitable and removal is authorized, remove and replace with trench stabilizing material as directed by Engineer.

### 3.04 ROCK EXCAVATION

- A. Excavate any rock to maintain minimum 6-inch clearance around pipe.
- B. Dispose of rock material not suitable for backfill as directed by Engineer.
- C. Use of explosives not permitted without prior written authorization from Owner and Engineer.
- D. Provide Special Hazard Insurance covering liability for blasting operations.

### 3.05 PIPE EMBEDMENT

Pipe embedment includes materials placed in the zone surrounding the pipe including bedding, haunching, and initial backfill over the top of pipe. Refer to the pipe bedding details on the Drawings for material types to be used in the pipe embedment zone.

- A. Bedding
  1. Place after bottom of trench has been excavated to proper depth and grade.
  2. Place, compact and shape bedding material to conform to barrel of pipe and bell to insure continuous firm bedding for full length of pipe.

B. Haunching (bottom of pipe to springline)

1. Place after pipe has been bedded and checked for alignment, grade and internal obstructions.
2. Do not backfill until any required concrete or mortar has sufficiently cured.
3. Work bedding material under pipe haunches and compact by hand to springline of pipe in 6-inch lifts.

C. Initial Backfill

1. From springline to not less than 12 inches above top of pipe, place backfill and compact in 6-inch layers using vibratory compactors.
2. Backfill simultaneously on both sides of pipe to prevent displacement.
3. Record location of connections and appurtenances before backfilling.

D. Embedment in Unstable Soils

1. Where the Engineer determines that the trench bottom or wall is unstable at the bedding zone, special pipe embedment material stabilization shall be required.
2. Unstable bedding zone conditions shall be determined immediately after trench excavation by checking soil bearing strength capacities at the bedding zone using a Standard Pocket Penetrometer or other appropriate means. A minimum of three readings shall be obtained and averaged. The soil to be tested in the bedding zone shall not be allowed to dry, and shall be tested under "in-situ" conditions. If, in the Engineer's opinion, the soil has dried, the Penetrometer Test shall be taken after removing a sufficient amount of soil from the wall or bottom surface in order to obtain a representative sample.
3. If the average reading is less than 8 blows per foot, then the pipe bed shall be prepared as follows:
  - a. The trench shall be dewatered to the greatest extent possible and rock shall be placed and compacted to form a firm trench bottom. No pipe shall be laid until stabilization is to the satisfaction of the Engineer.
  - b. A geotextile material shall be placed in the trench and the embedment material and pipe installed as indicated on the Drawings. Overlap geotextile around the top of the pipe envelope a minimum of 12 inches.



- c. The geotextile shall be installed in accordance with the manufacturer's recommendations. Prior to installation, the geotextile shall be stretched, aligned, and placed without any wrinkles. If the material is damaged or punctured, the damaged area shall be patched by overlapping and stitching.
4. Where the trench wall is unable to support trench boxes at a level above the top of the embedment zone, sheeting shall be used for trench wall stabilization to enable such use of trench boxes or as stand-alone trench protection in lieu of trench boxes. Sheeting installed below the top of the embedment zone shall be extracted vertically in incremental steps of one (1) foot or less. Embedment material shall be placed in loose lifts before each extraction step and thoroughly compacted immediately after each step to ensure that no compacted lift is disturbed by subsequent extraction. Contractor shall ensure the soils of the trench walls on both sides of the embedment zone remain as dense as the original unexcavated condition so that the pipe embedment remains firmly supported. In no case shall a trench box be permitted to rest below the top of the embedment zone.

E. Embedment of Flexible Pipe in Saturated Soils (Sewer Pipe Only)

1. Consolidated Soils: Pipe embedment may be installed using least restrictive, open-graded material.
2. Unconsolidated, Stable Soils: Dense-graded material shall be used to prevent loss of trench support caused by migration of soil into the embedment matrix. Alternately, open-graded embedment may be used in combination with geotextile fabric as specified for unstable soil.

### 3.06 TRENCH BACKFILL

A. Final Backfill

1. Place backfill into trench at an angle so that impact on installed pipe is minimized.
2. Compaction of all backfill material shall be performed in a manner that shall not crack, crush, or cause the installed pipe to be moved from the established grade and alignment.
3. Place minimum cushion of 3 feet of compacted backfill above pipe envelope before using heavy compacting equipment.
4. Use excavated material for final backfill subject to the requirements for Excavated Backfill unless otherwise specified.

5. Areas under or within 5 feet of pavement, and under or within 2 feet of utilities, buildings, or walks shall be backfilled with sand and mechanically compacted to the top of the subgrade in 8-inch lifts to a minimum of 95% Standard Proctor Density.
6. Areas not subject to vehicular traffic shall be backfilled in layers not more than 12 inches.
7. Structural and non-structural backfill shall be mechanically compacted. Compaction method is at discretion of Contractor with following exceptions:
  - a. If in Owner's opinion compaction method presents potential damage to pipe, it will not be allowed.
  - b. Flooding or water jetting may be permitted only if a geotechnical report justifying the use of water jetting is submitted to the City Engineer and approval is granted.
8. Mound excavated materials no greater than 6 inches in open areas only.
9. Fill upper portion of trench with topsoil as specified hereinbefore.

B. Controlled Density Fill

1. Use where shown on plans.
2. Provide suitable forms to limit volume of control density fill material.
3. Prevent flow of material into existing drain lines.
4. Protect exposed utility lines during placement.
5. Place material in accordance with suppliers' written recommendations unless directed otherwise by Engineer.

3.07 EXCESS MATERIAL

- A. Disposal of excess excavated material shall be the responsibility of the Contractor.

3.08 TESTING

- A. Unless specified elsewhere, testing will be responsibility of Owner.

B. Standard Proctor Density

1. ASTM D698.
2. One (1) required for each type of material encountered.

C. In Place Density

1. ASTM D1556 (Sand Cone)
2. ASTM D2167 (Balloon)
3. ASTM D3017 (Nuclear)

D. One (1) test per 250 linear feet of trench on alternating lifts, with a minimum of three tests per visit, for non-structural areas. One (1) test per 100 linear feet of trench on alternating lifts, with a minimum of three tests per visit, for structural areas.

E. Contractor will be responsible for any costs associated with testing performed as a result of failed tests

#### **PART 4 - MEASUREMENT AND PAYMENT**

##### **4.01 TRENCH EXCAVATION**

- A. Trench excavation shall be considered incidental to pipeline installation.
- B. Payment shall be made at the contract unit price per cubic yard only if a bid item is established in the contract.

##### **4.02 BACKFILL**

- A. Backfill shall be considered incidental to pipeline installation.
- B. Payment for backfill shall be made at the contract unit price per cubic yard only if a separate bid item is established in the contract.
- C. No allowance for waste shall be made.
- D. If Engineer orders a bedding backfill material other than that specified in contract, it shall be paid for as an extra in price per cubic yard as compacted in place, EXCEPT if a higher class embedment is ordered by Engineer because the Contractor has over-excavated the trench.
- E. If the Engineer orders the excavated material to be removed and disposed of



and replaced with another material and a separate bid item for that material has not been established, the material shall be paid as an extra.

- F. If the Contractor fails to compact the backfill to the density requirements, the Engineer may order the material removed and replaced at no cost to the Owner.
- G. The disposal of rejected material shall be at no cost to the Owner.
- H. Payment for geotextile envelopment in unstable trench soils shall be made at the bid price for "Trench Stabilization in Unstable Soils" in the bid form.

### **END OF SECTION**

## **SECTION 02223**

### **TRENCH EXCAVATION PROTECTION**

#### **PART 1 - GENERAL**

##### **1.01 GENERAL DESCRIPTION OF WORK**

- A. This work shall consist of shoring, bracing, bank stabilization, bank sloping, providing trench boxes or trench shields or other equivalent means to protect employees from the effects of moving ground or cave-ins.
- B. These specifications apply to any trench excavation which is over five (5) feet in depth from the ground surface, or trench excavations that are less than five (5) feet in depth located in areas where unstable soil conditions are present (Ref. OSHA Safety and Health Regulations, Part 1926, Subpart P, Paragraph 29 CFR 1926.652, Subparagraph (a)).
- B. All work shall be done in conformance with OSHA Safety and Health Standards (29 CFR 1926/1010 Chapter XVII Subpart P-Excavations, Trenching and Shoring.). It is the Contractor's responsibility that all excavation work and site conditions are within the regulations as established by OSHA. Any property damage or bodily injury (including death) that arises from use of the trench safety systems, from the Contractor's negligence in performance of the contract work, shall remain the sole responsibility and liability of the Contractor.

##### **1.02 DEFINITIONS APPLICABLE TO THIS SPECIFICATION**

- A. "Accepted engineering requirements (or practices)" - Those requirements or practices which are compatible with standards required a Registered Professional Engineer, or other duly licensed or recognized authority.
- B. "Angle of repose" - The greatest angle above the horizontal plane at which a material will lie without sliding.
- C. "Bank" - A mass of soil rising above a digging level.
- D. "Belled excavation" - A part of shaft or footing excavation, usually near the bottom and bell-shaped; i.e., an enlargement of the cross section above.
- E. "Braces (trench)" - The horizontal members of the shoring system whose ends bear against the uprights or stringers.

- F. "Excavation" - Any manmade cavity or depression in the earth's surface, including its sides, walls, or faces, formed by earth removal and producing unsupported earth conditions by reasons of the excavation. If installed forms or similar structures reduce the depth-to-width relationship, an excavation may become a trench.
- G. "Faces" - See paragraph (K) of this section.
- H. "Hard compact soil" - All earth materials not classified as running or unstable.
- I. "Kickouts" - Accidental release or failure of a shore or brace.
- J. "Sheet pile" - A pile, or sheeting, that may form one of the continuous interlocking line, or a row of timber, concrete, or steel piles, driven in close contact to provide a tight wall to resist the lateral pressure of water, adjacent earth, or other materials.
- K. "Sides", "Walls", or "Faces" - The vertical or inclined earth surfaces formed as a result of excavation work.
- L. "Slope" - The angle with the horizontal at which a particular earth material will stand indefinitely without movement.
- M. "Stringers" (wales) - The horizontal members of a shoring system whose sides bear against the uprights or earth.
- N. "Trench" - A narrow excavation made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench is not greater than 15-feet.
- O. "Trench shield" - A shoring system composed of steel plates and bracing, welded or bolted together, which support the walls of a trench from the ground level to the trench bottom and which can be moved along as work progresses.
- P. "Unstable soil" - Earth material, other than running, that because of its nature of the influence of related conditions cannot be depended upon to remain in place without extra support, such as would be furnished by a system of shoring.
- Q. "Uprights" - the vertical members of a shoring system.
- R. "Wales" - See paragraph M of this section.
- S. "Walls" - See paragraph K of this section.



## **PART 2 - PRODUCTS**

No information for this section

## **PART 3 - EXECUTION**

### **3.01 GENERAL PROTECTION REQUIREMENTS**

- A. Walkways, runways, and sidewalks shall be kept clear of excavated material or other obstructions and no sidewalks shall be undermined unless shored to carry a minimum live load of one hundred and twenty-five (125) pounds per square foot.
- B. If planks are used for raised walkways, runways, or sidewalks they shall be laid parallel to the length of the walk and fastened together against displacement.
- C. Planks shall be uniform in thickness and all exposed ends shall be provided with beveled cleats to prevent tripping.
- D. Raised walkways, runways, and sidewalks shall be provided with plank steps on string stringers. Ramps, used in lieu of steps, shall be provided with cleats to insure a safe walking surface.
- E. All employees shall be protected with personal protective equipment for the protection of the head, eyes, respiratory organs, hands, feet and other parts of the body as set forth in OSHA Standards.
- F. Employees exposed to vehicular traffic shall be provided with and shall be instructed to wear warning vests marked with or made or reflectorized with high visibility material.
- G. Employees subjected to hazardous dusts, gases, fumes, mists, or atmospheres deficient in oxygen, shall be protected with approved respiratory protection as set forth in OSHA Standards.
- H. No person shall be permitted under loads handled by power shovels, derricks, or hoists. To avoid any spillage, employees shall be required to stand away from any vehicle being loaded.
- I. Daily inspections of excavations shall be made by a competent person. If evidence of possible cave-ins or slides is apparent, all work in the excavation shall cease until the necessary precautions have been taken to safeguard employees.

### 3.02 SPECIFIC EXCAVATION REQUIREMENTS

- A. Prior to opening an excavation, effort shall be made to determine whether underground installations, i.e., sewer, telephone, water, fuel, electric lines, etc., will be encountered, and if so, where such underground installations are located. When the excavation approaches the estimated location of such an installation, the exact location shall be determined and when it is uncovered, proper supports shall be provided for the existing installation. Utility companies shall be contacted and advised of proposed work prior to the start of actual excavation.
- B. Trees, boulders, and other surface encumbrances, located so as to create a hazard employees involved in excavation work or in the vicinity thereof at any time during operations, shall be removed or made safe before excavating is begun.
- C. The walls and faces of all excavations in which employees are exposed to danger from moving ground shall be guarded by a shoring system, sloping of the ground or some other equivalent means.
- D. Excavations shall be inspected by a competent person after every rainstorm or other hazard-increasing occurrence, and the protection against slides and cave-ins shall be increased if necessary.
- E. The determination of the angle of repose and design of the supporting system shall be based on careful evaluation of pertinent factors such as: Depth of cut; possible variation in water content of the material while the excavation is open; anticipated changes in materials from exposure to air, sun, water, or freezing; loading imposed by structures, equipment, overlying materials, or stored material; and vibration from equipment, blasting, traffic, or other sources.
- F. Supporting systems, i.e., piling, cribbing, shoring, etc., shall be designed by a qualified person and meet accepted engineering requirements. When tie rods are used to restrain the top of sheeting or other retaining systems, the rods shall be securely anchored well back of the angle of repose. When tight sheeting or sheet piling is used, full loading due to ground water table shall be assumed, unless prevented by weep holes or drains or other means. Additional stringers, ties, and bracing shall be provided to allow for any necessary temporary removal of individual supports.
- G. All slopes shall be excavated to at least the angle of repose except for areas where solid rock allows for line drilling or presplitting.
- H. The angle of repose shall be flattened when an excavation has water conditions, silty materials, loose boulders, and areas where erosion deep frost action and slide planes appear.



I. Clearances:

1. In excavations which employees may be required to enter, excavated or other material shall be effectively stored and retained at least 2-feet or more from the edge of the excavation.
2. As an alternative to the clearance prescribed in subparagraph 1, the Contractor may use effective barriers or other effective retaining devices in lieu thereof in order to prevent excavated or other materials from falling into the excavation.

J. Sides, slopes, and faces of all excavations shall meet accepted engineering requirements by scaling, benching, barricading, rock bolting, wire meshing or other equally effective means. Special attention shall be given to slopes which may be adversely affected by weather or moisture content.

K. Support systems shall be planned and designed by a qualified person when excavation is in excess of 20-feet in depth, adjacent to structures or improvements, or subject to vibration or ground water.

L. Materials used for sheeting, sheet piling, cribbing, bracing, shoring and underpinning shall be in good serviceable condition, and timbers shall be sound, free from large or loose knots, and of proper dimensions.

M. Special precautions shall be taken in sloping or shoring the sides of excavations adjacent to previously backfilled excavation for a fill, particularly when the separation is less than the depth of the excavation. Particular attention also shall be paid to joints and seams of material comprising a face and the slope of such seams and joints.

N. Except in hard rock, excavations below the level of the base of footing of any foundation or retaining wall shall not be permitted, unless the wall is underpinned and all other precautions taken to insure the stability of the adjacent walls for the protection of employees involved in excavation work or in the vicinity thereof.

O. If the stability of adjoining building or walls is endangered by excavations, shoring, bracing or underpinning shall be provided as necessary to insure their safety. Such shoring, bracing or underpinning shall be inspected daily or more often, as conditions warrant, by a competent person the protection effectively maintained.

P. Diversion ditches, dikes, or other suitable means shall be used to prevent surface water from entering an excavation and to provide adequate drainage of the area adjacent to the excavation. Water shall not be allowed to accumulate in an excavation.



- Q. If it is necessary to place or operate power shovels, derricks, trucks, materials, or other heavy objects on a level above and near an excavation, the side of the excavation shall be sheet-piled, shored, and braced as necessary to resist the extra pressure due to such superimposed loads.
- R. Blasting and the use of explosives are not allowed unless authorized in other portions of the specifications.
- S. When mobile equipment is utilized or allowed adjacent to excavations, substantial stop logs or barricades shall be installed. If possible, the grade should be away from the excavation.
- T. Adequate barrier physical protection shall be provided at all remotely located excavations. All wells, pits shafts, etc., shall be barricaded or covered. Upon completion of exploration and similar operations, temporary wells, pits, shafts, etc. shall be backfilled.
- U. If possible, dust conditions shall be kept to a minimum by the use of water, salt, calcium chloride, oil, or other means.
- V. In locations where oxygen deficiency or gaseous conditions are possible, air in the excavation shall be tested. Controls, as set forth in OSHA Standards shall be established to assure acceptable atmospheric conditions. When flammable gases are present, adequate ventilation shall be provided or sources of ignition shall be eliminated. Attended emergency rescue equipment, such as breathing apparatus, a safety harness and line, basket stretcher, etc. shall be readily available where adverse atmospheric conditions may exist or develop in an excavation.
- W. Where employees or equipment are required or permitted to cross over excavations, walkways or bridges with standard guardrails shall be provided.
- X. Where ramps are used for employees or equipment, they shall be designed and constructed by qualified persons in accordance with accepted engineering requirements.
- Y. All ladders used on excavation operations shall be in accordance with requirements of OSHA Standards.

### **3.03 SPECIFIC TRENCHING REQUIREMENTS**

- A. Banks more than 5-feet shall be shored, laid back to a stable slope or some other equivalent means of protection shall be provided where employees may be exposed to moving ground or cave-ins. Refer to Figure 19000-1 as a guide in sloping of banks. Trenches less than 5-feet in depth shall also be effectively

protected when examination of the ground indicates hazardous ground movement may be expected.

- B. Sides of trenches in unstable or soft material, 5-feet or more in depth, shall be shored, sheeted, braced, sloped, or otherwise supported by means of sufficient strength to protect the employees working within them. See Figure 19000-1 and Table 19000-1.
- C. Sides of trenches in hard or compact soil, including embankments, shall be shored or otherwise supported when the trench is more than 5-feet in depth and 8-feet or more in length. In lieu of shoring, the sides of the trench above the 5-foot level may be sloped to preclude collapse, but shall not be steeper than a 1-foot rise to each 1/2-foot horizontal. When the outside diameter of a pipe is greater than 6-feet, a bench of 4-foot minimum shall be provided at the toe of the sloped portion.
- D. Materials used for sheeting and sheet piling, bracing, shoring, and underpinning, shall be in good serviceable condition, and timbers used shall be sound and free from large or loose knots, and shall be designed and installed so as to be effective to the bottom of the excavation.
- E. Additional precautions by way of shoring and bracing shall be taken to prevent slides or cave-ins when excavations or trenches are made in locations adjacent to backfilled excavations, or where excavations are subjected to vibrations from railroad or highway traffic, the operation of machinery, or any other source.
- F. Employees entering bell-bottom pier holes shall be protected by the installation of a removable-type casing of sufficient strength to resist shifting of the surrounding earth. Such temporary protection shall be provided for the full depth of that part of each pier and securely fastened to shoulder harness, shall be worn by each employee entering the shafts. This lifeline shall be individually manned and separate from any line used to remove materials excavated from the bell footing.



- G. Minimum requirements for trench timbering shall be in accordance with Table 19000-1. Braces and diagonal shores in a wood shoring system shall not be subjected to compressive stresses in excess of values given by the following formula:

$$S + 1300 - \frac{20L}{D}$$

$$\frac{\text{Maximum Ratio}}{D} = 50$$

Where:

- L = Length, unsupported, inches  
D = Least side of the timber in inches  
S = Allowable stress in pounds per square inch of cross-section.

- H. When employees are required to be in trenches 4-feet deep or more, an adequate means of exit, such as a ladder or steps shall be provided and located so as to require no more than 25-feet of lateral travel.
- I. Bracing or shoring of trenches shall be carried along with the excavation.
- J. Cross braces or trench jacks shall be placed in true horizontal position, be spaced vertically and be secured to prevent sliding, falling, or kickouts.
- K. Portable trench boxes or sliding trench shields may be used for the protection of personnel in lieu of a shoring system or sloping. Where such trench boxes or shields are used, they shall be designed, constructed, and maintained in a manner which will provide protection equal to or greater than the sheeting or shoring required for the trench. The Contractor shall provide a statement certified by a Registered Professional Engineer of the adequacy of trench boxes or shields.
- L. Backfilling and removal of trench supports shall progress together from the bottom of the trench. Jacks or braces shall be released slowly and, in unstable soil, ropes shall be used to pull out the jacks or braces from above after employees have cleared the trench.
- M. The Contractor's trench safety system shall be designed to take into account all surcharge loads including, but not limited to adjacent structures, contractor's equipment and heavily loaded truck traffic which will be routed near the work site.



### **3.05 CONSTRUCTION REQUIREMENTS**

- A. The Contractor unless provided for in the plans otherwise shall provide the minimum shoring shown in Table 02223-1 for the soil class noted in the plans. If approved by the Engineer, the Contractor may slope the excavation in accordance with Table 02223-1
- B. Should the soil conditions differ from those specified or should ground water be encountered in the excavation the contractor shall notify the Engineer immediately. The Contractor shall refrain from operating in that portion of the trench where changed conditions are noted until such time as an inspection of conditions takes place and the contractor is notified of measures necessary for continued operation.
- C. The Contractor shall prepare and submit a plan of operation. This plan of operation shall identify material, equipment, methods and installation and shall be inspected by a Registered Professional Engineer. The Contractor's Engineer shall certify the adequacy of the trench protection system and its adherence of OSHA Standards.

## **PART 4- MEASUREMENT AND PAYMENT**

### **4.01 MEASUREMENT**

- A. Providing shoring in trenches or other alternate means in accordance with this specification shall be measured by the linear foot of trench irrespective of size of pipe or depth or lump sum as shown or implied in the plans, or as provided in the proposal and contract. Additional depth for foundations, etc. shall be considered incidental to the price bid for the protection.
- B. If the plans require sloping the excavation or the excavation is sloped in accordance with Figure 19000-1 after receiving permission from the Engineer, no payment will be made under this item.
- C. The Contractor shall provide shoring systems for construction of structures 5-feet or greater in depth. There will be no direct payment for these systems but it shall be considered incidental to the price bid for the structure.

### **4.02 PAYMENT**

- A. Payment shall be made at the unit price bid for "Trench Excavation Protection" and include all components for design and construction of the Trench Protection System which can include, but not be limited to sloping, sheeting, trench boxes or trench shields, sheet piling, cribbing, bracing, shoring, dewatering or diversion of water to provide adequate drainage. Payment shall also include the additional

excavation and backfill required, any jacking, jack removal, and removal of the trench supports after completion.

- B. When not listed as separate contract pay item, Trench Excavation Protection shall be considered as incidental work, and the cost thereof including furnishing all materials, labor equipment, tools and incidentals required for the work, all in accordance with the plans and these specifications, shall be incorporated in such contract pay items as are provided in the proposal contract.

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

## **SECTION 02225 UNCLASSIFIED STREET EXCAVATION**

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### **PART 1 - GENERAL**

#### **1.01 GENERAL DESCRIPTION OF WORK:**

- A. Perform all required excavation within the limits of right of way and adjacent thereto (except excavations specifically described and provided for elsewhere in the specifications).
- B. Remove, properly use, or dispose of all excavated materials.
- C. Shape and finish all earth work in conformance with lines and grades as shown on the plans or as specified by the Engineer.
- D. Schedule work to avoid property owner inconvenience as practical during construction.
- E. Exercise care in operating applicable equipment beneath or adjacent to trees, sidewalks, poles, and other existing features to prevent damage.
- F. Restore obstructions removed to accommodate construction equipment or to facilitate excavation.

#### **1.02 CLASSIFICATION:**

- A. All street excavation shall be unclassified, regardless of material encountered.
- B. Any reference to rock or any other material on the plans, or in these specifications, is not to be construed as classification of the excavation.

### **PART 2 - PRODUCTS**

#### **2.01 SUBGRADE:**

- A. Use on-site material moved from cut areas to fill areas as approved by Engineer.
- B. Use borrow materials from areas designated as needed.

#### **2.02 DRAINAGE PROVISIONS:**

- A. Interruptions of natural surface drainage or flow of artificial drains shall be mitigated by the Contractor by use of temporary drainage facilities, as approved by the Engineer, to prevent damage to public or private interest.



- B. Restore original drainages as soon as the work shall permit.
- C. The Contractor shall be held liable for all damages which may result from neglect to provide for either natural or artificial drainage which his work may have interrupted.

### **PART 3 - EXECUTION**

#### **3.01 UNCLASSIFIED STREET EXCAVATION:**

- A. Perform all excavation, embankment and grading required for pavement and/or curb and gutter as shown on plans.
- B. Move suitable excavated material to areas requiring fill and place in accordance with these specifications. Determination of suitable material will be made by Engineer. Haul unsuitable material to waste sites.
- C. Slope cut or fill sections uniformly from curb line to sidewalk or other controlling feature, as designated by Engineer. Smooth bank to provide a neat finished appearance.
- D. Remove and replace unstable soils encountered during grading operations with suitable material. Notify Engineer of suspected unsuitable material before commencing removal. Authorized replacement with select material will be paid for by change order.
- E. Replace gravel or rock driveway surfaces disturbed by grading with like material at no additional cost to Owner.
- F. Strip, salvage and stockpile topsoil in sufficient quantity to allow a uniform 6-inch lift over all disturbed areas not otherwise surfaced. Topsoil is included in unclassified excavation.
- G. Remove existing culvert pipe where shown as part of and incidental to unclassified excavation.

#### **3.02 UNSTABLE OR UNSUITABLE SUBGRADE:**

- A. Excavate unstable subgrade at least 2 feet below grade where directed by Engineer.
- B. Replace with suitable stable material approved by Engineer.
- C. Compact to uniform density in 6-inch lifts.
- D. Density of compacted subgrade to be as per plans or as directed by engineer

- E. Payment will be as specified for unclassified excavation.
- F. Conduct operations in such a manner such that measurements may be taken before any backfill, as required above, is placed.

### 3.03 EXCESS OR UNSUITABLE EXCAVATION:

- A. Dispose of excavation in excess of that needed or unsuitable for construction. As directed by the Engineer, excess or unsuitable excavation may be used for widening of embankments, or flattening of slopes, or as otherwise specified.
- B. Obtain approval of the Engineer as to disposition and method for disposal of excess or unsuitable excavation.

### 3.04 GENERAL:

- A. Provide all labor, equipment and associated materials to excavate areas specified.

## **PART 4 - MEASUREMENT AND PAYMENT**

### 4.01 UNCLASSIFIED STREET EXCAVATION:

- A. When listed as a separate contract pay item, unclassified street excavation, as authorized, shall be measured in its original position and the volume determined by the average end area method. All work performed shall be paid for at the contract bid price per cubic yard for unclassified street excavation.
- B. When not listed as a separate contract pay item, unclassified street excavation 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 pay items.
- C. Compensation, whether by contract pay item or incidental work will be for furnishing all materials, labor, equipment, tools and incidentals required by the work, all in accordance with the plans and these specifications.

**END OF SECTION**

## **SECTION 02240 LIME STABILIZATION**

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### **PART 1 - GENERAL**

#### **1.01 GENERAL DESCRIPTION OF WORK:**

- A. Treating of subgrade, subbase, 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 subbase 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 SDI-IPT 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. Unhydrate Lime Content, Percent by Weight  $\text{CaO}$  5% Max. "Free Water" Content, Percent by Weight  $\text{H}_2\text{O}$  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  $\text{Ca(OH)}_2$  of not less than 90 percent by weight and a residue retainage equal to the retainage specified in Part 2.01B 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 City of McAllen water mains. The Contractor shall make arrangements with the City 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 required 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 smooth roadbed to conform to 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 windrow to expose secondary grade.
- 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 windrowing 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 base and subbase shall be delivered, placed and spread in the required amount per station. The material shall be thoroughly mixed prior to the addition of lime.
- 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. Provide slurry free of objectionable materials.
- 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 uniformly 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. Before applying lime, bring the prepared roadway to approximately optimum moisture content. Spread lime by an approved screw type spreader box or by bag distribution at the required rate shown in the plans.



- B. Distribute lime at a uniform rate with approved equipment 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. Only hydrated lime may be distributed by bag. Motor graders shall not be used to spread hydrated lime.
- D. Sprinkle material until required 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, discing, harrowing, and scarifying or by other approved pulverization methods such that nonslaking 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 subbase material, lime and required water until a homogeneous, friable mixture is obtained.



2. When lime is placed as slurry and mixed by use of blades, the material shall be bladed as the limewater 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 sections shall be moist cured for a minimum of two days before further coursing is 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 55-1 emulsified asphalt as a curing seal. Curing seal shall be applied as soon as possible after final rolling at a rate of 0.05 to 0.20 gallons per square yard. The exact rate will be as directed by the ENGINEER.
- D. 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 City of McAllen of McAllen and as directed by the ENGINEER.

#### **PART 4 - MEASUREMENT AND PAYMENT**

##### **4.01 MEASUREMENT AND PAYMENT:**

- A. When included as a separate line item, lime treatment may 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 or lime will be measured by the ton of 2,000 pounds dry weight. Lime treatment shall be paid for at the contract unit price per square yard or paid at the contract unit cost per ton of 2,000 pounds dry weight.
- B. When not included as a separate line item, lime treatment shall be considered incidental to the completion of construction and the costs thereof shall be included in the line items provided.
- 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 02580 STORM SEWER APPURTENANCES**

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### **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 3000 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 Section 03330.

**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 02571.

**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 02227.

- 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 02590.
- 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 wye. 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 Part 6 and Section 02571 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 be 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 02590 REINFORCED CONCRETE PIPE**

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### **PART 1 - GENERAL**

#### **1.01 GENERAL DESCRIPTION OF WORK:**

- A. This Item shall govern for furnishing and installing all concrete pipe and materials and for constructing precast concrete pipe culverts or precast concrete sewer mains, laterals, stubs and inlet leads. The pipes shall be of the sizes, strengths and dimensions shown on the plans and shall include all connections to new or existing pipes, sewers, manholes, inlets, headwalls and other appurtenances and jointing materials as may be required to complete the work.

### **PART 2 - PRODUCTS**

#### **2.01 GENERAL:**

- A. Except as modified herein, precast reinforced concrete pipe shall conform to the design shown on the plans and to ASTM C76 or C655 for circular pipe.
- B. All precast concrete pipe shall be machine made or cast by a process which will provide for uniform placement of the concrete in the form and compaction by mechanical devices which will assure a dense concrete. Concrete shall be mixed in a central batch plant or other approved batching facility from which the quality and uniformity of the concrete can be assured. Transit mixed concrete will not be acceptable for use in precast concrete pipe.
- C. Unless otherwise shown on the plans, not more than two (2) holes may be placed in the top section of precast pipe for lifting and placing. The holes may be cast, cut, or drilled in the wall of the pipe. The holes shall not exceed three (3) inches in diameter at the inside surface of the pipe wall. Not more than one (1) longitudinal wire or two (2) circumferential wires may be cut per layer of reinforcing steel when locating lift holes in the pipe wall. After the pipe is in place, lift holes shall be filled with concrete or mortar or precast concrete plugs to the satisfaction of the Engineer.

**TABLE A**  
**CIRCULAR PIPE**  
(CLASS, D-LOAD EQUIVALENTS)

<b>C76</b>	<b>C655</b>
CLASS I	800D-LOAD
CLASS II	1000D-LOAD
CLASS III	1350D-LOAD
CLASS IV	2000D-LOAD
CLASS V	3000D-LOAD

## 2.02 DESIGN:

- A. Reinforced concrete pipe for jacking, boring or tunneling shall meet the requirements of the pertinent ASTM specification with the following additional requirements:
  - 1. The pipe shall have circular reinforcement and for 30 inch and larger diameters shall have an additional layer of Class III reinforcement, 12 inches long, extending into both the tongue and groove of the joint to within 3/4 inch of the end of the tongue and the groove. The minimum wall thickness shall be wall "B" for the diameter specified, unless special designs are required. The minimum concrete compressive strength for jacking and boring pipe shall be 5000 psi. Variations in the laying length of opposite sides shall not exceed 3/8 inch for pipe diameters 24 inches through 60 inches and 1/2 inch for pipe diameters 66 inches and larger. The maximum joint taper shall be 7 degrees for tongue and groove pipe and 2 degrees for O-ring gasket pipe. Pipe manufactured to these additional requirements shall be marked to identify pipe for jacking and boring.
- B. The Construction Plans will provide a summary indicating the locations and length for all pipes. Additionally, the diameter required D-load and/or class for full circle pipe, will also be shown.

## 2.03 PHYSICAL TEST REQUIREMENTS:

- A. The acceptability of the pipe shall be determined by the results of the physical tests outlined herein; by appropriate material tests required in ASTM C76, C506, C507, or C655; by absorption tests on selected samples from the wall of the pipe; and by inspection of the finished pipe to determine its conformance with the required design and its freedom from defects. Three-Edge Bearing tests shall be performed on one (1) pipe for each 100' of pipe or fraction thereof of each design or shape, size, class or D-load for the load to produce a 0.01 inch crack and, at the discretion of the Engineer, the pipe may be tested to ultimate load.
- B. As an alternate to the Three-Edge Bearing test, concrete pipe 60 inches in diameter and larger may be accepted on the basis of compressive strength of cores cut from the wall of the pipe. The manufacturer shall furnish facilities and personnel for taking the cores and determining the compressive strength of the samples. Three-Edge Bearing tests and core tests shall be in accordance with ASTM C497.
- C. The manufacturer shall plug and seal coreholes in the pipe wall, after testing, in a manner satisfactory to the Engineer.



## 2.04 MARKING:

The following information shall be clearly marked on each section of pipe:

- A. The class or D-load of pipe.
- B. The date of manufacture.
- C. The name or trademark of the manufacturer.
- D. One end of each section of pipe with elliptical reinforcement shall be clearly marked during the process of manufacture or immediately thereafter on the inside and the outside of opposite walls to show the location of the "top" or "bottom" of the pipe as it should be installed, unless the external shape of the pipe is such that the correct position of the top and bottom is obvious. Marking shall be indented on the pipe section or painted thereon with waterproof paint.
- E. Pipe for jacking and boring shall be identified for the intended use.

## 2.05 INSPECTION:

The quality of materials, the process of manufacture, and the finished pipe shall be subject to inspection and approval by the Engineer at the pipe manufacturing plant. In addition, the finished pipe shall be subject to further inspection by the Engineer at the project site prior to and during installation.

- A. Causes for Rejection. Pipe shall be subject to rejection for failure to conform to any of the specification requirements. Individual sections of pipe may be rejected because of any of the following:
  - 1. Fractures or cracks passing through the shell, except for a single end crack that does not exceed the depth of the joint.
  - 2. Defects that indicate imperfect proportioning, mixing and molding.
  - 3. Surface defects indicating honeycombed or open texture.
  - 4. Damaged ends, where such damage would prevent making a satisfactory joint.
  - 5. Any continuous crack having a surface width of 0.01 inch or more and extending for a length of 12 inches or more, regardless of position in the wall of the pipe.
- B. Repairs. Pipe may be repaired if necessary, because of occasional imperfections in manufacture or accidental injury during handling and will be acceptable if, in the opinion of the Engineer, the repairs are sound, properly

finished and cured, and the repaired pipe conforms to the requirements of the specifications.

- C. Rejections. All rejected pipe will be plainly marked by the Engineer by painting colored spots over the Division of Materials and Tests monogram on the inside wall of the pipe and on the top outside wall of the pipe. The painted spots shall be sufficient to identify the rejected pipe but no larger than four (4) inches in diameter. Rejected pipe shall not be defaced in any other manner. The Contractor shall remove the rejected pipe from the project and replace with pipe meeting the requirements of this Item.
- D. Jointing Materials. Unless otherwise specified on the plans the Contractor shall have the option of making the joints using any of the materials described herein. For all jointing materials except mortar, the Contractor shall furnish the Engineer the Manufacturer's Certificate of Compliance.
1. Mortar for joints shall be in accordance with the section, "Jointing", of this Item.
  2. Cold Applied, Plastic Asphalt Sewer Joint Compound shall consist of natural and/or processed asphalt base, suitable volatile solvents and inert filler. The consistency is to be such that the ends of the pipe can be coated with a layer of the compound up to one-half inch thick by means of a trowel. The joint compound shall cure to a firm, stiff plastic condition after application. The material shall be of a uniform mixture and any small separation occurring in the container shall be stirred to a uniform mix before use.

This material shall meet the following requirements when tested in accordance with Test Method Tex-526-C:

Asphalt Base, 100% - % Volatiles - % Ash, % by weight	28-45
Volatiles, 212° F Evaporation, 24 h, % by weight	10-26
Mineral Matter, determined as Ash, % by weight	30-55
Consistency, Cone Penetration, 150 g, 5 sec, 77° F	150-275

3. Rubber Gaskets shall conform to ASTM C361 or C443. The design of the joints and permissible variations in dimensions shall be in accordance with ASTM C443. The Contractor shall furnish the Engineer the Manufacturer's Certificate of Analysis.



4. Cold Applied Preformed Plastic Gaskets. Preformed plastic gaskets shall be suitable for sealing joints of tongue and groove concrete pipe. The gasket sealing the joint shall be produced from blends of refined hydrocarbon resins and plasticizing compounds reinforced with inert mineral filler and shall contain no solvents, irritating fumes or obnoxious odors. The gasket joint sealer shall not depend on oxidizing, evaporating, or chemical action for its adhesive or cohesive strength, and shall be supplied in extruded rope-form of suitable cross-section. The size of the plastic gasket joint sealer shall be in accordance with the manufacturer's recommendations and be of sufficient size to properly seal the joint. The plastic gasket joint sealer shall be so constructed as to provide evidence of proper installation either by means of "squeeze-out" of the gasket material on the inside or outside around the pipe joint circumference or by means of tabs, projections or other such indicators placed at established intervals around the circumference of the pipe joint. Plastic gasket joint sealers shall be Type 1 or Type 2. Type 1 gaskets shall meet the "squeeze-out" requirements and Type 2 gaskets shall meet the requirements for tabs, projections or other indicators. The gasket joint sealer shall be protected by a suitable wrapper designed that when removed, the jointing material maintains integrity.

The chemical composition of the gasket joint sealing compound for Type 1 and 2, as shipped, shall meet the following requirements:

COMPOSITION	TEST METHOD	ANALYSIS
Bitumen, Petroleum Plastic Content, % by weight	ASTM D4	50-70
Ash-Inert Mineral Matter, % by weight	Tex-526-C	30-50
Volatile Matter, 325 F, % by weight	Tex-506-C	2.0 max.

The gasket joint sealing compound when immersed for 30 days at ambient room temperature separately in five (5) percent solution of caustic potash; a five (5) percent solution of hydrochloric acid; a five (5) percent solution of sulfuric acid; and a saturated H<sub>2</sub>S solution, shall show no visible deterioration.

The physical properties of the gasket joint sealing compound as shipped shall meet the following requirements:



PROPERTY	TEST METHOD	REQUIREMENT	
		Type 1	Type 2
Ductility @ 77 F (cm), min.	Tex-503-C	5.0	5.0
Softening Point, F	Tex-505-C	275	275
Penetration			
32 F (300g) 60 sec., min.	Tex-502-C	--	65
77 F (150g) 5 sec.	Tex-502-C	50-120	50-120
115 F (150g) 5 sec., max.	Tex-502-C	--	150

### PART 3 – EXECUTION

#### 3.01 CONSTRUCTION METHODS

- A. Excavation. All excavation shall be in accordance with the requirements of Section 02221, "Trench Excavation, Backfill, and Compaction", except where tunneling or jacking methods are shown on the plans or permitted by the Engineer.
- B. Shaping and Bedding. Shaping and bedding shall be in accordance with Section 02221, "Trench Excavation, Backfill, and Compaction".
- C. Laying Pipe. Unless otherwise authorized by the Engineer, the laying of pipe on the bedding shall be started at the outlet end with the spigot or tongue end pointing downstream and shall proceed toward the inlet end with the abutting sections properly matched, true to the established lines and grades. Where bell and spigot pipe are used, cross trenches shall be cut in the foundation to allow the barrel of the pipe to rest firmly upon the bedding. These cross trenches shall be not more than two (2) inches larger than the bell ends of the pipe. Proper equipment shall be provided for hoisting and lowering the sections of pipe into the trench without disturbing the bedding and the sides of the trench. The ends of the pipe shall be carefully cleaned before the pipe is placed. As each length of pipe is laid, the mouth of the pipe shall be protected to prevent the entrance of earth or bedding material. The pipe shall be fitted and matched so that when laid in the bed the pipe shall form a smooth, uniform conduit. When elliptical pipe with circular reinforcing or circular pipe with elliptical reinforcing is used, the pipe shall be laid in the trench in such position that the markings "Top" or "Bottom", shall not be more than five (5) degrees from the vertical plane through the longitudinal axis of the pipe.

Multiple installations of reinforced concrete pipe shall be laid with the center lines of individual barrels parallel. Unless otherwise shown on the plans, the following clear distances between outer surfaces of adjacent pipes shall be used:

Diameter 18"	24"	30"	36"	42"	48"	54"	60" to 64"
Clear 0'-9" Distance Between Pipes	0'- 11"	1'- 1"	1'- 3"	1'- 5"	1'- 7"	1'- 11"	2'-0"

#### D. Jointing.

##### 1. Joints sealed with portland cement mortar shall be made as follows:

Mortar shall consist of one (1) part cement, two (2) parts sand and sufficient water to make a plastic mix. The pipe ends shall be cleaned and wetted before making the joint. The lower half of the bell or groove and the upper half of the tongue or spigot shall be plastered with mortar. After the pipes are tightly jointed, mortar shall be packed into the joint from both inside and outside the pipe. The inside shall be finished smooth and flush with adjacent joints of pipe. Over the joint outside the pipe, a bead shall be formed at least one (1) inch on either side of the joint and of semicircular cross section for tongue and groove joints, but for bell and spigot joints, the mortar shall form a 45° fillet between the outer edge of the bell and the spigot. Mortar joints shall be cured by keeping the joints wet for at least 48 hours or until the backfill has been completed, whichever comes first. No jointing shall be done when the atmospheric temperature is at or below 40 F. Mortared joints shall be protected against freezing by backfilling or other approved methods for at least 24 hours.

No mortar banding on the outside of pipe will be required for driveway culverts.

At the Contractor's option, and with the approval of the Engineer, pipes which are large enough for a man to enter may be furnished with the groove not less than one-half of an inch and not more than three-fourths of an inch longer than the tongue. Such pipe may be laid and backfilled without mortar joints. Care shall be exercised to avoid displacing the joints during the backfilling operations. After the backfilling has been completed, the space between the end of the tongue and the groove on the interior of the pipe shall be cleaned of all foreign material, thoroughly wetted and filled with mortar around the entire circumference of the pipe and finished flush.

The Contractor shall make available for the use of the Engineer, an appropriate rolling device similar to an automobile mechanic's "Creeper" for conveyance through small size pipe structures.

Mortar joints will be required for irrigation wells, vents and similar vertical



structures.

2. Joints using Cold Applied, Plastic Asphalt Sewer Joint Compound shall be made as follows:

Both ends of the pipes shall be clean and dry. A one-half inch thick layer of the compound shall be troweled or otherwise placed in the groove end of the pipe covering not less than two-thirds of the joint face around the entire circumference. Next, the tongue end of the next pipe shall be shoved home with sufficient pressure to make a tight joint. After the joint is made any excess mastic projecting into the pipe shall be removed. Backfilling of pipe laid with asphalt mastic joints may proceed as soon as the joint has been inspected and approved by the Engineer. Special precautions shall be taken in placing and compacting backfill to avoid damage to the joints.

3. Joints using Rubber Gaskets shall be made as follows:

Where rubber gasket pipe joints are required by the plans the joint assembly shall be made according to the recommendations of the gasket manufacturer. Water tight joints will be required when using rubber gaskets. Backfilling may begin when approved by the Engineer.

4. Joints using Cold Applied Preformed Plastic Gaskets shall be made as follows:

Before laying the pipe in the trench, the plastic gasket shall be attached around the tongue or groove near the shoulder or hub of each joint in accordance with the gasket manufacturer's recommendations. The protective wrapper shall be removed and the gasket pressed firmly to the clean, dry surface of the pipe, as recommended by the manufacturer. The joint sealer must be placed in such a manner that no dirt or other deleterious materials will come in contact with the joint sealing material.

After the tongue is correctly aligned with the flare of the groove, the wrapper or wrappers on the gasket shall be removed and the pipe shall be pulled or pushed home with sufficient force to properly seal the joint. Any joint material pushed out into the interior of the pipe that would tend to obstruct the flow shall be removed. (Pipe shall be pulled home in a straight line with all parts of the pipe on line and grade at all times.)

Backfilling of pipe laid with plastic gasket joints may proceed as soon as the joint has been inspected and approved by the Engineer. Special precautions shall be taken in placing and compacting backfill to avoid damage to the joints.

When the atmospheric temperature is below 60 F, plastic joint seal gaskets shall either be stored in an area warmed to above 70 F, or



artificially warmed to this temperature in a manner satisfactory to the Engineer. Gaskets shall then be applied to pipe joints immediately prior to placing pipe in trench, followed by connection to previously laid pipe.

5. Connections and Stub Ends. Connections of concrete pipe to existing pipes, pipe sewers or sewer appurtenances shall be as shown on the plan.

The bottom of existing structures shall be mortared or concreted if necessary to eliminate any drainage pockets created by the connections. Any damage to the existing structure resulting from making the connection shall be repaired by the Contractor, to the satisfaction of the Engineer, at the Contractor's expense.

Unless otherwise shown in the plans, connections between concrete pipe and corrugated metal pipe shall be made with a suitable concrete collar having minimum thickness of twelve (12) inches.

Stub ends, for connections to future work not shown on the plans, shall be finished by installing watertight plugs into the free end of the pipe.

6. Backfilling. After the pipe has been placed, bedded and jointed as specified, filling and/or backfilling shall be done in accordance with the applicable requirements of Item 400, "Excavation and Backfill for Structures". When mortar joints are specified, no fill or backfill shall be placed until the jointing material has been cured for at least six hours. Special precautions shall be taken in placing and compacting the backfill to avoid any movement of the pipe or damage to the joints. For all pipe structures where joints consist of materials other than mortar, immediate backfilling will be permitted.
7. Re-use of Appurtenances. When existing appurtenances are specified on the plans for reuse, the portion to be reused shall be severed from the culvert and moved to the new position previously prepared by hoisting with a crane, rolling, or other approved methods. Connections shall conform to the requirements for joining sections of pipes, as designated herein or as shown on the plans. Any portion of the headwalls or pipe attached to the appurtenance damaged during the moving operations by the Contractor shall be restored to its original condition at the Contractor's expense. The Contractor may remove and dispose of the existing appurtenances and construct new appurtenances at his expense in accordance with the pertinent specifications and design shown on the plans or as furnished by the Engineer.
8. Protection of Pipe. Unless otherwise shown on the plans or permitted in writing by the Engineer, no heavy earth moving equipment will be permitted to haul over the structure until a minimum of four (4) feet of

permanent or temporary, compacted fill has been placed thereon. Pipe damaged by the Contractor's equipment shall be removed and replaced by the Contractor at the Contractor's expense.

#### **PART 4 - MEASUREMENT AND PAYMENT**

##### **4.01 MEASUREMENT:**

This Item will be measured by the linear foot. Such measurement will be made between the ends of the pipe barrel along the flow line. Where spurs or branches, or connections to existing pipe lines are involved, measurement of the spur or new connecting pipe will be made from the intersection of the flow line with the outside surface of the pipe into which it connects. Where inlets, headwalls, catch basins, manholes, junction chambers, or other structures are included in lines of pipe; that length of pipe tying into the structure wall will be included for measurement but no other portion of the structure length or width will be so included. For multiple pipes, the measured length will be the sum of the lengths of the barrels measured as prescribed above.

##### **4.02 PAYMENT:**

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Reinforced Concrete Pipe" and "Reinforced Concrete Pipe (Sewers)" of the size and D-load or class specified.

This price shall be full compensation for furnishing, hauling, placing and joining of pipes; for cutting of skews or slopes, for all connections to new or existing structures; for moving and reusing appurtenances where required; for removing and disposing of portions of existing structures as required; and for all labor, tools, equipment and incidentals necessary to complete the work.

Trenching, backfilling and compaction will not be measured or paid, but will be considered incidental to other items in accordance with Section 02221, "Trench Excavation, Backfill, and Compaction". Protection methods for excavation greater than 5 feet in depth will be measured and paid for as Item 02223, "Trench Protection System."

**END OF SECTION**



## **SECTION 02595 CONCRETE BOX CULVERTS AND SEWERS**

### **PART 1 - GENERAL**

#### **1.01 GENERAL DESCRIPTION OF WORK:**

- A. This Item shall govern for the materials furnished, and for constructing, furnishing and placing concrete box culverts and sewers at the locations shown, and in accordance with the details on the plans and this Item. Unless otherwise shown on the plans, the Contractor shall have the option of furnishing cast-in-place, precast (formed) or precast (machine-made) box culverts or sewers.

### **PART 2 - PRODUCTS**

#### **2.01 GENERAL:**

- A. All materials shall conform to the pertinent requirements of Section 02590, "Reinforced Concrete Pipe".
- B. Concrete for precast (machine-made) concrete boxes shall conform to ASTM C789, C850 or C1433

#### **2.02 FABRICATION:**

##### **A. GENERAL:**

All fabrication of concrete boxes including forming, casting and curing shall conform to the following requirements:

1. Cast-in-place concrete boxes shall be produced in accordance with Plan Specifications and Section 03300, "Concrete".
2. Precast (machine-made) concrete boxes shall be produced by a process which will provide for uniform placement of the concrete in the forms and compaction by mechanical devices which will assure dense concrete. Concrete shall be mixed in a central batch plant or other approved batching facility from which the quality and uniformity of the concrete can be assured. Ready-mix concrete will not be acceptable for use in precast (machine-made) concrete boxes. Curing shall be in accordance with ASTM C789 or C850, whichever is applicable.

#### **2.03 TESTING:**

- A. Test specimens for testing of cast-in-place concrete boxes sections shall be in accordance with Section 03310, "Supplied Concrete". Test



specimens for precast (formed) concrete box sections shall be in accordance with Section 03310. Test specimens for precast (machine-made) shall be test cylinders made at the same time and in the same manner as the box sections they represent.

- B. For precast concrete boxes (machine-made), a minimum of four (4) test cylinders shall be made for each day's production run of each size and class of box section. Test cylinders for machine-made concrete boxes shall be cured in the same manner and for the same time as the boxes they represent.

Equipment required for testing concrete boxes produced in a precasting plant shall be furnished by the producer.

#### 2.04 LIFTING HOLES:

- A. For precast concrete boxes, not more than four (4) lifting holes may be provided in each section to facilitate handling. Lifting holes may be cast, cut into the fresh concrete after form removal, or drilled. Lifting holes shall be so sized as to provide for adequate lifting devices based on the size and weight of the box sections but shall not be larger than three (3) inches in diameter. Spalled areas around the holes shall be repaired.

#### 2.05 MARKING:

- A. Precast concrete boxes produced in a precasting plant shall bear the following markings:
1. The name or trademark of the producer.
  2. The date of manufacture.
  3. The box size and height of fill.
  4. When lifting holes are not provided, one end of each box section shall be clearly marked on the inside and outside walls to indicate the top or bottom as it will be installed.
  5. When required under "Fabricating Tolerances", match-marks shall be used for proper installation. Markings shall be indented into the box section or may be painted thereon with waterproof paint.

#### 2.06 FABRICATING TOLERANCES:

- A. Tolerances for precast sections of either type shall conform to the following:
1. The inside vertical and horizontal dimensions shall not vary from plan

requirements by more than 1/2 inch.

2. The horizontal or vertical plane at each end of the box section shall not vary from perpendicular by more than 1/2 inch, measured on the inside faces of the section.
3. The sides of a section at each end shall not vary from being perpendicular to the top and bottom by more than 1/2 inch when measured diagonally between opposite interior corners of the end section.
4. The thickness of walls and slabs shall not be less than that shown on the plans, except that an occasional deficiency not greater than 1/4 inch will be acceptable. If proper jointing is not affected, thicknesses in excess of plan requirements are acceptable.
5. The straightness of the tongue and groove, at the mating surface shall not vary by more than 1/4 inch.

Deviations from the above tolerances will be acceptable if the sections can be fitted at the plant or job site and it is demonstrated that an acceptable joint can be made. For this condition an acceptable joint is:

When two sections are fitted together on a flat surface, in proper alignment and in the position the sections will be installed, the joint opening at any point shall not exceed one (1) inch. Sections fitted together at the plant and accepted in this manner shall be match-marked for installation.

## 2.07 DEFECTS AND REPAIR:

- A. Fine cracks on the surface of the member which do not extend to the plane of the nearest reinforcement will not be cause for rejection unless the cracks are numerous and extensive. Cracks which extend into the plane of the reinforcing steel shall be repaired in an approved manner.
- B. Small damaged or honeycombed areas which are purely surface in nature shall be repaired to the satisfaction of the Engineer. Excessive damage, honeycomb or cracking will be subject to structural review. Repairs shall be sound, properly finished and cured in conformance with the pertinent specifications. When fine cracks on the surface indicate poor curing practices, further production of precast sections shall be discontinued until corrections are made and proper curing provided.

## 2.08 STORAGE AND SHIPMENT:

Precast sections shall be stored on level blocking in a manner acceptable to the Engineer. No load shall be placed upon the sections until design strength is



reached and curing completed. Shipment of sections may be made when the design strength and curing requirements have been met.

### **PART 3 - EXECUTION**

#### **3.01 MIXING CONCRETE:**

- A. Excavation, bedding and backfill shall be in accordance with the requirements of Section 02221, "Trench Excavation, Backfill, And Compaction ", except where tunneling or jacking methods are required or permitted by the plans.
- B. Unless otherwise shown on the plans, the Contractor may use any of the jointing materials in accordance with the jointing requirements specified in Section 02590, "Reinforced Concrete Pipe".
- C. When precast box culverts are used to form multiple barrel structures, the box sections shall be placed in conformance with the details shown on the plans. Material to be used between barrels shall be as shown on the plans.
- D. Connections of precast sections to cast-in-place culverts or to any required headwalls, wingwalls, riprap or other structure shall conform to the details shown on the plans.
- E. Lifting holes shall be filled with mortar or concrete and cured to the satisfaction of the Engineer. Precast concrete or mortar plugs may be used when approved by the Engineer.

### **PART 4 - MEASUREMENT AND PAYMENT**

#### **4.01 MEASUREMENT:**

- A. This Item will be measured by the linear foot. Such measurement will be made between the ends of the culvert or sewer along the flow line, exclusive of safety end treatments. Where spurs or branches, or connections to existing structures are involved, measurement of the spur or new connection box sections will be made from the intersection of the flow line with the outside surface of the structure into which it connects. Where inlets, headwalls, catch basins, manholes, junction chambers, or other structures are included in lines of culverts or sewers that length of box section tying into the structure wall will be included for measurement but no other portion of the structure length or width will be so included.
- B. For multiple barrel structures, the measured length will be the sum of the lengths of the barrels measured as prescribed above.
- C. This is a plans quantity measurement Item and the quantity to be paid for will



be that quantity shown in the proposal and on the "Engineer's Estimate of Quantities " sheet of the contract plans. If no adjustment of quantities is required, additional measurements or calculations will not be required.

#### 4.02 PAYMENT:

- A. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Concrete Box Culvert" or "Concrete Box Sewer" of the size and type specified. This price shall be full compensation for constructing, furnishing and transporting sections; for preparing and shaping of the bed; for jointing of sections; for cutting of sections on skew or slope; for connections to existing structures; for concrete, reinforcing steel and all materials, labor and equipment, tools and incidentals necessary to complete the work.

Excavation, bedding, and backfill for box culverts and sewers will be paid for in accordance with Section 02221, "Trench Excavation, Backfill and Compaction ". Protection methods for excavation greater than 5 feet in depth will be measured and paid for as Item 02223, "Trench Protection System."

**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 the 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 uncrushed as necessary to comply with the requirements hereinafter specified.
- B. Materials shall consist of durable, coarse 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 F - Caliche

**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 subbase 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 Index	TEX-106-E
Sieve Analysis	TEX-110-E
Wet Ball Mill	TEX-116-E
Triaxial Test	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**

TYPES		GRADES							
		Grade 1		Grade 2		Grade 3		Grade 4	
		Triaxial Class 1, Min. compressive strength, psi: 45 to 0 psi lateral pressure and 175 at 15 psi lateral pressure		(Triaxial Class 1 to 2.4) Min. compressive strength, psi: 35 to 0 psi lateral pressure and 175 at 15 psi lateral pressure		(Unspecified Triaxial Class)		(Unspecified Triaxial Class)	
TYPE A		Retained on Sq. Sieve	%	Retained on Sq. Sieve	%	Retained on Sq. Sieve	%	Retained on Sq. Sieve	%
Crushed or Broken Aggregate (excluding gravel aggregate)	1-3/4		0	1-3/4	0-10	1-3/4	0-10	As Shown on Plans	
	7/8"		10-35	No. 4	45-75	No. 40	60-85		
	3/8"		30-50	No. 40	60-85	Max LL	45		
	No. 4		45-65	Max LL	40	Max PI	15		
	No. 40		70-85	Max PI	12	Wet Ball			
	Max LL		35	Wet Ball		Bill Amt	55		
	Max PI		10	Wet Ball Bill Amt	40	Wet Ball Bill Amt	40		
	Wet Ball Bill Amt		40	Max Increase in Passing No. 40	20	Max Increase in Passing No. 40	20		
	Max Increase in Passing No. 40		20						
TYPE B		Retained on Sq. Sieve	%	Retained on Sq. Sieve	%	Retained on Sq. Sieve	%	Retained on Sq. Sieve	%
Gravel Aggregate	N/A			1-3/4	0-10	2-3/4"	0	As Shown on Plans	
				No. 4	30-75	No. 40	45-65		
				No. 40	70-85	Max LL	35		
				Max LL	35	Max PI	12		
				Max PI	12				
				Max PI	12	Max LL	35		
				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 F	Retained on Sq. Sieve	%	Retained on Sq. Sieve	%	Retained on Sq. Sieve	%	Retained on Sq. Sieve	%
Caliche	N/A		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				

G. Materials exhibiting reasonably close conformity with the specified gradation and plasticity index are defined by the following criteria:

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 stockpile 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 of 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. The 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 subgrade and replaced with approved material.
- C. Flexible base shall not be placed until the Contractor has verified by proof rolling that the subgrade has been prepared and compacted in conformity with Standard Specification Item 02220, "Subgrade Preparation," to the typical sections, lines and grades indicated on the Drawings. Any deviation shall be corrected and proof rolled prior to placement of the flexible base material.
- D. All holes, ruts and depressions shall be filled with approved material and, if required, the subgrade shall be thoroughly wetted with water and reshaped and rolled to the extent directed in order to place the subgrade in an acceptable condition to receive the base material.
- E. The surface of the subgrade shall be finished to line and grade as established and in conformity with the typical section shown on plans. 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.
- F. Sufficient subgrade shall be prepared in advance to insure satisfactory execution of the work.



- G. Material excavated in the preparation of the subgrade shall be utilized in the construction of adjacent shoulders and slopes or otherwise disposed of as directed. 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 F MATERIAL:

- A. Immediately before placing the base material, the subgrade 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 to each 100-foot station.
- C. Material deposited upon the subgrade shall be spread and shaped the same day.
- D. In the event that inclement weather, or other unforeseen circumstances, renders the spreading of the material during the first 24-hour period impractical, the materials shall be scarified and spread as directed by the ENGINEER.
- E. Throughout the entire operation the material shall be sprinkled, if directed, and shall be maintained by blading and, upon completion, shall be smooth and shall conform to the typical section indicated on the Drawings and to the established lines and grades, shall then be bladed, dragged and shaped to conform to typical sections as shown on plans.
- F. Each lift shall be sprinkled as required to bring the material to optimum moisture content, then compacted to the extent necessary to provide not less than 95 percent nor more than 100 percent of the maximum dry density as determined in accordance with Test Method Tex-114-E. In addition to the requirements specified for density, the full depth of flexible base material shall be compacted to the extent necessary to remain firm and stable under construction equipment. After each section of flexible base material is completed, tests, as necessary, will be made by the Engineer or designated representative. As a minimum, three in-place density tests per section per day will be taken. If the material fails to meet the density requirements, it shall be reworked as necessary to meet these requirements.
- G. All areas and "nests" of segregated coarse or fine material shall be removed and replaced with well graded material, as directed by the ENGINEER.

- H. If additional binder is considered desirable or necessary after the material is spread and shaped, it shall be furnished and supplied 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.
- I. The course shall be compacted by methods 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 with approved compaction equipment as directed until a uniform compaction is secured. Throughout this entire operation, the shape of the course shall be maintained by blading. Upon completion, the surface shall be smooth and in conformity with the typical sections shown on plans and the established lines and grades.
    - b) In the area on which pavement is to be placed, any deviation in excess of 1/4 inch in cross section and in a length of 16-feet measured longitudinally shall be corrected by loosening, adding or removing approved material, as required reshaping and re-compacting by sprinkling and rolling.
    - c) All irregularities, depressions and weak spots which develop in the laid course shall be corrected immediately by scarifying the areas affected, adding approved material as required, reshaping and recompacting 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 the established lines and grades.
- e) In the areas on which pavement is to be placed, any deviation in excess of 1/4 inch in cross section and 16 feet in length, measured longitudinally, shall be corrected by loosening, adding or removing approved material as required, reshaping and recompacting by sprinkling and rolling.
- f) All irregularities, depressions, and weak spots which develop shall be corrected immediately by scarifying the areas affected, adding approved material as required, reshaping and recompacting by sprinkling and rolling. 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.

### 3.03 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.

### 3.04 REWORKING AN EXISTING BASE COURSE

- A. Existing base courses shall be reworked in accordance with TxDOT Item 251, or as directed by the ENGINEER, and result in a section that conforms the approved lines and grades.

### 3.05 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 that the part of the base included in the top 8 inches, immediately below the finished surface of the



roadway, be 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.

### 3.06 TOLERANCES:

- A. Flexible base will be measured by the square yard of surface area of completed and accepted work based on the thickness of flexible base as shown on the plans.
  - 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 thickness of flexible base as shown on the plans.
  - 1. The flexible base shall be measured for depth by the units of 2,000 square yards minimum, with one measurement taken at a location selected by the ENGINEER. There shall be a minimum of three (3) locations measured per project.
  - 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.
    - 1. 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.
- D. The ENGINEER may accept the work provided no more than 20% 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 and 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 this 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 the application of asphaltic materials on a newly 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 materials 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 the 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.
  - 4. The test report shall be signed by an authorized representative of the vendor and certify that the product delivered conforms to the specifications for type and grade indicated.
  - 5. Certified test reports and the testing required in the preparation of such report shall be at no cost to the City.
  - 6. 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° 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 shall conform to the requirements set forth in Table 2610-1.

TABLE 2610-1

Specification Designation	AASHTO Test Method	ASTM Test Method	MC 30	MC 70	MC 250	MC 800	MC 3000
Flash Point (Open Cleave)							
°F, Min.	T 48	D 92	100	100	150	150	150
Viscosity, 140°F, Kinematic, CS	T 201	D 2170	30 - 60	70 - 140	250 - 500	800 - 1600	3000 - 6000
Furol Viscosity at:	T 72	D 88					
77° F (Sec.)			75-150	60-120	125-250	100-200	300-600
122° F (Sec.)							
140° F (Sec.)							
180° F (Sec.)							
Distillation Distillate (% of Total Distillate to 680° F)	T 78	D 402					
437° F			0-25	0-20	0-10	0	0
500° F			40-70	25-60	20-55	10-35	0-15
600° F			75-93	75-90	70-85	65-80	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 - 250	120 - 250	120 - 250	120 - 250	120 - 250
* Ductility 77° F, cm, Min.	T 51	D 113	100	100	100	100	100
Solubility in CCl <sub>4</sub> , % Min.	T 44		99.5	99.5	99.5	99.5	99.5

Water, % Max.	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

\* 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 Naptha and 15% Xylene.

NOTE: Viscosity tests may be made by either Kinematic or Furol test methods.

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° F and rising and shall not be applied when the ambient air temperature is below 50° 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.
8. Recalibrate 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 a spacing 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. When listed as a separate contract pay item "Prime Coat", 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 material will be considered incidental to asphaltic material for prime coat with no direct payment.

**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 subgrade, subbase 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 TxDOT test methods noted below.

#### **PART 2 - PRODUCTS**

##### **2.01 ASPHALTIC MATERIALS:**

- A. Asphalt cement binders shall be uncracked 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° 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° 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 the CONTRACTOR 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 2612-1**

Specification	AASHTO Test	ASTM Test						
Designation	Method	Method	40 to 50	60 to 70	85 to 100	120 to 150	150 to 200	200 to 250
Flash Point (Open Cup) Min	T48	D92	--	450	450	450	450	350
Penetration of Orig. 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	0.75	0.75	0.75	0.75	1.00	1.00
Test of Residue from Thin-Film Oven Test; % of Orig. Pen., Min.	T49	D5	52	50	50	50	50	50
Ductility at 77° F cm. after los at 325° F, Min.	T51	D113	50	50	100	100	100	100
Solubility in CCl <sub>4</sub> 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 CCl<sub>4</sub> substituted for CS<sub>2</sub>.

\*\* Using 85% Standard Naphtha Solvent and 15% Xylene.



**TABLE 2612-2**

TYPE-GRADE	OA-30		OA-175*8		OA-400	
	Min	Max	Min	Max	Min	Max
Penetration at 32° F, 200 g, 60 sec	15	--	--	--	--	--
Penetration at 77° F, 100 g, 5 sec	25	35	150	200	--	--
Penetration at 115° F, 50 g, 5 sec	--	65	--	--	--	--
Ductility at 77° F, 5 cm/min, cms; Original OA	2	--	70	--	--	--
Flash Point COC, °F	450	--	425	--	425	--
Softening Point, R&B, °F	185	--	95	130	--	--
Thin Film Oven Test, 1/8 in. Film 50 g, 5 hrs, 325° F, % Loss by wt.	--	0.4	--	1.4	--	20
Penetration of Residue, at 77° F, 100 g, 5 sec % of Original Pen	--	--	40	--	--	--
Ductility of Residue at 77°F, 5 cm/min, cms	--	--	--	100	--	--
Solubility in Trichloroethylene, %	99	--	99	--	99	--
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 2612-3**

PROPERTIES	AC-1.5		AC-3		AC-5		AC-10		AC-20		AC-40	
	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, COC, ° F	425	--	425	--	425	--	450	--	450	--	450	--
Solubility in trichloroethylene, percent ...	99	--	99	--	99	--	99	--	99	--	99	--
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 (solids 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 ratio, 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@212° F)	100 min.
pH of Latex	9.4 - 10.5
Surface tension	28-42 dynes/cm <sup>2</sup>

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 min., cm.	100 min.

D. Asphalt content shall be within the limits noted below:

**Table 2612-4**

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 and any work in which it may have been incorporated as an integral component will be only tentatively accepted by the City. 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 City.
- 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 to 325° 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 standards:

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  
TxDOT Tex -106-E   Method of Calculating Plasticity Index of Solids  
TxDOT Tex-217 – F   (I & II) Determination of Deleterious Materials and  
                                 Decantation Test  
TxDOT Tex-203 – F   Quality Tests for Mineral Aggregates

- B. Aggregates shall have an abrasion of not more than 40 for all courses except the non-skid surface course, which shall have an abrasion of not more than 35.
- C. When properly 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 TxDOT 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. 4 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, retained on 3/8" sieve .....	21 to 53
Passing 3/8" sieve, retained on No. 4 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.....	95 to 100
Passing 5/8" sieve, retained on 3/8" sieve .....	16 to 42
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.....	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 directed by the ENGINEER, shall be in accordance with Section 02610 - Prime Coat, and as specified herein.
- B. Prime coat shall be applied to the surfaces of bases at least 12 hours prior to placing the HMA unless otherwise directed by the ENGINEER.
- C. Asphalt prime shall be applied uniformly at the rate in accordance with Section 02610 - Prime Coat.
- 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 be not 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, sufficient sand shall be spread over the surface to blot up the excess liquid asphalt and prevent it from being picked it up by 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 being sprayed upon adjacent pavements, structures, guard rails, guide posts, culvert markers, trees, and shrubbery that are not to be removed; adjacent property and improvements; 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 foot and vehicle traffic. Barricades shall be placed where necessary to protect the prime coat. If, after the prime coat has been applied to the satisfaction of the ENGINEER and has been accepted, if it is disturbed 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-surfaced pavement, a tack coat shall be evenly and uniformly applied to the existing pavement prior to the placing of the new asphalt concrete. The surface shall be free of water, all-foreign material, or dust when the tack coat is applied. No area shall be treated in any one day greater 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 of tack coat shall be 0.10 to 0.15 gallons per square yard, or 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 outlined in TxDOT Test Method Tex-200-F (Part 1 or 3), mineral filler shall meet the following gradations by weight:

Passing No. 30 Sieve	95-100%
Passing No. 80 Sieve	75%
Passing No. 200 Sieve	55%

## **2.06 ANTI-STRIPPING COMPOUND**

- A. 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 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 establish 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 following factors will be considered: air voids, Marshall stability, durability, water resistance, and asphalt film thickness.



- D. After the job mix formula is established, mixtures for the project shall conform to the following tolerances which may fall outside of the specified master range:

Percent by Weight or  
Volume as Applicable

Passing 1-3/4" sieve, retained on 7/8" sieve	± 5
Passing 7/8" sieve, retained on 5/8" sieve	± 5
Passing 5/8" sieve, retained on 3/8" sieve	± 5
Passing 3/8" sieve, retained on No.4 sieve	± 5
Passing No.4 sieve, retained on No.10 sieve	± 5
Total retained on No.10 sieve	± 5
Passing No.10 sieve, retained on No.40 sieve	± 3
Passing No.40 sieve, retained on No.80 sieve	± 3
Passing No.80 sieve, retained on No.200 sieve	± 3
Passing No.200 sieve	± 3

Asphaltic Material ± 0.05 by wt or 1.2 by vol.

Mixing Temperature ± 20° F

- E. Asphaltic mixture shall be tested in accordance with TxDOT Test Method Tex-200-4 (Part I or Part III) and shall have the following laboratory values:

Surface Course		Base Course
Density:	Minimum	95%
	Maximum	99%
	Optimum	96.5%
Stability (Hveem)		
	Minimum	30%
	Maximum	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 TxDOT Item 340.



## **2.09 STOCKPILING, STORAGE, PROPORTIONING AND MIXING:**

- A. Stockpiling, storage proportioning and mixing operations shall be in accordance with the Provisions of TxDOT 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 less than or equal to 60° F and falling, but may be placed when the air temperature is greater than or equal to 50° F and rising.
- C. Mat thicknesses of 1 inch 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 that have been thinly coated with a minimal amount of paraffin oil, lime slurry, tne 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 provide 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 operating; and shall be approved by the ENGINEER. It shall be operated in accordance with the manufacturer's recommendations.

2. Two Axle Tandem Roller. This roller shall be an 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. It shall be operated in accordance with the manufacturer's recommendations.
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. It shall be operated in accordance with the manufacturer's recommendations.
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-edge 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 these 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 within a range from 220° F to 300° F which will produce the required density. The established 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 outlined in TxDOT 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. 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 a 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 any 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 hereinbefore 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.

I. Price Adjustment for Roadway Density

1. The payment 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, if used.

Average Density % of Lab Density	Percent of Contract Price To Be Paid
Above 95%	100%
94.0 to 94.99	96%
93.0 to 93.99	91%
92.0 to 92.99	85%
Less than 92.00	*

\* 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, as shown on the Bid Proposal.
- 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 02620**  
**CONCRETE CURB AND GUTTER**

**PART 1 - GENERAL**

**1.01 GENERAL DESCRIPTION OF WORK:**

- A. This work shall consist of the construction of concrete curb, concrete curb and gutter, concrete gutter or valley gutter, or combination thereof in compliance with the specifications, lines, grades, and details shown on the plans, or as directed by the ENGINEER.

**PART 2 - PRODUCTS**

**2.01 MATERIALS:**

- A. Concrete and manufactured curb and gutter materials shall be subject to inspection and tests at plants and construction sites for compliance with quality requirements.
- B. Concrete curb and gutter or concrete valley gutter shall be constructed with concrete conforming to the provisions of Section 02630 - Concrete Pavement, or Class "B" concrete conforming to the requirements of Section 03300 - Cast-In-Place Concrete.
- C. Pre-formed expansion Joint Filler shall conform to the requirements of AASHTO M-33 or M-153.
- D. Linseed Oil shall conform to the requirements of AASHTO D-260.
- E. Mineral Spirits shall conform to the requirements of AASHTO D-235.

**2.02 FOUNDATION:**

- A. Concrete curb and gutter or concrete valley gutter shall be placed on an approved foundation conforming to the requirements of the following City of McAllen Specifications:
  - 1. Section 02220 - Subgrade Preparation
  - 2. Section 02226 - Excavation, Backfill & Compaction for Pavement
  - 3. Section 02601 - Flexible Base



## **PART 3 - EXECUTION**

### **3.01 EXCAVATION:**

- A. When required, excavation shall be made to the specified depth, and the base upon which the curb and gutter or valley gutter is to be placed shall be compacted to a firm, even surface conforming to the requirements of Subsection 2.02 above.
- B. All soft and unacceptable material shall be removed and replaced with material approved by the ENGINEER in conformance with the requirements of Subsection 2.02 above.

### **3.02 FORMS:**

- A. Forms shall be of wood or metal, straight, free from warp, and of such construction that facilitates the inspection of the grade and alignment for compliance with the approved plans and specifications.
- B. All forms shall extend for the entire depth of the curb and gutter and shall be braced and secured sufficiently so that no deflection from alignment or grade will occur during the placement of the concrete. Flexible forms shall be used in curved sections so that the top surface of the forms will form a smooth, continuous arc.

### **3.03 MIXING AND PLACING:**

- A. Concrete shall be proportioned, mixed, and placed in accordance with the requirements of Section 02630 – Concrete Pavement and Section 03300 – Cast in Place Concrete.
- B. Compaction of the concrete placed in forms shall be by vibration or other acceptable methods.
- C. Unless otherwise provided. After initial set, the exposed surfaces of curbs and gutters shall be finished by belting, or with steel or wooden floats then broom finish to achieve a uniform texture to the satisfaction of the Engineer. Forms shall be left in place until the concrete has set sufficiently so that they can be removed without injury to the curb and gutter.

#### 3.04 SECTIONS:

- A. Curb and gutter shall be constructed in sections having a uniform length of 20 feet, unless otherwise directed by the ENGINEER. Except at expansion joints, sections shall be separated by open joints 1/8 inch wide.

#### 3.05 EXPANSION JOINTS:

- A. Expansion joints shall be formed at the intervals shown on the plans using preformed expansion joints filler having a thickness of 3/4 inch.
- B. When the curb and gutter or concrete valley gutter is constructed adjacent to an existing concrete pavement, an expansion joint shall be located between the curb and gutter section and the existing concrete pavement.

#### 3.06 CURING

- A. Immediately upon completion of the finishing, the curb and gutter shall be moistened and kept moist for 3 days, or the curb and gutter shall be cured by the use of a membrane-forming material. The method and details of curing shall be subject to the approval of the ENGINEER.

#### 3.07 SURFACE TREATMENT:

- A. The surface of concrete curb and gutter or concrete valley gutter shall be treated with a solution of Linseed Oil and Mineral Spirits in accordance with the applicable requirements of Section 03300 - Cast-In-Place Concrete.

#### 3.08 BACKFILLING:

- A. After the concrete has set sufficiently, the spaces in front and behind the curb and gutter section shall be refilled to the required elevation with material approved by the ENGINEER, and shall be thoroughly tamped in layers of not more than 6 inches.

#### 3.09 SLIP-FORM CONCRETE CURB, CONCRETE CURB AND GUTTER OR CONCRETE VALLEY GUTTER:

- A. Any concrete curb or concrete curb and gutter, except on structures, may be placed using a slip form machine provided that the finished concrete curb or concrete curb and gutter is true to line and grade, the concrete is dense, and of the required surface texture.



- B. The concrete shall be of a consistency that it will maintain the shape of the concrete curb or concrete curb and gutter section without support after slip forming.
- C. The top and face of the finished concrete curb or concrete curb and gutter shall be true and straight and the top surface of the concrete curb or concrete curb and gutter shall be of uniform width and free from humps, sags, or other irregularities.
- D. The forming portion of the slip form machine shall be readily adjustable vertically during the forward motion of the slip form machine to provide a variable height of concrete curb or concrete curb and gutter grade when necessary. A grade line gauge or pointer shall be attached to the slip form machine in such a manner that a continual comparison can be made between the concrete curb or concrete curb and gutter grade as indicated by the offset guidelines.
- E. Concrete shall be fed to the slip form machine at a uniform rate. The slip form machine shall be operated under sufficient uniform restraint to forward motion to produce a well compacted mass of concrete free from surface pits larger than 3/16 inch in diameter and requiring no further finishing, other than light brushing with a wet brush. Finishing with a brush application of grout will not be permitted.
- F. Transverse weakened planes and expansion joints shall be constructed at right angles to the line of the concrete curb, concrete curb and gutter, or concrete valley gutter.
- G. Expansion joints may be constructed by sawing through the concrete curb or concrete curb and gutter section to its full depth. The width of the cut shall be such as to admit the joint filler with a snug fit.
- H. The operations of sawing and inserting the joint filler shall be completed before curing the concrete. At the conclusion of the curing period the filler in each joint shall be checked for tightness of fit. Loose filler in any joint shall be mortared in place and cured.
- I. Excavation shall be as per Subsection 3.02 above.
- J. All remaining provisions of Subsection 2.02 above also apply, unless otherwise specified.

## **PART 4 - MEASUREMENT AND PAYMENT**

### **4.01 MEASUREMENT:**

- A. Curb and gutter, curb, and valley gutter shall be measured by the linear foot.
  - 1. Curb shall be measured along the front face of the section at the finished grade elevation.
  - 2. Combination curb and gutter will be measured along the face of the curb at the flow line of the gutter.
  - 3. Valley gutter will be measured along the flow line of the gutter.
- B. A deduction in length shall be made for drainage structures, such as catch basins or inlets, in the curb, gutter, or combination thereof.
- C. There will be no direct measurement or payment of materials used to construct curb and gutter, curb, or valley gutter.
- D. Excavation or construction of embankment for foundation of curb, valley gutter, or combination curb and gutter will not be measured for payment.

#### 4.02 PAYMENT:

- A. The accepted quantities of curb, valley gutter, and curb and gutter will be paid for at the contract unit bid price per linear foot for each kind and type specified, complete and in place.
- B. Foundation preparation by excavating or constructing embankment to the required subgrade elevation is considered incidental to the completion of the work and no direct payment will be made thereof.
- C. Compensation 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 02660**

### **CONCRETE CURB AND GUTTER AND VALLEY GUTTER**

#### **PART 1 - GENERAL**

##### **1.01 GENERAL DESCRIPTION OF WORK:**

- A. This work shall consist of the construction of concrete curb, concrete curb and gutter, concrete gutter or valley gutter, or combination thereof in compliance with these specifications, lines, grades, and details shown on the plans, or as directed by the ENGINEER.

#### **PART 2 - PRODUCTS**

##### **2.01 MATERIALS:**

- A. Concrete and manufactured curb and gutter materials shall be subject to inspection and tests at plants and construction sites for compliance with quality requirements.
- B. Concrete curb and gutter or concrete valley gutter shall be constructed with concrete conforming to the provisions of Section 02614 - Portland Cement Concrete Paving, or Class "B" concrete conforming to the requirements of Section 03300 - Cast-In-Place Concrete.
- C. Preformed expansion Joint Filler shall conform to the requirements of AASHTO M-33 or M-153.
- D. Linseed Oil shall conform to the requirements of AASHTO D-260.
- E. Mineral Spirits shall conform to the requirements of AASHTO D-235.

##### **2.02 FOUNDATION:**

- A. Concrete curb and gutter or concrete valley gutter shall be placed on an approved foundation conforming to the requirements of the following City Of McAllen Specifications:
  - 1. Section 02210 - Subgrade Preparation,
  - 2. Section 02260 - Flexible Base,
  - 3. Section 02230 - Roadway Excavation, Borrow, and Embankment.

## **PART 3 - EXECUTION**

### **3.01 EXCAVATION:**

- A. When required, excavation shall be made to the specified depth, and the base upon which the curb and gutter or valley gutter is to be placed shall be compacted to a firm, even surface conforming to the requirements of Subsection 2.02 above.
- B. All soft and unacceptable material shall be removed and replaced with material approved by the ENGINEER in conformance with the requirements of Subsection 2.02 above.

### **3.02 FORMS:**

- A. Forms shall be of wood or metal, straight, free from warp, and of such construction that there will be no interference to the inspection of grade or alignment.
- B. All forms shall extend for the entire depth of the curb and gutter and shall be braced and secured sufficiently so that no deflection from alignment or grade will occur during the placing of the concrete. Flexible forms shall be used in curved sections so that the top surface of the forms will form a smooth, continuous arc.

### **3.03 MIXING AND PLACING:**

- A. Concrete shall be proportioned, mixed, and placed in accordance with the requirements of Section 02614 and Section 03300.
- B. Compaction of the concrete placed in forms shall be by vibration or other acceptable methods.
- C. Unless otherwise provided, the exposed surfaces of curbs and gutters shall be finished by belting or with wooden floats. Forms shall be left in place until the concrete has set sufficiently so that they can be removed without injury to the curb and gutter.

### **3.04 SECTIONS:**

- A. Curb and gutter shall be constructed in sections having a uniform length of 20 feet, unless otherwise directed by the ENGINEER. Sections shall be separated by open joints 1/8 inch wide except at expansion joints.



3.05 EXPANSION JOINTS:

- A. Expansion joints shall be formed at the intervals shown on the plans using a performed expansion joints filler having a thickness of 3/4 inch.
- B. When the curb and gutter is constructed adjacent to or on concrete pavement, expansion joints, shall be located opposite or at expansion joints in the pavement.

3.06 CURING

- A. Immediately upon completion of the finishing, the curb and gutter shall be moistened and kept moist for 3 days, or the curb and gutter shall be cured by the use of membrane-forming material. The method and details of curing shall be subject to the approval of the ENGINEER.

3.07 SURFACE TREATMENT:

- A. The surface of concrete curb and gutter or concrete valley gutter shall be treated with a solution of Linseed Oil and Mineral Spirits in accordance with the applicable requirements of Section 03300 - Cast-In-Place Concrete.

3.08 BACKFILLING:

- A. After the concrete has set sufficiently, the spaces in front and back of the curb shall be refilled to the required elevation with material approved by the ENGINEER, and shall be thoroughly tamped in layers of not more than 6 inches.

3.09 SLIP-FORM CONCRETE CURB, CONCRETE CURB AND GUTTER OR CONCRETE VALLEY GUTTER:

- A. Any concrete curb or concrete curb and gutter, except on structures, may be placed using a slip form machine provided that the finished concrete curb or concrete curb and gutter is true to line and grade and the concrete is dense and of the required surface texture.
- B. The concrete shall be of a consistency that it will maintain the shape of the concrete curb or concrete curb and gutter section without support after slip forming.
- C. The top and face of the finished concrete curb or concrete curb and gutter shall be true an straight and the top surface of the concrete curb or

concrete curb and gutter shall be of uniform width and free from humps, sags, or other irregularities.

- D. The forming portion of the slip form machine shall be readily adjustable vertically during the forward motion of the slip form machine to provide a variable height of concrete curb or concrete curb and gutter grade when necessary. A grade line gauge or pointer shall be attached to the slip form machine in such a manner that a continual comparison can be made between the concrete curb or concrete curb and gutter grade as indicated by the offset guidelines.
- E. Concrete shall be fed to the slip form machine at a uniform rate. The slip form machine shall be operated under sufficient uniform restraint to forward motion to produce a well compacted mass of concrete free from surface pits larger than 3/16 inch in diameter and requiring no further finishing, other than light brushing with a wet brush. Finishing with a brush application of grout will not be permitted.
- F. Transverse weakened plane and expansion joints shall be constructed at right angles to the line of the concrete curb, concrete curb and gutter, or concrete valley gutter.
- G. Expansion joints may be constructed by sawing through the concrete curb or concrete curb and gutter section to its full depth. The width of the cut shall be such as to admit the joint filler with a snug fit.
- H. The operations of sawing and inserting the joint filler shall be completed before curing the concrete. At the conclusion of the curing period the filler in each joint shall be checked for tightness of fit. The loose filler in any joint shall be mortared in place and cured.
- I. Excavation shall be as per Subsection 2.02 above.
- J. All remaining provisions of Subsection 2.02 above also apply, unless otherwise specified.

#### **PART 4 - MEASUREMENT AND PAYMENT**

##### **4.01 MEASUREMENT:**

- A. Curb and gutter, curb, and valley gutter shall be measured by the linear foot.
  - 1. Curb shall be measured along the front face of the section at the finished grade elevation.



2. Combination curb and gutter will be measured along the face of the curb at the flowline of the gutter.
3. Valley gutter will be measured along the flowline of the gutter.
- B. A deduction in length shall be made for drainage structures, such as catch basins or inlets, in the curb, gutter, or combination thereof.
- C. There will be no direct measurement or payment of materials used to construct curb and gutter, curb or valley gutter.
- D. Excavation or construction of embankment for foundation of curb, valley curb and gutter will not be measured for payment.

**4.02 PAYMENT:**

- A. The accepted quantities of curb, valley gutter, and curb and gutter will be paid for at the contract unit bid price per linear foot for each kind and type specified complete in place.
- B. Foundation preparation by excavating or constructing embankment to the required subgrade elevation is considered incidental to the completion of the work and no direct payment will be made therefor.
- C. Compensation 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 03300 CAST-IN-PLACE CONCRETE**

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### **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. Applicable standards and codes include, but are not limited to, the following:
  - 1. ASTM A36 - Structural Steel.
  - 2. ASTM C33 - Concrete Aggregates.
  - 3. ASTM C39 - Concrete Strength of Molded Concrete Cylinders.
  - 4. ASTM C94 - Ready-Mixed Concrete.
  - 5. ASTM C143 - Slump of Portland Cement Concrete.
  - 6. ASTM C150 - Portland Cement Concrete.
  - 7. ASTM C309 - Liquid Membrane-Forming Compounds for Curing Concrete.
  - 8. ACI 301 - Specification for Structural Concrete for Building.
  - 9. ACI 304 - Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
  - 10. ACI 315 - Manual of Standard practice for Detailing.
  - 11. ACI 318 - Building Code Requirements for Reinforced Concrete.
  - 12. ACI 347 - Recommended Practice for Concrete Formwork.
- 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, waterstops, 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 State Department of Highways and Public Transportation, 1982 Standard Specifications.
- B. Type I or II cement may be used unless Type II is specified.
- C. Except when Type II is specified, Type III may be used when the anticipated air temperature for the 12 hours following the placement of the concrete is not anticipated to exceed 60°F.



- D. Type III may be used in all pre-cast, pre-stressed concrete, except in piling when Type II cement is required for use as substructure concrete.
- E. All cement used in a monolithic placement shall be of the same type.
- F. Cements 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. Water shall be 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 SO<sub>4</sub>.
- B. Water of known potable quality requires no testing. Other sources shall meet the requirements of AASHTO T-26.
- C. Water shall have a pH of not less than 4.5 or more than 8.5.

## **2.03 FINE AGGREGATE:**

- A. Natural sand, manufactured sand or a combination of the two, with or without mineral filler.
- B. The sand, or mixture of sand, comprising a single fine aggregate, shall consist of clean, hard, durable, uncoated 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>Percent Retained</u>
3/8 inch	0
No. 4	0 - 5
No. 8	0 - 20
No. 16	15 - 50
No. 30	35 - 75
No. 50	65 - 90
No. 100	90 - 100
No. 200	97 - 100

E. Fineness Modulus:

1. For Grade 1 only - 2.3 minimum, 3.1 maximum.

F. Mineral 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:
  - a. Passing No. 30 sieve 95 to 100%
  - b. 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 the crushing of stone. There shall be no adherent coatings, clay, loam, organic or deleterious substances, 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	1.00%
Shale, Slate or other similar material	1.00%
Clay lumps	0.25%
Soft fragments	3.00%
Other deleterious substances, including friable, thin, elongated or laminated pieces	3.00%



The sum of all deleterious substances                      5.00%  
exclusive of material removed by  
decantation

E. Coarse 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:

1. Grade No. 1 - Maximum Nominal Size 2 1/2-inches (63 mm)

<u>Sieve</u>	<u>Percentage Retained</u>
2 1/2-inches	0
2-inches	0 - 20
1 1/2-inches	15 - 50
3/4-inches	60 - 80
No. 4	95 - 100

2. Grade No. 2 - Maximum Nominal Size 1 1/2-inches (37.5 mm)

<u>Sieve</u>	<u>Percentage Retained</u>
2-inches	0
1 1/2-inches	0 - 5
3/4-inches	30 - 65
3/8-inches	70 - 90
No. 4	95 - 100

3. Grade No. 3 - Maximum Nominal Size 1-inch (25 mm)

<u>Sieve</u>	<u>Percentage Retained</u>
1 1/2-inches	0 - 5
3/4-inches	10 - 40
1/2-inches	40 - 75
No. 4	95 - 100

4. Grade No. 4 - Maximum Nominal Size 3/8-inch (9.5 mm)

<u>Sieve</u>	<u>Percentage Retained</u>
1/2-inches	0 - 5
3/8-inches	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 (1/6) of the least dimension between forms of that part of the structure in which concrete is to be placed.
2. Three-fourths (3/4) of the clear space between reinforcement.
3. The maximum size aggregate is defined as the clear space between the

sides of the smallest square openings through which 95 percent of the weight of the aggregate can be passed.

4. Unless otherwise noted or restricted by above, the 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 be well graded from coarse to fine when tested by standard laboratory methods and shall meet the following minimum requirements for percentages by weight:
  1. Retained on 1/4 in sieve 55 to 60%
- D. Pit-run aggregate shall not be used for high-strength concrete of 3000 psi and stronger.
- 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 03330.

## **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 Corporation - Code 2802 or equal.
- C. Plastic Film: White pigmented, 0.00085-inches (minimum) thick.
- D. Burlap: jute fabric, lean, free of impurities.
- E. Surface Hardener: gray crystal, acidic fluosilicate base, slightly hygroscopic chemical surface hardener, SIKa Hardener, SIKa Chemical Corporation, 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, centerbulb.
- B. Size to suit joinings, minimum 6-inches.

## **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 coarse 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. Coarse 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>Average Slump</u>	<u>Maximum Slump</u>
1. Cased Drilled Shafts and Thin-walled Sections (9-inches or less)	4	5
2. Slabs, Caps, Columns, Piers, wall sections over 9-inches. etc.	3	4
3. Slip Form Paving	1/2	2
4. Underwater or Seal Concrete	5	6
5. Rip-rap, Curb, Gutter and other Miscellaneous Surfaces	As Specified By Owner	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	Minimum Maximum SX Cement Per CY	Minimum Comp. Strength 28-day PSI	Minimum Beam Strength 7-day psi ****	Maximum Water Cement Item 2.1.1 (c)(4)	Coarse Aggregate Number
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	ASP	NA	5.5	3

ASP = As Specified on Plans.

\*Entrained Air.

\*\*No. 1 coarse aggregate may be used in foundations only (Except cased drilled shafts).

\*\*\*Prestressed Concrete.

\*\*\*\*ASTI C293 (Center Point).

## **2.15 GROUT:**

### **A. Non-Shrink:**

1. Use premixed non-shrink, Embeco Pre-Mixed 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.

## **PART 3 - EXECUTION**

### **3.01 SUBGRADE:**

- A. Insure subgrade is true to line and grade and compacted as specified.
- B. Fill and recompact any ruts or depressions.
- C. Check cross section with a template.
- D. Place moisture barrier or moisten subgrade prior to placing of concrete. Method to be approved by 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 reasonably tight joints. Adequately support and brace forms.
- D. Place anchors, inserts, bolts, sleeves and other devices 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. Remove formwork for columns, walls, beam sides and other parts not supporting the weight of the concrete as soon as the concrete has hardened sufficiently to resist damage from removal operations.
- C. Formwork for slabs, beam soffits and other parts supporting the weight of the concrete shall remain in place until the concrete has reached its specified 28-day strength.
- D. Protect concrete from damage prior to acceptance.
- E. Prohibit traffic until concrete is at least 10 days old.
- F. Cure areas previously covered by forms.

### **3.04 MIXING CONCRETE:**

- A. Maintain all equipment, tools, and machinery used for hauling materials and performing any part of the work to insure completion of the work underway without excessive delays for repairs or replacement.
- 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. Transit 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 hour after the cement has been placed in the mixer, with mixer turning; 30 minutes without 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 mixed to the required consistency before discharging.
  - 3. The mixers shall have adequate water supply and metering devices.
  - 4. Calibration of these mixers will be required.

### **3.05 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 subgrade 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:

Air or Concrete Temperature	Non-Agitated Concrete	Maximum Time
80°F or Above	26.6°C	15 minutes
35 to 79°F	1.6 to 26.1°C	30 minutes

Air or Concrete Temperature	Agitated Concrete	Maximum Time
90°F or Above	32.2°C	45 minutes
75 to 89°F	23.9 to 31.6°C	60 minutes
35 to 74°F	1.6 to 23.3°C	90 minutes

- F. Prevent segregation during placing.
- G. Consolidate flat work with one pass of mechanical vibrator moving parallel to centerline. Unusual section 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 before the waterproofing membrane becomes damaged or dirty.
- J. Concrete placement will not be permitted when impending weather conditions will impair the quality of the 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-spading, 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.

### **3.06 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 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.

### **3.07 JOINTS:**

- A. Type 'A' (Contraction) Joints:
  - 1. Extend entirely across flat slabs at locations shown.
  - 2. Where location is not shown, maximum spacing is:
    - a. Driveways: 10-feet.
    - b. Sidewalks: 4-feet.
    - c. Other flat slabs: 20 times slab thickness.
  - 3. Saw depth not less than 1/4 slab thickness.
- B. Type 'B' (Isolation) Joint:
  - 1. Install where shown on the plans.
  - 2. Where location is not shown, place between 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 1/2-inch width unless shown otherwise.



C. Filling Joints:

1. Fill no later than 14 days after sawing.
2. Fill immediately following cleaning.
3. Fill to 1/8-inch of surface.
4. Remove excess while material is still pliable.
5. Refill low areas where necessary.
6. Omit filling sidewalk joints.

**3.08 FINISHING EXTERIOR FLAT WORK:**

- A. Strike off and float as required.
- B. Check surface with ten foot straight edge, maximum variance allowed is 1/8-inch.
- 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.
- E. Use hand finishing only when approved by Engineer.

**3.09 FINISHING OTHER CONCRETE:**

- A. Interior floors: smooth, steel-troweled finish. Use edger on exposed edges. Grind smooth defects which would telegraph through applied finish flooring.
- B. Exterior walks and steps: lightly broomed finish transverse to traffic flow. Use edger on exposed edges.
- C. Other surfaces:
  1. Remove fins, projections and loose material.
  2. Clean surfaces of form oil.
  3. Patch honeycomb, aggregate pockets, voids and holes as follows:
    - a. Chip out until sound concrete is exposed to minimum depth of 1-inch .
    - b. Prepare patching mortar with approximately two parts of normal Portland Cement, one part white cement, nine parts fine aggregate; vary proportions of aggregate as necessary to match color of adjacent concrete.
  4. Fill holes left by form ties to within 1 inch of surface with non-shrink grout. Fill remainder with patching mortar specified hereinbefore.
  5. Apply grout-cleaned finish to all exposed vertical surfaces. Wet surface and rub grout on surfaces with rubber or cork float. Scrape off excess grout and finish with brick rubbing or as approved by Engineer.
- D. Coordinate required finish with Engineer.

### 3.10 CURING:

- A. Contractor shall inform the Engineer fully of the methods and procedures proposed for curing; shall provide proper equipment and in adequate amounts; and shall have approval of the proposed method, equipment and materials prior to placing concrete.
- B. All concrete shall be cured for a period of 4 days except as noted herein.
  - 1. Exceptions to 4-day Curing.
    - a. Upper surfaces of Bridge Roadways, Median and Sidewalk Slabs, and Top Slabs of Direct Traffic Culverts require 8 curing days.
    - b. A curing day is defined as a calendar day when the ambient temperature, taken in the shade away from artificial heat, is above 50° F (10°C) for at least 19 hours. If the ambient temperature is 50° F or less, a curing day is accepted only if satisfactory provisions are made to maintain the temperature at all surfaces of the concrete above 40° Fahrenheit (4.4°C) for the entire 24 hours.
- C. Form Curing:
  - 1. When forms are left in contact with the concrete, other curing methods shall not be required except for cold-weather protection.
- D. Water Curing:
  - 1. All exposed surfaces of the concrete shall be kept wet continuously for the required curing time. The water used for curing shall meet requirements for concrete mixing water.
    - a. Wet Mat:
      - (1) Cotton mats shall be used for this curing method. The mats shall not be placed in contact with the concrete until such time that damage shall not occur to the surfaces.
      - (2) Damp burlap blankets made from 9-ounce stock may be placed upon the damp concrete surface for temporary protection prior to the application of the cotton mats.
      - (3) The mats may be placed by and wetted down after placement.
      - (4) Mat curing, except for continuous placements, shall commence not later than three hours after finishing of the roadway slab.
      - (5) The mats shall be weighted down adequately to provide continuous contact with all concrete surfaces where possible.
      - (6) The surfaces of the concrete shall be kept wet for the required curing time.
      - (7) Surfaces which cannot be cured by contact shall be enclosed with mats, anchored positively to the forms, or to the ground, so that outside air cannot enter the enclosure. Sufficient moisture shall be provided inside the enclosure to keep all surfaces of the concrete wet.
    - b. Water spray:
      - (1) This method shall be accomplished by overlapping sprays or



sprinklers, so that all unformed surfaces are kept continuously wet.

c. Ponding:

- (1) This method requires the covering of the surface with a minimum of two inches (5 cm) of clean granular material, kept wet at all times; or water to a minimum depth of one inch (2.5 cm). Satisfactory provisions shall be made to provide a dam to retain the granular material or water.

E. Membrane Curing

1. Unless otherwise shown on the plans, Type 2 membrane curing compound may be used where permitted.
2. A membrane shall be applied in a single, uniform coating at the rate of coverage recommended by the manufacturer and as approved by the Engineer, but not less than nine gallons per 210 feet (.0038M<sup>3</sup> 63M) of area. Tests for acceptance shall be at this specified rate.
3. Membrane curing shall not be applied to dry surfaces; but shall be applied to horizontal surfaces just before free moisture has disappeared.
4. Formed surfaces and surfaces which have been given a first rub shall be dampened and shall be moist at the time of application of the membrane.

Structure Unit Description	REQUIRED		PERMITTED	
	Water for Complete Curing	Membrane for Interim Curing	Water for Complete Curing	Membrane for Interim Curing
Upper surfaces of bridge roadway; median <i>and</i> sidewalk slabs; top slabs of direct traffic culverts; top surface of any concrete unit upon which concrete is to be placed and bonded at a later interval (stub walls risers, etc.) Other super- structure concrete (curbs, wing-walls, parapet walls, etc.)	X	X		
Top surface of precast and/or prestressed piling	X	X		
All substructure con- crete culverts box sewers inlets man- holes retaining walls riprap	X	X		

Resin Basin



\*Polyethylene sheeting or burlap polyethylene mats fastened to prevent outside air from entering into the concrete shall be considered equivalent to water or membrane curing per this item.

5. When membrane is used for complete curing, the film shall remain unbroken for the minimum curing period specified. Membrane which is damaged shall be corrected immediately by reapplication of membrane.

### **3.11 TESTING:**

- A. Furnish at least five cylinders or beams from each 50 cubic yard, or portion thereof for test purposes unless otherwise directed by Engineer. Test two cylinder at 7 days, test two cylinders at 28 days and test final cylinder only if needed for confirmation of compression strength.

### **3.12 MISCELLANEOUS CONCRETE ITEMS:**

- A. Filling-in: fill in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after work of other trades is in place. Use non-shrink grout as herein specified, to blend with in-place construction. Provide other miscellaneous concrete filling shown or required to complete work.
- B. Equipment bases and foundations: provide machine and equipment bases and foundations, as shown on drawings. Set anchor bolts for machines and equipment to template at correct elevations, complying with certified diagrams or templates of the manufacturer furnishing machines and equipment. Use non-shrink grout as shown on plans.
- C. Steel pan stairs: provide concrete fill for steel pan stair treads and landings and associated items. Cast-in safety inserts and accessories as shown on drawings. Screen, tamp and finish concrete surfaces as scheduled.
- D. Reinforced masonry: provide concrete grout for reinforced masonry lintels and bond beams where indicated on drawings and as scheduled. Maintain accurate location of reinforcing steel during concrete placement.

## **PART 4 - MEASUREMENT AND PAYMENT**

### **4.01 MEASUREMENT:**

- A. Cast-in-place concrete for the work shown on the plans shall be measured by the cubic yard as specified in the pans and contract.

### **4.02 PAYMENT:**

- A. The accepted quantities of cast-in-place concrete shall be paid for at the unit bid price per cubic yard.
- B. The unit bid price shall be full compensation for furnishing, hauling, and mixing all concrete materials, including trial batches; placing curing and finishing all

concrete; for all grouting and joints; furnishing and placing all expansion and construction joints, except as provided in the plans; furnishing and placing metal flashing strips and waterstops; and for all forms and false-work, labor tools, equipment and incidentals necessary to complete the work.

- C. The preceding provisions for payment shall not be interpreted to provide payment of concrete in railing, piling, precast, prestressed concrete units or other concrete items of which provision is otherwise made in the contract.

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



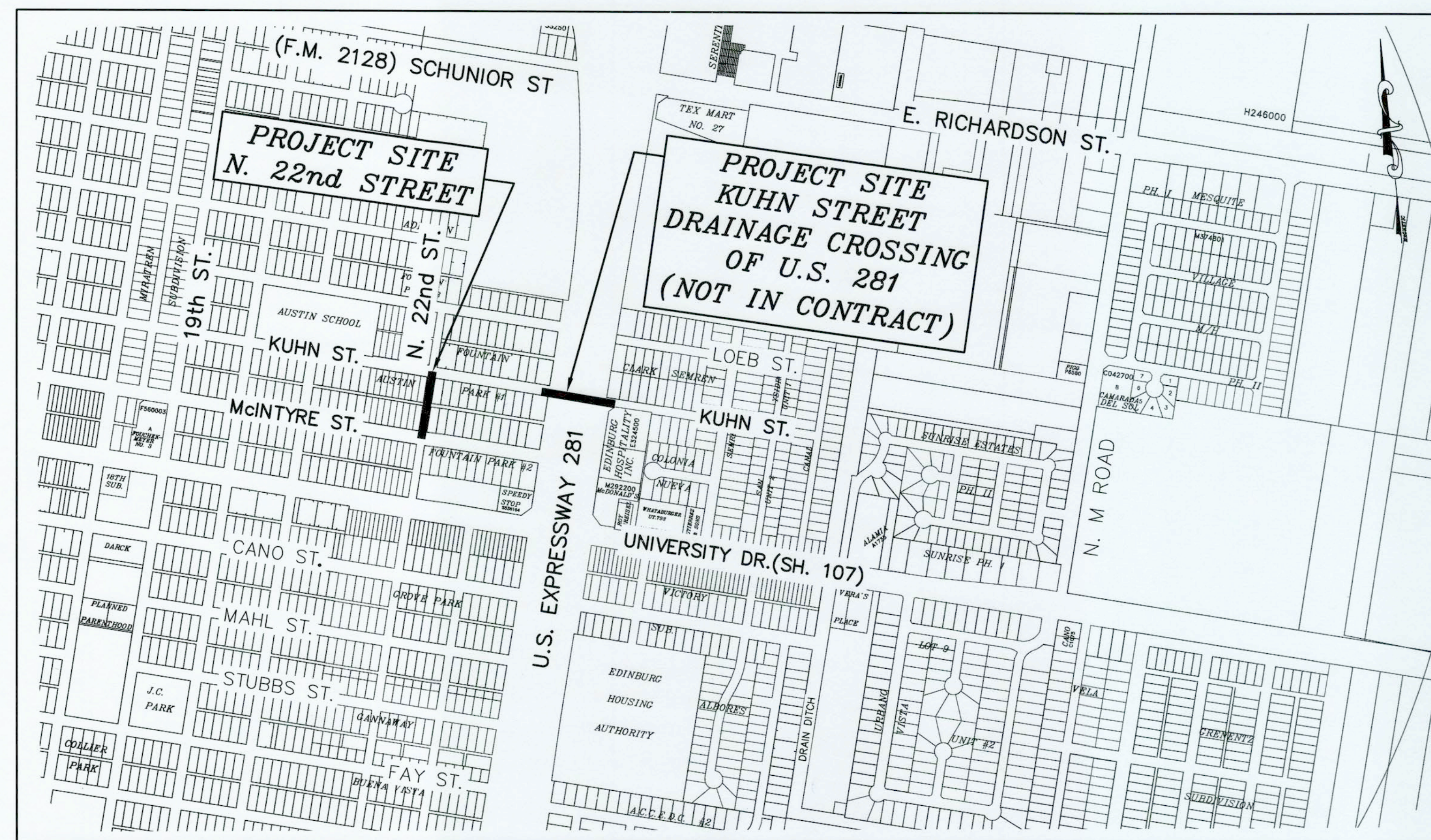
# CITY OF EDINBURG

## 2018 STORM DRAINAGE IMPROVEMENTS

### NORTH EAST ORIGINAL TOWNSITE

#### KUHN STREET AND 22nd STREET

#### INDEX OF SHEETS



LOCATION MAP  
SCALE: 1"=500'

SHEET#	DESCRIPTION
1	EXISTING UTILITY AND TOPOGRAPHIC LAYOUT
2	KUHN STREET/U.S. EXPRESSWAY 281 CROSSING (NOT IN CONTRACT)
3	22nd STREET (KUHN STREET TO MCINTYRE STREET)
4	TEMPORARY EROSION CONTROL LOGS
5	TEMPORARY EROSION SEDIMENT AND WATER POLLUTION CONTROL MEASURES
6	STANDARD STORM DRAINAGE DETAIL

#### CITY OFFICIALS

RICHARD MOLINA .....MAYOR  
 DAVID TORRES .....MAYOR PRO-TEM  
 GILBERT ENRIQUEZ .....CONCILMEMBER  
 HOMER JASSO JR. ....CONCILMEMBER  
 JORGE SALINAS .....CONCILMEMBER  
 JUAN GUERRA.....CITY MANAGER

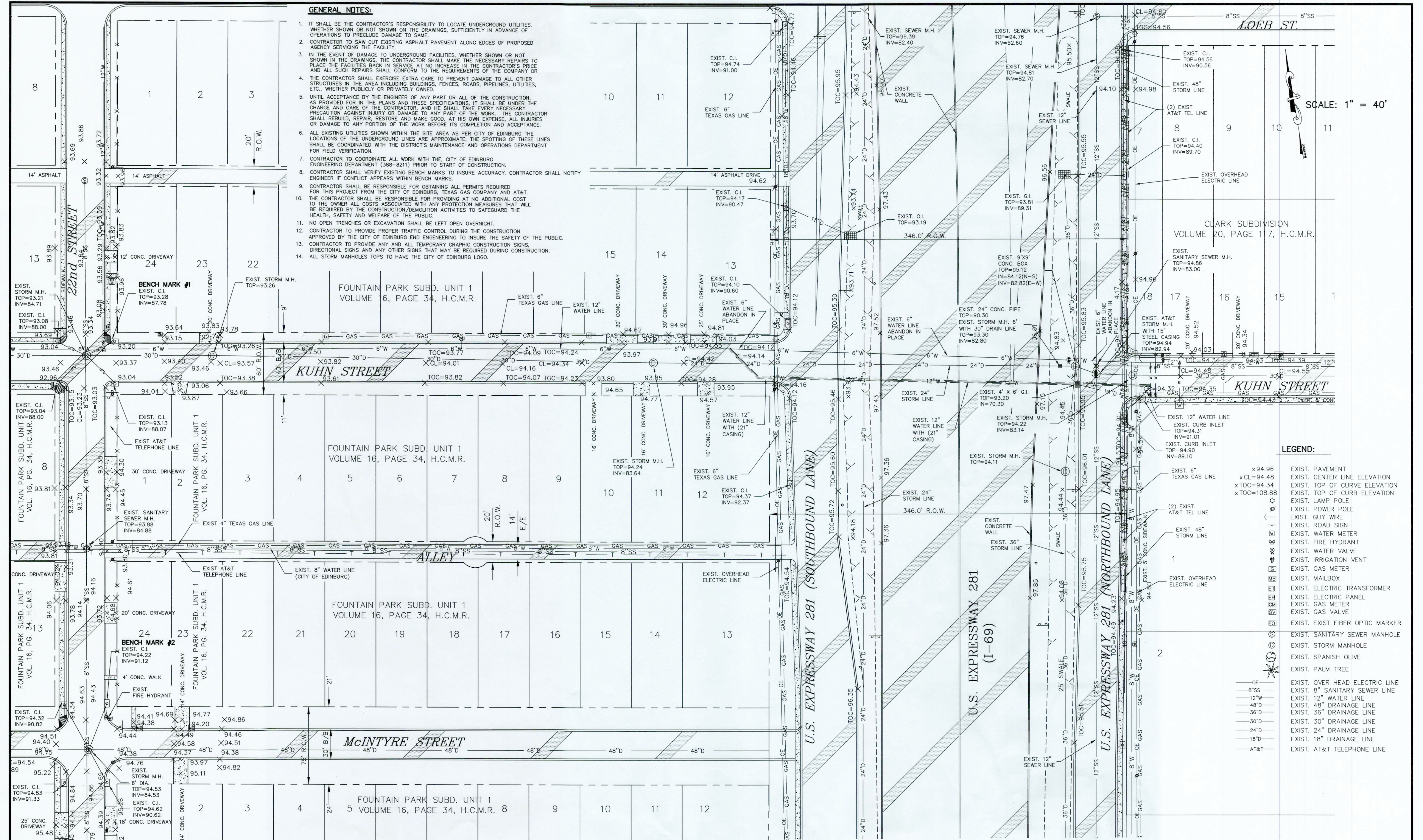


JAVIER HINOJOSA ENGINEERING  
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 javhin@rgv.rr.com  
 TBPE FIRM No. 1295

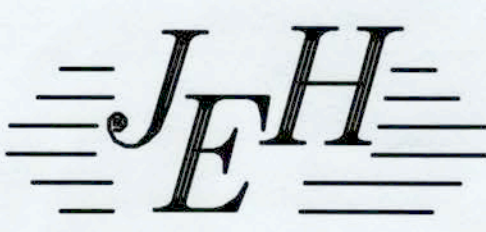


OCTOBER, 2018





REVISIONS		180406
	PROJECT No.	OCTOBER, 2018
	DATE	L.H.
	DRAWN BY	JH
	CHK. BY	



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PHONE (956) 668-1588  
javhino@rgv.tx.com  
TBP# FIRM No. F-1295

EXISTING UTILITY AND TOPOGRAPHIC LAYOUT  
KUHN STREET/22nd STREET/U.S. EXPRESSWAY 281 CROSSING  
DRAINAGE IMPROVEMENTS  
EDINBURG, TEXAS



SHEET  
**1**  
OF 6 SHEETS  
180406

- GENERAL NOTES:**
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UNDERGROUND UTILITIES, WHETHER SHOWN OR NOT SHOWN ON THE DRAWINGS, SUFFICIENTLY IN ADVANCE OF OPERATIONS TO PRECLUDE DAMAGE TO SAME.
  - CONTRACTOR TO SAW CUT EXISTING ASPHALT PAVEMENT ALONG EDGES OF PROPOSED AGENCY SERVING THE FACILITY.
  - IN THE EVENT OF DAMAGE TO UNDERGROUND FACILITIES, WHETHER SHOWN OR NOT SHOWN IN THE DRAWINGS, THE CONTRACTOR SHALL MAKE THE NECESSARY REPAIRS TO PLACE THE FACILITIES BACK IN SERVICE AT NO INCREASE IN THE CONTRACTOR'S PRICE AND ALL SUCH REPAIRS SHALL CONFORM TO THE REQUIREMENTS OF THE COMPANY OR AGENCY SERVING THE FACILITY.
  - THE CONTRACTOR SHALL EXERCISE EXTRA CARE TO PREVENT DAMAGE TO ALL OTHER STRUCTURES IN THE AREA INCLUDING BUILDINGS, FENCES, ROADS, PIPELINES, UTILITIES, ETC., WHETHER PUBLICLY OR PRIVATELY OWNED.
  - UNTIL ACCEPTANCE BY THE ENGINEER OF ANY PART OR ALL OF THE CONSTRUCTION, AS PROVIDED FOR IN THE PLANS AND THESE SPECIFICATIONS, IT SHALL BE UNDER THE CHARGE AND CARE OF THE CONTRACTOR, AND HE SHALL TAKE EVERY NECESSARY PRECAUTION AGAINST INJURY OR DAMAGE TO ANY PART OF THE WORK. THE CONTRACTOR SHALL REBUILD, REPAIR, RESTORE AND MAKE GOOD, AT HIS OWN EXPENSE, ALL INJURIES OR DAMAGE TO ANY PORTION OF THE WORK BEFORE ITS COMPLETION AND ACCEPTANCE.
  - ALL EXISTING UTILITIES SHOWN WITHIN THE SITE AREA AS PER CITY OF EDINBURG LOCATIONS OF THE UNDERGROUND LINES ARE APPROXIMATE. THE SPOTTING OF THESE LINES SHALL BE COORDINATED WITH THE DISTRICT'S MAINTENANCE AND OPERATIONS DEPARTMENT FOR FIELD VERIFICATION.
  - CONTRACTOR TO COORDINATE ALL WORK WITH THE CITY OF EDINBURG ENGINEERING DEPARTMENT (388-8211) PRIOR TO START OF CONSTRUCTION.
  - CONTRACTOR SHALL VERIFY EXISTING BENCH MARKS TO INSURE ACCURACY. CONTRACTOR SHALL NOTIFY ENGINEER IF CONFLICT APPEARS WITHIN BENCH MARKS.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR THIS PROJECT FROM THE CITY OF EDINBURG, TEXAS GAS COMPANY AND AT&T.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AT NO ADDITIONAL COST TO THE OWNER ALL COSTS ASSOCIATED WITH ANY PROTECTION MEASURES THAT WILL BE REQUIRED BY THE CONSTRUCTION/DEMOLITION ACTIVITIES TO SAFEGUARD THE HEALTH, SAFETY AND WELFARE OF THE PUBLIC.
  - NO OPEN TRENCHES OR EXCAVATION SHALL BE LEFT OPEN OVERNIGHT.
  - CONTRACTOR TO PROVIDE PROPER TRAFFIC CONTROL DURING THE CONSTRUCTION APPROVED BY THE CITY OF EDINBURG END ENGINEERING TO INSURE THE SAFETY OF THE PUBLIC.
  - CONTRACTOR TO PROVIDE ANY AND ALL TEMPORARY GRAPHIC CONSTRUCTION SIGNS, DIRECTIONAL SIGNS AND ANY OTHER SIGNS THAT MAY BE REQUIRED DURING CONSTRUCTION.
  - ALL STORM MANHOLES TOPS TO HAVE THE CITY OF EDINBURG LOGO.

SCALE: 1" = 40'

- LEGEND:**
- x 94.96 EXIST. PAVEMENT
  - x CL=94.48 EXIST. CENTER LINE ELEVATION
  - x TOC=94.34 EXIST. TOP OF CURVE ELEVATION
  - x TOC=108.88 EXIST. TOP OF CURB ELEVATION
  - EXIST. LAMP POLE
  - EXIST. POWER POLE
  - EXIST. GUY WIRE
  - EXIST. ROAD SIGN
  - EXIST. WATER METER
  - EXIST. FIRE HYDRANT
  - EXIST. IRRIGATION VENT
  - EXIST. GAS METER
  - EXIST. MAILBOX
  - EXIST. ELECTRIC TRANSFORMER
  - EXIST. ELECTRIC PANEL
  - EXIST. GAS METER
  - EXIST. GAS VALVE
  - EXIST. EXIST FIBER OPTIC MARKER
  - EXIST. SANITARY SEWER MANHOLE
  - EXIST. STORM MANHOLE
  - EXIST. SPANISH OLIVE
  - EXIST. PALM TREE
  - OE EXIST. OVER HEAD ELECTRIC LINE
  - 8"SS EXIST. 8" SANITARY SEWER LINE
  - 12"W EXIST. 12" WATER LINE
  - 48"D EXIST. 48" DRAINAGE LINE
  - 36"D EXIST. 36" DRAINAGE LINE
  - 30"D EXIST. 30" DRAINAGE LINE
  - 24"D EXIST. 24" DRAINAGE LINE
  - 18"D EXIST. 18" DRAINAGE LINE
  - AT&T EXIST. AT&T TELEPHONE LINE



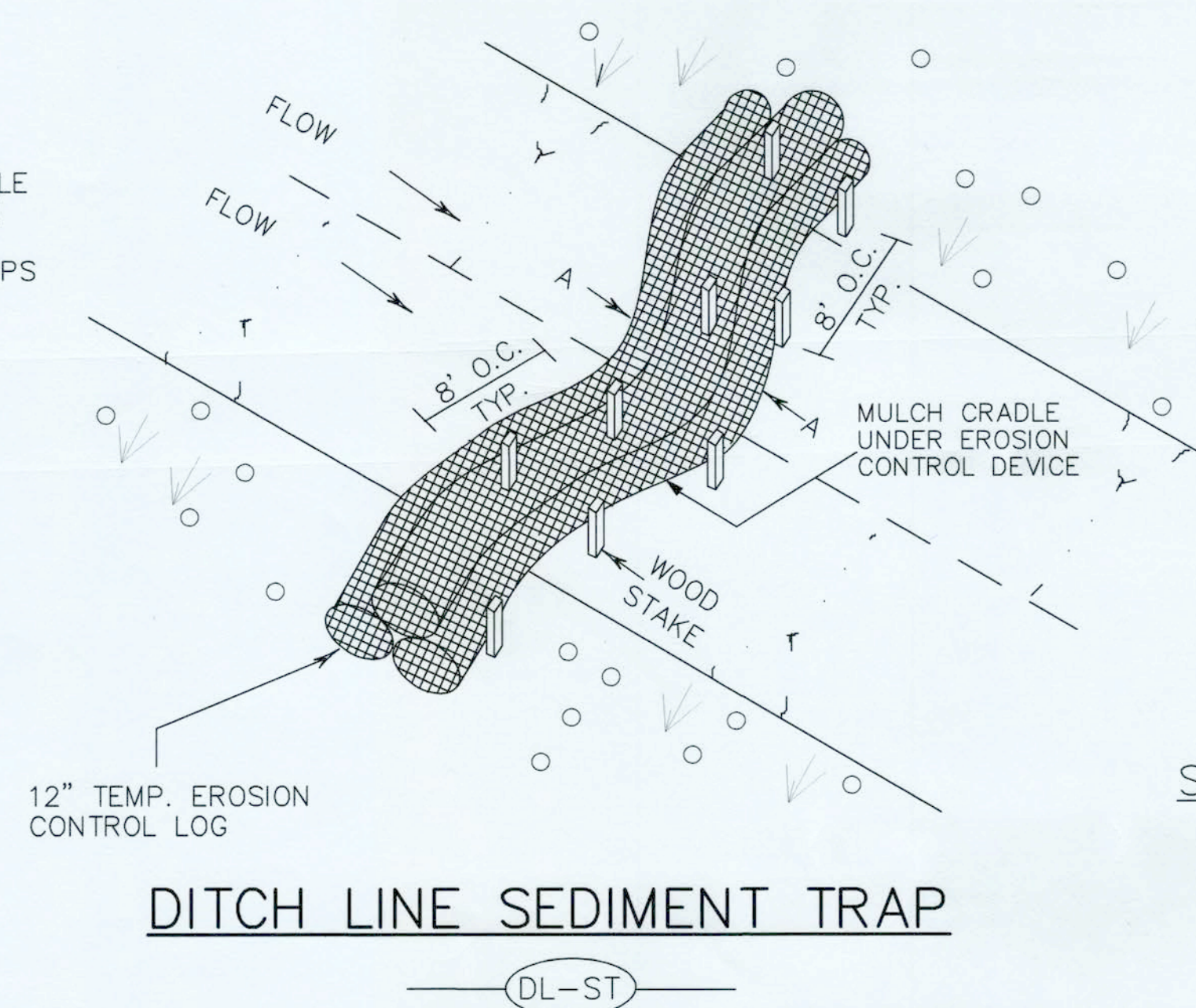
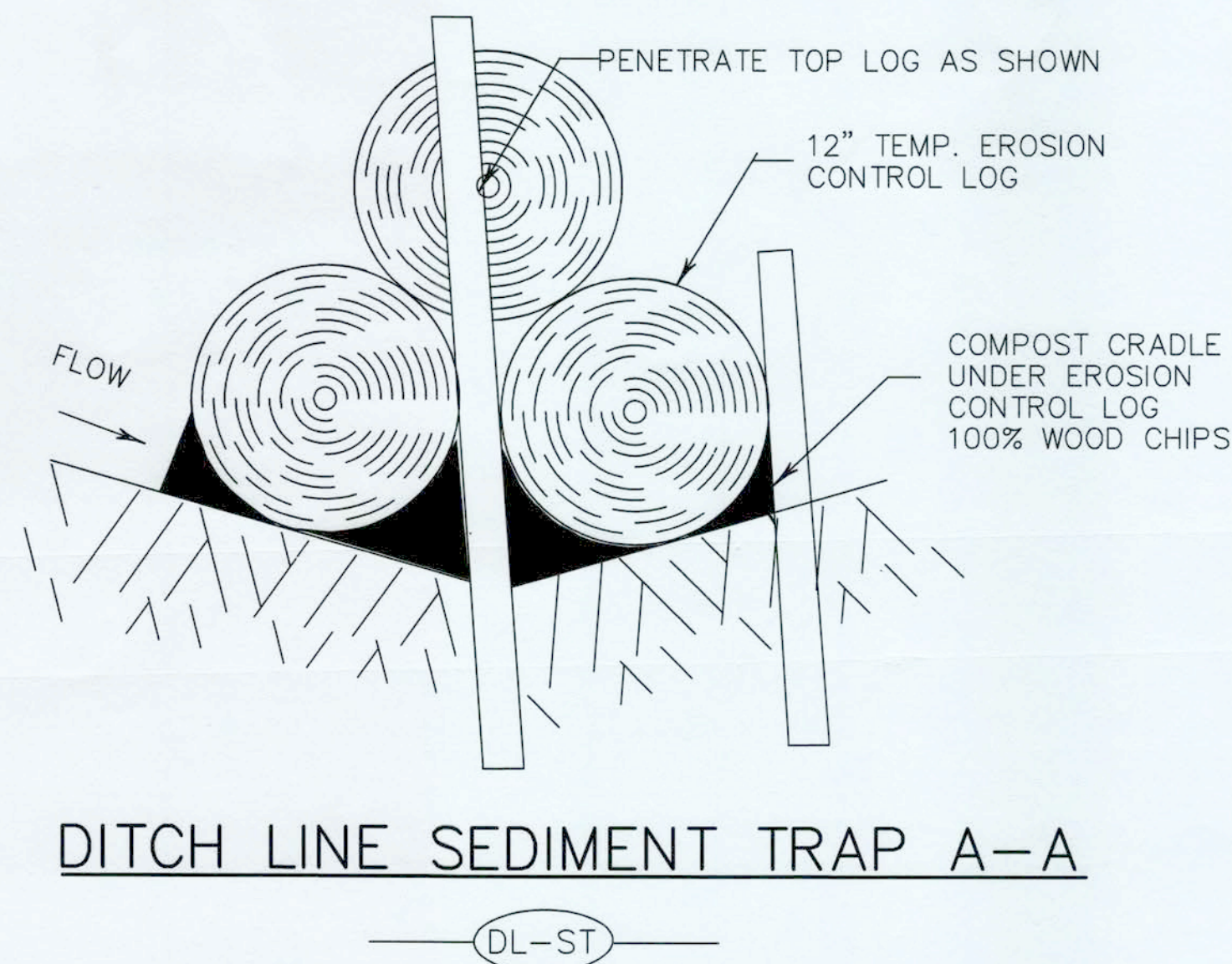
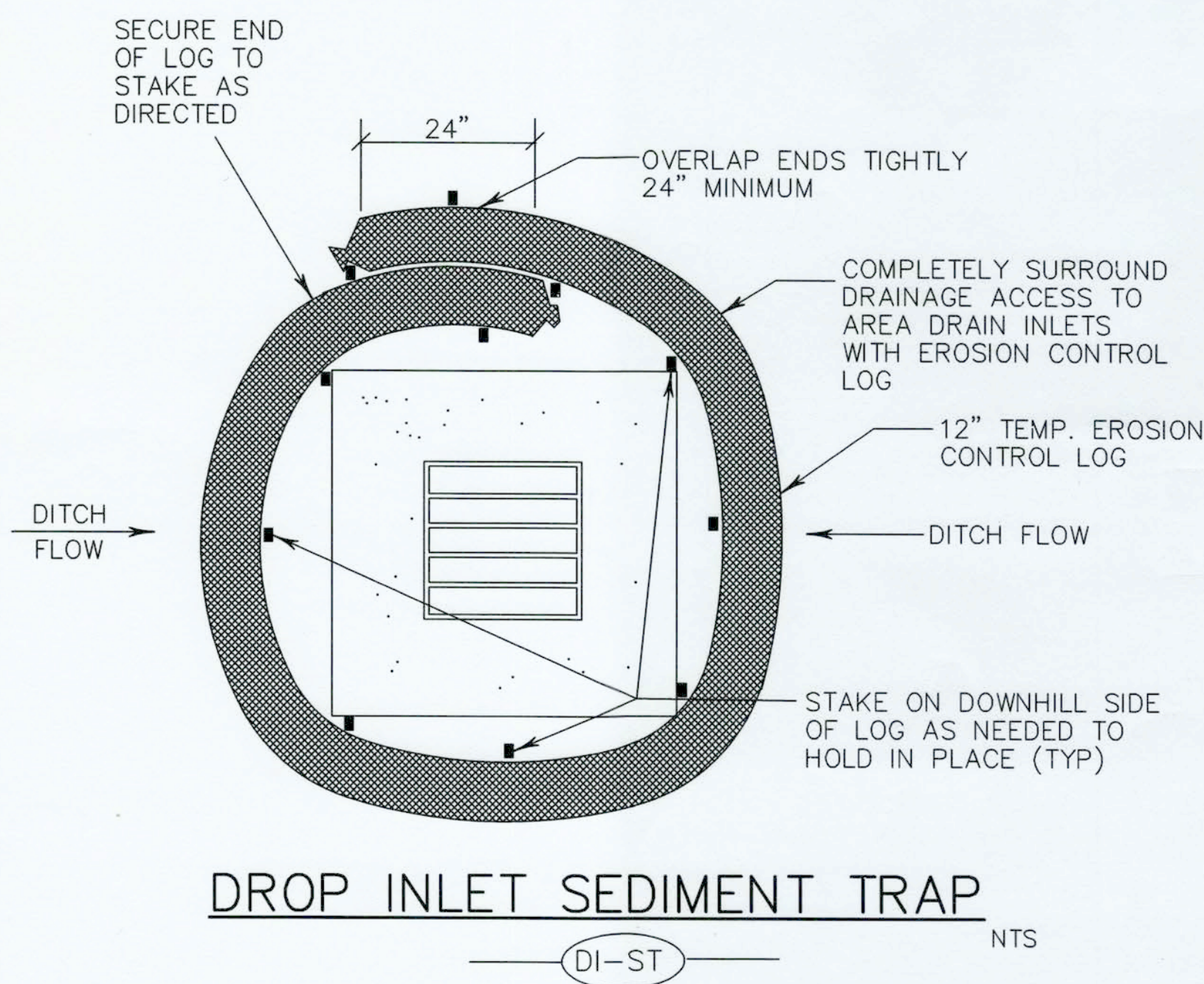








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#### PLANS SHEET LEGEND

- DI-ST DROP INLET SEDIMENT TRAP
- DL-ST DITCH LINE SEDIMENT TRAP
- BOCI-ST BACK OF CURB INLET SEDIMENT TRAP
- ROW-ST RIGHT OF WAY SEDIMENT TRAP
- CI-ST CURB INLET SEDIMENT TRAP

#### SEDIMENT BASIN & TRAP USAGE GUIDELINES

A sediment trap may be used to precipitate sediment out of runoff draining from an unstabilized area.

Traps: the drainage area for a sediment trap should not exceed 5 acres. The trap capacity should be 1800 CF/Acre (0.5" over the drainage area).

Sediment traps should be placed in the following locations:

1. Immediately preceding drain inlets
2. Just before the drainage enters a water course
3. Just before the drainage leaves the right of way
4. Just before the drainage leaves the construction limits where drainage flows away from the project

The trap should be cleaned when the capacity has been reduced by 1/2 or the sediment has accumulated to a depth of 1', whichever is less. Cleaning and removal of accumulated sediment deposits is incidental and will not be paid for separately.

#### GENERAL NOTES

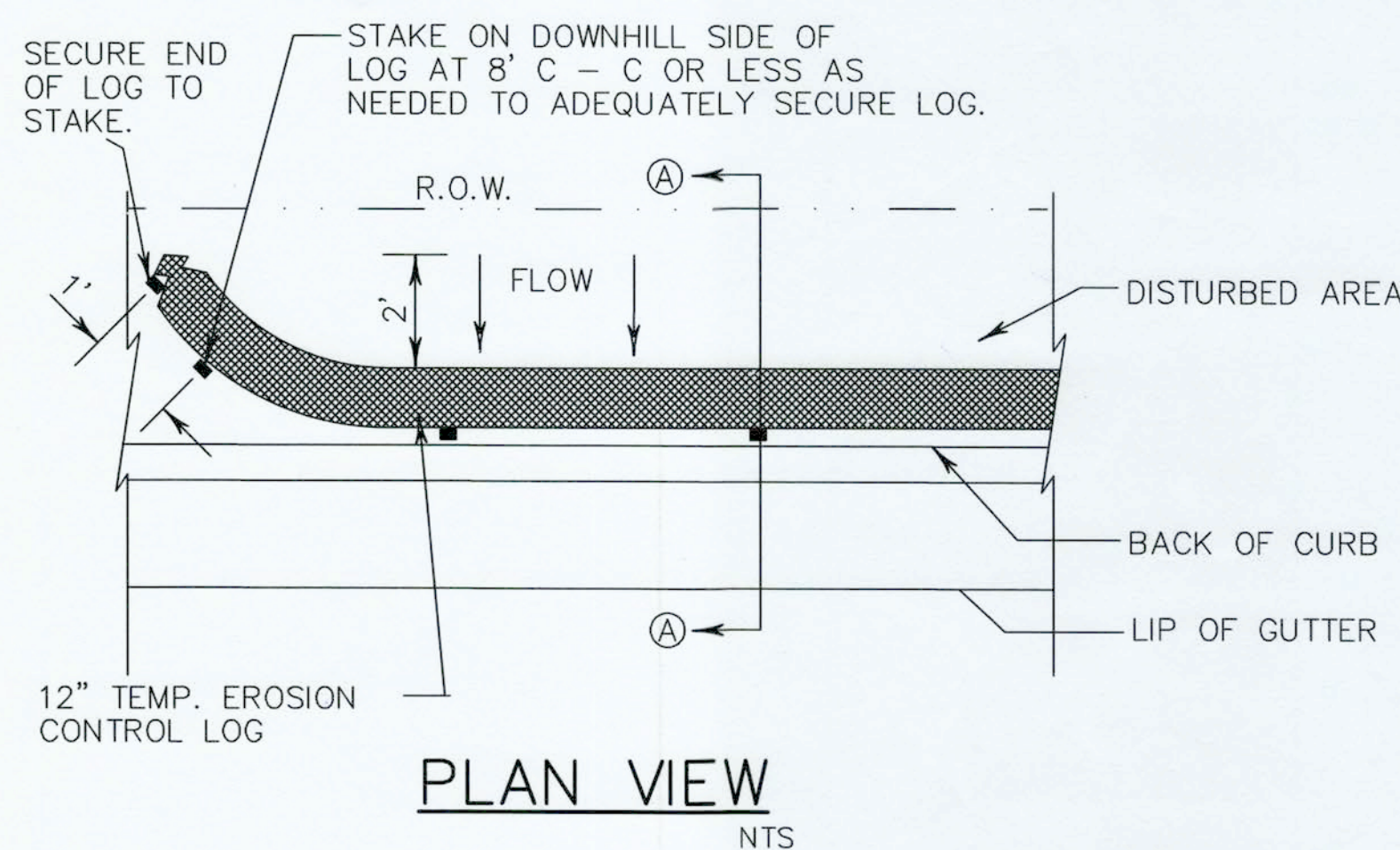
1. LENGTHS OF EROSION CONTROL LOGS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS REQUIRED FOR THE PURPOSE INTENDED. MAXIMUM LENGTH OF LOGS SHALL BE 30' FOR 12" DIAMETER LOGS.
2. UNLESS OTHERWISE DIRECTED, USE BIODEGRADABLE OR PHOTODEGRADABLE CONTAINMENT MESH ONLY WHERE LOG WILL REMAIN IN PLACE AS PART OF A VEGETATIVE SYSTEM. FOR TEMPORARY INSTALLATIONS, USE RECYCLABLE CONTAINMENT MESH.
3. STUFF LOGS WITH SUFFICIENT FILTER MATERIAL TO ACHIEVE DENSITY THAT WILL HOLD SHAPE WITHOUT EXCESSIVE DEFORMATION.
4. STAKES SHALL BE 2" X 2" WOOD 4' LONG, EMBEDDED SUCH THAT 2" PROTRUDES ABOVE LOG.
5. COMPOST CRADLE MATERIAL IS INCIDENTAL AND WILL NOT BE PAID FOR SEPARATELY.

PHARR DISTRICT STANDARD

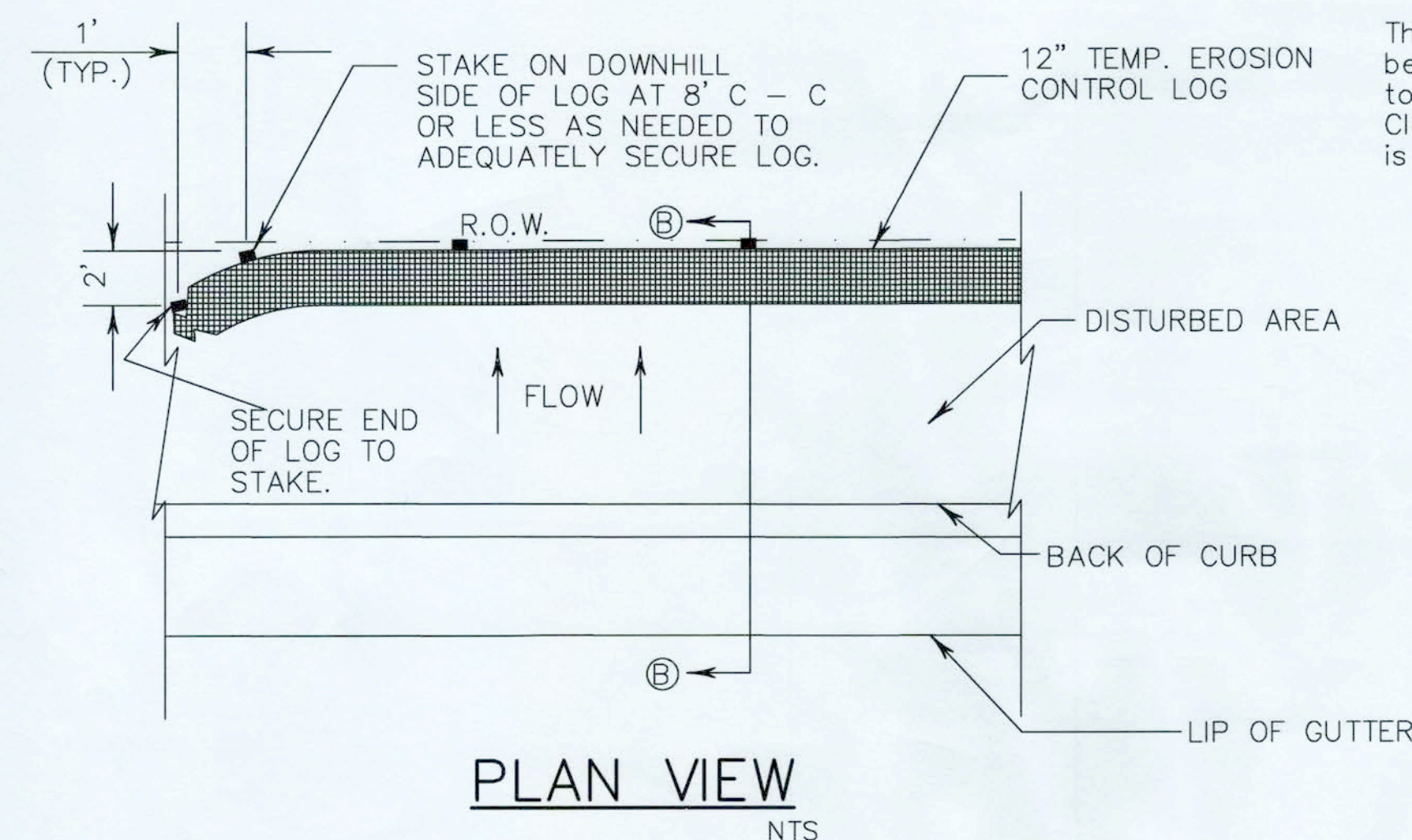
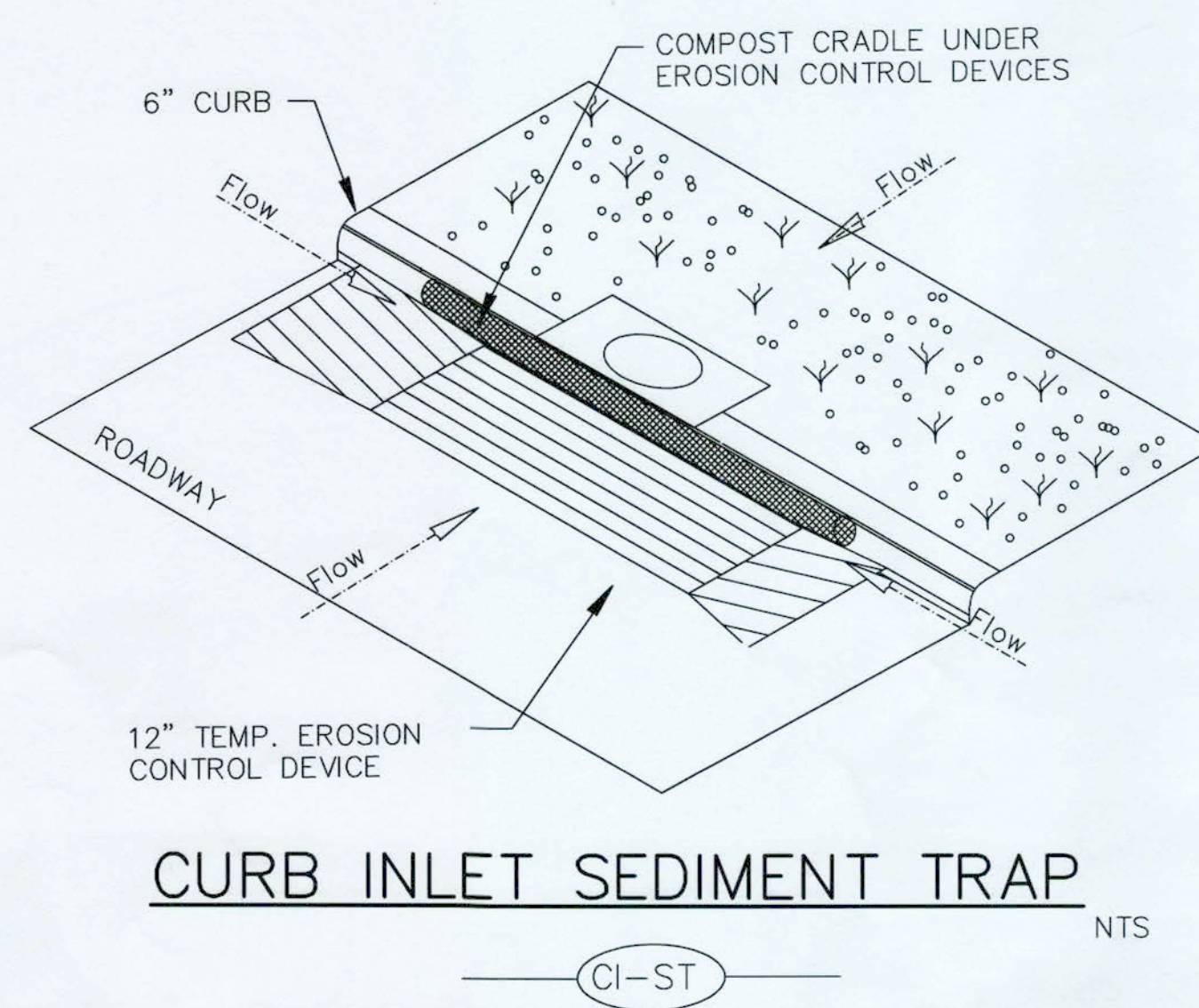
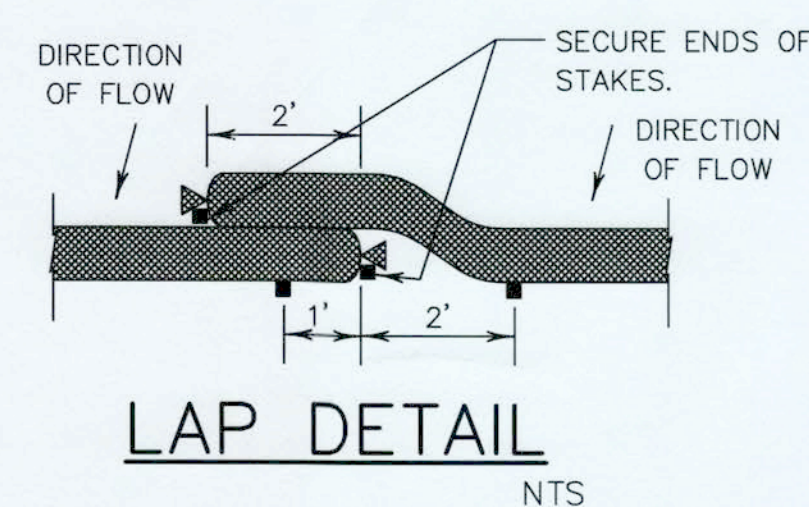


#### TEMPORARY EROSION CONTROL LOGS TECL-06 (PHR)

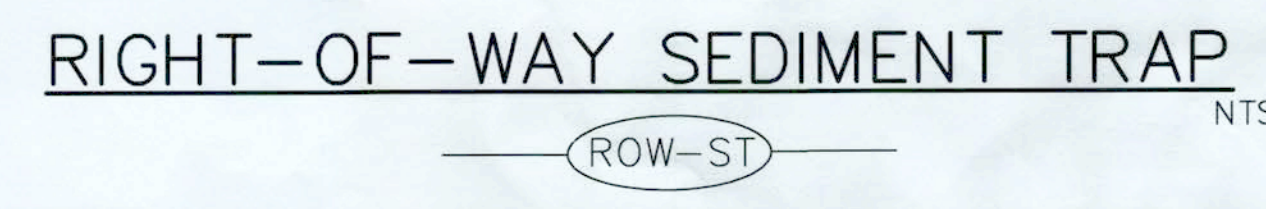
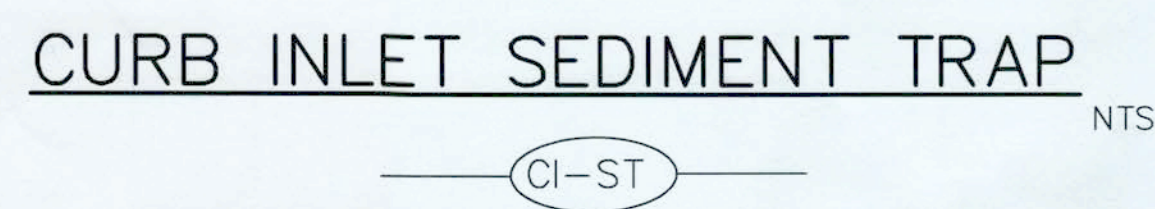
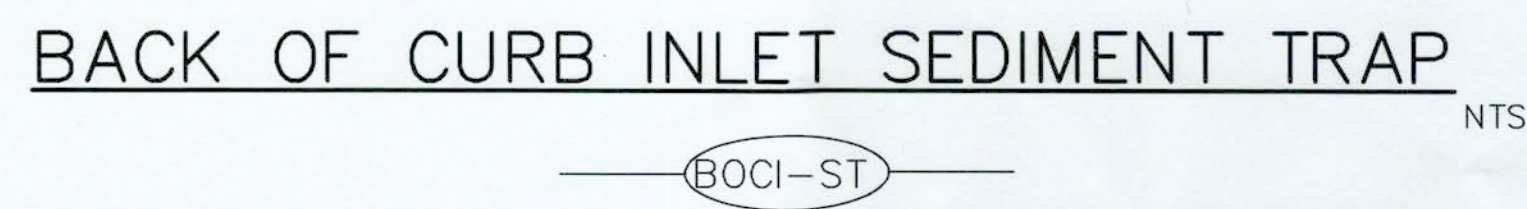
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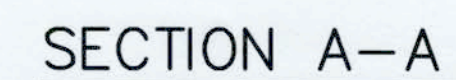
#### COMPOST CRADLE



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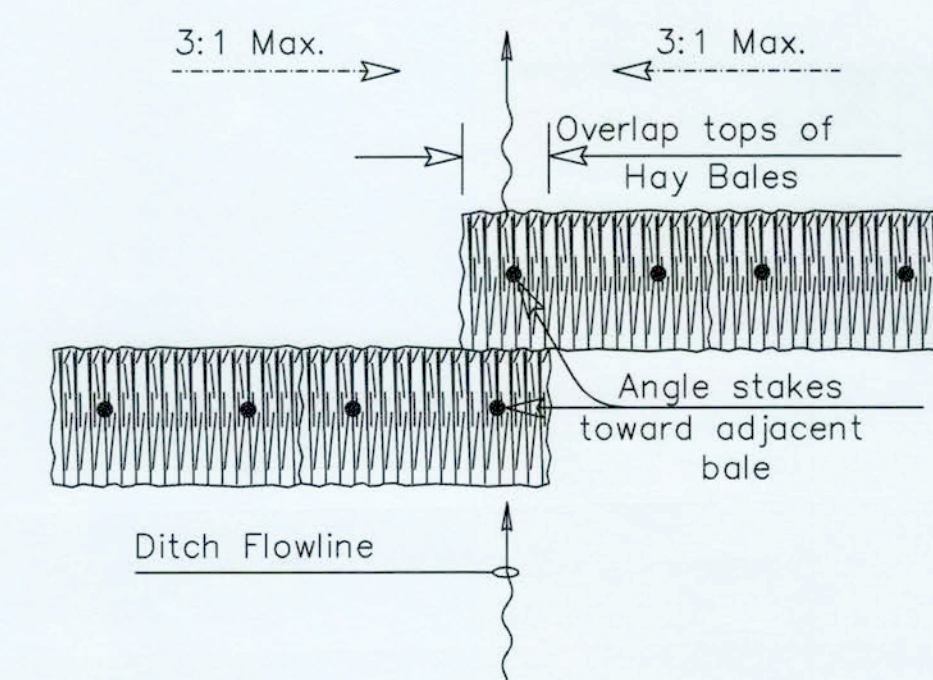
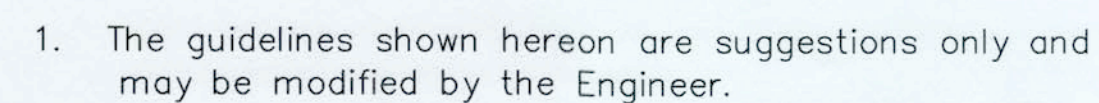




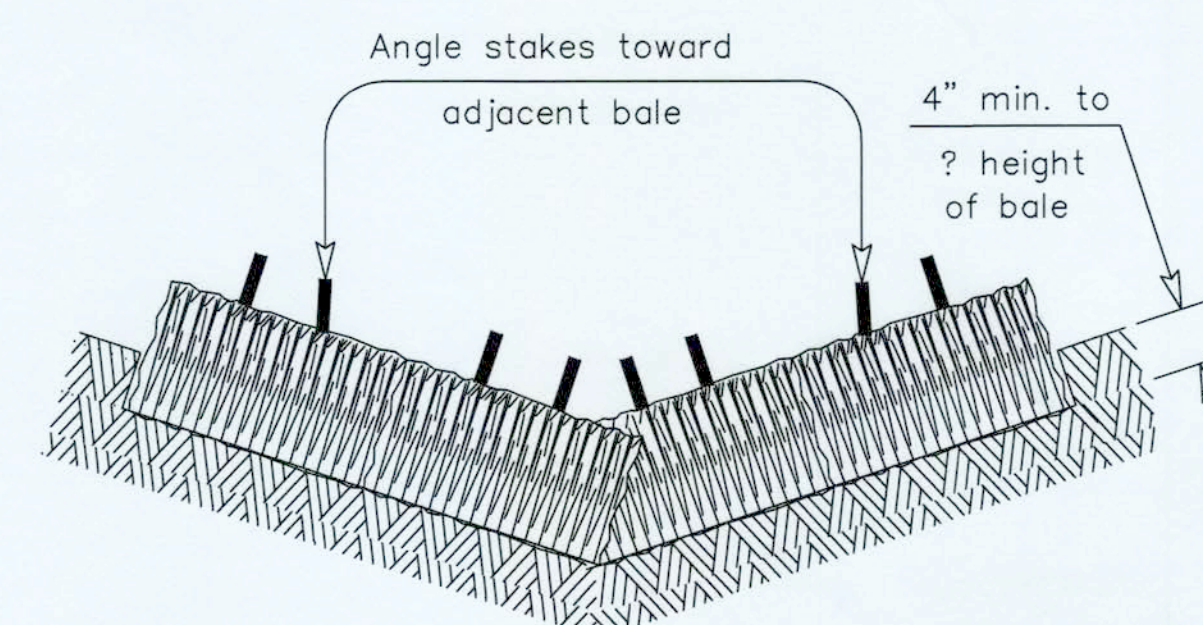
A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

Sediment control fence should be sized to filter a max. flow through rate of 100 GPM/FT . Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

Sediment Control Fence

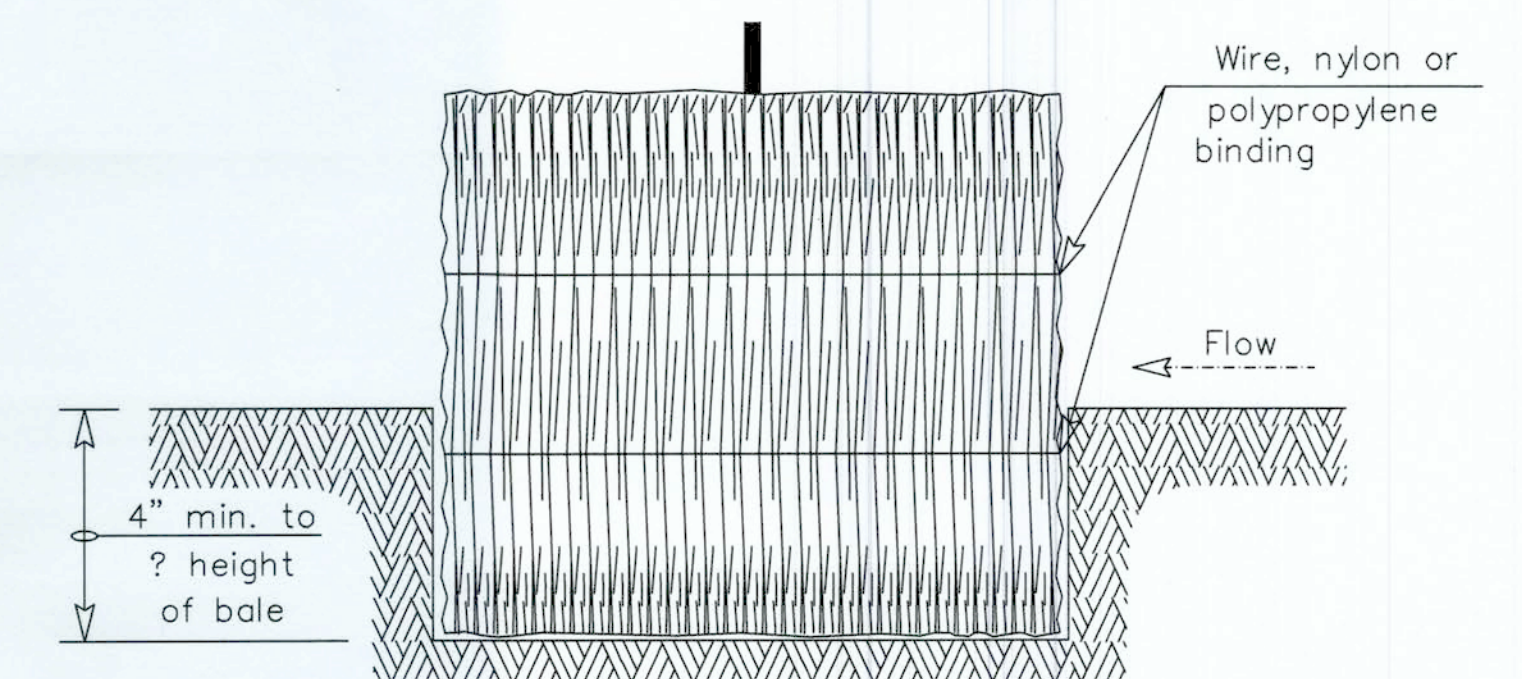


PLAN VIEW

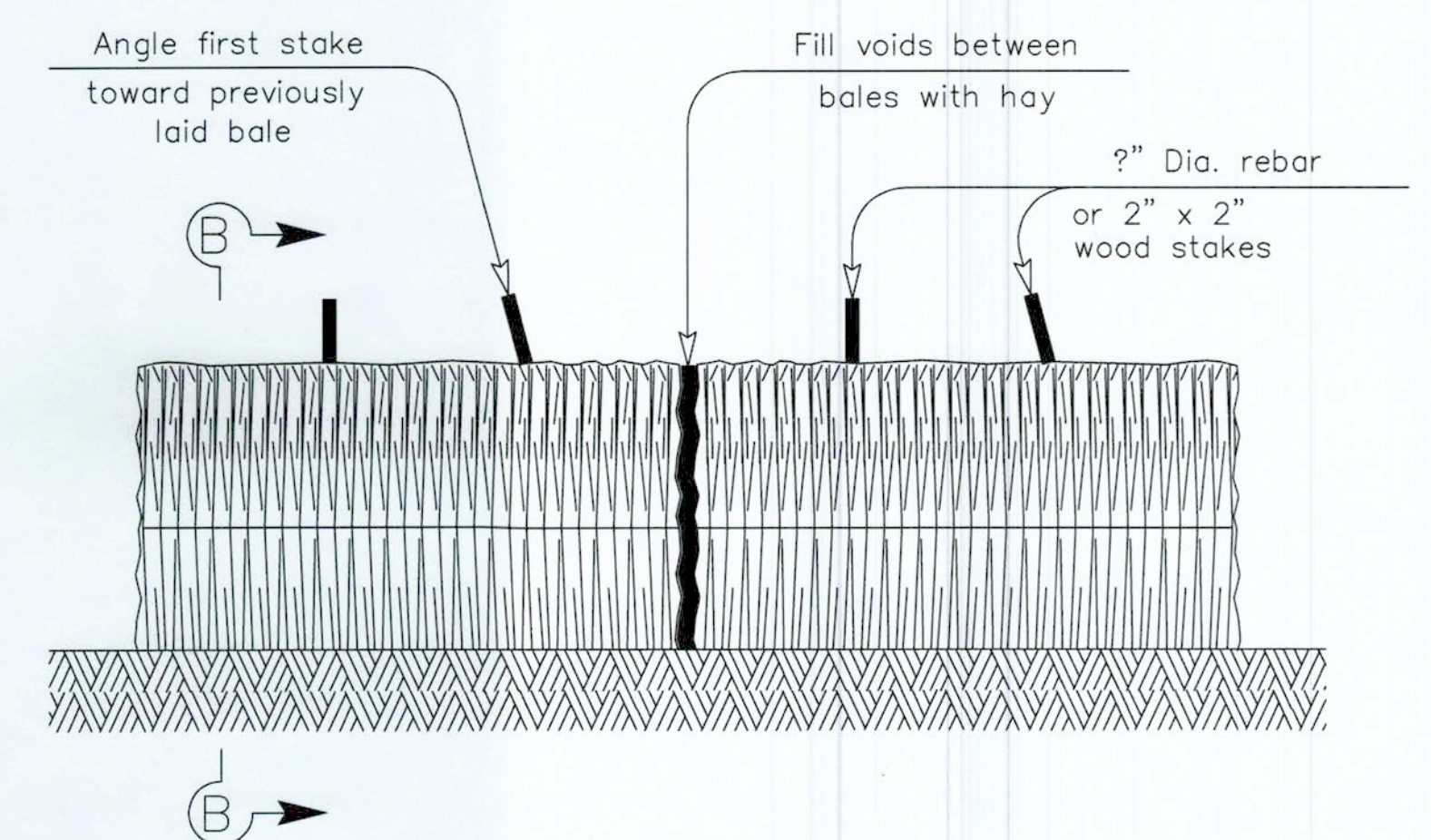


### PROFILE VIEW

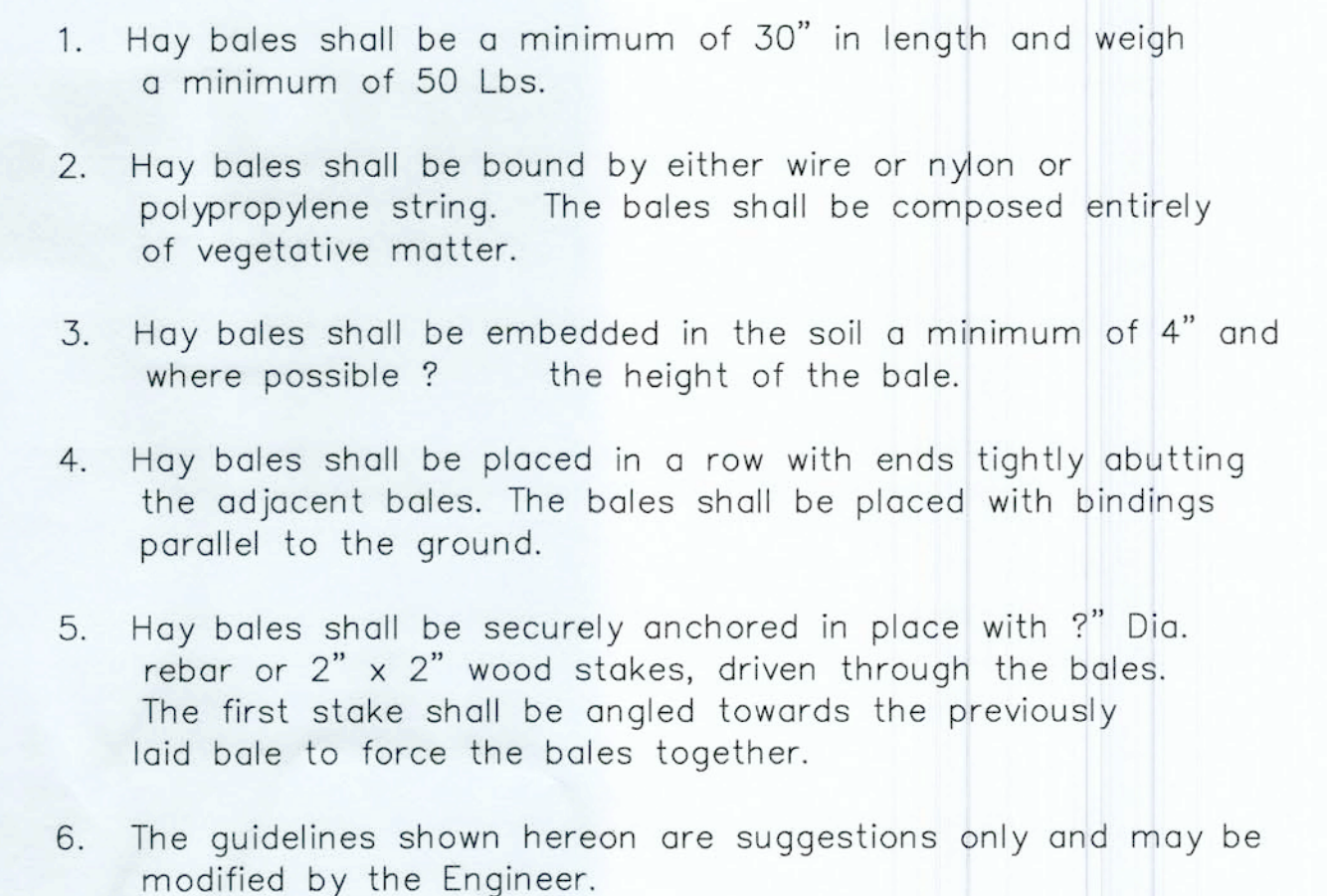
### PLANS SHEET LEGEND



SECTION B-B



## BALED HAY FOR EROSION CONTROL



A Baled Hay installation may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A two year storm frequency may be used to calculate the flow rate to be filtered. The installation should be sized to filter a maximum flow thru rate of 5 GPM/FT<sup>2</sup> of cross sectional area. Baled hay may be used at the following locations:

1. Where the runoff approaching the baled hay flows over disturbed soil for less than 100'. If the slope of the disturbed soil exceeds 10%, the length of slope upstream the baled hay should be less than 50'.
2. Where the installation will be required for less than 3 months.
3. Where the contributing drainage area is less than 5 acre.

For Baled Hay installations in small ditches, the additional following considerations apply:

1. The ditch sideslopes should be graded as flat as possible to maximize the drainage flowrate thru the hay.
2. The ditch should be graded large enough to contain the overtopping drainage when sediment has filled to the top of the baled hay.

Bales should be replaced usually every 2 months or more often during wet weather when loss of structural integrity is accelerated.

 Texas Department of Transportation  
Design Division (Roadway)

## TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

FENCED &amp; BALED HAY

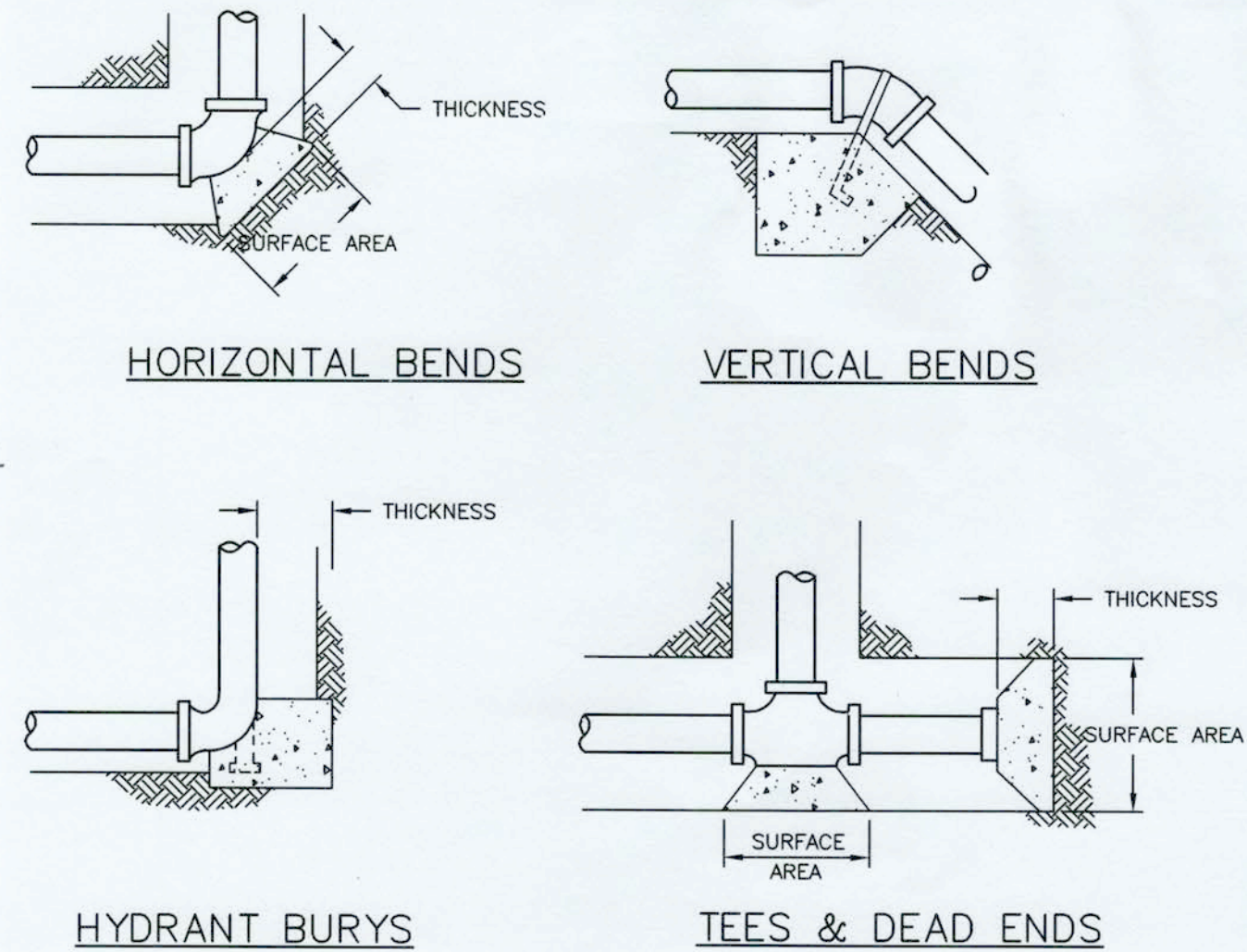
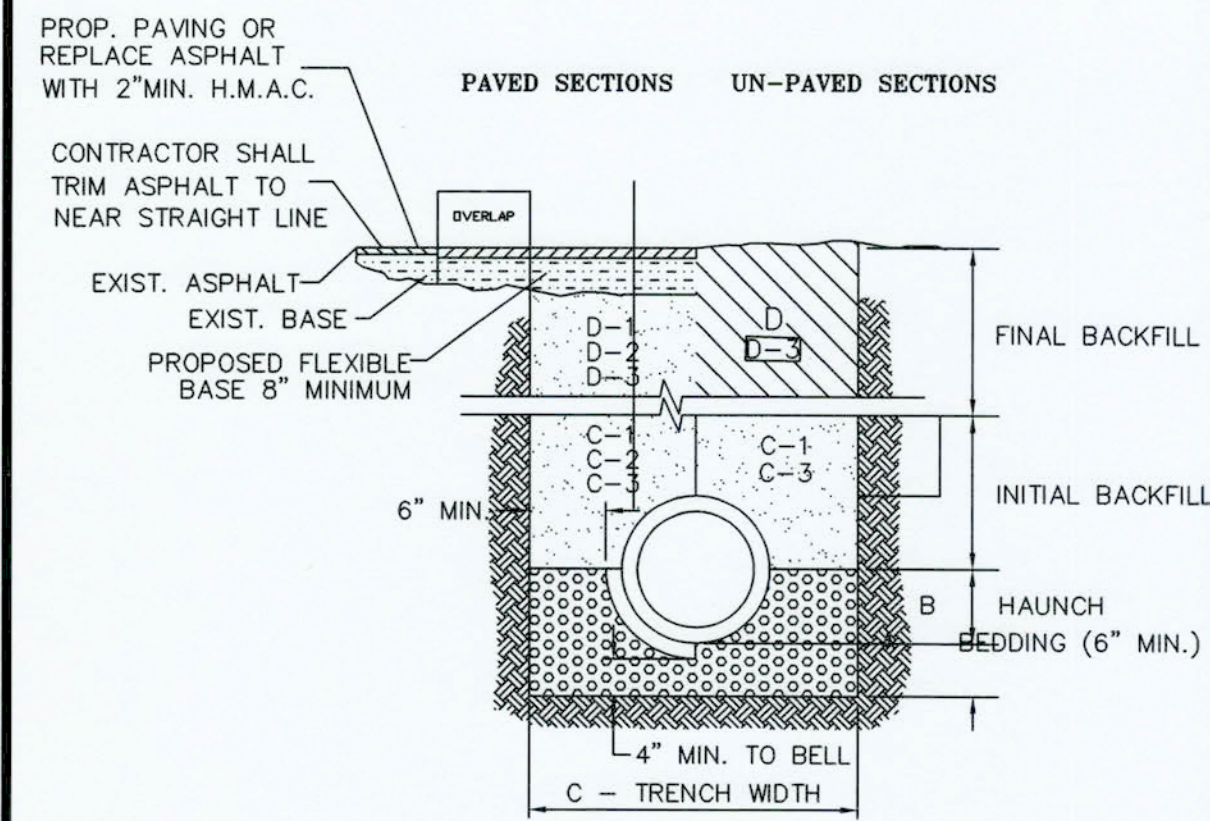
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REVISIONS		—	5		
		COUNTY	CONTROL	SECT	JOB
					HIGHWAY

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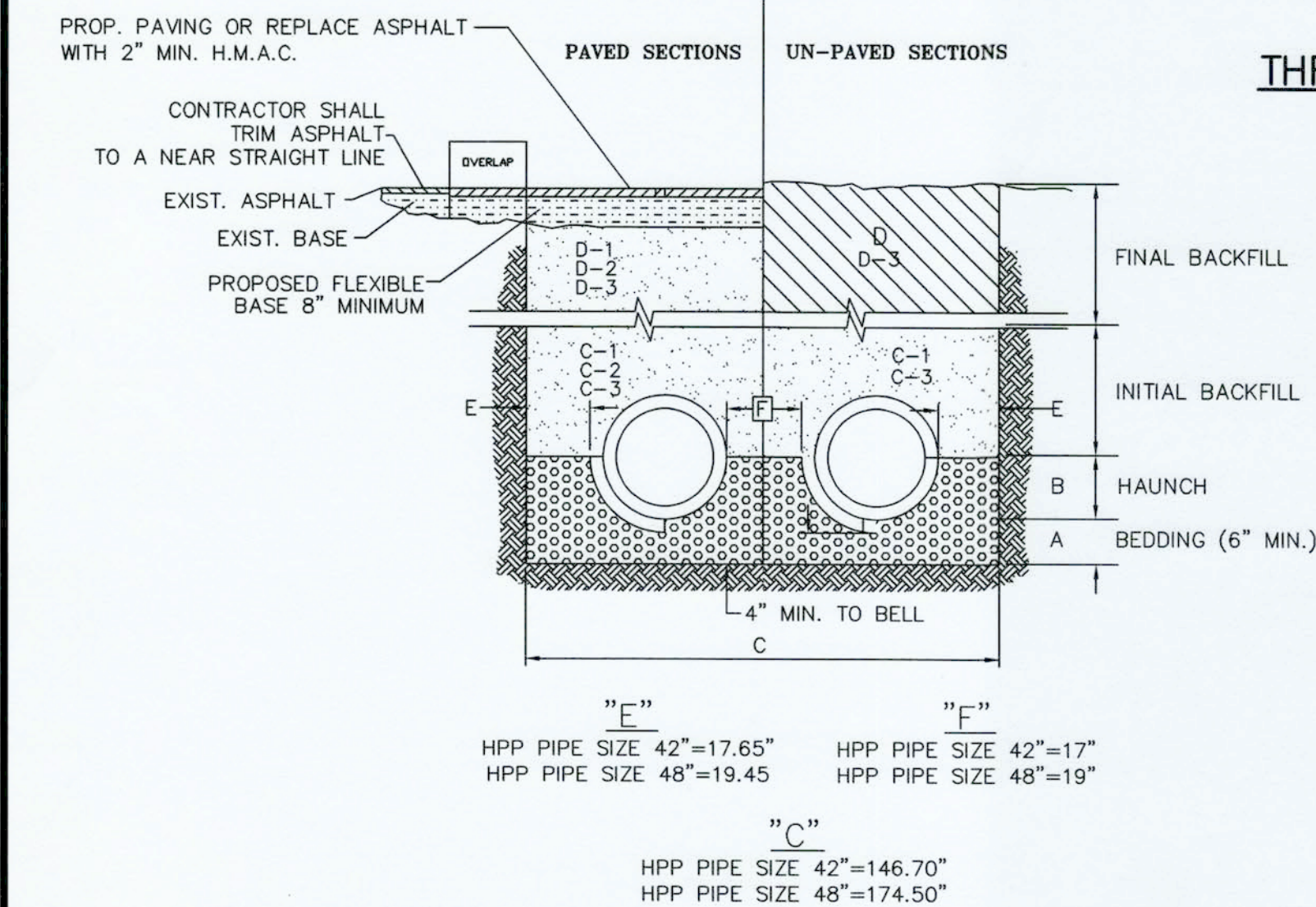
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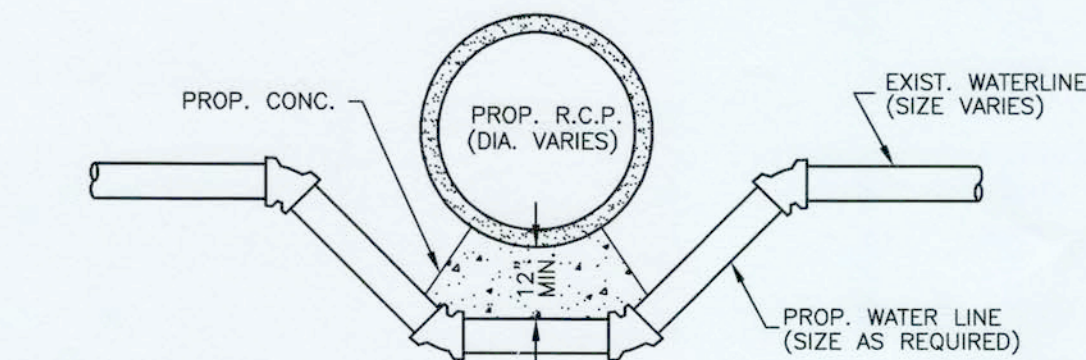


THRUST BLOCK SIZE				
DIAMETER OF PIPE INCHES	SURFACE AREA SQ. FT.		THICKNESS  INCHES	WEIGHT AT VERTICAL BENDS - LBS
22-1/2" BENDS				
6 OR LESS	2	8	1,700	
8	3	12	3,000	
10	3.5	12	4,500	
12	4	14	6,600	
14	5	18	9,000	
16	6	18	11,800	
45" BENDS				
6 OR LESS	4	12	3,200	
8	5	14	5,800	
10	6	18	9,000	
12	7	18	13,000	
14	8	24	17,000	
16	11.5	24	23,200	
90" BENDS				
6 OR LESS	6	12	6,000	
8	8	15	10,700	
10	10	18	16,700	
12	12	18	24,000	
14	18	24	32,600	
16	21	24	42,700	
TEES & DEAD ENDS				
6 OR LESS	3	12	—	
8	4	15	—	
10	6	18	—	
12	8.5	18	—	
14	11.5	24	—	
16	15	24	—	

NOTE: ALL VALUES SHOWN ARE MINIMUM FOR A HYDROSTATIC PRESSURE OF 150 P.S.I. AND A SOIL RESISTANCE OF 2,000 LBS/SQ. FT. WITH PIPE LINE A MINIMUM OF 2 FT. OF COVER



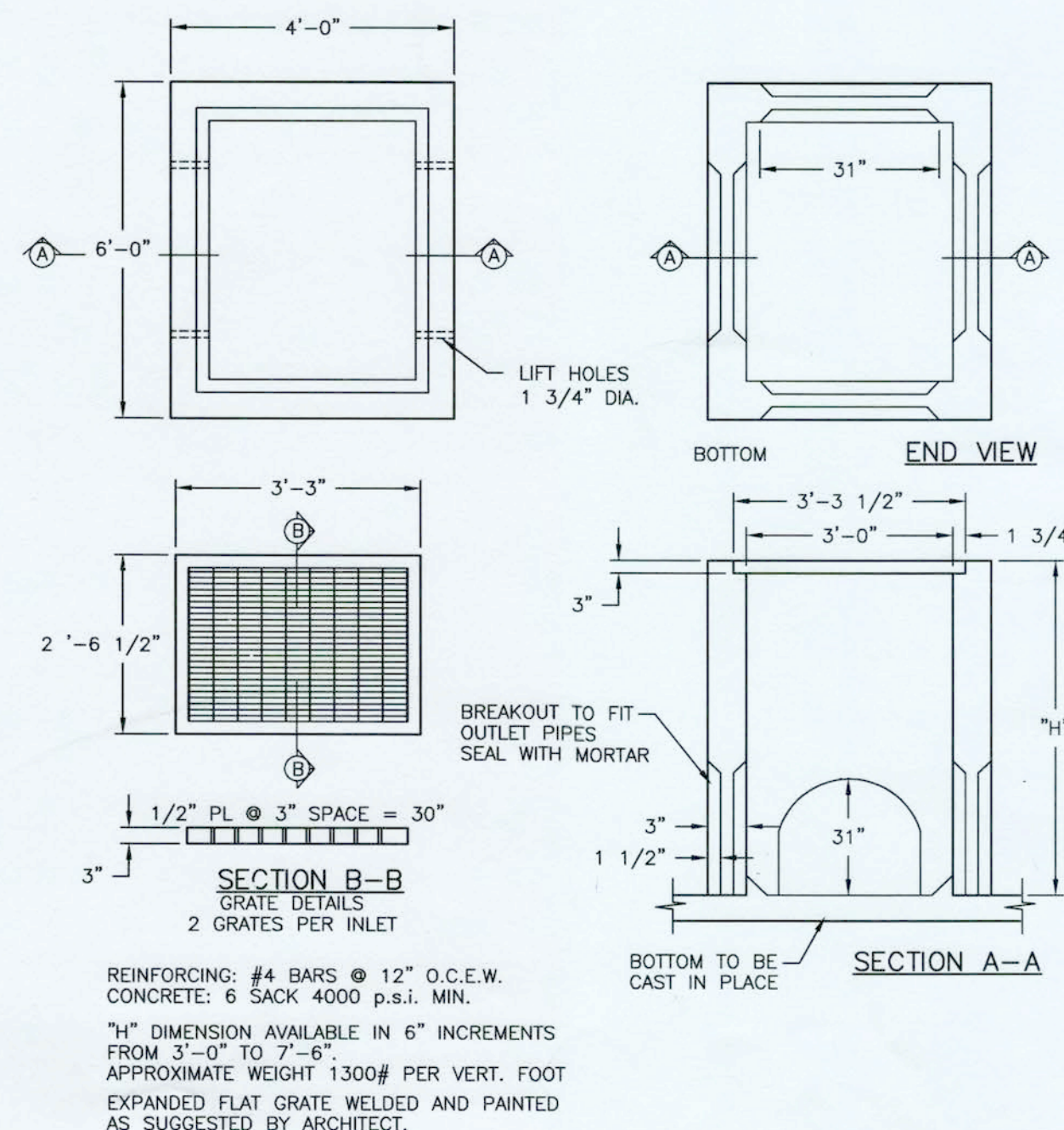
STORM TRENCH BEDDING AND BACKFILL DETAILS  
N.T.S.



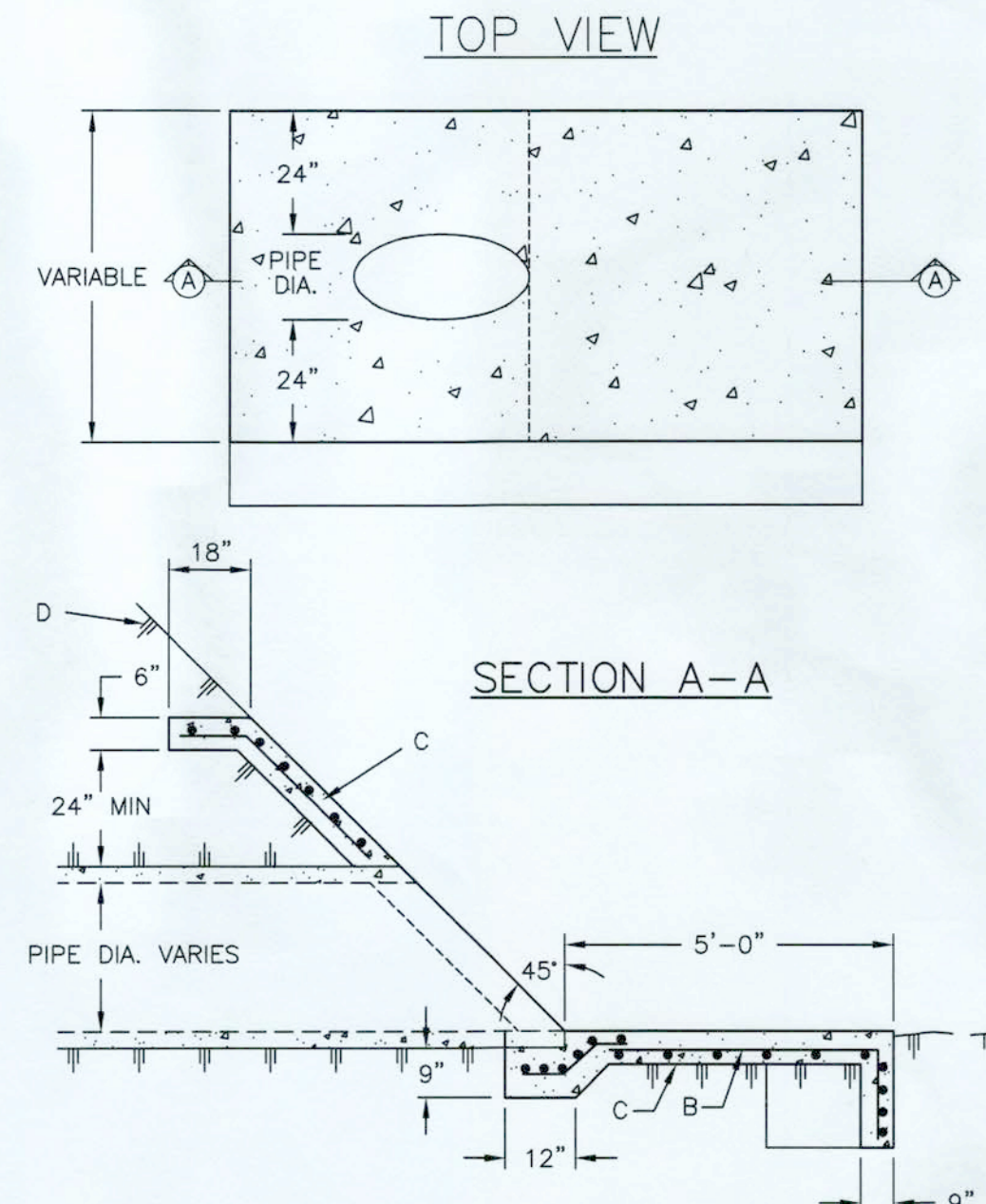
TYPICAL WATER LINE ADJUSTMENT DETAIL  
N.T.S.

- BEDDING FOR RCP CLASS III, HIGH PERFORMANCE POLYPROPYLENE OR CORRUGATED PVC STORM DRAIN PIPE - SAND AND/OR GRAVEL MIX BEDDING PLACED BEFORE PIPE IS LAID UP TO FLOW OF PIPE (MIN. COMPACTED THICKNESS = 6") - PIT RUN GRAVEL 3/4" MAX SIZE.
- HAUNCH FOR RCP CLASS III, HIGH PERFORMANCE POLYPROPYLENE OR CORRUGATED PVC STORM DRAIN PIPE - SHALL BE CLASS I OR CLASS II (ASTM D2321) BACKFILL MATERIAL COMPACTED TO 92% S.P.D., 8" LOOSE LIFTS, MECHANICAL COMPACTION.
- TRENCH WIDTH - SHALL BE BELL O.D. X 1.5 + 12" MINIMUM TRENCH WIDTH SHALL EQUAL STRUCTURE WIDTH + 4 FT. THROUGHOUT THE HEIGHT OF THE STRUCTURE.
- C-1 INITIAL BACKFILL FOR RCP CLASS III STORM DRAIN PIPE ON CITY STREETS, PARKING AREAS, DRIVEWAYS, COUNTY ROADS & UNPAVED AREAS - SHALL BE SOIL TYPE A1, A2, A3 WITH A MAXIMUM P.I. OF 19 (AASHTO M145) COMPACTED TO 92% S.P.D., 8" LOOSE LIFTS, MECHANICAL COMPACTION.
- C-2 INITIAL BACKFILL FOR RCP CLASS III STORM DRAIN PIPE ON STATE MAINTAINED ROADWAYS - COMPACTED SAND/CEMENT STABILIZED BACKFILL WITH 7% PORTLAND CEMENT, COMPACTED TO 92% S.P.D. AS PER ASTM D4253 AND ASTM D698, 8" LOOSE LIFTS, MECHANICAL COMPACTION.
- C-3 INITIAL BACKFILL FOR HIGH PERFORMANCE POLYPROPYLENE OR CORRUGATED PVC STORM DRAIN PIPE - SHALL BE CLASS I OR CLASS II WITH A MAXIMUM P.I. OF 19 (ASTM D2321) BACKFILL MATERIAL COMPACTED TO 92% S.P.D., 8" LOOSE LIFTS, MECHANICAL COMPACTION.
- D. FINAL BACKFILL FOR RCP CLASS III, HIGH PERFORMANCE POLYPROPYLENE OR CORRUGATED PVC STORM DRAIN PIPE UNDER UNPAVED SECTIONS - SHALL BE CLASS I, II, III OR IV, COMPACTED TO 92% S.P.D. (12" LOOSE LIFT, MECHANICAL COMPACTION).
- D-1 FINAL BACKFILL FOR RCP CLASS III, HIGH PERFORMANCE POLYPROPYLENE OR CORRUGATED PVC STORM DRAIN PIPE ON CITY STREETS, PARKING AREAS, DRIVEWAYS AND COUNTY ROADS - SHALL BE SOIL TYPE A1, A2, A3 WITH A MAXIMUM P.I. OF 19 (AASHTO M145) COMPACTED TO 92% S.P.D., 8" LOOSE LIFTS, MECHANICAL COMPACTION.
- D-2 FINAL BACKFILL FOR RCP CLASS III, HIGH PERFORMANCE POLYPROPYLENE OR CORRUGATED PVC STORM DRAIN PIPE ON STATE MAINTAINED ROADWAYS - COMPACTED SAND/CEMENT STABILIZED BACKFILL WITH 7% PORTLAND CEMENT, COMPACTED TO 92% S.P.D. AS PER ASTM D4253 AND ASTM D698, 8" LOOSE LIFTS, MECHANICAL COMPACTION.
- D-3 FINAL BACKFILL FOR STRUCTURES (INLETS, MANHOLES, ETC.) - STRUCTURES UNDER THE ROADWAY AND UP TO 5 FT BEYOND THE EDGE OF PAVEMENT/BACK OF CURB SHALL HAVE CLASS I OR CLASS II (ASTM D2321) OR SOIL TYPE A1, A2, OR A3 (AASHTO M145) WITH A MAXIMUM P.I. OF 19 BACKFILL MATERIAL. STRUCTURES BEYOND 5 FT FROM THE E.O.P./B.O.C. SHALL HAVE CLASS I, II, III OR IV (ASTM D2321) BACKFILL MATERIAL. FOUNDATION PREPARATION (WELLPONTS, MINIMUM 4" GRAVEL OR CEMENTS STABILIZATION, OR APPROVED SUBSTITUTE) SHALL BE REQUIRED WHEN TRENCH BOTTOM IS UNSTABLE. BACKFILLING AT STRUCTURES SHALL BE PLACED IN UNIFORM LAYERS, MOISTENED AS REQUIRED TO APPROXIMATE OPTIMUM MOISTURE CONTENT AND COMPACTED TO 95% S.P.D. (USE RELATIVE DENSITY TEST PER ASTM D4253 & ASTM D698). THE THICKNESS OF EACH LOOSE LAYER SHALL NOT EXCEED 8".

- NOTES:
- MAXIMUM COVER SHALL BE IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
  - FOR D-1 AND D-2 THE COMPACTION REQUIREMENT SHALL BE 95% S.P.D. WITHIN 12 IN. BELOW THE FLEXIBLE BASE.
  - FOR PAVED SECTIONS THE ABOVE REQUIREMENTS SHALL APPLY WHEN ANY PART OF THE TRENCH WIDTH IS WITHIN 5 FT. FROM THE E.O.P./B.O.C.
  - THE ABOVE REQUIREMENTS SHALL APPLY TO UTILITY PIPELINES AND UTILITY STRUCTURES OF OTHER UTILITY ENTITIES.



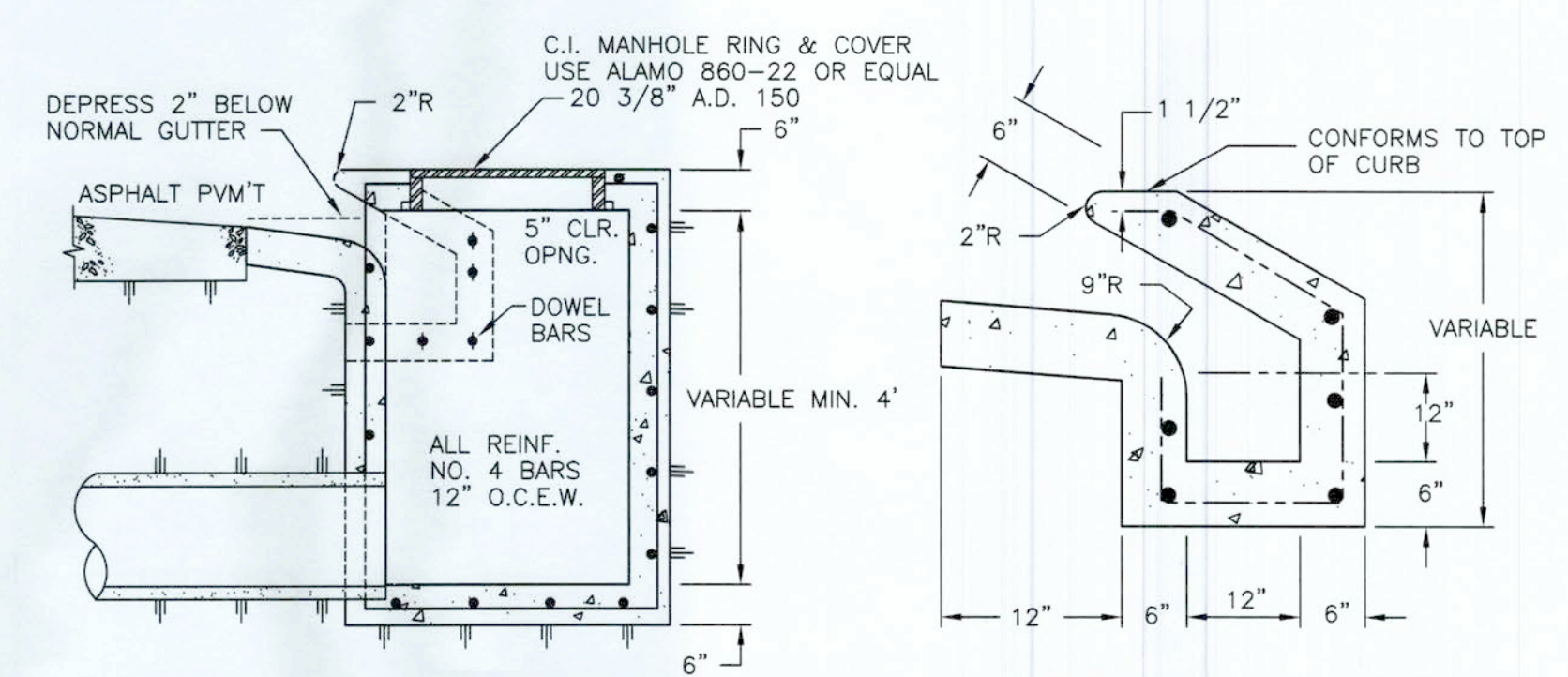
STANDARD INLET DETAILS



CONCRETE HEADWALL DETAIL (POURED IN PLACE)

#### NOTES

- ALL STEEL TO BE NO. 4 BARS AT 6" SPACING IN BOTH DIRECTIONS.
- SLOPE BOTTOM OF INLET EXTENSION 1/2" PER FT. TOWARD INLET.
- ALL FRAMES AND GRATES USED IN PAVED AREAS SHALL BE A36 OR 50 STRUCTURAL STEEL. ALL WELDING SHALL BE IN ACCORDANCE WITH ITEM "STEEL STRUCTURES" OR ITEM "FIELD WELDING" AS REQUIRED.
- INLETS SHALL BE COMPOSED OF PRE-CAST SECTIONS, CAST IN PLACE OR A COMBINATION OF BOTH.
- 6" GRAVEL BEDDING IS REQUIRED (3/4" MAX).

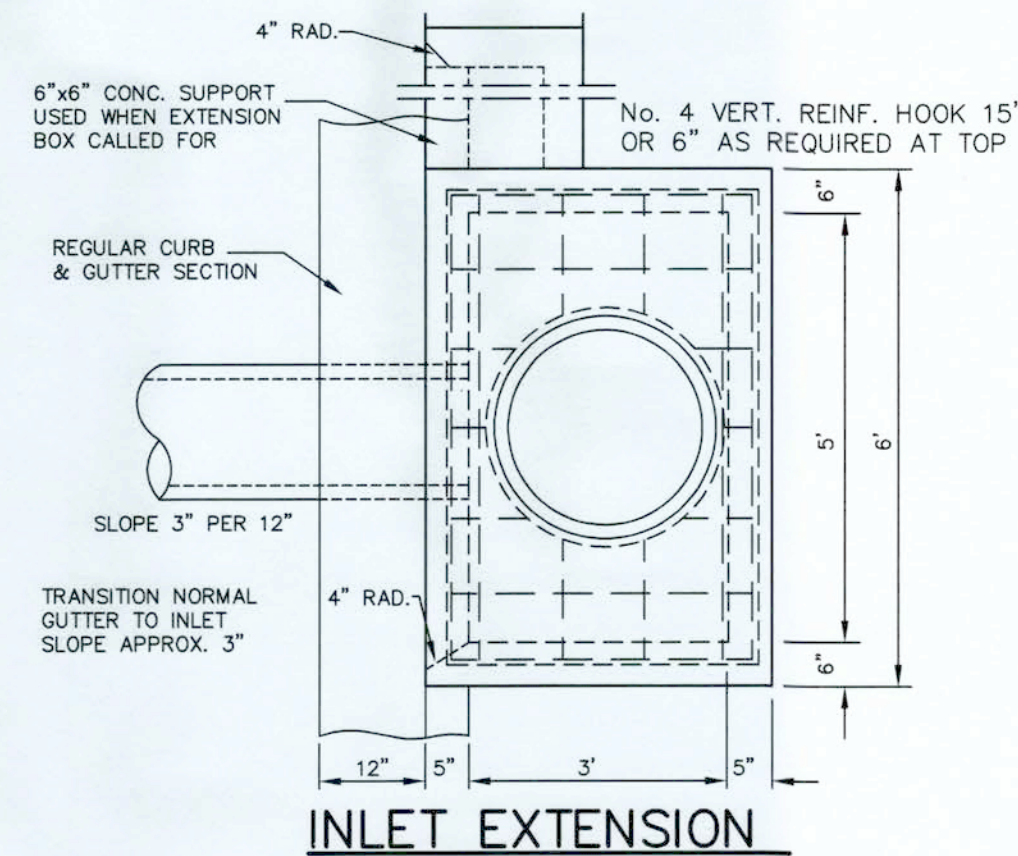


ALL STEEL TO BE NO. 4 BARS ON 12" SPACING IN BOTH DIRECTIONS.

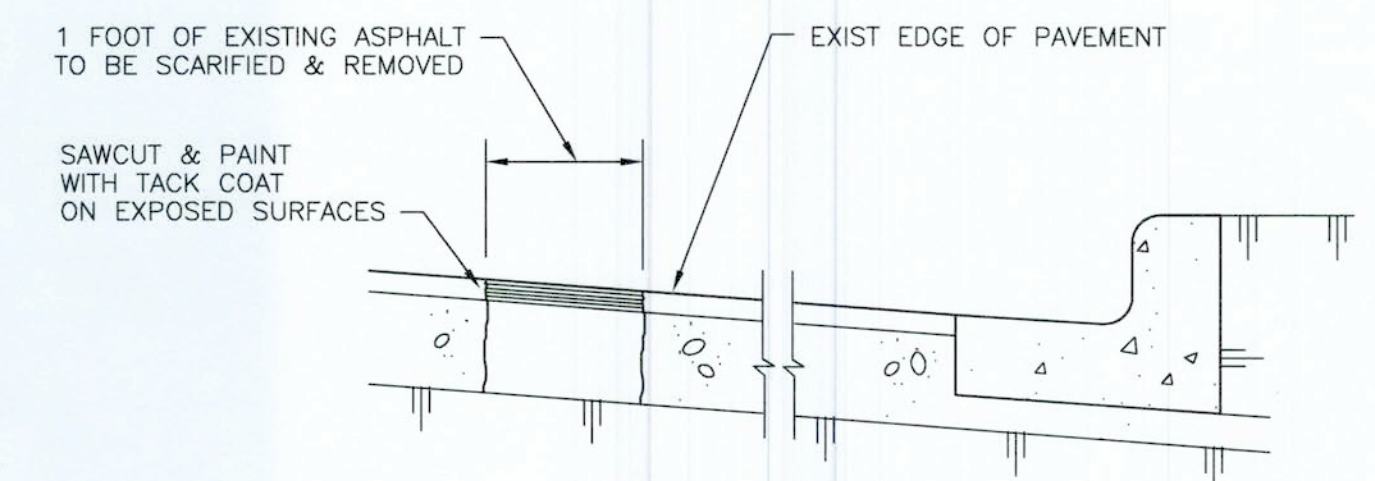
INLET EXTENSION

- GENERAL NOTES:
- CONCRETE TO HAVE 3000 p.s.i. AT MIN. 28 DAYS COMPRESSION STRENGTH.
  - ALL STEEL TO HAVE 4000 p.s.i. YIELD STRENGTH

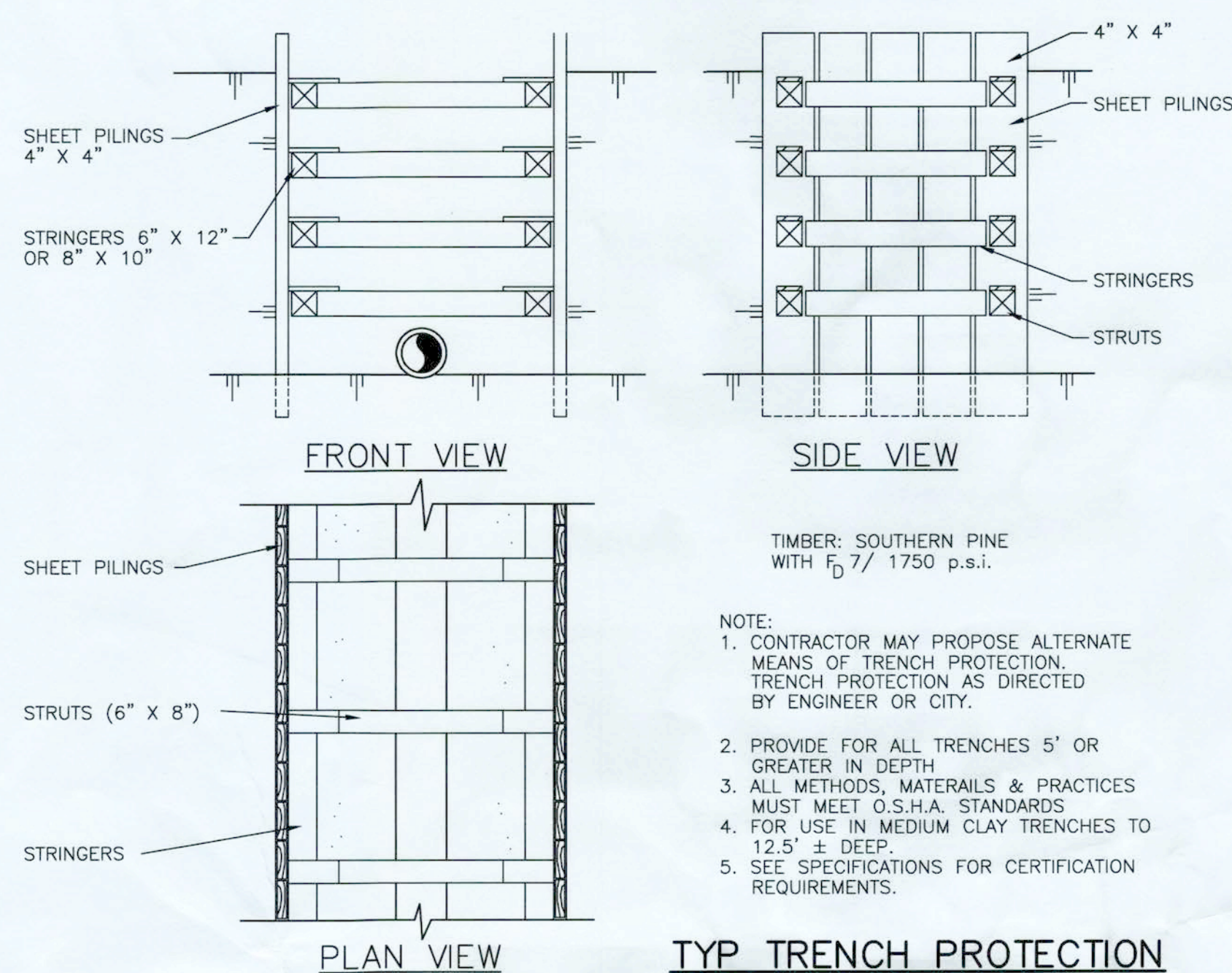
- CONSTRUCTION NOTES
- DRAIN DITCH FLOW LINE
  - 6"x6" #6 WIRE MESH OR EQUAL LAPPED 6"
  - MIN. 3" COVER REQUIRED ON EVERY SIDE
  - MIN. 95% COMPACTION



INLET EXTENSION



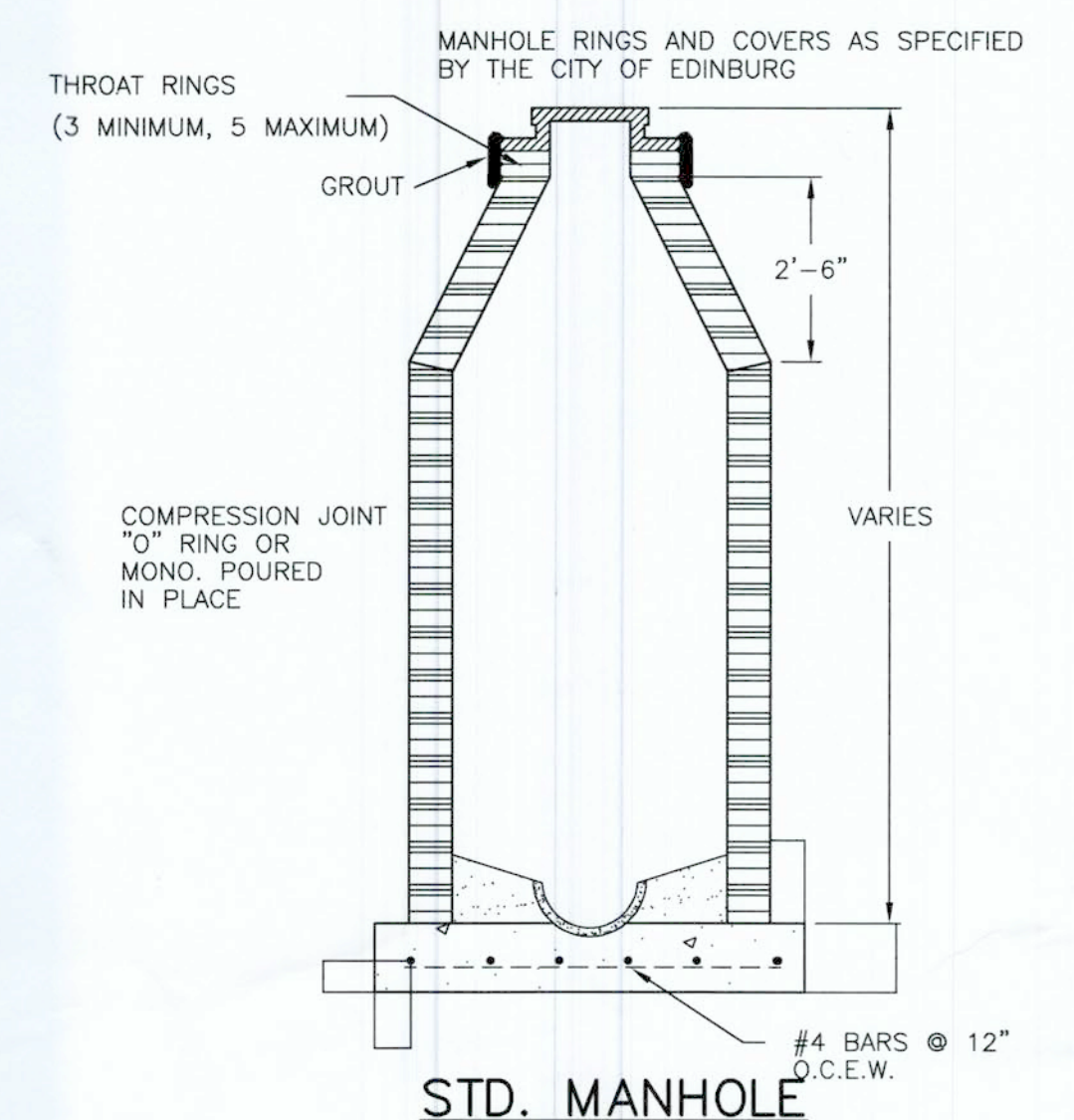
NEW ASPHALT MEETING EXISTING PAVEMENT



TYP TRENCH PROTECTION

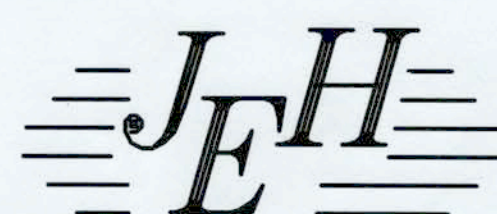
TIMBER: SOUTHERN PINE WITH F<sub>D</sub> 7/ 1750 p.s.i.

- NOTE:
- CONTRACTOR MAY PROPOSE ALTERNATE MEANS OF TRENCH PROTECTION. TRENCH PROTECTION AS DIRECTED BY ENGINEER OR CITY.
  - PROVIDE FOR ALL TRENCHES 5' OR GREATER IN DEPTH.
  - ALL METHODS, MATERIALS & PRACTICES MUST MEET O.S.H.A. STANDARDS.
  - FOR USE IN MEDIUM CLAY TRENCHES TO 12.5' ± DEEP.
  - SEE SPECIFICATIONS FOR CERTIFICATION REQUIREMENTS.



STD. MANHOLE

REVISIONS	
PROJECT No.	180406
DATE	OCTOBER, 2018
DRAWN BY	J.B.G.
CHK. BY	JH



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TBE FIRM NUMBER F-1295

**STANDARD STORM DRAINAGE DETAILS**  
KUHN STREET AND 22nd AVENUE/U.S. EXPRESSWAY 281  
CROSSING DRAINAGE IMPROVEMENTS  
EDINBURG, TEXAS



SHEET  
**6**  
OF 6 SHEETS

180406