CITY OF HOUSTON
STANDARD DOCUMENT 4600010679

CONTROL FORM FOR CONTRACT DOCUMENTS

Document 00496

CONTROL FORM FOR CONTRACT DOCUMENTS

NOTE: This form is to remain with the Contract documents and SHOULD NOT BE REMOVED.

PROJECT NAME: Safe Routes to School Sidewalk Project

PROJECT No.: WBS No. N-00610A-(0102-0106)-4

CONTRACTOR: CAAN Construction Services, Inc.

DEPARTMENT/DIVISION: Department of Public Works and Engineering/Engineering and Construction Division

CONTACT PERSON(S): Sam Kanu, P.E. **PHONE NUMBER(S):** (832) 395-2213

These documents are assembled according to the attached checklist. For verification of items within the Contract documents, refer to the checklist.

This Ordinance and/or Contract have been reviewed as to form by the undersigned legal assistant and have been found to meet established Legal Department criteria. The Legal Department has not reviewed the content of these documents.

By: _____ Date: 10-15-10
Legal Assistant

I have sent the Ordinance to the Controller's Office.

By: _____ Date: _____
Award Coordinator

TO THE CITY SECRETARY: I have examined and approved the Contract documents. Two copies of the Contract documents are sent to you herewith for signatures.

By: _____ Date: 12/20/10
Director, Department of Public Works and Engineering

TO THE CITY CONTROLLER: Two copies of the Contract documents are sent to you herewith for countersignature. They were authorized by Ordinance Number 11-038 passed by City Council on 1-12-11. The Contract documents were executed by the Mayor or Mayor Pro Tem on 1-14-11.

By: _____ Date: 1-18-11
City Secretary

TO THE DIRECTOR: One copy of the Contract documents is sent to you for final distribution.

By: Mary Wilson Date: 1/18/11
City Controller

END OF DOCUMENT

CONTROLLER'S
2011 JAN 18 AM 10: 55

Document 00520

AGREEMENT

Project: Safe Routes to School Sidewalk Project

Project Location: Various (Key Map No. Various)

Project No: WBS No. N-00610A-(0102-0106)-4

The City: THE CITY OF HOUSTON, 900 Bagby Street, Houston, Texas 77002 (the "City")

and

Contractor: CAAN Construction Services, Inc.

(Address for Written Notice) 12419 Shadowvale
Houston, Texas 77082

Fax Number: 281-558-0536

City Engineer is: Carl Smitha, P.E., (or his successor)

(Address for Written Notice) P. O. Box 1562, Houston, Texas 77251-1562

City Employee designated to represent the City Engineer is: Sam Kanu, P.E. (or his or her successor)

Fax Number: (832) 395-2252

THE CITY AND CONTRACTOR AGREE AS FOLLOWS:

ARTICLE 1
THE WORK OF THE CONTRACT

1.1 Contractor shall perform the Work in accordance with the Contract.

ARTICLE 2
CONTRACT TIME

2.1 Contractor shall achieve Date of Substantial Completion within 210 days after Date of Commencement of the Work, subject to adjustments of Contract Time as provided in the Contract.

2.2 The Parties recognize that time is of the essence for this Agreement and that the City will suffer financial loss if the Work is not completed within the Contract Time. Parties also recognize delays, expense, and difficulties involved in proving in a legal or arbitration proceeding actual loss suffered by the City if the Work is not completed on time. Accordingly, instead of requiring any such proof, the Parties agree that as liquidated damages for delay (but not as a penalty), Contractor shall pay the City the amount stipulated in Document 00800 – Supplementary Conditions, for each day beyond Contract Time.

ARTICLE 3
CONTRACT PRICE

3.1 Subject to terms of the Contract, the City will pay Contractor in current funds for Contractor's performance of the Contract, Contract Price of $886,392.00 which includes Alternates, if any, accepted below.

3.2 The City accepts Alternates as follows:

Alternate No. 1	None
Alternate No. 2	None
Alternate No. 3	None
Alternate No. 4	None

ARTICLE 4
PAYMENTS

4.1 The City will make progress payments to Contractor as provided below and in Conditions of the Contract.

4.2 The Period covered by each progress payment is one calendar month ending on the last day of the month.

4.3 The City will issue Certificates for Payment and will make progress payments on the basis of such Certificates as provided in Conditions of the Contract.

4.4 Final payment, constituting entire unpaid balance of Contract Price, will be made by the City to Contractor as provided in Conditions of the Contract.

ARTICLE 5
CONTRACTOR REPRESENTATIONS

5.1 Contractor represents:

5.1.1 Contractor has examined and carefully studied Contract documents and other related data identified in Request For Competitive Sealed Proposals.

5.1.2 Contractor has visited the site and become familiar with and is satisfied as to general, local, and site conditions that may affect cost, progress, and performance of the Work.

5.1.3 Contractor is familiar with and is satisfied as to all federal, state, and local laws and regulations that may affect cost, progress, and performance of the Work.

5.1.4 Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the site (except Underground Facilities) which have been identified in Contract documents and (2) reports and drawings of a hazardous environmental condition, if any, at the site which has been identified in Contract documents.

5.1.5 Contractor has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, including applying specific means,

methods, techniques, sequences, and procedures of construction, if any, expressly required by the Contract to be employed by Contractor, and safety precautions and programs incident thereto

5.1.6 Contractor does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for performance of the Work at Contract Price, within Contract Time, and in accordance with the Contract.

5.1.7 Contractor is aware of general nature of work to be performed by the City and others at the site that relates to the Work as indicated in Contract documents.

5.1.8 Contractor has correlated information known to Contractor, information and observations obtained from visits to the site, reports and drawings identified in the Contract, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract.

5.1.9 Contractor has given City Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract, and written resolution thereof by City Engineer is acceptable to Contractor.

5.1.10 Contract documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 6
MISCELLANEOUS PROVISIONS

6.1 The Contract may be terminated by either Party as provided in Conditions of the Contract.

6.2 The Work may be suspended by the City as provided in Conditions of the Contract.

ARTICLE 7
ENUMERATION OF CONTRACT DOCUMENTS

7.1 The following documents are incorporated into this Agreement:

7.1.1 Document 00700 - General Conditions.

7.1.2 Document 00800 - Supplementary Conditions.

7.1.3 General Requirements.

7.1.4 Divisions 02 through 16 of Specifications.

7.1.5 Drawings listed in Document 00015 - List of Drawings. Drawing No. 47266 and bound separately.

7.1.6 Addenda [and Riders] which apply to the Contract, are as follows:

Addendum No. 1, dated None

Addendum No. 2, dated None

Addendum No. 3, dated None

Rider No. [1], dated 12/8/10 INITIAL

7.1.7 Other documents:

	Document No.	Title
[X]	00410B	Proposal Form – Part B
[X]	00500	Form of Business
[X]	00501	Resolution of Contractor (if a corporation)
[ ]	00608	Contractor's Certification Regarding Non-Segregated Facilities for Project Funded by AIP Grant
[X]	00610	Performance Bond
[X]	00611	Statutory Payment Bond
[X]	00612	One-year Maintenance Bond
[X]	00613	One-year Surface Correction Bond
[X]	00620	Affidavit of Insurance (with the Certificate of Insurance attached)
[ ]	00623	Contractor's Act of Assurance (SRF Form ED-103)
[X]	00624	Affidavit of Compliance with Affirmative Action Program
[ ]	00628	Affidavit of Compliance with Disadvantaged Business Enterprise (DBE) Program for Project Funded By AIP Grant
[ ]	00630	Agreement to Comply with Pay or Play (POP) Program — Initial
[ ]	00631	Pay or Play (POP) Program List of Subcontractors — Initia
[ ]	00800	Supplementary Conditions for Project CIP or AIP Funded
[ ]	00801	Supplementary Conditions for Project AIP Funded
[ ]	00802	SRF Supplementary Conditions
[X]	00805	Affirmative Action Compliance Program (DELETE If AIP Funded)
[ ]	00806	Disadvantaged Business Enterprise (DBE) Program
[ ]	00807	Bidder/Contractor Requirements for DBE Program
[X]	00808	Minority and Women-owned Business Enterprise (MWBE) & Persons with Disabilities Business Enterprise (PDBE) Program
[ ]	00810	Federal Wage Rate - Highway
[ ]	00811	Federal Wage Rate - Building
[ ]	00812	Federal Wage Rate - Heavy
[X]	00820	Wage Rate for Engineering Construction
[ ]	00821	Wage Rate for Building Construction
[ ]	00830	Trench Safety Geotechnical Information
[ ]	00840	Pay or Play Program — Initial
[X]	00912	Rider — Initial

ARTICLE 8
SIGNATURES

8.1 This Agreement is executed in two original copies and is effective as of the date of countersignature by City Controller.

CONTRACTOR: CAAN Construction Services, Inc.

By: _____
Name: YOUSEF ELDIRADI
Title: PRESIDENT
Date: SEPT 08-2010
Tax Identification Number: 76-0629333

(If Joint Venture)

By: _____
Name: _____
Title: _____
Date: _____
Tax Identification Number: _____

CITY OF HOUSTON, TEXAS

APPROVED:

By: _____
Director,
Department of Public Works and Engineering

SIGNED:

By: _____
Mayor

COUNTERSIGNED:

By: _____
City Controller

Date Countersigned:

1/19/11

ATTEST/SEAL:

By: _____
City Secretary

8.2 This Contract and Ordinance have been reviewed as to form by the undersigned legal assistant and have been found to meet established Legal Department criteria. Legal Department has not reviewed the content of these documents.

_____
Legal Assistant

10-15-10
Date

END OF DOCUMENT

Document 00410B

BID FORM – PART B

1.0 TOTAL BID PRICE HAS BEEN CALCULATED BY BIDDER, USING THE FOLLOWING COMPONENT PRICES AND PROCESS (PRINT OR TYPE NUMERICAL AMOUNTS):

A. STIPULATED PRICE: $ N/A

(Total Bid Price; minus Base Unit Prices, Extra Unit Prices, Cash Allowances and All Alternates, if any)

B. BASE UNIT PRICE TABLE:

Item No.	Spec Ref.	Base Unit Short Title	Unit of Measure	Estimated Quantity	Unit Price (this column controls)	Total in figures
GENERAL PROJECT ITEMS						
1	01502	Mobilization	LS	1	43,000.00	$43,000.00
2	01410/ 01570	TPDES Requirement and Implementation of SWPPP, Complete in Place.	LS	1	$1,000.00	$1,000.00
3	01555	Traffic Control and Regulation	LS	1	$5,000.00	$5,000.00
4	01555	Flagmen	LS	1	$10,000.00	$10,000.00
5	01562	Tree and Plant Protection	LS	1	$1,000.00	$1,000.00
6	01562	Trim & Prune Existing Trees & Shrubs	EA	12	$50.00	$600.00
7	01562	Tree Removal	EA	24	$100.00	$2400.00
8	01570	Reinforced Filter Fabric Barrier	LF	680	$2.00	$1360.00
9	01580	Project Construction Sign	EA	2	$1,000.00	$2000.00
10	01570	Gravel Bag Inlet Protection Barrier	LF	860	$2.00	$1720.00
11	01110	Relocate Existing Sign, Marker, Post or Mailbox	EA	30	$50.00	$1500.00
12	01110	Remove and Relocate Fence, all Types and all Heights	LF	281	$10.00	$2810.00
13	02922	Sodding, Complete in Place	SY	3829	$5.00	$19,145.00

Bidder's Initials [V.G]

Item No.	Spec Ref.	Base Unit Short Title	Unit of Measure	Estimated Quantity	Unit Price (this column controls)	Total in figures
STORM SEWER ITEMS						
14	02506	3-Inch To 6-Inch Diameter PVC Pipe, Complete in Place.	LF	131	$ 20.00 =	$ 2620.00 =
15	02221	Remove and Dispose of Existing Culvert, All Sizes	LF	500	$ 1.00 =	$ 500.00 =
16	02611/ 02631	24" Reinforced Concrete Pipe Culvert, Complete in Place	LF	464	$ 90.00 =	$ 41,760.00 =
17	02611/ 02631	18-Inch To 12-Inch Reinforced Concrete Pipe Culvert, Complete in Place	LF	36	$ 90.00 =	$ 3240.00 =
18	02526	Relocate Water Meter	EA	83	$ 120.00 =	$ 9960.00 =
19	02086	Adjust Top of Existing Water Valve to Grade	EA	31	$ 25.00 =	$ 775.00 =
20	02086	Adjust Existing Manhole to Grade	EA	2	$ 500.00 =	$ 1000.00 =
PAVING ITEMS						
21	02221	Sawcut & Remove Concrete Curb	LF	300	$ 5.00 =	$ 1500.00 =
22	02221	Remove and Dispose 6" Curb and Gutter	LF	254	$ 10.00 =	$ 2540.00 =
23	02221	Remove and Dispose Existing Sidewalk	SY	5951	$ 3.00 =	$ 17,853.00 =
24	02221	Remove Existing Concrete Driveways, Including Sawcut, all Depth	SY	2329	$ 3.00 =	$ 6,987.00 =
25	02221	Remove Existing Gravel or Asphalt Driveways, all Depth	SY	1914	$ 3.00 =	$ 5,742.00 =
26	02233	Clearing and Grubbing	LS	1	$ 1000.00 =	$ 1,000.00 =
27	02315	Ditch Re-grade by Embankment Borrow/Fill, Complete in Place	LF	325	$ 10.00 =	$ 3250.00 =
28	02520	Relocate Fire Hydrant	EA	6	$ 600.00 =	$ 3600.00 =
29	02714	6-Inch Flexible Base for Temporary Shoulders, Driveways	SY	66	$ 15.00 =	$ 990.00 =
30	02741	Hot mix Asphaltic Concrete, Complete in Place	TON	93	$ 55.00 =	$ 5115.00 =
31	02752	3/4-Inch Pre-Formed Expansion Joint, Complete in Place	LF	1214	$ 2.00 =	$ 2428.00 =
32	02752	Horizontal Dowels, #4 Rebar at 24-Inch Spacing	LF	317	$ 5.00 =	$ 1585.00 =

Bidder's Initials [CG]

Item No.	Spec Ref.	Base Unit Short Title	Unit of Measure	Estimated Quantity	Unit Price (this column controls)	Total in figures
33	02754	Construct New 6" Concrete Driveways, Complete in Place	SF	39620	$ 4.50	$ 178,290.00
34	02754	Construct New 7" Concrete Driveways, Complete in Place	SF	4756	$ 5.50	$ 26,158.00
35	02765	Remove Pavement Markings	LF	1870	$ 0.5	$ 935.00
36	02767	Thermoplastic Pavement Marking (24-inch Wide) White	LF	567	$ 6.00	$ 3402.00
37	02767	Thermoplastic Pavement Marking (12-inch Wide) White	LF	2240	$ 3.00	$ 6720.00
38	02771	Construct Saw-Tooth Curb, Complete in Place	LF	100	$ 20.00	$ 2000.00
39	02771	Construct 6-inch Concrete Curb, Complete in Place	LF	150	$ 5.00	$ 750.00
40	02771	Construct 6-inch Concrete Curb and Gutter, Complete in Place	LF	431	$ 15.00	$ 6465.00
41	02771/ DWG	6-inch Sidewalk Retaining Wall, Complete in Place	LF	265	$ 30.00	$ 7950.00
42	02775	Construct New 4 1/2-inch Concrete Sidewalk, Complete in Place	SF	84546	$ 4.00	$ 338,184.00
43	02775	Construct New 6-inch Concrete Sidewalk, Complete in Place	SF	1834	$ 7.00	$ 12,838.00
44	02775	Wheelchair Ramps including Colored Truncated Dome , Complete in Place	SF	11171	$ 5.00	$ 55,855.00
45	02775	Sawcut Concrete Sidewalk Pavement, All Thickness	LF	479	$ 5.00	$ 2395.00
46	02775/ DWG	Checker Plate for Tree Sensitive Area (Complete in Place, including All Material and Hardware, See Detail)	SF	794	$ 30.00	$ 23,820.00
47	DWG	Remove and Relocate Guardrail, Complete in Place	LF	130	$ 25.00	$ 3250.00
48	DWG	Construct Concrete Steps, Complete in Place	SF	60	$ 10.00	$ 600.00
49	DWG	Replace Gate, Complete in Place	LF	120	$ 15.00	$ 1800.00

Bidder's Initials [CG]

C. EXTRA UNIT PRICE TABLE:

Item No.	Spec Ref.	Extra Unit Short Title	Unit of Measure	Estimated Quantity	Unit Price (this column controls)	Total in figures
1	02221	Extra remove and dispose of miscellaneous concrete and masonry	CY	50	$1.00	$50.00
2	02318	Extra Hand Excavation	CY	50	$1.00	$50.00
3	02318	Extra Machine Excavation	CY	100	$1.00	$100.00
4	02317	Extra Placement of Backfill Material	CY	200	$1.00	$200.00
5	02741	Extra Cement Stabilized Sand	CY	70	$20.00	$1400.00
6	02751	Concrete Rip-Rap	CY	25	$20.00	$500.00
7	02811	Irrigation Pipe	LF	100	$2.00	$200.00
8	02811	Irrigation Sprinkler Head	EA	25	$20.00	$500.00
TOTAL EXTRA UNIT PRICES						$3000.00

REST OF PAGE INTENTIONALLY LEFT BLANK

Bidder's Initials [C.O.]

D. CASH ALLOWANCE TABLE:

Item No.	Spec Ref.	Cash Allowance Short Title	Cash Allowance in figures (1)
1		Street Cut Permit	$8000.00
TOTAL CASH ALLOWANCES			$8000.00

REST OF PAGE INTENTIONALLY LEFT BLANK

Bidder's Initials [K.O.]

E. ALTERNATES TABLE:

Item No.	Spec Ref.	Alternate Short Title	Unit of Measure	Estimated Quantity	Unit Price (this column controls)	Total Price for Alternate in figures
[1]		N/A				
TOTAL ALTERNATES						$_____

REST OF PAGE INTENTIONALLY LEFT BLANK

Bidder's Initials [ ]

F. TOTAL BID PRICE: $ 886,392.00
(Add Totals for Items A., B., C., D., and E. above)

2.0 SIGNATURES: By signing this Document, I agree that I have received and reviewed all Addenda and considered all costs associated with the Addenda in calculating the Total Bid Price.

Bidder: CAAN CONSTRUCTION SVCS. INC.
(Print or type full name of your proprietorship, partnership, corporation, or joint venture.*)

**By: [signature] AUG-24-2010
Signature Date

Name: YOUSEF ELDIRADI PRESIDENT
(Print or type name) Title

Address: P.O. BOX 770696 HOU, TX 77215
(Mailing)
12419 SHADOWVALE HOU, TX 77082
(Street, if different)

Telephone and Fax Number: 713-539-5943 and 281-558-053
(Print or type numbers)

* If Bid is a joint venture, add additional Bid Form signature sheets for each member of the joint venture.

** Bidder certifies that the only person or parties interested in this offer as principals are those named above. Bidder has not directly or indirectly entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding.

Note: This document constitutes a government record, as defined by § 37.01 of the Texas Penal Code. Submission of a false government record is punishable as provided in § 37.10 of the Texas Penal Code.

Footnotes for Tables B through E:
(1) Fixed Unit Price determined prior to Bid. Cannot be adjusted by the Bidder.
(2) Minimum Bid Price determined prior to Bid. Can be increased by the Bidder by crossing out the Minimum and noting revised price on the line above.
(3) Maximum Bid Price determined prior to Bid. Can be decreased but not increased by Bidder by crossing out the Maximum and noting revised price on the line above. A Bid that increases the Maximum Bid Price may be found non-conforming and non-responsive.
(4) Fixed Range Bid Price determined prior to Bid. Unit Price can be adjusted by Bidder to any amount within the range defined by crossing out prices noted and noting revised price on the line above.

This bid opened and read
In Council Chamber
SEP 02 2010
Troy D. Lemon

Document 00500

FORM OF BUSINESS

Please mark the box describing your firm's form of business, fill in the requested information, and include the relevant attachments.

[X] **Corporation**
Corporate Name: CAAN CONSTRUCTION SERVICES, INC.
State of Incorporation: TEXAS
Mailing Address: 12419 SHADOWVALE HOU. TX 77082
Type of Corporation: S

Certificate of Assumed Name, if operating under a name different than that on the corporate charter (the Certificate must have been issued within the past 10 years to be valid)

*Certificate of Good Standing

*Certificate of Existence (if non-Texas corporation, Certificate of Authority)

[ ] **Partnership/Joint Venture**
Partnership/Joint Venture Name: _____
Mailing Address: _____
Type of Partnership/Joint Venture: _____

Copy of the Partnership or Joint Venture Agreement, **or**
Affidavit with the name of the partnership or joint venture, the names of the individual partners or participants in the joint venture, and a statement that the partnership or joint venture is in existence

Certificate of Assumed Name, (the Certificate must have been issued within the past 10 years to be valid)

If firm is a limited partnership, the Certificate of Limited Partnership

If any partner or joint venturer is a corporation, the above information relating to corporation must be included as to each sum partner or joint venturer.

[ ] **Sole Proprietorship**

Name: _____
Mailing Address: _____

Certificate of Assumed Name, if operating under a name different than that of the sole proprietor (the Certificate must have been issued within the past 10 years to be valid)

** Must be furnished upon request of the Director and must be less than 90 days old.*

Document 00501

RESOLUTION OF CONTRACTOR

CAAN CONSTRUCTION SVCS., INC. ("Contractor"),
(Name of Contractor, e.g., "Biz. Inc.", "Biz LLP")

is a CORPORATION,
(Type of Organization, e.g.: Corporation, Limited Partnership, Limited Liability Partnership, Limited Liability Company, etc.)

which is bound by acts of Board of Directors,
(Name and Form of Governing Entity, e.g., "Biz Inc. Board of Directors", "Bill Smith, GP", etc.)

("Governing Entity").

On the 8th day of Sept, 20 10, the Governing Entity resolved, in accordance with all documents, rules, and laws applicable to the Contractor, that YOUSEF ELDIRAOUI, is authorized to act as the
(Contractor's Representative)

Contractor's Representative in all business transactions (initial one) Y.E. conducted in the State of Texas OR ____ related to this Contract; and

The Governing Entity warrants that the above resolution (a) was entered into without dissent or reservation by the Governing Entity, (b) has not been rescinded or amended, and (c) is now in full force and effect; and

In authentication of the adoption of this resolution, I subscribe my name on this 8th day of Sept, 20 10

(Authorized Signature for Governing Entity)

YOUSEF ELDIRAOUI
(Print or Type Name and Title of Authorized Signatory)

SWORN AND SUBSCRIBED before me on 9/8/10
Date

ROXANNE G. HEBERT
NOTARY PUBLIC
STATE OF TEXAS
MY COMM. EXP. 11/17/2011

Notary Public in and for the State of Texas

My Commission Expires: 11/17/2011
Expiration Date

Roxanne G. Hebert
Print or Type Name of Notary Public

Document 00610

PERFORMANCE BOND

THAT WE, CAAN Construction Services, Inc. as Principal, (the "Contractor"), and the other subscriber hereto, SureTec Insurance Company, as Surety, do hereby acknowledge ourselves to be held and firmly bound to the City of Houston (the "City"), a municipal corporation, in the penal sum of $886,392.00 for the payment of which sum, well and truly to be made to the City, its successors and assigns, Contractor and Surety do bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH THAT:

WHEREAS, the Contractor has on or about this day executed a Contract in writing with the City for Safe Routes to School Sidewalk Project WBS No. N-00610A-(0102-0106)-4, all of such work to be done as set out in full in said Contract documents therein referred to and adopted by the City Council, all of which are made a part of this instrument as fully and completely as if set out in full herein.

NOW THEREFORE, if the said Contractor shall faithfully and strictly perform the Contract in all its terms, provisions, and stipulations in accordance with its true meaning and effect, and in accordance with the Contract documents referred to therein and shall comply strictly with each and every provision of the Contract and with this Bond, then this obligation shall become null and void and shall have no further force and effect; otherwise the same is to remain in full force and effect. Should the Contractor fail to faithfully and strictly perform the Contract in all its terms, including but not limited to the indemnifications thereunder, the Surety shall be liable for all damages, losses, expenses and liabilities that the City may suffer in consequence thereof, as more fully set forth herein.

It is further understood and agreed that the Surety does hereby relieve the City or its representatives from the exercise of any diligence whatever in securing compliance on the part of the Contractor with the terms of the Contract, and the Surety agrees that it shall be bound to take notice of and shall be held to have knowledge of all acts or omissions of the Contractor in all matters pertaining to the Contract. The Surety understands and agrees that the provision in the Contract that the City will retain certain amounts due the Contractor until the expiration of 30 days from the acceptance of the Work is intended for the City's benefit, and the City will have the right to pay or withhold such retained amounts or any other amount owing under the Contract without changing or affecting the liability of the Surety hereon in any degree.

It is further expressly agreed by Surety that the City or its representatives are at liberty at any time, without notice to the Surety, to make any change in the Contract

documents and in the Work to be done thereunder, as provided in the Contract, and in the terms and conditions thereof, or to make any change in, addition to, or deduction from the Work to be done thereunder; and that such changes, if made, shall not in any way vitiate the obligation in this Bond and undertaking or release the Surety therefrom.

It is further expressly agreed and understood that the Contractor and Surety will fully indemnify and save harmless the City from any liability, loss, cost, expense, or damage arising out of Contractor's performance of the Contract.

If the City gives Surety notice of Contractor's default, Surety shall, within 45 days, take one of the following actions:

1. Arrange for Contractor, with consent of the City, to perform and complete the Contract; or

2. Take over and assume completion of the Contract itself, through its agents or through independent contractors, and become entitled to the payment of the balance of the Contract Price.

If the Surety fails to take either of the actions set out above, it shall be deemed to have waived its right to perform and complete the Contract and receive payment of the balance of the Contract Price and the City shall be entitled to enforce any remedies available at law, including but not limited to completing the Contract itself and recovering any cost in excess of the Original Contract Price from the Surety.

This Bond and all obligations created hereunder shall be performable in Harris County, Texas. This Bond is given in compliance with the provisions of Chapter 2253, Texas Government Code, as amended, which is incorporated herein by this reference.

Notices required or permitted hereunder shall be in writing and shall be deemed delivered when actually received or, if earlier, on the third day following deposit in a United States Postal Service post office or receptacle, with proper postage affixed (certified mail, return receipt requested), addressed to the respective other Party at the address prescribed in the Contract documents, or at such other address as the receiving party may hereafter prescribe by written notice to the sending party.

Safe Routes to School Sidewalk Project
WBS No. N-00610A-(0102-0106)-4 **PERFORMANCE BOND**

IN WITNESS THEREOF, the said Contractor and Surety have signed and sealed this instrument on the respective dates written below their signatures and have attached current Power of Attorney.

ATTEST, SEAL: (If a corporation)
WITNESS: (if not a corporation)

By:
Name: YOUSEF ELDIRAWI
Title: PRESIDENT

CAAN Construction Services, Inc.
Name of Contractor

By:
Name: YOUSEF ELDIRAWI
Title: PRESIDENT
Date: September 8, 2010

ATTEST/SURETY WITNESS:

(SEAL)

SureTec Insurance Company
Full Name of Surety
952 Echo Lane, Suite 450
Address of Surety for Notice
Houston, Texas 77024

713-812-0800
Telephone Number of Surety

By:
Name: Beverly A. Ireland
Title: Account Manager
Date: September 8, 2010

By:
Name: Roxanne G. Hebert
Title: Attorney-in-Fact
Date: September 8, 2010

This Ordinance or Contract has been reviewed as to form by the undersigned legal assistant and have been found to meet established Legal Department criteria. The Legal Department has not reviewed the content of these documents.

Legal Assistant

10-15-10
Date

END OF DOCUMENT

POA #: 4221100

SureTec Insurance Company

LIMITED POWER OF ATTORNEY

Know All Men by These Presents, That SURETEC INSURANCE COMPANY (the "Company"), a corporation duly organized and existing under the laws of the State of Texas, and having its principal office in Houston, Harris County, Texas, does by these presents make, constitute and appoint

Sharen Groppell, Gary L. Timmons, Roxanne G. Hebert, Edward L. Moore, Bruce C. DeHart,
David R. Groppell, Beverly A. Ireland, Mary M. Rifaat

its true and lawful Attorney-in-fact, with full power and authority hereby conferred in its name, place and stead, to execute, acknowledge and deliver any and all bonds, recognizances, undertakings or other instruments or contracts of suretyship to include waivers to the conditions of contracts and consents of surety, providing the bond penalty does not exceed

Five Million Dollars and no/100 ($5,000,000.00)

and to bind the Company thereby as fully and to the same extent as if such bond were signed by the President, sealed with the corporate seal of the Company and duly attested by its Secretary, hereby ratifying and confirming all that the said Attorney(s)-in-Fact may do in the premises. Said appointment shall continue in force until 12/31/12 and is made under and by authority of the following resolutions of the Board of Directors of the SureTec Insurance Company:

Be it Resolved, that the President, any Vice-President, any Assistant Vice-President, any Secretary or any Assistant Secretary shall be and is hereby vested with full power and authority to appoint any one or more suitable persons as Attorney(s)-in-Fact to represent and act for and on behalf of the Company subject to the following provisions:

Attorney-in-Fact may be given full power and authority for and in the name of and of behalf of the Company, to execute, acknowledge and deliver, any and all bonds, recognizances, contracts, agreements or indemnity and other conditional or obligatory undertakings and any and all notices and documents canceling or terminating the Company's liability thereunder, and any such instruments so executed by any such Attorney-in-Fact shall be binding upon the Company as if signed by the President and sealed and effected by the Corporate Secretary.

Be it Resolved, that the signature of any authorized officer and seal of the Company heretofore or hereafter affixed to any power of attorney or any certificate relating thereto by facsimile, and any power of attorney or certificate bearing facsimile signature or facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached. *(Adopted at a meeting held on 20th of April, 1999.)*

In Witness Whereof, SURETEC INSURANCE COMPANY has caused these presents to be signed by its President, and its corporate seal to be hereto affixed this 28th day of October, A.D. 2008.

SURETEC INSURANCE COMPANY

By: B.J. King, President

State of Texas ss:
County of Harris

On this 28h day of October, 2008 before me personally came B.J. King, to me known, who, being by me duly sworn, did depose and say, that he resides in Houston, Texas, that he is President of SURETEC INSURANCE COMPANY, the company described in and which executed the above instrument; that he knows the seal of said Company; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said Company; and that he signed his name thereto by like order.

Michelle Denny
Notary Public
State of Texas
Expires August 27, 2012

Michelle Denny, Notary Public
My commission expires August 27, 2012

I, M. Brent Beaty, Assistant Secretary of SURETEC INSURANCE COMPANY, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney, executed by said Company, which is still in full force and effect; and furthermore, the resolutions of the Board of Directors, set out in the Power of Attorney are in full force and effect.

Given under my hand and the seal of said Company at Houston, Texas this 8th day of September, 2010, A.D.

M. Brent Beaty, Assistant Secretary

Any instrument issued in excess of the penalty stated above is totally void and without any validity.
For verification of the authority of this power you may call (713) 812-0800 any business day between 8:00 am and 5:00 pm CST.

Document 00611

STATUTORY PAYMENT BOND

THAT WE, CAAN Construction Services, Inc., as Principal, hereinafter called Contractor and the other subscriber hereto, SureTec Insurance Company as Surety, do hereby acknowledge ourselves to be held and firmly bound unto the City of Houston, a municipal corporation, in the sum of $886,392.00 for the payment of which sum, well and truly to be made to the City of Houston, and its successors, the said Contractor and Surety do bind themselves, their heirs, executors, administrators, successors, jointly and severally.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH THAT:

WHEREAS, the Contractor has on or about this day executed a contract in writing with the City of Houston for Safe Routes to School Sidewalk Project WBS No. N-00610A-(0102-0106)-4, all of such work to be done as set out in full in said Contract documents therein referred to and adopted by the City Council, all of which are made a part of this instrument as fully and completely as if set out in full herein;

NOW, THEREFORE, if the said Contractor shall pay all claimants supplying labor and materials to him or a Subcontractor in the prosecution of the Work provided for in the Contract, then, this obligation shall be void; otherwise the same is to remain in full force and effect;

PROVIDED HOWEVER, that this Bond is executed pursuant to the provisions of Chapter 2253, Texas Government Code, as amended, 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.

Safe Routes to School Sidewalk Project
WBS No. N-00610A-(0102-0106)-4

STATUTORY PAYMENT BOND

IN WITNESS THEREOF, the said Contractor and Surety have signed and sealed this instrument on the respective dates written below their signatures and have attached current Power of Attorney.

ATTEST, SEAL: (if a corporation)
WITNESS: (if not a corporation)

By: [signature]
Name: YOUSEF ELDIRADI
Title: PRESIDENT

CAAN Construction Services, Inc.
Name of Contractor

By: [signature]
Name: YOUSEF ELDIRADI
Title: PRESIDENT
Date: September 8, 2010

ATTEST/SURETY WITNESS:

(SEAL)

By: [signature]
Name: Beverly A. Ireland
Title: Account Manager
Date: September 8, 2010

SureTec Insurance Company
Full Name of Surety
952 Echo Lane, Suite 450
Address of Surety for Notice
Houston, Texas 77024

713-812-0800
Telephone Number of Surety

By: [signature]
Name: Roxanne G. Hebert
Title: Attorney-in-Fact
Date: September 8, 2010

This Ordinance or Contract has been reviewed as to form by the undersigned legal assistant and have been found to meet established Legal Department criteria. The Legal Department has not reviewed the content of these documents.

[signature] 10-15-10
Legal Assistant Date

END OF DOCUMENT

POA #: 4221100

SureTec Insurance Company

LIMITED POWER OF ATTORNEY

Know All Men by These Presents, That SURETEC INSURANCE COMPANY (the "Company"), a corporation duly organized and existing under the laws of the State of Texas, and having its principal office in Houston, Harris County, Texas, does by these presents make, constitute and appoint

Sharen Groppell, Gary L. Timmons, Roxanne G. Hebert, Edward L. Moore, Bruce C. DeHart,
David R. Groppell, Beverly A. Ireland, Mary M. Rifaat

its true and lawful Attorney-in-fact, with full power and authority hereby conferred in its name, place and stead, to execute, acknowledge and deliver any and all bonds, recognizances, undertakings or other instruments or contracts of suretyship to include waivers to the conditions of contracts and consents of surety, providing the bond penalty does not exceed

Five Million Dollars and no/100 ($5,000,000.00)

and to bind the Company thereby as fully and to the same extent as if such bond were signed by the President, sealed with the corporate seal of the Company and duly attested by its Secretary, hereby ratifying and confirming all that the said Attorney(s)-in-Fact may do in the premises. Said appointment shall continue in force until 12/31/12 and is made under and by authority of the following resolutions of the Board of Directors of the SureTec Insurance Company:

Be it Resolved, that the President, any Vice-President, any Assistant Vice-President, any Secretary or any Assistant Secretary shall be and is hereby vested with full power and authority to appoint any one or more suitable persons as Attorney(s)-in-Fact to represent and act for and on behalf of the Company subject to the following provisions:

Attorney-in-Fact may be given full power and authority for and in the name of and of behalf of the Company, to execute, acknowledge and deliver, any and all bonds, recognizances, contracts, agreements or indemnity and other conditional or obligatory undertakings and any and all notices and documents canceling or terminating the Company's liability thereunder, and any such instruments so executed by any such Attorney-in-Fact shall be binding upon the Company as if signed by the President and sealed and effected by the Corporate Secretary.

Be it Resolved, that the signature of any authorized officer and seal of the Company heretofore or hereafter affixed to any power of attorney or any certificate relating thereto by facsimile, and any power of attorney or certificate bearing facsimile signature or facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached. *(Adopted at a meeting held on 20th of April, 1999.)*

In Witness Whereof, SURETEC INSURANCE COMPANY has caused these presents to be signed by its President, and its corporate seal to be hereto affixed this 28th day of October, A.D. 2008.

SURETEC INSURANCE COMPANY

By: _____
B.J. King, President

State of Texas ss:
County of Harris

On this 28h day of October, 2008 before me personally came B.J. King, to me known, who, being by me duly sworn, did depose and say, that he resides in Houston, Texas, that he is President of SURETEC INSURANCE COMPANY, the company described in and which executed the above instrument; that he knows the seal of said Company; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said Company; and that he signed his name thereto by like order.

Michelle Denny
Notary Public
State of Texas
Expires August 27, 2012

_____
Michelle Denny, Notary Public
My commission expires August 27, 2012

I, M. Brent Beaty, Assistant Secretary of SURETEC INSURANCE COMPANY, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney, executed by said Company, which is still in full force and effect; and furthermore, the resolutions of the Board of Directors, set out in the Power of Attorney are in full force and effect.

Given under my hand and the seal of said Company at Houston, Texas this 8th day of September, 2010, A.D.

_____
M. Brent Beaty, Assistant Secretary

Any instrument issued in excess of the penalty stated above is totally void and without any validity.
For verification of the authority of this power you may call (713) 812-0800 any business day between 8:00 am and 5:00 pm CST.

Document 00612

ONE-YEAR MAINTENANCE BOND

THAT WE, CAAN Construction Services, Inc., as Principal, hereinafter called Contractor, and the other subscriber hereto, SureTec Insurance Company, as Surety, do hereby acknowledge ourselves to be held and firmly bound to the City of Houston, a municipal corporation, in the sum of $886,392.00, for the payment of which sum well and truly to be made to the City of Houston and its successors, the said Contractor and Surety do bind themselves, their heirs, executors, administrators, successors, jointly and severally.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH THAT:

WHEREAS, the Contractor has on or about this day executed a Contract in writing with the City of Houston for Safe Routes to School Sidewalk Project WBS No. N-00610A-(0102-0106)-4, all of such work to be done as set out in full in said Contract documents therein referred to and adopted by the City Council, all of which are made a part of this instrument as fully and completely as if set out in full herein.

NOW THEREFORE, if the said Contractor shall comply with the provisions of Paragraph 11.5.1 of the General Conditions, and correct work not in accordance with the Contract documents discovered within the established one-year period, then this obligation shall become null and void, and shall be of no further force and effect; otherwise, the same is to remain in full force and effect.

Notices required or permitted hereunder shall be in writing and shall be deemed delivered when actually received or, if earlier, on the third day following deposit in a United States Postal Service post office or receptacle, with proper postage affixed (certified mail, return receipt requested), addressed to the respective other party at the address prescribed in the Contract documents, or at such other address as the receiving party may hereafter prescribe by written notice to the sending party.

Bond No. 5085860

Safe Routes to School Sidewalk Project
WBS No. N-00610A-(0102-0106)-4

ONE-YEAR MAINTENANCE BOND

IN WITNESS THEREOF, the said Contractor and Surety have signed and sealed this instrument on the respective dates written below their signatures and have attached current Power of Attorney.

ATTEST, SEAL: (if a corporation)
WITNESS: (if not a corporation)

By: _____
Name: YOUSEF ECDIRAOU
Title: PRESIDENT

CAAN Construction Services, Inc.
Name of Contractor

By: _____
Name: YOUSEF ECDIRAOU
Title: PRESIDENT
Date: September 8, 2010

ATTEST/SURETY WITNESS:

(SEAL)

By: _____
Name: Beverly A. Ireland
Title: Account Manager
Date: September 8, 2010

SureTec Insurance Company
Full Name of Surety
952 Echo Lane, Suite 450
Address of Surety for Notice
Houston, Texas 77024

713-812-0800
Telephone Number of Surety

By: _____
Name: Roxanne G. Hebert
Title: Attorney-in-Fact
Date: September 8, 2010

This Ordinance or Contract has been reviewed as to form by the undersigned legal assistant and have been found to meet established Legal Department criteria. The Legal Department has not reviewed the content of these documents.

_____ 10-15-10
Legal Assistant Date

END OF DOCUMENT

POA #: 4221100

SureTec Insurance Company

LIMITED POWER OF ATTORNEY

Know All Men by These Presents, That SURETEC INSURANCE COMPANY (the "Company"), a corporation duly organized and existing under the laws of the State of Texas, and having its principal office in Houston, Harris County, Texas, does by these presents make, constitute and appoint

Sharen Groppell, Gary L. Timmons, Roxanne G. Hebert, Edward L. Moore, Bruce C. DeHart,
David R. Groppell, Beverly A. Ireland, Mary M. Rifaat

its true and lawful Attorney-in-fact, with full power and authority hereby conferred in its name, place and stead, to execute, acknowledge and deliver any and all bonds, recognizances, undertakings or other instruments or contracts of suretyship to include waivers to the conditions of contracts and consents of surety, providing the bond penalty does not exceed

Five Million Dollars and no/100 ($5,000,000.00)

and to bind the Company thereby as fully and to the same extent as if such bond were signed by the President, sealed with the corporate seal of the Company and duly attested by its Secretary, hereby ratifying and confirming all that the said Attorney(s)-in-Fact may do in the premises. Said appointment shall continue in force until 12/31/12 and is made under and by authority of the following resolutions of the Board of Directors of the SureTec Insurance Company:

Be it Resolved, that the President, any Vice-President, any Assistant Vice-President, any Secretary or any Assistant Secretary shall be and is hereby vested with full power and authority to appoint any one or more suitable persons as Attorney(s)-in-Fact to represent and act for and on behalf of the Company subject to the following provisions:

Attorney-in-Fact may be given full power and authority for and in the name of and of behalf of the Company, to execute, acknowledge and deliver, any and all bonds, recognizances, contracts, agreements or indemnity and other conditional or obligatory undertakings and any and all notices and documents canceling or terminating the Company's liability thereunder, and any such instruments so executed by any such Attorney-in-Fact shall be binding upon the Company as if signed by the President and sealed and effected by the Corporate Secretary.

Be it Resolved, that the signature of any authorized officer and seal of the Company heretofore or hereafter affixed to any power of attorney or any certificate relating thereto by facsimile, and any power of attorney or certificate bearing facsimile signature or facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached. *(Adopted at a meeting held on 20th of April, 1999.)*

In Witness Whereof, SURETEC INSURANCE COMPANY has caused these presents to be signed by its President, and its corporate seal to be hereto affixed this 28th day of October, A.D. 2008.

SURETEC INSURANCE COMPANY

By: _____
B.J. King, President

State of Texas ss:
County of Harris

On this 28h day of October, 2008 before me personally came B.J. King, to me known, who, being by me duly sworn, did depose and say, that he resides in Houston, Texas, that he is President of SURETEC INSURANCE COMPANY, the company described in and which executed the above instrument; that he knows the seal of said Company; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said Company; and that he signed his name thereto by like order.

Michelle Denny
Notary Public
State of Texas
Expires August 27, 2012

Michelle Denny
Michelle Denny, Notary Public
My commission expires August 27, 2012

I, M. Brent Beaty, Assistant Secretary of SURETEC INSURANCE COMPANY, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney, executed by said Company, which is still in full force and effect; and furthermore, the resolutions of the Board of Directors, set out in the Power of Attorney are in full force and effect.

Given under my hand and the seal of said Company at Houston, Texas this 8th day of September, 2010, A.D.

M. Brent Beaty
M. Brent Beaty, Assistant Secretary

Any instrument issued in excess of the penalty stated above is totally void and without any validity.
For verification of the authority of this power you may call (713) 812-0800 any business day between 8:00 am and 5:00 pm CST.

Document 00613

ONE-YEAR SURFACE CORRECTION BOND

THAT WE, CAAN Construction Services, Inc., as Principal, hereinafter called Contractor, and the other subscriber hereto, SureTec Insurance Company as Surety, do hereby acknowledge ourselves to be held and firmly bound to the City of Houston, a municipal corporation, in the sum of $35,455.70, such sum being equal to four percent of the Original Contract Price, for the payment of which sum to be made to the City of Houston and its successors, Contractor and Surety do bind themselves, their successors, jointly and severally.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH THAT:

WHEREAS, the Contractor has entered into a Contract in writing with the City of Houston, Texas, dated of even date herewith, for Safe Routes to School Sidewalk Project
WBS No. N-00610A-(0102-0106)-4,
all of such work to be done in accordance with the Contract documents therein referred to, and adopted by the City Council of the City of Houston.

NOW THEREFORE, if the Contractor shall comply with the provisions of Paragraph 11.5.1 of the General Conditions, and repair, replace, restore, and correct surface work associated with backfill operations of subsurface work not in accordance with the Contract documents discovered within one year from the date that the One-year Maintenance Bond has expired, then this obligation shall become null and void, and shall be of no further force and effect; otherwise, the same is to remain in full force and effect.

Notices required or permitted hereunder shall be in writing and shall be deemed delivered when actually received or, if earlier, on the third day following deposit in a United States Postal Service post office or receptacle, with proper postage affixed (certified mail, return receipt requested), addressed to the respective other party at the address prescribed in the Contract documents, or at such other address as the receiving party may hereafter prescribe by written notice to the sending party.

Bond No. 5085860

Safe Routes to School Sidewalk Project
WBS No. N-00610A-(0102-0106)-4 **ONE-YEAR SURFACE CORRECTION BOND**

IN WITNESS THEREOF, the said Principal and Surety have signed and sealed this instrument on the respective dates written below their signatures.

ATTEST, SEAL: (if a corporation)
WITNESS: (if not a corporation)

By:
Name: YOUSEF ELDIRNOU
Title: PRESIDENT

CAAN Construction Services, Inc.
Name of Contractor

By:
Name: YOUSEF ELDIRNOU
Title: PRESIDENT
Date: September 8, 2010

ATTEST/SURETY WITNESS:

(SEAL)

By:
Name: Beverly A. Ireland
Title: Account Manager
Date: September 8,2010

SureTec Insurance Company
Full Name of Surety
952 Echo Lane, Suite 450
Address of Surety for Notice
Houston, Texas 77024

713-812-0800
Telephone Number of Surety

By:
Name: Roxanne G. Hebert
Title: Attorney-In-Fact
Date: September 8, 2010

This Ordinance or Contract has been reviewed as to form by the undersigned legal assistant and have been found to meet established Legal Department criteria. The Legal Department has not reviewed the content of these documents.

Legal Assistant

10-15-10
Date

END OF DOCUMENT

POA #: 4221100

SureTec Insurance Company

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Five Million Dollars and no/100 ($5,000,000.00)

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Be it Resolved, that the signature of any authorized officer and seal of the Company heretofore or hereafter affixed to any power of attorney or any certificate relating thereto by facsimile, and any power of attorney or certificate bearing facsimile signature or facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached. *(Adopted at a meeting held on 20th of April, 1999.)*

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SURETEC INSURANCE COMPANY

By: B.J. King, President

State of Texas ss:
County of Harris

On this 28h day of October, 2008 before me personally came B.J. King, to me known, who, being by me duly sworn, did depose and say, that he resides in Houston, Texas, that he is President of SURETEC INSURANCE COMPANY, the company described in and which executed the above instrument; that he knows the seal of said Company; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said Company; and that he signed his name thereto by like order.

Michelle Denny
Notary Public
State of Texas
Expires August 27, 2012

Michelle Denny
Michelle Denny, Notary Public
My commission expires August 27, 2012

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Given under my hand and the seal of said Company at Houston, Texas this 8th day of September, 20 10, A.D.

M. Brent Beaty
M. Brent Beaty, Assistant Secretary

Any instrument issued in excess of the penalty stated above is totally void and without any validity.
For verification of the authority of this power you may call (713) 812-0800 any business day between 8:00 am and 5:00 pm CST.

SureTec Insurance Company
THIS BOND RIDER CONTAINS IMPORTANT COVERAGE INFORMATION

Statutory Complaint Notice

To obtain information or make a complaint: You may call the Surety's toll free telephone number for information or to make a complaint at: 1-866-732-0099. You may also write to the Surety at:

SureTec Insurance Company
9737 Great Hills Trail, Suite 320
Austin, Tx 78759

You may contact the Texas Department of Insurance to obtain information on companies, coverage, rights or complaints at 1-800-252-3439. You may write the Texas Department of Insurance at

PO Box 149104
Austin, TX 78714-9104
Fax#: 512-475-1771

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

Terrorism Risks Exclusion

The Bond to which this Rider is attached does not provide coverage for, and the surety shall not be liable for, losses caused by acts of terrorism, riot, civil insurrection, or acts of war.

Exclusion of Liability for Mold, Mycotoxins, Fungi & Environmental Hazards

The Bond to which this Rider is attached does not provide coverage for, and the surety thereon shall not be liable for, molds, living or dead fungi, bacteria, allergens, histamines, spores, hyphae, or mycotoxins, or their related products or parts, nor for any environmental hazards, bio-hazards, hazardous materials, environmental spills, contamination, or cleanup, nor the remediation thereof, nor the consequences to persons, property, or the performance of the bonded obligations, of the occurrence, existence, or appearance thereof.

ACORD CERTIFICATE OF LIABILITY INSURANCE

OP ID JS

DATE (MM/DD/YYYY) 11/05/10

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

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

PRODUCER

Elsey & Associates
21755 IH-45 North Bldg 8
Spring TX 77388
Phone:281-651-0002 Fax:281-350-0281

CONTACT NAME: Jacke Siegel
PHONE (A/C, No, Ext): 281-651-0002 FAX (A/C, No): 281-350-0281
E-MAIL ADDRESS: jsiegel@elseyagency.com
PRODUCER CUSTOMER ID #: CAANC22

INSURED

Caan Construction Enterprises, LP, Caan Construction Services, Inc.
P.O. Box 770696
Houston TX 77215

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A: Employers Mutual Casualty Co.	40509
INSURER B: Service Lloyds Ins. Co.	
INSURER C:	
INSURER D:	
INSURER E:	
INSURER F:	

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

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

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	GENERAL LIABILITY X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: POLICY X PRO-JECT LOC	X	X	4D21551-11	11/18/10	11/18/11	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$1,000,000 $100,000 $5,000 $1,000,000 $2,000,000 $2,000,000
A	AUTOMOBILE LIABILITY ANY AUTO ALL OWNED AUTOS X SCHEDULED AUTOS X HIRED AUTOS X NON-OWNED AUTOS	X	X	4E21551-11	11/18/10	11/18/11	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$1,000,000 $ $ $
A	UMBRELLA LIAB X OCCUR EXCESS LIAB CLAIMS-MADE DEDUCTIBLE X RETENTION $ 10,000	X	X	4J21551-11	11/18/10	11/18/11	EACH OCCURRENCE AGGREGATE	$1,000,000 $1,000,000
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A	X	SRZA0656752	11/18/10	11/18/11	X WC STATU-TORY LIMITS OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $1,000,000 $1,000,000 $1,000,000

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

WBS No. N-00610A-(0102-0106)-4 Safe Routes to School Sidewalk Project Additional Insured (except Workers' Comp) & Waiver of Subrogation in favor of City of Houston, Its Officers, Agents & Employees as required by written contract. Thirty Day Notice of Cancellation applies.

CERTIFICATE HOLDER

COHOUST

City of Houston Public Works & Engineering
Sam Kanu
611 Walker
Houston TX 77002

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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ACORD

CERTIFICATE OF LIABILITY INSURANCE

OP ID JS

DATE (MM/DD/YYYY) 09/08/10

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

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

PRODUCER

Elsey & Associates
21755 IH-45 North Bldg 8
Spring TX 77388
Phone:281-651-0002 Fax:281-350-0281

CONTACT NAME: Jacke Siegel
PHONE (A/C, No, Ext): 281-651-0002 FAX (A/C, No): 281-350-0281
E-MAIL ADDRESS: jsiegel@elseyagency.com
PRODUCER CUSTOMER ID #: CAANC22

INSURED

Caan Construction Enterprises, LP, Caan Construction Services, Inc.
P.O. Box 770696
Houston TX 77215

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A: Employers Mutual Casualty Co.	40509
INSURER B: New Hampshire Insurance Co.	23841
INSURER C:	
INSURER D:	
INSURER E:	
INSURER F:	

COVERAGES

CERTIFICATE NUMBER:

REVISION NUMBER:

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

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	GENERAL LIABILITY X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: POLICY X PRO-JECT LOC	X	X	4D21551-10	11/18/09	11/18/10	EACH OCCURRENCE	$ 1,000,000
							DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 100,000
							MED EXP (Any one person)	$ 5,000
							PERSONAL & ADV INJURY	$ 1,000,000
							GENERAL AGGREGATE	$ 2,000,000
							PRODUCTS - COMP/OP AGG	$ 2,000,000
								$
A	AUTOMOBILE LIABILITY ANY AUTO ALL OWNED AUTOS X SCHEDULED AUTOS X HIRED AUTOS X NON-OWNED AUTOS	X	X	4E21551-10	11/18/09	11/18/10	COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
							BODILY INJURY (Per person)	$
							BODILY INJURY (Per accident)	$
							PROPERTY DAMAGE (Per accident)	$
								$
								$
A	UMBRELLA LIAB X OCCUR EXCESS LIAB CLAIMS-MADE DEDUCTIBLE X RETENTION $ 10,000	X	X	4J21551-10	11/18/09	11/18/10	EACH OCCURRENCE	$ 1,000,000
							AGGREGATE	$ 1,000,000
								$
								$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N N/A (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A	X	WC009742606	11/18/09	11/18/10	X WC STATU-TORY LIMITS OTH-ER	
							E.L. EACH ACCIDENT	$ 1,000,000
							E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
							E.L. DISEASE - POLICY LIMIT	$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)
WBS No. N-00610A-(0102-0106)-4 Safe Routes to School Sidewalk Project
Additional Insured (except Workers' Comp) & Waiver of Subrogation in favor of City of Houston, Its Officers, Agents & Employees as required by written contract. Thirty Day Notice of Cancellation applies.

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City of Houston Public Works & Engineering
Sam Kanu
611 Walker
Houston TX 77002

COHOUST

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AUTHORIZED REPRESENTATIVE

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Spring TX 77388
Phone:281-651-0002 Fax:281-350-0281

CONTACT NAME:
PHONE (A/C, No, Ext):
FAX (A/C, No):
E-MAIL ADDRESS:
PRODUCER CUSTOMER ID #: CAANC22

INSURED

City of Houston
Department of Public
Works & Engineering
Sam Kanu, P.E.
611 Walker
Houston TX 77002

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A: Employers Mutual Casualty Co.	40509
INSURER B:	
INSURER C:	
INSURER D:	
INSURER E:	
INSURER F:	

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

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INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	GENERAL LIABILITY							
	COMMERCIAL GENERAL LIABILITY						EACH OCCURRENCE	$ 1000000
	CLAIMS-MADE / OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$
A	X Owner/Cont Prot.			4D39569-11	09/07/10	09/07/11	MED EXP (Any one person)	$
							PERSONAL & ADV INJURY	$
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$ 1000000
	POLICY / PRO-JECT / LOC						PRODUCTS - COMP/OP AGG	$
								$
	AUTOMOBILE LIABILITY							
	ANY AUTO						COMBINED SINGLE LIMIT (Ea accident)	$
	ALL OWNED AUTOS						BODILY INJURY (Per person)	$
	SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	HIRED AUTOS						PROPERTY DAMAGE (Per accident)	$
	NON-OWNED AUTOS							$
								$
	UMBRELLA LIAB / OCCUR							
	EXCESS LIAB / CLAIMS-MADE						EACH OCCURRENCE	$
	DEDUCTIBLE						AGGREGATE	$
	RETENTION $							$
								$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY						WC STATU-TORY LIMITS / OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N	N/A					E.L. EACH ACCIDENT	$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$
	Commercial Applica						E.L. DISEASE - POLICY LIMIT	$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)
WBS No. N-00610A-(0102-0106)-4 Safe Routes to School Sidewalk Project
Contractor: Caan Construction Enterprises, LP, Caan Construction Services, Inc. P.O. Box 770696 Houston, Texas 77215

CERTIFICATE HOLDER

City of Houston Department
of Public Works & Engineering
Sam Kanu, P.E.
611 Walker
Houston TX 77002

COHOUST

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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Caan Construction Services,Inc.

P.O Box 770696 Houston, Texas 77215-0696 Phone (713) 539-5943 Fax (281) 558-0536

Oct.-06-2010

C.O.H. Public Works & Engineering
611 Walker 14th Flr.
Houston,, Tx 77002
Attn: Sam Kanu

Re : Floater Policy
Safe Routes To School
WBS No. : N-00610A(0102-0106)-4

Mr Kanu:

Caan Construction Services , Inc. will not bill The City Of Houston for Materials stored on site for the above mentioned project. Should there be any billing for materials, Caan will provide the City with an installation floater policy prior to the monthly estimate.

Should you have any questions please feel free to call me.

Yousef Eldiraoui, President
Caan Construction Services, Inc.

Caan Construction Services,Inc.

P.O Box 770696 Houston, Texas 77215-0696 Phone (713) 539-5943 Fax (281) 558-0536

Oct.-08-2010

C.O.H. Public Works & Engineering
611 Walker 14th Flr.
Houston,, Tx 77002
Attn: Sam Kanu

Re : Auto Insurance
Safe Routes To School
WBS No. : N-00610A(0102-0106)-4

Mr Kanu:

This letter is to inform you that all vehicles owned by **Caan Construction Services , Inc.** are presently insured through Employers Mutual Casualty co. under policy # 4E21551-10 .

If Caan Construction should purchase additional vehicles during the term of the above contract with the City Of Houston, they in turn would be covered and added to the policy. The City Of Houston would be shown as an additional insured and include a waiver of subrogation in favor of the City Of Houston.

Yousef Eldiraoui, President
Caan Construction Services, Inc.

Document 00620

AFFIDAVIT OF INSURANCE

BEFORE ME, the undersigned authority, on this day personally appeared

Yousef Eldiraoui, who
Affiant

being by me duly sworn on his oath stated that he is PRESIDENT, of
Title

CAAN Construction Services, Inc.,
Contractor's Company Name

the Contractor named and referred to within the Contract documents; that he is fully competent and authorized to give this affidavit and that the attached original insurance certificate truly and accurately reflects the insurance coverage that is now available and will be available during the term of the Contract.

Affiant's Signature

SWORN AND SUBSCRIBED before me on 09/8/10.
Date

Notary Public in and for the State of TEXAS

Roxanne G. Hebert
Print or type Notary Public name

ROXANNE G. HEBERT
NOTARY PUBLIC
STATE OF TEXAS
MY COMM. EXP. 11/17/2011

My Commission Expires: 11/17/2011
Expiration Date

END OF DOCUMENT

Document 00624

AFFIDAVIT OF COMPLIANCE WITH
AFFIRMATIVE ACTION PROGRAM

BEFORE ME, the undersigned authority, on this day personally appeared Yousef Eldiraoui (Affiant), who being by me duly sworn on his oath stated that he is PRESIDENT (Title), of CAAN Construction Services, Inc. (Contractor), the Contractor named and referred to within the Contract documents; that he is fully competent and authorized to give this affidavit and that the Contract is in compliance with the Affirmative Action Program of the City and has done all that is required by the Contract documents, the Affirmative Action Program, and pursuant to Chapter 15, Code of Ordinances, City of Houston, §15.16 et seq.

Affiant's Signature

SWORN AND SUBSCRIBED before me on this day of 9/8, 2010.

Notary Public in and for the State of TEXAS

Roxanne G. Hebert
Print or Type Notary Public Name

ROXANNE G. HEBERT
NOTARY PUBLIC
STATE OF TEXAS
MY COMM. EXP. 11/17/2011

My Commission Expires: 11/17/2011
Expiration Date

END OF DOCUMENT

CITY OF HOUSTON
STANDARD DOCUMENT

AGREEMENT TO COMPLY WITH PAY OR PLAY

Document 00630 (POP-2)

CERTIFICATION OF AGREEMENT TO COMPLY WITH PAY OR PLAY PROGRAM

Contractor Name: CAAN CONSTRUCTION SVCS. INC $ 886,390.00
(Contractor/Subcontractor) (Amount of Contract)

Contractor Address: 12419 SHADOWVALE, HOU TX 77082

Project No.: N-00610A-(0102-0106)-4

Project Name: Safe Routes to School Sidewalk Project

In accordance with the City of Houston Pay or Play Program authorized by Ordinance 2007-534, Contractor agrees to abide by the terms of this Program. This certification is required of all contractors for contracts subject to the program. You must agree EITHER to PAY or to PLAY for each covered employee, including those of subcontractors subject to the program.

[X] Yes [ ] No Contractor agrees to Pay $1.00 per hour for work performed by covered employees under the contract with the City and to ensure compliance by covered subcontractors and contract labor to the terms of the Pay or Play Program.

[ ] Yes [X] No Contractor agrees to offer health benefits to each covered employee and ensure compliance by the covered subcontractors. The offered health benefits must meet the following criteria:
(1) the employer will contribute no less than $150 per employee per month toward the total premium cost; and
(2) the employee contribution, if any amount, will be no greater than 50% of the total premium cost.

[ ] Yes [X] No Contractor agrees to pay on behalf of some covered employees and contract labor and play on behalf of other covered employees, in accordance with program requirements, including subcontractors' employees, if applicable.

[ ] Yes [X] No If contract labor is utilized the Contractor agrees to report hours worked by the contract laborer and Pay $1.00 per hour for work performed.

[X] Yes [ ] No Contractor will comply with all provisions of the Pay or Play Program and will furnish all information and reports requested to determine compliance with program provisions.

[X] Yes [ ] No For Prime Contractors Only: Contractor will file compliance reports with the City, which will include activity for subcontractors subject to the program, in the form and to the extent requested by the administering department or the Affirmative Action and Contract Compliance Office. Compliance reports shall contain information including, but not limited to, documentation showing employee health coverage and employee work records.

[illegible]	[illegible]	[illegible]
Total Employees on City Job		
Covered Employees		
Non-Covered Employees		
Exempt Employees		

*Required

I hereby certify that the above information is true and correct.

CONTRACTOR (Signature) DATE Sept-08-2011

YOUSEF ELDIRAOUI PRESIDENT
NAME AND TITLE (Print or type)

CITY OF HOUSTON
STANDARD DOCUMENT

Document 00631
(POP-3)

PAY OR PLAY PROGRAM
LIST OF SUBCONTRACTORS

LIST OF SUBCONTRACTORS

Reporting Period:

Prime Contractor: CAAN CONSTRUCTION SVCS INC

Project Name: Safe Route to School Sidewalk

WBS Number: N-00610A-(0102-0106)-4

Contact Person: YOUSEF ELDIRAOUI
Address: 12919 SHADOWLAKE
HOU, TX 77082
Email: ELDIRAOUI@AOL.COM
Phone: 713-539-5943

Note: Include all subcontractors. Subcontractors with subcontracts valued $200,000 or greater are required to pay or play.

Subcontractor Name	Supplier Y/N?	Amount of Subcontract	Check One: Pay	Check One: Play	Check One: N/A	Contact Person	Phone	Email Address	Mailing Address
CEMEX, INC	Y	150,000			N/A	ERIC EDWARDS	281 599 9506		
CMC / Shepherd	Y	50,000			N/A	DEAN ALLEY	713 799-1150		
GULF COAST	Y	15,000			N/A	JO-ANN.	281 277-1613		
HANSON	Y	11,500			N/A	JOSH	713 695-3655		

Noe - Document 00630 must be submitted for each subcontractor required to participate in the POP Program.

****

List of Changes:

02-04-2005: Added new Paragraph 3.25.1.3 concerning strict liability. Edited Paragraph 3.25.1.1 accordingly. Edited Paragraph 9.6.1.4 to remove the words "retainage of".

08-15-2006: Revised many references to Section(s) to read Paragraph(s). Added Small Business Enterprise (SBE) requirement to Paragraphs 3.5.3, 3.5.3.1, 3.5.3.2 and 3.5.3.3.

08-17-2006: Added new Paragraphs 5.2.4, 5.2.5, 9.2.1 and 9.4.2 concerning prompt payment provisions.

10-10-2006: Added new Paragraphs 9.7.1.8, 9.7.1.9 concerning prompt payment provisions. Changed 9.8.1 to "20 days", and added language to 9.8.2 concerning "7 calendar days" and payment disputes.

03-10-2008: Revised Table 1 after 11.2.11 (Installation Floater), and expanded Paragraph 11.5.1 on Maintenance Bonds.

09-10-2008: Revised 5.2.5[sic] on page 17 to read 5.2.4.

10-24-2008: Revised many sections to include or amend numbering.

08-01-2009: Amended 1.1.6., definition of City Engineer. Amended 2.2 to say "Duties" and added 2.2.2 stating that the contract imposes no implied duty on City. Added 3.5.4 concerning Contractor Participation in the Pay or Play Program. Added 3.28 pertaining to Contractor Debt. Amended 4.1.2 to prohibit the City Engineer from delegating signature authority under 4.4. Amended 4.1.11 stating that City owes no duty to Contractor not stated in contract. Amended 4.3.2 to delete second sentence concerning City Engineers decision as a condition precedent to litigation. Amended 4.6 to require both parties to wave claims, attorney fees, and interest. Amended 11.2.6 to require Contractor to notify the City of any Insurance Policy cancelation or modification. Amended 11.2.8 to exempt Workers' Compensation coverage from certain documentation requirements. Amended Table 1 after 11.2.11 to specify automobile coverage requirements. Added 11.3.3 to address content requirements on Certificates of Insurance. Added 13.3.2 to extend joint and several liability to any series, affiliate, subsidiary, or successor to which Contractor assigns or transfers assets. Amended throughout to standardize references to Sections (x.x), Paragraphs (x.x.x), and Subparagraphs (x.x.x.x and below).

01-15-2010: Amended Sections 4.4 and 4.6 concerning written decisions, findings of fact, and hearings by the City engineer, precedent to litigation, and interest under Chapter 2251 of the Texas Local Government Code. Removed Section 4.5 NON-BONDING MEDIATION and renumbered and renamed Section 4.6 as 4.5 CONDITION PRECEDENT TO SUIT; WAIVER OF ATTORNEY FEES AND INTEREST.

07-01-2010: Amended Subsection 1.1.5 to change "municipal corporation" to "home rule municipality". Amended Subsection 3.9.1.1 to reflect change from Low Sulfur Deisel Fuel (500 ppm) to Ultra Low Sulfur Fuel (15 ppm).

****

Document 00700

GENERAL CONDITIONS

JULY 1, 2010 EDITION

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6. CONSTRUCTION BY THE CITY OR BY SEPARATE CONTRACTORS
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1.1 DEFINITIONS

1.1.1 Agreement: Document signed by the Parties and binding the Parties, containing the name of Contractor, title and location of the Project, original Contract Time, Original Contract Price, enumeration of documents included in the Contract, and other provisions.

1.1.2 Bonds: Performance Bond, Payment Bond, Maintenance Bond, and other Surety instruments executed by Surety. When in singular form, refers to individual instrument.

1.1.3 Cash Allowance: An estimated sum of money to be used only for a limited class of expenditures such as utility relocation costs, fees for special licenses or permits, or other "pass-through" costs that would be the same for any contractor. Cash Allowances may not be used to purchase goods or services that are not specified in the Contract. The unspecified items must be purchased according to the terms of Article 7.

1.1.4 Change Order: Written instrument prepared by the City and signed by City Engineer and Contractor, specifying the following:

.1 a change in the Work;
.2 a change in Contract Price, if any; and
.3 a change in Contract Time, if any.

The value of a Change Order is the net amount after offsetting all deductions against all additions effected by the Change Order.

1.1.5 City: The City of Houston, a home rule municipality located principally within Harris County, Texas, including its successors and its authorized representatives.

1.1.6 City Engineer: The City Engineer, or the City employee representing the City Engineer, designated in the Agreement and authorized to represent the City, or successors.

1.1.7 Claim: Written demand or written assertion by one Party seeking adjustment of the Contract, payment of money, extension of time, or other relief under the Contract. The Party making the Claim has the responsibility to substantiate the Claim.

1.1.8 Conditions of the Contract: General Conditions and Supplementary Conditions.

1.1.9 Construction Manager: Person or firm under contract with the City as its authorized representative to oversee and administer construction of the Work, and who may perform the role of Project Manager and Inspector, as designated by City Engineer in writing.

1.1.10 Contract: The Agreement; documents enumerated in and incorporated into the Agreement; Modifications; and amendments.

1.1.11 Contract Price: The monetary amount stated in the Agreement adjusted by Change Order, and increases or decreases in Unit Price Quantities, if any.

1.1.12 Contract Time: The number of days stated in the Agreement to substantially complete the Work, plus days authorized by Change Order.

1.1.13 Contractor: Person or firm identified as such in the Agreement including its successors and its authorized representatives.

1.1.14 Date of Commencement of the Work: Date established in Notice to Proceed on which Contract Time will commence. This date will not be changed by failure of Contractor, or persons or entities for whom Contractor is responsible, to act.

1.1.15 Date of Substantial Completion: Date that construction, or portion thereof designated by City Engineer, is certified by City Engineer to be substantially complete.

1.1.16 Design Consultant: Person or firm, under contract with the City, to provide professional services during construction and its authorized representatives. If a Design Consultant is not employed for services during construction, Project Manager will perform duties of Design Consultant designated in the Contract in addition to usual duties of Project Manager.

1.1.17 Drawings: Graphic and pictorial portions of the Contract that define the character and scope of the Work.

1.1.18 Extra Unit Price: Unit Prices, which may be required for completion of the Work. These Unit Prices and Unit Price Quantities are in the Contract and are included in Original Contract Price.

1.1.19 Furnish: To supply, pay for, deliver to the site, and unload.

1.1.20 General Requirements: The sections of Division 01 Specifications that specify administrative and procedural requirements and temporary facilities required for the Work.

1.1.21 Inspector: City's employee or agent authorized to assist with inspection of the Work.

1.1.22 Install: Unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, clean, protect, and similar operations.

1.1.23 Legal Holiday: Day established by the City Council as a holiday.

1.1.24 Major Unit Price Work: An individual Unit Price item,

.1 whose value is greater than five percent of Original Contract Price,

.2 whose value becomes greater than five percent of Original Contract Price as the result of an increase in quantity, or

.3 whose value is $100,000, whichever is least.

1.1.25 Minor Change in the Work: A written change in the Work, ordered by City Engineer, that does not change Contract Price or Contract Time, and that is consistent with the general scope of the Contract.

1.1.26 Modification: Change Order, Work Change Directive, or Minor Change in the Work.

1.1.27 Notice of Noncompliance: A written notice by City Engineer to Contractor regarding defective or nonconforming work that does not meet the Contract requirements, and that establishes a time by which Contractor shall correct the defective or nonconforming work.

1.1.28 Notice to Proceed: A written notice by City Engineer to Contractor establishing Date of Commencement of the Work.

1.1.29 Original Contract Price: The monetary amount originally stated in the Agreement.

1.1.30 Parties: Contractor and the City. When in singular form, refers to Contractor or the City.

1.1.31 Pollutant: Any materials subject to the Texas Solid Waste Disposal Act.

1.1.32 Pollutant Facility: Any facility regulated by the State of Texas to protect the health and environment from contamination by Pollutants, including without limitation, land fills, oil and gas production and storage facilities, wastewater facilities, waste injection wells, and storage tanks (including drums).

1.1.33 Product: Materials, equipment, or systems incorporated into the Work or to be incorporated into the Work.

1.1.34 Product Data: Illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by Contractor to illustrate a Product.

1.1.35 Project: Total construction, of which the Work performed under the Contract may be the whole or a part, and which may include construction by the City or by separate contractors.

1.1.36 Project Manager: City Engineer's authorized representative for administration of the Work. Titles used within the City's departments may be different than those used in this definition.

1.1.37 Provide: Furnish and Install, complete, ready for intended use.

1.1.38 Samples: Physical examples that illustrate Products, or workmanship, and establish standards by which the Work is judged.

1.1.39 Shop Drawings: Drawings, diagrams, schedules, and other data specially prepared for the Work by Contractor, Subcontractor or Supplier, to illustrate a portion of the Work.

1.1.40 Specifications: Divisions 01 through 16 of the documents that are incorporated into the Agreement, consisting of written General Requirements and requirements for Products, standards, and workmanship for the Work, and performance of related services.

1.1.41 Stipulated Price: Single lump sum amount stated in the Contract for completion of the Work, or for designated portion of the Work.

1.1.42 Subcontractor: Person or firm that has direct or indirect contract with Contractor or with another Subcontractor to perform a portion of the Work and its authorized representatives.

1.1.43 Superintendent: Employee of Contractor having authority and responsibility to act for and represent Contractor.

1.1.44 *Supplementary Conditions:* Part of Conditions of the Contract that amends or supplements General Conditions.

1.1.45 *Supplier:* Manufacturer, distributor, materialman, or vendor having a direct agreement with Contractor or Subcontractor for Products, or services and its authorized representatives.

1.1.46 *Surety:* Corporate entity that is bound by one or more Bonds, and is responsible for completion of the Work, including the correction period, and for payment of debts incurred in fulfilling the Contract. Surety shall include co-surety or reinsurer, as applicable.

1.1.47 *Underground Facilities:* Pipes, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments and encasements containing such facilities that exist below ground level.

1.1.48 *Unit Price:* An amount stated in the Contract for an individual, measurable item of work, which, when multiplied by actual quantity incorporated into the Work, amounts to full compensation for completion of the item, including work incidental to it.

1.1.49 *Unit Price Quantities:* Quantities indicated in the Contract that are approximations made by the City for contracting purposes.

1.1.50 *Work:* Entire construction required by the Contract, including all labor, Products, and services provided by Contractor to fulfill Contractor's obligations. The Work may constitute the whole or a portion of the Project.

1.1.51 *Work Change Directive:* A written change in the Work, ordered by City Engineer, that is within the general scope of the Contract and consisting of additions, deletions, or other revisions. A Work Change Directive will state proposed basis for adjustment, if any, in Contract Price or Contract Time, or both.

1.2 *EXECUTION, CORRELATION, AND INTENT*

1.2.1 Execution of the Contract by Contractor is conclusive that Contractor has visited the Work site, become familiar with local conditions under which the Work will be performed, and fully informed itself as to conditions and matters which can affect the Work or costs. Contractor further agrees that it has carefully correlated personal observations with requirements of the Contract.

1.2.2 The Contract and Modifications have been read and carefully considered by Contractor, who understands and agrees to their sufficiency for the Work. The Contract may not be more strongly construed against the City than against Contractor and Surety.

1.2.3 Contractor shall include all items necessary for proper execution and completion of the Work.

1.2.4 Reference to standard specifications, manuals, or codes of a technical society, organization, or association, or to laws or regulations of a governmental authority, whether specific or implied, mean the latest edition in effect as of date of receipt of bids, except as may be otherwise specifically stated in the Contract.

1.2.5 No provision of any referenced standard, specification, or manual changes the duties and responsibilities of the City, City Engineer, Contractor, or Design Consultant from those set forth in the Contract. Nor do these provisions assign to Design Consultant any duty or authority to supervise or direct performance of the Work or any duty or authority to undertake any actions contrary to provisions of the Contract.

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

1.2.7 Unless otherwise defined in the Contract, words which have well-known construction industry technical meanings are used in the Contract in accordance with these recognized meanings.

1.3 *OWNERSHIP AND USE OF DOCUMENTS*

1.3.1 Drawings, Specifications, and other documents prepared by the City or by Design Consultant are instruments of service through which the Work to be executed by Contractor is described. Contractor may retain one Contract record set.

1.3.2 Neither Contractor, Subcontractor, nor Supplier will own or claim a copyright to documents contained in the Contract or any part of the Contract.

1.3.3 Documents contained in the Contract, prepared by the City or by Design Consultant, and copies furnished to Contractor, are for use solely with respect to the Work. They may not be used by Contractor, Subcontractor or Supplier on other projects or for additions to the Work, outside the scope of the Work, without the specific written consent of City Engineer, and Design Consultant, when applicable.

1.3.4 Contractor, Subcontractors, and Suppliers are granted a limited license to use and reproduce applicable portions of the Contract appropriate to and for use in execution of their work under the Contract.

1.4 *INTERPRETATION*

1.4.1 Specifications are written in an imperative streamlined form and are directed to Contractor, unless noted otherwise. When written in this form, words "shall be" are included by inference where a colon (:) is used within sentences or phrases.

1.4.2 In the interest of brevity, the Contract frequently omits modifying words such as "all" and "any" and articles such as "the" and "an", but an absent modifier or article is not intended to affect interpretation of a statement.

ARTICLE 2 - THE CITY

2.1 *LIMITATIONS OF THE CITY'S OFFICERS AND EMPLOYEES*

2.1.1 No officer or employee of the City may authorize Contractor to perform an act or work contrary to the Contract, except as otherwise provided in the Contract.

2.2 *DUTIES OF THE CITY*

2.2.1 If a building permit is required, the City will process an application for, and Contractor shall purchase the building permit before Date of Commencement of the Work.

2.2.2 The City will make available to Contractor a reproducible set of Drawings. Additional copies will be furnished, on Contractor's request, at the cost of reproduction.

2.2.3 When necessary for performance of the Work, the City will provide surveys describing physical characteristics, legal limitations, legal description of site, and horizontal and vertical control adequate to lay out the Work.

2.2.4 Information or services that the City is required to provide under the Contract will be provided by the City with reasonable promptness to avoid delay in orderly progress of the Work.

2.2.5 The Contract imposes no implied duty on the City. The City does not warrant any plans or specifications associated with the Contract.

2.2.6 Except as expressly stated in this Article, the City owes no duty to the Contractor or any subcontractor.

2.3 *AVAILABILITY OF LAND AND USE OF SITE*

2.3.1 The City will furnish, as indicated in the Contract, rights-of-way, land on which the Work is to be performed, and other land designated in the Contract for use by Contractor unless otherwise provided in the Contract.

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

2.3.3 In addition to land provided by the City under Section 2.3, Contractor shall provide all land and access to land that may be required for use by Contractor for temporary construction facilities or for storage of materials and equipment, and shall indemnify the City during its use of the land as stated in Section 3.25.

2.4 *THE CITY'S RIGHT TO STOP THE WORK*

2.4.1 If Contractor fails to carry out the Work in accordance with the Contract, or fails to correct work which is not in accordance with requirements of the Contract as required in Sections 12.1 and 12.2, the City may, by Notice of Noncompliance, order Contractor to stop the Work or any portion of the Work until the cause for the order has been eliminated. However, the right of the City to stop the Work will not give rise to a Claim for delay or to a duty on the part of the City to exercise this right for the benefit of Contractor or any other person or entity, except to the extent required by Section 6.2. If Contractor corrects the defective or nonconforming work within the time established in Notice of Noncompliance, City Engineer will give written

notice to Contractor to resume performance of the Work.

2.5 *THE CITY'S RIGHT TO CARRY OUT WORK*

2.5.1 If Contractor fails to carry out work in accordance with the Contract, and fails within the period established in a Notice of Noncompliance to correct the nonconforming work, the City may, after expiration of the required period, correct the deficiencies without prejudice to other remedies the City may have, including rights of the City under Section 14.1.

2.5.1.1 When the City corrects deficiencies, City Engineer will issue an appropriate Change Order and deduct from payments then or thereafter due Contractor the cost of correcting the deficiencies, including compensation for Design Consultant's and Construction Manager's additional services and expenses made necessary by such default, neglect, or failure. This action by the City and amounts charged to Contractor are both subject to prior approval of City Engineer. If payments, then or thereafter due Contractor, are not sufficient to cover these amounts, Contractor shall pay the difference to the City.

2.5.2 Notwithstanding the City's right to carry out work, maintenance and protection of the Work remains Contractor's responsibility, as provided in the Contract.

ARTICLE 3 - CONTRACTOR

3.1 *RESPONSIBILITIES*

3.1.1 Contractor shall maintain office with agent in the greater City of Houston area during the Contractor's performance under the Contract. Contractor shall file its street address with City Engineer.

3.1.2 Contractor and Contractor's employees shall not give or lend money or anything of value to an officer or employee of the City. Should this Paragraph 3.1.2 be violated, City Engineer may terminate the Contract under Section 14.1.

3.2 *REVIEW OF CONTRACT AND FIELD CONDITIONS BY CONTRACTOR*

3.2.1 Contractor shall carefully study and compare documents contained in the Contract with each other and with information furnished by the City pursuant to Section 2.2 and shall immediately report, in writing, any errors, inconsistencies, or omissions to City Engineer. If work is affected, Contractor shall obtain a written interpretation or clarification from City Engineer before proceeding with the affected work. However, Contractor will not be liable to the City for failure to report an error, inconsistency, or omission in the Contract unless Contractor had actual knowledge or should have had knowledge of the error, inconsistency, or omission.

3.2.2 Contractor shall take field measurements and verify field conditions, and shall carefully compare the conditions and other information known to Contractor with the Contract, before commencing activities. Contractor shall immediately report, in writing, to City Engineer for interpretation or clarification of discrepancies, inconsistencies, or omissions discovered during this process.

3.2.3 Contractor shall make a reasonable attempt to understand the Contract before requesting interpretation from City Engineer.

3.3 *SUPERVISION AND CONSTRUCTION PROCEDURES*

3.3.1 Contractor shall supervise, direct, and inspect the Work competently and efficiently, devoting the attention and applying the skills and expertise as necessary to perform the Work in accordance with the Contract. Contractor is solely responsible and has control over construction means, methods, techniques, sequences, and procedures of construction; for safety precautions and programs in connection with the Work; and for coordinating all work under the Contract.

3.3.2 Regardless of observations or inspections by the City or City's consultants, Contractor shall perform and complete the Work in accordance with the Contract and submittals approved pursuant to Section 3.18. The City is not liable or responsible to Contractor or Surety for work performed by Contractor that is not in accordance with the Contract regardless of whether discovered during construction or after acceptance of the Work.

3.4 *SUPERINTENDENT*

3.4.1 Contractor shall employ a competent Superintendent and necessary assistants who shall be present at the site during performance of the Work. Communications given to Superintendent are binding on the Contractor.

3.4.2 Contractor shall notify City Engineer in writing of its intent to replace the Superintendent. Contractor may not replace the Superintendent if City Engineer makes a reasonable objection in writing.

3.5 *LABOR*

3.5.1 Contractor shall provide competent, qualified personnel to survey and lay out the Work and perform construction as required by the Contract. The City may, by written notice, require Contractor to remove from the Work any employee of Contractor or Subcontractors to whom City Engineer makes reasonable objection.

3.5.2 Contractor shall comply with City Code of Ordinances, Chapter 15, Article II, relating to equal opportunity employment, and take affirmative action to ensure that applicants are employed and employees are treated without regard to race, religion, color, sex, national origin, or age.

3.5.3 When Original Contract Price is greater than $1,000,000, Contractor shall comply with the City's Minority and Women-owned Business Enterprise ("MWBE"), Persons with Disabilities Business Enterprises ("PDBE") and Small Business Enterprise ("SBE") policy as set out in Chapter 15, Articles V,VI and IX of the City of Houston Code of Ordinances.

3.5.3.1 When Original Contract Price is greater than $1,000,000, Contractor shall make good faith efforts to award subcontracts or supply agreements in at least the percentages set out in the Supplementary Conditions to MWBE,PDBE and SBE firms. Contractor acknowledges that it has reviewed the requirements for good faith efforts on file with the City's Affirmative Action and Contract Compliance Division and will comply with them.

3.5.3.2 Contractor shall require written subcontracts with MWBE, PDBE and SBE Subcontractors and Suppliers and shall submit all disputes with MWBE, PDBE and SBE firms to binding arbitration to be conducted in Houston, Texas, if directed to do so by the Affirmative Action and Contract Compliance Division Director ("Director"). MWBE, PDBE and SBE subcontracts must contain the terms set out in Subparagraph 3.5.3.3. If Contractor is an individual person, as distinguished from a corporation, partnership, or other legal entity, and the amount of the subcontract is $50,000 or less, the subcontract must also be signed by the attorneys of the respective parties.

3.5.3.3 Contractor shall ensure that subcontracts with MWBE, PDBE and SBE firms are clearly labeled **"THIS CONTRACT IS SUBJECT TO ARBITRATION ACCORDING TO THE TEXAS GENERAL ARBITRATION ACT"** and contain the following terms:

.1 (MWBE, PDBE and SBE firm) may not delegate or subcontract more than 50 percent of work under this subcontract to any other subcontractor without the express written consent of the Director.

.2 (MWBE, PDBE and SBE firm) shall permit representatives of the City of Houston, at all reasonable times, to perform (1) audits of the books and records of the Subcontractors and Suppliers, and (2) inspections of all places where work is to be undertaken in connection with this subcontract. (MWBE, PDBE and SBE firm) shall keep the books and records available for this purpose for at least four years after the end of its performance under this subcontract. Nothing in this Section shall affect the time for bringing a cause of action nor the applicable statute of limitations.

.3 Within five business days of execution of this subcontract, Contractor and (MWBE, PDBE and SBE firm) shall designate in writing to the Director an agent for receiving any notice required or permitted to be given pursuant to Chapter 15 of the Houston City Code of Ordinances, along with the street and mailing address and phone number of the agent.

.4 As concluded by the parties to this subcontract, and as evidenced by their signature to this subcontract, any controversy between the parties involving the construction or application of the terms of this subcontract will, on the written request of one party served upon the other or upon notice by Director served on both parties, be submitted to arbitration, under the Texas General Arbitration Act (TEX. CIV. PRAC. & REM. CODE ANN., Ch 171 - - "Act"). Arbitration will be conducted according to the following procedures:

.1 Upon the decision of the Director or upon written notice to the Director from either party that a dispute has arisen, the Director shall notify all parties that they must resolve the dispute within

30 days or the matter may be referred to arbitration.

.2 If the dispute is not resolved within the time specified, any party or the Director may submit the matter to arbitration governed by the American Arbitration Association rules.

.3 Upon submittal of the matter to arbitration, each party shall pay all fees required by the American Arbitration Association and its arbitrators from liability for decisions reached in the arbitration.

.4 If the City contracts with an organization other than the American Arbitration Association to provide arbitration services related to disputes between prime contractors and MWBE, PDBE and SBE firms, the parties may, at their option, proceed with arbitration before the American Arbitration Association or with the organization the City has contracted with.

.5 All arbitrations will be conducted in Houston, Texas unless the parties agree to another location in writing.

3.5.4 The requirements and terms of the City of Houston Pay or Play Program, as set out in Executive Order 1-7 and Ordinance 2007-0534, are incorporated into the Contract for all purposes. Contractor shall comply with the terms and conditions of the Pay or Play Program as they are set out at the time of City Council approval of this agreement. IF CONTRACTOR DOES NOT PAY IN ACCORDANCE WITH THE PAY OR PLAY PROGRAM WITHIN 30 DAYS OF THE DATE CITY ENGINEEER SENDS CONTRACTOR WRITTEN NOTIFICATION, CITY CONTROLLER MAY DEDUCT FUNDS UP TO THE AMOUNT OWED FROM ANY PAYMENTS OWED TO CONTRACTOR UNDER THIS AGREEMENT, AND CONTRACTOR WAIVES ANY RECOURSE.

3.6 *PREVAILING WAGE RATES*

3.6.1 Contractor shall comply with governing statutes providing for labor classification of wage scales for each craft or type of laborer, worker, or mechanic.

3.6.2 Prevailing wage rates applicable to the Work may be one or a combination of the following wage rates identified in Division 00:

.1 Federal Wage Rate General Decisions
- .1 Highway Rates
- .2 Building Rates
- .3 Heavy Construction Rates
- .4 Residential Rates

.2 City Prevailing Wage Rates
- .1 Building Construction Rates
- .2 Engineering Construction Rates
- .3 Asbestos Worker Rates

3.6.3 Each week Contractor shall submit to the City Affirmative Action and Contract Compliance Division certified copies of payrolls showing classifications and wages paid by Contractor, Subcontractors, and Suppliers for each employee under the Contract, for any day included in the Contract.

3.7 *LABOR CONDITIONS*

3.7.1 In the event of labor disputes affecting Contractor or Contractor's employees, Contractor shall utilize all possible means to resolve disputes in order that the Work not be delayed to any extent. These means will include seeking injunctive relief and filing unfair labor practice charges, and any other action available to Contractor.

3.7.2 When Contractor has knowledge that any actual or potential labor dispute is delaying or is threatening to delay timely performance of the Work, Contractor shall immediately notify City Engineer in writing. No Claims will be accepted by City Engineer for costs incurred as a result of jurisdictional or labor disputes.

3.8 *DRUG DETECTION AND DETERRENCE*

3.8.1 It is the policy of the City to achieve a drug-free work force and to provide a workplace that is free from the use of illegal drugs and alcohol. It is also the policy of the City that manufacture, distribution, dispensation, possession, sale, or use of illegal drugs or alcohol by contractors while on the City's premises is prohibited. By executing the Contract, Contractor represents and certifies that it meets and will comply with all requirements and procedures set forth in the Mayor's Policy on Drug Detection and Deterrence, City Council Motion No. 92-1971 ("Mayor's Policy") and the Mayor's Drug Detection and Deterrence Procedures for Contractors, Executive Order No. 1-31, (Revised)

3.8.1.1 The Executive Order applies to the City's contracts for labor or services except the following:

.1 contracts authorized by Emergency Purchase Orders,

.2 contracts in which imposition of requirements of the Executive Order would exclude all potential bidders or proposers, or would eliminate meaningful competition for the Contract,

.3 contracts with companies that have fewer than 15 employees during any 20-week period during a calendar year and no safety impact positions,

.4 contracts with non-profit organizations providing services at no cost or reduced cost to the public, and

.5 contracts with federal, state, or local governmental entities.

3.8.1.2 Prior to execution of the Contract, Contractor shall have filed with the City:

.1 a Drug Policy Compliance Agreement form (Attachment "A" to the Executive Order), and

.2 a copy of Contractor's drug free workplace policy, and

.3 a written designation of all safety impact positions, if applicable, or a Contractor's Certification of a No Safety Impact Positions form (Attachment "C" to the Executive Order).

3.8.1.3 Every six months during performance of the Contract and upon completion of the Contract, Contractor shall file a Drug Policy Compliance Declaration form (Attachment "B" to the Executive Order). The Contractor shall submit the Drug Policy Compliance Declaration within 30 days of expiration of each six-month period of performance and within 30 days of completion of the Contract. The first six-month period shall begin on Date of Commencement of the Work.

3.8.1.4 Contractor shall have a continuing obligation to file updated designation of safety impact positions when additional safety impact positions are added to Contractor's employee workforce during performance of the Work.

3.8.1.5 Contractor shall require its Subcontractors and Suppliers to comply with the Mayor's Policy and Executive Order. Contractor is responsible for securing and maintaining required documents from Subcontractors and Suppliers for the City inspection throughout the term of the Contract.

3.8.1.6 Failure of Contractor to comply with requirements will be a material breach of the Contract entitling the City to terminate in accordance with Section 14.1.

3.9 *MATERIALS & EQUIPMENT*

3.9.1 Unless otherwise provided in the Contract, Contractor shall provide and assume full responsibility for Products, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, transportation, temporary facilities, supplies, and other facilities and incidentals necessary for Furnishing, performing, testing, starting-up, and completing the Work.

3.9.1.1 Contractor, Subcontractors, and Suppliers shall use Ultra Low Sulfur Diesel Fuel in all diesel operating vehicles and motorized equipment utilized in performing the Work. Ultra Low Sulfur Diesel Fuel is defined as diesel fuel having 15 ppm or the applicable standard set by state or federal law or rules and regulations of the Texas Commission on Environmental Quality, or the Environmental Protection Agency, whichever is less in sulfur content. Off-road Ultra Low Sulfur Diesel Fuel may be used in lieu of on-road Ultra Low Sulfur Diesel Fuel. Contractor shall provide, upon request by City Engineer, proof that Contractor, Subcontractors, and Suppliers are using Ultra Low Sulfur Diesel Fuel.

3.9.2 Contractor shall provide Products that are:

.1 new, unless otherwise required or permitted by the Contract, and

.2 of specified quality.

If required by City Engineer, Contractor shall furnish satisfactory evidence, including reports of required tests, as to kind and quality of Products.

3.9.3 Contractor shall store Products in a safe, neat, compact, and protected manner. Contractor shall also store Products delivered during the work, along the right-of-way:

.1 so as to cause the least inconvenience to property owners, tenants, and general public; and

.2 so as not to block access to, or be closer than, three feet to any fire hydrant.

Contractor shall protect trees, lawns, walks, drives, streets, and other improvements that are to remain, from damage. If private or public property is damaged by Contractor, Contractor shall, at its sole expense, restore the damaged property to at least its original condition.

3.9.3.1 Contractor shall obtain City Engineer's approval for storage areas used for Products for which payment has been requested under Paragraph 9.6.1. Contractor shall provide the City access to the storage areas for inspection purposes. Products, once paid for by the City, become the property of the City and may not be removed from place of storage, without City Engineer's written permission except for a movement to the site. Contractor's Installation Floater, required under Section 11.2, shall cover all perils, including loss or damage to Products during storage, loading, unloading, and transit to the site.

3.10 *PRODUCT OPTIONS AND SUBSTITUTIONS*

3.10.1 For Products specified by reference standards or by description only, Contractor may provide any Product meeting those standards or description.

3.10.2 For Products specified by naming one or more manufacturers with provision for substitutions or equal, Contractor may submit a request for substitution for any manufacturer not named.

3.10.3 City Engineer will consider requests for substitutions only within the first 15 percent of Contract Time, or first 90 days after date of Notice to Proceed, whichever is less.

3.10.4 Contractor shall document each request for substitution with complete data substantiating compliance of proposed substitution with the Contract.

3.10.5 A request for substitution constitutes a representation that Contractor:

.1 has investigated the proposed Product and determined that it meets or exceeds the quality level of the specified Product;

.2 shall provide the same warranty for the substitution as for the specified Product;

.3 shall coordinate installation of the proposed substitution and make changes to other work which may be required for the Work to be completed, with no additional cost or increase in time to the City;

.4 confirms that cost data is complete and includes all related costs under the Contract;

.5 waives Claim for additional costs or time extensions that may subsequently become apparent; and

.6 shall provide review or redesign services by a design consultant with appropriate professional license and shall obtain re-approval and permits from authorities.

3.10.6 City Engineer will not consider and will not approve substitutions when:

.1 they are indicated or implied on Shop Drawing or Product Data submittals without separate written request; or

.2 acceptance will require revision to the Contract.

3.10.7 City Engineer may reject requests for substitution, and his decision will be final and binding on the Parties.

3.11 *CASH ALLOWANCES*

3.11.1 Contract Price includes Cash Allowances as identified in the Contract.

3.11.2 The City will pay the actual costs of Cash Allowance item exclusive of profit, overhead or administrative costs. If actual costs exceed the Cash Allowance, City Engineer must approve a Change Order for the additional costs.

3.12 *WARRANTY*

3.12.1 Contractor warrants to the City that Products furnished under the Contract are:

.1 free of defects in title;

.2 of good quality; and

.3 new, unless otherwise required or permitted by the Contract.

If required by the City Engineer, Contractor shall furnish satisfactory evidence as to kind, quality and title of Products, and that Products conform to requirements of the Contract.

3.12.2 In the event of a defect in a Product, either during construction or warranty period,

Contractor shall take appropriate action with manufacturer of Product to assure correction or replacement of defective Product with minimum delay.

3.12.3 Contractor warrants that the Work is free of defects not inherent in the quality required or permitted, and that the Work does conform with the requirements of the Contract. Contractor further warrants that the Work has been performed in a thorough and workmanlike manner.

3.12.4 Contractor warrants that the Work is free of concentrations on polychlorinated biphenyl (PCB) and other substances defined as hazardous by the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) or any other applicable law or regulation.

3.12.5 Work not conforming to requirements of Section 3.12, including substitutions not properly approved and authorized, may be considered nonconforming work.

3.12.6 Contractor's warranty excludes remedy for damage or defect caused by:

.1 improper or insufficient maintenance by the City;

.2 normal wear and tear under normal usage; or

.3 claim that hazardous material was incorporated into the Work, if that material was specified in the Contract.

3.12.7 Contractor warrants that title to all work covered by Contractor's request for payment passes to the City upon incorporation into the Work or upon Contractor's receipt of payment, whichever occurs first. The Contractor further warrants that the title is free of all liens, claims, security interests or other interests ("Encumbrances"). If not, upon written demand from City Engineer, Contractor shall immediately take legal action necessary to remove Encumbrances.

3.13 *TAXES*

3.13.1 Contractor shall pay all sales, consumer, use, and similar taxes, which are in effect or scheduled to go into effect on or before bids are received, related to work provided by Contractor.

3.13.2 Contractor shall obtain, and require Subcontractors and Suppliers to obtain, necessary permits from the state and local taxing authorities to perform contractual obligations under the Contract, including sales tax permits.

3.13.3 The City is exempt from the Federal Transportation and Excise Tax. Contractor shall comply with federal regulations governing the exemptions.

3.13.4 Products incorporated into the Work are exempt from state sales tax according to provisions of the TEX. TAX CODE ANN. CH. 151, Subsection H.

3.14 *PERMITS, FEES, AND NOTICES*

3.14.1 Unless otherwise provided in the Contract, Contractor shall secure and pay for all construction permits, licenses, and inspections:

.1 necessary for proper execution and completion of the Work; and

.2 legally required at time bids are received.

3.15 *CONSTRUCTION SCHEDULES*

3.15.1 On receipt of Notice to Proceed, Contractor shall promptly prepare and submit construction schedule for the Work for City Engineer's review. The schedule must reflect the minimum time required to complete the Work not to exceed Contract Time.

3.15.2 Contractor shall give 24-hour written notice to City Engineer before commencing work or resuming work where work has been stopped. Contractor shall also give the same notice to inspectors.

3.15.3 Contractor shall incorporate milestones specified in Summary of Work Specification into the construction schedule. Contractor's failure to meet a milestone, as determined by City Engineer, may be considered a material breach of the Contract.

13.15.4 Each month, Contractor shall submit to City Engineer a copy of an updated construction schedule indicating actual progress, incorporating applicable changes, and indicating courses of action required to assure completion of the Work within Contract Time.

13.15.5 Contractor shall keep a current schedule of submittals that coordinates with the construction schedule, and shall submit the initial schedule of submittals to City Engineer for approval.

3.16 *DOCUMENTS AND SAMPLES AT THE SITE*

3.16.1 Contractor shall maintain at the site, and make available to City Engineer, one record

copy of Drawings, Specifications, and Modifications. Contractor shall maintain the documents in good order and marked currently to record changes and selections made during construction. In addition, Contractor shall maintain at the site, approved Shop Drawings, Product Data, Samples, and similar submittals, which will be delivered to City Engineer prior to final inspection as required in Paragraph 9.11.4.

3.16.2 Contractor shall maintain all books, documents, papers, accounting records, and other relevant documentation pursuant to the Work and shall make the books, documents, papers, and accounting records available to representatives of the City for review and audits during the Contract term and for the greater of three years following Date of Substantial Completion or until all litigation or audits are fully resolved.

3.16.3 Contractor shall provide to City Attorney all documents and records that City Attorney deems necessary to assist in determining Contractor's compliance with the Contract, with the exception of those documents made confidential by federal or state law or regulation.

3.17 *MANUFACTURER'S SPECIFICATIONS*

3.17.1 Contractor shall handle, store, and Install Products and perform all work in the manner required by Product manufacturer. Should the Contract and manufacturer's instructions conflict, Contractor shall report conflict to City Engineer for resolution prior to proceeding with the affected work.

3.17.2 References in the Contract to the manufacturer's specifications, directions, or recommendations, mean manufacturer's current published documents in effect as of date of receipt of bids, or in the case of a Modification, as of date of Modification.

3.18 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

3.18.1 Shop Drawings, Product Data, and Samples are not part of the Contract. The purpose of Contractor submittals is to demonstrate, for those portions of the Work for which submittals are required, the way Contractor proposes to conform to information given and design concept expressed in the Contract.

3.18.2 Contractor shall submit to Project Manager for review the Shop Drawings, Product Data, and Samples, which are required by the Contract. Review by Project Manager is subject to limitations of Paragraph 4.1.4. Contractor shall transmit the submittals to the Project Manager with reasonable promptness and in a sequence, so as to cause no delay in the Work or in activities of the City or of separate contractors. Contractor shall transmit submittals in time to allow a minimum of 30 days for Project Manager's review prior to date Contractor needs reviewed submittals returned. This time may be shortened for a particular job requirement if approved by Project Manager in advance of submittal.

3.18.3 Contractor shall certify that the content of submittals conforms to the Contract without exception by affixing Contractor's approval stamp and signature. By certifying and submitting Shop Drawings, Product Data, and Samples, Contractor represents, and Contractor's stamp of approval shall state, that Contractor has determined and verified materials, quantities, field measurements, and field construction criteria related to the submittal, and has checked and coordinated information contained within the submittals with requirements of the Contract.

3.18.4 Contractor may not perform any work requiring submittal and review of Shop Drawings, Product Data, or Samples until the submittal has been returned with appropriate review decision by the Project Manager. Contractor shall perform work in accordance with the review.

3.18.5 If Contractor performs any work requiring submittals prior to review and acceptance of the submittals by Project Manager, such work is at Contractor's risk and the City is not obligated to accept work if the submittals are later found to be unacceptable.

3.18.6 If, in the opinion of Project Manager, the submittals are incomplete, or demonstrate an inadequate understanding of the Work or lack of review by the Contractor, then submittals may be returned to the Contractor for correction and resubmittal.

3.18.7 Contractor shall direct specific attention in writing and on the resubmitted Shop Drawings, Product Data, or Samples to any additional proposed revisions, other than those revisions requested by Project Manager on previous submittals.

3.18.8 Contractor is not relieved of responsibility for deviations from requirements of the

Contract by Project Manager's review of Shop Drawings, Product Data, or Samples unless Contractor has specifically informed Project Manager in writing of the deviation at the time of the submittal, and Project Manager has given written approval of the deviation.

3.18.9 When professional certification of performance criteria of Products is required by the Contract, the City may rely upon accuracy and completeness of the calculations and certifications.

3.18.10 For Product colors or textures to be selected by the City, Contractor shall submit all samples together to allow preparation of a complete selection schedule.

3.18.11 Contractor shall submit informational submittals, on which Project Manager is not expected to take responsive action, as required by the Contract.

3.18.12 Submittals made by Contractor which are not required by the Contract may be returned to Contractor without action.

3.19 *CULTURAL RESOURCES AND ENDANGERED SPECIES*

3.19.1 Contractor may not remove or disturb, or cause to be removed or disturbed, any historical, archaeological, architectural, or other cultural artifacts, relics, vestiges, remains, or objects of antiquity. If Contractor discovers one of these items, Contractor shall immediately notify City Engineer and further comply with the requirements of 13 Tex. Admin. Code Chs. 25 and 26 (2002), or successor regulation. Contractor shall protect site and cultural resources from further disturbance until professional examination can be made or until clearance to proceed is authorized in writing by City Engineer.

3.19.2 Should either threatened or endangered plant or animal species be encountered, Contractor shall cease work immediately in the area of encounter and notify City Engineer.

3.20 *CUTTING AND PATCHING*

3.20.1 Contractor is responsible for necessary cutting, fitting, and patching to accomplish the Work and shall suitably support, anchor, attach, match, and trim or seal materials to work of other contractors. Contractor shall coordinate the Work with work of other contractors to minimize conflicts, as provided in Article 6.

3.20.2 Contractor may not endanger work by cutting, digging, or other action, and may not cut or alter work of other contractors except by written consent of City Engineer and affected contractor.

3.21 *CLEANING*

3.21.1 Contractor shall perform daily cleanup of all dirt, debris, scrap materials and other disposable items resulting from Contractor's operations, whether on-site or off-site. Unless otherwise authorized in writing by City Engineer, Contractor shall keep all streets, access streets, driveways, areas of public access, walkways, and other designated areas clean and open at all times.

3.21.2 Failure of Contractor to maintain a clean site, including access streets, is the basis for City Engineer to issue a Notice of Noncompliance. Should compliance not be attained within the time period in the Notice of Noncompliance, City Engineer may authorize necessary cleanup to be performed by others and the cost of the cleanup will be deducted from monies due Contractor.

Contractor shall legally dispose off-site, all waste materials and other excess materials resulting from Contractor's operations.

3.22 *SANITATION*

3.22.1 Contractor shall provide and maintain sanitary facilities at site for use of all construction forces under the Contract. Newly-constructed or existing sanitary facilities may not be used by Contractor.

3.23 *ACCESS TO WORK AND TO INFORMATION*

3.23.1 Contractor shall provide the City, Design Consultant, testing laboratories, and governmental agencies which have jurisdictional interests, access to the Work in preparation and in progress wherever located. Contractor shall provide proper and safe conditions for the access.

3.23.2 If required by City Engineer, Contractor shall furnish information concerning character of Products and progress and manner of the Work, including information necessary to determine cost of the Work, such as number of employees, pay of employees, and time employees worked on various classes of the Work.

3.24 *TRADE SECRETS*

3.24.1 Contractor will not make any claim of ownership of trade secrets as to products used in the Work, or preparation of any mixture for the Work. City Engineer will at all times have the right to demand and Contractor shall furnish information concerning materials or samples of ingredients of any materials used, or proposed to be used, in preparation of concrete placed or other work to be done. Mixtures, once agreed on, shall not be changed in any manner without knowledge and consent of City Engineer. The City will make its best efforts to protect confidentiality of proprietary information.

3.25 *INDEMNIFICATION*

3.25.1 CONTRACTOR AGREES TO AND SHALL DEFEND, INDEMNIFY, AND HOLD THE CITY, ITS AGENTS, EMPLOYEES, OFFICERS, AND LEGAL REPRESENTATIVES (COLLECTIVELY THE "CITY") HARMLESS FOR ALL CLAIMS, CAUSES OF ACTION, LIABILITIES, FINES, AND EXPENSES (INCLUDING, WITHOUT LIMITATION, ATTORNEYS' FEES, COURT COSTS, AND ALL OTHER DEFENSE COSTS AND INTEREST) FOR INJURY, DEATH, DAMAGE, OR LOSS TO PERSONS OR PROPERTY SUSTAINED IN CONNECTION WITH OR INCIDENTAL TO PERFORMANCE UNDER THE CONTRACT INCLUDING, WITHOUT LIMITATION, THOSE CAUSED BY:

.1 CONTRACTOR'S AND/OR ITS AGENTS', EMPLOYEES', OFFICERS', DIRECTORS', CONTRACTORS', OR SUBCONTRACTORS' (COLLECTIVELY IN NUMBERED SUBPARAGRAPHS .1 through .3, "CONTRACTOR") ACTUAL OR ALLEGED NEGLIGENCE OR INTENTIONAL ACTS OR OMISSIONS;

.2 THE CITY'S AND CONTRACTOR'S ACTUAL OR ALLEGED CONCURRENT NEGLIGENCE, WHETHER CONTRACTOR IS IMMUNE FROM LIABILITY OR NOT;

.3 THE CITY'S AND CONTRACTOR'S ACTUAL OR ALLEGED STRICT PRODUCTS LIABILITY OR STRICT STATUTORY LIABILITY, WHETHER CONTRACTOR IS IMMUNE FROM LIABILITY OR NOT.

CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE CITY HARMLESS DURING THE TERM OF THE CONTRACT AND FOR FOUR YEARS AFTER THE CONTRACT TERMINATES. CONTRACTOR SHALL NOT INDEMNIFY THE CITY FOR THE CITY'S SOLE NEGLIGENCE.

3.25.2 NOTWITHSTANDING ANYTHING TO THE CONTRARY, THE LIABILITY OF CONTRACTOR FOR THE CITY'S CONCURRENT NEGLIGENCE SHALL NOT EXCEED $1,000,000.

3.26 *RELEASE AND INDEMNIFICATION – PATENT, COPYRIGHT, TRADEMARK, AND TRADE SECRET INFRINGEMENT*

3.26.1 UNLESS OTHERWISE SPECIFICALLY REQUIRED BY THE CONTRACT, CONTRACTOR AGREES TO AND SHALL RELEASE AND DEFEND, INDEMNIFY, AND HOLD HARMLESS THE CITY, ITS AGENTS, EMPLOYEES, OFFICERS, AND LEGAL REPRESENTATIVES (COLLECTIVELY THE "CITY") FROM ALL CLAIMS OR CAUSES OF ACTION BROUGHT AGAINST THE CITY BY ANY PARTY, INCLUDING CONTRACTOR, ALLEGING THAT THE CITY'S USE OF ANY EQUIPMENT, SOFTWARE, PROCESS, OR DOCUMENTS CONTRACTOR FURNISHES DURING THE TERM OF THE CONTRACT INFRINGES ON A PATENT, COPYRIGHT, OR TRADEMARK, OR MISAPPROPRIATES A TRADE SECRET. CONTRACTOR SHALL PAY ALL COSTS (INCLUDING, WITHOUT LIMITATION, ATTORNEYS' FEES, COURT COSTS, AND ALL OTHER DEFENSE COSTS, AND INTEREST) AND DAMAGES AWARDED.

3.26.2 CONTRACTOR SHALL NOT SETTLE ANY CLAIM ON TERMS WHICH PREVENT THE CITY FROM USING THE EQUIPMENT, SOFTWARE, PROCESS, OR PRODUCT WITHOUT THE CITY ENGINEER'S PRIOR WRITTEN CONSENT.

3.26.3 UNLESS OTHERWISE SPECIFICALLY REQUIRED BY THE CONTRACT, WITHIN 60 DAYS AFTER BEING NOTIFIED OF THE CLAIM, CONTRACTOR SHALL, AT ITS OWN EXPENSE, EITHER:

.1 OBTAIN FOR THE CITY THE RIGHT TO CONTINUE USING THE EQUIPMENT, SOFTWARE, PROCESS, OR PRODUCT, OR

.2 IF BOTH PARTIES AGREE, REPLACE OR MODIFY THEM WITH COMPATIBLE AND FUNCTIONALLY EQUIVALENT PRODUCTS.

IF NONE OF THESE ALTERNATIVES IS REASONABLY AVAILABLE, THE CITY MAY

RETURN THE EQUIPMENT, SOFTWARE, OR PRODUCT, OR DISCONTINUE THE PROCESS, AND CONTRACTOR SHALL REFUND THE PURCHASE PRICE.

3.27 *INDEMNIFICATION PROCEDURES*

3.27.1 *Notice of Indemnification Claims:* If the City or Contractor receives notice of any claim or circumstances which could give rise to an indemnified loss, the receiving party shall give written notice to the other Party within 10 days. The notice must include the following:

.1 a description of the indemnification event in reasonable detail,

.2 the basis on which indemnification may be due, and

.3 the anticipated amount of the indemnified loss.

This notice does not estop or prevent the City from later asserting a different basis for indemnification or a different amount of indemnified loss than that indicated in the initial notice. If the City does not provide this notice within the 10-day period, it does not waive any right to indemnification except to the extent that Contractor is prejudiced, suffers loss, or incurs expense because of the delay.

3.27.2 *Defense of Indemnification Claims:*

.1 *Assumption of Defense:* Contractor may assume the defense of the claim at its own expense with counsel chosen by it that is reasonably satisfactory to the City. Contractor shall then control the defense and any negotiations to settle the claim. Within 10 days after receiving written notice of the indemnification request, Contractor must advise the City as to whether or not it will defend the claim. If Contractor does not assume the defense, the City shall assume and control the defense, and all defense expenses constitute an indemnified loss.

.2 *Continued Participation:* If Contractor elects to defend the claim, the City may retain separate counsel to participate in, but not control, the defense and to participate in, but not control, any settlement negotiations. Contractor may settle the claim without the consent or agreement of the City, unless it:

.1 would result in injunctive relief or other equitable remedies or otherwise require the City to comply with restrictions or limitations that adversely affect the City;

.2 would require the City to pay amounts that Contractor does not fund in full; or

.3 would not result in the City's full and complete release from all liability to the plaintiffs or claimants who are parties to or otherwise bound by the settlement.

3.28 *CONTRACTOR DEBT*

IF CONTRACTOR, AT ANY TIME DURING THE TERM OF THIS AGREEMENT, INCURS A DEBT, AS THE WORD IS DEFINED IN SECTION 15-122 OF THE HOUSTON CITY CODE OF ORDINANCES, IT SHALL IMMEDIATELY NOTIFY CITY CONTROLLER IN WRITING. IF CITY CONTROLLER BECOMES AWARE THAT CONTRACTOR HAS INCURRED A DEBT, IT SHALL IMMEDIATELY NOTIFY CONTRACTOR IN WRITING. IF CONTRACTOR DOES NOT PAY THE DEBT WITHIN 30 DAYS OF EITHER SUCH NOTIFICATION, CITY CONTROLLER MAY DEDUCT FUNDS IN AN AMOUNT EQUAL TO THE DEBT FROM ANY PAYMENTS OWED TO CONTRACTOR UNDER THIS AGREEMENT, AND CONTRACTOR WAIVES ANY RECOURSE THEREFOR. CONTRACTOR SHALL FILE A NEW AFFIDAVIT OF OWNERSHIP, USING THE FORM DESIGNATED BY CITY, BETWEEN FEBRUARY 1 AND MARCH 1 OF EVERY YEAR DURING THE TERM OF THE CONTRACT.

ARTICLE 4 - ADMINISTRATION OF THE CONTRACT

4.1 *CONTRACT ADMINISTRATION*

4.1.1 City Engineer will provide administration of the Contract and City Engineer is authorized to issue Change Orders, Work Change Directives, and Minor Changes in the Work.

4.1.2 City Engineer may act through Project Manager, Design Consultant, or Inspector. When the term "City Engineer" is used in the Contract, action by City Engineer is required unless City Engineer delegates his authority in writing. The City Engineer may not delegate authority to render decisions under Section 4.4.

The City does not have control over or charge of, and is not responsible for, supervision, construction, and safety procedures enumerated in Section 3.3. The City does not have control over or charge of and is not responsible for acts or omissions of Contractor, Subcontractors, or Suppliers.

4.1.3 The City and Design Consultant may attend project meetings and visit the site to observe progress and quality of the Work. The City and Design Consultant are not required to make exhaustive or continuous on-site inspections to check quality or quantity of the Work.

4.1.4 Project Manager will review and approve or take other appropriate action on Contractor's submittals, but only for limited purpose of checking for conformance with information given and design concept expressed in the Contract.

4.1.5 Project Manager's review of the submittals is not conducted for purpose of determining accuracy and completeness of other details, such as dimensions and quantities, or for substantiating instructions for installation or performance of Products, all of which remain the responsibility of Contractor.

4.1.6 Project Manager's review of submittals does not relieve Contractor of its obligations under Sections 3.3, 3.12, and 3.18. Review does not constitute approval of safety precautions or, unless otherwise specifically stated by Project Manager in writing, of construction means, methods, techniques, sequences, or procedures. Project Manager's review of a specific item does not indicate approval of an assembly of which the item is a component.

4.1.7 Based on field observations and evaluations, Project Manager will process Contractor's progress payments, certify amounts due Contractor, and issue Certificates for Payment in the amount certified.

4.1.8 Project Manager will receive and forward to City Engineer for his review and records, written warranties and related documents required by the Contract and assembled by Contractor.

4.1.9 Upon written request by Contractor or Project Manager, City Engineer will resolve matters of interpretation of or performance of the Contract, which are not Claims. City Engineer's decisions are final and binding on the Parties.

4.1.10 City Engineer may reject work which does not conform to the Contract.

4.1.11 When City Engineer considers it necessary to implement the intent of the Contract, City Engineer may require additional inspection or testing of work in accordance with Paragraphs 13.6.3 and 13.6.4, whether such work is fabricated, Installed, or completed.

4.2 *COMMUNICATIONS IN ADMINISTRATION OF THE CONTRACT*

4.2.1 Except as otherwise provided in the Contract or when authorized by City Engineer in writing, Contractor shall communicate with Project Manager. Contractor shall communicate with Design Consultant, Design Consultant's subconsultants, and separate contractors through Project Manager. The City will communicate with Subcontractors and Suppliers through Contractor.

4.3 *CLAIMS AND DISPUTES*

4.3.1 *Documentation by Project Manager:* Contractor shall submit Claims, including those alleging an error or omission by Project Manager or Design Consultant, to Project Manager for documentation and recommendation to City Engineer.

4.3.2 *Decision of City Engineer:* Upon submission of Claim by Project Manager or Contractor, City Engineer will resolve Claims in accordance with Section 4.4.

4.3.3 *Time Limits on Claims:* Claims by Contractor must be made within 90 days after occurrence of event giving rise to the Claim.

4.3.4 *Continuing the Contract Performance:* Pending final resolution of a Claim including referral to non-binding mediation, unless otherwise agreed in writing, Contractor shall proceed diligently with the performance of the Contract and the City will continue to make payments in accordance with the Contract.

4.3.4.1 Pending final resolution of a Claim including referral to non-binding mediation,

Contractor is responsible for safety and protection of physical properties and conditions at site.

4.3.5 *Claims for Concealed or Unknown Conditions:* Concealed or unknown physical conditions include utility lines, other man-made structures, storage facilities, Pollutants and Pollutant Facilities, and the like, but do not include conditions arising from Contractor operations, or failure of Contractor to properly protect and safeguard subsurface facilities. Concealed conditions also include naturally-occurring soil conditions outside the range of soil conditions identified through geotechnical investigations, but do not include conditions arising from groundwater, rain, or flood.

4.3.5.1 If conditions are encountered at the site which are Underground Facilities or otherwise concealed or unknown conditions which differ materially from:

.1 those indicated by the Contract; or
.2 conditions which Contractor could have discovered through site inspection, geotechnical testing, or otherwise;

then Contractor will give written notice to City Engineer no later than five days after Contractor's first observation of the condition and before condition is disturbed. Contractor's failure to provide notice constitutes a waiver of a Claim.

4.3.5.2 City Engineer will promptly investigate concealed or unknown conditions. If City Engineer determines that conditions at the site are not materially different and that no change in Contract Price or Contract Time is justified, City Engineer will notify Contractor in writing, stating reasons. If City Engineer determines the conditions differ materially and cause increase or decrease in Contractor's cost or time required for performance of part of the Work, City Engineer will recommend an adjustment in Contract Price or Contract Time, or both, as provided in Article 7. Opposition by a Party to the City Engineer's determination must be made within 21 days after City Engineer has given notice of the decision. If the Parties cannot agree on adjustment to Contract Price or Contract Time, adjustment is subject to further proceedings pursuant to Section 4.4.

4.3.6 *Claims for Additional Cost:* If Contractor wishes to make a Claim for increase in Contract Price, Contractor shall give written notice before proceeding with work for which Contractor intends to submit a Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

4.3.6.1 Contractor may file a Claim in accordance with Section 4.4 if Contractor believes it has incurred additional costs, for the following reasons:

.1 written interpretation of City Engineer;
.2 order by City Engineer to stop the Work when Contractor is not at fault;
.3 suspension of the Work by City Engineer;
.4 termination of the Contract by City Engineer; or
.5 The City's non-compliance with another provision of the Contract.

4.3.6.2 No increase in Contract Price is allowed for delays or hindrances to the Work, except for direct and unavoidable extra costs to Contractor caused by failure of the City to provide information and services, or to make land and materials available, when required of the City under the Contract. Any increase claimed is subject to the provisions of Section 4.4 and Article 7.

4.3.6.3 The City is not liable for Claims for delay when Date of Substantial Completion occurs prior to expiration of Contract Time.

4.3.7 *Claims for Additional Time:* If Contractor wishes to make a Claim for an increase in Contract Time, Contractor shall give written notice as provided in Section 8.2. In case of continuing delay, only one Claim is necessary.

4.4 *RESOLUTION OF CLAIMS AND DISPUTES*

4.4.1 City Engineer will review Claims and take one or more of the following preliminary actions within 30 days of receipt of Claim:

.1 submit a suggested time to meet and discuss the Claim with City Engineer;
.2 reject Claim, in whole or in part, stating reasons for rejection;
.3 recommend approval of the Claim by the other Party;
.4 suggest a compromise; or
.5 take other actions as City Engineer deems appropriate to resolve the Claim.

4.4.2 City Engineer may request additional supporting data from claimant. Party making Claim shall, within 10 days after receipt of City Engineer's request, submit additional supporting data requested by City Engineer.

4.4.3 At any time prior to rendering a written decision regarding a Claim, City Engineer may refer

Claim to non-binding mediation. If Claim is resolved, City Engineer will prepare and obtain all appropriate documentation. If Claim is not resolved, City Engineer will take receipt of Claim and begin a new review under Section 4.4.

4.4.4 If Claim is not referred to or settled in non-binding mediation, City Engineer may conduct a hearing and will render a written decision, including findings of fact, within 75 days of receipt of Claim, or a time mutually agreed upon by the Parties in writing. City Engineer may notify Surety and request Surety's assistance in resolving Claim. City Engineer's decision is final and binding on the Parties.

4.5 CONDITION PRECEDENT TO SUIT; *WAIVER OF ATTORNEY FEES AND INTEREST*

4.5.1 A final decision by the City Engineer is a condition precedent to file suit in any jurisdiction for a claim made in connection with this Contract.

4.5.2 Neither the City nor Contractor may recover attorney fees for any claim brought in connection with this Contract.

4.5.3. Neither the City nor the Contractor may recover interest for any damages claim brought in connection with this Contract except as allowed by TEXAS LOCAL GOVERNMENT CODE Chapter 2251.

ARTICLE 5 - SUBCONTRACTORS AND SUPPLIERS

5.1 *AWARD OF SUBCONTRACTS OTHER CONTRACTS FOR PORTIONS OF THE WORK*

5.1.1 Contractor may not contract with a Subcontractor or Supplier that City Engineer has made a reasonable and timely objection to.

5.1.2 If City Engineer has a reasonable objection to person or entity proposed by Contractor, Contractor shall propose another with whom City Engineer has no reasonable objection.

5.1.3 Contractor shall execute contracts with approved Subcontractors and Suppliers before the Subcontractors or Suppliers begin work under the Contract.

5.1.4 Contractor shall notify City Engineer in writing of any proposed change of Subcontractor or Supplier previously accepted by the City.

5.1.5 Contractor shall make timely payments to Subcontractors and Suppliers for performance of the Contract. Contractor shall protect, defend, and indemnify the City from any claim or liability arising out of Contractor's failure to make the payments. Disputes relating to payment of MWBE Subcontractors or Suppliers will be submitted to arbitration in same manner as other disputes under MWBE subcontracts. Failure of Contractor to comply with decisions of arbitrator may be determined by City Engineer a material breach leading to termination of the Contract.

5.2 *CONTRACTOR RESPONSIBILITY FOR SUBCONTRACTORS*

5.2.1 Contractor is responsible to the City, as may be required by laws and regulations, for all acts and omissions of Subcontractors, Suppliers, and other persons and organizations performing or furnishing any of the Work under direct or indirect contract with Contractor.

5.2.2 Contractor shall make available to each proposed Subcontractor, prior to execution of subcontract, copies of the Contract to which Subcontractor is bound by this Section 5.2. Contractor shall notify Subcontractor of any terms of proposed subcontract which may be at variance with the Contract.

5.2.3 The City's approval of Subcontractor or Suppliers does not relieve Contractor of its obligation to perform, or to have performed to the full satisfaction of the City, the Work required by the Contract.

5.2.4 Unless there is a contractual relationship between Contractor and a Subcontractor or Supplier to the contrary, Contractor shall withhold no more retainage from Subcontractors or Suppliers than City withholds from Contractor under this Agreement. However, once a Subcontractor or Supplier completes performance, Contractor shall release all retainage to that Subcontractor or Supplier regardless if City continues to retain under this Agreement.

5.2.5 Prior to a Subcontractor or Supplier commencing performance for Contractor, Contractor shall meet with that Subcontractor or Supplier to provide instructions on invoicing procedures, dispute resolution procedures, and statutory rights, such as claim filing procedures under the McGregor Act.

Subcontractors and Suppliers must certify to the City Engineer that Contractor has fulfilled the requirements of this Section.

ARTICLE 6 - CONSTRUCTION BY THE CITY OR BY SEPARATE CONTRACTORS

6.1 *THE CITY'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS*

6.1.1 The City may perform on-site construction operations related to the Work and as part of the Project with the City's workforce or with separate contractors.

6.2 *COORDINATION*

6.2.1 The City will coordinate activities of the City's workforce and of each separate contractor with work of Contractor, and Contractor shall cooperate with the City and separate contractors.

6.2.1.1 Contractor shall participate with other separate contractors and the City in reviewing their construction schedules when directed to do so by the Project Manager. Contractor shall make revisions to construction schedule and Contract Price deemed necessary after joint review and mutual agreement. Construction schedules shall then constitute schedules to be used by Contractor, separate contractors, and the City, until subsequently revised.

6.2.2 Contractor shall afford to the City and to separate contractors reasonable opportunity for introduction and storage of their materials and equipment, and for performance of their activities.

6.2.3 If part of Contractor's work depends on proper execution of construction or operations by the City or a separate contractor, Contractor shall, prior to proceeding with that portion of the Work, inspect the other work and promptly report to City Engineer apparent discrepancies or defects in the other construction that would render it unsuitable for the proper execution of the Work. Failure of Contractor to report apparent discrepancies or defects in the other construction shall constitute acknowledgment that the City's or separate contractor's completed or partially completed construction is fit and proper to receive Contractor's work, except as to discrepancies or defects not then reasonably discoverable.

6.3 *MUTUAL RESPONSIBILITY*

6.3.1 The responsible party bears the costs caused by delays, by improperly timed activities, or by nonconforming construction.

6.3.2 Contractor shall promptly remedy damage caused by Contractor to completed or partially completed construction or to property of the City or separate contractor.

6.3.3 Claims or disputes between Contractor and other City contractors, or subcontractors of other City contractors, working on the Project must be submitted to binding arbitration in accordance with Construction Industry Arbitration Rules of the American Arbitration Association upon demand by any party to the dispute or by the City.

6.4 *THE CITY'S RIGHT TO CLEAN UP*

6.4.1 If dispute arises among Contractor, separate contractors, and the City as to responsibility under their respective contracts for maintaining premises and surrounding area free from waste materials and rubbish as described in Section 3.21, the City may clean up and allocate cost among those responsible, as determined by City Engineer.

ARTICLE 7 - CHANGES IN THE WORK

7.1 *CHANGES*

7.1.1 Changes in scope of the Work, subject to limitations in Article 7 and elsewhere in the Contract, may be accomplished without invalidating the Contract, or without notifying Surety by:

.1 Change Order;
.2 Work Change Directive; or
.3 Minor Change in the Work.

7.1.2 The following types of Change Orders require City Council approval:

.1 a single Change Order that exceeds five percent of Original Contract Price,
.2 a Change Order which, when added to previous Change Orders, exceeds five percent of Original Contract Price,
.3 a Change Order, in which the total value of increases outside of the general scope of work approved by City Council, when added to increases outside the general scope of work approved by City Council in previous Change Orders, exceeds 40 percent of the Original Contract Price, even if the net increase to the Original Contract Price is five percent or less.

In this context, "increase" means an increase in quantity resulting from the addition of locations not within the scope of work approved by City Council, or the addition of types of goods or services not bid as unit price items.

Nothing in this Section is intended to permit an increase of the Contract Price in excess of the limit set out in TEX. LOC. GOV'T CODE ANN. §252.048 or its successor statute.

7.1.3 Contractor shall proceed promptly to execute changes in the Work provided in Modifications, unless otherwise stated in the Modification.

7.2 *WORK CHANGE DIRECTIVES*

7.2.1 A Work Change Directive cannot change Contract Price or Contract Time, but is evidence that the Parties agree that a change, ordered by directive, will be incorporated in a subsequently issued Change Order as to its effect, if any, on Contract Price or Contract Time.

7.2.2 Failure by Contractor to commence work identified in a Work Change Directive within the time specified by City Engineer, or to complete the work in a reasonable period of time, may be determined by City Engineer to be a material breach of Contract.

7.2.3 A Work Change Directive is used in the absence of total agreement of the terms of a Change Order. Interim payments are made in accordance with Paragraph 9.6.1.

7.2.4 If Contractor signs a Work Change Directive, then Contractor agrees to its terms including adjustment in Contract Price and Contract Time or method for determining them. Agreement by the Parties to adjustments in Contract Price and Contract Time are immediately recorded as a Change Order.

7.2.5 City Engineer, by Work Change Directive, may direct Contractor to take measures as necessary to expedite construction to achieve Date of Substantial Completion on or before expiration of Contract Time. When the Work is expedited solely for convenience of the City and not due to Contractor's failure to prosecute timely completion of the Work, then Contractor is entitled to an adjustment in Contract Price equal to actual costs determined in accordance with Article 7.

7.3 *ADJUSTMENTS IN CONTRACT PRICE*

7.3.1 Adjustments in Contract Price are accomplished by Change Order and are based on one of the following methods:

.1 mutual acceptance of fixed price, properly itemized and supported by sufficient data to permit evaluation;

.2 unit prices stated in the Contract or subsequently agreed upon;

.3 cost to be determined in a manner agreed upon by the Parties and mutually acceptable fixed or percentage fee; or

	Overhead	Profit
to Contractor for change in the Work performed by Subcontractors:	10 percent	0 percent
to first tier Subcontractors for change in the Work performed by its Subcontractors:	10 percent	0 percent
to Contractor and Subcontractor for change in the Work performed by their respective firms:	10 percent	5 percent

.4 as provided in Paragraph 7.3.2.

7.3.2 If Contractor does not agree with a change in Contract Price or Contract Time or the method for adjusting them specified in the Work Change Directive within 21 days from date of the Work Change Directive's issuance, method and adjustment are determined by City Engineer. If Project Manager or Contractor disagree with City Engineer's determination they then may file a Claim in accordance with Section 4.4.

7.3.2.1 If City Engineer determines a method and adjustment in Contract Price under Paragraph 7.3.2, Contractor shall provide, in a form as City Engineer may prescribe, appropriate supporting data for items submitted under Paragraph 7.3.2. Failure to submit the data within 21 days of request for the data by City Engineer shall constitute waiver of a Claim.

7.3.2.2 Unless otherwise provided in the Contract, costs for the purposes of this Paragraph 7.3.2 are limited to the following:

.1 costs of labor, including labor burden as stated below for social security,

unemployment insurance, customary and usual fringe benefits required by agreement or custom, and Workers' Compensation insurance;

.1 the maximum labor burden applied to costs of labor for changes in the Work is 55 percent;

.2 costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;

.3 rental costs of machinery and equipment, exclusive of hand tools, whether rented from Contractor or others, with prior approval of City Engineer;

.4 costs of premiums for Bonds and insurance and permit fees related to the change in the Work;

.5 additional costs of direct supervision of work and field office personnel directly attributable to the change; and

.6 allowances for overhead and profit as stated below.

.1 the maximum allowances for overhead and profit on increases due to Change Orders:

.2 for changes in the Work performed by Contractor and Subcontractors, allowance for overhead and profit are applied to an amount equal to cost of all additions less cost of all deletions to the Work. Allowance for overhead to Contractor and first tier Subcontractors on changes performed by Subcontractors are applied to an amount equal to the sum of all increases to the Work by applicable Subcontractors.

7.3.3 If the City deletes or makes a change, which results in a net decrease in Contract Price, the City is entitled to a credit calculated in accordance with Paragraphs 7.3.1 and 7.3.2 and Subparagraphs 7.3.2.1, and 7.3.2.2.1 through 7.3.2.2.5. When both additions and credits covering related work or substitutions are involved in a change, allowance for overhead and profit is figured on the basis of a net increase, if any, with respect to that change in accordance with Subparagraph 7.3.2.2.6.

7.3.4 When Contractor agrees with the determination made by City Engineer concerning adjustments in Contract Price and Contract Time, or the Parties otherwise reach agreement upon the adjustments, the agreement will be immediately recorded by Change Order.

7.4 *MINOR CHANGES IN THE WORK*

7.4.1 A Minor Change in Work is binding on the Parties. Contractor shall acknowledge, in a written form acceptable to City Engineer, that there is no change in Contract Time or Contract Price and shall carry out the written orders promptly.

ARTICLE 8 - TIME

8.1 *PROGRESS AND COMPLETION*

8.1.1 Time is of the essence in the Contract. By executing the Contract, Contractor agrees that Contract Time is a reasonable period for performing the Work.

8.1.2 *Computation of Time:* In computing any period of time prescribed or allowed by the General Conditions, the day of the act, event, or default after which designated period of time begins to run is not to be included. Last day of the period so computed is to be included, unless it is a Sunday or Legal Holiday, in which event the period runs until end of next day which is not a Sunday or Legal Holiday. Sundays and Legal Holidays are considered to be days and are to be included in all other time computations relative to Contract Time.

8.1.3 Contractor may not commence the Work prior to the effective date of insurance and Bonds required by Article 11.

8.1.4 Contractor shall proceed expeditiously and without interruption, with adequate forces, and shall achieve Date of Substantial Completion within Contract Time.

8.1.5 Should progress of the Work fall behind construction schedule, except for reasons stated in Paragraph 8.2.1, Contractor shall promptly submit at the request of Project Manager, updated construction schedule to City Engineer for approval. Contractor's failure to submit updated schedule may, at City Engineer's discretion, constitute a material breach of the Contract. Contractor shall take action necessary to restore progress by working the hours, including night shifts and lawful overtime operations as necessary, to achieve Date of Substantial Completion within Contract Time.

8.1.6 Except in connection with safety or protection of persons or the Work or property at the site or adjacent to the site, and except as otherwise

indicated in the Contract, all the Work at the site will be performed Monday through Saturday between the hours of 7:00 a.m. and 7:00 p.m. Contractor may not perform work between 7:00 p.m. and 7:00 a.m., on a Sunday, or on a Legal Holiday, without giving City Engineer 24-hour prior written notice and receiving written consent of City Engineer.

8.2 *DELAYS AND EXTENSIONS OF TIME*

8.2.1 Contractor may request extension of Contract Time for a delay in performance of work that arises from causes beyond control and without fault or negligence of Contractor. Examples of these causes are:

.1 acts of God or of the public enemy,
.2 acts of government in its sovereign capacity,
.3 fires,
.4 floods,
.5 epidemics,
.6 quarantine restrictions,
.7 strikes,
.8 freight embargoes,
.9 unusually severe weather; and
.10 discovery of Pollutants or Pollutant Facilities at the site.

8.2.2 Contractor may request an extension of Contract Time for delay only if:

.1 delay is caused by failure of Subcontractor or Supplier to perform or make progress; and
.2 cause of failure is beyond control of both Contractor and Subcontractor or Supplier.

8.2.3 Claims relating to Contract Time must be made in accordance with Paragraph 4.3.7.

8.2.4 Claims for extending or shortening Contract Time are based on written notice promptly delivered by the Party making Claim to other Party. Claim must accurately describe occurrence generating Claim, and a statement of probable effect on progress of the Work.

8.2.5 Claims for extension of Contract Time are considered only when a Claim is filed within the time limits stated in Paragraph 4.3.3.

8.2.6 Written notice of Claim must be accompanied by claimant's written statement that adjustment claimed is entire adjustment to which claimant is entitled as a result of the occurrence of the event. When the Parties cannot agree, Claims for adjustment in Contract Time are determined by City Engineer in accordance with Section 4.4.

8.2.7 Adjustments to Contract Time are accomplished by Change Order.

ARTICLE 9 - PAYMENTS AND COMPLETION

9.1 *UNIT PRICE WORK*

9.1.1 Where the Contract provides that all or part of the Work is based on Unit Prices, the Original Contract Price includes, for all Unit Price work, an amount equal to the sum of Unit Prices times Unit Price Quantities for each separately identified item of Unit Price work.

9.1.2 Each Unit Price includes an amount to cover Contractor's overhead and profit for each separately identified item.

9.1.3 The Contractor may not make a Claim against the City for excess or deficiency in Unit Price Quantities provided in the Contract, except as provided in Subparagraph 9.1.4.1. Payment at the prices stated in the Contract is in full for the completed work. Contractor is not entitled to additional payment for materials, supplies, labor, tools, machinery and all other expenditures incidental to satisfactory completion of the Work.

9.1.4 City Engineer may increase or decrease quantities of the Work within limitations stated in Paragraph 7.1.2. Contractor is entitled to payment for actual quantities of items provided at Unit Prices set forth in the Contract.

9.1.5 Where the final quantity of work performed by Contractor on Major Unit Price Work item differs by more than 25 percent from quantity of the item stated in the Contract, a Party may request an adjustment in Unit Price, for the portion that differs by more than 25 percent, by a Change Order under Section 7.3.

9.2 *ESTIMATES FOR PAYMENT, UNIT PRICE WORK*

9.2.1 Following the day of each month indicated in the Contract, Project Manager will prepare a Certificate for Payment for the preceding monthly period based on estimated units of work completed. Prior to preparing Certificate of Payment, Contractor shall have submitted to City Engineer on a form approved by the Director of Affirmative Action, evidence satisfactory to the City Engineer of

payments made to Subcontractors and Suppliers for the month preceding the month for which the Certificate for Payment is prepared.

9.2.2 Before final completion, City Engineer will review and confirm with Contractor the actual final installed Unit Price quantities. City Engineer's determination of actual final installed Unit Price quantities will be included in the final Certificate for Payment and any previous underpayments and overpayments will be reconciled with the actual final Unit Price quantities. Contractor shall file written notice of intent to appeal, if any, City Engineer's determination within 10 days of receipt of final Certificate for Payment. Upon expiration of the 10-day period, City Engineer's decision is final and binding on the Parties. If Contractor submits notice within the 10-day period, Contractor shall submit a Claim in accordance with Section 4.4.

9.3 *STIPULATED PRICE WORK*

9.3.1 For work contracted on a Stipulated Price basis, 10 days before submittal of first Application for Payment, Contractor shall submit to City Engineer a Schedule of Values allocated to various portions of the Work, prepared in the form and supported by the data as City Engineer may require to substantiate its accuracy. This schedule, as approved by City Engineer, is used as a basis for approval of Contractor's Applications for Payment.

9.4 *APPLICATIONS FOR PAYMENT, STIPULATED PRICE WORK*

9.4.1 For work contracted on a Stipulated Price basis, Contractor shall submit Applications for Payment to City Engineer each month on a form acceptable to City Engineer in accordance with Schedule of Values. Application must indicate percentages of completion of each portion of the Work listed in Schedule of Values as of the end of the period covered by the Application for Payment.

9.4.2 Applications for Payment must be supported by substantiating data as City Engineer may require and must reflect retainages as provided below. Evidence satisfactory to the City Engineer of payments made to Subcontractors and Suppliers for the month preceding the month for which the Application for Payment is submitted must accompany each Application for Payment on a form approved by the Director of Affirmative Action. Application must be sworn and notarized.

9.5 *CERTIFICATES FOR PAYMENT*

9.5.1 City Engineer will, within 10 days after the date specified in the Contract for Unit Price work, or upon receipt of Contractor's Application for Payment for Stipulated Price work, issue a Certificate for Payment for work based on amount which City Engineer determines is properly due, with copy to Contractor.

9.5.2 Unless otherwise provided in the Contract, payment for completed work and for properly stored Products is conditioned upon compliance with procedures satisfactory to City Engineer to protect the City's interests. Procedures will include applicable insurance, storage, and transportation to site for materials and equipment stored off-site. Contractor is responsible for maintaining materials and equipment until Date of Substantial Completion.

9.5.3 Contractor shall document its use of Low Sulfur Diesel Fuel by providing invoices and receipts evidencing Contractor's use.

9.6 *COMPUTATIONS OF CERTIFICATES FOR PAYMENT*

9.6.1 Subject to the provisions of the Contract, the amount of each Certificate for Payment is calculated as follows:

.1 that portion of Contract Price allocated to completed work as determined by:
  .1 multiplying the percentage of completion of each portion of the Work listed in the Schedule of Values by the value of that portion of the Work, or
  .2 multiplying Unit Price quantities Installed times the Unit Prices listed in the Contract;
.2 plus progress payments for completed work that has been properly authorized by Modifications;
.3 less retainage of five percent;
.4 plus actual costs, properly substantiated by certified copies of invoices and freight bills, of non-perishable materials and equipment delivered and properly stored, if approved in advance by Project Manager, less 15 percent;
.5 less any previous payments by the City.

9.7 *DECISIONS TO WITHHOLD CERTIFICATION*

9.7.1 City Engineer may decline to certify payment and may withhold payment in whole or in

part to the extent reasonably necessary to protect the City if, in City Engineer's opinion, there is reason to believe that:

.1 nonconforming work has not been remedied;

.2 the Work cannot be completed for unpaid balance of Contract Price;

.3 there is damage to the City or another contractor;

.4 the Work will not be completed within Contract Time and that unpaid balance will not be adequate to cover actual and liquidated damages;

.5 probable evidence that third party claims will be filed in court, in arbitration, or otherwise;

.6 Contractor has failed to make payments to Subcontractors or Suppliers for labor, material, or equipment; or

.7 Contractor has persistently failed to carry out work in accordance with the Contract.

.8 Contractor has not paid Subcontractors or Suppliers because of a payment dispute; or

.9 Contractor has failed to provide satisfactory evidence described in Paragraphs 9.2.1, 9.4.2, and 9.8.2.

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

9.7.3 City Engineer may decline to certify payment and may withhold request for payment in whole or in part upon failure of Contractor to submit initial construction schedule or monthly schedule updates, as required in Paragraphs 3.15.1 and 3.15.3.

9.8 *PROGRESS PAYMENTS*

9.8.1 The City will make payment, in an amount certified by City Engineer, within 20 days after City Engineer has issued a Certificate for Payment.

9.8.2 The City has no obligation to pay or to facilitate the payment to a Subcontractor or Supplier, except as may otherwise be required by law. Contractor shall comply with the prompt payment requirements of Chapter 2251 of the Government Code. State law requires payment of Subcontractors and Suppliers by Contractor within 7 calendar days of Contractor's receipt of payment from the City, unless there is a payment dispute between Contractor and a Subcontractor or Supplier evidenced on a form approved by the Director of Affirmative Action and submitted to the City Engineer each month with Application for Payment or Estimate for Payment.

9.8.2.1 The City may, upon request and at the discretion of City Engineer, furnish to Subcontractor information regarding percentages of completion or the amounts applied for by Contractor, and action taken thereon by the City because of work done by the Subcontractor.

9.8.2.2 Contractor shall prepare and submit to City Engineer a Certification of Payment to Subcontractors and Suppliers form to be attached to each monthly Estimate for Payment or Application for Payment.

9.8.3 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Work by the City, does not constitute acceptance of work which is not in accordance with the Contract.

9.9 *DATE OF SUBSTANTIAL COMPLETION*

9.9.1 When Contractor considers the Work, or a portion thereof designated by City Engineer, to be substantially complete, Contractor shall prepare and submit to Project Manager a comprehensive punch list of items to be completed or corrected. Failure to include an item on the punch list does not alter the responsibility of Contractor to comply with the Contract.

9.9.1.1 By submitting the punch list to Project Manager, Contractor represents that work on the punch list will be completed within the time provided for in Subparagraph 9.9.4.3.

9.9.2 Upon receipt of Contractor's punch list, Project Manager will inspect the Work, or designated portion thereof, to verify that the punch list contains all items needing completion or correction. If Project Manager's inspection discloses items not on Contractor's punch list, the items must be added to the punch list of items to be completed or corrected. If Project Manager's inspection reveals that Contractor is not yet substantially complete, Contractor shall complete or correct the deficiencies and request another inspection by Project Manager. The City may recover the costs of re-inspection from Contractor.

9.9.3 Prior to City Engineer's issuing a Certificate of Substantial Completion, Contractor shall also provide:

.1 Certificate of Occupancy for new construction, or Certificate of Compliance for remodeled work, as applicable, and

.2 compliance with Texas Accessibility Standards through state inspection of the Work, if required. If Contractor calls for inspection in a timely manner and the inspection is delayed through no fault of Contractor, and City Engineer so confirms, City Engineer may, upon request by Contractor, add the inspection to the punch list in Paragraph 9.9.2 and issue a Certificate of Substantial Completion.

9.9.4 When the Work, or designated portion thereof, is determined by City Engineer to be sufficiently complete in accordance with the Contract so the City can occupy or utilize the Work, or designated portion thereof, for the purpose for which it is intended, City Engineer will prepare a Certificate of Substantial Completion that incorporates the punch list in Paragraph 9.9.2 and establishes:

.1 Date of Substantial Completion;

.2 responsibilities of the Parties for security, maintenance, heating, ventilating and air conditioning, utilities, damage to the Work, and insurance; and

.3 fixed time within which Contractor shall complete all items on punch list of items to be corrected accompanying the certificate.

9.9.5 Warranties required by the Contract shall commence on the Date of Substantial Completion unless otherwise provided by City Engineer in Certificate of Substantial Completion. Warranties may not commence on items not substantially completed.

9.9.6 After Date of Substantial Completion and upon application by Contractor and approval by City Engineer, the City may make payment, reflecting adjustment in retainage, if any, as follows:

.1 with the consent of Surety, the City may increase payment to Contractor to 96 percent of Contract Price, less value of items to be completed and accrued liquidated damages.

9.9.7 Contractor shall complete or correct the items in Paragraph 9.9.2 within the time period set out in the Certificate of Substantial Completion. If Contractor fails to do so, the City may issue a Notice of Noncompliance and proceed according to Section 2.5.

9.10 *PARTIAL OCCUPANCY OR USE*

9.10.1 The City may occupy or use any completed or partially completed portion of the Work at any stage, provided the occupancy or use is consented to by Contractor and Contractor's insurer and authorized by public authorities having jurisdiction over the Work. Consent of Contractor to partial occupancy or use may not be unreasonably withheld.

9.10.2 Immediately prior to the partial occupancy or use, Project Manager and Contractor shall jointly inspect the area to be occupied or portion of the Work to be used to determine and record condition of the Work.

9.10.3 Partial occupancy or use of a portion of the Work does not constitute acceptance of work not in compliance with requirements of the Contract.

9.11 *FINAL COMPLETION AND FINAL PAYMENT*

9.11.1 Contractor shall review the Contract and inspect the Work prior to Contractor notification to City Engineer that the Work is complete and ready for final inspection. Contractor shall submit affidavit that the Work has been inspected and that the Work is complete in accordance with requirements of the Contract.

9.11.2 Project Manager will make final inspection within 15 days after receipt of Contractor's written notice that the Work is ready for final inspection and acceptance. If Project Manager finds the Work has been completed in accordance with the Contract, Contractor shall submit items set out in Paragraph 9.11.4 and, for stipulated price contracts, a final Application for Payment. City Engineer will, within 10 days, issue Certificate of Final Completion stating that to the best of City Engineer's knowledge, information, and belief, the Work has been completed in accordance with the Contract, and will recommend acceptance of the Work by City Council.

9.11.3 Should work be found not in compliance with requirements of the Contract, City Engineer will notify Contractor in writing of items of noncompliance. Upon inspection and acceptance of the corrections by Project Manager, compliance with all procedures of Paragraph 9.11.2, and Contractor's

submission of the items set out in Paragraph 9.11.4, the City Engineer will issue Certificate of Final Completion to Contractor as provided in Paragraph 9.11.2.

9.11.4 Contractor shall submit the following items to City Engineer before City Engineer will issue a Certificate of Final Completion:

.1 affidavit that payrolls, invoices for materials and equipment, and other indebtedness of Contractor connected with the Work, less amounts withheld by the City, have been paid or otherwise satisfied. If required by City Engineer, Contractor shall submit further proof including waiver or release of lien or claims from laborers or Suppliers of Products;

.2 certificate evidencing that insurance required by the Contract to remain in force after final payment is currently in effect, will not be canceled or materially changed until at least 30 days written notice has been given to the City;

.3 written statement that Contractor knows of no substantial reason that insurance will not be renewable to cover correction and warranty period required by the Contract;

.4 consent of Surety to final payment; and

.5 copies of record documents, maintenance manuals, tests, inspections, and approvals.

Upon City Engineer's issuance of a Certificate of Final Completion, Contractor may request increase in payment to 99 percent of Contract Price, less accrued liquidated damages.

9.11.5 If Contractor fails to submit required items in Paragraph 9.11.4 within 10 days of Project Manager's inspection of the Work under Paragraph 9.11.2 or Paragraph 9.11.3, City Engineer may, but is not obligated to:

.1 deduct liquidated damages accrued from monies held;

.2 proceed to City Council for acceptance of the Work, minus some or all of the items Contractor fails to submit under Paragraph 9.11.4; and,

.3 upon acceptance by City Council of the portion of the Work completed, make final payment as set out in Paragraph 9.11.8.

9.11.6 If final completion is materially delayed through no fault of Contractor, or by issuance of Change Orders affecting date of final completion, and City Engineer so confirms, the City may, upon application by Contractor and certification by City Engineer, and without terminating the Contract, make payment of balance due for that portion of the Work fully completed and accepted.

9.11.7 If remaining balance due for work not corrected is less than retainage stipulated in the Contract, Contractor shall submit to City Engineer written consent of Surety to payment of balance due for that portion of the Work fully completed and accepted, prior to certification of the payment. The payment is made under terms governing final payment, except that it does not constitute waiver of Claims.

9.11.8 The City will make final payment to Contractor within 30 days after acceptance of the Work by City Council, subject to limitations, if any, as stated in the Contract.

9.11.9 Acceptance of final payment by Contractor shall constitute a waiver of all Claims, whether known or unknown, by Contractor, except those previously made in writing and identified by Contractor as unsettled at time of final Application for Payment.

9.12 *LIQUIDATED DAMAGES*

9.12.1 Contractor, Surety, and the City agree that failure to complete the Work within Contract Time will cause damages to the City and that actual damages from harm are difficult to estimate accurately. Therefore, Contractor, Surety, and the City agree that Contractor and Surety are liable for and shall pay to the City the amount stipulated in Supplementary Conditions as liquidated damages, and that the amount of damages fixed therein is a reasonable forecast of just compensation for harm to the City resulting from Contractor's failure to complete the Work within Contract Time. The amount stipulated will be paid for each day of delay beyond Contract Time until Date of Substantial Completion.

9.12.2 Contractor shall pay the City an amount equal to $1,200.00 per diesel operating vehicle or piece of motorized equipment per incident of high sulfur diesel fuel usage.

ARTICLE 10 - SAFETY PRECAUTIONS

10.1 *SAFETY PROGRAMS*

10.1.1 Contractor is responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with performance of the Contract. Contractor shall submit a safety program to City Engineer prior to mobilizing for the Work, and is solely responsible for safety, efficiency, and adequacy of ways, means, and methods, and for damage which might result from failure or improper construction, maintenance, or operation performed by Contractor.

10.2 *POLLUTANTS AND POLLUTANT FACILITIES*

10.2.1 If Contractor encounters material on-site which it reasonably believes to be a Pollutant or facilities which it reasonably believes to be a Pollutant Facility, Contractor shall immediately stop work in affected area and immediately notify City Engineer, confirming the notice thereafter in writing.

10.2.2 If City Engineer determines that the material is a Pollutant or facility is a Pollutant Facility, work in affected area may not be resumed except by Modification, and only if the work would not violate applicable laws or regulations.

10.2.3 If City Engineer determines that the material is not a Pollutant or a facility is not a Pollutant Facility, work in affected area will be resumed upon issuance of a Modification.

10.2.4 Contractor is not required to perform, unless authorized by Change Order, work relating to Pollutants or Pollutant Facilities except for that work relating to Pollutants or Pollutant Facilities specified in the Contract.

10.3 *SAFETY OF THE ENVIRONMENT, PERSONS, AND PROPERTY*

10.3.1 Contractor shall take reasonable precautions for safety and shall provide reasonable protection to prevent damage, injury, or loss from all causes, to:

.1 employees performing work on-site, and other persons who may be affected thereby;

.2 work, including Products to be incorporated into the Work, whether in proper storage, under control of Contractor or Subcontractor; and

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

10.3.2 Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations, and lawful orders of public authorities bearing on safety of persons, property, or environment.

10.3.2.1 Contractor shall comply with requirements of Underground Facility Damage Prevention and Safety Act TEX. UTIL. CODE ANN. Ch. 251 (Vernon Supp. 2002).

10.3.2.2 Contractor shall comply with all safety rules and regulations of the Federal Occupational Health and Safety Act of 1970 and subsequent amendments (OSHA).

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

10.3.4 Contractor shall designate responsible member of Contractor's organization at site whose duty is prevention of accidents. This person will be Contractor's Superintendent unless otherwise designated by Contractor in writing to City Engineer.

10.3.5 Contractor shall prevent windblown dust and may not burn or bury trash debris or waste products on-site. Contractor shall prevent environmental pollution, including but not limited to particulates, gases and noise, as a result of the Work.

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

10.3.7 Contractor shall promptly remedy damage and loss to property referred to in Subparagraphs 10.3.1.2 and 10.3.1.3, caused in whole or in part by Contractor, or Subcontractors, which is not covered by insurance required by the Contract. Contractor is not required to remedy damage or loss attributable to the City, Design Consultant, or other contractors.

10.4 *EMERGENCIES*

10.4.1 In emergencies affecting safety of persons or property, Contractor shall act at Contractor's discretion to prevent imminent damage,

injury, or loss. Additional compensation or extension of time claimed by Contractor because of emergencies are determined as provided in Article 7.

ARTICLE 11 - INSURANCE AND BONDS

11.1 *GENERAL INSURANCE REQUIREMENTS*

11.1.1 With no intent to limit Contractor's liability under indemnification provisions set forth in Paragraphs 3.25 and 3.26, Contractor shall provide and maintain in full force and effect during term of the Contract and all extensions and amendments thereto, at least the following insurance and available limits of liability.

11.1.2 If any of the following insurance is written as "claims made" coverage and the City is required to be carried as additional insured, then Contractor's insurance shall include a two-year extended discovery period after last date that Contractor provides any work under the Contract.

11.1.3 Aggregate amounts of coverage, for purposes of the Contract, are agreed to be amounts of coverage available during fixed 12-month policy period.

11.2 *INSURANCE TO BE PROVIDED BY CONTRACTOR*

11.2.1 *Risks and Limits of Liability:* Contractor shall provide at a minimum insurance coverage and limits of liability set out in Table 1.

11.2.1.1 If Limit of Liability for Excess Coverage is $2,000,000 or more, Limit of Liability for Employer's Liability may be reduced to $500,000.

11.2.2 *Form of Policies:* Insurance may be in one or more policies of insurance, form of which is subject to approval by City Engineer. It is agreed, however, that nothing City Engineer does or fails to do with regard to insurance policies relieves Contractor from its duties to provide required coverage and City Engineer's actions or inactions will never be construed as waiving the City's rights.

11.2.3 *Issuers of Policies:* Issuer of any policy shall have:

.1 a Certificate of Authority to transact business in Texas, or

.2 have a Best's rating of at least B+ and a Best's Financial Size Category of Class VI or better, according to the most current edition of Best's Key Rating Guide, and the issuer must be an eligible nonadmitted insurer in the State of Texas.

Each insurer is subject to approval by City Engineer in City Engineer's sole discretion as to conformance with these requirements, pursuant to Paragraph 11.2.2.

11.2.4 *Insured Parties:* Each policy, except those for Workers' Compensation and Owner's and Contractor's Protective Liability, must name the City, its officers, agents, and employees as additional insured parties on original policy and all renewals or replacements during term of the Contract. The City's status as additional insured under Contractor's insurance does not extend to instances of sole negligence of the City unmixed with any fault of Contractor.

11.2.5 *Deductibles:* Contractor assumes and bears any claims or losses to extent of deductible amounts and waives any claim it may ever have for same against the City, its officers, agents, or employees.

11.2.6 *Cancellation:* Contractor shall notify the Director in writing 30 days prior to any cancellation or material change to Contractor's insurance coverage. Within the 30 day period, Contractor shall provide other suitable policies in lieu of those about to be canceled or nonrenewed so as to maintain in effect the required coverage. If Contractor does not comply with this requirement, the City Engineer, at his or her sole discretion, may:

.1 immediately suspend Contractor from any further performance under this Contract and begin procedures to terminate for default, or

.2 purchase the required insurance with City funds and deduct the cost of the premiums from amounts due to Contractor under this Contract.

11.2.7 *Subrogation:* Each policy except Owner's and Contractor's Protective Liability must contain endorsement to the effect that issuer waives any claim or right in nature of subrogation to recover against the City, its officers, agents, or employees.

11.2.8 *Endorsement of Primary Insurance:* Each policy, except Workers' Compensation policies, must contain an endorsement that the policy is primary insurance to any other insurance available to additional insured with respect to claims arising hereunder.

11.2.9 *Liability for Premium:* Contractor is solely responsible for payment of all insurance premium requirements hereunder and the City is not obligated to pay any premiums.

11.2.10 *Additional Requirements for Workers' Compensation Insurance Coverage:* Contractor shall, in addition to meeting the obligations set forth in Table 1, maintain throughout the term of the Contract Workers' Compensation coverage as required by statute, and Contractor shall specifically comply with requirements set forth in Paragraph 11.2.10. The definitions set out below shall apply only for purposes of this Paragraph 11.2.10.

11.2.10.1 Definitions:

.1 *Certificate of Coverage:* A copy of certificate of insurance, or coverage agreement (TWCC-81, TWCC-82, TWCC-83, or TWCC-84), showing statutory Workers' Compensation insurance coverage for Contractor's, Subcontractor's, or Supplier's employees providing services for the duration of the Contract.

.2 *Duration of the Work:* Includes the time from Date of Commencement of the Work until Contractor's work under the Contract has been completed and accepted by City Council.

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

11.2.10.2 Contractor shall provide coverage, based on proper reporting of classification codes and payroll amounts and filing of coverage agreements, which meets the statutory requirements of TEX. LAB. CODE ANN., Section 401.011(44) for employees of Contractor providing services on the Work, for duration of the Work.

11.2.10.3 Contractor shall provide a Certificate of Coverage to the City prior to being awarded the Contract.

11.2.10.4 If coverage period shown on Contractor's original Certificate of Coverage ends during duration of the Work, Contractor shall file new Certificate of Coverage with the City showing that coverage has been extended.

11.2.10.5 Contractor shall obtain from each person providing services on the Work, and provide to City Engineer:

.1 Certificate of Coverage, prior to that person beginning work on the Work, so the City will have on file Certificates of Coverage showing coverage for all persons providing services on the Work; and

.2 no later than seven days after receipt by Contractor, new Certificate of Coverage showing extension of coverage, if coverage period shown on current Certificate of Coverage ends during the duration of the Work.

11.2.10.6 Contractor shall retain all required Certificates of Coverage for the duration of the Work and for one year thereafter.

11.2.10.7 Contractor shall notify City Engineer in writing by certified mail or personal delivery, within 10 days after Contractor knew or should have known, of any change that materially affects provision of coverage of any person providing services on the Work.

11.2.10.8 Contractor shall post on-site a notice, in text, form and manner prescribed by Texas Workers' Compensation Commission, informing all persons providing services on the Work that they are required to be covered, and stating how person may verify coverage and report lack of coverage.

11.2.10.9 Contractor shall contractually require each person with whom it contracts to provide services on the Work to:

.1 provide coverage, based on proper reporting of classification codes, payroll amounts and filing of any coverage agreements, which meets statutory requirements of TEX. LAB. CODE ANN.,

Section 401.011(44) for all its employees providing services on the Work, for the duration of the Work;

.2 provide to Contractor, prior to that person's beginning work on the Work, a Certificate of Coverage showing that coverage is being provided for all employees of the person providing services on the Work, for the duration of the Work;

.3 provide Contractor, prior to the end of the coverage period, a new Certificate of Coverage showing extension of coverage, if the coverage period shown on the current Certificate of Coverage ends during the duration of the Work;

.4 obtain from each other person with whom it contracts, and provide to Contractor: (1) Certificate of Coverage, prior to other person's beginning work on the Work; and (2) new Certificate of Coverage showing extension of coverage, prior to end of coverage period, if coverage period shown on the current Certificate of Coverage ends during duration of the Work.

.5 retain all required Certificates of Coverage on file for the duration of the Work and for one year thereafter;

.6 notify City Engineer in writing by certified mail or personal delivery within 10 days after person knew, or should have known, of change that materially affects provision of coverage of any person providing services on the Work; and

.7 contractually require each person with whom it contracts to perform as required by Paragraphs 11.2.10.1 through 11.2.10.7, with Certificates of Coverage to be provided to person for whom they are providing services.

11.2.10.10 By signing the Contract or providing or causing to be provided a Certificate of Coverage, Contractor is representing to the City that all employees of Contractor who will provide services on the Work will be covered by Workers' Compensation coverage for the duration of the Work, that coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with appropriate insurance carrier. Contractor is not allowed to self-insure Workers' Compensation. Contractor may be subject to administrative penalties, criminal penalties, civil penalties, or other civil actions for providing false or misleading information.

11.2.10.11 Contractor's failure to comply with Paragraph 11.2.10 is a breach of the Contract by Contractor, which entitles the City to declare the Contract void if Contractor does not remedy breach within 10 days after receipt of notice of breach from City Engineer.

11.2.11 *Subcontractor Insurance Requirements:* Contractor shall require Subcontractors and Suppliers to obtain Commercial General Liability, Workers' Compensation, Employer's Liability and Automobile Liability coverage that meets all the requirements of Paragraph 11.2. The amount must be commensurate with the amount of the subcontract, but not less than $500,000 per occurrence. Contractor shall require all Subcontractors with whom it contracts directly, whose subcontracts exceed $100,000, to provide proof of Commercial General Liability and Automobile Liability insurance coverage meeting the above requirements. Contractor shall comply with all requirements set out under Paragraph 11.2.10 as to Workers' Compensation Insurance for all Subcontractors and Suppliers.

TABLE 1
REQUIRED COVERAGE

(Coverage)	(Limit of Liability)
.1 Workers' Compensation	Statutory Limits for Workers' Compensation
.2 Employer's Liability	Bodily Injury by Accident $1,000,000 (each accident) Bodily Injury by Disease $1,000,000 (policy limit) Bodily Injury by Disease $1,000,000 (each employee)

.3 Commercial General Liability: Including Contractor's Protective, Broad Form Property Damage, Contractual Liability, Explosion, Underground and Collapse, Bodily Injury, Personal Injury, Products, and Completed Operations (for a period of one year following completion of the Work).	Combined single limit of $1,000,000 (each occurrence), subject to general aggregate of $2,000,000; Products and Completed Operations $1,000,000 aggregate.
.4 Owner's and Contractor's Protective Liability	$1,000,000 combined single limit each Occurrence/ aggregate
.5 Installation Floater (Unless alternative coverage approved by City Attorney)	Value of stored material or equipment, listed on Certificates of Payments, but not yet incorporated into the Work
.6 Automobile Liability Insurance: (For automobiles furnished by Contractor in course of his performance under the Contract, including Owned, Non-owned, and Hired Auto coverage)	$1,000,000 combined single limit each occurrence for (1) Any Auto or (2) All Owned, Hired, and Non-Owned Autos
.7 Excess Coverage	$1,000,000 each occurrence/combined aggregate in excess of limits specified for Employer's Liability, Commercial General Liability, and Automobile Liability
Defense costs are excluded from face amount of policy. Aggregate Limits are per 12-month policy period unless otherwise indicated.	

11.3 *PROOF OF INSURANCE*

11.3.1 Prior to commencing services and at time during the term of the Contract, Contractor shall furnish City Engineer with Certificates of Insurance, along with Affidavit from Contractor confirming that Certificate accurately reflects insurance coverage that is available during term of the Contract. If requested in writing by City Engineer, Contractor shall furnish City Engineer with certified copies of Contractor's actual insurance policies. Failure of Contractor to provide certified copies, as requested, may be deemed, at City Engineer's or City Attorney's discretion, a material breach of the Contract.

11.3.2 Notwithstanding the proof of insurance requirements, Contractor shall continuously maintain in effect required insurance coverage set forth in Paragraph 11.2. Failure of Contractor to comply with this requirement does constitute a material breach by Contractor allowing the City, at its option, to immediately suspend or terminate work, or exercise any other remedy allowed under the Contract. Contractor agrees that the City has not waived or is not estopped to assert a material breach of the Contract because of any acts or omissions by the City regarding its review or non-review of insurance documents provided by Contractor, its agents, employees, or assigns.

11.3.3 Contractor shall provide updated certificates of insurance to the Director upon request. Every certificate of insurance Contractor delivers in connection with this Contract shall

.1 be less than 12 months old;

.2 include all pertinent identification information for the Insurer, including the company name and address, policy number, NAIC number or AMB number, and authorized signature;

.3 include the Project name and reference numbers and indicates the name and address of the Project Manager in the Certificate Holder Box; and

.4 be appropriately marked to accurately identify all coverages and limits of the policy, effective and expiration dates, and waivers of subrogation in favor of the City for Commercial General Liability, Automobile Liability, and Worker's Compensation/Employers' Liability.

11.4 *PERFORMANCE AND PAYMENT BONDS*

11.4.1 For Contracts over the value of $25,000, Contractor shall provide Bonds on the City's standard forms covering faithful performance of the Contract and payment of obligations arising thereunder as required in the Contract pursuant to Chapter 2253 of the Government Code. The Bonds

must be for 100 percent of Original Contract Price and in accordance with conditions stated on standard City Performance and Payment Bond and Statutory Payment Bond forms. Bonds may be obtained from Contractor's usual source and cost for the Bonds are included in Contract Price.

11.5 *MAINTENANCE BONDS*

11.5.1 *One-year Maintenance Bond:* Contractor shall provide Bond on standard City One-year Maintenance Bond form, providing for Contractor's correction, replacement, or restoration of any portion of the Work which is found to be not in compliance with requirements of the Contract during one-year correction period required in Paragraph 12.2. The Maintenance Bond must be for 100 percent of the Original Contract Price.

11.6 *SURETY*

11.6.1 A Bond that is given or tendered to the City pursuant to the Contract must be executed by a surety company that is authorized and admitted to write surety Bonds in the State of Texas.

11.6.2 If a Bond is given or tendered to the City pursuant to the Contract in an amount greater than 10 percent of Surety's capital and surplus, Surety shall provide certification that Surety has reinsured that portion of the risk that exceeds 10 percent of Surety's capital and surplus. The reinsurance must be with one or more reinsurers who are duly authorized, accredited, or trusted to do business in the State of Texas. The amount reinsured by reinsurer may not exceed 10 percent of reinsurer's capital and surplus. The amount of allowed capital and surplus must be based on information received from State Board of Insurance.

11.6.3 If the amount of a Bond is greater than $100,000, Surety shall:

.1 also hold certificate of authority from the United States Secretary of Treasury to qualify as surety on obligations permitted or required under federal law; or,

.2 Surety may obtain reinsurance for any liability in excess of $100,000 from reinsurer that is authorized and admitted as a reinsurer in the State of Texas and is the holder of a certificate of authority from the United States Secretary of the Treasury to qualify as surety or reinsurer on obligations permitted or required under federal law.

11.6.4 Determination of whether Surety on the Bond or the reinsurer holds a certificate of authority from the United States Secretary of the Treasury is based on information published in Federal Register covering the date on which Bond was executed.

11.6.5 Each Bond given or tendered to the City pursuant to the Contract must be on City forms with no changes made by Contractor or Surety, and must be dated, executed, and accompanied by power of attorney stating that the attorney in fact executing such the bond has requisite authority to execute such Bond. The Bonds must be dated and must be no more than 30 days old.

11.6.6 Surety shall designate in its Bond, power of attorney, or written notice to the City, an agent resident in Harris County to whom any requisite notices may be delivered and on whom service of process may be had in matters arising out of the suretyship.

11.6.7 Contractor shall furnish information to a payment bond beneficiary as required by TEX. GOV'T CODE ANN. CH. 2253.

11.7 *DELIVERY OF BONDS*

11.7.1 Contractor shall deliver required Bonds to the City within time limits stated in Notice of Intent to Award and prior to Date of Commencement of the Work.

ARTICLE 12 - UNCOVERING AND CORRECTION OF THE WORK

12.1 *UNCOVERING OF THE WORK*

12.1.1 If a portion of the Work has been covered which City Engineer has not specifically requested to observe prior to its being covered, City Engineer may request to see such work and it must be uncovered by Contractor. If such work is in accordance with the Contract, the costs of uncovering and covering such work is charged to the City by Change Order. If such work is not in accordance with the Contract, Contractor shall pay for uncovering and shall correct the nonconforming Work promptly after receipt of Notice of Noncompliance to do so.

12.2 *CORRECTION OF THE WORK*

12.2.1 Contractor shall promptly correct or remove work rejected by City Engineer or work failing to conform to requirements of the Contract,

whether observed before or after Date of Substantial Completion and whether fabricated, Installed, or completed.

12.2.2 Contractor bears costs of correcting the rejected or nonconforming work including additional testing and inspections, and compensation for Design Consultant's services and expenses made necessary thereby.

12.2.3 If within one year after Date of Substantial Completion, or after date for commencement of warranties established under Paragraph 9.9.5 or by other applicable special warranty required by the Contract, whichever is later in time, any of the Work is found not to be in accordance with the requirements of the Contract, Contractor shall correct such work promptly after receipt of Notice of Noncompliance to do so.

12.2.4 One-year correction period for portions of the Work completed after Date of Substantial Completion will begin on the date of acceptance of that portion of the Work. This obligation under this Paragraph survives acceptance of the Work under the Contract and termination of the Contract.

12.2.5 The one-year correction period does not establish a duration for the Contractor's general warranty under Paragraph 3.12. The City retains the right to recover damages from the Contractor as long as may be permitted by the applicable statute of limitations.

12.2.6 If Contractor does not proceed with correction of the nonconforming work within time fixed by Notice of Noncompliance, the City may correct nonconforming work or remove nonconforming work and store salvageable Products at Contractor's expense. Contractor shall pay the costs of correction of nonconforming work and removal and storage of salvageable Products to the City. If Contractor does not pay costs of the correction or removal and storage within 10 days after written notice, the City may sell the Products at auction or at private sale. The City will account for proceeds thereof after deducting costs and damages that would have been borne by Contractor, including compensation for services of Design Consultant and necessary expenses. If the proceeds of sale do not cover costs which Contractor should have borne, Contractor shall pay the value of the deficiency to the City.

12.2.7 Contractor bears cost of correcting work originally installed by Contractor, the City, or by separate contractors and damaged by Contractor's correction or removal of Contractor's work.

12.3 *ACCEPTANCE OF NONCONFORMING WORK*

12.3.1 If City Engineer prefers to accept work which is not in accordance with requirements of the Contract, City Engineer may do so only by issuance of Change Order, instead of requiring its removal and correction. City Engineer will determine Contract Price reduction. The reduction will become effective even if final payment has been made.

ARTICLE 13 - MISCELLANEOUS PROVISIONS

13.1 *GOVERNING LAWS*

13.1.1 The Contract is subject to the laws of the State of Texas, the City Charter and Ordinances, the laws of the federal government of the United States, and all rules and regulations of any regulatory body or officer having jurisdiction.

13.1.2 Venue for any litigation relating to the Contract is Harris County, Texas.

13.2 *SUCCESSORS*

13.2.1 The Contract binds and benefits the Parties and their legal successors and permitted assigns; however, this Paragraph 13.2.1 does not alter the restrictions on assignment and disposal of assets set out in Paragraph 13.3.1. The Contract does not create any personal liability on the part of any officer or agent of the City.

13.3 *BUSINESS STRUCTURE AND ASSIGNMENTS*

13.3.1 Contractor may not assign the Contract at law or otherwise, or dispose of all or substantially all of its assets without City Engineer's prior written consent. Nothing in this Section, however, prevents the assignment of accounts receivable or the creation of a security interest as described in §9.406 of the Texas Business & Commerce Code. In the case of such an assignment, Contractor shall immediately furnish the City with proof of the assignment and the name, telephone number, and address of the assignee and a clear identification of the fees to be paid to the assignee.

13.3.2 Any series, as defined by the TEX. BUS. ORG. CODE ANN., affiliate, subsidiary, or successor to which Contractor assigns or transfers assets shall join in privity and be jointly and severally liable under this Contract.

13.4 *WRITTEN NOTICE*

13.4.1 All notices required or permitted by the Contract must be in writing and must be effected by hand delivery; registered or certified mail, return receipt requested; or facsimile with confirmation copy mailed to receiving Party. Notice is sufficient if made or addressed with proper postage to the address stated in the Agreement for each Party ("Notice Address") or faxed to the facsimile number stated in the Agreement for each Party. The notice is deemed delivered on the earlier of:

.1 the date the Notice is actually received;
.2 the third day following deposit in a United States Postal Service post office or receptacle; or
.3 the date the facsimile is sent unless the facsimile is sent after 5:00 p.m. local time of the recipient and then it is deemed received on the following day.

Any Party may change its Notice Address or facsimile number at any time by giving written notice of the change to the other Party in the manner provided for in this Paragraph at least 15 days prior to the date the change is effected.

13.5 *RIGHTS AND REMEDIES*

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

13.5.2 No act or failure to act by the City or Contractor is a waiver of rights or duties afforded them under the Contract, nor is the act or failure to act constitute approval of or acquiescence in a breach of the Contract. No waiver, approval or acquiescence is binding unless in writing and, in the case of the City, signed by City Engineer.

13.6 *TESTS AND INSPECTIONS*

13.6.1 Contractor shall give City Engineer, Construction Manager, and Design Consultant timely notice of the time and place where tests and inspections are to be made. Contractor shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

13.6.2 The City will employ and pay for services of an independent testing laboratory to perform inspections or acceptance tests required by the Contract except:

.1 inspections or tests covered by Paragraph 13.6.3;
.2 those otherwise specifically provided in the Contract; or
.3 costs incurred in connection with tests or inspections conducted pursuant to Paragraph 12.2.2.

13.6.3 Contractor is responsible for and shall pay all costs in connection with inspection or testing required in connection with City Engineer's acceptance of a Product to be incorporated into the Work, or of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation into the Work.

13.6.4 Neither observations by the City, Construction Manager, or Design Consultant, nor inspections, tests, or approvals by others, relieves Contractor from Contractor's obligations to perform the Work in accordance with the Contract.

13.7 *INTEREST*

13.7.1 No interest will accrue on late payments by the City except as provided under Chapter 2251 of the Government Code.

13.8 *PARTIES IN INTEREST*

13.8.1 The Contract does not bestow any rights upon any third party, but binds and benefits the Parties only.

13.9 *ENTIRE CONTRACT*

13.9.1 The Contract merges the prior negotiations and understandings of the Parties and embodies the entire agreement of the Parties. No other agreements, assurances, conditions, covenants, express or implied, or other terms of any kind, exist between the Parties regarding the Contract.

13.10 *WRITTEN AMENDMENT*

13.10.1 Changes to the Contract that cannot be effected by Modifications, must be made by written amendment, which will not be effective until approved by City Council.

13.11 *COMPLIANCE WITH LAWS*

13.11.1 Contractor shall comply with the Americans with Disabilities Act of 1990 as amended (ADA) and Texas Architectural Barriers Act and all regulations relating to either statute.

13.11.2 Contractor shall comply with all applicable federal, state, and city laws, rules and regulations.

13.12 *SEVERABILITY*

13.12.1 If any part of the Contract is for any reason found to be unenforceable, all other parts remain enforceable to the extent permitted by law.

ARTICLE 14 - TERMINATION OR SUSPENSION OF THE CONTRACT

14.1 *TERMINATION BY THE CITY FOR CAUSE*

14.1.1 Each of the following acts or omissions of Contractor or occurrences shall constitute an "Event of Default" under the Contract:

.1 Contractor refuses or fails to supply enough properly skilled workers or proper Products;

.2 Contractor disregards laws, ordinances, rules, regulations, or orders of a public authority having jurisdiction;

.3 Contractor is guilty of material breach of any duty or obligation of Contractor under the Contract;

.4 Contractor has had any other contract with the City terminated for cause at any time subsequent to the effective date of the Contract as set out in the Agreement; or

.5 Contractor fails to utilize Low Sulfur Diesel Fuel, as required in Paragraph 3.9.1.1.

14.1.2 If an Event of Default occurs, City Engineer may, at his option and without prejudice to any other rights or remedies which the City may have, deliver a written notice to Contractor and Surety describing the Event of Default and giving the Contractor 10 days to cure the Event of Default. If after the cure period, Contractor has failed or refused to cure the Event of Default, then City Engineer may deliver a second written notice to Contractor giving notice of the termination of the Contract or of the termination of Contractor's performance under the Contract ("Notice of Termination"). If City Engineer issues a Notice of Termination, then City Engineer may, subject to any prior rights of Surety and any other rights of the City under the Contract or at law:

.1 request that Surety complete the Work; or

.2 take possession of the site and all materials, equipment, tools, and construction equipment and machinery on the site owned by Contractor; and

.3 finish the Work by whatever reasonable method City Engineer may deem expedient.

14.1.3 After Contractor's receipt of a Notice of Termination, and except as otherwise directed in writing by City Engineer, Contractor shall:

.1 stop the Work on the date and to the extent specified in the Notice of Termination;

.2 place no further orders or subcontracts for Products or services;

.3 terminate all orders and subcontracts to the extent that they relate to performance of work terminated;

.4 assign to the City, in the manner, at the times, and to the extent directed by City Engineer, all rights, title, and interest of Contractor, under the terminated supply orders and subcontracts. The City may settle or pay claims arising out of termination of the orders and subcontracts;

.5 settle all outstanding liabilities and all claims arising out of the termination of supply orders and subcontracts with approval of City Engineer;

.6 take action as may be necessary, or as City Engineer may direct, for protection and preservation of property related to the Work that is in possession of Contractor, and in which the City has or may acquire an interest; and

.7 secure the Work in a safe state before leaving the site, providing any necessary safety measures, shoring, or other devices.

14.1.4 If the City terminates the Contract or terminates Contractor's performance under the Contract for any one or more of the reasons stated in Paragraph 14.1.1, Contractor may not receive any further payment until the Work is complete, subject to Paragraph 14.1.5.

14.1.5 If the unpaid balance of Contract Price exceeds the costs of finishing the Work, including liquidated damages and other amounts due under the Contract, the balance will be paid to Contractor. If the costs of finishing the Work exceed the unpaid

balance, Contractor shall, within 10 days of receipt of written notice setting out the amount of the excess costs, pay the difference to the City. The amount to be paid to Contractor or the City will be certified by City Engineer in writing, and this obligation for payment shall survive termination of the Contract or termination of Contractor's performance under the Contract. Termination of the Contractor for cause shall not relieve the Surety from its obligation to complete the project.

14.2 *TERMINATION BY THE CITY FOR CONVENIENCE*

14.2.1 City Engineer may, without cause and without prejudice to other rights or remedies of the City, give Contractor and Surety a Notice of Termination with a seven days written notice.

14.2.2 After receipt of the Notice of Termination, and except as otherwise approved by City Engineer, Contractor shall conform to requirements of Paragraph 14.1.3.

14.2.3 After receipt of the Notice of Termination, Contractor shall submit to the City its termination Claim, in forms required by City Engineer. The Claim will be submitted to the City promptly, but no later than six months from the effective date of termination, unless one or more extensions are granted by City Engineer in writing. If Contractor fails to submit its termination Claim within the time allowed, in accordance with Paragraph 14.2.4, City Engineer will determine, on the basis of available information, the amount, if any, due to Contractor because of termination, and City Engineer's determination is final and binding on the Parties. The City will then pay to Contractor the amount so determined.

14.2.4 City Engineer will determine, on the basis of information available to City Engineer, the amount due, if any, to Contractor for the termination as follows:

.1 Contract Price for all work performed in accordance with the Contract up to the date of termination determined in the manner prescribed for monthly payments in Article 9, except no retainage is withheld by the City either for payment determined by percentage of completion or for materials and equipment delivered to the site, in storage or in transit.

.2 Reasonable termination expenses, including costs for settling and paying Subcontractor and Supplier claims arising out of termination of the Work, reasonable cost of preservation and protection of the City's property after termination, if required, and the cost of Claim preparation. Termination expenses do not include field or central office overhead, salaries of employees of Contractor, or litigation costs, including attorneys' fees.

No amount is allowed for anticipated profit or central office overhead on uncompleted work, or any cost or lost profit for other business of Contractor alleged to be damaged by the termination.

14.2.5 Contractor shall promptly remove from the site any construction equipment, tools, and temporary facilities, except the temporary facilities which City Engineer may wish to purchase and retain.

14.2.6 Contractor shall cooperate with City Engineer during the transition period.

14.2.7 The City will take possession of the Work and materials delivered to the site, in storage, or in transit, as of date or dates specified in the Notice of Termination, and is responsible for maintenance, utilities, security, and insurance, as stated in Notice of Termination.

14.3 *SUSPENSION BY THE CITY FOR CONVENIENCE*

14.3.1 City Engineer may, without cause, after giving Contractor and Surety 24-hour prior written notice, order Contractor to suspend, delay, or interrupt the Work in whole or in part for a period of time as City Engineer may determine.

14.3.2 An adjustment will be made in Contract Time equivalent to the time of suspension.

14.3.3 Adjustment will be made to Contract Price for increases in the cost of performance of the Work, including profit on increased cost of performance caused by suspension, delay, or interruption of the Work in accordance with Paragraph 7.3. No adjustment will be made to the extent that:

.1 performance was, or would have been, suspended, delayed, or interrupted by another cause for which Contractor is responsible; or

.2 adjustment is made or denied under another provision of the Contract.

14.4 *TERMINATION BY CONTRACTOR*

14.4.1 Contractor may terminate the Contract if the Work is stopped for a period of 30 days through no act or fault of Contractor, directly related to one of these events:

.1 issuance of an order of a court or other public authority having jurisdiction;

.2 act of government, such as a declaration of national emergency which makes material unavailable; or

.3 if repeated suspensions, delays, or interruptions by the City as described in Paragraph 14.3 constitute, in the aggregate, more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less;

No termination will be effective for the above reasons if Contractor delivers written notice to City Engineer describing the reason for termination, giving the proposed termination date, and granting the City a reasonable opportunity to respond and cure any City default before termination is effective.

14.4.2 If the Contract is terminated pursuant to this Paragraph 14.4, Contractor shall comply with the requirements of Paragraphs 14.2.2 through 14.2.7.

END OF DOCUMENT

Document 00800

SUPPLEMENTARY CONDITIONS

The following Paragraphs amend and supplement the 2010 edition of General Conditions. Unaltered portions of General Conditions remain in effect.

ARTICLE 1 - GENERAL PROVISIONS:

1.1 DEFINITIONS: Insert the following Paragraph 1.1.9.1

1.1.9.1 The firm of _____ has been employed by the City as Construction Manager for the Work.

ARTICLE 3 - THE CONTRACTOR

3.5 *LABOR: Insert the following Paragraphs 3.5.1.1 and 3.5.3.1.1*

3.5.1.1 Materials produced after July 1, 1991, by convict labor may only be incorporated in a Federal-aid highway construction project if such materials have been: (1) Produced by convicts who are on parole, supervised release, or probation from a prison or (2) Produced in a qualified prison facility and the cumulative annual production amount of such materials for use in Federal-aid highway construction does not exceed the amount of such materials produced in such facility for use in Federal-aid highway construction during the 12-month period ending July 1, 1987.

3.5.3.1.1 If the original contract price is greater than $1 Million Dollars, the Contractor shall make good faith efforts to comply with the City ordinances regarding Minority Business Enterprises (MBE), Persons with Disabilities Business Enterprises (PDBE), Small Business Enterprise (SBE) and Disadvantaged Business Enterprises (DBE) participation goals which are as follows:

1. the MBE goal is ___0___ percent,
2. the PDBE goal is ___0___ percent
3. the SBE goal is ___0___ percent, and
4. the DBE goal is ___**8**___ percent

The Contractor shall ensure that firms used to satisfy the DBE goal are certified as DBE with both the City of Houston and the Texas Department of Transportation.

8.1 *PROGRESS AND COMPLETION: Delete Paragraph 8.1.6. and replace with the following 8.1.6. and 8.1.6.1*

8.1.6 Contractor may perform Work at the site 24 hours per day, seven days per week. Contractor shall give 24-hour prior written notice and receive confirmation of notice from Project Manager prior to performing work between 7:00 p.m. and 7:00 a.m., on a Sunday, or on a Legal Holiday. Contractor shall comply with City Code of Ordinances, Chapter 30 relating to Noise and Sound Level Regulation.

8.1.6.1 Contractor shall credit the City by Change Order for inspection services for overtime work or work performed on Sundays or Legal Holidays. The amount Contractor credits the City will be $50.00 per hour per inspector for inspection services.

ARTICLE 9 - PAYMENTS AND COMPLETION

9.1 *UNIT PRICE WORK: Delete Section 9.1 in its entirety and insert the following Section 9.1.*

9.1 References to Unit Prices in individual Specification sections are not applicable to the Contract. Include payment for portions of the Work required by these sections in the Stipulated Price for the Contract.

9.12 *LIQUIDATED DAMAGES: Insert the following Paragraph 9.12.1.1.*

9.12.1.1 The amount of liquidated damages provided in General Conditions Paragraph 9.12.1 payable by Contractor or Surety for each and every day of delay beyond Contract Time, are $800.00 per day.

ARTICLE 11 - INSURANCE AND BONDS

11.5 *MAINTENANCE BONDS: Insert the following Paragraph 11.5.2.*

11.5.2 One-year Surface Correction Bond: Contractor shall provide, on the City standard form, an additional one year Bond in an amount equal to four percent of the Original Contract Price or cost of repair. Bond shall provide for Contractor's correction, replacement, or restoration of backfill or subsurface and surface work not in accordance with the Contract, within one year from the date the One-year Maintenance Bond has expired.

ARTICLE 13 - MISCELLANEOUS PROVISIONS

13.1 *GOVERNING LAWS*: Insert the following Paragraph 13.1.3

13.1.3 The City and Contractor certify that they will comply with the Title Prison Produced Materials (23 CFR 635.417) and that the use of Prison Produced Materials on this project is prohibited.

END OF DOCUMENT

Document 00820

WAGE SCALE FOR ENGINEERING CONSTRUCTION

1.01 In accordance with the Prevailing Wage Law on Public Works (Chapter 2258 of the Texas Government Code), the public body awarding the Contract does hereby specify the following to be the general prevailing rates in the locality in which the Work is being performed.

1.02 This prevailing wage rate does not prohibit the payment of more than the rates stated.

1.03 The wage scale for engineering construction is to be applied to all site work greater than 5 feet from an exterior wall of new building under construction or from an exterior wall of an existing building.

1.04 If Contractor believes that an additional classification for a particular craft or type of worker is necessary to perform work under the Contract, it must submit with its bid a request to the Affirmative Action & Contract Compliance Division of the Mayor's office ("AA") to use an additional labor classification not listed in Exhibit "A" and specify the proposed new classification. AA shall determine whether a proposed classification is already covered in Exhibit "A", and, if it is, specify which classification is appropriate. AA's decision is conclusive. If AA decides that a new classification is necessary, it will determine the appropriate prevailing wage rate for any resurveyed, amended, new, or additional craft or type of worker not covered by Exhibit "A". Such determination must be decided in accordance with procedures established by AA, and in compliance with Chapter 2258 of the Texas Government Code and City of Houston, Texas Ordinance Nos. 85-2070, 2000-1114, 2001-152, 2006-91, 2006-168 and 2009-247 subject to City Council approval.

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LABOR CLASSIFICATIONS AND PREVAILING WAGE RATES
FOR
ENGINEERING CONSTRUCTION
2010

CLASSIFICATION	RATE	CLASSIFICATION	RATE
Asphalt Distributor Operator	$10.94	Milling Machine Operator - Fine Grade	$13.17
Asphalt Paving Machine Operator	$12.01	Mixer Operator	$10.33
Asphalt Raker	$11.13	Motor Grader Operator- Rough	$13.13
Asphalt. Shoveler	$9.14	Motor Grader Operator	$11.67
Broom or Sweeper Operator	$11.19	Oiler	$12.12
Bulldozer Operator	$11.81	Painter-Structures	$15.54
Carpenter- Rough	$12.49	Pavement Marking Machine Operator	$8.18
Concrete Finisher- Paving	$11.38	Pile Driverman.	$12 .22
Concrete Finisher- Structures	$10.80	Pipe Layer	$9.49
Concrete Paving Curbing Machine Operator	$10.00	Reinforcing Steel Setter - Paving	$15.14
Concrete Paving Finishing Machine Operator	$13.07	Reinforcing Steel Setter - Structure	$13.87
Concrete Paving Joint Sealer Operator	$11.00	Roller Operator, Pneumatic - Self-propelled	$9.91
Concrete Paving. Saw Operator .	$12.75	Roller Operator, Steel Wheel, Flat Wheel/Tamping	$10.43
Concrete Paving Spreader Operator.	$10.44	Roller Operator, Steel Wheel, Plant Mix Pavement	$11 .07
Concrete Rubber . . .	$9.00	Scraper Operator	$9.92
Crane Clamshell Backhoe Derrick, Dragline, Shovel Operator	$12.71	Servicer	$10.96
Crusher and Screening Plant Operator	$11.29	Sign Installer - PGM	$8.54
Electrician * 3 Journeyman 2 Apprentice	$21.79	Slip Form Machine Operator	$11.07
Flagger	$9.42	Spreader Box Operator	$11.12
Form Builder/Setter- Structures	$10.50	Structural Steel Worker	$12.13
Form Liner- Paving and Curb	$11.75	Tractor Operator - Crawler Type	$13.00
Form Setter- Paving and Curb	$10.51	Tractor Operator- Pneumatic	$10.07
Foundation Drill Operator - Crawler Mounted	$15.00	Transit Mixer Truck Driver	$11.00
Foundation Drill Operator - Truck Mounted	$12.73	Truck Driver, Lowboy-float	$13.16
Front Loader Operator	$10.65	Truck Driver, Single-Axle - Heavy	$10.65
Laborer Common	$9.15	Truck Driver, Single-Axle - Light	$10.07
Laborer- Utility	$9.81	Truck Driver, Tandem Axle Semi-Trailer	$10.25
Manhole Builder	$9.00	Work Zone Barricade Servicer	$9.94
Mechanic	$13.72	Welders - Receive rate prescribed for craft performing operation to which welding is incidental	
* Apprentices- must be in an approved USDOL Program and cannot exceed ratios			

Ordinance No. 2009-247 passed March 25, 2009

Engineering Prevailing Wages
Classification Definitions

Adoption: February 1, 2010

Asphalt Distributor Operator
Drives distributor truck, sets spray bars and operates valves and levers to control distribution of bituminous material for highway surfacing. May oil, grease or otherwise service and make adjustments to equipment as needed. Performs other related duties.

Asphalt Paving Machine Operator
Operates paving machine that spreads and levels asphaltic concrete on highway subgrade. Controls movement of machine, raises and lowers screed, regulates width of screed. May, oil, grease, service and make adjustments to equipment as needed. Performs other related duties.

Asphalt Raker
Distributes asphaltic materials evenly over road surface by raking and brushing material to correct thickness; directs Laborers when to add or take away material to fill low spots or to reduce high spots. Performs other related duties.

Asphalt Shoveler
A general term used on construction work covering many unskilled classifications requiring work of a physical nature. A laborer works with all crews doing everything from pick and shovel work to cleaning up lumber with hammer, shoveling and placing concrete, uses air tools, cleans concrete joints and fills joints with sealing compound from bucket or with hose and nozzle from a central source, applies coating of oil to inside face of forms, may help set and strip forms, unloads and transports reinforcing steel, cures newly poured concrete, helps lower pipe into ditch for pipelayers, builds fences, works with dirt crew keeping construction layout stakes out of the way of dirt moving equipment.

Broom or Sweeper Operator
Operates a self-propelled machine to sweep and clean roadway surfaces. May oil grease, service and make adjustments to equipment as needed. Performs other related duties.

Bulldozer Operator
Operates a crawler tractor with a bulldozer mounted in front of chassis to level, distribute and push earth or other material. May operate a ripper attachment to break up rock or other hard material. May use a push block on front of tractor to push load scrapers. May oil grease, or otherwise service and make minor repairs to equipment as needed. Performs other related duties.

Carpenter, Rough
Works from plans to build, assemble, fit together, align, plum, and set in place forms for molding concrete structures. Forms may be wood, steel, aluminum, fiberglass or any other type of material. Checks form while concrete is placed. May install miscellaneous materials integral to concrete structures. May set precast concrete elements. Prepares for slipforming traffic rail and median barrier. May install permanent metal deck forms. May work with power tools Performs other related duties.

Concrete Finisher, Paving
Finishes the exposed surfaces of fresh concrete paving, median barrier and every element of concrete structures to the final grade and contour structures to the final grade and contour with the use of straight edges and steel trowels. Operates bridge deck finishing machine. Finishes concrete curbs and gutters. Finishes exposed surface of concrete after forms have been removed by patching imperfections with fresh concrete, rubbing surface with abrasive stone, and directing others in removing excess or defective concrete with power tools. Performs other related duties.

Concrete Finisher, Structures
A worker semi-skilled in concrete finishing who assists Concrete finisher by performing specific or general duties of lesser skill and keeping Concrete Finisher supplied with materials, tools, and supplies; cleaning working area an equipment; and holding materials and tools. Performs other related duties.

Concrete Paving Curbing Machine Operator
Operates self - propelled machine(s) which may or may not travel on concrete paving forms, spreading and leveling fresh concrete to grade by use of augers and screeds. May oil, grease or otherwise service and make adjustments to equipment as necessary. Performs other related duties.

Concrete Paving Finishing Machine Operator
Operates self - propelled machine(s) which may or may not travel on concrete paving forms, spreading and leveling fresh concrete to grade by use of augers and screeds. May oil, grease or otherwise service and make adjustments to equipment as necessary. Performs other related duties.

Concrete Paving Joint Sealer Operator
Cleans and seals joints requiring a hot or cold sealing compound in concrete paving, sidewalks, driveway and approach slabs. May oil, grease or make necessary repairs adjustments to equipment as needed. Performs other related duties.

Concrete Paving Saw Operator
Operates a water-cooled power saw with either or an abrasive blade to saw expansion and contraction joints in concrete paving. May also be used to saw asphaltic pavements. May oil grease or otherwise service and make necessary adjustments to equipment as needed. Performs other related duties.

Concrete Paving Spreader Operator
Operates self - propelled machine(s) which may or may not travel on concrete paving forms, spreading and leveling fresh concrete to grade by use of augers and screeds. May oil, grease or otherwise service and make adjustments to equipment as necessary. Performs other related duties.

Concrete Rubber
Finishes the exposed surface of concrete masonry after the forms have been removed by patching holes and broken corners with fresh concrete, rubbing surface with abrasive stone to remove rough spots, and removing g high spots and defective concrete with hand chisel and hammer or pneumatic chisel and powered abrasive stone. Performs other related duties.

Crane, Clamshell, Backhoe, Derrick, Dragline, Shovel Operator
A worker who operates a lattice boom type crane can hoist and move materials, raise and lower heavy weights and perform other related operations. May be crawler type or rubber tired. May include placement of rock riprap, clamshell, dragline, pipe and pile driving operations. May oil, grease or otherwise service and make necessary adjustments to equipment as needed. Performs other related duties.

Crusher and Screed Plant Operator
Operates a crusher or screening plant through which rock is run to break it into crushed stone for construction or to control flow of materials not needed. May include minor repairs and may service and make necessary adjustments to equipment as needed. Performs other related duties.

Electrician
Plans and directs the layout of metal electrical conduit, installs wiring systems, switch-panels, buss bars, works on overhead distribution systems and underground distribution systems. Performs other related duties.

Flagger
A worker who directs traffic in or around a construction site. May use signs or devices to direct traffic. May help assemble, position and clean devices or equipment used to direct traffic. Must be able to effectively communicate with the public. May require certain level of training by TXDOT specifications. Performs other related duties.

Form Builder/Setter, Structures
Works from plans to build, assemble, fit together, align, plum, and set in place forms for molding concrete structures. Forms may be wood, steel, aluminum, fiberglass or any other type of material. Checks forms while concrete is placed. May install miscellaneous materials integral to concrete structures. May set precast concrete elements. Prepares for slipforming traffic rail and median barrier. May install permanent metal deck forms. May work with power tools Performs other related duties.

Form Liner, Paving & Curb
Fits together, aligns and sets to grade metal and wooden forms for placement of concrete paving and curbs. Works with survey crew to set stringline for paving, curb, and gutter curb. Performs other related duties.

Form Setter, Paving & Curb
Fits together, aligns and sets to grade metal and wooden forms for placement of concrete paving and curbs. Works with survey crew to set stringline for paving, curb, and gutter curb. Performs other related duties.

Foundation Drill Operator, Crawler Mounted
Operates a hole-drilling machine that is crawler mounted. May include geotechnical operations such as soils nails, rock nails, tiebacks, anchors and jet grouting. May oil, grease or otherwise service and make necessary adjustments to equipment as needed. Performs other related duties.

Foundation Drill Operator, Truck Mounted
Operates a hole drilling machine that is mounted on the rear of a rubber tired vehicle or truck. May include soils nails, rock nails, tiebacks, anchors and jet grouting. Drive truck from location to location or may have laborer who drives truck. May oil, grease or otherwise service and make necessary adjustments to equipment as needed. Performs other related duties.

Front End Loader Operator
Operates a rubber tired, skid steer or crawler type tractor with an attached scoop type bucket on front end. Machine is used to load materials from stockpiles, excavation, charging batch plants, loading and unloading trucks. May be used with attachments in lieu of the bucket. May oil, grease or otherwise service and make necessary adjustments to equipment as needed. Performs other related duties.

Laborer, Common
A general term used on construction work covering many unskilled classifications requiring work of a physical nature. A laborer works with all crews doing everything from pick and shovel work to cleaning up lumber with hammer, shoveling and placing concrete, uses air tools, cleans concrete joints and fills joints with sealing compound from bucket or with hose and nozzle from a central source, applies coating of oil to inside face of forms, may help set and strip forms, unloads and transports reinforcing steel, cures newly poured concrete, helps lower pipe into ditch for pipelayers, builds fences, works with dirt crew keeping construction layout stakes out of the way of dirt moving equipment.

Laborer, Utility
Performs a variety of manual duties, usually working in a utility capacity by working on multiple projects and tasks where demands require workmen with varied experience and ability to work without close direction. Unloads and transports reinforcing steel. May occasionally place and tie reinforcing steel. Directs common laborers in pouring concrete. Erects shoring and bracing. Assists in installation of pipe. Installs, operate and maintains dewatering systems. May assist equipment operators in positioning machines, verifying grades and signaling operators. Directs truck drivers and scraper operators to dumping positions to maintain grades as directed. Uses power tools and air tools. May work as lead man in a labor crew. His performance of a wide variety of construction jobs distinguishes him from a helper assigned to a specific craft. Installs and maintains erosion control. Is more or less a general utility construction worker. May be second step in learning a skill, and may later become a helper in a specific classification. Performs other related duties.

Manhole Builder
Constructs a means of permanent access to water and sewer lines for maintenance purposes. This work consists of laying brick or concrete slab at bottom of ditch up to an approximate grade line near the surface of the ground. Brick or block is normally laid to form a nearly circular manhole. Brick or block is laid in by eyesight and is normally to a plumb line. Chipped or culled brick can be used quite often is. No effort may be made to keep mortar off the face of the brick and joints are not pointed. May apply coating of concrete to interior and exterior surface. Performs other related duties.

Mechanic
Assembles, set up, adjusts and maintains and repairs all types of construction equipment and trucks. He may perform the duties of a welder in repair of equipment. Performs other related duties.

Milling Machine Operator, Fine Grade
Operates a power-driven milling machine that planes material of the to roadbed and discharges the material into a hauling unit or a windrow. May oil, grease or otherwise service and make necessary adjustments to equipment as needed. Performs other related duties.

Mixer Operator
Performs a variety of manual duties, usually working in a utility capacity by working on multiple projects and tasks where demands require workmen with varied experience and ability to work without close direction. Unloads and transports reinforcing steel. May occasionally place and tie reinforcing steel. Directs common laborers in pouring concrete. Erects shoring and bracing. Assists in installation of pipe. Installs, operate and maintains dewatering systems. May assist equipment operators in positioning machines, verifying grades and signaling operators. Directs truck drivers and scraper operators to dumping positions to maintain grades as directed. Uses power tools and air tools. May work as lead man in a labor crew. His performance of a wide variety of construction jobs distinguishes him from a helper assigned to a specific craft. Installs and maintains erosion control. Is more or less a general utility construction worker. May be second step in learning a skill, and may later become a helper in a specific classification. Performs other related duties.

Motor Grader Operator, Rough
Operates a motor grader. Equipment is used to grade excavation and embankment and to lay asphalt , base and other materials. May blade haul roads and do other general motor grader work, but does not perform finish grade work to close specification tolerances. This operator may be a learner in the first phase of learning the skills of motor grader work. May oil, grease or otherwise service and make necessary adjustments to equipment as needed. Performs other related duties.

Motor Grader Operator
Operates a motor grader. Equipment is used to grade excavation and embankment and to lay asphalt , base and other materials. May blade haul roads and do other general motor grader work, but does not perform finish grade work to close specification tolerances. This operator may be a learner in the first phase of learning the skills of motor grader work. May oil, grease or otherwise service and make necessary adjustments to equipment as needed. Performs other related duties.

Oiler
A learner or semi-skilled worker who under the direction of the watch engineer May oil and grease or otherwise service all engines and necessary equipment as needed. He may clean and paint engine room as needed. Performs other related duties.

Painter, Structures
Paints and stains structural steel and concrete surfaces of bridges, retaining walls, or other structures. Directs cleaning and abrasive blasting of surfaces prior to painting or staining. Performs other related duties.

Pavement Marking Machine Operator
Operates machine used in laying paint stripes or markers on all types of paving. Loads machine with appropriate materials and may walk or ride on machine. May oil, grease or otherwise service and make necessary adjustments to equipment as needed. Performs other related duties.

Piledriverman
Sets in place, aligns, plumbs directs driving of timber, concrete, steel, pipe and any other type of piling. Sets, drives and pulls steel, concrete and other types of sheet piling. Rigs pile and leads and bracing. Signals operator. Splices piles before and after driving. Directs pile cutoff. May direct jetting or drilling equipment in connection with installing piles to grade. Performs other related duties.

Pipelayer
Installs concrete, clay, steel, ductile iron, plastic, corrugated pipe and any other type of pipe for storm drainage, water lines, gas lines and sanitary sewer lines. Lays underground communication and electrical ducts. May install and set electrical ground boxes, hand holes, manholes, inlets and other structures. Caulks joints, make threaded and flanged connections. Installs valves and other accessories. Performs other related duties.

Reinforcing Steel Setter, Paving
Works from plans to lay out and install reinforcing steel within forms or in mats of concrete paving. May direct unloading of material. Determines rigging required to complete work. Gives direction to reinforcing steel worker (helper) or common or utility laborers. May install miscellaneous materials integral to concrete structure or paving. May work with power tools. Performs other related duties.

Reinforcing Steel Setter,Structure
Works from plans to lay out and install reinforcing steel within forms or in mats of concrete paving. May direct unloading of material. Determines rigging required to complete work. Gives direction to reinforcing steel worker (helper) or common or utility laborers. May install miscellaneous materials integral to concrete structure or paving. May work with power tools. Performs other related duties.

Roller Operator, Pneumatic, Self-Propelled
Operates a self-propelled machine with either steel wheels pneumatic tires, which is used to compact and smooth all bituminous materials. May oil, grease or otherwise service and make necessary adjustments to equipment as needed. Performs other related duties.

Roller Operator, Steel Wheel, Flat Wheel/Tamping
Operates a self-propelled machine with either steel wheels or pneumatic tires which is used to compact earth fills, subgrade, flexible base and all other types of materials except bituminous. May oil, grease or otherwise service and make necessary adjustments to equipment as needed. Performs other related duties.

Roller Operator, Steel Wheel, Plant Mix Pavement
Operates a self-propelled machine with either steel wheels pneumatic tires, which is used to compact and smooth all bituminous materials. May oil, grease or otherwise service and make necessary adjustments to equipment as needed. Performs other related duties.

Scraper Operator
Operates a self-contained wheeled tractor scraper both self loading or assisted by crawler tractors or other scrapers. Used to excavate and transport earth or other materials. May oil, grease or otherwise service and make necessary adjustments to equipment as needed. Performs other related duties.

Servicer
Drives a truck, which carries various fuels, oils, greases and filters. Must have knowledge of and is responsible for the correct oiling and greasing and changing of filters on equipment according to the manufacturers' specifications. Uses compressed air grease guns, wrenches and other tools. May make adjustments to clutches, brakes and other mechanical items. Keeps record of service preventive maintenance records. May have laborer assisting him. May require CDL if driving truck on public highways. Performs other related duties.

Sign Installer (PGM)
Sets forms, reinforcing steel, anchor bolts and pours concrete for Sign foundations. Fabricates and erects pipe and angle Frameworks by bolting, welding or other means prior to installation of signs that are normally prefabricated. Works from plans in location and drilling holes for proper location and alignment of signs. May direct hoisting of signs into place. Fastens signs to framework by bolting and other means. Locates and sets lighting brackets. May perform other work associated with signing projects. Supervises sign erector helper. Performs other related duties.

Slip Form Machine Operator
Cleans and seals joints requiring a hot or cold sealing compound in concrete paving, sidewalks, driveway and approach slabs. May oil, grease or make necessary repairs adjustments to equipment as needed. Performs other related duties.

Spreader Box operator
Operates spreader box by adjusting hopper and strike off blade so that the gravel, stone or other material may be spread to a specific depth on road surface during seal coat and surface treatment operations. May oil, grease or other wise service and make necessary adjustments to equipment as needed. Performs other related duties.

Structural Steel Worker
Works from plans to lay out and install reinforcing steel within forms or in mats of concrete paving. May direct unloading of material. Determines rigging required to complete work. Gives direction to reinforcing steel worker (helper) or common or utility laborers. May install miscellaneous materials integral to concrete structure or paving. May work with power tools. Performs other related duties.

Tractor operator, Crawler Type
Operates a crawler tractor with a bulldozer mounted in front of chassis to level, distribute and push earth or other material. May operate a ripper attachment to break up rock or other hard material. May use a push block on front of tractor to push load scrapers. May oil grease, or otherwise service and make minor repairs to equipment as needed. Performs other related duties.

Tractor Operator, Pneumatic
Operates a gasoline or diesel powered agricultural tractor that tows compaction rollers, plow, disc. water tanks, scrapers and other similar operations. May use other miscellaneous attachments. May oil. Grease or otherwise service and make necessary adjustments to equipment as needed. Performs other related duties.

Traveling Mixer Operator
Drives a gasoline or diesel truck upon which is mounted a concrete mixer. Operates concrete mixer and dumps concrete on the grade, into forms or into concrete pumps or buckets. Cleans mixer drum. May require CDL license for on highway use. May service and make necessary adjustments for proper operation of equipment. Performs other related duties.

Truck driver, lowboy-Float
Drives a heavy-duty diesel powered truck to which is attached a trailer upon which heavy equipment is hauled. Driver is often required to operate heavy equipment to load or unload the lowboy. May require CDL license for on highway use. May service and make necessary adjustments for proper operation of equipment. Performs other related duties.

Truck driver, Single Axle, Heavy
Drive a light capacity truck for transporting loads of construction material. The truck is of single rear axle type, may have various kinds of beds attached, such as dump, flat bed, tank, etc. May require CDL license for driving on highway. May services and make necessary adjustments for proper operation equipment. Performs other related duties.

Truck driver, Single Axle-Light
Drive a light capacity truck for transporting loads of construction material. The truck is of single rear axle type, may have various kinds of beds attached, such as dump, flat bed, tank, etc. May require CDL license for driving on highway. May services and make necessary adjustments for proper operation equipment. Performs other related duties.

Truck Driver, Tandem Axle, Semi-Trailer
Drives a diesel-powered tractor pulling a semi trailer hauling materials. Hauls dirt, rock, aggregates or other material. May require CDL license for driving on highway. May service and make necessary adjustments for proper operation of equipment. Performs other related duties.

Work Zone Barricade Servicer
Fabricates, erects and maintains temporary traffic control devices, including arrow boards, signs, barricades, channelizing devices, barrels and all message boards. May operates a truck during traffic control operations.

WELDERS - Receives rate for craft being performed to which welding is incidental.

Document 00821

WAGE SCALE FOR BUILDING CONSTRUCTION

1.01 Contractor and its Subcontractors must pay the general prevailing wage rates for building construction for each craft or type of worker or mechanic employed in the execution of any building construction or repair under the Contract in accordance with Chapter 2258 of the Texas Government Code and City of Houston, Texas Ordinance Nos. 85-2070, 2000-1114, 2001-152, 2006-91 and 2006-168, and 2009-247 all as amended from time to time. City Council has determined the prevailing wage rate in the locality in which the work is being performed, which is set forth in Exhibit "A".

1.02 In bidding, Contractor warrants and represents that it has carefully examined the classifications for each craft or type of worker needed to execute the Contract and determined that such classifications in Exhibit "A" include all necessary categories to perform the work under the Contract.

1.03 If Contractor believes that an additional classification for a particular craft or type of worker is necessary to perform work under the Contract, it must submit with its bid a request to the Affirmative Action & Contract Compliance Division of the Mayor's office ("AA") to use an additional labor classification not listed in Exhibit "A" and specify the proposed new classification. AA shall determine whether a proposed classification is already covered in Exhibit "A", and, if it is, specify which classification is appropriate. AA's decision is conclusive. If AA decides that a new classification is necessary, it will determine the appropriate prevailing wage rate for any resurveyed, amended, new, or additional craft or type of worker not covered by Exhibit "A". Such determination must be decided in accordance with procedures established by AA, and in compliance with Chapter 2258 of the Texas Government Code and City of Houston, Texas Ordinance Nos. 85-2070, 2000-1114, 2001-152, 2006-91, 2006-168, and 2009-247 subject to City Council approval.

1.04 Contractor must not use any labor classification not covered by Exhibit "A" until such classification is established and approved for use by AA.

A Contractor or Subcontractor who violates Chapter 2258 of the Texas Government Code must pay to the City, $60 per each worker employed for each calendar day or part of the day that the worker is paid less than the wage rates set forth in Exhibit "A".

1.05 The City may withhold money required to be withheld under Chapter 2258 of the Texas Government Code from the final payment to Contractor or earlier payments if City Council makes a determination that there is good cause to believe that Contractor has not complied with these provisions and Chapter 2258 of the Government Code, in which case the City may withhold the money at any time subsequent to the finding by City Council.

1.06 Contractor and Subcontractors must keep records specifying:

(1) the name and classification of each worker employed under the Contract; and

(2) the actual per diem wages paid to each worker, and the applicable hourly rate.

The records must be open at all reasonable hours for inspection by the officers and agents of the City.

1.07 The prevailing wage rate does not prohibit the payment of more than the rates stated.

1.08 The hourly cost of salary for non-exempt workers for labor in excess of 40 hours per worker per week, shall be calculated at 1.5 times the worker's base pay, plus 1.0 times fringe benefits, for the applicable craft and level.

1.09 The wage scale for building construction is to be applied to work on a building including an area within 5 feet of the exterior wall.

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EXHIBIT "A"

CITY OF HOUSTON, TEXAS
LABOR CLASSIFICATIONS AND PREVAILING WAGE RATES
FOR
BUILDING CONSTRUCTION
2010

Worker Classification	Ratio	Base Rate	Fringe Benefit	Wage Total
Asbestos Worker/Insulator *	Ratio 1/1 - Apprentice	$20.63	$8.30	$28.93
Asbestos Abatement Worker (ceilings, walls ,floors only)	Ratio 1/1 - Apprentice	$14.00	$0.00	$14.00
Boilermaker *	Ratio 5/1 - Apprentice	**$24.70**	**$16.88**	**$41.58**
Brick Layer * (see Mason Tender Brick)	Ratio 1/3 - Apprentice	$18.00	$0.00	$18.00
Carpenter * (including acoustical ceiling work)	Ratio 2/1 - Apprentice	$21.00	$6.43	$27.43
Cement Mason/Concrete Finisher *	Ratio 1/3 - Apprentice	$12.83	$0.00	$12.83
Drywall Finisher/Taper *	Ratio 1/3 - Helper $8.54	$12.13	$1.01	$13.14
Drywall Hanger, * incl. metal studs installation	Ratio 1/3 - Helper $9.46	$12.96	$1.59	$14.55
Electrician *	Ratio 3/2 - Apprentice	$24.85	$7.61	$32.46
Elevator Mechanic *	Ratio 1/1 - Apprentice	**$34.95**	**$20.23**	**$55.18**
Formbuilder/Formsetter *	Ratio 1/3 - Helper $7.67	$11.82	$0.00	$11.82
Glazier *	Ratio 1/3 - Helper $11.51	$14.92	$2.78	$17.70
Insulator * (Batt and Foam)	Ratio 1/3 - Helper $6.50	$10.00	$0.00	$10.00
Ironworker *(Reinforcing)	Ratio 1/3 - Helper $7.83	$12.06	$0.00	$12.06
Ironworker *(Structural)	Ratio 1/3 - Helper $10.19	$15.68	$0.00	$15.68
Lather *	Ratio 1/3 - Helper $13.38	$16.90	$3.61	$20.51
Painter * (Brush, Roller, and Spray)	Ratio 1/3 - Helper $7.42	$11.17	$0.00	$11.17
Pipe Fitter *(HVAC Pipe only)	Ratio 1/3 - Apprentice	$28.07	$9.31	$37.38
Pipe Fitter *(Excluding HVAC)	Ratio 1/1 - Apprentice	$19.20	$8.23	$27.43
Plasterer *	Ratio 1/3 - Apprentice	$19.42	$1.00	$20.42
Plumber *	Ratio 3/2 - Apprentice	$28.54	$8.78	$37.32
Roofer *	Ratio 1/3 - Helper $7.85	$11.51	$0.57	$12.08
Sheet Metal Worker *(incl. HVAC duct and system install.)	Ratio 2/1 - Apprentice	$25.74	$10.17	$35.91
Sprinkler Fitter * (Fire sprinklers)	Ratio 1/1 - Apprentice	$25.30	$15.35	$41.25
Tile Finisher *	Ratio 1/3 - Helper $8.08	$12.00	$0.43	$12.43
Tile Setter *	Ratio 1/3 - Helper $10.91	$15.70	$1.09	$16.79
Truck Driver		$10.78	$1.57	$12.35
Laborers:				
Common Laborer		$9.29	$0.00	$9.29
Mason Tender (Brick)		$10.13	$0.00	$10.13
Mason Tender (Cement)		$9.86	$0.00	$9.86
Pipe Layer		$12.35	$0.00	$12.35
Plaster Tender (Plasterer's helper)		$12.90	$2.51	$15.41
Power Equipment Operator:				
Asphalt Paver		$13.50	$0.25	$13.75
Backhoe – Power Equipment Operator		$12.54	$0.00	$12.54
Crane – Power Equipment Operator		$17.95	$3.56	$21.51
Forklift – Power Equipment Operator		$15.46	$5.15	$20.61
Slab and Wall Saw – Power Equipment Operator		$15.54	$3.83	$19.37
Welders - Receive rate prescribed for craft performing operation in which welding is incidental				
*** When Apprentices are shown, Helpers cannot be utilized**				

Ordinance No. 2009-247 passed March 25, 2009

Building Construction Prevailing Wages
Classification Definitions

Adoption: February 1, 2010

Asbestos Worker/Insulator * - Ratio 1/1 Apprentice
(Including application of all insulating materials, protective coverings, coatings and finishing to all type of mechanical systems). Applies insulating material to exposed surfaces of structures, such as air ducts, hot and cold pipes, storage tanks, and cold storage rooms: Reads blueprints and selects required insulation material (in sheet, tubular, or roll form), such as fiberglass, foam rubber, styrofoam, cork, or urethane, based on material's heat retaining or excluding characteristics. Brushes adhesives on or attaches metal adhesive-backed pins to flat surfaces as necessary to facilitate application of insulation material. Measures and cuts insulation material to specified size and shape for covering flat or round surfaces, using tape measure, knife, or scissors. Fits, wraps, or attaches required insulation material around or to structure, following blueprint specifications. Covers or seals insulation with preformed plastic covers, canvas strips, sealant, or tape to secure insulation to structure, according to type of insulation used and structure covered, using staple gun, trowel, paintbrush, or caulking gun.

Asbestos Abatement Worker * (Ceilings, Floors, & Walls only)
Ratio 1/3 Apprentice
Removes asbestos from ceilings, walls, beams, boilers, and other structures, following hazardous waste handling guidelines: Assembles scaffolding and seals off work area, using plastic sheeting and duct tape. Positions mobile decontamination unit or portable showers at entrance of work area. Builds connecting walkway between mobile unit or portable showers and work area, using hand tools, lumber, nails, plastic sheeting, and duct tape. Positions portable air evacuation and filtration system inside work area. Sprays chemical solution over asbestos covered surfaces, using tank with attached hose and nozzle, to soften asbestos. Cuts and scrapes asbestos from surfaces, using knife and scraper. Shovels asbestos into plastic disposal bags and seals bags, using duct tape. Cleans work area of loose asbestos, using vacuum, broom, and dustpan. Places asbestos in disposal bags and seals bags, using duct tape. Dismantles scaffolding and temporary walkway, using hand tools, and places plastic sheeting and disposal bags into transport bags. Seals bags, using duct tape, and loads bags into truck.

Boilermaker * - Ratio 5/1 Apprentice
Assembles, analyzes defects in, and repairs boilers, pressure vessels, tanks, and vats in field, following blueprints and using hand tools and portable power tools and equipment: Locates and marks reference points for columns or plates on foundation, using master straightedge, squares, transit, and measuring tape, and applying knowledge of geometry. Attaches rigging or signals crane operator to lift parts to specified position. Aligns structures or plate sections to assemble boiler frame, tanks, or vats, using plumb bobs, levels, wedges, dogs, or turnbuckles. Hammers, flame cuts, files, or grinds irregular edges of sections or structural parts to facilitate fitting edges together. Bolts or arc-welds structures and sections together. Positions drums and headers into supports and bolts or welds supports to frame. Aligns water tubes and connects and expands ends to drums and headers, using tube expander. Bells, beads with power hammer, or welds tube ends to ensure leak proof joints. Bolts or welds casing sections, uptakes, stacks, baffles, and such fabricated parts as chutes, air heaters, fan stands, feeding tube, catwalks, ladders, coal hoppers, and safety hatch to frame, using wrench. Installs manholes, hand holes, valves, gauges, and feed water connection in

drums to complete assembly of water tube boilers. Assists in testing assembled vessels by pumping water or gas under specified pressure into vessel and observing instruments for evidence of leakage. Repairs boilers or tanks in field by unbolting or flame cutting defective sections or tubes, straightening plates, using torch or jacks, installing new tubes, fitting and welding new sections and replacing worn lugs on bolts. May rivet and caulk sections of vessels, using pneumatic riveting and caulking hammers.

Bricklayer * (See Mason Tender) - Ratio 1/3 Apprentice
Lays building materials, such as brick, structural tile, and concrete cinder, glass, gypsum, and terra cotta block (except stone) to construct or repair walls, partitions, arches, sewers, and other structures: Measures distance from reference points and marks guidelines on working surface to lay out work. Spreads soft bed (layer) of mortar that serves as base and binder for block, using trowel. Applies mortar to end of block and positions block in mortar bed. Taps block with trowel to level, align, and embed in mortar, allowing specified thickness of joint. Removes excess mortar from face of block, using trowel. Finishes mortar between brick with pointing tool or trowel. Breaks bricks to fit spaces too small for whole brick, using edge of trowel or brick hammer. Determines vertical and horizontal alignment of courses, using plumb bob, gauge line (tightly stretched cord), and level. Fastens brick or terra cotta veneer to face of structures, with tie wires embedded in mortar between bricks, or in anchor holes in veneer brick. May weld metal parts to steel structural members. May apply plaster to walls and ceiling, using trowel, to complete repair work.

Carpenter * (Including Acoustical Ceiling Work) - Ratio 2/1 Apprentice
Constructs, erects, installs, and repairs structures and fixtures of wood, plywood, and wallboard, using carpenter's hand tools and power tools, and conforming to local building codes: Studies blueprints, sketches, or building plans for information pertaining to type of material required, such as lumber or fiberboard, and dimensions of structure or fixture to be fabricated. Selects specified type of lumber or other materials. Prepares layout, using rule, framing square, and calipers. Marks cutting and assembly lines on materials, using pencil, chalk, and marking gauge. Shapes materials to prescribed measurements, using saws, chisels, and planes. Assembles cut and shaped materials and fastens them together with nails, dowel pins, or glue. Verifies trueness of structure with plumb bob and carpenter's level. Erects framework for structures and lays subflooring. Builds stairs and lays out and installs partitions and cabinetwork. Covers sub floor with building paper to keep out moisture and lays hardwood, parquet, and wood-strip-block floors by nailing floors to sub floor or cementing them to mastic or asphalt base. Applies shock-absorbing, sound-deadening, and decorative paneling to ceilings and walls. Fits and installs prefabricated window frames, doors, doorframes, weather stripping, interior and exterior trim, and finish hardware, such as locks, letter drops, and kick plates. Constructs forms and chutes for pouring concrete. Erects scaffolding and ladders for assembling structures above ground level. May weld metal parts to steel structural members.

Cement Mason/Concrete Finisher *(See Concrete Mason/Concrete Finisher) - Ratio 1/3 Apprentice
Finisher; concrete floater Smoothes and finishes surfaces of poured concrete floors, walls, sidewalks, or curbs to specified textures, using hand tools or power tools, including floats, trowels, and screeds: Signals concrete deliverer to position truck to facilitate pouring concrete. Moves discharge chute of truck to direct concrete into forms. Spreads concrete into inaccessible sections of forms, using rake or shovel. Levels concrete to specified depth and workable consistency, using hand held screed and floats to bring water to surface and produce soft topping. Smoothes, and shapes surfaces of freshly poured concrete, using straightedge and float or power screed. Finishes concrete surfaces, using power trowel, or wets and rubs concrete with abrasive stone to impart finish. Removes rough or defective spots from concrete surfaces, using power grinder or chisel and hammer, and patches holes with fresh concrete or epoxy compound. Molds expansion joints and edges, using edging tools, jointers, and straightedge. May sprinkle colored stone chips, powdered steel, or coloring powder on concrete to produce prescribed finish. May produce rough concrete surface, using broom. May mix cement, using hoe or concrete-mixing machine. May direct sub grade work, mixing of concrete, and setting of forms.

Drywall Finisher/Taper - Ratio 1/3 Helpers
Wallboard and plasterboard; sheetrock taper; taper and bedder; taper and floater Seals joints between plasterboard or other wallboards to prepare wall surface for painting or papering; Mixes sealing compound by hand or with portable electric mixer, and spreads compound over joints between boards, using trowel, broad knife, or spatula. Presses paper tape over joint to embed tape into compound and seal joint, or tapes joint, using mechanical applicator that spreads compound and embeds tape in one operation. Spreads and smoothes cementing material over tape, using trowel or floating machine to blend joint with wall surface. Sands rough spots after cement has dried. Fills cracks and holes in walls and ceiling with sealing compound. Installs metal molding at corners in lieu of sealant and tape. Usually works as member of crew. May apply texturing compound and primer to walls and ceiling preparatory to final finishing, using brushes, roller, or spray gun. May countersink nails or screws below surface of wall prior to applying sealing compound, using hammer or screwdriver.

Drywall Hanger (Includes Installing Metal Studs) - Ratio 1/3 Helpers
Dry-wall installer; gypsum dry-wall systems installer Plans gypsum drywall installations, erects metal framing and furring channels for fastening drywall, and installs drywall to cover walls, ceilings, soffits, shafts, and movable partitions in residential, commercial, and industrial buildings: Reads blueprints and other specifications to determine method of installation, work procedures, and material, tool, and work aid requirements. Lays out reference lines and points for use in computing location and position of metal framing and furring channels and marks position for erecting metalwork, using chalk line. Measures, marks, and cuts metal runners, studs, and furring channels to specified size, using tape measure, straightedge and hand and portable power cutting tools. Secures metal framing to walls and furring channels to ceilings, using hand and portable power tools. Measures and marks cutting lines on drywall, using square, tape measure, and marking devices. Scribes cutting lines on drywall, using straightedge and utility knife and breaks board along cut lines. Fits and fastens board into specified position on wall, using screws, hand tools, portable power tools, or adhesive. Cuts openings into board for electrical outlets, vents, or fixtures, using keyhole saw or other cutting tools. Measures, cuts, assembles, and installs metal framing and decorative trim for windows, doorways, and vents. Fits, aligns, and hangs doors and installs hardware, such as locks and kick plates

Electrician * (Including Pulling Wire and Low Voltage Wiring and Installation of Fire Alarms, Security Systems, Telephones, and Computers.) - Ratio 3/2 Apprentice
Plans layout, installs, and repairs wiring, electrical fixtures, apparatus, and control equipment: Plans new or modified installations to minimize waste of materials, provide access for future maintenance, and avoid unsightly, hazardous, and unreliable wiring, consistent with specifications and local electrical codes. Prepares sketches showing location of wiring and equipment, or follows diagrams or blueprints, ensuring that concealed wiring is installed before completion of future walls, ceilings, and flooring. Measures, cuts, bends, threads, assembles, and installs electrical conduit, using tools, such as hacksaw, pipe threader, and conduit bender. Pulls wiring through conduit. Splices wires by stripping insulation from terminal leads, using knife or pliers, twisting or soldering wires together, and applying tape or terminal caps. Connects wiring to lighting fixtures and power equipment, using hand tools. Installs control and distribution apparatus, such as switches, relays, and circuit-breaker panels, fastening in place with screws or bolts, using hand tools and power tools. Connects power cables to equipment, such as electric range or motor, and installs grounding leads. Tests continuity of circuit to ensure electrical compatibility and safety of components, using testing instruments, such as ohmmeter, battery and buzzer, and oscilloscope. Observes functioning of installed equipment or system to detect hazards and need for adjustments, relocation, or replacement.

Elevator Mechanic * - Ratio 1/1 Apprentice
FOOTNOTES: a. - Employer contributes 8% of basic hourly rate for over 5 years' service and 6% of basic hourly rate for 6 months to 5 years' service as Vacation Pay Credit. Paid Holidays: New Year's Day; Memorial Day; Independence Day Labor Day; Thanksgiving Day; Friday after Thanksgiving Day; Christmas Day

Erector; elevator installer; elevator mechanic Assembles and installs electric and hydraulic freight and passenger elevators, escalators, and dumbwaiters, determining layout and electrical connections from blueprints: Studies blueprints and lays out location of framework, counterbalance rails, motor pump, cylinder, and plunger foundations. Drills holes in concrete or structural steel members with portable electric drill. Secures anchor bolts or welds brackets to support rails and framework, and verifies alignment with plumb bob and level. Cuts prefabricated sections of framework, rails, and other elevator components to specified dimensions, using acetylene torch, power saw, and disk grinder. Installs cables, counterweights, pumps, motor foundations, escalator drives, guide rails, elevator cars, and control panels, using hand tools. Connects electrical wiring to control panels and electric motors. Installs safety and control devices. Positions electric motor and equipment on top of elevator shaft, using hoists and cable slings.

Formbuilder/Formsetter - Ratio 1/3 Helpers
Constructs built-in-place or prefabricated wooden forms, according to specifications, for molding concrete structures: Studies blueprints and diagrams to determine type and dimension of forms to be constructed. Saws lumber to blueprint dimensions, using handsaw or power saw, and nails lumber together to make form panels. Erects built-in-place forms or assembles and installs prefabricated forms on construction site according to blueprint specifications, using hand tools, plumb rule, and level. Inserts spreaders and tie rods between opposite faces of form to maintain specified dimensions. Anchors and braces forms to fixed objects, using nails, bolts, anchor rods, steel cables, planks, and timbers.

Glazier - Ratio 1/3 Helpers
Installs glass in windows, skylights, store fronts, and display cases, or on surfaces, such as building fronts, interior walls, ceilings, and tabletops: Marks outline or pattern on glass, and cuts glass, using glasscutter. Breaks off excess glass by hand or with notched tool. Fastens glass panes into wood sash with glaziers points, and spreads and smoothes putty around edge of panes with knife to seal joints. Installs mirrors or structural glass on building fronts, walls, ceilings, or tables, using mastic, screws, or decorative molding. Bolts metal hinges, handles, locks, and other hardware to prefabricated glass doors. Sets glass doors into frame and fits hinges. May install metal window and doorframes into which glass panels are to be fitted. May press plastic adhesive film to glass or spray glass with tinting solution to prevent light glare. May install stained glass windows.

Insulator (Batt and Foam) - Ratio 1/3 Helpers
Applies batt and form insulation to walls, ceilings and other surfaces according to manufacturers specifications and blue print instructions. May use sealants such as cement plaster or asphalt compound to seal insulation; may spread concrete over floor slabs to form wearing floor: brushes adhesives, cuts insulating materials to specified shape to cover surfaces; uses tape or other sealants to adhere insulation to surfaces. May use staple gun, towel, paintbrushes and caulking guns.

Ironworker (Reinforcing) - Ratio 1/3 Helpers
Positions and secures steel bars in concrete forms to reinforce concrete; places rods in forms, spacing and fastening together with wire and pliers. Cuts bars using hacksaw, bar cutters or acetylene torch. Bends steel rods with hand tools or rod bending machine; reinforces concrete with wire mesh; welds reinforcing bars together.

Ironworker (Structural) - Ratio 1/3 Helpers
Erector; ironworker; steel erector; structural-iron erector; structural-iron worker; structural steel erector Performs any combination of following duties to raise, place, and unite girders, columns, and other structural-steel members to form completed structures or structure frameworks, working as member of crew: Sets up hoisting equipment for raising and placing structural-steel members. Fastens steel members to cable of hoist, using chain, cable, or rope. Signals worker operating hoisting equipment to lift and place steel member. Guides member, using tab line (rope) or rides on member in order to guide it into position. Pulls, pushes, or pries steel members into approximate position while member is supported by hoisting device. Forces members into final position, using turnbuckles, crowbars, jacks, and hand tools. Aligns rivet holes in member with corresponding holes in previously placed member by driving drift pins or handle of wrench through holes. Verifies vertical and horizontal alignment of members, using plumb bob and level.

Lather - Ratio 1/3 Helpers
Fastens wooden, metal, or rockboard lath to walls, ceilings, and partitions of buildings to provide supporting base for plaster, fireproofing, or acoustical material, using hand tools and portable power tools: Erects horizontal metal framework to which laths are fastened, using nails, bolts, and studgun. Drills holes in floor and ceiling, using portable electric tool, and drives ends of wooden or metal studs into holes to provide anchor for furring or rockboard lath. Wires horizontal strips to furring to stiffen framework. Cuts lath to fit openings and projections, using hand tools or portable power tools. Wires, nails, clips, or staples lath to framework, ceiling joists, and flat concrete surfaces. Bends metal lath to fit corners, or attaches preformed corner reinforcements. Wires plasterer's channels to overhead structural framework to provide support for plaster or acoustical ceiling tile.

Painter (Brush, Roller, and Spray) - Ratio 1/3 Helpers
Applies coats of paint, varnish, stain, enamel, or lacquer to decorate and protect interior or exterior surfaces, trimmings, and fixtures of buildings and other structures: Reads work order or receives instructions from supervisor or homeowner regarding painting. Smoothes surfaces, using sandpaper, brushes, or steel wool, and removes old paint from surfaces, using paint remover, scraper, wire brush, or blowtorch to prepare surfaces for painting. Fills nail holes, cracks, and joints with caulk, putty, plaster, or other filler, using caulking gun and putty knife. Selects premixed paints, or mixes required portions of pigment, oil, and thinning and drying substances to prepare paint that matches specified colors. Removes fixtures, such as pictures and electric switchcovers, from walls prior to painting, using screwdriver. Spreads dropcloths over floors and room furnishings, and covers surfaces, such as baseboards, doorframes, and windows with masking tape and paper to protect surfaces during painting. Paints surfaces, using brushes, spray gun, or paint rollers. Simulates wood grain, marble, brick, or tile effects. Applies paint with cloth, brush, sponge, or fingers to create special effects. Erects scaffolding or sets up ladders to perform tasks above ground level.

Pipe fitter * (HVAC Pipe Only) - Ratio 1/3 Apprentice
Lays out, assembles, installs, and maintains pipe systems, pipe supports, and related hydraulic and pneumatic equipment for steam, hot water, heating, cooling, lubricating, sprinkling, and industrial production and processing systems, applying knowledge of system operation, and following blueprints: Selects type and size of pipe, and related materials and equipment, such as supports, hangers, and hydraulic cylinders, according to specifications. Inspects work site to determine presence of obstructions and to ascertain that holes cut for pipe will not cause structural weakness. Plans installation or repair to avoid obstructions and to avoid interfering with activities of other workers. Cuts pipe, using saws, pipe cutter, hammer and chisel, cutting torch, and pipe cutting machine. Threads pipe, using pipe threading machine. Bends pipe, using pipe bending tools and pipe bending machine. Assembles and installs variety of metal and nonmetal pipes, tubes, and fittings, including iron, steel, copper, and plastic. Connects pipes, using threaded, caulked, soldered, brazed, fused, or cemented joints, and hand tools. Secures pipes to structure with brackets, clamps, and hangers, using hand tools and power tools. Installs and maintains hydraulic and pneumatic components of machines and equipment, such as pumps and cylinders, using hand tools. Installs and maintains refrigeration and air conditioning systems, including compressors, pumps, meters, pneumatic and hydraulic controls, and piping, using hand tools and power tools, and following

specifications and blueprints. Increases pressure in pipe system and observes connected pressure gauge to test system for leaks. May weld pipe supports to structural steel members. May observe production machines in assigned area of manufacturing facility to detect machinery malfunctions. May operate machinery to verify repair. May modify programs of automated machinery, such as robots and conveyors, to change motion and speed of machine, using teach pendant, control panel, or keyboard and display screen of robot controller and programmable controller. May be designated Steam Fitter (construction) when installing piping systems that must withstand high pressure.

Pipe Fitter * (Excluding HVAC) – Ratio 1/1 See Journeyman / Apprentice schedule
Lays out, assembles, installs, and maintains pipe systems, pipe supports, and related hydraulic and pneumatic equipment for steam, hot water, heating, cooling, lubricating, sprinkling, and industrial production and processing systems, applying knowledge of system operation, and following blueprints: Selects type and size of pipe, and related materials and equipment, such as supports, hangers, and hydraulic cylinders, according to specifications. Inspects work site to determine presence of obstructions and to ascertain that holes cut for pipe will not cause structural weakness. Plans installation or repair to avoid obstructions and to avoid interfering with activities of other workers. Cuts pipe, using saws, pipe cutter, hammer and chisel, cutting torch, and pipe cutting machine. Threads pipe, using pipe-threading machine. Bends pipe, using pipe bending tools and pipe bending machine. Assembles and installs variety of metal and nonmetal pipes, tubes, and fittings, including iron, steel, copper, and plastic. Connects pipes, using threaded, caulked, soldered, brazed, fused, or cemented joints, and hand tools. Secures pipes to structure with brackets, clamps, and hangers, using hand tools and power tools. Installs and maintains hydraulic and pneumatic components of machines and equipment, such as pumps and cylinders, using hand tools. Installs and maintains refrigeration and air conditioning systems, including compressors, pumps, meters, pneumatic and hydraulic controls, and piping, using hand tools and power tools, and following specifications and blueprints. Increases pressure in pipe system and observes connected pressure gauge to test system for leaks.

Plasterer * See Plaster Tender - Ratio 1/3 Apprentice
Applies coats of plaster to interior walls, ceilings, and partitions of buildings, to produce finished surface, according to blueprints, architect's drawings, or oral instructions, using hand tools and portable power tools: Directs workers to mix plaster to desired consistency and to erect scaffolds. Spreads plaster over lath or masonry base, using trowel, and smoothes plaster with darby and float to attain uniform thickness. Applies scratch, brown, or finish coats of plaster to wood, metal, or board lath successively. Roughens undercoat with scratcher (wire or metal scraper) to provide bond for succeeding coats of plaster.

Plumber * (Excluding HVAC Pipe) - Ratio 3/2 Apprentice
Assembles, installs, and repairs pipes, fittings, and fixtures of heating, water, and drainage systems, according to specifications and plumbing codes: Studies building plans and working drawings to determine work aids required and sequence of installations. Inspects structure to ascertain obstructions to be avoided to prevent weakening of structure resulting from installation of pipe. Locates and marks position of pipe and pipe connections and passage holes for pipes in walls and floors, using ruler, spirit level, and plumb bob. Cuts openings in walls and floors to accommodate pipe and pipe fittings, using hand tools and power tools. Cuts and threads pipe, using pipe cutters, cutting torch, and pipe-threading machine. Bends pipe to required angle by use of pipe-bending machine or by placing pipe over block and bending it by hand. Assembles and installs valves, pipe fittings, and pipes composed of metals, such as iron, steel, brass, and lead, and nonmetals, such as glass, vitrified clay, and plastic, using hand tools and power tools. Joins pipes by use of screws, bolts, fittings, solder, plastic solvent, and caulks joints. Fills pipe system with water or air and reads pressure gauges to determine whether system is leaking. Installs and repairs plumbing fixtures, such as sinks, commodes, bathtubs, water heaters, hot water tanks, garbage disposal units, dishwashers,

and water softeners. Repairs and maintains plumbing by replacing washers in leaky faucets, mending burst pipes, and opening clogged drains.

Roofer - Ratio 1/3 Helpers
Covers roofs with roofing materials other than sheet metal, such as composition shingles or sheets, wood shingles, or asphalt and gravel, to waterproof roofs: Cuts roofing paper to size, using knife, and nails or staples it to roof in overlapping strips to form base for roofing materials. Installs gutters and downs spouts. Aligns roofing material with edge of roof, and overlaps successive layers, gauging distance of overlap with chalkline, gauge on shingling hatchet, or by lines on shingles. Fastens composition shingles or sheets to roof with asphalt, cement, or nails. Punches holes in slate, tile, terra cotta, or wooden shingles, using punch and hammer. Cuts strips of flashing and fits them into angles formed by walls, vents, and intersecting roof surfaces. When applying asphalt or tar and gravel to roof, mops or pours hot asphalt or tar onto roof base. Applies alternate layers of hot asphalt or tar and roofing paper until roof covering is as specified. Applies gravel or pebbles over top layer, using rake or stiff bristled broom.

Sheet metal worker * Ratio 2/1 Apprentice (Including Setting HVAC System)(Excluding HVAC Duct) Ratio 3/1 Apprentice
Fabricates, assembles, installs and repairs sheet metal products, including sheet metal roof (also see Roofer). Operates soldering and welding equipment to join together sheet metal parts. Seals seams and joints with sealant. Installs roof sheets, trims, flashing, gutters down spouts and other related items. Performs other related duties.

Sprinkler Fitter (Fire) * - Ratio 1/1 Apprentice
Lays out, assembles, installs, and maintains pipe systems, pipe supports, and related hydraulic and pneumatic equipment for steam, hot water, heating, cooling, lubricating, sprinkling, and industrial production and processing systems, applying knowledge of system operation, and following blueprints: Selects type and size of pipe, and related materials and equipment, such as supports, hangers, and hydraulic cylinders, according to specifications. Inspects work site to determine presence of obstructions and to ascertain that holes cut for pipe will not cause structural weakness. Plans installation or repair to avoid obstructions and to avoid interfering with activities of other workers. Cuts pipe, using saws, pipe cutter, hammer and chisel, cutting torch, and pipe cutting machine. Threads pipe, using pipe-threading machine. Bends pipe, using pipe bending tools and pipe bending machine. Assembles and installs variety of metal and nonmetal pipes, tubes, and fittings, including iron, steel, copper, and plastic. Connects pipes, using threaded, caulked, soldered, brazed, fused, or cemented joints, and hand tools. Secures pipes to structure with brackets, clamps, and hangers, using hand tools and power tools. Installs and maintains hydraulic and pneumatic components of machines and equipment, such as pumps and cylinders, using hand tools. Installs and maintains refrigeration and air conditioning systems, including compressors, pumps, meters, pneumatic and hydraulic controls, and piping, using hand tools and power tools, and following specifications and blueprints. Increases pressure in pipe system and observes connected pressure gauge to test system for leaks. May weld pipe supports to structural steel members. May observe production machines in assigned area of manufacturing facility to detect machinery malfunctions. May operate machinery to verify repair. May modify programs of automated machinery, such as robots and conveyors, to change motion and speed of machine, using teach pendant, control panel, or keyboard and display screen of robot controller and programmable controller.

Tile Finisher - Ratio 1/3 Helpers
Supplies and mixes construction materials for TILE SETTER (construction) 861.381-054, applies grout, and cleans installed tile: Moves tiles, tile setting tools, and work devices from storage area to installation site manually or using wheelbarrow. Mixes mortar and grout according to standard formulas and request from TILE SETTER (construction), using bucket, water hose, spatula, and portable mixer. Supplies TILE SETTER (construction) with mortar, using wheelbarrow and shovel. Applies grout between joints of installed tile, using grouting trowel. Removes excess grout from tile

joints with wet sponge and scrapes corners and crevices with trowel. Wipes surface of tile after grout has set to remove grout residue and polish tile, using nonabrasive materials. Cleans installation site, mixing and storage areas, and installation machines, tools, and equipment, using water and various cleaning tools. Stores tile setting materials, machines, tools, and equipment. May apply caulk, sealers, acid, steam, or related agents to caulk, seal, or clean installed tile, using various application devices and equipment. May modify mixing, grouting, grinding, and cleaning procedures according to type of installation or material used. May assist TILE SETTER (construction) to position and secure metal lath, wire mesh, or felt paper prior to installation of tile. May cut marked tiles to size, using power saw or tile cutter.

Tile Setter - Ratio 1/3 Helpers
Applies tile to walls, floors, ceilings, and promenade roof decks, following design specifications: Examines blueprints, measures and marks surfaces to be covered, and lays out work. Measures and cuts metal lath to size for walls and ceilings with tin snips. Tacks lath to wall and ceiling surfaces with staple gun or hammer. Spreads plaster base over lath with trowel and levels plaster to specified thickness, using screed. Spreads concrete on sub floor, with trowel and levels it with screed. Spreads mastic or other adhesive base on roof deck, using serrated spreader to form base for promenade tile. Cuts and shapes tile with tile cutters and biters. Positions tile and taps it with trowel handle to affix tile to plaster or adhesive base.

Truck Driver
Drives truck with capacity of more than 3 tons, to transport materials to and from specified destinations: Drives truck to destination, applying knowledge of commercial driving regulations and area roads. Prepares receipts for load picked up. Collects payment for goods delivered and for delivery charges. May maintain truck log, according to state and federal regulations. May maintain telephone or radio contact with supervisor to receive delivery instructions. May load and unload truck. May inspect truck equipment and supplies, such as tires, lights, brakes, gas, oil, and water. May perform emergency roadside repairs, such as changing tires, installing light bulbs, tire chains, and spark plugs. May position blocks and tie rope around items to secure cargo during transit.

Laborers

Common Laborer
Performs any combination of the following tasks in erecting, repairing and wrecking buildings; dig, spread and level dirt and gravel; lift carry and hold building materials, tools and supplies; clean tools, equipment, materials and work areas; mix, pour and spread concrete, asphalt, gravel and other materials; join, wrap and seal sections of pipe; routine non-machine tasks such as removing forms from set concrete, filling expansion joints with asphalt, and placing culverts in trench. May also signal construction equipment operators; measure distances from grade stakes, drive stakes and stretch lines; bolt, nail align and block up under forms; mix and finish poured concrete, erect scaffolding; spread paint or coating to seal surfaces; caulking compounds to seal surfaces; remove projections from concrete, and mount pipe hangers.

Mason Tender Brick (Bricklayer's Helper)

Mason Tender Cement (Concrete Mason's / Concrete Finisher's Helper)

Pipe layer
Lay pipe for storm or sanitation sewers, drains, and water mains. Perform any combination of the following tasks: grade trenches or culverts, position pipe, or seal joints.

Plaster Tender (Plaster's Helper)
Tends machine that pumps plaster or stucco through spraygun for application to ceilings, walls, and partitions of buildings: Starts and stops machine on signals from PLASTERER (construction). Fills

hopper of machine with plaster. Turns valves to regulate pump and compressor. Assists in erecting scaffolds.

Power Equipment Operator:

Asphalt Paver (operator)
Operator; bituminous-paving-machine operator; blacktop-paver operator; blacktop spreader; mechanical-spreader operator; paving-machine operator, asphalt or bituminous Operates machine that spreads and levels hot-mix bituminous paving material on sub grade of highways and streets: Bolts extensions to screed to adjust width, using wrenches. Lights burners to heat screed. Starts engine and controls paving machine to push dump truck and maintain constant flow of asphalt into hopper. Observes distribution of paving material along screed and controls direction of screed to eliminate voids at curbs and joints. Turns valves to regulate temperature of asphalt flowing from hopper when asphalt begins to harden on screed.

Backhoe (operator)
Operates power-driven machine, equipped with movable shovel, to excavate or move coal, dirt, rock, sand, and other materials: Receives written or oral instructions from supervisor regarding material to move or excavate. Pushes levers and depresses pedals to move machine, to lower and push shovel into stockpiled material, to lower and dig shovel into surface of ground, and to lift, swing, and dump contents of shovel into truck, car, or onto conveyor, hopper, or stockpile. Observes markings on ground, hand signals, or grade stakes to remove material, when operating machine at excavation site.

Crane (operator)
Operates electric-, diesel-, gasoline-, or steam-powered guy-derrick or stiff-leg derrick (mast supported by fixed legs or tripod), to move products, equipment, or materials to and from quarries, storage areas, and processes, or to load and unload trucks or railroad cars: Pushes and pulls levers and depresses pedals to raise, lower, and rotate boom and to raise and lower load line in response to signals.

Forklift (operator)
Drives gasoline-, liquefied gas-, or electric-powered industrial truck equipped with lifting devices, such as forklift, boom, scoop, lift beam and swivel-hook, fork-grapple, clamps, elevating platform, or trailer hitch, to push, pull, lift, stack, tier, or move products, equipment, or materials in warehouse, storage yard, or factory: Moves levers and presses pedals to drive truck and control movement of lifting apparatus. Positions forks, lifting platform, or other lifting device under, over, or around loaded pallets, skids, boxes, products, or materials or hooks tow trucks to trailer hitch, and transports load to designated area. Unloads and stacks material by raising and lowering lifting device.

Slab & Wall Saw (operator)

Apprentices
Apprentices may be used in any of the crafts listed above where noted, if they are currently certified in a program recognized by the Bureau of Apprenticeship and Training, U.S. Department of Labor, providing the proper ratio between journeyman and apprentice is observed. Apprentice certification certificates must be supplied with the first weekly payroll upon which the apprentice's name appears.

Helper (65% of the journeyman classification)
(Must not exceed 3 helpers to 1 journeyman)
A Helper is a semi-skilled worker (rather than a skilled journeyman) who works under the direction of and assists a journeyman. Under the journeyman's direction and supervision, the helper performs a variety of duties to assist the journeyman such as preparing, carrying, and furnishing equipment,

supplies and maintaining them in order; cleaning and preparing work areas; lifting, positioning, and holding materials or tools; and other related semi-skilled tasks as directed by the journeyman. A helper may use the tools of the trade at and under the direction of the journeyman. The particular duties performed by a helper vary according to area practice. The journeyman must work in close proximity to the location of the helpers work area. The helpers wage rate shall be calculated at no less than 65% of the prevailing wage for that journeyman's classification.

Helper who assists more than one journeyman craft should be listed with the notation indicating each journeyman craft classification they assist.

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

Pipe fitters * Apprentice Schedule (Excluding HVAC Pipe)

Journeyman	Indentured Apprentice	Apprentice Applicant	Total
1	1	0	1 to 1
3	2	1	3 to 3
5	3	2	5 to 5
8	4	3	8 to 7
12	5	4	12 to 9
16	6	5	16 to 11
20	7	6	20 to 13
25	8	7	25 to 15
30	9	8	30 to 17
40	10	9	40 to 19
50	11	10	50 to 21

NOTE: Continue after 50 Journeyman — ONE (1) Indentured Apprentice and one (1) Apprentice Applicant for every ten (10) Journeyman

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*** When Apprentices are shown, Helpers cannot be utilized**

If there are questions as to the classification of a worker, contact the Contract Compliance Officer in writing with a description of the work the worker will be performing. After review the Contract Compliance Officer will respond in writing with the classification and wage rate to be paid the worker in question.

END OF DOCUMENT

SPECIAL PROVISION

000---003

Notice to All Bidders

To report bid rigging activities call:

1-800-424-9071

The U.S. Department of Transportation (DOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

SPECIAL PROVISION

000—006

Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246)

1. As used in these specifications:

   a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;

   b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;

   c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

   d. "Minority" includes:

      (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);

      (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);

      (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

      (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North American and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of $10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U. S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its

obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing contracts in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the contract is being performed. Goals are published periodically in the Federal Register in notice form and such notices may be obtained from any Office of Federal Contract Compliance Programs office or any Federal procurement contracting officer. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U. S. Department of Labor.

7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

   a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

   b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.

d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral Process has impeded the Contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and Collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of

applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these Specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both

minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

10. Nondiscrimination programs require that Federal-aid recipients, subrecipients, and contractors prevent discrimination and ensure nondiscrimination in all of their programs and activities, whether those programs and activities are federally funded or not. The factors prohibited from serving as a basis for action or inaction which discriminates include race, color, national origin, sex, age, and handicap/disability. The efforts to prevent discrimination must address, but not be limited to a program's impacts, access, benefits, participation, treatment, services, contracting opportunities, training opportunities, investigations of complaints, allocations of funds, prioritization of projects, and the functions of right-of-way, research, planning, and design.

11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

16. In addition to the reporting requirements set forth elsewhere in this contract, the Contractor and the subcontractors holding subcontracts, not including material suppliers, of $10,000 or more, shall submit for every month of July during which work is per-formed, employment data as contained under Form PR 1391 (Appendix C to 23 CFR, Part 230), and in accordance with the instructions included thereon.

SPECIAL PROVISION

000--1966

Disadvantaged Business Enterprise in Federal Aid Contracts

1. **Description.** The purpose of this Special Provision is to carry out the U. S. Department of Transportation's (DOT) policy of ensuring nondiscrimination in the award and administration of DOT assisted contracts and creating a level playing field on which firms owned and controlled by individuals who are determined to be socially and economically disadvantaged can compete fairly for DOT assisted contracts. If the Disadvantaged Business Enterprise (DBE) goal is greater than zero, Article A, "Disadvantaged Business Enterprise in Federal Aid Contracts", of this Special Provision shall apply to this contract. If there is no DBE goal, Article B, "Race-Neutral DBE Participation", of this Special Provision shall apply to this contract. The percentage goal for DBE participation in the work to be performed under this contract will be shown on the proposal.

A. **Article A. Disadvantaged Business Enterprise in Federal Aid Contracts.**

1. **Policy.** It is the policy of the DOT and the Texas Department of Transportation (henceforth the "Department") that DBEs, as defined in 49 CFR Part 26, Subpart A and the Department's DBE Program, shall have the opportunity to participate in the performance of contracts financed in whole or in part with Federal funds. The DBE requirements of 49 CFR Part 26, and the Department's DBE Program, apply to this contract as follows:

a. The Contractor will solicit DBEs through reasonable and available means, as defined in 49 CFR Part 26, Appendix A and the Department's DBE Program, or show a good faith effort to meet the DBE goal for this contract.

b. The Contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate.

c. The requirements of this Special Provision shall be physically included in any subcontract.

d. By signing the contract proposal, the Bidder is certifying that the DBE goal as stated in the proposal will be met by obtaining commitments from eligible DBEs or that the Bidder will provide acceptable evidence of good faith effort to meet the commitment. The Department will determine the adequacy of a Contractor's efforts to meet the contract goal, within 10 business days,

excluding national holidays, from receipt of the information outlined in this Special Provision under Section 1.A.3, "Contractor's Responsibilities." If the requirements of Section 1.A.3 are met, the conditional situation will be removed and the contract will be forwarded to the Contractor for execution.

2. **Definitions.**

a. "Broker" is an intermediary or middleman that does not take possession of a commodity or act as a regular dealer selling to the public.

b. "Disadvantaged Business Enterprise" or "DBE" is defined in the standard specifications, Article 1, Definition of Terms.

c. "DBE Joint Venture" means an association of a DBE firm and 1 or more other firm(s) to carry out a single business enterprise for profit for which purpose they combine their property, capital, efforts, skills and knowledge, and in which the DBE is responsible for a distinct, clearly defined portion of the work of the contract and whose share in the capital contribution, control, management, risks, and profits of the joint venture are commensurate with its ownership interest.

d. "DOT" means the U.S. Department of Transportation, including the Office of the Secretary, the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), and the Federal Aviation Administration (FAA).

e. "Federal Aid Contract" is any contract between the Texas Department of Transportation and a Contractor which is paid for in whole or in part with DOT financial assistance.

f. "Good Faith Effort" means efforts to achieve a DBE goal or other requirement of this Special Provision which, by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the program requirement.

g. "Manufacturer" is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract and of the general character described by the specifications."

h. "Race-conscious" means a measure or program that is focused specifically on assisting only DBEs, including women-owned businesses.

i. "Race-neutral DBE Participation" means any participation by a DBE through customary competitive procurement procedures.

j. "Regular Dealer" is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. To be a regular dealer, the firm must be an established, regular business that engages in, as its principal business and under its own name, the purchase and sale or lease of the products in question.

A regular dealer in such bulk items as steel, cement, gravel, stone, and petroleum products need not keep such products in stock if it owns and operates distribution equipment for the products. Any supplementing of regular dealers own distribution equipment shall be by a long-term lease agreement and not on an ad hoc or contract-by-contract basis. Brokers, packagers, manufacturers' representatives, or other persons who arrange or expedite transactions shall not be regarded as a regular dealer.

k. "Texas Unified Certification Program" or "TUCP" provides one-stop shopping to applicants for certification, such that applicants are required to apply only once for a DBE certification that will be honored by all recipients of federal funds in the state. The TUCP by Memorandum of Agreement established six member entities to serve as certifying agents for Texas in specified regions.

3. **Contractor's Responsibilities.** These requirements must be satisfied by the Contractor.

a. After conditional award of the contract, the Contractor shall submit a completed Form SMS.4901 "DBE Commitment Agreement", From SMS 4901-T "DBE Trucking Commitment Agreement", or Form SMS.4901-MS "DBE Material & Supplier Commitment Agreement" for each DBE he/she intends to use to satisfy the DBE goal or a good faith effort to explain why the goal could not be reached, so as to arrive in the Department's Office of Civil Rights (OCR) in Austin, Texas not later than 5:00 p.m. on the 10th business day, excluding national holidays, after the conditional award of the contract. When requested, additional time, not to exceed 7 business days, excluding national holidays, may be granted based on documentation submitted by the Contractor.

b. DBE prime Contractors may receive credit toward the DBE goal for work performed by his/her own forces and work subcontracted to DBEs. A DBE prime must make a good faith effort to meet the goals. In the event a DBE prime subcontracts to a non-DBE, that information must be reported on Form SMS.4902.

c. A Contractor who cannot meet the contract goal, in whole or in part, shall make adequate good faith efforts to obtain DBE participation as so stated and defined in 49 CFR Part 26, Appendix A. The following is a list of the types of action that may be considered as good faith efforts. It is not intended to be a mandatory checklist, nor is it intended to be exclusive or exhaustive. Other factors or types of efforts may be relevant in appropriate cases.

- Soliciting through all reasonable and available means (e.g. attendance at prebid meetings, advertising, and/or written notices) the interest of all certified DBEs who have the capability to perform the work of the contract. The solicitation must be done within sufficient time to allow the DBEs to respond to it. Appropriate steps must be taken to follow up initial solicitations to determine, with certainty, if the DBEs are interested.

- Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the Contractor might otherwise prefer to perform the work items with its own forces.
- Providing interested DBEs with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.
- Negotiating in good faith with interested DBEs to make a portion of the work available to DBE subcontractors and suppliers and select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiations includes the names, addresses, and telephone numbers of DBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBEs to perform the work.
- A Bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional cost involved in finding and using DBEs is not in itself sufficient reason for a bidders failure to meet the Contract DBE goal as long as such cost are reasonable. Also, the ability or desire of the Contractor to perform the work of the Contract with its own organization does not relieve the Bidder of the responsibility to make good faith effort. Contractors are not, however, required to accept higher quotes from DBEs if the price difference is excessive or unreasonable.
- Not rejecting DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The Contractor's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate cause for the rejection or non-solicitation of bids and the Contractors efforts to meet the project goal.
- Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.
- Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.
- Effectively using the services of available minority/women community organizations; minority/women Contractors' groups; local, state, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBEs.

- If the Program Manager of the OCR determines that the Contractor has failed to meet the good faith effort requirements, the Contractor will be given an opportunity for reconsideration by the Director of the OCR.

d. Should the bidder to whom the contract is conditionally awarded refuse, neglect or fail to meet the DBE goal or comply with good faith effort requirements, the proposal guaranty filed with the bid shall become the property of the state, not as a penalty, but as liquidated damages to the Department.

e. The preceding information shall be submitted directly to the Office of Civil Rights, Texas Department of Transportation, 125 E. 11th Street, Austin, Texas 78701-2483.

f. The Contractor shall not terminate for convenience a DBE subcontractor named in the commitment submitted under Section 1.A.3.a, of this Special Provision. Prior to terminating or removing a DBE subcontractor named in the commitment, the Contractor must have a written consent of the Department.

g. The Contractor shall also make a good faith effort to replace a DBE subcontractor that is unable to perform successfully with another DBE, to the extent needed to meet the contract goal. The Contractor shall submit a completed Form 4901 "DBE Commitment Agreement", From SMS 4901-T "DBE Trucking Commitment Agreement", or Form SMS.4901-MS "DBE Material & Supplier Commitment Agreement" for the substitute DBE firm(s). Any substitution of DBEs shall be subject to approval by the Department. Prior to approving the substitution, the Department will request a statement from the DBE concerning it being replaced.

h. The Contractor shall designate a DBE liaison officer who will administer the Contractor's DBE program and who will be responsible for maintenance of records of efforts and contacts made to subcontract with DBEs.

i. Contractors are encouraged to investigate the services offered by banks owned and controlled by disadvantaged individuals and to make use of these banks where feasible.

4. **Eligibility of DBEs.**

a. The member entities of the TUCP certify the eligibility of DBEs and DBE joint ventures to perform DBE subcontract work on DOT financially assisted contracts.

b. The Department maintains the Texas Unified Certification Program DBE Directory containing the names of firms that have been certified to be eligible to participate as DBE's on DOT financially assisted contracts. This Directory is available from the Department's OCR. An update of the Directory can be found on the Internet at http://www.dot.state.tx.us/business/tucp/default.htm.

c. Only DBE firms certified at the time commitments are submitted are eligible to be used in the information furnished by the Contractor as required under Section 1.A.3.a. and 3.g. above. For purposes of the DBE goal on this project, DBEs will only be allowed to perform work in the categories of work for which they are certified.

d. Only DBE firms certified at the time of execution of a contract/subcontract/purchase order, are eligible for DBE goal participation.

5. **Determination of DBE Participation.** When a DBE participates in a contract, only the values of the work actually performed by the DBE, as referenced below, shall be counted by the prime contractor toward DBE goals:

a. The total amount paid to the DBE for work performed with his/her own forces is counted toward the DBE goal. When a DBE subcontracts part of the work of its contract to another firm, the value of the subcontracted work may be counted toward DBE goals only if the subcontractor is itself a DBE. Work that a DBE subcontracts to a non-DBE firm does not count toward DBE goals.

b. A Contractor may count toward its DBE goal a portion of the total value of the contract amount paid to a DBE joint venture equal to the distinct, clearly defined portion of the work of the contract performed by the DBE.

(1) A Contractor may count toward its DBE goal only expenditures to DBEs that perform a commercially useful function (CUF) in the work of a contract or purchase order. A DBE is considered to perform a CUF when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a CUF, the DBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself.

In accordance with 49 CFR Part 26, Appendix A, guidance concerning Good Faith Efforts, contractors may make efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services. Contractors may not however, negotiate the price of materials or supplies used on the contract by the DBE, nor may they determine quality and quantity, order the materials themselves, nor install the materials (where applicable), or pay for the material themselves. Contractors however, may share the quotations they receive from the material supplier with the DBE firm, so that the DBE firm may negotiate a reasonable price with the material supplier.

In all cases, prime or other non-DBE subcontractor assistance will not be credited toward the DBE goal.

(2) A DBE does not perform a CUF if its role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of DBE participation.

Consistent with industry practices and the DOT/Department's DBE program, a DBE subcontractor may enter into second-tier subcontracts, amounting up to 70% of their contract. Work subcontracted to a non-DBE does not count towards DBE goals. If a DBE does not perform or exercise responsibility for at least 30% of the total cost of its contract with its own work force, or the DBE subcontracts a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involved, it will be presumed that the DBE is not performing a CUF

(3) A DBE trucking firm (including an owner operator who is certified as a DBE is considered to be performing a CUF when the DBE is responsible for the management and supervision of the entire trucking operation on a particular contract and the DBE itself owns and operates at least 1 fully licensed, insured, and operational truck used on the contract:

(a) The Contractor receives credit for the total value of the transportation services the DBE provides on a contract using trucks it owns, insures, and operates using drivers it employs.

(b) The DBE may lease trucks from another DBE firm, including an owner operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the Contract.

(c) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit for the total value of transportation services provided by non-DBE lessees not to exceed the value of transportation services provided by the DBE-owned trucks on the contract. Additional participation by non-DBE lessees receive credit only for the fee or commission it receives as result of the lease arrangement

(d) A lease must indicate that the DBE has exclusive use of and control over the trucks giving the DBE absolute priority for use of the leased trucks. Leased trucks must display the name and identification number of the DBE.

(4) When a DBE is presumed not to be performing a CUF the DBE may present evidence to rebut this presumption.

(5) Project materials or supplies acquired from an affiliate of the prime contractor can not directly or indirectly (2nd or lower tier subcontractor) be used for DBE goal credit.

c. A Contractor may count toward its DBE goals expenditures for materials and supplies obtained from a DBE manufacturer, provided that the DBE assumes the actual and contractual responsibility for the materials and supplies. Count expenditures with DBEs for materials or supplies toward DBE goals as provided in the following:

(1) If the materials or supplies are obtained from a DBE manufacturer, count 100% of the cost of the materials or supplies toward DBE goals. (Definition of a DBE manufacturer found at 1A.c.(1) of this provision.)

For purposes of this Section (1.A.c.(1)), a manufacturer is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract and of the general character described by the specifications.

(2) If the materials or supplies are purchased from a DBE regular dealer, count 60% of the cost of the materials or supplies toward DBE goals.

For purposes of this Section (1.A.5.c.(2)), a regular dealer is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business:

(A) To be a regular dealer, the firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question.

(B) A person may be a regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone or asphalt without owning, operating, or maintaining a place of business as provided in the first paragraph under Section 1.A.5.c.(2), if the person both owns and operates distribution equipment for the products. Any supplementing of regular dealers' own distribution equipment shall be by a long-term lease agreement and not on an ad hoc or contract-by-contract basis.

(C) Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions are not regular dealers within the meaning of Section 1.A.5.c.(2).

(3) With respect to materials or supplies purchased from DBE which is neither a manufacturer nor a regular dealer, count the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site, toward DBE goals, provided you determine the fees to be reasonable and not excessive as compared with fees customarily allowed for similar services.

Do not count any portion of the cost of the materials and supplies themselves toward DBE goals.

(4) Count the entire amount of fees or commissions charged by a DBE firm for providing a bona fide service, such as professional, technical, consultant or managerial services, or for providing bonds or insurance specifically required for the performance of a DOT-assisted contract, toward DBE goals, provided you determine the fee to be reasonable and not excessive as compared with fees customarily allowed for similar services.

d. If the Contractor chooses to assist a DBE firm, other than a manufacturing material supplier or regular dealer, and the DBE firm accepts the assistance, the Contractor may act solely as a guarantor by use of a two-party check for payment of materials to be used on the project by the DBE. The material supplier must invoice the DBE who will present the invoice to the Contractor. The Contractor may issue a joint check to the DBE and the material supplier and the DBE firm must issue the remittance to the material supplier. No funds shall go directly from the Contractor to the material supplier. The DBE firm may accept or reject this joint checking arrangement.

The Contractor must obtain approval from the Department prior to implementing the use of joint check arrangements with the DBE. Submit to the Department, Joint Check Approval Form 2178 for requesting approval. Provide copies of cancelled joint checks upon request. No DBE goal credit will be allowed for the cost of DBE materials that are paid by the Contractor directly to the material supplier.

e. No DBE goal credit will be allowed for supplies and equipment the DBE subcontractor leases from the contractor or its affiliates.

f. No DBE goal credit will be allowed for the period of time determined by the Department that the DBE was not performing a CUF. The denial period of time may occur before or after a determination has been made by the department. In case of the denial of credit for non-performance of a CUF of a DBE, the Contractor will be required to provide a substitute DBE to meet the contract goal or provide an adequate good faith effort when applicable.

6. **Records and Reports.**

a. The Contractor shall submit monthly reports, after work begins, on DBE payments to meet the DBE goal and for DBE or HUB race-neutral participation. Report payments made to non-DBE HUBs. The monthly report is to be sent to the Area Engineer. These reports will be due within 15 days after the end of a calendar month. These reports will be required until all DBE subcontracting or material supply activity is completed. Form SMS.4903, "DBE Progress Report," is to be used for monthly reporting. Form. SMS.4904, "DBE Final Report," is to be used as a final summary of DBE payments submitted upon completion of the project.

The original final report must be submitted to the OCR and a copy must be submitted to the Area Engineer. These forms may be obtained from the Department or may be reproduced by the Contractor. The Department may verify the amounts being reported as paid to DBEs by requesting copies of cancelled checks paid to DBEs on a random basis. Cancelled checks and invoices should reference the Department's project number.

b. DBE subcontractors and/or material suppliers should be identified on the monthly report by Vendor Number, name, and the amount of actual payment made to each during the monthly period. Negative reports are required when no activity has occurred in a monthly period.

c. All such records must be retained for a period of 3 years following completion of the contract work, and shall be available at reasonable times and places for inspection by authorized representatives of the Department or the DOT. Provide copies of subcontracts or agreements and other documentation upon request.

d. Prior to receiving final payment, the Contractor shall submit Form SMS.4904, "DBE Final Report". If the DBE goal requirement is not met, documentation supporting Good Faith Efforts, as outlined in Section 1.A.3.c of this Special Provision, must be submitted with the "DBE Final Report."

e. Provide a certification of prompt payment in accordance with the Department's prompt payment procedure to certify that all subcontractors and suppliers were paid from the previous months payments and retainage was released for those whose work is complete. Submit the completed form each month and the month following the month when final acceptance occurred at the end of the project.

7. **Compliance of Contractor.** To ensure that DBE requirements of this DOT assisted contract are complied with, the Department will monitor the Contractor's efforts to involve DBEs during the performance of this contract. This will be accomplished by a review of monthly reports submitted to the Area Engineer by the Contractor indicating his progress in achieving the DBE contract goal, and by compliance reviews conducted on the project site by the Department.

The Contractor shall receive credit toward the DBE goal based on actual payments to the DBE subcontractor. The Contractor shall notify the Area Engineer if he/she withholds or reduces payment to any DBE subcontractor. The Contractor shall submit an affidavit detailing the DBE subcontract payments prior to receiving final payment for the contract.

Contractors' requests for substitutions of DBE subcontractors shall be accompanied by a detailed explanation which should substantiate the need for a substitution. The Contractor may not be allowed to count work on those items being substituted toward the DBE goal prior to approval of the substitution from the Department.

The prime Contractor is prohibited from providing work crews and equipment to DBEs. DBE Goal credit for the DBE subcontractors leasing of equipment or purchasing of supplies from the prime contractor or its affiliates is not allowed.

When a DBE subcontractor named in the commitment under Section I.A.3.a. of this Special Provision, is terminated or fails to complete its work on the contract for any reason, the prime contractor is required to make good faith efforts to find another DBE subcontractor to substitute for the original DBE. These good faith efforts shall be directed at finding another DBE to perform at least the same amount of work under the contract as the DBE that was terminated, to the extent needed to meet the contract goal.

A Contractor's failure to comply with the requirements of this Special Provision shall constitute a material breach of this contract. In such a case, the Department reserves the right to terminate the contract; to deduct the amount of DBE goal not accomplished by DBEs from the money due or to become due the Contractor, or to secure a refund, not as a penalty but as liquidated damages to the Department or such other remedy or remedies as the Department deems appropriate.

Forward Form 2371, "DBE Trucking Credit Worksheet," completed by the DBE trucker every month DBE credit is used.

B. **Article B. Race-Neutral Disadvantaged Business Enterprise Participation.** It is the policy of the DOT that Disadvantaged Business Enterprises (DBE) as defined in 49 CFR Part 26 Subpart A, be given the opportunity to compete fairly for contracts and subcontracts financed in whole or in part with Federal funds and that a maximum feasible portion of the Department's overall DBE goal be met using race-neutral means. Consequently, if there is no DBE goal, the DBE requirements of 49 CFR Part 26, apply to this contract as follows:

The Contractor will offer DBEs as defined in 49 CFR Part 26, Subpart A, the opportunity to compete fairly for contracts and subcontractors financed in whole or in part with Federal funds. Race-Neutral DBE and non-DBE HUB participation on projects with no DBE goal shall be reported on Form SMS.4903, "DBE or HUB Progress Report" and submitted to the Area Engineer each month and at project completion. Payments to DBEs reported on Form SMS.4903 are subject to the requirements of Section I.A.5, "Determination of DBE Participation."

The Contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate.

SPECIAL PROVISION

000--1483

Notice of Changes to U.S. Department of Labor Required Payroll Information

Do not include employee addresses and social security numbers on the payroll submissions to the department. In lieu of the social security number, include an individually identifying number for each employee (Example: last four digits of the individual's social security number).

Maintain the full social security number and current address of each covered employee in files for 3 years after project completion and make the information available upon the Department's request.

Form FHWA 1273 and optional form WH-347 will be revised in the future to reflect these changes.

SPECIAL PROVISION
000—1676
On-the-Job Training Program

1. **Description.** The primary objective of this Special Provision is the training and advancement of minorities, women and economically disadvantaged persons toward journeyworker status. Accordingly, make every effort to enroll minority, women and economically disadvantaged persons to the extent that such persons are available within a reasonable area of recruitment. This training commitment is not intended, and shall not be used to discriminate against any applicant for training, whether or not he/she is a member of a minority group.

2. **Trainee Assignments.** Training assignments are determined based on the past contract volume of federal-aid work performed with the Department. Contractors meeting the selection criteria will be notified of their training assignment at the beginning of the reporting year by the Department's Office of Civil Rights.

3. **Program Requirements.** Fulfill all of the requirements of the On-the-Job Training Program including the maintenance of records and submittal of periodic reports documenting program performance. Trainees shall be paid at least 60% of the appropriate minimum journeyworker's rate specified in the contract for the first half of the training period, 75% for the third quarter and 90% for the last quarter, respectively. Contractors may be reimbursed $0.80 per training hour at no additional cost to the Department.

4. **Compliance.** The Contractor will have fulfilled the contractual responsibilities by having provided acceptable training to the number of trainees specified in their goal assignment. Noncompliance may be cause for corrective and appropriate measures pursuant to Article 8.6., "Abandonment of Work or Default of Contract," which may be used to comply with the sanctions for noncompliance pursuant to 23 CFR Part 230.

Document 00607

CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS

Contractor certifies to the best of its knowledge and belief that it and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State, or local department or agency;

2. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

3. Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph 2 of this certification; and

4. Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Section 1001, a false statement may result in a fine of up to $10,000 or imprisonment for up to five years, or both.

Company: CAAN Construction Services, Inc.

Yousef Eldiraowi, President
Typed Name & Title of Authorized Representative

Signature of Authorized Representative

DEC-08-2010
Date

☐ I am unable to certify the above statements. My explanation is attached.

END OF DOCUMENT

Section 3

Local Government (LG) Contract Components

A. BID DOCUMENT PREPARATION

Buy America

General. All steel and iron products must be of domestic origin. All manufacturing processes must take place domestically. Current regulations require the use of domestic steel and iron in federally funded highway construction. All foreign steel and iron materials and products are covered by Buy America regulations regardless of the percentage they comprise in a manufactured product or the form they may take. The regulations allow bidders and the LG some latitude through minimum use, waivers and alternate bids.

As previously mentioned, all manufacturing processes must take place domestically. Manufacturing begins with the initial melting and mixing, and continues through the coating stage. Any process that modifies the chemical content, the physical size or shape, or the final finish is considered a manufacturing process. These processes include rolling, extruding, machining, bending, grinding, drilling and coating. Coating includes epoxy coating, galvanizing, painting, or any other coating that protects or enhances the value of the material.

Buy America does not apply to raw materials (iron ore and alloys), scrap, pig iron or processed, pelletized, and reduced iron ore. Insufficient domestic supplies of raw materials caused FHWA to issue nationwide waiver allowing foreign source supplies of these items. The waiver may be found at the FHWA website (http://www.fhwa.dot.gov/programadmin/contracts/032495.cfm). If domestically produced steel billets or iron ingots are shipped overseas for any manufacturing process, and then returned to the U.S., the resulting product does not conform to the Buy America requirements.

The manufacturing process for a steel/iron product is a considered complete when the product is ready for use as an item (e.g., fencing, posts, girders, pipe, manhole cover, etc.) or could be incorporated as a component of a more complex product through a further manufacturing process (e.g., the case for a traffic signal head). The final assembly process does not need to be accomplished domestically so long as the steel/iron component is only installed and not manufacturing process is performed on the steel/iron component.

Example: Shapes produced domestically from foreign source steel billets are not acceptable under Buy America since the initial melting and mixing of alloys to create the steel occurred in a foreign country.

Example: All welding must take place domestically since the welding rod itself is typically an iron/steel product and the welding process substantially alters the rod.

Buy American does not apply to minimal use of iron/steel materials provided that the total cost of all foreign source items used in the project, as delivered to the project site, is less than $2,500 or one-tenth-of-one-percent (1/10 of 1%) of the contact amount, whichever is greater. If a supplier or fabricator wishes to use a partial fabrication process where domestic and foreign source components should include any transportation, assembly and testing costs required to install them in the final product.

For the Buy American requirements to apply, the steel or iron product must permanently incorporated into the project. Buy American does not apply to temporary steel items (e.g. temporary sheet pilling, temporary bridges, steel scaffolding and falsework, etc.) Further, Buy American does not apply to materials that remain in place at the contractor's convenience.

The practice of making otherwise eligible items non-participating for the purpose of circumventing the Buy American requirements is unacceptable and will not be approved. There is no clear-cut rule for resolving an after-the-fact discovery of an inadvertent incorporation of an excess amount of foreign materials into a project. Each situation should be resolved on a case-by-case basis. FHWA retains the authority to resolve all Buy America issued.

Buy American provisions apply to all material incorporated in a Federal-aid project, even if an item is rendered as a "donated material" in accordance with 23 U.S.C. 323 – Donations and Credits. While the LG may receive a credit for donated material, this material must generally comply with Buy America.

Waivers. Approval authority for waivers of Buy American requirements is retained by FHWA for all federally funded projects. The FHWA may grant a waiver of the Buy America requirements for specific projects if the LG can demonstrate either of the following:

a. Compliance with the requirements is inconsistent with the public interest; or
b. Insufficient quantities of satisfactory quality domestic products are available.

Materials delivery delay will not be considered as grounds for a waiver. The cost differential between domestic and foreign products is also not grounds for a waiver.

An LG may apply for a waiver of the Buy American provision if it believes that a waiver is warranted. The LG must submit the waiver request with supporting information through TxDOT to FHWA sufficiently in advance of need to allow time for proper review and action.

Alternative Bidding Procedures. An alternative bidding procedure may be used to justify the use of foreign steel or iron. Under this procedure, the total project is bid using two alternatives: one which is based on foreign sources products, and the second, using domestic projects. The use of foreign products may be justified if the lowest total bid based on domestic steel or iron products is 25 percent more than the lowest bid using corresponding foreign steel or iron

products. The 25 percent differential applies to the total bid for the entire project, not just the bids for the steel or iron products.

Enforcement. The LG is responsible for enforcing the Buy American provisions. The contract provisions should require the contractor to provide a definitive statement about the origin of all products covered under the Buy American provisions. An alternate procedure is to use step certification for products. Under step certification, each handler of the product (supplier, fabricator, manufacturer, processor, etc.) certifies that his or her step in the process was domestically performed.

Federal Regulations

a. 23 CFR 635.410 – All iron and steel products must be of domestic origin. Waivers may be approved by FHWA.

b. 23 CFR 636.119 Design-build – TxDOT must ensure compliance with Buy American regardless of the form of FHWA funding.

State Regulations

a. Transportation Code 223.045 – A contract awarded by TxDOT on the state highway system without federal aid must contain the same preference provisions for steel and steel products that are required under federal law for federally funded project. There is no specific requirement for other entities to follow this statute.

Required Practices

a. Projects with federal funds comply with the Buy American statute.

b. Concessionaire projects administered by TxDOT must comply with TTC 223.045. TxDOT executing an agreement with concessionaire is considered the same as TxDOT awarding a contract.

LG Responsibilities

a. If there is federal funds the LG must prepare any requests for waivers and submit the request through TxDOT to FHWA for approval prior to advertisement for receipt of bids.

b. If there are federal funds or project is awarded by TxDOT, the LG must include contract provisions that address Buy America.

c. If there are not federal or state funds and the project is not warded by TxDOT, the LG does not have to comply with these provisions.

TxDOT District Responsibilities

a. The District must assure that Buy American provisions are included in all procurement documents for federally funded projects and that the provisions of Transportation Code 223.045 are included in concessionaire projects administered by TxDOT.

Section 3
Local Government (LG) Contract Components

A. BID DOCUMENT PREPARATION

Differing Site Conditions

General. In accordance with federal regulations, differing site or changed condition clauses must be included verbatim in the contract. Due to the nature of highway construction and the conditions under which work is performed, designers cannot always accurately determine and describe the conditions existing at project sites. Consequently, actual conditions encountered during construction may differ from those indicated in the contract documents, resulting in a change in construction costs. Also, situations may develop during construction that require the contracting agency to order the contractor to slow down or stop construction through no fault of the contractor. These slow downs or stoppages in the work may cause a change in construction costs.

There also may be situations encountered during construction that require the contracting agency to make alterations to the design. In addition to changing the amount of contract work, such alterations could significantly affect the contractor's production costs.

In theory, the use of the standardized changed condition clause takes the risk of differing subsurface conditions out of the bidding process. Bidders need not consider the costs and difficulty of taking their own borings and compare that with the risk of differing site condition. They need not consider the amount of a contingency to be included in the bid. Theoretically, with a standardized changed condition clause, contractors will receive no windfalls nor suffer a disaster from a changed condition. The owner will benefit from more competitive bidding as the bidders will not inflate costs for risk that may not happen. And finally, the use of the standardized changed condition clause is meant to provide uniformity across state lines.

The standardized changed condition clauses in 23 U.S.C. 112(e) must be included verbatim in all contracts. The regulation requires the use of three different clauses:

1. Differing Site Conditions Clause – This clause provides for the adjustment of the contract items if the contractor encounters:
   - Subsurface or latent physical conditions that differ materially from those indicated in the contract, or
   - Unknown physical conditions of an unusual nature that differ materially from those ordinarily encountered and generally recognized as inherent to the work.
2. Suspensions of Work Ordered by the Engineer [LG] – This clause provides for the adjustment of the contract terms if the performance of all or a portion of the work is suspended or delayed by the Engineer [LG], in writing, for an unreasonable period of time (not originally anticipated, customary, or inherent to the construction industry). The

contractor is required to submit a request, in writing, to the Engineer [LG] within seven calendar days of receipt of the notice to resume work. Recovery of profit on costs resulting from suspensions of work is not allowed.

To quality for an adjustment, suspensions must be for unreasonable periods and do not include brief, customary suspensions for reasons inherent to highway construction (i.e., material sampling and testing; approval of shop drawings, material sources, etc.; and other reasonable and customary suspensions necessary for the supervision of construction of the contracting agency). In addition, an adjustment under this clause is not allowed if the work is suspended for other reasons or if an adjustment is provided for, or excluded, under other terms or conditions of the contract.

3. Material Changes in the Scope of the Work – This clause provides for the adjustment of the contract terms if the Engineer [LG] orders, in writing, an alteration in the work or in the quantities that significantly change the character of work. The term "significant change" shall be construed to apply only to the following circumstances:
   - The altered character of the work differs materially from that of the original contract, or
   - A major item of work, as defined in the contract, is increased or decreased by more than 25 percent of the original contract quantity (adjustments shall apply only to that portion in excess of 125 percent of original contract quantity, or in case of a decrease, to the actual quantity performed).

This clause provides for adjustments resulting from formal change orders by the Engineer, in writing, to the extent that the impacted work is part of the contract. Both parties may initiate an adjustment and both must be in agreement before the work is performed. As with the suspension of work provision, this clause does not preclude the recognition of constructive suspensions or delays.

GENERAL DECISION: TX20100120 03/12/2010 TX120

Date: March 12, 2010
General Decision Number: TX20100120 03/12/2010

Superseded General Decision Number: TX20080120

State: Texas

Construction Type: Highway

Counties: Andrews, Archer, Armstrong, Bailey, Baylor, Borden, Briscoe, Brown, Callahan, Carson, Castro, Childress, Clay, Cochran, Coke, Coleman, Collingsworth, Comanche, Concho, Cooke, Cottle, Crane, Crosby, Dallam, Dawson, Deaf Smith, Dickens, Donley, Eastland, Fisher, Floyd, Foard, Gaines, Garza, Glasscock, Gray, Hale, Hall, Hansford, Hardeman, Hartley, Haskell, Hemphill, Hockley, Howard, Hutchinson, Irion, Jones, Kent, Kimble, King, Knox, Lamb, Lampasas, Lipscomb, Loving, Lynn, Martin, McCulloch, Menard, Mills, Mitchell, Montague, Moore, Motley, Nolan, Ochiltree, Oldham, Parmer, Reagan, Real, Roberts, Runnels, San Saba, Schleicher, Scurry, Shackelford, Sherman, Stephens, Sterling, Stonewall, Swisher, Terry, Throckmorton, Upton, Ward, Wheeler, Wilbarger, Winkler, Yoakum and Young Counties in Texas.

HIGHWAY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	03/12/2010

SUTX2005-009 11/09/2004

	Rates	Fringes
Air Tool Operator	$ 9.05	0.00
Asphalt Distributor Operator	$ 10.46	0.00
Asphalt paving machine operator	$ 9.38	0.00
Asphalt Raker	$ 9.53	0.00
Asphalt Shoveler	$ 7.33	0.00
Batching Plant Weigher	$ 11.15	0.00
Broom or Sweeper Operator	$ 8.01	0.00
Bulldozer operator	$ 10.88	0.00
CARPENTER	$ 10.10	0.00
Concrete Finisher, Paving	$ 11.25	0.00
Concrete Finisher, Structures	$ 10.03	0.00
Concrete Paving Saw Operator	$ 15.00	0.00
[illegible], Clamshell, Backhoe, Derrick, Dragline, Shovel Operator	$ 10.94	0.00

Crusher or Screen Plant Operator	$ 9.00	0.00
ELECTRICIAN	$ 19.00	0.00
Flagger	$ 7.29	0.00
Form Builder/Setter, Structures	$ 10.01	0.00
Form Setter, Paving & Curb	$ 9.43	0.00
Foundation Drill Operator, Truck Mounted	$ 18.00	0.00
Front End Loader Operator	$ 10.04	0.00
Laborer, common	$ 8.25	0.00
Laborer, Utility	$ 9.62	0.00
MECHANIC	$ 14.05	0.00
Milling Machine Operator, Fine Grade	$ 12.20	0.00
Motor Grader Operator, Fine Grade	$ 13.24	0.00
Motor Grader Operator, Rough	$ 14.36	0.00
Oiler	$ 10.67	0.00
Painter, Structures	$ 11.00	0.00
Pavement Marking Machine Operator	$ 9.26	0.00
Planer Operator	$ 17.50	0.00
Reinforcing Steel Setter, Paving	$ 9.50	0.00
Reinforcing Steel Setter, Structure	$ 11.85	0.00
Roller Operator, Pneumatic, Self-Propelled	$ 7.55	0.00
Roller Operator, Steel Wheel, Flat Wheel/Tamping	$ 8.66	0.00
Roller Operator, Steel Wheel, Plant Mix Pavement	$ 9.81	0.00
Scraper Operator	$ 7.78	0.00
Servicer	$ 8.22	0.00
[illegible]der Box operator	$ 10.07	0.00
Tractor operator, Pneumatic	$ 8.58	0.00

Traveling Mixer Operator.....$ 9.71 0.00

Truck driver, lowboy-Float.....$ 11.42 0.00

Truck driver, Single Axle,
Heavy.....$ 11.00 0.00

Truck driver, Single Axle,
Light.....$ 7.55 0.00

Truck Driver, Tandem Axle,
Semi-Trailer.....$ 9.02 0.00

Wagon Drill, Boring Machine,
Post Hole Driller Operator.....$ 8.86 0.00

WELDER.....$ 9.75 0.00

Work Zone Barricade Servicer.....$ 8.64 0.00

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

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

In the listing above, the "SU" designation means that rates listed under the
identifier do not reflect collectively bargained wage and fringe benefit
rates. Other designations indicate unions whose rates have been determined
to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

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

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

On survey related matters, initial contact, including requests for summaries
of surveys, should be with the Wage and Hour Regional Office
for the area in
which the survey was conducted because those Regional Offices have
responsibility for the Davis-Bacon survey program. If the

response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

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

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

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

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

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

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

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

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

END OF GENERAL DECISION

http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=Davis-Bacon&docid=TX20100120

FORM CD-[illegible]
(REV 1-08)

U.S. DEPARTMENT OF COMMERCE

CERTIFICATION REGARDING LOBBYING

Applicants should also review the instructions for certification included in the regulations before completing this form. Signature on this form provides for compliance with certification requirements under 15 CFR Part 28, "New Restrictions on Lobbying." The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of Commerce determines to award the covered transaction, grant, or cooperative agreement.

LOBBYING

As required by Section 1352, Title 31 of the U.S. Code, and implemented at 15 CFR Part 28, for persons entering into a grant, cooperative agreement or contract over $100,000 or a loan or loan guarantee over $150,000 as defined at 15 CFR Part 28, Sections 28.105 and 28.110, the applicant certifies that to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure occurring on or before October 23, 1996, and of not less than $11,000 and not more than $110,000 for each such failure occurring after October 23, 1996.

Statement for Loan Guarantees and Loan Insurance

The undersigned states, to the best of his or her knowledge and belief, that:

In any funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required statement shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure occurring on or before October 23, 1996, and of not less than $11,000 and not more than $110,000 for each such failure occurring after October 23, 1996.

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above applicable certification.

NAME OF APPLICANT	AWARD NUMBER AND/OR PROJECT NAME
YOUSEF ELDIRAOUI	SAFE ROUTE TO School

PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE

YOUSEF ELDIRAOUI

SIGNATURE	DATE
[signature]	DEC-08-2010

Section 02260

TRENCH SAFETY SYSTEM

PART GENERAL

1.01 SECTION INCLUDES

A. Trench safety system for the construction of trench excavations.

B. Trench safety system for structural excavations which fall under provisions of State and Federal trench safety laws.

C. This Standard Specification Section replaces previously published Section 01561-Trench Safety System.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices:

1. Measurement for trench safety systems used on trench excavations is on a linear foot basis measured along the centerline of the trench, including manholes and other line structures.

2. No payment will be made for trench safety systems for structural excavations under this section. Include payment for trench safety system in applicable structure installation sections.

3. Refer to Section 01270 - Measurement and payment for unit price procedures.

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

1.03 DEFINITIONS

A. A trench shall be defined as a narrow excavation (in relation to its depth) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench (measured at the bottom) is not greater than 15 feet.

B. The trench safety system requirements will apply to larger open excavations if the erection of structures or other installations limits the space between the excavation slope and these installation to dimensions equivalent of a trench as defined.

C. Trench Safety Systems include but are not limited to sloping, sheeting, trench boxes or trench shields, sheet piling, cribbing, bracing, shoring, dewatering or diversion of water to provide adequate drainage.

1.04 SUBMITTALS

A. Submittals shall conform to requirements of Section 01330 - Submittal Procedures.

B. Submit a safety program specifically for the construction of trench excavation. Design the trench safety program to be in accordance with OSHA 29CFR standards governing the presence and activities of individuals working in and around trench excavations.

C. Construction and shop drawings containing deviations from OSHA standards or special designs shall be sealed by a licensed Engineer retained and paid by Contractor.

D. Review of the safety program by the City Engineer will only be in regard to compliance with this specification and will not constitute approval by the City Engineer nor relieve Contractor of obligations under State and Federal trench safety laws.

1.05 REGULATORY REQUIREMENTS

A. Install and maintain trench safety systems in accordance with the detail specifications set out in the provision of Excavations, Trenching, and Shoring, Federal Occupation Safety and Health Administration (OSHA) Standards, 29CFR, Part 1926, Subpart P, as amended, including Final Rule, published in the Federal Register Vol. 54, No. 209 on Tuesday, October 31, 1989. The sections that are incorporated into these specifications by reference include Sections 1926-650 through 1926-652.

B. A reproduction of the OSHA standards included in "Subpart P - Excavations" from the Federal Register Vol. 54, No. 209 is available upon request to Contractors bidding on City projects. The City assumes no responsibility for the accuracy of the reproduction. The Contractor is responsible for obtaining a copy of this section of the Federal Register.

C. Legislation that has been enacted by the Texas Legislature with regard to Trench Safety Systems, is hereby incorporated, by reference, into these specifications. Refer to Texas Health and Safety Code Ann., §756.021 (Vernon 1991).

D. Reference materials, if developed for a specific project, will be issued with the Bid Documents, including the following:

1. Document 00820 - Trench Safety Geotechnical Information: Geotechnical information obtained for use in design of the trench safety system.

2. Document 00821 - Special Shoring Requirements.

1.06 INDEMNIFICATION

A. Contractor shall indemnify and hold harmless the City, its employees and agents, from any and all damages, costs (including, without limitation, legal fees, court costs, and the cost of investigation), judgements or claims by anyone for injury or death of persons resulting from the collapse or failure of trenches constructed under this Contract.

B. Contractor acknowledges and agrees that this indemnity provision provides indemnity for the City in case the City is negligent either by act or omission in providing for trench safety, including, but not limited to safety program and design reviews, inspections, failures to issue stop work orders, and the hiring of the Contractor.

PART PRODUCTS - Not Used

PART EXECUTION

3.01 INSTALLATION

A. Install and maintain trench safety systems in accordance with provisions of OSHA 29CFR.

B. Install specially designed trench safety systems in accordance with the Contractor's trench excavation safety program for the locations and conditions identified in the program.

C. A competent person, as identified in the Contractor's Trench Safety Program, shall verify that trench boxes and other premanufactured systems are certified for the actual installation conditions.

3.02 INSPECTION

A. Contractor, or Contractor's independently retained consultant, shall make daily inspections of the trench safety systems to ensure that the installed systems and operations meet OSHA 29CFR and other personnel protection regulations requirements.

B. If evidence of possible cave-ins or slides is apparent, Contractor shall immediately stop work in the trench and move personnel to safe locations until the necessary precautions have been taken by Contractor to safeguard personnel entering the trench.

C. Maintain a permanent record of daily inspections.

3.03 FIELD QUALITY CONTROL

A. Contractor shall verify specific applicability of the selected or specially designed trench safety systems to each field condition encountered on the project.

END OF SECTION

DIVISION 1A:

TXDOT GENERAL REQUIREMENTS

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

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ATTACHMENTS

A. Employment Preference for Appalachian Contracts (Included in Appalachian contracts only)

I. GENERAL

1. These contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

2. Except as otherwise provided for in each section, the contractor shall insert in each subcontract all of the stipulations contained in these Required Contract Provisions, and further require their inclusion in any lower tier subcontract or purchase order that may in turn be made. The Required Contract Provisions shall not be incorporated by reference in any case. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Required Contract Provisions.

3. A breach of any of the stipulations contained in these Required Contract Provisions shall be sufficient grounds for termination of the contract.

4. A breach of the following clauses of the Required Contract Provisions may also be grounds for debarment as provided in 29 CFR 5.12:

Section I, paragraph 2;
Section IV, paragraphs 1, 2, 3, 4, and 7;
Section V, paragraphs 1 and 2a through 2g.

5. Disputes arising out of the labor standards provisions of Section IV (except paragraph 5) and Section V of these Required Contract Provisions shall not be subject to the general disputes clause of the contract. Such disputes shall be resolved in accordance with the procedures of the U.S. Department of Labor (DOL) as set forth in 29 CFR 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the DOL, or the contractor's employee or their representatives.

6. Selection of Labor: During the performance of this contract, the contractor shall not:

a. discriminate against labor from any other State, possession, or territory of the United States (except for employment preference for Appalachian contracts, when applicable, as specified in Attachment A), or

b. employ convict labor for any purpose within the limits of the project unless it is labor performed by convicts who are on parole, supervised release, or probation.

II. NONDISCRIMINATION

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $10,000 or more.)

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630 and 41 CFR 60) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The Equal Opportunity Construction Contract Specifications set forth under 41 CFR 60-4.3 and the provisions of the American Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the State highway agency (SHA) and the Federal Government in carrying out EEO obligations and in their review of his/her activities under the contract.

b. The contractor will accept as his/her operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotions, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the SHA contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of EEO and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such actions, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minority group employees.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed

in publications having a large circulation among minority groups in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The DOL has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)

c. The contractor will encourage his present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.

5. **Personnel Actions.** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotions, transfers, demotions, layoff, and terminations, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective actions. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of his avenues of appeal.

6. **Training and Promotion:**

a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees and applicants for employment.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.

7. **Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:

a. The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.

b. The contractor will use best efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the SHA and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability, making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The DOL has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referrals failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the SHA.

8. **Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

a. The contractor shall notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.

b. Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use his best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of DBE construction firms from SHA personnel.

c. The contractor will use his best efforts to ensure subcontractor compliance with their EEO obligations.

9. **Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the SHA and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women;

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and

(4) The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.

b. The contractors will submit an annual report to the SHA

each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. If on-the job training is being required by special provision, the contractor will be required to collect and report training data.

III. NONSEGREGATED FACILITIES

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $10,000 or more.)

a. By submission of this bid, the execution of this contract or subcontract, or the consummation of this material supply agreement or purchase order, as appropriate, the bidder, Federal-aid construction contractor, subcontractor, material supplier, or vendor, as appropriate, certifies that the firm does not maintain or provide for its employees any segregated facilities at any of its establishments, and that the firm does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The firm agrees that a breach of this certification is a violation of the EEO provisions of this contract. The firm further certifies that no employee will be denied access to adequate facilities on the basis of sex or disability.

b. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, which are segregated by explicit directive, or are in fact segregated on the basis of race, color, religion, national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override (e.g., disabled parking).

c. The contractor agrees that it has obtained or will obtain identical certifications from proposed subcontractors or material suppliers prior to award of subcontracts or consummation of material supply agreements of $10,000 or more and that it will retain such certifications in its files.

IV. PAYMENT OF PREDETERMINED MINIMUM WAGE

(Applicable to all Federal-aid construction contracts exceeding $2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural minor collectors, which are exempt.)

1. General:

a. All mechanics and laborers employed or working upon the site of the work will be paid unconditionally and not less often than once a week and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations (29 CFR 3) issued by the Secretary of Labor under the Copeland Act (40 U.S.C. 276c)) the full amounts of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payments. The payment shall be computed at wage rates not less than those contained in the wage determination of the Secretary of Labor (hereinafter "the wage determination") which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor or its subcontractors and such laborers and mechanics. The wage determination (including any additional classifications and wage rates conformed under paragraph 2 of this Section IV and the DOL poster (WH-1321) or Form FHWA-1495) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. For the purpose of this Section, contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act (40 U.S.C. 276a) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of Section IV, paragraph 3b, hereof. Also, for the purpose of this Section, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in paragraphs 4 and 5 of this Section IV.

b. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed.

c. All rulings and interpretations of the Davis-Bacon Act and related acts contained in 29 CFR 1, 3, and 5 are herein incorporated by reference in this contract.

2. Classification:

a. The SHA contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.

b. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have been met:

(1) the work to be performed by the additional classification requested is not performed by a classification in the wage determination;

(2) the additional classification is utilized in the area by the construction industry;

(3) the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and

(4) with respect to helpers, when such a classification prevails in the area in which the work is performed.

c. If the contractor or subcontractors, as appropriate, the laborers and mechanics (if known) to be employed in the additional classification or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the DOL, Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, D.C. 20210. The Wage and Hour Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

d. In the event the contractor or subcontractors, as appropriate, the laborers or mechanics to be employed in the additional classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

e. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 2c or 2d of this Section IV shall be paid to all workers performing work in the additional classification from the first day on which work is performed in the classification.

3. Payment of Fringe Benefits:

a. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor or subcontractor, as appropriate, shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

b. If the contractor or subcontractor, as appropriate, does not make payments to a trustee or other third person, he/she may consider as a part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

4. Apprentices and Trainees (Programs of the U.S. DOL) and Helpers:

a. Apprentices:

(1) Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the DOL, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or if a person is employed in his/her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.

(2) The allowable ratio of apprentices to journeyman-level employees on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rates, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate listed in the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor or subcontractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman-level hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

(3) Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator for the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

(4) In the event the Bureau of Apprenticeship and Training, or a State apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor or subcontractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the comparable work performed by regular employees until an acceptable program is approved.

b. Trainees:

(1) Except as provided in 29 CFR § 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the DOL, Employment and Training Administration.

(2) The ratio of trainees to journeyman-level employees on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(3) Every trainee must be paid at not less than the rate specified in the approved program for his/her level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman-level wage rate on the wage determination which provides for less than full fringe benefits for apprentices, in which case such trainees shall receive the same fringe benefits as apprentices.

(4) In the event the Employment and Training Administration withdraws approval of a training program, the contractor or subcontractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Helpers:

Helpers will be permitted to work on a project if the helper classification is specified and defined on the applicable wage determination or is approved pursuant to the conformance procedure set forth in Section IV.2. Any worker listed on a payroll at a helper wage rate, who is not a helper under a approved definition, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed.

5. Apprentices and Trainees (Programs of the U.S. DOT):

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

6. Withholding:

The SHA shall upon its own action or upon written request of an authorized representative of the DOL withhold, or cause to be withheld, from the contractor or subcontractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the SHA contracting officer may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

7. Overtime Requirements:

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen, or guards (including apprentices, trainees, and helpers described in paragraphs 4 and 5 above) shall require or permit any laborer, mechanic, watchman, or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman, or guard receives compensation at a rate not less than one-and-one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.

8. Violations:

Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in paragraph 7 above, the contractor and any subcontractor responsible thereof shall be liable to the affected employee for his/her unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer, mechanic, watchman, or guard employed in violation of the clause set forth in paragraph 7, in the sum of $10 for each calendar day on which such employee was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in paragraph 7.

9. Withholding for Unpaid Wages and Liquidated Damages:

The SHA shall upon its own action or upon written request of any authorized representative of the DOL withhold, or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 8 above.

V. STATEMENTS AND PAYROLLS

(Applicable to all Federal-aid construction contracts exceeding $2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural collectors, which are exempt.)

1. Compliance with Copeland Regulations (29 CFR 3):

The contractor shall comply with the Copeland Regulations of the Secretary of Labor which are herein incorporated by reference.

2. Payrolls and Payroll Records:

a. Payrolls and basic records relating thereto shall be maintained by the contractor and each subcontractor during the course of the work and preserved for a period of 3 years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work.

b. The payroll records shall contain the name, social security number, and address of each such employee, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof the types described in Section 1(b)(2)(B) of the Davis Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. In addition, for Appalachian contracts, the payroll records shall contain a notation indicating whether the employee does, or does not, normally reside in the labor area as defined in Attachment A, paragraph 1. Whenever the Secretary of Labor, pursuant to Section IV, paragraph 3b, has found that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis Bacon Act, then contractor and each subcontractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and show the cost anticipated or the actual cost incurred in providing benefits. Contractors or subcontractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certifications and wage rates prescribed in the applicable programs.

c. Each contractor and subcontractor shall furnish, each week in which any contract work is performed, to the SHA resident engineer a payroll of wages paid each of its employees (including apprentices, trainees, and helpers, described in Section IV, paragraphs 4 and 5, and watchmen and guards engaged on work during the preceding weekly payroll period). The payroll submitted shall set out accurately and completely all of the information required to be maintained under paragraph 2b of this Section V. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal stock number 029-005-0014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.

d. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his/her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) that the payroll for the payroll period contains the information required to be maintained under paragraph 2b of the Section V and that such information is correct and complete;

(2) that such laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR 3;

(3) that each laborer or mechanic has been paid not less that the applicable wage rate and fringe benefits or cash equivalent for the classification of worked performed, as specified in the applicable wage determination incorporated into the contract.

e. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 2d of this Section V.

f. The falsification of any of the above certifications may subject the contractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 231.

g. The contractor or subcontractor shall make the records required under paragraph 2b of this Section V available for inspection, copying, or transcription by authorized representatives of the SHA, the FHWA, or the DOL, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the SHA, the FHWA, the DOL, or all may after written notice to the contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payments, advances, or guarantees of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

VI. RECORD OF MATERIALS, SUPPLIES, AND LABOR

1. On all Federal-aid contracts on the National Highway System, except those which provide solely for the installation of protective devices at railroad grade crossings, those which are constructed on a force account or direct labor basis, highway beautification contracts, and contracts for which the total final construction cost for roadway and bridge is less than $1,000,000 (23 CFR 635) the contractor shall:

a. Become familiar with the list of specific materials and supplies contained in Form FHWA-47, "Statement of Materials and Labor Used by Contractor of Highway Construction Involving Federal Funds," prior to the commencement of work under this contract.

b. Maintain a record of the total cost of all materials and supplies purchased for and incorporated in the work, and also of the quantities of those specific materials and supplies listed on Form FHWA-47, and in the units shown on Form FHWA-47.

c. Furnish, upon the completion of the contract, to the SHA resident engineer on Form FHWA-47 together with the data required in paragraph 1b relative to materials and supplies, a final labor summary of all contract work indicating the total hours worked and the total amount earned.

2. At the prime contractor's option, either a single report covering all contract work or separate reports for the contractor and for each subcontract shall be submitted.

VII. SUBLETTING OR ASSIGNING THE CONTRACT

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the State. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635).

a. "Its own organization" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of

a subcontractor, assignee, or agent of the prime contractor.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph 1 of Section VII is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the SHA contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the SHA contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the SHA has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

VIII. SAFETY: ACCIDENT PREVENTION

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the SHA contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, the following notice shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

NOTICE TO ALL PERSONNEL ENGAGED ON FEDERAL-AID HIGHWAY PROJECTS

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined not more that $10,000 or imprisoned not more than 5 years or both."

X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $100,000 or more.)

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.

2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.

3. That the firm shall promptly notify the SHA of the receipt of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

1. *Instructions for Certification - Primary Covered Transactions:*

(Applicable to all Federal-aid contracts - 49 CFR 29)

a. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this

transaction for cause of default.

d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations.

f. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded From Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph f of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Primary Covered Transactions

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgement rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and

d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

2. **Instructions for Certification - Lower Tier Covered Transactions:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions of $25,000 or more - 49 CFR 29)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal" and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and

frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Covered Transactions:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

(Applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 - 49 CFR 20)

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

ATTACHMENT A - EMPLOYMENT PREFERENCE FOR APPALACHIAN CONTRACTS

(Applicable to Appalachian contracts only.)

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph 1c shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph 4 below.

2. The contractor shall place a job order with the State Employment Service indicating: (a) the classifications of the laborers, mechanics and other employees required to perform the contract work; (b) the number of employees required in each classification; (c) the date on which he estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, he shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within 1 week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph 1c above.

5. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

SPECIAL PROVISION

000—004

Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246)

1. **General.** In addition to the affirmative action requirements of the Special Provision titled "Standard Federal Equal Employment Opportunity Construction Contract Specifications" as set forth elsewhere in this proposal, the Bidder's attention is directed to the specific requirements for utilization of minorities and females as set forth below.

2. **Goals.**

   a. Goals for minority and female participation are hereby established in accordance with 41 CFR 60-4.

   b. The goals for minority and female participation expressed in percentage terms for the Contractor's aggregate work force in each trade on all construction work in the covered area, are as follows:

Goals for minority participation in each trade (percent)	Goals for female participation in each trade (percent)
See Table I	6.9

   c. These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and non-federally involved construction. The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Standard Federal Equal Employment Opportunity Construction Contract Specifications Special Provision and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority and female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

d. A contractor or subcontractor will be considered in compliance with these provisions by participation in the Texas Highway-Heavy Branch, AGC, Statewide Training and Affirmative Action Plan. Provided that each contractor or subcontractor participating in this plan must individually comply with the equal opportunity clause set forth in 41 CFR 60-1.4 and must make a good faith effort to achieve the goals set forth for each participating trade in the plan in which it has employees. The overall good performance of other contractors and subcontractors toward a goal in an approved plan does not excuse any covered contractor's or subcontractor's failure to make good faith efforts to achieve the goals contained in these provisions. Contractors or subcontractors participating in the plan must be able to demonstrate their participation and document their compliance with the provisions of this Plan.

3. **Subcontracting.** The Contractor shall provide written notification to the Department within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation pending concurrence of the Department in the award. The notification shall list the names, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.

4. **Covered Area.** As used in this special provision, and in the contract resulting from this solicitation, the geographical area covered by these goals for female participation is the State of Texas. The geographical area covered by these goals for other minorities are the counties in the State of Texas as indicated in Table 1.

5. **Reports.** The Contractor is hereby notified that he may be subject to the Office of Federal Contract Compliance Programs (OFCCP) reporting and record keeping requirements as provided for under Executive Order 11246 as amended. OFCCP will provide direct notice to the Contractor as to the specific reporting requirements that he will be expected to fulfill.

Table 1

County	Goals for Minority Participation	County	Goals for Minority Participation
Anderson	22.5	Concho	20.0
Andrews	18.9	Cooke	17.2
Angelina	22.5	Coryell	16.4
Aransas	44.2	Cottle	11.0
Archer	11.0	Crane	18.9
Armstrong	11.0	Crockett	20.0
Atascosa	49.4	Crosby	19.5
Austin	27.4	Culberson	49.0
Bailey	19.5	Dallam	11.0
Bandera	49.4	Dallas	18.2
Bastrop	24.2	Dawson	19.5
Baylor	11.0	Deaf Smith	11.0
Bee	44.2	Delta	17.2
Bell	16.4	Denton	18.2
Bexar	47.8	DeWitt	27.4
Blanco	24.2	Dickens	19.5
Borden	19.5	Dimmit	49.4
Bosque	18.6	Donley	11.0
Bowie	19.7	Duval	44.2
Brazoria	27.3	Eastland	10.9
Brazos	23.7	Ector	15.1
Brewster	49.0	Edwards	49.4
Briscoe	11.0	Ellis	18.2
Brooks	44.2	El Paso	57.8
Brown	10.9	Erath	17.2
Burleson	27.4	Falls	18.6
Burnet	24.2	Fannin	17.2
Caldwell	24.2	Fayette	27.4
Calhoun	27.4	Fisher	10.9
Callahan	11.6	Floyd	19.5
Cameron	71.0	Foard	11.0
Camp	20.2	Fort Bend	27.3
Carson	11.0	Franklin	17.2
Casey	20.2	Freestone	18.6
Castro	11.0	Frio	49.4
Chambers	27.4	Gaines	19.5
Cherokee	22.5	Galveston	28.9
Childress	11.0	Garza	19.5
Clay	12.4	Gillespie	49.4
Cochran	19.5	Glasscock	18.9
Coke	20.0	Goliad	27.4
Coleman	10.9	Gonzales	49.4
Collin	18.2	Gray	11.0
Collingsworth	11.0	Grayson	9.4
Colorado	27.4	Gregg	22.8
Comal	47.8	Grimes	27.4
Comanche	10.9	Guadalupe	47.8

County	Goals for Minority Participation	County	Goals for Minority Participation
Hale	19.5	Lavaca	27.4
Hall	11.0	Lee	24.2
Hamilton	18.6	Leon	27.4
Hansford	11.0	Liberty	27.3
Hardeman	11.0	Limestone	18.6
Hardin	22.6	Lipscomb	11.0
Harris	27.3	Live Oak	44.2
Harrison	22.8	Llano	24.2
Hartley	11.0	Loving	18.9
Haskell	10.9	Lubbock	19.6
Hays	24.1	Lynn	19.5
Hemphill	11.0	Madison	27.4
Henderson	22.5	Marion	22.5
Hidalgo	72.8	Martin	18.9
Hill	18.6	Mason	20.0
Hockley	19.5	Matagorda	27.4
Hood	18.2	Maverick	49.4
Hopkins	17.2	McCulloch	20.0
Houston	22.5	McLennan	20.7
Howard	18.9	McMullen	49.4
Hudspeth	49.0	Medina	49.4
Hunt	17.2	Menard	20.0
Hutchinson	11.0	Midland	19.1
Irion	20.0	Milam	18.6
Jack	17.2	Mills	18.6
Jackson	27.4	Mitchell	10.9
Jasper	22.6	Montague	17.2
Jeff Davis	49.0	Montgomery	27.3
Jefferson	22.6	Moore	11.0
Jim Hogg	49.4	Morris	20.2
Jim Wells	44.2	Motley	19.5
Johnson	18.2	Nacogdoches	22.5
Jones	11.6	Navarro	17.2
Karnes	49.4	Newton	22.6
Kaufman	18.2	Nolan	10.9
Kendall	49.4	Nueces	41.7
Kenedy	44.2	Ochiltree	11.0
Kent	10.9	Oldham	11.0
Kerr	49.4	Orange	22.6
Kimble	20.0	Palo Pinto	17.2
King	19.5	Panola	22.5
Kinney	49.4	Parker	18.2
Kleberg	44.2	Parmer	11.0
Knox	10.9	Pecos	18.9
Lamar	20.2	Polk	27.4
Lamb	19.5	Potter	9.3
Lampasas	18.6	Presidio	49.0
LaSalle	49.4	Rains	17.2

County	Goals for Minority Participation
Randall	9.3
Reagan	20.0
Real	49.4
Red River	20.2
Reeves	18.9
Refugio	44.2
Roberts	11.0
Robertson	27.4
Rockwall	18.2
Runnels	20.0
Rusk	22.5
Sabine	22.6
San Augustine	22.5
San Jacinto	27.4
San Patricio	41.7
San Saba	20.0
Schleicher	20.0
Scurry	10.9
Shackelford	10.9
Shelby	22.5
Sherman	11.0
Smith	23.5
Somervell	17.2
Starr	72.9
Stephens	10.9
Sterling	20.0
Stonewall	10.9
Sutton	20.0
Swisher	11.0
Tarrant	18.2
Taylor	11.6
Terrell	20.0
Terry	19.5
Throckmorton	10.9
Titus	20.2
Tom Green	19.2
Travis	24.1
Trinity	27.4
Tyler	22.6
Upshur	22.5
Upton	18.9
Uvalde	49.4
Val Verde	49.4
Van Zandt	17.2
Victoria	27.4
Walker	27.4
Waller	27.3
Ward	18.9
Washington	27.4

County	Goals for Minority Participation
Webb	87.3
Wharton	27.4
Wheeler	11.0
Wichita	12.4
Wilbarger	11.0
Willacy	72.9
Williamson	24.1
Wilson	49.4
Winkler	18.9
Wise	18.2
Wood	22.5
Yoakum	19.5
Young	11.0
Zapata	49.4
Zavala	49.4

SPECIAL PROVISION

000—009

Certification of Nondiscrimination in Employment

By signing this proposal, the bidder certifies that he has participated in a previous contract or subcontract subject to the equal opportunity clause, as required by Executive Orders 10925, 11114, or 11246, or if he has not participated in a previous contract of this type, or if he has had previous contract or subcontracts and has not filed, he will file with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

Note: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7(b)(1)) and must be submitted by bidders and proposed subcontractors only in connection with contracts and subcontracts which are subject to the equal opportunity clause. Contracts and subcontracts which are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally only contracts or subcontracts of $10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b)(1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U. S. Department of Labor.

SPECIAL PROVISION

000--1555

Important Notice to Contractors

The Contractor's attention is directed to the fact that this project is expected to be funded from the America Recovery and Reinvestment Act of 2009 (ARRA). For projects funded by the ARRA, Contractors must:

- report by the 10th day of the month, the number of project employees, hours worked, and payroll for the previous month (The reporting requirement also includes subcontractor employees.) and;
- include this requirement in subcontracts with subcontractors.

The Engineer will approve the form and method used for this reporting. Noncompliance with this requirement will result in the Department taking actions including but not limited to withholding estimates and suspending the work. This reporting will not be paid for directly but will be considered subsidiary to Items of the Contract.

SPECIAL PROVISION

000—1580

Important Notice to Contractors

The Contractor's attention is directed to the fact that this project is expected to be funded from the America Recovery and Reinvestment Act of 2009 (ARRA). Section 902 of the ARRA provides the U.S. Comptroller General and his representatives with the authority to:

(1) to examine any records of the contractor or any of its subcontractors, or any State or local agency administering such contract, that directly pertain to, and involve transactions relating to, the contract or subcontract; and
(2) to interview any officer or employee of the contractor or any of its subcontractors, or of any State or local government agency administering the contract, regarding such transactions.

Accordingly, the Comptroller General and his representatives shall have the authority and rights as provided under Section 902 of the ARRA with respect to this contract, which is funded with funds made available under the ARRA. Section 902 further states that nothing in this section shall be interpreted to limit or restrict in any way any existing authority of the Comptroller General.

Additionally, be advised that Section 1515(a) of the ARRA provides as follows:

Access.
For projects using ARRA funds, any representative of an appropriate inspector general appointed under section 3 or 8G of the Inspector General Act of 1978 (5 U.S.C. App.), is authorized:

(1) to examine any records of the contractor or grantee, any of its subcontractors or subgrantees, or any State or local agency administering such contract, that pertain to, and involve transactions relating to, the contract, subcontract, grant, or subgrant; and
(2) to interview any officer or employee of the contractor, grantee, subgrantee, or agency regarding such transactions.

Section 1515(b) further provides that nothing in this section shall be interpreted to limit or restrict in any way any existing authority of an inspector general.

CHILD SUPPORT STATEMENT

Under Section 231.006, Family Code, the vendor or applicant certifies that the individual or business entity named in this contract, bid, or application is not ineligible to receive the specified grant, loan, or payment and acknowledges that this contract may be terminated and payment may be withheld if this certification is inaccurate.

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt a covered Federal action, or a material change to a previous filing pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.

2. Identify the status of the covered Federal action.

3. Identify the appropriate classification of this report. If this a followup report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.

4. Enter the full name, address, city, State and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be a prime or subaward receipt. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.

5. If the organization filing the report in item 4 checks "Subawardee," then enter the full name, address, city, State and zip code of the prime Federal recipient. Include Congressional District, if known.

6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.

7. Enter the Federal program name or description for the covered Federal action (Item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans and loan commitments.

8. Enter the most appropriate Federal identifying number available for the Federal action identified in Item 1 (e.g., Request for Proposal (RFP) number; Invitation for bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Include prefixes, e.g. "RFP-DE-90-001."

9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in Item 4 or 5.

10. (a) Enter the full name, address, city, State and zip code of the lobbying registrant under the Lobbying Disclosure Act of 1995 engaged by the reporting entity identified in Item 4 to influence the covered Federal action.

    (b) Enter the full names of the individual(s) performing services, and include full address if different from 10 (a). Enter Last Name, First Name and Middle Initial (MI).

11. Certifying official shall sign and date the form, print his/her name, title and telephone number.

According to the Paperwork Reduction Act, as amended, no persons are required to respond to a collection of information unless it displays a valid OMB Control Number. The valid OMB control number for this information collection is OMB No. 0348-0046. Public reporting burden for this collection of information is estimated to average 10 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0046), Washington, DC 20503.

Approved by OMB No. 0348-0

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352
(See Reverse for public burden disclosure.)

1. Type of Federal Action:
- [ ] a. contract
- b. grant
- c. cooperative agreement
- d. loan
- e. loan guarantee
- f. loan insurance

2. Status of Federal Action:
- [ ] a. bid/offer/application
- b. initial award
- c. post-award

3. Report Type:
- [ ] a. initial filing
- b. material change

For Material Change Only:
year _____ quarter _____
date of last report _____

4. Name and Address of Reporting Entity:
- [ ] Prime
- [ ] Subawardee

Tier _____, *if known:*

Congressional District, *if known:*

5. If Reporting Entity in No. 4 is a Subawardee, Enter Name and Address of Prime:

Congressional District, *if known:*

6. Federal Department/Agency:

7. Federal Program Name/Description:

CFDA Number, *if applicable:*

8. Federal Action Number, *if known:*

9. Award Amount, *if known:*

$

10. a. Name and Address of Lobbying Registrant
(If individual, last name, first name, MI):

b. Individuals Performing Services *(including address if different from No. 10a)*
(last name, first name, MI):

11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less that $10,000 and not more than $100,000 for each such failure.

Signature: _____
Print Name: _____
Title: _____
Telephone No.: _____ Date: _____

Authorized for Local Reproduction
Standard Form LLL (Rev. 7-97)

DISCLOSURE OF LOBBYING ACTIVITIES
CONTINUATION SHEET

Approved by OMB
0348-0046

Reporting Entity: _____ Page _____ of _____

Authorized for Local Reproduction
Standard Form - LLL-A

Document 00912

RIDER NO. 1

PROJECT NAME: American Recovery and Reinvestment Act (ARRA) – Local Rehabilitation Projects STP 2010 (675)ES, Etc.

PROJECT NO: WBS No. N-00610A-(0102-0106)-4

This Rider is incorporated into the Contract documents. In the event of a conflict with the original Contract documents, this Rider governs.

CHANGES TO PROJECT MANUAL

1. City of Houston Document 00520 – Agreement. Initial where indicated on pages 00520-3 and 00520-4.
2. TxDOT SPECIAL PROVISION 000—003 – Notice to All Bidders. Add Special Provision.
3. TxDOT SPECIAL PROVISION 000—006 - Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246). Add Special Provision.
4. TxDOT SPECIAL PROVISION 000—1966 – Disadvantaged Business Enterprise in Federal-Aid Construction
5. TxDOT SPECIAL PROVISION 000-1483 – Notice of Changes to U.S. Department of Labor Required Payroll Information. Add Special Provision.
6. TxDOT SPECIAL PROVISION 000-1676 – On-the-Job Training Program. Add Special Provision.
7. CERTIFICATION REGARDING LOBBYING Form
8. Local Government (LG) Project Procedures Manual, Module 11, Section 3A – Bid Document Preparation: Buy America. Add this LG Component.
9. Local Government (LG) Project Procedures Manual, Module 11, Section 3A – Bid Document Preparation: Differing Site Conditions. Add this LG Component.
10. Davis-Bacon Wage Rates for Federally Funded Construction Projects. Add document.
11. CITY OF HOUSTON (COH) STANDARD SPECIFICATION Document 00607 – Certification Regarding Debarment, Suspension, And Other Responsibility Matters. Add COH Standard Specification 00607.
12. CITY OF HOUSTON (COH) STANDARD SPECIFICATION SECTION 02260 – Trench Safety System. Add COH Standard Specification 02260.
13. TXDOT SPECIAL PROVISION 000—004 – Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive 11246).

14. TXDOT SPECIAL PROVISION 000—009 – Certification of Nondiscrimination in Employment
14. TXDOT SPECIAL PROVISION 000—1555 – Important Notice to Contractors
15. TXDOT SPECIAL PROVISION 000—1580 - Important Notice to Contractors
16. TEXAS FAMILY CODE Section 231.006 – Eligibility to Receive State Grants or loans or receive payment on state contracts.
17. TXDOT SPECIAL PROVISION FORM FHWA – 1273.

END OF RIDER NO. 1

DATED: ___ _____

Director of Public Works & Engineering

DATED: Dec 08-2010

Contractor

END OF DOCUMENT

Document 00931

REQUEST FOR INFORMATION

1. PROJECT No.: WBS No. N-00610A-(102-106)-4
2. RFI No.: _____
3. PROJECT NAME: Safe Route to School Sidewalk Project
4. CONTRACTOR: [Contractor Name]
5. CONTRACT No.: _____
6. SPECIFICATION Nos.: _____
7. DRAWING Nos.: _____
8. RESPONSE CODE: [_] CRITICAL [_] ROUTINE 9.DATE RESPONSE REQUIRED: _____
10. INFORMATION REQUIRED:

11. _____ _____
CONTRACTOR (Signature) TITLE DATE

12. RESPONSE:

13. _____ _____
PROJECT MANAGER (Signature) DATE

14. **If Contractor believes the response given in Item 12 requires an adjustment in Contract Price or Contract Time, Contractor shall submit a timely proposal so as not to delay Contractor's Work in accordance with General Conditions, Article 7 - Changes in the Work.**

END OF DOCUMENT

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
ENGINEERING AND CONSTRUCTION DIVISION

PROJECT MANUAL
SAFE ROUTE TO SCHOOL SIDEWALK PROJECT
WBS No. N-00610A-(102-106)-4
PROJECT NO. STP 2009()SRS

VOLUME 1 of 1

Divisions 00 through 16

August 13, 2010

IDC, Inc.
11111 Wilcrest Green,
Suite 250
Houston, Texas-77042
(713) 541-5591

STATE OF TEXAS
ABU A. ALMAMUN
96608
LICENSED
PROFESSIONAL ENGINEER

08-10-2010

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
ENGINEERING AND CONSTRUCTION DIVISION

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08-10-2010

Doc. No.	Document Title	Doc. Date

Document 00010

TABLE OF CONTENTS

NOTE: Bold capitalized Specification Sections are included in the City of Houston Department of Public Works and Engineering Standard Construction Specifications for Wastewater Collection Systems, Water Lines, Storm Drainage, Street Paving, and Traffic, dated July 2009; and are incorporated in Project Manuals by reference as if copied verbatim. Documents listed "for filing" are to be provided by Bidder and are not included in this Project Manual unless indicated for example only. The Document numbers and titles hold places for actual documents to be submitted by Contractor during Bid, post-bid, or construction phase of the Project. Specification Sections marked with an asterisk (*) are amended by a supplemental specification, printed on blue paper and placed in front of the Specification it amends. Documents in the 200, 300 and 400 series of Division 00, except for Document 00410B – Bid Form, Part B, are not part of the Contract.

Doc. No.	Document Title	Doc. Date
	INTRODUCTORY INFORMATION	
00010	Table of Contents	07-01-2010
00015	List of Drawings	02-01-2004
	BIDDING REQUIREMENTS	
	INSTRUCTIONS TO BIDDERS	
00200	Instructions to Bidders	08-18-2006
00210	Supplementary Instructions to Bidders	05-09-2007
00220	Request for Bid Information	06-11-2004
	INFORMATION AVAILABLE TO BIDDERS	
00340	Environmental Information	09-14-2005
	BID FORMS AND SUPPLEMENTS	
00410	Bid Form, Parts A & B	02-01-2010
00430	Bidder's Bond (For filing; Example Form)	02-01-2004
00450	Bidder's Statement of MWBE/PDBE/DBE/SBE Status	03-09-2007
00452	Contractor Submission List - Fair Campaign Ordinance	04-30-2004
00454	Affidavit of Non-interest	02-01-2004

Doc. No.	Document Title	Doc. Date
00455	Affidavit of Ownership or Control	03-18-2008
00456	Bidder's Certificate of Compliance with Buy American Program	02-01-2004
00457	Conflict of Interest Questionnaire	02-28-2006
00458	Bidder's Certificate Regarding Foreign Trade Restriction	02-01-2004
00459	Contractor's Statement Regarding Previous Contracts Subject to EEO	02-01-2004
00470	Pay or Play Acknowledgement Form (POP-1A)	06-30-2008

POST-BID PROCEDURES

00495	Post-bid Procedures	10-05-2007
00496	Control Form for Contract Documents	02-01-2004

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00500	Form of Business	02-01-2004
00501	Resolution of Corporation	02-01-2010
00520	Agreement	11-02-2009

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00600	List of Proposed Subcontractors and Suppliers, Parts A & B	03-09-2007
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00602	Contractor's Drug Free Workplace Policy (For filing)	
00604	History of OSHA Actions and List of On-the-job Injuries	02-01-2004
00605	List of Safety Impact Positions	02-01-2004
00606	Contractor's Certification of No Safety Impact Positions	02-01-2004
00607	Certification Regarding Debarment, Suspension, and Other Responsibility Matters	02-01-2004
00610	Performance Bond	05-17-2005
00611	Statutory Payment Bond	05-17-2005
00612	One-year Maintenance Bond	05-17-2005
00620	Affidavit of Insurance (with attached Certificates of Insurance)	02-01-2004
00622	Name and Qualifications of Proposed Superintendent (For filing)	
00624	Affidavit of Compliance with Affirmative Action Program	02-01-2004
00630	Certification of Agreement to Comply with Pay or Play Program	09-23-2009
00631	City of Houston Pay or Play Program – List of Participating Subcontractors	08-01-2007
00633	Equal Employment Opportunity - Certification By Material Suppliers	02-01-2010
00642	Monthly Subcontractor Payment Reporting Form	02-01-2010
00646	Payment Notification Explanation of Withholding	02-01-2010

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00800	Supplementary Conditions	07-01-2010
00820	Wage Scale for Engineering Construction	02-01-2010
00821	Wage Scale for Building Construction	07-01-2010

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01325	Construction Schedule	08-01-2003
01330	Submittal Procedures	08-01-2003
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01410	TPDES Requirements (with Attachments)	08-01-2003
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01725	Field Surveying	08-01-2003
01732	Procedure for Water Valve Assistance (with Attachments)	08-01-2003
01740	Site Restoration	08-01-2003
01770	Closeout Procedures	08-01-2003

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02084	**FRAMES, GRATES, RINGS, AND COVERS**	**08-01-2008**
02085	**VALVE BOXES, METER BOXES, AND METER VAULTS**	**10-01-2002**
02086	**ADJUSTING MANHOLES, INLETS, AND VALVE BOXES TO GRADE**	**10-01-2002**
02221	**REMOVING EXISTING PAVEMENTS AND STRUCTURES,**	**07-01-2009**
02233	**CLEARING AND GRUBBING**	**10-01-2002**
02315	**ROADWAY EXCAVATION**	**07-01-2009**
02317S	Eacavation And Backfill For Utilities	08-26-2008
***02317**	**EXCAVATION AND BACKFILL FOR UTILITIES**	**08-01-2008**
02318S	Extra Unit Price Work For Excavation And Backfill	01-07-2003
***02318**	**EXTRA UNIT PRICE WORK FOR EXCAVATION AND BACKFILL**	**10-01-2002**
02319	**BORROW**	**10-01-2002**
02320	**UTILITY BACKFILL MATERIALS**	**10-01-2002**
02321	**CEMENT STABILIZED SAND**	**10-01-2002**
02330	**EMBANKMENT**	**10-01-2002**
02336	**LIME-STABILIZED SUBGRADE**	**10-01-2002**
02337	**LIME/FLY-ASH STABILIZED SUBGRADE**	**10-01-2002**
02505	**HIGH DENSITY POLYETHYLENE (HDPE) SOLID AND PROFILE WALL PIPE**	**08-01-2008**
02506	**POLYVINYL CHLORIDE PIPE**	**10-01-2002**
02520S	Fire Hydrants	**08-21-2009**
***02520**	**FIRE HYDRANTS**	**10-01-2002**
02526	**WATER METERS**	**10-01-2002**
02611	**REINFORCED CONCRETE PIPE**	**10-01-2002**
02631	**STORM SEWERS**	**08-01-2008**
02741	**ASPHALTIC CONCRETE PAVEMENT**	**07-01-2009**
02714	**FLEXIBLE BASE COURSE FOR TEMPROARY DRIVEWAY**	**07-01-2009**
02742	**PRIME COAT**	**10-01-2002**
02743	**TACK COAT**	**10-01-2002**
02752	**CONCRETE PAVEMENT JOINTS**	**10-01-2002**
02751	**CONCRETE PAVING**	**07-01-2009**
02754	**CONCRETE DRIVEWAYS**	**09-01-2002**
02761	**COLORED CONCRETE FOR MEDIANS AND SIDEWALKS**	**09-01-2002**
02762	**BLAST CLEANING OF PAVEMENT**	**10-01-2002**
02765	**TEMPORARY AND REMOVABLE REFLECTORIZED PAVEMENT MARKINGS**	**10-01-2002**
02767	**THERMOPLASTIC PAVEMENT MARKINGS**	**10-01-2002**

Doc. No.	Document Title	Doc. Date
02771	CURB, CURB AND GUTTER, AND HEADERS	10-01-2002
02772	CONCRETE MEDIANS AND DIRECTIONAL ISLANDS	10-01-2002
02775	CONCRETE SIDEWALKS	10-01-2002
02811	LANDSCAPE IRRIGATION	10-01-2002
02912	TREE, PLANT, AND HARDSCAPE PROTECTION	07-01-2009
02915	TREE PLANTING	10-01-2002
02922	SODDING	07-01-2009

TxDOT SPECIAL PROVISIONS

000---002	PARTNERING
000---003	NOTICE TO ALL BIDDERS
000---004	NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY
000---006	STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS
000---009	CERTIFICATION OF NONDISCRIMINATION IN EMPLOYMENT
000---1483	NOTICE OF CHANGES TO US DEPARTMENT OF LABOR REQUIRED PAYROLL INFORMATION
000---1493	SCHEDULE OF LIQUIDATED DAMAGES
000---1676	ON THE JOB TRAINING PROGRAM
000---1966	DISADVANTAGED BUSINESS ENTERPRISE IN FEDERAL-AID CONTRACTS

LOCAL GOVERNMENT (LG) CONTRACT COMPONENTS

CHILD SUPPORT DOCUMENTATION (FAMILY CODE §231.006)
DIFFERING SITE CONDITIONS (23 CFR 635.109)
FORM FHWA-1273 (23 CFR 633)
LOBBYING CERTIFICATION (49 CFR 20 & 23 CFR 635.112(g))
NON-COLLUSION STATEMENT (23 CFR 635.112)
NON-SEGREGATED FACILITIES (23 CFR 633 Subpart A)
PRISON-PRODUCED MATERIALS (23 CFR 635.417)

END OF DOCUMENT

Document 00015

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2	General Notes
3	Overall Layout
4-8	Sheet Layout
9-11	Typical Sections
12-22	Survey Control Maps
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24	Forest Hill (Dallas to Rusk)
25	Harrisburg (72nd to Forest Hill)
26-27	Pasadena (Santiago to Forest Hill)
28	Rusk (Forest Hill to 74th street)
29	Walker (Forest Hill to 74th street)
30	Walker (74th Street to 75th street)
31-36	Sherman (Lockwood to Oldham Street)
37-38	Miraglen (Fair Oaks Road to S. Wayside Dr.)
39-40	Wayside Dr. (Lawndale to Carillo Elem School)
41-43	Avenue I (76th street to Navigation Blvd.)
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46-47	Avenue K (75th street to 76th street)
48	71st street (Avenue H to Avenue K)
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51	Avenue E (66th street to Cesar Chavez)
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56-57	Intersections Layout
58-61	Driveway Tables
62-94	Tree Protection & Mitigation Plans
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108-110A	Miscellaneous Standard details
111-112	Waterline Standard Details

Sheet No.	Drawing Title
113	Retaining Wall Details
114	Pavement Marking Details
115	Barricade Standard Details
116	Tree Protection Details
117	SWPPP Details

END OF DOCUMENT

Document 00840
(POP-1)

PAY OR PLAY PROGRAM

I. Pay or Play Program Elements

A. Purpose
Authorized by Ordinance 2007-534 and Executive Order 1-7, the purpose of the Pay or Play Program is (1) to create a more level playing field among competing contractors so that those who provide health benefits to their employees are not disadvantaged in the bidding process; and 2) to recognize and account for the fact that there are costs associated with the health care of the uninsured.

B. Program Elements

1. Covered contracts: Contracts covered by the program are those that are advertised after July 1, 2007, which are valued at or above $100,000 and are not primarily for the procurement of property, goods, supplies or equipment.

2. Covered employees: This program applies to employees of a covered contractor or subcontractor, including contract labor, who are over age 18, work at least 30 hours per week <u>and</u> work any amount of time under a covered city contract or subcontract.

3. Compliance with the program means that the contractor either:
   - "Pays" by contributing $1.00 per covered employee per hour for work performed under the contract with the City; or
   - "Plays" by offering health benefits to covered employees. Health benefits must meet or exceed the following standards:
     - The employer will contribute no less than $150 per covered employee per month toward the total premium cost.
     - The employee contribution, if any amount, will be no greater than 50% of the total monthly premium cost.

4. Subcontracts: The prime contractor is responsible for compliance on behalf of covered employees, including contract labor, of subcontractors with subcontracts valued at or greater than $200,000, if the subcontract is not primarily for the procurement of property, goods, supplies or equipment. Subcontractor compliance includes submission of applicable reports and/or payments to the prime, as well as maintenance of records.

5. Exemptions/Waivers: The City of Houston will award a contract to a contractor that neither Pays nor Plays only if the contractor has received an approved waiver.

6. Administration: Contractor performance in meeting Pay or Play program requirements will be managed by the contracting department. The Office of Affirmative Action and Contract Compliance will have administrative oversight of the

program, including audit responsibilities. Questions about the program should be referred to the department POP Liaison or the Office of Affirmative Action and Contract Compliance.

II. Documentation and Reporting Requirements

A. Documents that must be signed and returned to administering department within a period designated by the department's Contract Administrator, upon notification of low bidder or successful proposer status:

1. Certification of Contractor's Intent to Comply with Pay or Play Program (Document 00630). Note - Contractors that opt to "play" must provide proof of coverage, including documentation from insurance provider, and names of covered employees.

2. List of Participating Subcontractors (Document 00631)

B. The contractor will comply with the following reporting requirements:

1. Contractors that opt to Play
   Provide periodic reports to the contract administrator showing proof of coverage. Reporting schedule will be determined by administering department based on length of contract. Reports shall be provided in a Microsoft Excel format on a CD-Rom.

2. Contractors that opt to Pay
   Provide monthly reports to administering department, detailing names of employees, hours worked, exemptions (if any) and amount owed. Reports shall be provided in a Microsoft Excel format on a CD-Rom.

Contractors shall submit an initial report with the second invoice to the department. Reports shall be provided in a Microsoft Excel format on a CD-Rom in the form attached as page 3 of this document. Payments based on monthly reports are due to the contracting department with submission of the following month's invoice. Payments may be made via wire transfer, provided that proof of transaction is submitted to administering department.

III. Compliance and Enforcement

The Affirmative Action and Contract Compliance Office will audit program compliance. Contractors willfully violating or misrepresenting POP program compliance will be subject to corrective and/or punitive action, including but not limited to the assessment of fines and penalties and/or debarment.

Document 00931

REQUEST FOR INFORMATION

1. PROJECT No.: WBS No. N-00610A-(102-106)-4
2. RFI No.: _____
3. PROJECT NAME: Safe Route to School Sidewalk Project
4. CONTRACTOR: [Contractor Name]
5. CONTRACT No.: _____
6. SPECIFICATION Nos.: _____
7. DRAWING Nos.: _____
8. RESPONSE CODE: [_] CRITICAL [_] ROUTINE 9.DATE RESPONSE REQUIRED: _____
10. INFORMATION REQUIRED:

11. _____ _____
CONTRACTOR (Signature) TITLE DATE

12. RESPONSE:

13. _____ _____
PROJECT MANAGER (Signature) DATE

14. **If Contractor believes the response given in Item 12 requires an adjustment in Contract Price or Contract Time, Contractor shall submit a timely proposal so as not to delay Contractor's Work in accordance with General Conditions, Article 7 - Changes in the Work.**

END OF DOCUMENT

Section 01110

SUMMARY OF WORK

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Summary of the Work including work by the City, City-furnished Products, work sequence, future work, Contractor use of Premises, special conditions for substantial completion and City occupancy.

1.02 WORK COVERED BY CONTRACT DOCUMENTS

A. Work of the Contract is for the construction of sidewalks at various locations within the City limits. Works include construction of new sidewalks, removal and replacement of existing sidewalks including sawcut, construction of new wheelchair ramps with colored truncated dome,removal and replacement of driveways, removal and replacement of fences along with gates and guardrails, relocation of utility devices, signs and mailboxes, construction of concrete steps, construction of drainage pipes, re-grade of ditches and construction of checker plates at tree sensitive areas.

B. Truncated domes will be incidental to wheelchair ramps.

1.03 CASH ALLOWANCES

A. Include the following specific Cash Allowances in Contract Price under provision of General Conditions Paragraph 3.11:

1. Permits- $8000.00

1.04 ALTERNATES

A. From the following list of Alternates, amount included in Contract Price for only those Alternates accepted by the City and listed in the fully executed Document 00520 – Agreement, Paragraph 3.2:

1. N/A

1.05 CITY-FURNISHED PRODUCTS

A. Items Furnished by the City for Installation and final connection by Contractor: Water meter.

B. Contractor's Responsibilities:

1. Arrange and pay for Product delivery to the site.

2. Receive and unload Products at the site; jointly with the City, inspect for completeness or damage.

3. Handle, store, Install, and finish Products.

4. Repair or replace damaged items.

1.06 WORK SEQUENCE

A. Construct the Work in Phases during the construction period, coordinate construction schedule and operations with the City:

1. No Phases for this Project.

B. For projects with no Phases, do not disturb more than 50% of total project linear feet of disturbed right-of-way and easement until site restored in accordance with Section 01740 – Site Restoration.

C. Coordination of the Work: Refer to Section 01312 - Coordination and Meetings.

1.07 CONTRACTOR USE OF PREMISES

A. Comply with procedures for access to the site and Contractor's use of rights-of-way as specified in Section 01145 - Use of Premises.

B. Construction Operations: Limited to the City's rights-of-way provided by the City and areas shown or described in the Contract documents.

C. Utility Outages and Shutdown: Provide a minimum of 48 hours notice to the City and private utility companies (when applicable), excluding weekends and holidays, in advance of required utility shutdown. Coordinate all work as required.

1.08 STREET CUT ORDINANCE

A. Excavations on or under pavement in the City's right-of-way must have a permit. Comply with City of Houston, Texas Ordinance No. 2000-1115, an ordinance amending Chapter 40 of the Code of Ordinances, Houston, Texas, relating to excavating in the Public right -of-way.

B. Comply with the latest edition of street cut New Pavement Repair and Pavement Replacement details.

C. Quantities are included for street cut pavement repair and replacement in applicable Specification sections for Unit Price contracts.

D. Include payment for street cut pavement repair and replacement in lump sum bid for Stipulated Price contracts.

1.09 WARRANTY

A. Comply with warranty requirements in accordance with Document 00700 - General Conditions.

1.10 ADDITIONAL CONDITIONS FOR SUBSTANTIAL COMPLETION

A. In addition to requirements outlined in Document 00700 – General Conditions, for Contractor to be substantially complete with the Work and call for inspection by Project Manager to confirm, the following conditions must be met or completed:

1. All testing shall be completed and accepted by Project Manager.

2. All pay items complete report.

3. All safety related work including pavement striping, signing and signalization.

4. Contractor shall contact Construction Project Manager to complete Texas Department of Licensing and Regulation Post Construction Inspection of pedestrian elements for Texas Accessibility Standards.

B. No additional condition described in Paragraph 1.10 may be included in Contractor's punch list.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01145

USE OF PREMISES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General use of the site including properties inside and outside of rights-of-way, work affecting road, ramps, streets and driveways and notification to adjacent occupants.

1.02 RIGHTS-OF-WAY

A. Confine access, and operations and storage areas to rights-of-way provided by the City as stipulated in Document 00700 - General Conditions; trespassing on abutting lands or other lands in the area is not allowed.

B. Make arrangements, at no cost to the City, for temporary use of private properties. Contractor and Surety shall indemnify and hold harmless the City against claims or demands arising from such use of properties outside of rights-of-way. Submit a copy of agreements between private property owners and Contractor prior to use of the area. Agreements between private property owners and Contractor shall be notarized or bear the signatures of two witnesses.

C. Obtain written permission from City of Houston Parks and Recreation Department for storage of materials on esplanades and other areas within rights-of-way under that department's jurisdiction. Submit copies of written permission prior to use of the area.

D. Restrict total length of distributed materials along the route of construction to 1,000 linear feet unless otherwise approved in writing by City Engineer.

1.03 PROPERTIES OUTSIDE OF RIGHTS-OF-WAY

A. Do not alter the condition of properties adjacent to and along rights-of-way.

B. Do not use ways, means, methods, techniques, sequences, or procedures that result in damage to properties or improvements.

C. Restore damaged properties outside of rights-of-ways at no cost to the City.

1.04 USE OF SITE

A. Obtain approvals from governing authorities prior to impeding or closing public roads and streets. Do not close more than two consecutive intersections at one time.

B. Notify Project Manager and Public Works and Engineering Traffic Management Branch at least five working days prior to closing a street or street crossing. Obtain permits for street closures in advance.

C. Maintain 10-foot-wide minimum access lanes for emergency vehicles including access to fire hydrants.

D. Avoid obstructing drainage ditches or inlets. When obstruction is unavoidable due to requirements of the Work, provide grading and temporary drainage structures to maintain unimpeded flow.

E. Locate and protect private lawn sprinkler systems that may exist within the site. Repair or replace damaged systems to condition existing at start of the Work, or better.

F. Conform to daily clean-up requirements of Article 3 of Document 00700 - General Conditions.

G. Beware of overhead power lines existing in area and in close proximity of the Project. When 10 feet of clearance between energized overhead power line and construction-related activity cannot be maintained, request Houston Lighting & Power Company (HL&P) de-energize or move conflicting overhead power line. Contact HL&P representatives at (713) 207-7777. Schedule, coordinate and pay costs associated with de-energizing or moving conflicting overhead power lines. When there is no separate pay item for this effort, include these costs in various items of bid that make such work necessary.

1.05 NOTIFICATION TO ADJACENT OCCUPANTS

A. Notify individual occupants in areas to be effected by the Work of proposed construction and time schedule. Notify not less than 72 hours or more than two weeks prior to work performed within 200 feet of homes or businesses. Follow form and content of sample door hanger provided by Project Manager.

B. Include in notification nature of the Work, and names and telephone numbers of two company representatives for resident contact available on 24-hour call.

C. Submit proposed notification to Project Manager for approval. Consider ethnicity of the neighborhood where English is not the dominant language. Provide notice in an understandable language.

1.06 PUBLIC, TEMPORARY, AND CONSTRUCTION ROADS AND RAMPS

A. Construct and maintain temporary detours, ramps, and roads to provide for normal public traffic flow when it is necessary to close public roads or streets.

B. Provide mats or other means to prevent overloading or damage to existing roadways from tracked equipment, large tandem axle trucks or equipment that will damage the existing roadway surfaces.

C. Construct and maintain access roads and parking areas as specified in Section 01504 - Temporary Facilities and Controls.

1.07 EXCAVATION IN STREETS AND DRIVEWAYS

A. Avoid hindering or inconveniencing public travel on streets or intersecting alleys for more than two blocks at any one time, except by permission of City Engineer.

B. Obtain Traffic Management Branch and City Engineer's approval when nature of the Work requires closure of an entire street. Permits required for street closure are Contractor's responsibility. Avoid unnecessary inconvenience to abutting property owners.

C. Remove surplus materials and debris and open each block for public use, as work in that block is complete.

D. Acceptance of any portion of the Work will not be based on return of street to public use.

E. Avoid obstructing driveways or entrances to private property.

F. Provide temporary crossings or complete excavation and backfill in one continuous operation to minimize duration of obstruction when excavation is required across drives or entrances.

G. Provide barricades and signs in accordance with Section VI of the State of Texas Manual on Uniform Traffic Control Devices.

1.08 TRAFFIC CONTROL

A. Comply with traffic regulation as specified in Section 01555 - Traffic Control and Regulation.

1.09 SURFACE RESTORATION

A. Restore the site to the condition existing before construction, or better.

B. Repair paved areas per the requirements of Section 02951 - Pavement Repair and Resurfacing.

C. Repair damaged turf areas, level with bank run sand conforming to Section 02317 - Excavation and Backfill for Utilities, or topsoil conforming to Section 02911 - Topsoil, and re-sod in accordance with Section 02922 - Sodding. Water and level newly sodded areas with adjoining turf using appropriate steel wheel rollers for sodding. Do not use spot sodding or sprigging.

1.10 LIMITS OF CONSTRUCTION

A. Confine operations to lands within construction work limits shown on Drawings. Unless otherwise noted on Drawings adhere to the following:

1. Where utility alignment is within esplanade, and construction limits are shown on Drawings to extend to edge of esplanade, keep equipment, materials, stockpiles a minimum of five feet from back of curb.

2. Where construction limits shown on Drawings extend to property line, keep sidewalks free of equipment, materials, and stockpiles.

1.11 EQUIPMENT AND MATERIAL SALVAGE

A. Upon completion of the Work, carefully remove salvageable equipment and material. Deliver them to City of Houston as directed by Project Manager. Dispose of equipment offsite at no additional cost to the City when Project Manager deems equipment unfit for further use.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01255

CHANGE ORDER PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Procedures for processing Change Orders, including:

1. Assignment of a responsible individual for approval and communication of changes in the Work;
2. Documentation of change in Contract Price and Contract Time;
3. Change procedures, using proposals and Modifications;
4. Execution of Change Orders;
5. Correlation of Contractor submittals.

1.02 REFERENCES

A. Blue Book is defined as the Rental Rate Blue Book for Construction Equipment (a.k.a. Data Quest Blue Book).

B. Rental Rate is defined as the full-unadjusted base rental rate for the appropriate item of construction equipment.

1.03 RESPONSIBLE INDIVIDUAL

A. Provide a letter indicating the name and address of the individual authorized to execute Modifications, and who will be responsible for informing others in Contractor's employ and Subcontractors of changes to the Work. Provide this information at the pre-construction meeting.

1.04 DOCUMENTATION OF CHANGE IN CONTRACT PRICE AND CONTRACT TIME

A. Maintain detailed records of changes in the Work. Provide full information required for identification and evaluation of proposed changes, and substantiate costs of changes in the Work.

B. Document each proposal for change in Contract Price or Contract Time with sufficient data to allow evaluation of proposal.

C. Include the following minimum information on proposals:

1. Quantities of items in original Document 00410 – Bid Form with additions, reductions, deletions, and substitutions.

2. Quantities and cost of items in original Schedule of Values with additions, reductions, deletions and substitutions.

3. Provide Unit Prices for new items, with supporting information, for inclusion in Schedule of Unit Price Work.

4. Justification for changes in Contract Time.

5. Additional data upon request.

D. For changes in the Work performed on a time-and-material basis, provide the following additional information:

1. Quantities and description of Products.

2. Taxes, insurance and Bonds.

3. Overhead and profit as noted in Document 00700 - General Conditions.

4. Dates, times and by who work was performed.

5. Time records and certified copies of applicable payrolls.

6. Invoices and receipts for Products, rental equipment, and subcontracts, similarly documented.

E. For changes in the Work performed on a time-and-materials basis, rental equipment is paid as follows:

1. Actual invoice cost for duration of time required to complete extra work without markup for overhead and profit. When extra work comprises only a portion of a rental invoice where equipment would otherwise be on site, compute hourly equipment rate by dividing the actual monthly invoice by 176. One day equals eight hours and one week equals 40 hours.

2. Do not exceed estimated operating costs given in Blue Book for items of equipment. Overhead and profit will be allowed on the operating cost.

F. For changes in the Work performed on a time-and-materials basis using Contractor-owned equipment, use Blue Book rates as follows:

1. Contractor-owned equipment will be paid at the Blue Book Rental Rate for the duration of time required to complete extra work without markup for overhead and profit. Utilize lowest cost combination of hourly, daily, weekly or monthly rates. Use 150 percent of Rental Rate for double shifts, one extra shift per day, and 200 percent of Rental Rate for more than two shifts per day. Standby rates shall be 50 percent of the appropriate Rental Rate shown in Blue Book. No other rate adjustments apply.

2. Do not exceed estimated operating costs given in Blue Book. Overhead and profit will be allowed on operating costs. Operating costs will not be allowed for equipment on standby.

1.05 CHANGE PROCEDURES

A. Changes to Contract Price or Contract Time can only be made by issuance of Document 00941 - Change Order. Issuance of Document 00940 - Work Change Directive will be formalized into a Change Order. Changes will be in accordance with requirements of Document 00700 - General Conditions.

B. City Engineer will advise of Minor Changes in the Work as authorized by the Document 00700 - General Conditions by issuing Document 00942 – Minor Change.

C. Request clarification of Drawings, Specifications, Contract documents or other information by using Document 00931- Request for Information. Response by Project Manager to Requests for Information does not authorize Contractor to perform tasks outside scope of the Work. Changes must be authorized as described in this Section.

1.06 PROPOSALS AND CONTRACT MODIFICATIONS

A. Project Manager may issue Document 00932- Request for Proposal, which includes a detailed description of the proposed change with supplementary or revised Drawings and Specifications. Project Manager may also request a proposal in response to a Request for Information. Prepare and submit the proposal within seven days or as specified in request.

B. Submit requests for Contract changes to City Engineer describing proposed change and its full effect on the Work, with a statement describing reason for change and effect on Contract Price and Contract Time including full documentation.

C. Design Consultant may review Change Orders.

1.07 WORK CHANGE DIRECTIVE

A. City Engineer may issue a signed Work Change Directive instructing Contractor to proceed with a change in the Work. Work Change Directive will subsequently be incorporated into a Change Order.

B. Work Change Directives will describe changes in the Work and designate the method of determining change in Contract Price or Contract Time.

C. Proceed promptly to execute changes in the Work in accordance with the Work Change Directive.

1.08 STIPULATED PRICE CHANGE ORDER

A. A Stipulated Price Change Order will be based on an accepted proposal.

1.09 UNIT PRICE CHANGE ORDER

A. Where Unit Prices for affected items of the Work are included in Document 00410 – Bid Form, the Change Order will be based on Unit Prices, subject to Articles 7 and 9 of Document 00700 - General Conditions.

B. Where Unit Prices of the Work are not pre-determined in Document 00410-Bid Form, the Work Change Directive or accepted proposal will specify the Unit Prices to be used.

1.10 TIME-AND-MATERIAL CHANGE ORDER

A. Provide itemized account and supporting data after completion of change, within time limits indicated for claims in Document 00700 - General Conditions.

B. City Engineer will determine the change allowable in Contract Price and Contract Time as provided in Document 00700 - General Conditions.

C. Maintain detailed records for work done on time-and-material basis as specified in Paragraph 1.04 above.

D. Provide full information required for evaluation of changes and substantiate costs for changes in the Work.

1.11 EXECUTION OF CHANGE DOCUMENTATION

A. City Engineer will issue Change Orders, Work Change Directives, or Minor Change in the Work for signatures of Parties as described in Document 00700 - General Conditions.

1.12 CORRELATION OF CONTRACTOR SUBMITTALS

A. For Stipulated Price Contracts, promptly revise Schedule of Values and Application for Payment forms to record authorized Change Orders as separate line item.

B. For Unit Price Contracts, the next monthly estimate of the Work after acceptance of a Change Order will be revised to include new items not previously included with appropriate Unit Prices.

C. Promptly revise progress schedules to reflect change in Contract Time, and to adjust time for other items of work affected by the change, and resubmit for review.

D. Promptly enter changes to on-site and record copies of Drawings, Specifications or Contract documents as required in Section 01785 - Project Record Documents.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01270

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Procedures for measurement and payment plus conditions for nonconformance assessment and nonpayment for rejected Products.

1.02 AUTHORITY

A. Measurement methods delineated in Specification sections are intended to complement criteria of this Section. In event of conflict, requirements of the Specification section shall govern.

B. Project Manager will take all measurements and compute quantities accordingly.

C. Assist by providing necessary equipment, workers, and survey personnel.

D. Measurement and Payment paragraphs are included only in those Specification sections of Division 01 where direct payment will be made. Include costs in the total bid price for those Specification sections in Division 01 that do not contain Measurement and Payment paragraphs,

1.03 UNIT QUANTITIES SPECIFIED

A. Quantity and measurement estimates stated in the Agreement are for contract purposes only. Quantities and measurements supplied or placed in the Work and verified by Project Manager will determine payment as stated in Article 9 of Document 00700 - General Conditions.

B. When actual work requires greater or lesser quantities than those quantities indicated in Document 00410 – Bid Form, provide required quantities at Unit Prices contracted, except as otherwise stated in Article 9 of Document 00700 - General Conditions.

1.04 MEASUREMENT OF QUANTITIES

A. Measurement by Weight: Reinforcing steel, rolled or formed steel or other metal shapes are measured by CRSI or AISC Manual of Steel Construction weights. Welded assemblies are measured by CRSI or AISC Manual of Steel Construction or scale weights.

B. Measurement by Volume:

1. Stockpiles: Measured by cubic dimension using mean length, width, and height or thickness.

2. Excavation and Embankment Materials: Measured by cubic dimension using average end area method.

C. Measurement by Area: Measured by square dimension using mean length and width or radius.

D. Linear Measurement: Measured by linear dimension, at item centerline or mean chord.

E. Stipulated Price Measurement: By unit designated in the Agreement.

F. Other: Items measured by weight, volume, area, or linear means or combination, as appropriate, as completed item or unit of the Work.

G. Measurement by Each: Measured by each instance or item provided.

H. Measurement by Lump Sum: Measure includes all associated work.

1.05 PAYMENT

A. Payment includes full compensation for all required supervision, labor, Products, tools, equipment, plant, transportation, services, and incidentals; and erection, application or Installation of an item of the Work; and Contractor's overhead and profit.

B. Total compensation for required Unit Price work shall be included in Unit Price bid in Document 00410 – Bid Form. Claims for payment as Unit Price work, but not specifically covered in the list of Unit Prices contained in Document 00410 – Bid Form, will not be accepted.

C. Interim payments for stored materials will be made only for materials to be incorporated under items covered in Unit Prices, unless disallowed in Document 00800 - Supplementary Conditions.

D. Progress payments will be based on Project Manager's observations and evaluations of quantities incorporated in the Work multiplied by Unit Price.

E. Final payment for work governed by Unit Prices will be made on the basis of actual measurements and quantities determined by Project Manager multiplied by the Unit Price for work which is incorporated in or made necessary by the Work.

1.06 NONCONFORMANCE ASSESSMENT

A. Remove and replace work, or portions of the Work, not conforming to the Contract documents.

B. When not practical to remove and replace work, City Engineer will direct one of the following remedies:

1. Nonconforming work will remain as is, but Unit Price will be adjusted lower at discretion of City Engineer.

2. Nonconforming work will be modified as authorized by City Engineer, and the Unit Price will be adjusted lower at the discretion of City Engineer, when modified work is deemed less suitable than specified.

C. Specification sections may modify the above remedies or may identify a specific formula or percentage price reduction.

D. Authority of City Engineer to assess nonconforming work and identify payment adjustment is final.

1.07 NONPAYMENT FOR REJECTED PRODUCTS

A. Payment will not be made for any of the following:

1. Products wasted or disposed of in an unacceptable manner.

2. Products determined as nonconforming before or after placement.

3. Products not completely unloaded from transporting vehicles.

4. Products placed beyond lines and levels of required work.

5. Products remaining on hand after completion of the Work, unless specified otherwise.

6. Loading, hauling, and disposing of rejected Products.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01292

SCHEDULE OF VALUES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Preparation and submittal of Schedule of Values for Stipulated Price Contracts or for Major Unit Price Work on Unit Price Contracts.

1.02 PREPARATION

A. For Stipulated Price Contracts, subdivide the Schedule of Values into logical portions of the Work, such as major work items or work in contiguous construction areas. Use Section 01325 - Construction Schedule as a guide to subdivision of work items. Directly correlate Items in the Schedule of Values with tasks in the Construction Schedule. Organize each portion using the Project Manual Table of Contents as an outline for listing value of the Work by Sections. A pro rata share of mobilization, Bonds, and insurance may be listed as separate items for each portion of the Work.

B. For Unit Price Contracts, items should include a proportional share of Contractor's overhead and profit so that total of all items will equal Contract Price.

C. For lump sum equipment items, where submittal of operation and maintenance data and testing are required, include separate items for equipment operation and maintenance data where:

1. submittal of maintenance data is valued at five percent of the lump sum amount for each equipment item and

2. submittal for testing and adjusting is valued at five percent of the lump sum amount for each equipment item.

Round off figures for each item listed to the nearest $100. Set the value of one item, when necessary, to make total of all values equal the Contract Price for Stipulated Price Contracts or the lump sum amount for Unit Price Work.

1.03 SUBMITTAL

A. Submit the Schedule of Values, in accordance with requirements of Section 01330 - Submittal Procedures, at least 10 days prior to processing of the first Certificate for Payment.

B Submit the Schedule of Values in an approved electronic spreadsheet file and an 81/2-inch by 11-inch print on white bond paper.

C. Revise Schedule of Values for items affected by Contract Modifications. After City Engineer has reviewed changes, resubmit at least 10 days prior to the next scheduled Certificate for Payment date.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

Section 01312

COORDINATION AND MEETINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General coordination including pre-construction meeting, site mobilization conference, and progress meetings.

1.02 COORDINATION OF DOCUMENTS

A. Coordination is required throughout documents. Refer to Contract documents and coordinate as necessary.

1.03 CONTRACTOR COORDINATION

A. Coordinate scheduling, submittals, and work of various Specification sections to assure efficient and orderly sequence of Installation of interdependent construction elements.

B. Coordinate completion and clean up of the Work prior to the Date of Substantial Completion and for portions of the Work designated for City's partial occupancy.

C. Coordinate access to the site for correction of nonconforming work to minimize disruption of the City's activities where the City is in partial occupancy.

1.04 PRE-CONSTRUCTION MEETING

A. Project Manager will schedule pre-construction meeting.

B. Attendance Required: City representatives, Design Consultant, special consultants as required by Project Manager, Contractor, and major Subcontractors and Suppliers.

C. Agenda:

1. Distribution of Contract documents.

2. Designation of personnel representing the Parties and Design Consultant.

3. Review of insurance.

4. Discussion of formats for Schedule of Values and Construction Schedule.

5. Procedures and processing of Shop Drawings, substitutions, pay estimates or Applications for Payment, Requests for Information, Requests for Proposal, Modifications, and the Contract closeout, other submittals.

6. Scheduling of the Work and coordination with other contractors.

7. Review of Subcontractors and Suppliers.

8. Appropriate agenda items listed for the site mobilization conference, Paragraph 1.05.C, when pre-construction meeting and site mobilization conference are combined.

9. Procedures for testing.

10. Procedures for maintaining record documents.

1.05 SITE MOBILIZATION CONFERENCE

A. When required by Contract documents, Project Manager will schedule a conference at the Project site prior to Contractor mobilization.

B. Attendance Required: City representatives, Design Consultant, special consultants, Superintendent, and major Subcontractors.

C. Agenda:

1. Use of premises by the City and Contractor.

2. Safety and first aid procedures.

3. Construction controls provided by the City.

4. Temporary utilities.

5. Survey and layout.

6. Security and housekeeping procedures.

7. Field office requirements.

1.06 PROGRESS MEETINGS

A. Hold meetings at Project field office or other location designated by Project Manager. Hold meetings at monthly intervals, or more frequently when directed by Project Manager.

B. Attendance Required: Superintendent, major Subcontractors and Suppliers, City representatives, Design Consultant and its subconsultants as appropriate for agenda topics for each meeting.

C. Project Manager will make arrangements for meetings, and for recording minutes.

D. Project Manager will prepare the agenda and preside at meetings.

E. Provide required information and be prepared to discuss each agenda item.

F. Agenda:

1. Review minutes of previous meetings.

2. Review of construction schedule, pay estimates, cash flow curve, payroll and compliance submittals.

3. Field observations, problems, and necessary decisions.

4. Identification of problems that impede planned progress.

5. Review of submittal schedule and status of submittals.

6. Review of RFI and RFP status.

7. Modification status.

8. Review of off-site fabrication and delivery schedules.

9. Maintenance of Construction Schedule.

10. Corrective measures to regain Construction Schedule.

11. Planned progress during the succeeding work period.

12. Coordination of projected progress.

13. Maintenance of quality and work standards.

14. Effect of proposed Modifications on Construction Schedule and coordination.

15. Review Project Record Contract Drawings.

16. Other item relating to the Work.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01321

CONSTRUCTION PHOTOGRAPHS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Photographic requirements for construction photographs and submittals.

1.02 DEFINITIONS

A. Pre-construction Photographs: Photographs taken, in sufficient numbers and detail, prior to Date of Commencement of the Work, to show original construction site conditions.

B. Progress Photographs: Photographs, taken throughout the duration of construction at regular intervals and from fixed vantage points, pre-approved by the City, that document progress of the Work.

C. Finished Photographs: Photographs, taken by a professional photographer near Date of Substantial Completion and before City Council's acceptance of the Work, that are suitable for framing and for use in brochures or on the Internet

1.03 SUBMITTALS

A. Refer to Section 01330, Submittal Procedures, for submittal requirements.

B. Format and Media. Film or digital photography may be used. Submit color photographs, unless otherwise specified.

1. Prints. Submit each Progress or Pre-construction Photograph print in a three-hole plastic pocket or sleeve, bound in a three-ring notebook. Produce prints on photographic-quality paper approved by Project Manager. Minimum size for Pre-construction Photograph prints shall be 3-inches by 5-inches. Progress Photograph prints shall be 8-inches by 10-inches.

2. Film. Use 35mm or larger color film. Submit negatives used to make submitted photographs, in 3-hole 8-1/2 inch by 11-inch plastic sheets with sleeves for negatives.

3. Digital Photography. Use 2.1 megapixel density or greater for photographs. Scanned photographs must equal or exceed 400 dots

per inch when scanned from 8-inch by 10-inch prints. Submit digital photographic files on computer disks. Format disks for MS-DOS (Microsoft Disk Operating System) filing system and in JPEG (Joint Photographic Experts Group) format.

C. Submittal Quantities and Frequencies.

1. Pre-construction Photographs:
   a. For Stipulated Price Contracts, submit two sets of Pre-construction Photographs, if required, prior to first Application for Payment.
   b. For Unit Price Contracts, submit two sets of Pre-construction Photographs prior to start of construction operations.

2. Progress Photographs:
   a. For Stipulated Price Contracts, submit three sets of Progress Photographs with each Application for Payment at the times established for submittal of Applications for Payment. Monthly Applications for Payment shall be deemed incomplete if not accompanied by the required Progress Photographs. Contractor's failure or election to not submit a monthly Application for Payment shall not affect the requirement for monthly Progress Photographs.
   b. Progress Photographs are not required for Unit Price Contracts unless otherwise specified.

3. Finished Photographs: For Stipulated Price Contracts submit two sets of Finished Photographs, if required, after Date of Substantial Completion and prior to final payment. Each set shall contain one 11-inch by 14-inch matte finish color photographic print from each of the two vantage points pre-approved by the City. Vantage points for Finished Photographs will be approved separately from vantage points approved for Progress Photographs. Finished Photographs are not required for Unit Price Contracts unless otherwise specified.

D. Labeling. Place a label on the back of each photographic print, applied so as to not to show through on the front. Labels shall contain the following information:

1. Name of Project, address of Project and GFS Number.

2. Name and address of Contractor.

3. Date photograph was taken.

4. Location photo was taken from and short description of photo subject.

5. Name and address of professional photographer who took the photograph, if applicable.

E. Hand-deliver or transmit prints in standard photographic mailers marked "Photographs - Do Not Bend".

F. Photographic prints, negatives, photographic files and disks become the property of the City. Do not be publish photographs without written consent by the City.

1.04 QUALITY ASSURANCE

A. Contractor shall be responsible for the quality of and timely execution and submittal of photographs.

B. For Finished Photographs, Contractor shall use a professional photographer, with five years minimum professional experience in the Houston area. Contractor shall submit name, address and credentials of professional photographer for Project Manager's review and approval.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.01 PRE-CONSTRUCTION PHOTOGRAPHS

A. Prior to commencement of construction operations, photograph the site to include initial construction corridor, detour routes, and staging or storage areas.

1. For Stipulated Price Contracts, unless specified as a requirement in other Sections, these photographs are optional for Contractor, but are highly recommended for areas bounded by other property owners.

2. Pre-construction photographs are required for Unit Price Contracts. For line projects with scheduled construction segments, take Pre-construction Photographs prior to commencement of work on each segment.

B. Prepare Pre-construction Photographs as follows:

1. Show the following information on a non-reflective chalkboard placed within the picture frame:
   a. Job number.
   b. Project Number.
   c. Date and time photographs were taken (Automatic date/time in negative is acceptable).
   d. Baseline station, direction of view (i.e. N, S, NW, etc.) and house number or street address and street name.

2. Pre-construction Photographs shall indicate condition of the following:
   a. Esplanades and boulevards.
   b. Yards (near side and far side of street).
   c. House walks and sidewalks.
   d. Curbs.
   e. Areas between walks and curbs.
   f. Particular features (e.g. yard lights, shrubs, fences, trees).

3. Show date photographs were taken on negatives.

C. Show the location of vantage points and direction of shots on a key plan of the site.

3.02 PROGRESS PHOTOGRAPHS

A. Progress Photographs document monthly advancement of the Work. Select vantage points for each shot so as to best show status of construction and progress since last photograph submittal. Select camera stations that will require little or no movement or adjustment over the duration of construction.

B. Take monthly Progress Photographs at regular intervals to coincide with cutoff dates associated with each Application for Payment.

3.03 FINISHED PHOTOGRAPHS

A. Finished Photographs shall be "staged" and taken by a professional photographer to depict the most flattering images of a finished facility. Two vantage points, from which Finished Photographs will be taken, shall be agreed to in advance by the City. Photographer shall consider lighting, time of day, height of eye, landscaping and placement of vehicles, people and other props in each picture. Filters and post-photography processing may be utilized to achieve a finished product acceptable to the City.

3.04 LOCATION

A. Vantage points, times and conditions for camera stations and photography for Progress and Finished Photographs shall be mutually agreed upon by the City, Contractor and Photographer. Progress Photograph vantage points may be changed by mutual agreement as the Work progresses, at no additional cost to the City.

END OF SECTION

Section 01325

CONSTRUCTION SCHEDULE

PART 1 GENERAL

1.01 GENERAL

A. Provide Construction Schedules for the Work included in this Contract in accordance with requirements in this Section. Create Construction Schedule using Critical Path Method (CPM) computer software capable of mathematical analysis of Precedence Diagramming Method (PDM) plan. Provide printed activity listings and bar charts in formats described in this Section.

B. Combine activity listings and bar charts with narrative report to form Construction Schedule submittal for Project Manager.

1.02 SCHEDULING STAFF

A. Employ or retain services of individual experienced in CPM scheduling for duration of the Contract. Individual shall cooperate with Project Manager and update schedule monthly as required to indicate current status of the Work.

1.03 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. During preconstruction meeting, as described in Section 01312 - Coordination and Meetings, provide sample bar charts and activity listings produced from scheduling software proposed. Scheduling software is subject to review by Project Manager and must meet requirements provided in this Section. Project Manager will provide review of samples within seven days of submittal.

C. Within 21 days of receipt of approval of Contractor's format, or 30 days of Notice to Proceed, whichever is later, submit proposed Construction Schedule for review. Base Construction Schedule submittal on the following:

1. Level of detail and number of activities required in schedule are dependent on project type.
   a. For wastewater projects, categorize work type and area code in schedule.
      1) For wastewater rehabilitation projects, there are six work-type categories. An area code will be assigned for each

Meter Service Area or Basin. Include at least one activity for each unique combination of work type and area code. Normal schedules of wastewater rehabilitation projects contain between 35 and 100 activities, depending on number of basins and work types involved in each basin.

2) For wastewater relief projects (line work), area codes will be assigned geographically.

3) For wastewater plant or facility work, other criteria may apply to assignment of area codes, such as a combination of geographical and craft categories.

b. For projects with multiple types of tasks within scope, indicate types of work separately within schedule.

c. For projects with work at different physical locations or service areas, or different facilities within a site, indicate each location or facility separately within schedule. Show work on each floor of multi-story building as separate tasks.

d. For projects with multiple crafts or significant Subcontractor components, indicate elements separately within schedule. Unless permitted by Project Manager, tasks shall consist of work covered by only one division of Project Manual.

2. Unless permitted by Project Manager, each scheduled task shall be same as Schedule of Values line item, and vice versa.

3. For projects with Major Unit Price Work, indicate Shop Drawing submittal and review, purchase, delivery, and Installation dates on Project schedule. Include activities for testing, adjustment, and delivering O&M manuals.

4. No task except the acquisition of Major Unit Price Work shall represent more than one percent of Original Contract Price for facility projects and three percent of Original Contract Price for other projects. Duration of tasks may not exceed 40 calendar days.

5. For projects where operating facilities are involved, identify each period of work that will impact any process or operation in the schedule and that must be agreed to by Project Manager and facility operator prior to starting work in the area.

D. Construction Schedule submittals shall include:

1. printed bar charts that meet criteria outlined in this Section and are produced by Contractor's approved scheduling software;

2. activity listings that meet criteria outlined in this Section and are produced by Contractor's approved scheduling software; and

3. a predecessor/successor listing sorted by Activity ID that meets criteria outlined in this Section and is produced by Contractor's scheduling software.

4. A logic network diagram is required with the first Construction Schedule submittal for facilities projects.

5. Prepare and submit graphic or tabular display of estimated monthly billings (i.e. a cash flow curve for the Work) with the first schedule submittal. This information is not required in monthly updates, unless significant changes in work require re-submittal of schedule for review. Display shall allocate units indicated in bid schedule or Schedule of Values to Construction Schedule activities. Weighted allocations are acceptable, where appropriate. Dollar value associated with each allocated unit will be spread across the duration of that activity on a monthly basis. Total for each month and cumulative total will be indicated. These monthly forecasts are only for Project Manager's planning purposes. Monthly payments for actual work completed will be made in accordance with Document 00700 - General Conditions.

6. Narrative Report that provides the information outlined in this Section.

E. No payment will be made until Project Manager approves Construction Schedule and billing forecast.

F. If Contractor desires to make changes in its method of operating and scheduling, after Project Manager has reviewed original schedule, notify Project Manager in writing, stating reasons for changes. When Project Manager considers these changes to be significant, Contractor may be required to revise and resubmit for review all or affected portion of Contractor's Construction Schedule to show effect on the Work.

G. Upon written request from Project Manager, revise and submit for review all or any part of Construction Schedule submittal to reflect changed conditions in the Work or deviations made from original schedule.

H. Updated Construction Schedule with actual start and actual finish dates, percent complete, and remaining duration of each activity shall be submitted monthly. Data date used in updating monthly Construction Schedule shall be the same date as used in monthly Payment Application. Monthly update of Construction Schedule is required for monthly Payment Application to be processed for payment.

1.04 SCHEDULING COMPUTER SOFTWARE REQUIREMENTS

A. Contractor's scheduling software shall be capable of creating bar charts and activity listings, which can be sorted by various fields (i.e. Activity ID, Early Start, Total Float, Area Code, Specification Section number, and Subcontractor). Use software capable of producing logic network diagram.

B. Use scheduling software capable of producing activity listings and bar charts with the following information for each activity in the schedule:

1. Activity ID
2. Activity Description
3. Estimated (Original) Duration
4. Remaining Duration
5. Actual Duration
6. Early Start Date
7. Late Start Date
8. Early Finish Date
9. Late Finish Date
10. Free Float
11. Total Float
12. Activity Codes (such as Area Code, Work Type, Specification Section, Subcontractor)

C. Use scheduling software capable of printing calendars using mathematical analysis of schedule, indicating standard workdays of week and scheduled holidays.

D. Use scheduling software capable of printing activity listing that indicates predecessors and successors, lag factors and lag relationships used in creating logic of the schedule.

E. Use scheduling software to provide monthly time in Bar Chart format and scale with 12-month scale not to exceed one page width. Bar charts may be

printed or plotted on 8-1/2 by 11-inch, 8-1/2 by 14-inch or 11 by 17-inch sheet sizes. Over-size plots are not acceptable.

1.05 NARRATIVE SCHEDULE REPORT

A. Narrative schedule report shall list activities started this month, activities completed this month, activities continued this month, activities scheduled to start or complete next month, problems encountered this month, and actions taken to solve these problems.

B. Narrative schedule report shall describe changes made to Construction Schedule logic (i.e. changes in predecessors and lags), activities added to schedule, activities deleted from schedule, any other changes made to the schedule other than addition of actual start dates and actual finish dates and changes of data date and remaining durations for re-calculation of mathematical analysis.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01330

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Submittal procedures for:

1. Schedule of Values
2. Construction Schedules and Cash Flow Curve (billing forecast).
3. Shop Drawings, Product Data and Samples
4. Operations and Maintenance (O&M) Data
5. Manufacturer's Certificates
6. Construction Photographs
7. Project Record Documents and monthly certification.
8. Video Tapes
9. Design Mixes

1.02 SUBMITTAL PROCEDURES

A. Scheduling and Handling:

1. Submit Shop Drawings, data and Samples for related components as required by Specifications and Project Manager.
2. Schedule submittals well in advance of need for construction Products. Allow time for delivery of Products after submittal approval.
3. Develop submittal schedule that allows sufficient time for initial review, correction, resubmission and final review of all submittals. Allow a minimum of 30 days for initial review. Project Manager will review and return submittals to Contractor as expeditiously as possible but time required for review will vary depending on complexity and quantity of data submitted.

4. Project Manager's review of submittals covers only general conformity to Drawings, Specifications and dimensions that affect layout. Contractor is responsible for quantity determination. No quantities will be verified by Project Manager. Contractor is responsible for errors, omissions or deviations from Contract requirements; review of submittals does not relieve Contractor from the obligation to furnish required items in accordance with Drawings and Specifications.

5. Submit five copies of documents unless otherwise specified.

6. Revise and resubmit submittals as required. Identify all changes made since previous submittal.

7. Assume risk for fabricated Products delivered prior to approval. Do not incorporate Products into the Work, or include payment for Products in periodic progress payments, until approved by Project Manager.

B. Transmittal Form and Numbering:

1. Transmit each submittal to Project Manager with Transmittal letter which includes:
   a. Date and submittal number
   b. Project title and number
   c. Names of Contractor, Subcontractor, Supplier and manufacturer
   d. Identification of Product being supplied
   e. Location of where Product is to be Installed
   f. Applicable Specification section number

2. Identify deviations from Contract documents clouding submittal drawings. Itemize and detail on separate 8-1/2 by 11-inch sheets entitled "DEVIATIONS FOR _____." When no deviations exist, submit a sheet stating no deviations exist.

3. Have design deviations signed and sealed by an appropriate design professional, registered in the State of Texas.

4. Sequentially number transmittal letters beginning with number one. Use original number for resubmittals with an alphabetic suffix (i.e., 2A for the first resubmittal of submittal 2, or 15C for third resubmittal of submittal 15, etc.). Show only one type of work or Product on each submittal. Mixed submittals will not be accepted.

C. Contractor's Stamp:

1. Apply Contractor's Stamp certifying that the items have been reviewed in detail by Contractor and that they comply with Contract requirements, except as noted by requested variances.

2. As a minimum, Contractor's Stamp shall include:
   a. Contractor's name
   b. Job number
   c. Submittal number
   d. Certification statement Contractor has reviewed submittal and it is in compliance with the Contract
   e. Signature line for Contractor

D. Submittals will be returned with one of the following Responses:

1. "ACKNOWLEDGE RECEIPT" when no response and resubmittal is required.

2. "NO EXCEPTION" when sufficient information has supplied to determine that item described is accepted and that no resubmittal is required.

3. "EXCEPTIONS AS NOTED" when sufficient information has been supplied to determine that item will be acceptable subject to changes, or exceptions, which will be clearly stated. When exceptions require additional changes, the changes must be submitted for approval. Resubmittal is not required when exceptions require no further changes.

4. "REJECTED-RESUBMIT" when submittal does not contain sufficient information, or when information provided does not meet Contract requirements. Additional data or details requested by Project Manager must be submitted to obtain approval.

1.03 MANUFACTURER'S CERTIFICATES

A. When required by Specification sections, submit manufacturers' certificate of compliance for review by Project Manager.

B. Place Contractor's Stamp on front of certification.

C. Submit supporting reference data, affidavits, and certifications as appropriate.

D. Product certificates may be recent or from previous test results, but must be acceptable to Project Manager.

1.04 DESIGN MIXES

A. When required by Specification sections, submit design mixes for review.

B. Place Contractor's Stamp, as specified in this section, on the front of each design mix.

C. Mark each mix to identify proportions, gradations, and additives for each class and type of mix submitted. Include applicable test results from samples for each mix. Perform tests and certifications within 12 months of the date of the submittal.

D. Maintain copies of approved mixes at mixing plant.

1.05 CHANGES TO CONTRACT

A. Changes to Contract may be initiated by completing a Request for Information form. Project Manager will provide a response to Contractor by completing the form and returning it to Contractor.

1. If Contractor agrees that the response will result in no increase in cost or time, a Minor Change in the Work will be issued by City Engineer.

2. If Contractor and Project Manager agree that an increase in time or cost is warranted, Project Manager will forward the Request for Proposal for negotiation of a Change Order.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01340

SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Methods, schedules, and processes to be followed for Shop Drawings, Product Data and Sample submittals.

1.02 REQUIREMENT

A. Submit Shop Drawings, Product Data and Samples as required by Document 00700 - General Conditions and Specification sections, using procedures specified in Section 01330 - Submittal Procedures and the requirements of this Section.

B. Shop Drawings, Product Data and Samples are not considered Contract documents.

1.03 SHOP DRAWING/SUBMITTAL SCHEDULE

A. Submit a separate Shop Drawing submittal schedule at same time the Construction Schedule is submitted. List Products for which Shop Drawings and other submittals are required in the order that they appear in Specifications. Include Product Data and Sample submittals in the schedule. Payment Applications or Certificates for Payment will not be processed until Project Manager has approved the Shop Drawing submittal schedule.

1.04 SHOP DRAWINGS

A. Submit a minimum of seven sets of Shop Drawings and Product Data in a form and quality suitable for microfilming. Review and sign Shop Drawings indicating compliance with the Contract.

B. Place Contractor's Stamp on each drawing as described in Section 01330 - Submittal Procedures.

C. Show the following accurately and distinctly:

1. Field and erection dimensions;

2. Arrangement and section views;

3. Relation to adjacent materials or structure, including complete information for making connections between the Work and work under other contracts;

4. Types of Products and finishes;

5. Parts list and descriptions;

6. Assembly drawings of equipment components and accessories showing respective positions and relationships to the complete equipment package;

7. Identify details by referencing drawing sheet and detail numbers, schedule or room numbers as shown on the Contract drawings, where necessary for clarity.

D. Scale drawings to provide a true representation of the specific equipment or item Furnished.

E. Coordinate and submit components, necessary for Project Manager to adequately review submittal, as a complete package. Reproduction of the Drawings for use in Shop Drawings is not allowed.

F. For major changes to original documents, submit Computer-Aided Design (CAD) drawings on a media acceptable to Project Manager.

1.05 PRODUCT DATA

A. Submit Product Data for review as required in Specifications.

B. Place Contractor's stamp, on each data item submitted, as described in Section 01330 - Submittal Procedures.

C. Mark each copy to identify applicable Products, models, and options to be used in the Work. Where required by Specifications, supplement manufacturers' standard data to provide information unique to the Work.

D. Give manufacturers, trade name, model or catalog designation and applicable reference standard for Products specified only by reference standards.

E. Pre-approved and Pre-qualified Products.

1. For "pre-approved", "pre-qualified" and "approved" Products named in the City standard products list, provide an appropriate list designation,

as described in Section 01630 - Product Substitution Procedures, within 30 days after Notice to Proceed.

2. For Products proposed as alternates to "approved" products, provide information required to demonstrate that the proposed Products meet the level of quality and performance criteria of the "approved" product.

1.06 SAMPLES

A. Submit Samples for review as required by Specifications. Have Samples reviewed and signed by a Registered Professional.

B. Place Contractor's stamp on each Sample or firmly attach a sheet of paper with Contractor's stamp, as described in Section 01330 - Submittal Procedures.

C. Submit the number of Samples specified in Specifications; Project Manager will retain one.

D. Reviewed Samples that may be used in the Work are identified in Specifications.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01410

TPDES REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Documentation to be prepared and signed by Contractor before conducting construction operations, in accordance with the Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit Number TXR 150000 issued March 5, 2003 (the Construction General Permit).

B. Implementation, maintenance inspection, and termination of storm water pollution prevention control measures including, but not limited to, erosion and sediment controls, storm water management plans, waste collection and disposal, off-site vehicle tracking, and other appropriate practices shown on the Drawings or specified elsewhere in the Contract.

C. Review of the Storm Water Pollution Prevention Plan (SWP3) implementation in a meeting with Project Manager prior to start of construction.

1.02 DEFINITIONS

A. Commencement of Construction Activities: The exposure of soil resulting from activities such as clearing, grading, and excavating.

B. Large Construction Activity: Project that:

1. disturbs five acres or more, or

2. disturbs less than five acres but is part of a larger common plan of development that will disturb five acres or more of land.

C. Small Construction Activity: Project that:

1. disturbs one or more acres but less than five acres, or

2. disturbs less than one acre but is part of a larger common plan of development that will ultimately disturb one or more acres but less than five acres.

D. TPDES Operator:

1. The person or persons who have day-to-day operational control of the construction activities which are necessary to ensure compliance with the SWP3 for the site or other Construction General Permit conditions.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N

3.01 SITE SPECIFIC STORM WATER POLLUTION PREVENTION PLAN (SWP3)

A. Prepare a SWP3 following Part III of the Construction General Permit and the Storm Water Management Handbook for Construction Activities issued under City Ordinance Section 47-695(b). If conflicts exist between the Construction General Permit and the handbook, the more stringent requirements will apply.

B. Update or revise the SWP3 as needed during the construction following Part III, Section E of the Construction General Permit.

C. Submit the SWP3 and any updates or revisions to Project Manager for review and address comments prior to commencing, or continuing, construction activities.

3.02 NOTICE OF INTENT For Large Construction Activity

A. Fill out, sign, and date TCEQ Form 20022 (02/03) Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity under the TPDES Construction General Permit (TXR 150000), **ATTACHMENT 1** of this Section 01410.

B. Transmit the signed Contractor's copy of TCEQ Form 20022 (02/03), along with a $100.00 check, made out to Texas Commission on Environmental Quality, and the completed Payment Submittal Form to Project Manager.

C. Project Manager will complete a separate TCEQ Form 20022 (02/03) for City's Notice of Intent, and will submit both Notices, along with checks for application fees, to the TCEQ.

D. Submission of the Notice of Intent form by both the City and Contractor to TCEQ is required a minimum of two days before Commencement of Construction Activities.

3.03 CONSTRUCTION SITE NOTICE FOR SMALL CONSTRUCTION ACTIVITY

A. Fill out, sign, and date the Construction Site Notice, Attachment 2 to TPDES General Permit TXR 150000, "Construction Site Notice", **ATTACHMENT 2** of this Section 01410.

B. Transmit the signed Construction Site Notice to Project Manager at least seven days prior to Commencement of Construction Activity.

3.04 CERTIFICATION REQUIREMENTS

A. Fill out TPDES Operator's Information form, **ATTACHMENT 3** of this Section 01410, including Contractor's name, address, and telephone number, and the names of persons or firms responsible for maintenance and inspection of erosion and sediment control measures. Use multiple copies as required to document full information.

B. Contractor and Subcontractors shall sign and date the Contractor's / Subcontractor's Certification for TPDES Permitting, **ATTACHMENT 4** of this Section 01410. Include this certification with other Project certification forms.

C. Submit properly completed certification forms to Project Manager for review before beginning construction operations.

D. Conduct inspections in accordance with TCEQ requirements. Ensure persons or firms responsible for maintenance and inspection of erosion and sediment control measures read, fill out, sign, and date the Erosion Control Contractor's Certification for Inspection and Maintenance. Use the EPA NPDES Construction Inspection Form, **ATTACHMENT 5** of this Section 01410; and the City of Houston Storm Water Pollution Prevention Plan Construction Site Inspection Report, **ATTACHMENT 6** of this Section 01410 to record maintenance inspections and repairs.

3.05 RETENTION OF RECORDS

A. Keep a copy of this document and the SWP3 in a readily accessible location at the construction site from Commencement of Construction Activity until submission of the Notice of Termination (NOT) for Storm Water Discharges Associated with Construction Activity under TPDES Construction General Permit (TXR 150000). Contractors with day-to-day operational control over SWP3 implementation shall have a copy of the SWP3 available at a central location, on-site, for the use of all operators and those identified as having responsibilities under the SWP3. Upon submission of the NOT, submit all required forms and a copy of the SWP3 with all revisions to Project Manager.

3.06 REQUIRED NOTICES

A. Post the following notices from effective date of the SWP3 until date of final site stabilization as defined in the Construction General Permit:

1. Post the TPDES permit number for Large Construction Activity, or a signed TCEQ Construction Site Notice for Small Construction Activity. Signed copies of the City's and Contractor's NOI must also be posted.

2. Post notices near the main entrance of the construction site in a prominent place for public viewing. Post name and telephone number of Contractor's local contact person, brief project description and location of the SWP3.
   a. If posting near a main entrance is not feasible due to safety concerns, coordinate posting of notice with Project Manager to conform to requirements of the Construction General Permit.
   b. If Project is a linear construction project (e.g.: road, utilities, etc.), post notice in a publicly accessible location near active construction. Move notice as necessary.

3. Post a notice to equipment and vehicles operators, instructing them to stop, check, and clean tires of debris and mud before driving onto traffic lanes. Post at each stabilized construction exit area.

4. Post a notice of waste disposal procedures in a readily visible location on site.

3.07 ON-SITE WASTE MATERIAL STORAGE

A. On-site waste material storage shall be self-contained and shall satisfy appropriate local, state, and federal rules and regulations.

B. Prepare list of waste material to be stored on-site. Update list as necessary to include up-to-date information. Keep a copy of updated list with the SWP3.

C. Prepare description of controls to reduce pollutants generated from on-site storage. Include storage practices necessary to minimize exposure of materials to storm water, and spill prevention and response measures consistent with best management practices. Keep a copy of the description with the SWP3.

3.08 NOTICE OF TERMINATION

A. Submit a NOT, **ATTACHMENT 7** of this Section 01410, to Project Manager within 30 days after:

1. Final stabilization has been achieved on all portions of the site that are the responsibility of the Contractor; or

2. Another operator has assumed control over all areas of the site that have not been stabilized; and

3. All silt fences and other temporary erosion controls have either been removed, scheduled to be removed as defined in the SWP3, or transferred to a new operator if the new operator has sought permit coverage.

B. Project Manager will complete City's NOT and submit Contractor and City's notices to the TCEQ and MS4 entities.

END OF SECTION

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ATTACHMENT 1

TCEQ

Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity under the TPDES Construction General Permit (TXR150000)

For help completing this application, read the TXR150000 NOI Instructions (TCEQ-20022-Instructions).

TCEQ Office Use Only
TPDES Permit Number: TXR15 __|__|__|__| - NO
GIN Number: |__|__|__|__|__|__|__|__|

A. Construction Site Operator ☐New ☐No Change Customer Reference Number: CN_____
Name:_____
Mailing Address:_____ City:_____ State:____ Zip Code:_____
Country Mailing Information (*if outside USA*) Territory:_____ Country Code:_____ Postal Code:_____
Phone Number:_____ Extension:_____ Fax Number:_____
E-mail Address:_____
Type of Operator: ☐ Individual ☐ Sole Proprietorship - D.B.A. ☐ Partnership ☐ Corporation ☐ Federal Government
☐ State Government ☐ County Government ☐ City Government ☐ Other:_____
Independent Operator? ☐ Yes ☐ No Number of Employees: ☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 or higher
Federal Tax ID:_____ State Franchise Tax ID Number:_____ DUNS Number:_____

B. Billing Address
Name:_____
Mailing Address:_____ City:_____ State:____ Zip Code:_____
Country Mailing Information (*if outside USA*) Territory:_____ Country Code:_____ Postal Code:_____

C. Project / Site Information ☐New ☐No Change Regulated Entity Reference Number: RN_____
Name:_____
Mailing Address:_____ City:_____ State:____ Zip Code:_____
Physical Address:_____ City:_____ County:_____ Zip Code:_____
Location Access Description:_____
Latitude:___°___'___" N Longitude:___°___'___" W Degrees (°), Minutes ('), and Seconds (")
Latitude:_____ Longitude: -_____ Decimal Form
Standard Industrial Classification (SIC) code:_____ Also, describe the construction activity at this site (*do not repeat the SIC code*):
_____
Has a storm water pollution prevention plan been prepared as specified in the general permit (TXR150000)? ☐ Yes ☐ No
Estimated area of land disturbed (to the nearest acre):_____ Is the project / site located on Indian Country Lands? ☐ Yes ☐ No
Does this project / site discharge storm water into a municipal separate storm sewer system (MS4)? ☐ Yes ☐ No
If yes, provide the name of the MS4 operator:_____
Provide the name or segment number of the water body that receives storm water from this project / site:_____

D. Contact - If the TCEQ needs additional information regarding this application, who should be contacted?
Name:_____ Title:_____
Phone Number:_____ Extension:_____ Fax Number:_____
E-mail Address:_____

E. Payment Information - Check / Money Order Number:_____ Name on Check / Money Order:_____

F. Certification
I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
Construction Site Operator:
Prefix:_____ First:_____ Middle:_____
Last:_____ Suffix:_____ Title:_____
Signature:_____ Date:_____

If you have questions on how to fill out this form or about the storm water program, please contact us at (512) 239-4671.
Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at (512) 239-3282.

The completed NOI must be mailed to the following address. Use the attached document to submit the $100 application fee. Please note that the NOI and application fee are submitted separately to different addresses.

Texas Commission on Environmental Quality
Storm Water & General Permits Team; MC - 228
P.O. Box 13087
Austin, Texas 78711-3087

TCEQ-20022 (05/03) **Page 1 of 2**

ATTACHMENT 1

Texas Commission on Environmental Quality
Payment Submittal Form

The storm water application fee shall be sent under separate cover to the Texas Commission on Environmental Quality.

This form must be used to submit your Storm Water Application Fee. Please complete the following information, staple your check in the space provided at the bottom of this document, and mail it to:

BY REGULAR U.S. MAIL

Texas Commission on Environmental Quality
Financial Administration Division
Cashier's Office, MC-214
P.O. Box 13088
Austin, TX 78711-3088

BY OVERNIGHT/EXPRESS MAIL

Texas Commission on Environmental Quality
Financial Administration Division
Cashier's Office, MC-214
12100 Park 35 Circle
Austin, TX 78753

Fee Code: GPA

Storm Water General Permit: TXR150000

Check / Money Order No: _____

Amount of Check/Money Order: _____

Date of Check or Money Order: _____

Name on Check or Money Order: _____

Facility / Site Name: _____

Facility / Site Physical Address: _____

City: _____

Zip Code: _____

Staple Check In This Space

ATTACHMENT 1

Completing the Notice of Intent for Storm Water Discharges Associated with Construction Activity under the TPDES Construction General Permit (TXR150000)

A. Construction Site Operator Information

Check boxes and Customer Reference Number

These boxes designate the operator's status as a TCEQ "customer"—in other words, an individual or business that is involved in an activity that we regulate. We assign each customer a number that begins with "CN," followed by nine digits. ***This is not a permit number, registration number, or license number.*** In the remainder of this section, we will use "this customer" to mean the operator for Part A of the form.

- If this customer has not been assigned a Customer Reference Number or if this number is unknown, check "New" and leave the space for the Customer Reference Number blank.
- If this customer has already been assigned this number, enter the operator's Customer Reference Number and:
  - Check "No Change" if all the remaining customer information is the same as previously reported. However, you must still complete most blanks in this form for this notice of intent to be valid.
  - If this customer's information has changed since the last time it was reported to the TCEQ, check neither box and complete the remainder of this notice of intent.
- ***Do not enter a permit number, registration number, or license number in place of the Customer Reference Number.***

Name

Enter the legal name of this customer as authorized to do business in Texas. Include any abbreviations (LLC, Inc., etc.).

Mailing Address

Enter a central and general mailing address for this customer to receive mail from the TCEQ. For example, if this customer is a large company, this address might be the corporate or regional headquarters. On the other hand, for a smaller business, this address could be the same as the site address.

If this is a street address, please follow US Postal Service standards. In brief, these standards require this information in this order:

- the "house" number—for example, the 1401 in 1401 Main St
- if there is a direction before the street name, the one- or two-letter abbreviation of that direction (N, S, E, W, NE, SE, SW, or NW)
- the street name (if a numbered street, do not spell out the number—for example, 6th St, not Sixth St)
- an appropriate abbreviation of the type of street—for example, St, Ave, Blvd, Fwy, Exwy, Hwy, Cr, Ct, Ln
- if there is a direction after the street name, the one- or two-letter abbreviation of that direction (N, S, E, W, NE, SE, SW, or NW)
- if there is a room number, suite number, or company mail code

City, State, *and* ZIP Code

Enter the name of the city, the two-letter USPS abbreviation for the state (for example, TX), and the ZIP Code. (Enter the full ZIP+4 if you know it.)

Country Mailing Information

If this address is ***outside*** the United States, enter the territory name, country code, and any non-ZIP mailing codes or other non–U.S. Postal Service features here. If this address is ***inside*** the United States, leave these spaces blank.

Phone Number *and* Extension

This number should correspond to this customer's mailing address given earlier. Enter the area code and phone number here. Leave "Extension" blank if this customer's phone system lacks this feature.

Fax Number

This number should correspond to this customer's mailing address given earlier. Enter the area code and fax number here.

E-mail Address

As with the mailing address, this should be a general address that is appropriate for e-mail to this customer's central or regional headquarters, if applicable.

If "No Change" was checked for this customer, you may skip the rest of the fields in this part of the form and continue to the next part of the NOI.

Type of Operator

Check *only one* box.

Check . . .	*if this customer . . .*
Individual	is a person and has not established a business to do whatever causes them to be regulated by us.
Sole Proprietorship—D.B.A.	is a business that is owned by only one person and has not been incorporated. This business may: • be under the person's name • have its own name ("doing business as" or d.b.a.) • have any number of employees
Partnership	is a business that is established as a partnership as defined by the Texas Secretary of State's Office.
Corporation	meets all of these conditions • is a legally incorporated entity under the laws of any state or country • is recognized as a corporation by the Texas Secretary of State • has proper operating authority to operate in Texas
Federal, state, county, or city government (as appropriate)	is either an agency of one of these levels of government or the governmental body itself (If a utility district, water district, tribal government, college district, council of governments, or river authority, check "Other" and write in the specific type of government.)
Other	fits none of the above descriptions. Enter a short description of the type of customer in the blank provided.

Independent Operator?

Check "No" if this customer is a subsidiary or part of a larger company. Otherwise, check "Yes."

Number of Employees

Check one box to show the number of employees for this customer's entire company, at all locations. ***This is not necessarily the number of employees at the site named in this NOI.***

Federal Tax ID

All businesses, except for some small sole proprietors, should have a federal taxpayer identification number (TIN). Enter this number here. Use no prefixes, dashes, or hyphens. Individuals and sole proprietors do not need to provide a federal tax ID.

State Franchise Tax ID

Corporations and limited liability companies that operate in Texas are issued a franchise tax identification number. If this customer is a corporation or limited liability company, enter this number here.

DUNS Number

Most businesses have a DUNS (Data Universal Numbering System) number issued by Dun and Bradstreet Corp. If this customer has one, enter it here.

B. Billing Address

We will mail the annual fee invoice for this site to the address entered in this section.

Name

Enter the legal name of the person or business to which we should mail this site's fee invoice each year.

Mailing Address

Enter the specific mailing address to which we should mail this site's fee invoice each year. If this is a street address, please follow the US Postal Service standards as described under "A. Construction Site Operator Information" on page 1 of these instructions.

City, State, *and* ZIP Code

Enter the name of the city, the two-letter USPS abbreviation for the state (for example, TX), and the ZIP Code. (Enter the full ZIP+4 if you know it.)

Country Mailing Information

If this address is ***outside*** the United States, enter the territory name, country code, and any non-ZIP mailing codes or other non–U.S. Postal

ATTACHMENT 1

Service features here. If this address is ***inside*** the United States, leave these spaces blank.

C. Project / Site Information

Check boxes *and* Regulated Entity Reference Number
These boxes designate this site's status as a TCEQ "regulated entity"—in other words, a location where an activity that we regulate occurs. We assign each regulated entity a number that begins with "RN," followed by nine digits. ***This is not a permit number, registration number, or license number.***

- If this site has not been assigned a Regulated Entity Reference Number or if this number is unknown, check "New" and leave the space for the Regulated Entity Reference Number blank.
- If this site has already been assigned this number, enter the Regulated Entity Reference Number and:
  - Check "No Change" if all the remaining information is the same as previously reported. However, even if there has been no change, you must complete this section at least through "E-mail Address" for this NOI to be valid.
  - If this site's information has changed since the last time it was reported to the TCEQ, check neither box and complete the remainder of this notice of intent.
- ***Do not enter a permit number, registration number, or license number in place of the Regulated Entity Reference Number.***

Name
Enter the name by which you want this site to be known to the TCEQ.

Mailing Address
Enter the specific mailing address for this site. If this is a street address, please follow the US Postal Service standards as described under "A. Construction Site Operator Information" on page 1 of these instructions. If the project / site's mailing address is the same as what is provided in Section A, you may enter "Same as Section A".

City, State, *and* ZIP Code
Enter the name of the city, the two-letter USPS abbreviation for the state (for example, TX), and the ZIP Code. (Enter the full ZIP+4 if you know it.)

Physical Address
Enter the physical address of the site itself. TCEQ staff should be able to use this address to find the site. Please follow the US Postal Service standards as described under "A. Construction Site Operator Information" on page 1 of these instructions. If the project / site does not have a physical address, enter "No Address".

City, County, *and* ZIP Code
Enter the name of the city, the county, and the ZIP Code. (Enter the full ZIP+4 if you know it.) This information must be provided even if you have entered "No Address" in the previous field.

Location Access Description
Enter a physical description of the location of the site based on highway intersections and/or permanent landmarks.

Latitude *and* Longitude
Enter the latitude and longitude of the site in ***either*** degrees, minutes, and seconds ***or*** decimal form.

For help obtaining the latitude and longitude, go to:
http://www.tnrcc.state.tx.us/gis/drgview.html

Standard Industrial Classification (SIC) Code and Activity Description

Provide the SIC code that best describes the construction activity being conducted at the site.

For help with SIC codes, go to:
http://www.osha.gov/oshstats/sicser.html

In addition to the SIC code, you must also provide a description of the construction activity being conducted at the site. This may include such descriptions as: "Apartment Building Construction" or "Shopping Center Construction."

Storm Water Pollution Prevention Plan
This plan identifies the areas and activities that could produce contaminated runoff at your site and then tells how you will ensure that this contamination is mitigated. For example, in describing your mitigation measures, your site's plan might identify the devices that collect and filter storm water, tell how those devices are to be maintained, and tell how frequently that maintenance is to be carried out. ***You must develop this plan before you complete this NOI.*** This plan must be available for a TCEQ investigator to review on request. Specific requirements for the development of the plan can be found in the *Texas Pollutant Discharge Elimination System Construction General Permit (TXR150000).*

Estimated Area of Land Disturbed
Provide the approximate number of acres that the construction site will disturb. It is appropriate to enter a value less than 5, only if the project is part of a larger common plan that disturbs five or more acres. If the acreage is less than 1, enter 1. "Disturb" means any clearing, grading, excavating, or other similar activities.

Is the site located on Indian Country Lands?
Check "Yes" only if the site is on a reservation or other areas designated by the federal government as Indian Country Lands. If not, check "No."

Destination of Storm Water Discharge
The storm water from your site eventually reaches a receiving water body such as a local stream or lake, possibly via a drainage ditch. The discharge may initially be into a municipal separate storm sewer system (MS4). Check the appropriate boxes for whether storm water is discharged into an MS4. If you checked "Yes" to "An MS4?", then enter the name of the entity that operates the storm sewer—often a city, town, or utility district, but possibly another form of government.

You must also provide the name of the water body that receives the discharge from the construction site (a local stream or lake). Storm water may be discharged directly to a receiving stream or via a storm sewer system. If known, please include the segment number if the discharge is to a classified water body.

For a map that includes segment numbers, go to:
http://www.tnrcc.state.tx.us/water/quality/data/index.html

D. Contact

Give all the relevant information for the person whom TCEQ can contact if there are questions about any of the information on this form—perhaps the same person who completed the form.

E. Payment Information

Provide the number and account holder name from the check or money order used to pay the $100 application fee.

F. Certification

The operator must sign and date this statement to validate this NOI. Be sure to enter the full legal name of the person signing the form and the relevant title—for example, "Operator," "Vice-President," or "Partner." Use the "Prefix" blank for such titles as Dr., Mr., or Ms., as desired. Use the "Suffix" blank for such designations as Ph.D., Jr., Sr., III, or J.D., if applicable.

For a corporation, the application shall be signed by a responsible corporate officer. A responsible corporate officer means a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars). If authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. Corporate procedures governing authority to sign permit applications may provide for assignment or delegation to applicable corporate positions rather than to specific individuals.

For a partnership or sole proprietorship, the application shall be signed by a general partner or the proprietor, respectively.

For a municipality, state, federal, or other public agency, the application shall be signed by either a principal executive officer or a ranking elected official. For purposes of this application, a principal executive officer of a federal agency includes the chief executive officer of the agency, or a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., regional administrator of the United States Environmental Protection Agency).

Questions?

If you have questions about any of the information on this form, contact our Storm Water Program at 512/239-4671 or look for "Storm Water" on our Web site:

www.tceq.state.tx.us

ATTACHMENT 2

CONSTRUCTION SITE NOTICE

FOR THE
Texas Commission on Environmental Quality (TCEQ)
Storm Water Program

TPDES GENERAL PERMIT TXR150000

The following information is posted in compliance with **Part II.D.2.** of the TCEQ General Permit Number TXR150000 for discharges of storm water runoff from construction sites. Additional information regarding the TCEQ storm water permit program may be found on the internet at:
www.tnrcc.state.tx.us/permitting/waterperm/wwperm/tpdestorm

Contact Name and Phone Number:	
Project Description: (Physical address or description of the site's location, estimated start date and projected end date, or date that disturbed soils will be stabilized)	
Location of Storm Water Pollution Prevention Plan :	

For Construction Sites Authorized Under Part II.D.2. (Obtaining Authorization to Discharge) the following certification must be completed:

I _____ (Typed or Printed Name Person Completing This Certification) certify under penalty of law that I have read and understand the eligibility requirements for claiming an authorization under Part II.D.2. of TPDES General Permit TXR150000 and agree to comply with the terms of this permit. A storm water pollution prevention plan has been developed and implemented according to permit requirements. A copy of this signed notice is supplied to the operator of the MS4 if discharges enter an MS4 system. I am aware there are significant penalties for providing false information or for conducting unauthorized discharges, including the possibility of fine and imprisonment for knowing violations.

_____ _____
Signature and Title Date

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ATTACHMENT 3

TPDES OPERATOR'S INFORMATION

Owner's Name and Address: City of Houston

Mr. _____
(City Official)

_____
(Department)
P. O. Box 1562
Houston, Texas 77251-1562
(713) 247-1000

Contractors' Names and Addresses:

General Contractor: _____

Telephone: _____

Site Superintendent: _____

Telephone: _____

Erosion Control and
Maintenance Inspection: _____

Telephone: _____

Subcontractors' Names and Addresses:

_____ _____

Phone: _____ Phone: _____

Note: Insert name, address, and telephone number of person or firms

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ATTACHMENT 4

CONTRACTOR'S / SUBCONTRACTOR'S

CERTIFICATION FOR TPDES PERMITTING

I certify under penalty of law that I understand the terms and conditions of TPDES General Permit No. TXR150000 and the Storm Water Pollution Prevention Plan for the construction site identified as part of this certification.

Signature: _____

Name: (printed or typed) _____

Title: _____

Company: _____

Address: _____

Date: _____

Signature: _____

Name: (printed or typed) _____

Title: _____

Company: _____

Address: _____

Date: _____

Signature: _____

Name: (printed or typed) _____

Title: _____

Company: _____

Address: _____

Date: _____

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ATTACHMENT 5

EPA NPDES Construction Inspection Form

The following inspection is being performed in compliance with Part IV.D.4. of the NPDES Region 6 Storm Water Construction General Permit [63 Fed. Reg. 36502] and being retained in accordance with Part V of the Permit. Qualified personnel (provided by the permittee or cooperatively by multiple permittees) shall inspect disturbed areas of the construction site that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, placement and effectiveness of structural control measures, and locations where vehicles enter or exit the site. Inspections shall be performed at least once every 14 days and within 24 hours of the end of a storm event of 0.5 inches or greater. Where sites have been temporarily stabilized, runoff is unlikely due to winter conditions, or during seasonal arid periods in arid areas (0-10 inches of rainfall annually) and semi-arid areas (10-20 inches annually) such inspections shall be conducted at least once every month. This form is primarily intended for use with construction projects in Texas and New Mexico. Permittees on Indian Country lands in Oklahoma, Louisiana and Arkansas and some oil and gas facilities in Oklahoma may use this form if they are eligible for this permit. Other facilities need to check with their NPDES authority before using this form.

If you do not know your NPDES Permit Number, contact the NOI Processing Center at (301)495-4145. This form was prepared as an example and it is not a required form for use with the permit. Alternative forms may be used if they contain all of the required information as set forth in the permit. This form and additional information regarding the NPDES Region 6 storm water program may be found on the Internet at http://www.epa.gov/region6/sw/. Any person with a complaint about the operation of this facility in regards to this permit should contact EPA Region 6 at (214)665-7112.

Permit Number(s) covered by this inspection (e.g. owners, developers, general contractor, builders)	
Signature and Certification in accordance with Part VI.G of the permit:	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. Signature_____ Date_____
Date of Inspection	
Inspector Name	
Is there a copy of the permit language with the SWPPP?	☐ YES ☐ NO
Is the inspector qualified and are the qualifications documented in the SWPPP?	☐ YES ☐ NO
Is an NPDES storm water construction sign posted at the entrance for all permittees?	☐ YES ☐ NO

You may want to use EPA Region 6 construction checklist to assure components of the SWPPP are complete. This form, the construction sign, and the checklist are available on the Region 6 NPDES Storm Water Forms and Documents web page which may be found on the internet at http://www.epa.gov/earth1r6/6en/w/formsw.htm In addition to the checklist, you should provide a narrative (see next page) on the existing Best Management Practices and Structural Controls found during each inspection. Any problems identified in an inspection should be corrected within 7 days. The inspection should cover all components of the SWPPP and all potential pollutants. While eroded soil is the primary pollutant of concern, do not forget to inspect for other pollutant sources such as fuel tanks, paints, solvents, stabilization materials, concrete hardner, batch plants, and construction debris. The inspector will need to update the SWPPP to reflect findings of the inspection. The site map should be updated after an inspection to show controls that have been added or removed, to ensure the site map is kept current in accordance with Part IV.C. of the permit.

Revision 4, March 1, 2000

ATTACHMENT 5

Narrative Findings of the inspection:

Observations should include any findings of Best Management Practices or controls that are not in accordance with the SWPPP. If a control is not in place or failed, observe the reason why. A control removed temporarily for work is not necessarily a violation if properly recorded in the SWPPP. If it has been removed, record why it was removed and, if applicable, when it will be reinstalled. If the control has failed, observe the conditions so a conclusion may be made as to wether the control failed for improper maintenance or improper design. The qualified inspector will know when a failed control is inadequate and should be replaced by an improved control mechanism. Qualified inspectors are to have authority to make changes to the SWPPP to assure compliance. Controls that have not been installed should be given a reason why they are not installed and/or a scheduled date for installation if they are designed for a later phase of construction. After the inspection, the SWPPP and its site map should be updated to reflect current conditions of controls and Best Management Practices at the time of the inspection. This includes removing uninstalled controls from the site map or otherwise denoting on the site map if they are no longer installed if the controls have been removed because they are no longer necessary (e.g. stabilization has been achieved in that area).

ATTACHMENT 6

City of Houston

Storm Water Pollution Prevention Plan
Construction Site Inspection Report

TPDES/EPA Permit Number _____

COH Storm Water Quality Permit Number _____

DATE _____

☐ No exceptions noted.

The following must be corrected prior to continuing work:

☐ Public Notice improperly posted
☐ Initial Construction Site Inspection Report information requires updating
☐ Copy of NOI not on site
☐ Storm water pollution prevention plan not on site
☐ Erosion and sediment controls improperly installed
☐ Erosion and sediment control devices improperly maintained
☐ Fueling or washout areas not properly protected
☐ Portocan or other sanitary facilities not properly protected
☐ Self-inspection and maintenance records incomplete
☐ Sediment from site outside area of construction
☐ Other (see description below)

_____

_____

Please contact the Storm Water Quality Engineer at
611 Walker, RA-257, Houston TX 77002
713-837-7383 fax 713-837-0570

Once the above items have been corrected, call to arrange for reinspection. No further inspections for any construction related activity shall be made until the above items have been corrected.

Inspector's Signature	Contractor's Signature
Inspector's Name	Contractor's Name

☐ not present

Distribution Stormwater Quality Engineer, Code Enforcement, Inspector, Operator
(Operator is Contractor)

Form _____ (10-01-01)

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ATTACHMENT 7

Notice of Termination (NOT) for Storm Water Discharges Associated with Construction Activity under the TPDES Construction General Permit (TXR150000)

TCEQ Office Use Only
TPDES Permit Number: TXR15 __|__|__|__| - NO
GIN Number: __|__ __|__ __|__|__|

For help completing this application, read the TXR150000 NOI Instructions (TCEQ-20023-Instructions).

A. TPDES Permit Number: TXR15_____

B. Construction Site Operator Customer Reference Number: CN_____
Name:_____
Mailing Address:_____
City:_____ State:_____ Zip Code:_____
Country Mailing Information (*if outside USA*) Territory:_____ Country Code:_____ Postal Code:_____
Phone Number:_____ Extension:_____ Fax Number:_____
E-mail Address:_____

C. Project / Site Information Regulated Entity Reference Number: RN_____
Name:_____
Physical Address:_____
Location Access Description:_____
City:_____ County:_____ Zip Code:_____

D. Contact - If the TCEQ needs additional information regarding this termination, who should be contacted?
Name:_____ Title:_____
Phone Number:_____ Extension:_____ Fax Number:_____
E-mail Address:_____

E. Certification
I certify under penalty of law that authorization under the TPDES Construction General Permit (TXR150000) is no longer necessary based on the provisions of the general permit. I understand that by submitting this Notice of Termination, I am no longer authorized to discharge storm water associated with construction activity under the general permit TXR150000, and that discharging pollutants in storm water associated with construction activity to waters of the U.S. is unlawful under the Clean Water Act where the discharge is not authorized by a TPDES permit. I also understand that the submittal of this Notice of Termination does not release an operator from liability for any violations of this permit or the Clean Water Act.

Construction Site Operator Representative:

Prefix:_____ First:_____ Middle:_____
Last:_____ Suffix:_____
Title:_____

Signature:_____ Date:_____

If you have questions on how to fill out this form or about the storm water program, please contact us at (512) 239-4671. Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at (512) 239-3282.

The completed NOT must be mailed to the following address:

Texas Commission on Environmental Quality
Storm Water & General Permits Team; MC - 228
P.O. Box 13087
Austin, Texas 78711-3087

TCEQ - 20023 (02/03) **Page 1 of 1**

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ATTACHMENT 7

Completing the Notice of Termination for Storm Water Discharges Associated with Construction Activity under the TPDES Construction General Permit (TXR150000)

Who May File a Notice of Termination (NOT) Form
Permittees disturbing 5 acres or more (or part of a larger common plan of development or sale disturbing 5 acres or more) who are presently covered under the Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit must submit a Notice of Termination (NOT) when final stabilization has been achieved on all portions of the site that is the responsibility of the permittee; or another permitted operator has assumed control over all areas of the site that have not been finally stabilized and all silt fences and other temporary erosion controls have either been removed, scheduled for removal as defined in the SWP3, or transferred to a new operator if the new operator has sought permit coverage. Erosion controls that are designed to remain in place for an indefinite period, such as mulches and fiber mats, are not required to be removed or scheduled for removal.

Final Stabilization occurs when either of the following conditions are met:

(a) All soil disturbing activities at the site have been completed and a uniform (e.g, evenly distributed, without large bare areas) perennial vegetative cover with a density of 70% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or goetextiles) have been employed.

(b) For individual lots in a residential construction site by either:

(1) the homebuilder completing final stabilization as specified in condition (a) above; or

(2) the homebuilder establishing temporary stabilization for an individual lot prior to the time of transfer of the ownership of the home to the buyer and after informing the homeowner of the need for, and benefits of, final stabilization.

(c) For construction activities on land used for agricultural purposes (e.g. pipelines across crop or range land), final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to a surface water and areas which are not being returned to their preconstruction agricultural use must meet the final stabilization conditions of condition (a) above.

A. TPDES Permit Number
Provide the TPDES permit number assigned to the operator of the construction site.

B. Construction Site Operator Information
Customer Reference Number
This number designates the operator's status as a TCEQ "customer"—in other words, an individual or business that is involved in an activity that we regulate. We assign each customer a number that begins with "CN," followed by nine digits. ***This is not a permit number, registration number, or license number.*** In the remainder of this section, we will use "this customer" to mean the operator for Part B of the form.

- If this customer has not been assigned a Customer Reference Number, leave the space for the Customer Reference Number blank.
- If this customer has already been assigned this number, enter the operator's Customer Reference Number.
- ***Do not enter a permit number, registration number, or license number in place of the Customer Reference Number.***

Name
Enter the legal name of this customer as authorized to do business in Texas. Include any abbreviations (LLC, Inc., etc.).

Mailing Address
Enter a central and general mailing address for this customer to receive mail from the TCEQ. For example, if this customer is a large company, this address might be the corporate or regional headquarters. On the other hand, for a smaller business, this address could be the same as the site address.

If this is a street address, please follow US Postal Service standards. In brief, these standards require this information in this order:

- the "house" number—for example, the 1401 in 1401 Main St
- if there is a direction before the street name, the one- or two-letter abbreviation of that direction (N, S, E, W, NE, SE, SW, or NW)
- the street name (if a numbered street, do not spell out the number—for example, 6th St, not Sixth St)
- an appropriate abbreviation of the type of street—for example, St, Ave, Blvd, Fwy, Exwy, Hwy, Cr, Ct, Ln
- if there is a direction after the street name, the one- or two-letter abbreviation of that direction (N, S, E, W, NE, SE, SW, or NW)
- if there is a room number, suite number, or company mail code

City, State, *and* ZIP Code
Enter the name of the city, the two-letter USPS abbreviation for the state (for example, TX), and the ZIP Code. (Enter the full ZIP+4 if you know it.)

ATTACHMENT 7

Country Mailing Information
If this address is ***outside*** the United States, enter the territory name, country code, and any non-ZIP mailing codes or other non–U.S. Postal Service features here. If this address is ***inside*** the United States, leave these spaces blank.

Phone Number *and* Extension
This number should correspond to this customer's mailing address given earlier. Enter the area code and phone number here. Leave "Extension" blank if this customer's phone system lacks this feature.

Fax Number
This number should correspond to this customer's mailing address given earlier. Enter the area code and fax number here.

E-mail Address
As with the mailing address, this should be a general address that is appropriate for e-mail to this customer's central or regional headquarters, if applicable.

C. Project / Site Information

Regulated Entity Reference Number
This number designates this site's status as a TCEQ "regulated entity"—in other words, a location where an activity that we regulate occurs. We assign each regulated entity a number that begins with "RN," followed by nine digits. ***This is not a permit number, registration number, or license number.***

- If this site has not been assigned a Regulated Entity Reference Number, leave the space for the Regulated Entity Reference Number blank.
- If this site has already been assigned this number, enter the Regulated Entity Reference Number.
- ***Do not enter a permit number, registration number, or license number in place of the Regulated Entity Reference Number.***

Name
Enter the name by which you want this site to be known to the TCEQ.

Physical Address
Enter the physical address of the site itself. TCEQ staff should be able to use this address to find the site.

Location Description
Enter a physical description of the location of the site based on highway intersections and/or permanent landmarks.

City, County, *and* ZIP Code
Enter the name of the city, the county, and the ZIP Code. (Enter the full ZIP+4 if you know it.)

D. Contact

Give all the relevant information for the person whom TCEQ can contact if there are questions about any of the information on this form—perhaps the same person who completed the form.

E. Certification

The operator must sign and date this statement to validate this NOI. Be sure to enter the full legal name of the person signing the form and the relevant title—for example, "Operator," "Operator's attorney," or "Senior Site Manager." Use the "Prefix" blank for such titles as Dr., Mr., or Ms., as desired. Use the "Suffix" blank for such designations as Ph.D., Jr., Sr., III, or J.D., if applicable.

For a corporation, the application shall be signed by a responsible corporate officer. A responsible corporate officer means a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. Corporate procedures governing authority to sign permit applications may provide for assignment or delegation to applicable corporate positions rather than to specific individuals.

For a partnership or sole proprietorship, the application shall be signed by a general partner or the proprietor, respectively.

For a municipality, state, federal, or other public agency, the application shall be signed by either a principal executive officer or a ranking elected official. For purposes of this application, a principal executive officer of a federal agency includes the chief executive officer of the agency, or a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g. regional administrator of the United States Environmental Protection Agency).

Questions?

If you have questions about any of the information on this form, contact our Storm Water Program at 512/239-4671 or look for "Storm Water" on our Web site:
www.tceq.state.tx.us

Section 01422

REFERENCE STANDARDS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Section includes general quality assurance as related to Reference Standards and a list of references.

1.02 QUALITY ASSURANCE

A. For Products or workmanship specified by association, trade, or Federal Standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Conform to reference standard by date of issue current on the date as stated in the General Conditions.

C. Request clarification from Project Manager before proceeding should specified reference standards conflict with Contract documents.

1.03 SCHEDULE OF REFERENCES

AASHTO	American Association of State Highway and Transportation Officials 444 North Capitol Street, N.W. Washington, DC 20001
ACI	American Concrete Institute P.O. Box 9094 Farmington Hills, MI 48333-9094
AGC	Associated General Contractors of America 333 John Carlyle Street Alexandria, VA 22314
AI	Asphalt Institute Research Park Drive P.O. Box 14052 Lexington, KY 40512

AITC	American Institute of Timber Construction 7012 S. Revere Parkway, Suite 140 Englewood, CO 80112
AISC	American Institute of Steel Construction One East Wacker Dr. Chicago, IL 60601
AISI	American Iron and Steel Institute 1101 17th Street NW, Suite 1300 Washington, DC 20036
ASME	American Society of Mechanical Engineers Three Park Avenue New York, NY 10016
ANSI	American National Standards Institute 1819 L Street NW Sixth Floor Washington, D.C. 20036
APA	American Plywood Association Box 11700 Tacoma, WA 98411
API	American Petroleum Institute 1220 L Street, N.W. Washington, DC 20005
AREA	American Railway Engineering and Maintenance-of-Way-Association 8201 Corporate Drive, Suite 1125 Landover, Maryland 20785
ASTM	American Society for Testing and Materials 100 Barr Harbor Drive West Conshohocken, PA 19428
AWPA	American Wood-Preservers' Association P.O. Box 5690 Granbury, TX 76049
AWS	American Welding Society 550 NW 42nd Avenue Miami, FL 33126

AWWA	American Water Works Association 6666 West Quincy Avenue Denver, CO 80235
COH	City of Houston P.O. Box 1562 Houston, TX 77251-1562
CLFMI	Chain Link Fence Manufacturers Institute 9891 Broken Land Parkway, Suite 300 Columbia, MD 21046
CRSI	Concrete Reinforcing Steel Institute 933 Plum Grove Road Schaumburg, IL 60173-4758
EJMA	Expansion Joint Manufacturers Association 25 North Broadway Tarrytown, NY 10591
FS	Federal Standardization Documents General Services Administration Specifications Unit (WFSIS) 7th and D Streets, S.W. Washington, DC 20406
ICEA	Insulated Cable Engineer Association P.O. Box 440 S. Yarmouth, MA 02664
IEEE	Institute of Electrical and Electronics Engineers 445 Hoes Lane P.O. Box 440 Piscataway, NJ 08855-459
ISA	International Society of Arboriculture P.O. Box 3129 Champaign, IL 61826-3129
MIL	Military Specifications General Services Administration Specifications Unit (WFSIS) 7th and D Streets, S.W. Washington, DC 20406

NACE	National Association of Corrosion Engineers 1440 South Creek Drive Houston, TX 77084-4906
NEMA	National Electrical Manufacturers' Association 1300 North 17th Street, Suite 1847 Rosslyn, VA 22209
NFPA	National Fire Protection Association 1 Batterymarch Park P.O. Box 9101 Quincy, MA 02269-9101
OSHA	Occupational Safety Health Administration U.S. Department of Labor Office of Public Affairs – Room N3647 Washington, DC 20210
PCA	Portland Cement Association 5420 Old Orchard Road Skokie, IL 60077-1083
PCI	Prestressed Concrete Institute 209 W. Jackson Blvd. Chicago, IL 60606
SDI	Steel Deck Institute P.O. Box 25 Fox River Grove, IL 60021
SSPC	Society for Protective Coatings (Steel Structures Painting Council) 40 24th Street, Sixth Floor Pittsburgh, PA 15222
TAC	Texas Administrative Code Texas Water Resources Conservation Commission P. O. Box 13087 Library MC-196 Austin, TX 78711-3087
TxDOT	Texas Department of Transportation 125 East 11th Street Austin, TX 78701-2483

UL	Underwriters' Laboratories, Inc. 333 Pfingston Road Northbrook, IL 60062
UNI-BELL	UNI-BELL Pipe Association 2655 Villa Creek Drive, Suite 155 Dallas, TX 75234

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01450

CONTRACTOR'S QUALITY CONTROL

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Quality assurance and control of Installation and manufacturers' field services and reports.

1.02 QUALITY ASSURANCE AND CONTROL OF INSTALLATION

A. Monitor quality control over Suppliers, manufacturers, Products, services, site conditions and workmanship, to produce work of specified quality at no additional cost to the City.

B. Comply fully with manufacturers' Installation instructions, including each step in sequence.

C. Request clarification from Project Manager before proceeding when manufacturers' instructions conflict with the Contract.

D. Comply with specified standards as minimum requirements for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Perform the Work by persons qualified to produce a specified level of workmanship.

1.03 REFERENCES

A. Obtain copies of standards and maintain at job site when required by individual Specification sections.

1.04 MANUFACTURERS' FIELD SERVICES AND REPORTS

A. When specified in individual Specification sections, or as required by Project Manager, provide Product suppliers' or manufacturers' technical representative to observe site conditions, conditions of surfaces and Installation, quality of workmanship, start-up of equipment, operator training, testing, adjusting and balancing of equipment as applicable and to initiate required operation. Conform to minimum time requirements for start-up operations and operator training when provided in Specification sections.

B. At Project Manager's request, submit qualifications of manufacturers' representative to Project Manager 15 days in advance of required representatives' services. Representative is subject to approval by Project Manager.

C. Manufacturer's representatives shall report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to a manufacturer's written instructions. Submit report within 14 days of observation to Project Manager for review.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01452

INSPECTION SERVICES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Inspection services and references

1.02 INSPECTION

A. City Engineer will appoint an Inspector to represent the City and perform inspections, tests, and other services specified in individual Specification sections.

B. City Engineer may also appoint, employ, and pay an independent firm to provide additional inspection or construction management services as indicated in Section 01454 - Testing Laboratory Services.

C. The independent firm will submit reports to Project Manager, indicating observations and results of tests and indicating compliance or noncompliance with Contract requirements.

D. Contractor shall assist and cooperate with the Inspector; furnish samples of materials, design mix, equipment, tools, and storage.

E. Contractor shall notify Project Manager 24 hours prior to expected time for operations requiring services.

F. Contractor shall sign and acknowledge reports for Inspector.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

Section 01454

TESTING LABORATORY SERVICES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Testing laboratory services and Contractor responsibilities related to those services.

1.02 REFERENCES

A. ASTM C 1077 - Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation.

B. ASTM D 3666 - Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Bituminous Paving Materials.

C. ASTM D 3740 - Standard Practice for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.

D. ASTM E 329 - Standard Specification for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction.

E. ISO/TEC Guide 25 - General Requirements for the Competence of Calibration and Testing Laboratories.

1.03 SELECTION AND PAYMENT

A. The City will select, employ, and pay for services of an independent testing laboratory to perform inspection and testing identified in Part 3 of individual Specification sections.

B. Contractor shall employ and pay for services of an independent testing laboratory or laboratories to perform inspection and testing identified in Part 2 of individual Specification sections.

C. Employment of a testing laboratory by the City shall not relieve Contractor of its obligation to perform work in accordance with requirements of Contract documents.

D. The City will deduct a minimum two-hour charge for testing laboratory time from periodic progress payment when operations requiring testing or inspection are canceled without prior notification.

E. The City will deduct cost of retesting from periodic progress payment whenever failed work is removed, replaced and retested.

1.04 QUALIFICATION OF LABORATORY

A. Meet laboratory requirements of ASTM E 329 and applicable requirements of ASTM C 1077, ASTM D 3666, and ASTM D 3740.

B. Meet ISO/TEC Guide 17025 conditions for accreditation by the American Association for Laboratory Accreditation (A2LA) in specific fields of testing required in individual Specification sections.

C. If laboratory subcontracts are part of the testing services, such work will be placed with a laboratory complying with the requirements of this Section.

1.05 LABORATORY REPORTS

A. Testing laboratory shall provide and distribute copies of laboratory reports to the distribution list Project Manager provides at the pre-construction conference.

B. Keep one copy of each laboratory report distributed or faxed at the site field office for duration of the Work.

C. Laboratory will fax material supplier, Contractor and Project Manager reports that indicate failing test results by no later than close of business on the working day following test completion and review.

1.06 LIMITS ON TESTING LABORATORY AUTHORITY

A. Laboratory may not release, revoke, alter, or enlarge requirements of the Contract.

B. Laboratory may not approve or accept any portion of the Work.

C. Laboratory may not assume Contractor duties.

D. Laboratory has no authority to stop the Work.

1.07 CONTRACTOR RESPONSIBILITIES

A. Provide safe access to the Work and to manufacturer's facilities for Project Manager and for testing laboratory personnel.

B. Provide testing laboratory with a copy of the Construction Schedule and a copy of each update to Construction Schedule.

C. Notify Project Manager and testing laboratory during normal working hours of the day previous to expected time for operations requiring inspection and testing services. When Contractor fails to make timely prior notification, do not proceed with the operations requiring inspection and testing services.

D. Notify Design Consultant 24 hours in advance when Specification requires presence of Design Consultant for sampling or testing.

E. Request and monitor testing as required to provide timely results and to avoid delays to the Work. Provide samples to laboratory in sufficient time to allow required test to be performed in accordance with specified test methods before intended use of the Product.

F. Cooperate with laboratory personnel in collecting samples on site. Provide incidental labor and facilities for safe access to the Work to be tested, to obtain and handle samples at site or at source of Products to be tested, and to facilitate tests and inspections including storage and curing of test samples.

G. Make arrangements with laboratory through Project Manager. Payment for additional testing will be made in accordance with Document 00700 - General Conditions:

1. Re-testing required for failed tests.

2. Re-testing for nonconforming work.

3. Additional sampling and tests requested beyond specified requirements.

4. Insufficient notification of cancellation of tests for work scheduled but not performed.

PART 2 P R O D U C T S - Not Used

PART 3 EXECUTION

3.01 CONDUCTING TESTING

A Conform to laboratory sampling and testing methods specified in individual Specification sections to the latest issues of ASTM standards, TxDOT methods, or other recognized test standards as approved by Project Manager.

B Requirements of this Section shall also apply to those tests for approval of materials, for mix designs, and for quality control of materials as performed by employed testing laboratories.

END OF SECTION

Section 01502

MOBILIZATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Mobilization of construction equipment and facilities onto the site.

1.02 MEASUREMENT AND PAYMENT

A. Unit Price Contracts. If Contract is Unit Price Contract, measurement for mobilization is on a lump sum basis.

B. Stipulated Price (Lump Sum) Contract. If Contract is Stipulated Price Contract, payment for Work in this Section is included in total Stipulated Price.

C. Mobilization payments will be included in monthly payment estimates upon written application by Contractor subject to the following provisions:

1. Authorization for payment of 50 percent of that portion of Contract Price designated for mobilization will be made upon receipt and approval by Project Manager of the following items, as applicable:

   a. Safety Program (Document 00700, Paragraph 10.1.1).

   b. Site Utilization Plan (Section 01145).

   c. Schedule of Values (Section 01292), if any.

   d. Initial Construction Photographs (Section 01321), if needed.

   e. Preliminary Construction Schedule and Billing Forecast (Section 01325).

   f. Construction Schedule (Section 01325 or Section 01326, as applicable).

   g. Submittal Schedule (Section 01330).

   h. Site specific Storm Water Pollution Prevention Plan (SWPPP) and Notice of Intent (NOI) along with storm water application fee (Section 01410), if required.

   i. Contractor's Quality Control Plan (Section 01450), if required.

j. Establishment of a Field Office for Project Manager meeting requirements of Section 01520 - Temporary Field Office.

k. Traffic Control Plan (Section 01555), if required.

l. Plan for Control of Ground and Surface Water (Section 01578), if required.

m. Project Signs Submittal (Section 01580).

n. Trench Safety Program (Section 02260), if required.

o. Dewatering plan, when required.

2. Authorization for payment of the balance of that portion of Contract Price designated for mobilization will be made upon completion of the Work amounting to five percent of Original Contract Price. The amount of Contract Price designated for mobilization may not be applied in computing whether or not five percent of the Original Contract Price has been obtained.

3. Mobilization payments will be subject to retainage amounts stipulated in Document 00700 – General Conditions.

PART 2 PRODUCTS -Not Used

PART 3 EXECUTION -Not Used

END OF SECTION

Section 01555

TRAFFIC CONTROL AND REGULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Requirements for signs, signals, control devices, traffic barriers, flares, lights and traffic signals; construction parking control, designated haul routes, and bridging of trenches and excavations.

B. Qualifications and requirements for use of flagmen.

1.02 MEASUREMENT AND PAYMENT

A. Unit Price Contracts.

1. Traffic control and regulation. Payment for traffic control and regulation is on a lump sum basis. Include preparation and submittal of traffic control plan if different than shown on Drawings, and provision of traffic control devices, equipment, and personnel necessary to protect the Work and public. Payment will be based on Contractor's Schedule of Values for traffic control and regulation.

2. Flagmen. Payment for flagmen is on a lump sum basis. Partial payments will be based on Contractor's Schedule of Values for flagmen.

3. New Portable Concrete Low Profile Traffic Barrier Provided. Payment is on a unit price basis for each linear foot of low profile traffic barrier provided, installed with hardware assemblies and connected together in accordance with the approved traffic control plan.

4. Portable Concrete Low Profile Traffic Barrier picked up from City of Houston Stockpile. Payment is on a unit price basis for each linear foot of low profile traffic barrier picked up from designated stockpile, moved onto the project, set at location and connected together.

5. Portable Concrete Low Profile Traffic Barrier Installed. Payment is on a unit price basis for each linear foot of low profile traffic barrier delivered to the project location, installed with hardware assemblies and connected together in accordance with the approved traffic control plan.

6. Portable Concrete Low Profile Traffic Barrier Moved and Reset. Payment is on a unit price basis for each linear foot of low profile traffic barrier disassembled, moved on the project, reset at the new locations and connected together. Include cost to repair roadway in the unit price.

7. Portable Concrete Low Profile Traffic Barrier Removed. Payment is on a unit price basis for each linear foot of low profile traffic barrier removed from the project, including hardware assemblies, and stockpiling at location listed in Section 01110 – Summary of Work. Include cost to repair roadway in the unit price.

8. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price Contracts. Include payment for work under this section in the total Stipulated Price.

1.03 REFERENCES

A. Texas Manual on Uniform Traffic Control Devices (TMUTCD)

B. Article 4413 (29bb), commonly referred to as Private Investigators and Private Security Agencies Act, and Article 2.12, Texas Code of Criminal Procedure.

C. Code of Ordinances, City of Houston, Texas.

1. Chapter 10 Buildings And Neighborhood Protection, Article X Cleanup After Demolition Or Removal Of Structures

2. Chapter 40 Streets and Sidewalks, Article XVII Pedestrian Way Impairments

1.04 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Traffic control plan:

1. If using traffic control plan contained in the Contract without modification, submit a letter confirming use of the plan.

2. If using a different traffic control plan, submit the plan for approval. The plan must conform to TMUTCD requirements and be sealed by a Registered Texas Professional Engineer.

C. Submit copies of approved lane closure permits issued by City Traffic Engineering Branch.

D. Submit Schedules of Values for traffic control plan and flagmen within 30 days following Notice to Proceed.

E. Submit records verifying qualifications of Uniformed Peace Officers and Certified Flagmen proposed for use on the Work.

F. When working in the central business district, submit copies of approved Pedestrian Way permits issued by the City's Traffic Engineering Branch.

1.05 FLAGMEN

A. Use Uniformed Peace Officers and Certified Flagmen to control movement of vehicular and pedestrian traffic when construction operations encroach on public traffic lanes.

B. Uniformed Peace Officer: Individual employed full-time as a peace officer who receives separate compensation as a privately employed flagman. Private employment may be an employee-employer relationship or on an individual basis. Flagman may not be in the employ of another peace officer nor be a reserve peace officer.

1. Uniformed Peace Officers may be:
   a. sheriffs and their deputies;
   b. constables and deputy constables;
   c. marshals or police officers of an incorporated city, town or village; or
   d. as otherwise provided by Article 2.12, Code of Criminal Procedure.

2. The Uniformed Peace Officer must be a full-time peace officer, must work a minimum average of 32 paid hours per week, and must be paid a rate not less than the prevailing minimum hourly wage rate set by the federal Wage and Hour Act. The individual must be entitled to vacation, holidays, and insurance and retirement benefits.

C. Certified Flagman: Individual who receives compensation as a flagman and meets the following qualifications:

1. Formally trained and certified in traffic control procedures by the City's E. B. Cape Center.

2. Speaks English. Ability to speak Spanish is desirable but not required.

3. Paid for flagman duty at an hourly rate not less than the wage rate set for Rough Carpenter under the City's Wage Scale for Engineering Construction.

D. Certified Flagmen must wear a distinctive uniform, bright-colored vest, and be equipped with appropriate flagging and communication devices while at the Work site. They must also have in their possession while on duty, a proof of training identification card issued by the appropriate training institute.

PART 2 PRODUCTS

2.01 SIGNS, SIGNALS, AND DEVICES

A. Comply with TMUTCD requirements.

B. Traffic cones and drums, flares and lights: Conform to local jurisdictions' requirements.

C. When working in the Central business district, provide pedestrian pathway signage approved by the City's Traffic Engineering Branch.

2.02 PORTABLE LOW PROFILE CONCRETE BARRIERS

A. The low profile concrete barrier is a patented design. Information concerning this barrier may be obtained from Texas Transportation Institute, Texas A&M University System, College Station, Texas 77843-3135, (409) 845-1712.

PART 3 EXECUTION

3.01 PUBLIC ROADS

A. Submit requests forms for lane closure and sidewalk closure to the City's Traffic Engineering Branch at least three working days prior to need for blocking vehicular lanes or sidewalks. Do not block lanes or sidewalks without approved permits. Obtain application from the City's Traffic Engineering Branch at 611 Walker, 5th floor or at the following internet address: http://www.ci.houston.tx.us/pwe/mrow/laneclosure.htm.

B. Follow laws and regulations of governing jurisdictions when using public roads. Pay for and obtain permits from jurisdiction before impeding traffic or closing lanes. Coordinate activities with Project Manager.

C. Give Project Manager one-week notice before implementing approved traffic control phases. Inform local businesses of impending traffic control activities.

D. Notify police department, fire department, METRO, and local schools, churches, and businesses in writing a minimum of five business days prior to beginning work.

E. Maintain 10-foot-wide all-weather lanes adjacent to the Work for emergency vehicle use. Keep all-weather lanes free of construction equipment and debris.

F. Do not to obstruct normal flow of traffic from 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. on designated major arterials or as directed by Project Manager.

G. Maintain local driveway access to residential and commercial properties adjacent to work areas at all times. Use all-weather materials approved by Project Manager to maintain temporary driveway access to commercial and residential driveways.

H. Keep streets entering and leaving job site free of excavated material, debris, and foreign material resulting from construction operations in compliance with applicable ordinances.

I. Remove existing signage and striping that conflict with construction activities or that may cause driver confusion.

J. Provide safe access for pedestrians along major cross streets.

K. Alternate closures of cross streets so that two adjacent cross streets are not closed simultaneously.

L. Do not close more than two consecutive esplanade openings at a time without prior approval from Project Manager.

3.02 CONSTRUCTION PARKING CONTROL

A. Control vehicular parking to prevent interference with public traffic and parking, access by emergency vehicles, and the City's operations.

B. Monitor parking of construction personnel's vehicles in existing facilities. Maintain vehicular access to and through parking areas.

C. Prevent parking on or adjacent to access roads or in non-designated areas.

3.03 FLARES AND LIGHTS

A. Provide flares and lights during hours of low visibility to delineate traffic lanes and to guide traffic.

3.04 HAUL ROUTES

A. Utilize haul routes designated by authorities or shown on Drawings for construction traffic.

B. Confine construction traffic to designated haul routes.

C. Provide traffic control at critical areas of haul routes to regulate traffic and minimize interference with public traffic.

3.05 TRAFFIC SIGNS AND SIGNALS

A. Construct necessary traffic control devices for temporary signals required to complete the Work including loop detectors, traffic signal conduits, traffic signal wiring and crosswalk signals. Notify the City's Traffic Engineering Branch a minimum of 60 days in advance of need for control boxes and switchgear. The City will perform necessary service, programming or adjustments, to signal boxes and switchgear if required during construction.

B. Install and operate traffic control signals to direct and maintain orderly traffic flow in areas under Contractor's control affected by Contractor's operations. Post notices, signs and traffic controls before moving into next phase of traffic control.

C. Relocate traffic signs and signals as the Work progresses to maintain effective traffic control.

D. Unless otherwise approved by Project Manager, provide driveway signs with name of business that can be accessed from each crossover. Use two signs for each crossover.

E. Replace existing traffic control devices in Project area.

F. Project Manager may direct Contractor to make minor adjustments to traffic control signage to eliminate driver confusion and maintain orderly traffic flow during construction at no additional cost to the City.

3.06 BRIDGING TRENCHES AND EXCAVATIONS

A. When necessary, construct bridges over trenches and excavation to permit an unobstructed flow of traffic across construction areas and major drives.

Use steel plates of sufficient thickness to support H-20 loading and install to operate with minimum noise.

B. Shore trench or excavation to support bridge and traffic.

C. Secure bridging against displacement with adjustable cleats, angles, bolts or other devices when:

1. bridging is placed over existing bus routes,

2. more than five percent of daily traffic is comprised of commercial or truck traffic,

3. more than two separate plates are used for bridging, and

4. when bridge is to be used for more than five consecutive days.

D. Extend steel plates used for bridging a minimum of 1 foot beyond edges of trench or excavation. Use temporary paving materials such as premix to feather edges of plates to minimize wheel impact on secured bridging.

3.07 REMOVAL

A. Remove equipment and devices when no longer required.

B. Repair damage caused by installation.

C. Remove post settings to a depth of 2 feet.

3.08 TRAFFIC CONTROL, REGULATION AND DIRECTION

A. Use Flagmen to control, regulate and direct an even flow and movement of vehicular and pedestrian traffic, for periods of time as may be required to provide for public safety and convenience, where:

1. multi-lane vehicular traffic must be diverted into single lane vehicular traffic,

2. vehicular traffic must change lanes abruptly,

3. construction equipment must enter or cross vehicular traffic lanes and walks,

4. construction equipment may intermittently encroach on vehicular traffic lanes and unprotected walks and crosswalks,

5. traffic regulation is needed due to rerouting of vehicular traffic around the Work site, and

6. where construction activities might affect public safety and convenience.

B. Use of Flagmen to assist in the regulation of traffic flow and movement does not relieve Contractor of responsibility to take other means necessary to protect the Work and public.

3.09 INSTALLATION STANDARDS

A. Place temporary pavement for single lane closures, in accordance with TMUTCD.

B. Reinstall temporary and permanent pavement markings as approved by Project Manager. When weather conditions do not allow application according to manufacturer's requirements, alternate markings may be considered. Submit proposed alternate to Project Manager for approval prior to installation. No additional payment will be made for use of alternate markings.

3.10 MAINTENANCE OF EQUIPMENT AND MATERIAL

A. Submit name, address and telephone number of individual designated to be responsible for maintenance of traffic handling at construction site to Project Manager. Individual must be accessible at all times to immediately correct deficiencies in equipment and materials used to handle traffic including missing, damaged, or obscured signs, drums, barricades, or pavement markings.

B. Inspect signs, barricades, drums, lamps and temporary pavement markings daily to verify that they are visible, in good working order, and conform with traffic handling plans as approved by Project Manager. Immediately repair, clean, relocate, realign, or replace equipment or materials that are not in compliance.

C. Keep equipment and materials, signs and pavement markings, clean and free of dust, dirt, grime, oil, mud, or debris.

D. Obtain approval of Project Manager to reuse damaged or vandalized signs, drums, and barricades.

END OF SECTION

Section 01562

TREE AND PLANT PROTECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Tree and plant protection and maintenance.

B. Planting new trees and relocating and replanting existing trees.

C. Maintenance of planted or replanted trees.

1.02 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit name and experience of qualified Arborist, proposed for use on the Work, to Project Manager.

1.03 PROJECT CONDITIONS

A. Preserve and protect existing trees and plants, that are to remain; from damage to foliage, branches, trunk, or roots; that could result from construction operations.

B. Do not remove any Tree unless Parks and Recreation Department grants written permission for removal. Chapter 33, Article VI of the City of Houston Code of Ordinances (the "Code") defines Tree.

C. Prevent following types of damage:

1. Compaction of root zone by foot, vehicular traffic, or material storage.

2. Trunk damage from equipment operations, material storage, or from nailing or bolting.

3. Trunk and branch damage caused by ropes or guy wires.

4. Root poisoning from spilled solvents, gasoline, paint, and other noxious materials.

5. Branch damage due to improper pruning or trimming.

6. Damage from lack of water due to:

a. Cutting or altering natural water migration patterns near root zones
b. Failure to provide adequate watering

7. Damage from alteration of soil pH factor caused by depositing lime, concrete, plaster, or other base materials near roots

8. Cutting of roots larger than 1-1/2 inches in diameter

1.04 DAMAGE ASSESSMENT

A. When a Tree, defined by the Code, other than those permitted for removal, are destroyed or badly damaged as result of construction operations, remove and replace with same size, species, and variety. Replace trees larger than 8 inches in diameter with 8-inch diameter tree of same species and variety.

B. Contract Price shall be reduced by the amount determined by Parks and Recreation Department using the formula in the Code.

PART 2 PRODUCTS

2.01 MATERIALS

A. Asphalt Paint: Emulsified asphalt or other adhesive, elastic, antiseptic coating formulated for horticultural use on cut or injured plant tissue, free from kerosene and coal creosote.

B. Burlap: Suitable for use as tree wrapping.

C. Fertilizer: Liquid containing 20 percent nitrogen, 10 percent phosphorus, and 5 percent potash.

D. Obtain Project Manager approval of replacement trees.

PART 3 EXECUTION

3.01 PROTECTION AND MAINTENANCE OF EXISTING TREES AND SHRUBS

A. Trees within Project area, except for trees shown on Drawings or directed by Project Manager to be removed and relocated, are to remain in place. Protect from damage and maintain trees that are to remain.

B. Perform the following for trees or shrubs that are to remain:

1. Trim trees and shrubs under supervision of a professional tree surgeon or horticulturist.
   a. Prune trees according to International Society of Arbor culture specifications.
   b. Prune trees and shrubs requiring pruning for construction operations for balance and to maintain proper form and branching habit.
   c. Cut limbs at branch collar and remove stubs. Do not gouge outer layer of tree structure or trunk.
   d. Prior to construction, prune all trees to remain of new or recent growth to maintain basic branching form of trees. Base extent of pruning upon proximity of pavement to trunk and size of tree blockouts and requirements of construction adjacent to tree.
   e. Limit pruning of young branches to the maximum extent possible. Maintain older branches that provide basic form of tree. Prune in the presence of Project Manager.
   f. Paint exposed, living tissue of cuts over 3/4" in diameter with tree paint.

2. Use extreme care to prevent excessive damage to root systems.
   a. Cut tree roots in construction area smoothly with a trencher before excavating. Do not allow ripping of roots with backhoes or other equipment.
   b. Temporarily cover exposed roots with wet burlap to prevent roots from drying out.
   c. Cover exposed roots with soil as soon as possible.

3. Prevent damage or compaction of root zone (area below drip line) by construction activities.
   a. Do not allow equipment to scar trunks or limbs
   b. Do not store construction materials, vehicles, or excavated material under drip line of trees.
   c. Do not pour liquid materials under drip line.

4. Water and fertilize remaining trees and shrubs to maintain their health during construction period.
   a. Water landscaping during construction operations at least once every seven days in cold months and once every four days in hotter months.
   b. Saturate soils to at least 6 to 8 inches beneath surface.

5. Water areas currently being served by private sprinkler systems while systems are temporarily taken out of service to maintain health of existing landscapes.

6. With Project Manager's permission, shrubs to remain may be temporarily transplanted and returned to original positions under supervision of professional horticulturist.

3.02 PROTECTION

A. Protection of Trees or Shrubs in Open Area:

1. Install steel drive-in fence posts in protective circle, approximately 8 feet on center, not closer than 4 feet to trunk of trees or stems of shrubs.

2. Insert steel drive-in fence posts a minimum of 3 feet into ground, leaving a minimum of 5 feet above ground.

3. Mount fluorescent orange construction fence on fence posts.

4. For trees or shrubs in paved areas, use movable posts consisting of two 1/2-inch minimum diameter concrete-filled steel pipe mounted in rubber automobile tires filled with concrete.

B. Provide timber wrap protection for trees in close proximity to equipment when work is required within construction fencing.

1. Wrap trunk with a layer of burlap.

2. Install vertical 5 to 6 foot long 2 by 4's or 2 by 5's, spaced 3 to 5 inches apart, around circumference of tree trunk.

3. Tie burlap in place with 12 to 9 gauge steel wire.

3.03 RELOCATING AND PLANTING NEW TREES

A. Employ a qualified Arborist, acceptable to Project Manager, to plant and to move and relocate trees. Arborist must be normally engaged in the field and have a minimum of five years experience.

3.04 MAINTENANCE OF NEWLY PLANTED TREES AND REPLANTED TREES

A. Provide proof of capability to water trees during dry periods.

B. Maintain newly planted trees, in healthy condition until end of one-year warranty and Surface Restoration Bond periods.

1. Straighten leaning trees.

2. Replace dead trees or trees that, in the opinion of Project Manager, have become unhealthy, unsightly or have lost their natural shape as result of additional growth, improper pruning, maintenance or weather conditions, within four weeks of notice from Project Manager.

3. When a tree must be replaced, a new warranty period shall commence on date of tree replacement, and Project Manager's approval. Minimum warranty period shall be one year.

4. Dispose of rejected trees.

END OF SECTION

Section 01570

STORM WATER POLLUTION CONTROL

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Implementation of Storm Water Pollution Prevention Plans (SWP3) described in Section 01410 – TPDES Requirement.

B. Installation and maintenance of storm-water pollution prevention structures: diversion dikes, interceptor dikes, diversion swales, interceptor swales, down spout extenders, pipe slope drains, paved flumes and level spreaders. Structures are used during construction and prior to final development of the site.

C. Filter Fabric Fences:

1. Type 1: Temporary filter fabric fences for erosion and sediment control in non-channelized flow areas.

2. Type 2: Temporary reinforced filter fabric fences for erosion and sediment control in channelized flow areas.

D. Straw Bale Fence.

1.02 MEASUREMENT AND PAYMENT

A. UNIT PRICES

1. Payment for filter fabric fence is on a linear foot basis measured between limits of beginning and ending of stakes.

2. Payment for reinforced filter fabric fence is on a linear foot basis measured between limits of beginning and ending of stakes.

3. Payment for drop inlet baskets is on a unit price basis for each drop inlet basket.

4. Payment for storm inlet sediment traps is on a unit price basis for each storm inlet sediment trap.

5. Payment for storm-water-pollution-prevention structures is on a lump sum basis for the project. Earthen structures with outlet and piping includes diversion dikes, interceptor dikes, diversion swales, interceptor swales, and excavated earth-outlet sediment trap,

embankment earth-outlet sediment trap, down spout extenders, pipe slope drains, paved flumes, stone outlet sediment trap, and level spreaders.

6. Payment for straw bale barrier, if included in Document 00410 - Bid Form, is on a linear foot of accepted bale barriers, if not include in cost of storm-water-pollution-prevention structures.

7. Payment for brush berm, if included in Document 00410 - Bid Form, is on a linear foot of accepted brush berm, if not include in cost of storm-water-pollution-prevention structures.

8. Payment for sandbag barrier, if included in Document 00410 - Bid Form, is on a linear foot basis measured between limits of beginning and ending of sandbags, if not include in cost of storm-water-pollution-prevention structures.

9. Payment for sediment basin with pipe outlet or stone outlet, if included in Document 00410 - Bid Form, is on a square yard basis, if not include in cost of storm-water-pollution-prevention structures.

10. Payment for inlet protection barriers, if included in Document 00410 - Bid Form, is on a linear foot basis measured along outside face of inlet protection barrier, if not include in cost of storm-water-pollution-prevention structures.

11. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum) Contract. If Contract is Stipulated Price Contract, payment for Work in this Section is included in total Stipulated Price.

1.03 REFERENCE STANDARDS

A. ASTM

1. A 36 - Standard Specification for Carbon Structural Steel.

2. D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)).

3. D3786 - Standard Test Method for Hydraulic Bursting Strength for Knitted Goods and Nonwoven Fabrics.

4. D 4355 - Standard Test Method for Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus).

5. D 4491 - Standard Test Methods for Water Permeability of Geotextiles by Permittivity.

6. D 4632 - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.

7. D 4833 - Standard Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products.

8. D 6382 - Standard Practice for Dynamic Mechanical Analysis and Thermogravimetry of Roofing and Waterproofing Membrane Material.

B. Storm Water Management Handbook for Construction Activities prepared by City of Houston, Harris County and Harris County Flood Control District.

1.04 SYSTEM DESCRIPTIONS

A. Filter Fabric Fence Type 1 and Type 2: Install to allow surface or channel runoff percolation through fabric in sheet-flow manner and to retain and accumulate sediment. Maintain Filter Fabric Fences to remain in proper position and configuration at all times.

B. Straw Bale Fence: Install to allow surface runoff percolation through straw in sheet-flow manner and to retain and accumulate sediment. Maintain Straw Bale Fence to remain in proper position and configuration at all times.

C. Interceptor Dikes and Swales: Construct to direct surface or channel runoff around the project area or runoff from project area into sediment traps.

D. Drop Inlet Baskets: Install to allow runoff percolation through the basket and to retain and accumulate sediment. Clean accumulation of sediment to prevent clogging and backups.

E. Sediment traps: Construct to pool surface runoff from construction area to allow sediment to settle onto the bottom of trap.

1.05 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit manufacturer's literature for product specifications and installation instructions.

C. Submit manufacturer's catalog sheets and other product data on geotextile or filter fabrics, outlet pipe, perforated riser and connectors.

D. Submit proposed methods, equipment, materials, and sequence of operations for storm-water pollution prevention structures.

E. Submit shop drawings for Drop Inlet Baskets.

PART 2 PRODUCTS

2.01 CONCRETE

A. Concrete: Class B in accordance with Section 03315 – Concrete for Utility Construction or as shown on the Drawings.

2.02 AGREGATE MATERIALS

A. Use poorly graded cobbles with diameter greater than 3 inches and less than 5 inches.

B. Provide gravel lining in accordance with Section 2320 – Utility Backfill Materials or as shown on the drawings.

C. Provide clean cobbles and gravel consisting of crushed concrete or stone. Use clean, hard crushed concrete or stone free from adherent coatings, salt, alkali, dirt, clay, loam, shale, soft or flaky materials, or organic matter.

D. Sediment Pump Pit Aggregate: Use nominal 2-inch diameter river gravel.

2.03 PIPE

A. Polyethylene culvert pipe or PVC sewer pipe in accordance with Section 02505- High Density Polyethylene (HDPE) Solid and Profile Wall Pipe and Section 02506 Polyvinyl Chloride Pipe or as shown on the Drawings.

B. Inlet Pipes: Galvanized steel pipe in accordance with Section 02642 Corrugated Metal Pipe or as shown on the Drawings.

C. Standpipe for Sediment Pump Pits: Galvanized round culvert pipe or round PVC pipe, minimum of 12-inch and a maximum of 24-inch diameter, perforate at 6 to 12 inch centers around circumference.

2.04 GEOTEXTILE FILTER FABRIC

A. Woven or nonwoven geotextile filter fabric made of either polypropylene, polyethylene, ethylene, or polyamide material, in continuous rolls of longest practical length.

B. Grab Strength: 100 psi in any principal direction (ASTM D-4632), Mullen burst strength >200 psi (ASTM D-3786), and equivalent opening size between 50 and 140.

C. Furnish ultraviolet inhibitors and stabilizers for minimum 6 months of expected usable construction life at temperature range of 0 degrees F to 120 degrees F.

D. Mirafi, Inc., Synthetic Industries, or equivalent

2.05 FENCING

A. Wire Fencing: Woven galvanized steel wire, 14 gauge by 6-inch square mesh spacing, minimum 24 inch roll or sheet width of longest practical length.

B. Fence Stakes: Nominal 2 by 2 inch moisture-resistant treated wood or steel posts (min. of 1.25 lbs. per linear foot and Brinell Hardness greater than 140) with safety caps on top; length as required for minimum 8 inch bury and full height of filter fabric.

2.06 SANDBAGS

A. Provide woven material made of polypropylene, polyethylene, or polyamide material.

1. Minimum unit weight of four ounces per square yard.

2. Minimum grab strength of 100 psi in any principal direction (ASTM D4632)

3. Mullen burst strength exceeding 300 psi (ASTM D3786).

4. Ultraviolet stability exceeding 70 percent.

5. Size: Length:18 to 24 inches. Width: 12 to 18 inches. Thickness: 6 to 8 inches. Weight: 50 to 125 pounds.

2.07 DROP INLET BASKET

A. Provide steel frame members in accordance with ASTM A36.

B. Construct top frame of basket with two short sides of 2 inch by 2 inch and single long side of 1 inch by 1 inch, 1/8 inch angle iron. Construct basket hangers of 2 inch by 1/4 inch iron bars. Construct bottom frame of 1 inch by 1/4 inch iron bar or 1/4 inch plate with center 3 inches removed. Use minimum 1/4 inch diameter iron rods or equivalent for sides of inlet basket. Weld minimum of 14 rods in place between top frame/basket hanger and bottom frame. Exact dimensions for top frame and insert basket will be determined based on dimensions of type of inlet being protected.

2.08 STRAW BALE

A. Straw: Standard-baled agricultural hay bound by wire, nylon, or polypropylene rope. Do not use jute or cotton binding.

B. Straw Bale Stakes (applicable where bales are on soil): No. 3 (3/8 diameter) reinforcing bars, deformed or smooth at Contractor's option, length as required for minimum 18 inch bury and full height bales.

PART 3 EXECUTION

3.01 PREPARATION, INSTALLATION AND MAINTAINANCE

A. Provide erosion and sediment control structures at locations shown on the Drawings.

B. Do not clear, grub or rough cut until erosion and sediment control systems are in place unless approved by Project Manger to allow installation of erosion and sediment control systems, soil testing and surveying.

C. Maintain existing erosion and sediment control systems located within project site until acceptance of Project or until directed by Project Manger to remove and discard existing system.

D. Regularly inspect and repair or replace damaged components of erosion and sediment control structures. Unless otherwise directed, maintain erosion and sediment control structure until project area stabilization is accepted. . Redress and replace granular fill at outlets as needed to replenish depleted granular fill. Remove erosion and sediment control structures promptly when directed by Project Manger. Dispose of materials in accordance with Section 01576 - Waste Material Disposal.

E. Remove and dispose sediment deposits at the designated spoil site for the Project. If a project spoil site is not designated on Drawings, dispose of sediment off site at approved location in accordance with Section 01576 - Waste Material Disposal.

F. Unless otherwise shown on the Drawings, compact embankments, excavations, and trenches in accordance with Section 02315 Roadway Excavation or Section 2317 Excavation and Backfill for Utilities.

G. Prohibit equipment and vehicles from maneuvering on areas outside of dedicated right of way and easements for construction. Immediately repair damage caused by construction traffic to erosion and sediment control structures.

H. Protect existing trees and plants in accordance with Section 1562 – Tree and Plant Protection.

3.02 SEDIMENT TRAPS

A. Install sediment traps so that surface runoff shall percolate through system in sheet flow fashion and allow retention and accumulation of sediment.

B. Inspect sediment traps after each rainfall, daily during periods of prolonged rainfall, and at a minimum once each week. Repair or replace damaged sections immediately.

C. Use fill material for embankment in accordance with Section 02320 – Utility Backfill Materials.

D. Excavation length and height shall be as specified on Drawings. Use side slopes of 2:1 or flatter.

E. Stone outlet sediment traps:

1. Maintain minimum of 6 inches between top of core material and top of stone outlet, minimum of 4 inches between bottom of core material and existing ground and minimum of 1 foot between top of stone outlet and top of embankment.

2. Embed cobbles minimum of 4 inches into existing ground for stone outlet. Core shall be minimum of 1 foot in height and in width and wrapped in triple layer of geotextile filter fabric.

F. Sediment Basin with Pipe Outlet Construction Methods: Install outlet pipe and riser as shown on the Drawings.

G. Remove sediment deposits when design basin volume is reduced by one-third or sediment level is one foot below principal spillway crest, whichever is less.

3.03 FILTER FABRIC FENCE CONSTRUCTION METHODS

A. Fence Type 1:

1. Install stakes 3 feet on center maximum and firmly embed minimum 8 inches in soil. If filter fabric is factory preassembled with support netting, then maximum support spacing is 8 feet. Install wood stakes at a slight angle toward the source of anticipated runoff.

2. Trench in the toe of the fence lines so the downward face of the trenches is flat and perpendicular to direction of flow. V-trench configuration as shown on Drawings may also be used.

3. Lay fabric along edges of trenches in longest practical continuous runs to minimize joints. Make joints only at a support post. Splice with minimum 6-inch overlap and seal securely.

4. Staple filter fabric to stakes at maximum 3 inches on center. Extend fabric minimum 18 inches and maximum 36 inches above natural ground.

5. Backfill and compact trench.

B. Fence Type 2:

1. Layout fence same as for Type 1.

2. Install stakes at 6 feet on center maximum and at each joint in wire fence, firmly embedded 1-foot minimum, and inclined it as for Type 1.

3. Tie wire fence to stakes with wire at 6 inches on center maximum. Overlap joints minimum one bay of mesh.

4. Install trench same as for Type 1.

5. Fasten filter fabric wire fence with tie wires at 3 inches on center maximum.

6. Layout fabric same as for Type 1. Fasten to wire fence with wire ties at 3 inches on center maximum and, if applicable, to stakes above top of wire fence it as for Type 1.

7. Backfill and compact trench.

C. Attach filter fabric to wooden fence stakes spaced a maximum of 6 feet apart or steel fence stakes spaced a maximum of 8 feet apart and embedded a minimum of 12 inches. Install stakes at a slight angle toward source of anticipated runoff.

D. Trench in toe of filter fabric fence with spade or mechanical trencher so that downward face of trench is flat and perpendicular to direction of flow. A

V-trench configuration may also be used. Lay filter fabric along edges of trench. Backfill and compact trench upon completion of Construction.

E. Filter fabric fence shall have a minimum height of 18 inches and a maximum height of 36 inches above natural ground.

F. Cut length of fence to minimize use of joints. When joints are necessary, splice fabric together only at support post with minimum 6 inch overlap and seal securely.

G. Triangular Filter Fabric Fence Construction Methods

1. Attach filter fabric to wire fencing, 18 inches on each side. Provide a fabric cover and skirt with continuous wrapping of fabric. Skirt should form continuous extension of fabric on upstream side of fence.

2. Secure triangular fabric filter fence in place using one of the following methods:
   a. Toe-in skirt 6 inches with mechanically compacted material;
   b. Weight down skirt with continuous layer of 3-inch to 5-inch graded rock; or
   c. Trench-in entire structure 4 inches.

3. Anchor triangular fabric filter fence structure and skirt securely in place using 6-inch wire staples on 2-foot centers on both edges and on skirt, or staked using 18-inch by 3/8-inch diameter re-bar with tee ends.

4. Lap fabric filter material by 6 inches to cover segment joints. Fasten joints with galvanized shoat rings.

H. Reinforced Filter Fabric Barrier Construction Methods

1. Attach woven wire fence to fence stakes.

2. Securely fasten filter fabric material to wire fence with tie wires.

3. When used in swales, ditches or diversions, elevation of barrier at top of filter fabric at flow line location in channel shall be lower than bottom elevation of filter fabric at ends of barrier or top of bank, whichever is less, in order to keep storm water discharge in channel from overtopping bank.

4. Remove sediment deposits when silt reaches depth one-third height of barrier or 6 inches, whichever is less.

3.04 DIKE AND SWALE

A. Unless otherwise indicated, maintain minimum dike height of 18 inches, measured from cleared ground at up slope toe to top of dike. Maintain side slopes of 2:1 or flatter.

B. Dike and Swale Stabilization: When shown on the Drawings, place gravel lining 3 inches thick and compacted into the soil or 6 inches thick if truck crossing is expected. Extend gravel lining across bottom and up both sides of swale minimum height of 8 inches vertically, above bottom. Gravel lining on dike side shall extend up the up slope side of dike a minimum height of 8 inches, measured vertically from interface of existing or graded ground and up slope toe of dike, as shown on Drawings.

C. Divert flow from dikes and swales to sediment basins, stabilized outlets, or sediment trapping devices of types and at locations shown on Drawings. Grade dikes and swales as shown on Drawings, or, if not specified, provide positive drainage with maximum grade of 1 percent to outlet or basin.

D. Clear in accordance with Section 2233 – Clearing and Grubbing Compact embankments in accordance with Section 2315 – Roadway Excavation.

E. Carry out excavation for swale construction so that erosion and water pollution is minimal. Minimum depth shall be 1 foot and bottom width shall be 4 feet, with level swale bottom. Excavation slopes shall be 2:1 or flatter. Clear, grub and strip excavation area of vegetation and root material.

3.05 DOWN SPOUT EXTENDER

A. Down spout extender shall have slope of approximately 1 percent. Use pipe diameter of 4 inches or as shown on the Drawings. Place pipe in accordance with Section 2317 - Bedding and Backfill for Utilities.

3.06 PIPE SLOPE DRAIN

A. Compact soil around and under drain entrance section to top of embankment in lifts appropriately sized for method of compaction utilized.

B. Inlet pipe shall have slope of 1 percent or greater. Use pipe diameter as shown on the Drawings.

C. Top of embankment over inlet pipe and embankments directing water to pipe shall be at least 1 foot higher at all points than top of inlet pipe.

D. Pipe shall be secured with hold-down grommets spaced 10 feet on centers.

E. Place riprap apron with a depth equal to pipe diameter with 2:1 side slopes.

3.07 PAVED FLUME

A. Compact soil around and under the entrance section to top of the embankment in lifts appropriately sized for method of compaction utilized.

B. Construct subgrade to required elevations. Remove and replace soft sections and unsuitable material. Compact subgrade thoroughly and shape to a smooth, uniform surface.

C. Construct permanent paved flumes in accordance with Drawings.

D. Remove sediment from riprap apron when sediment has accumulated to depth of one foot.

3.08 LEVEL SPREADER

A. Construct level spreader on undisturbed soil and not on fill. Ensure that spreader lip is level for uniform spreading of storm runoff.

B. Maintain at required depth, grade, and cross section as specified on Drawings. Remove sediment deposits as well as projections or other irregularities which will impede normal flow.

3.09 INLET PROTECTION BARRIER

A. Place sandbags and filter fabric fences at locations shown on the SWP3.

3.10 DROP INLET BASKET CONSTRUCTION METHODS

A. Fit inlet insert basket into inlet without gaps around insert at locations shown on the SWP3.

B. Support for inlet insert basket shall consist of fabricated metal as shown on Drawings.

C. Push down and form filter fabric to shape of basket. Use sheet of fabric large enough to be supported by basket frame when holding sediment and extend at least 6 inches past frame. Place inlet grates over basket/frame to serve as fabric anchor.

D. Remove sediment deposit after each storm event and whenever accumulation exceeds 1-inch depth during weekly inspections.

3.11 STRAW BALE FENCE CONSTRUCTION METHODS

A. Place bales in row with ends tightly abutting adjacent bales. Place bales with bindings parallel to ground surface.

B. Embed bale in soil a minimum of 4 inches.

C. Securely anchor bales in place with Straw Bale Stakes driven through bales a minimum of 18-inches into ground. Angle first stake in each bale toward previously laid bale to force bales together.

D. Fill gaps between bales with straw to prevent water from channeling between bales. Wedge carefully in order not to separate bales.

E. Replace with new straw bale fence every two months or as required by Project Manager.

3.12 BRUSH BERM CONSTRUCTION METHODS

A. Construct brush berm along contour lines by hand placing method. Do not use machine placement of brush berm.

B. Use woody brush and branches having diameter less than 2-inches with 6-inches overlap. Avoid incorporation of annual weeds and soil into brush berm.

C. Use minimum height of 18-inches measured from top of existing ground at upslope toe to top of berm. Top width shall be 24 inches minimum and side slopes shall be 2:1 or flatter.

D. Embed brush berm into soil a minimum of 4-inches and anchor using wire, nylon or polypropylene rope across berm with a minimum tension of 50 pounds. Tie rope securely to 18-inch x 3/8-inch diameter rebar stakes driven into ground on 4-foot centers on both sides of berm.

3.13 STREET AND SIDEWALK CLEANING

A. Keep areas clean of construction debris and mud carried by construction vehicles and equipment. If necessary, install stabilized construction exits at construction, staging, storage, and disposal areas, following Section 01575-Stabilized Construction Exit.

B. In lieu of or in addition to stabilized construction exits, shovel or sweep pavements as required to keep areas clean. Do not waterhose or sweep debris and mud off street into adjacent areas, except, hose sidewalks during off-peak hours, after sweeping.

3.14 WASTE COLLECTION AREAS

A. Prevent water runoff from passing through waste collection areas, and prevent water runoff from waste collection areas migrating outside collection areas.

3.15 EQUIPMENT MAINTENANCE AND REPAIR

A. Confine maintenance and repair of construction machinery and equipment to areas specifically designated for that purpose, so fuels, lubricants, solvents, and other potential pollutants are not washed directly into receiving streams or storm water conveyance systems. Provide these areas with adequate waste disposal receptacles for liquid and solid waste. Clean and inspect maintenance areas daily.

B. Where designated equipment maintenance areas are not feasible, take precautions during each individual repair or maintenance operation to prevent potential pollutants from washing into streams or conveyance systems. Provide temporary waste disposal receptacles.

3.16 VEHICLE/ EQUIPMENT WASHING AREAS

A. Install wash area (stabilized with coarse aggregate) adjacent to stabilized construction exit(s), as required to prevent mud and dirt run-off. Release wash water into drainage swales or inlets protected by erosion and sediment controls. Build wash areas following Section 01575- Stabilized Construction Exit. Install gravel or rock base beneath wash areas.

B. Wash vehicles only at designated wash areas. Do not wash vehicles such as concrete delivery trucks or dump trucks and other construction equipment at locations where runoff flows directly into watercourses or storm water conveyance systems.

C. Locate wash areas to spread out and evaporate or infiltrate wash water directly into ground, or collect runoff in temporary holding or seepage basins.

3.17 WATER RUNOFF AND EROSION CONTROL

A. Control surface water, runoff, subsurface water, and water from excavations and structures to prevent damage to the Work, the site, or adjoining properties.

B. Control fill, grading and ditching to direct water away from excavations, pits, tunnels, and other construction areas, and to direct drainage to proper runoff courses to prevent erosion, sedimentation or damage.

C. Provide, operate, and maintain equipment and facilities of adequate size to control surface water.

D. Dispose of drainage water to prevent flooding, erosion, or other damage to the site or adjoining areas. Follow environmental requirements.

E. Retain existing drainage patterns external to the site by constructing temporary earth berms, sedimentation basins, retaining areas, and temporary ground cover as required to control conditions.

F. Plan and execute construction and earth work to control surface drainage from cuts and fills, and from borrow and waste disposal areas, to prevent erosion and sedimentation.

1. Hold area of bare soil exposed at one time to a minimum.

2. Provide temporary controls such as berms, dikes, and drains.

G. Construct fill and waste areas by selective placement to eliminate surface silts or clays which will erode.

H. Inspect earthwork periodically to detect start of erosion. Immediately apply corrective measures as required to control erosion.

I. Dispose of sediments offsite, not in or adjacent to streams or floodplains, nor allow sediments to flush into streams or drainage ways. Assume responsibility for offsite disposal location.

J. Unless otherwise indicated, compact embankments, excavations, and trenches by mechanically blading, tamping, and rolling soil in maximum of 8-inch layers. Provide compaction density at minimum 90 percent Standard Proctor ASTM D-698-78 density. Make at least one test per 500 cubic yards of embankment.

K. Do not maneuver vehicles on areas outside of dedicated rights-of-way and easements for construction. Immediately repair damage to erosion and sedimentation control systems caused by construction traffic.

L. Do not damage existing trees intended to remain.

3.18 REMOVAL OF CONTROLS

A. Remove erosion and sediment controls when the site is finally stabilized or as directed by Project Manager.

B. Dispose of sediments and waste products following Section 01505-Temporary Facilities.

END OF SECTION

Section 01575

STABILIZED CONSTRUCTION EXIT

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Installation of erosion and sediment control for stabilized construction exits used during construction and prior to final development of site.

1.02 MEASUREMENT AND PAYMENT

A. Unit Price Contracts. If Contract is Unit Price Contract, payment for work in this Section will be based on the following:

1. Stabilized construction roads, parking areas, exits and truck-washing areas: per square yard of aggregate placed in 8-inch layers. No separate payment will be made for street cleaning necessary to meet TPDES requirements. Include cost of work for street cleaning under related Specification section.

B. Stipulated Price (Lump Sum) Contracts. If the Contract is a Stipulated Price Contract, include payment for work under this Section in the total Stipulated Price.

1.03 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit manufacturer's catalog sheets and other Product Data on geotextile fabric.

C. Submit sieve analysis of aggregates conforming to requirements of this Specification.

1.04 REFERENCES

A. ASTM D 4632 - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.

B. Storm Water Quality Management Guidance Manual prepared by the City of Houston, Harris County and Harris County Flood Control District.

PART 2 PRODUCTS

2.01 GEOTEXTILE FABRIC

A. Provide woven or non-woven geotextile fabric made of polypropylene, polyethylene, ethylene, or polyamide material.

B. Geotextile fabric: Minimum grab strength of 270 psi in any principal direction (ASTM D-4632) and equivalent opening size between 50 and 140.

C. Geotextile and threads: Resistant to chemical attack, mildew, and rot and contain ultraviolet ray inhibitors and stabilizers to provide minimum of six months of expected usable life at temperature range of 0 to 120 degrees F.

D. Representative Manufacturers: Mirafi, Inc. or equal.

2.02 COARSE AGGREGATES

A. Coarse aggregate: Crushed stone, gravel, crushed blast furnace slag, or combination of these materials. Aggregate shall be composed of clean, hard, durable materials free from adherent coatings of, salt, alkali, dirt, clay, loam, shale, soft or flaky materials, or organic and injurious matter.

B. Coarse aggregates shall conform to following gradation requirements.

Sieve Size (Square Mesh)	Percent Retained (By Weight)
2-1/2"	0
2"	0 - 20
1-1/2"	15 - 50
3/4"	60 - 80
No. 4	95 - 100

PART 3 EXECUTION

3.01 PREPARATION AND INSTALLATION

A. Provide stabilized construction roads and exits at construction, staging, parking, storage, and disposal areas to keep street clean of mud carried by

construction vehicles and equipment. Construct erosion and sediment controls in accordance with Drawings and Specification requirements.

B. Do not clear grub or rough cut until erosion and sediment control systems are in place, unless approved by Project Manager to allow soil testing and surveying.

C. Maintain existing construction site erosion and sediment control systems until acceptance of the Work or until removal of existing systems is approved by Project Manager.

D. Regularly inspect, repair or replace components of stabilized construction exits. Unless otherwise directed, maintain stabilized construction roads and exits until the City accepts the Work. Remove stabilized construction roads and exits promptly when directed by Project Manager. Discard removed materials off-site.

E. Remove and dispose of sediment deposits at designated spoil site for Project. If a spoil site is not designated on Drawings, dispose of sediment off-site at a location not in or adjacent to stream or flood plain. Assume responsibility for off-site disposal.

F. Spread compacted and stabilized sediment evenly throughout site. Do not allow sediment to flush into streams or drainage ways. Dispose of contaminated sediment in accordance with existing federal, state, and local rules and regulations.

G. Prohibit equipment and vehicles from maneuvering on areas outside of dedicated rights-of-way and easements for construction. Immediately repair damage to erosion and sediment control systems caused by construction traffic.

H. Conduct construction operations in conformance with erosion control requirements of Specification 01570 – Storm Water Pollution Control.

3.02 CONSTRUCTION METHODS

A. Provide stabilized access roads, subdivision roads, parking areas, and other on-site vehicle transportation routes where shown on Drawings.

B. Provide stabilized construction exits and truck washing areas, when approved by Project Manager, of sizes and at locations shown on Drawings or as specified in this Section.

C. Clean tires to remove sediment on vehicles leaving construction areas prior to entering public right-of-ways. Construct truck washing areas needed to

remove sediment. Wash trucks on stabilized areas that drain into drainage systems protected by erosion and sediment control measures.

D. Details for stabilized construction exits are shown on Drawings. Construct other stabilized areas to same requirements. Maintain minimum roadway widths of 14 feet for one-way traffic and 20 feet for two-way traffic and of sufficient width to allow ingress and egress. Place geotextile fabric as a permeable separator to prevent mixing of coarse aggregate with underlaying soil. Limit exposure of geotextile fabric to elements between laydown and cover to a maximum 14 days to minimize potential damage.

E. Grade roads and parking areas to provide sufficient drainage away from stabilized areas. Use sandbags, gravel, boards, or similar materials to prevent sediment from entering public right-of-ways, receiving streams or storm water conveyance systems.

F. Inspect and maintain stabilized areas daily. Provide periodic top dressing with additional coarse aggregates to maintain required depth. Repair and clean out damaged control systems used to trap sediment. Immediately remove spilled, dropped, washed, or tracked sediment from public right-of-ways.

G. Maintain lengths of stabilized areas as shown on Drawings or a minimum of 50 feet. Maintain a minimum thickness of 8 inches. Maintain minimum widths at all points of ingress or egress.

H. Stabilize other areas with the same thickness, and width of coarse aggregate required for stabilized construction exits, except where shown otherwise on Drawings.

I. Stabilized areas may be widened or lengthened to accommodate truck washing areas when authorized by Project Manager.

J. Clean street daily before end of workday. When excess sediments have tracked onto streets, Project Manager may direct Contractor to clean street as often as necessary. Remove and legally dispose of sediments.

K. Use other erosion and sediment control measures to prevent sediment runoff during rain periods and non-working hours and when storm discharges are expected.

END OF SECTION

Section 01580

PROJECT IDENTIFICATION SIGNS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Project identification sign description.

B. Project sign installation.

C. Maintenance and removal of Project sign.

1.02 SYSTEM DESCRIPTION

A. Sign Construction: Construct signs of new materials in accordance with Standard Detail provided at the Pre-construction Conference.

B. Appearance: Maintain signs to present a clean and neat look throughout Contract duration.

C. Sign Manufacturer: Experienced professional sign company.

D. Sign Placement: At locations shown in Drawings unless otherwise specified by Project Manager at pre-construction meeting.

1. Provide one sign at each end of a linear Project involving paving, overlay, sewer line, storm drainage, or water main construction located in rights-of-ways.

2. Provide one sign for site or building construction Contracts

3. Provide one sign at each site for Contracts with multiple sites.

4. Sign Relocation: As work progresses, relocate signs if directed by Project Manager in writing. Include cost for one relocation of post-mounted signs in Contract Price. Subsequent relocations, if directed by Project Manager in writing, will be subject to Change Order.

E. Skid-mounted signs: Use for projects with noncontiguous locations where work progresses from one location to another. Design skid structure to withstand a 60 mile-per-hour wind load to the face or back of sign using stakes, straps, or ballast. Contractor shall be responsible for security of signs at each site.

1.03 SUBMITTALS

A. Submit Shop Drawings under provisions of Section 01330 - Submittal Procedures.

B. Show content, layout, lettering style, lettering size, and colors. Make sign and lettering to scale, clearly indicating condensed lettering, if used.

PART 2 PRODUCTS

2.01 SIGN MATERIALS

A. Structure and Framing: Use new sign materials.

1. Sign Posts: 4-inch by 4-inch pressure treated wood posts, 9 feet long for skid mounting and 12 feet long minimum for in-ground mounting.

2. Skid Bracing: 2-inch by 4-inch wood framing material.

3. Skid Members: 2-inch by 6-inch wood framing material.

4. Fasteners:
   a. Galvanized steel.
   b. Attach sign to posts with 1/2-inch by 5-1/2 inch button head carriage bolts and secure with nuts and flat head washers.
   c. Cover button heads with white reflective film or paint to match sign background.
   d. Use metal brackets and braces and 3/4-inch wood screws to attach sign header.

B. Sign and Sign Header: 3/4-inch thick marine plywood. Use 4-foot by 8 -foot sheet for the sign and a single piece for the header to minimize joints. Do not piece wood sheets to fabricate sign face.

C. Paint and Primers: White industrial grade, fast-drying, oil-based paint with gloss finish for structural and framing members, sign, and sign header material surfaces. Paint all sign surfaces prior to adding adhesive applications.

D. Colors:

1. Sign Background: Reflective white 3M Scotchlite Engineer Grade, Pressure Sensitive Sheeting (White), or approved equal.

2. Border: For red border around area, which designates project name and project amount, use reflective red 3M Scotchlite Engineer Grade, Pressure Sensitive Sheeting (Red), or approved equal.

3. Sign Film: 3M Scotchcal Pressure Sensitive Films, or approved equal for legends, symbols, lettering, and artwork. Match colors to 3M Scotchcal Pressure Sensitive Films.

a.	Lettering Below Seal:	Black
b.	Lettering Above Project Name:	Vivid Blue
c.	Lettering on Blue Background:	White
d.	Background Behind Project Name:	Vivid Blue

E. City Seal: Project Manager will provide City seals to Contractor, as needed.

2.02 SIGN LAYOUT

A. Lettering:

1. Style, Size, and Spacing: Helvetica Regular lettering.

2. Condensed Style: Text may be condensed if needed to maintain sign composition.

B. Composition:

1. Lines with Standard Text
   a. Top line shall read "BUILDING TOGETHER FOR THE FUTURE".
   b. Use lower left below City Seal to list names and titles for Mayor, Controller and Council Members. Place as shown on Drawings with indicated size and spacing.
   c. Center telephone number of the Customer Response Center, "311", near the bottom of the area with the blue background.

2. Lines with Variable Text. Use blue background space for Project name and dollar amount.
   a. Project Manager will provide Project name and dollar amount of Project for preparation of sign. Center name on one or two lines, and dollar amount immediately below Project name, in area with blue background. Use condensed lettering if necessary.

2.03 LAYOUT AND COMPOSITION FOR HEADER

A. City of Houston Seal:

1. A space of approximately 24 inches in diameter is provided for the City seal, the top 6 inches of which extends above the sign on the sign header.

2. Construct sign header of same material as sign face. Cut material to match curve of the City seal.

3. Project Manager will provide the seal to be affixed to the sign by sign maker.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install Project identification signs within seven days after Date of Commencement of the Work.

B. Erect signs at locations shown in Drawings unless otherwise designated by Project Manager at pre-construction meeting. Position sign so it is fully visible and readable to general public.

C. Erect sign level and plumb.

D. If mounted on posts, sink posts 3 to 4 feet below grade and stabilize posts to minimize lateral motion. Leave a minimum of 8 feet of post above existing grade for mounting of sign.

E. Erect sign so that top edge of sign is at a nominal 8 feet above existing grade.

3.02 MAINTENANCE AND REMOVAL

A. Keep signs and supports clean. Repair deterioration and damage.

B. Remove signs, framing, supports, and foundations to a depth of at least 2 feet upon completion of Project. Restore area to a condition equal to or better than before construction.

END OF SECTION

PROJECT No.: (FILE NO:)	CONTRACT No.:	REVIEWED BY:

***INSTRUCTIONS TO SIGN MAKER** (LIST COMPANY NAME):

QTY.	ACTION ITEMS:
	Make new sign(s)
	Follow City standards attached
	Provide submittal (drawing) to the City for project sign showing content, layout, lettering style, lettering size, and colors

VARIABLE TEXT

Line 1	Project Name:	
Line 2	Project Amount (rounded to nearest $1000):	

ATTACHMENTS INCLUDED

QTY.	SEALS / LOGOS
	City of Houston - 24" diameter
	STANDARDS
	Standard Specification Section 01580 - Project Identification Signs
	Standard Detail 01580-02 Construction Sign

(Instructions on reverse.)

INSTRUCTIONS

Contractor produces this form. Contractor shall insert the information and provide the form to the sign maker with Contractor's purchase order.

List PROJECT No., (FILE No.), CONTRACT No., and name of City's Project Manager REVIEWED BY.

INSTRUCTIONS TO SIGN MAKER:

- Give COMPANY NAME of sign maker.
- Indicate QUANTITY of new signs to be made.
- Direction for sign maker to follow City Standards in making signs.
- Require submittals from sign maker, who provides Shop Drawing of Project sign showing content, layout, lettering style, lettering size, and colors.

VARIABLE TEXT:

- Give PROJECT NAME. Write it out in all caps and suggest line break. Lines are required.
- Give Project amount to be listed on sign. Round off to nearest $1000.

ATTACHMENTS INCLUDED:

- **Seals**

  City provides the quantity of City seals required, one for each Project sign.

- **Standards**

  Contractor provides set of Standards to sign maker, including (Specification Section 01580 - Project Identification Signs, and Standard Detail No. 01580-02 - Construction Sign.

Section 01610

BASIC PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Requirements for transportation, delivery, handling, and storage of Products.

1.02 PRODUCTS

A. Products: Defined in Document 00700 – General Conditions. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components designated for reuse.

B. Do not reuse materials and equipment, designated for removal, except as specified by the Contract.

C. Provide Products from the fewest number of manufacturers as practical, in order to simplify spare parts inventory and to allow for maximum interchangeability of components. For multiple components of the same size, type or application, use the same make and model of component throughout the Work.

1.03 TRANSPORTATION

A. Make arrangements for transportation, delivery, and handling of Products required for timely completion of the Work.

B. Transport and handle Products in accordance with manufacturer's instructions.

C. Consign and address shipping documents to proper party giving name of the Project and its complete street address. Shipments shall be delivered to Contractor.

1.04 DELIVERY

A. Arrange deliveries of Products to accommodate short-term site completion schedules and in ample time to facilitate inspection prior to Installation. Avoid deliveries that cause lengthy storage or overburden of limited storage space.

B. Coordinate deliveries to avoid conflict with the Work and conditions at the site and to accommodate the following:

1. Work of other contractors or the City.

2. Limitations of storage space.

3. Availability of equipment and personnel for handling Products.

4. The City's use of premises.

C. Have Products delivered to the site in manufacturer's original, unopened, labeled containers.

D. Immediately upon delivery, inspect shipment to assure:

1. Product complies with requirements of the Contract.

2. Quantities are correct.

3. Containers and packages are intact; labels are legible.

4. Products are properly protected and undamaged.

1.05 PRODUCT HANDLING

A. Coordinate off-loading of Products delivered to the site. If necessary during construction, move and relocate stored Products at no additional cost to the City.

B. Provide equipment and personnel necessary to handle Products, including those provided by the City, by methods to prevent damage to Products or packaging.

C. Provide additional protection during handling as necessary to prevent breaking, scraping, marring, or otherwise damaging Products or surrounding areas.

D. Handle Products by methods to prevent over-bending or overstressing.

E. Lift heavy components only at designated lifting points.

F. Handle Products in accordance with manufacturer's recommendations.

G. Do not drop, roll, or skid Products off delivery vehicles. Hand-carry or use suitable materials handling equipment.

1.06 STORAGE OF PRODUCTS

A. Store and protect Products in accordance with manufacturer's recommendations and requirements of these Specifications.

B. Make necessary provisions for safe storage of Products. Place Products so as to prevent damage to any part of the Work or existing facilities and to maintain free access at all times to all parts of the Work and to utility service company installations in the vicinity of the Work. Keep Products neatly and compactly stored in locations that will cause minimum inconvenience to other contractors, public travel, adjoining owners, tenants, and occupants. Arrange storage in a manner so as to provide easy access for inspection.

C. Restrict storage to areas available on the site for storage of Products as shown on Drawings or approved by Project Manager.

D. Provide off-site storage and protection when on-site storage is not adequate. Provide addresses of, and access to, off-site storage locations for inspection by Project Manager.

E. Do not use lawns, grass plots, or other private property for storage purposes without written permission of owner or other person in possession or control of premises.

F. Protect stored Products against loss or damage.

G. Store in manufacturers' unopened containers.

H. Neatly, safely, and compactly stack Products delivered and stored along the line of the Work to avoid inconvenience and damage to property owners and general public, and maintain at least 3 feet clearance around fire hydrants. Keep public, private driveways and street crossings open.

I. Repair or replace damaged lawns, sidewalks, streets or other improvements to satisfaction of Project Manager. Total length that Products may be distributed along route of construction at one time is 1000 linear feet, unless otherwise approved in writing by Project Manager.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01630

PRODUCT SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Options for making Product or process selections.

B. Procedures for proposing equivalent Products or processes, including pre-approved, pre-qualified, and approved Products or processes.

1.02 DEFINITIONS

A. Product: As defined in Document 00700 – General Conditions. Product does not include machinery and equipment used for production, fabrication, conveying, and erection of the Work. Products may also include existing materials or components designated for reuse.

B. Process: Any proprietary system or method for installing system components resulting in an integral, functioning part of the Work. For this Section, the word Products includes Processes.

1.03 SELECTION OPTIONS

A. Pre-approved Products: Construction products of certain manufacturers or Suppliers designated in Specifications as "pre-approved." The City maintains a list of pre-approved products. Pre-approved Products for this Project are designated as pre-approved in Specifications. Products of other manufacturers or suppliers are not acceptable for this Project and will not be considered under the submittal process for approving alternate products.

B. Pre-qualified Products: Construction products of certain manufacturers or Suppliers designated in Specifications as "pre-qualified." Pre-qualified Products for this Project are designated as pre-qualified in Specifications. Products of other manufacturers or suppliers are not acceptable for this Project and will not be considered under the submittal process for approving alternate products.

C. Approved Products: Construction products of certain manufacturers or Suppliers designated in Specifications followed by words "or approved equal." Approval of alternate products not listed in Specifications may be obtained through provisions for product options and substitutions in Document 00700 - General Conditions, and by following submittal procedures specified in

Section 01330- Submittal Procedures. The procedure for approval of alternate products is not applicable to pre-approved or pre-qualified products.

D. Product Compatibility: To the maximum extent possible, provide Products that are of the same type or function from a single manufacturer, make, or source. Where more than one choice is available, select Product that is compatible with other Products already selected, specified, or in use by the City.

1.04 CONTRACTOR'S RESPONSIBILITY

A. Responsibility related to Product options and substitutions is defined in Document 00700 - General Conditions.

B. Furnish information Project Manager deems necessary to judge equivalency of alternate Product.

C. Pay for laboratory testing, as well as any other review or examination costs, needed to establish equivalency between products in order to obtain information upon which Project Manager can base a decision.

D. If Project Manager determines alternate product is not equal to that named in Specifications, Furnish one of the specified Products.

1.05 CITY REVIEW

A. Use alternate Products only when approved in writing by Project Manager. Project Manager's determination regarding acceptance of proposed alternate Product is final.

B. Alternate Products shall be accepted if Products are judged by Project Manager to be equivalent to specified Product or to offer substantial benefit to the City.

C. The City retains the right to accept any Product deemed advantageous to the City, and similarly, to reject any product deemed not beneficial to City.

1.06 SUBSTITUTION PROCEDURE

A. Collect and assemble technical information applicable to the proposed Product to aid in determining equivalency as related to the approved Product specified.

B. Submit a written request for a construction Product to be considered as an alternate Product.

C. Submit Product information after the effective date of the Contract and within the time period allowed for substitution submittals given in Document 00700 - General Conditions. After the submittal period has expired, requests for alternate Products shall be considered only when specified Product becomes unavailable because of conditions beyond Contractor's control.

D. Submit five copies of each request for alternate Product approval. Include the following information:

1. Complete data substantiating compliance of proposed substitution with the Contract.

2. For Products:
   a. Product identification, including manufacturer's name and address.
   b. Manufacturer's literature with Product description, performance and test data, and reference standards.
   c. Samples, as applicable.
   d. Name and address of similar projects on which Product was used and date of installation. Include names of Owner, design consultant, and installing contractor.

3. For construction methods:
   a. Detailed description of proposed method.
   b. Drawings illustrating methods.

4. Itemized comparison of proposed substitution with Product or method specified.

5. Data relating to changes in Construction Schedule.

6. Relation to separate contracts, if any.

7. Accurate cost data on proposed substitution in comparison with Product or method specified.

8. Other information requested by Project Manager.

E. Approved alternate Products will be subject to the same review process as the specified Product would have been for Shop Drawings, Product Data, and Samples.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01725

FIELD SURVEYING

PART 1 GENERAL

1.01 QUALITY CONTROL

A. Conform to State of Texas laws for surveys requiring licensed surveyors. Employ a surveyor acceptable to Project Manager if required by the Contract.

1.02 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit name, address, and telephone number of Surveyor to Project Manager before starting survey work.

C. Submit documentation verifying accuracy of survey work on request.

D. Submit certificate signed by Surveyor, that elevations and locations of the Work are in conformance with the Contract.

1.03 PROJECT RECORD DOCUMENTS

A. Maintain a complete and accurate log of control and survey work as it progresses.

B. Prepare a certified survey setting forth dimensions, locations, angles, and elevations of construction and site work upon completion of foundation walls and major site improvements.

C. Submit record documents under provisions of Section 01785 - Project Record Documents.

1.04 EXAMINATION

A. Verify locations of survey control points prior to starting the Work.

B. Notify Project Manager immediately if any discrepancies are discovered.

1.05 SURVEY REFERENCE POINTS

A. The City will establish survey control datum as provided in Document 00700 - General Conditions and as indicated on Drawings. Inform Project Manager in advance of time horizontal and vertical control points will be established so

verification deemed necessary by Project Manager may be done with minimum inconvenience to the City or Contractor.

B. Locate and protect survey control points prior to starting site work; preserve permanent reference points during construction.

C. Notify Project Manager a minimum of 48 hours before relocation of reference points is needed due to changes in grades or other reasons.

D. Promptly report loss or destruction of reference points to Project Manager.

E. Reimburse the City for cost of reestablishment of permanent reference points disturbed by construction operations.

1.06 SURVEY REQUIREMENTS

A. Utilize recognized engineering survey practices.

B. Establish a minimum of two permanent benchmarks on site, referenced to established control points. Record horizontal and vertical location data on Project record documents.

C. Establish elevations, lines and levels to provide quantities required for measurement and payment and for appropriate controls for the Work. Locate and lay out the following with appropriate instruments:

1. Site improvements including grading, fill and topsoil placement, utilities, and footings and slabs

2. Grid or axis for structures

3. Building foundation, column locations, and ground floor elevations

D. Periodically verify layouts.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01732

PROCEDURE FOR WATER VALVE ASSISTANCE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Operation of valves. City of Houston employees will operate existing valves. Contractor's employees may operate new valves included in the Project prior to acceptance by the City.

1.02 PROCEDURE

A. Perform activities listed in Exhibit A attached to this Section.

1.03 SUBMITTALS

A. Submit request for work order planning meetings in accordance with Exhibit A. Include information listed in Step 1 of Exhibit A, attached to this Section.

1.04 CANCELLATION

A. Contractor, Project Manager, or Public Utilities Division may cancel a scheduled valve assistance appointment at no extra cost or payment to Contractor. Contractor shall notify City's appointed Project Inspector ("Inspector") 24 hours in advance of cancellation. Inspector shall notify Central Operation Service (COS) immediately upon receipt of cancellation notice. Cancellation may be caused by bad weather, preparation work taking longer than anticipated, or unforeseen delays by one or more of the three parties.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

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EXHIBIT A

PROCEDURE FOR VALVE ASSISTANCE

The following procedure will be used by Utility Maintenance Branch personnel when completing a service request from individual Contractors, through Inspector, for operation of existing water valves.

ROUTINE VALVE ASSISTANCE REQUEST (NON-EMERGENCY JOBS):

Step 1. a. When notified by Contractor, Inspector will schedule a work order planning meeting by calling Central Operation Service (COS) at **(713) 295-5521** and providing information shown below. The work order planning meeting shall be conducted a minimum of three days after the request; excluding weekends, holidays, inclement weather days, and the day of the call.

Location of Work (Street Intersection)	Project #
Project Description	Contractor (Company Name)
Job Superintendent's Name	Superintendent's Office #/Mobile #/Pager #
Contractor's Emergency Information	Name and Phone #/Mobile #/Pager #
Inspector/Senior Inspector	Name, Phone #/Mobile #/Pager #
Date & Time assistance is requested	

b. COS will create a work order for each wet connection, cut and plug, etc. that will be designated as a "Code 40" (Private Contractor).

c. COS will give Inspector the work order number. This work order number must be used as a reference in all communications regarding this request for Valve Assistance.

d. Valve personnel must have the work order number on their route sheet. When valve personnel arrive at the job site for the Work Order Planning Meeting between Inspector, Contractor, and Utility Maintenance valve personnel, they will verify the street intersection and work order number with the Inspector before beginning Work Order Planning Meeting.

e. During Work Order Planning Meeting, the work to be performed will be outlined and the actual date work will be performed will be mutually determined by Inspector, Contractor and City's Utility Maintenance Division valve personnel, based upon relevant factors such as preparatory work needed, customer requirements, etc.

f. Valve personnel will perform work specifically outlined in the work order requested. Also, Utility Maintenance Branch valve personnel will only operate existing water valves. Inspector must contact COS and request a new work order for additional work.

g. Valve personnel will contact the dispatcher and advise when the job is complete. Valve personnel will list all appropriate information on the Crew Activity Report.

Step 2. Should valve personnel not be able to keep an appointment to provide valve assistance, Utility Maintenance Branch will provide notification to appropriate Inspector by phone at least 24 hours prior, with that fact and rescheduling information, if available.

Step 3. Inspector will notify COS if valve personnel have not arrived at the site within 30 minutes of scheduled appointment. If Contractor is not ready when valve operator arrives to provide valve assistance, the City shall charge Contractor $50.00 per hour, starting 15 minutes after the scheduled appointment time, minimum one hour charge.

Step 4. Contractor will not be due delay claims or downtime if Utility Maintenance Branch has notified Inspector that they will not be able to provide valve assistance as scheduled.

Step 5. Test installed new valves in the presence of Inspector before substantial completion inspection is scheduled. Place new valves in open position on or before the Date of Substantial Completion.

Step 6. Project Manager will notify, in writing, Utility Maintenance Branch two months before the warranty expires to report any problems they have with new water lines. Project Manager will notify Contractor about these problems.

EMERGENCY REQUEST FOR VALVE ASSISTANCE PROCEDURE:

Step 1. When notified by Contractor, Inspector will request emergency Valve Assistance due to a broken line/service, etc. by calling COS at **(713) 295-5521** and providing the following information:

Location of Work (Street Intersection)	Project #
Project Description	Superintendent's Office #/Mobile #/Pager #
Contractor (Company Name)	Name and Phone #/Mobile #/Pager #
Job Superintendent's Name	Name, Phone #/Mobile #/Pager #
Contractor's Emergency Information	
Inspector/Senior Inspector	
Date & Time assistance is requested	

Step 2. COS will create an emergency work order number and describe the work to be performed.

Step 3. COS will give Inspector the emergency work order number. Reference work order number in all communications regarding request for Valve Assistance.

Step 4. COS will contact designated valve personnel and assign emergency work order. Dispatcher will follow standard COS procedures if this situation occurs after normal working hours.

Step 5. Valve personnel must have the emergency work order number on the route sheet. When valve personnel arrive at the job site for emergency work, they will verify the street intersection and emergency work order number with Inspector prior to beginning work requested for operating existing water valves. Valve personnel will coordinate verification of street intersection and work order number with Inspector prior to performing work.

Section 01740

SITE RESTORATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Restoration of site affected by the Work in public or private property, including pavement, esplanades, sidewalks, driveways, fences, lawns and landscaping.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment for restoration of Project site disturbed by utility construction operations is on a linear foot basis. Measurement will be as provided for corresponding utility in each Specification section. No separate payment made for branch pipe, valves and, other associated work for utilities. Measurement for restoration with multiple utilities within the same right-of-way will be on a linear foot basis for only one utility.

2. No separate payment made for facility or roadway projects. Include cost in the surface improvements associated with the facility or roadway construction.

3. Payment includes required site restoration within the right-of-way or easement regardless of size or type of pipe, method of construction, paved or unpaved areas or thickness and width of pavement.

4. No separate payment made for site restoration for service connections under this Section. Include cost in appropriate utility section.

5. Refer to Section 01270 – Measurement and Payment for Unit Price procedures.

B. Stipulated Price (Lump Sum) Contracts. If Contract is Stipulated Price Contract, include payment for work under this section in total Stipulated Price.

1.03 DEFINITIONS

A. Phase: Locations identified on the plans and listed in Section 1110 – Summary of Work under Work Sequence.

B. Site Restoration: Replacement or reconstruction of Site Improvements located in rights-of-way, easements, public property, and private property affected or altered by the Work.

C. Site Improvement: Includes pavement, curbs and gutters, esplanades, sidewalks, driveways, fences, lawns, irrigation systems, landscaping, and other improvements in existence at the Project site before commencement of construction operations.

1.04 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Schedule of testing, service connections, abandonment, backfill, and site restoration.

C. Sample of notices to residents outlining their responsibility for maintenance of site improvements adjacent to the Project that are not disturbed by construction operations

1.05 SCHEDULING

A. Schedule testing, service connections, abandonment, backfill and site restoration immediately following completion of pipe laying work or paving within each block or line segment.

B. Phased Construction:

1. Commencement of subsequent Phase will follow scheduling of site restoration of prior Phase. Limit work to a maximum of two Phases of the project.

C. Construction of Projects with no Phases listed in Section 01110- Summary of Work:

1. Complete site restoration prior to disturbing over 50% of total project linear feet or 2,000 linear feet, whichever is greater, of right-of-way or easement.

2. Limit work to a maximum of 50% of total project linear feet or 2,000 linear feet, whichever is greater, of right-of-way and easement. Commence work in additional right-of-way or easement after completion of site restoration.

PART 2 PRODUCTS

2.01 MATERIALS

A. Pavement, Sidewalks and Driveways: Materials specified in Section 02951 - Pavement Repair and Resurfacing.

B. Seeding and Sodding: Sod specified in Section 02922 - Sodding and Seed specified in Section 02921 - Hydromulch Seeding.

C. Trees, Shrubs and Plantings: Conform to requirements of Section 01562 – Tree and Plant Protection.

PART 3 EXECUTION

3.01 Preparatory Work

A. Provide cleanup and restoration crews to work closely behind pipe laying and roadway construction crews, and where necessary, during testing, service restoration, abandonment, backfill and surface restoration.

B. Water Lines: Unless otherwise approved by Project Manager, comply with the following:

1. Once Project Manager approves work within a Phase, immediately begin preparatory work for disinfection effort.

2. No later than three days after completing disinfection preparatory work, submit to City appropriate request for disinfection.

3. If City fails to perform initial disinfection of lines in accordance with Section 2514 - Disinfection of Water Lines, within seven days from submission of appropriate request, and if approved by Project Manager, pipe laying operations may continue beyond approved limits until the City responds.

4. Immediately after transfer of services, begin abandonment of old water lines and site restoration.

C. Wastewater Lines:

1. Once Project Manager approves work within a Line Segment, immediately begin preparatory work for testing effort.

2. No later than three days after completing preparatory work for testing, initiate testing work.

3. Immediately after transfer of service connections, begin abandonment of old wastewater lines, and site restoration.

D. Street Construction and Paving Projects

1. Once Project Manager approves work within a Line Segment or block, immediately begin preparatory work for testing effort.

2. No later than three days after completing preparatory work for testing, initiate testing work.

3. Immediately after testing begin site restoration.

E. Street Construction and Paving Projects

1. Once Project Manager approves work within a block, immediately begin preparatory work for sidewalk construction, sodding and hydromulching and tree planting.

2. No later than seven days after completing preparatory work, initiate construction.

3.02 CLEANING

A. Remove debris and trash to maintain a clean and orderly site in accordance with requirements of General Conditions and Section 01576 - Waste Material Disposal.

3.03 LANDSCAPING AND FENCES

A. Seeding and Sodding.

1. Remove construction debris and level area with bank sand so that new grass surface matches level of existing grass and maintains pre-construction drainage patterns. Level and fill minor ruts or depressions caused by construction operations with bank sand, where grass is still viable.

2. Restore previously existing turfed areas with sod and fertilize in accordance with Section 02922 - Sodding. Sod to match existing turf.

3. Restore unpaved areas not requiring sodding with hydromulch seeding conforming to Section 02921 - Hydromulch Seeding.

B. Trees, Shrubbery and Plants.

1. Remove and replant trees, shrubs, and plants in accordance with requirements of Section 01562 – Tree and Plant Protection.

C. Fence Replacement.

1. Replace removed or damaged fencing to equal or better condition than existed prior to construction, including concrete footings and mow strips. Provide new wood posts, top and bottom railing and panels. Metal fencing material, not damaged by the Work, may be reused.

2. Remove and dispose of damaged or substandard material.

3.04 MAINTENANCE

A. Maintain shrubs, plantings, sodded areas and seeded areas.

B. Replace shrubs, plantings and seeded or sodded areas that fail to become established.

C. Refer to Section 01562 - Tree and Plant Protection, Section 02921 - Hydromulch Seeding and Section 02922 - Sodding for maintenance requirements.

END OF SECTION

Section 01770

CLOSEOUT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Procedures to establish Date of Substantial Completion.

B. Closeout procedures for final submittals, O&M data, warranties, spare parts and maintenance materials.

C. Texas Department of Licensing and Regulation (TDLR) inspection for Texas Accessibility Standards (TAS) compliance.

1.02 SUBSTANTIAL COMPLETION

A. Comply with Document 00700 - General Conditions regarding Date of Substantial Completion when Contractor considers the Work, or portion thereof designated by Project Manager, to be substantially complete.

B. Insure the following items have been completed when included in the Work, prior to presenting a list of items to be inspected by Project Manager for issuance of a Certificate of Substantial Completion:

1. cutting, plugging, and abandoning of water, wastewater, and storm sewer lines, as required by Contract documents for each item;

2. construction of, and repairs to, pavement, driveways, sidewalks, and curbs and gutters;

3. sodding and hydromulch seeding, unless waived by Project Manager in writing;

4. general clean up including pavement markings, transfer of services, successful testing and landscape;

5. additional requirements contained in Section 01110 - Summary of Work.

C. Assist Project Manager with inspection of Contractor's list of items and complete or correct the items, including items added by Project Manager, within specified time period.

D. Should Project Manager's inspection show failure of Contractor to comply with requirements to obtain Date of Substantial Completion, including those items in Paragraph 1.02 B. of this section, Contractor shall complete or correct the items, before requesting another inspection by Project Manager.

1.03 CLOSEOUT PROCEDURES

A. Comply with Document 00700 - General Conditions regarding final completion and final payment when the Work is complete and ready for Project Manager's final inspection.

B. Provide Project Record Documents in accordance with Section 01785 - Project Record Documents.

C. Complete or correct items on punch list, with no new items added. Address new items during warranty period.

D. The City will occupy portions of the Work as specified in other sections.

1.04 FINAL CLEANING

A. Execute final cleaning prior to final inspection.

B. For facilities, clean interior and exterior glass and surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

C. Clean equipment and fixtures to sanitary condition.

D. Clean or replace filters of operating equipment.

E. Clean debris from roofs, gutters, down spouts, and drainage systems.

F. Clean site; sweep paved areas, and rake clean landscaped surfaces.

G. Remove waste and surplus materials, rubbish, and temporary construction facilities from site following final test of utilities and completion of the Work.

1.05 ADJUSTING

A. Adjust operating equipment to ensure smooth and unhindered operation. Value of this testing and adjusting is five percent of Lump Sum Price in the Schedule of Values for item being tested.

1.06 OPERATION AND MAINTENANCE DATA

A. Submit O&M data as noted in Section 01330 - Submittal Procedures.

B. Five percent of lump sum amount of each piece of equipment as indicated in Schedule of Unit Price Work or Schedule of Values will be paid after the required O&M data submittals are received and approved by Project Manager.

1.07 WARRANTIES

A. Provide one original of each warranty from Subcontractors, Suppliers, and manufacturers.

B. Provide Table of Contents and assemble warranties in a 3-ring/D binder with durable plastic cover.

C. Submit warranties prior to final progress payment.

D. Warranties shall commence in accordance with the requirements in Document 00700 - General Conditions.

1.08 SPARE PARTS AND MAINTENANCE MATERIALS

A. Provide Products, spare parts, maintenance and extra materials in quantities specified in individual Specification sections.

B. Deliver to a location within the City limits as directed by Project Manager. Applicable items must be delivered prior to issuance of a final Certificate for Payment.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 01785

PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Maintenance and submittal of record documents and Samples.

1.02 MAINTENANCE OF DOCUMENTS AND SAMPLES

A. Maintain one record copy of documents at the site in accordance with Document 00700 - General Conditions.

B. Store record documents and Samples in field office, if a field office is required by the Contract, or in a secure location. Provide files, racks, and secure storage for record documents and Samples.

C. Label each document "PROJECT RECORD" in neat, large, printed letters.

D. Maintain record documents in a clean, dry, and legible condition. Do not use record documents for construction purposes. Do not use permit drawings to record Modifications to the Work.

E. Keep record documents and Samples available for inspection by Project Manager.

F. Bring record documents to progress review meetings for viewing by Project Manager and, if applicable, Design Consultant.

1.03 RECORDING

A. Record information legibly with red ink pen on a set of blueline opaque drawings, concurrently with construction progress. Maintain an instrument on site at all times for measuring elevations accurately. Do not conceal work until required information is recorded

B. Contract Drawings and Shop Drawings: Mark each item to record completed Modifications, or when minor deviations exist, the actual construction including:

1. Measured depths of elements of foundation in relation to finish first floor datum.
2. Measured horizontal locations and elevations of Underground Facilities and appurtenances, referenced to permanent surface improvements.

3. Elevations of Underground Facilities referenced to City of Houston benchmark utilized for the Work.

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

5. Dimensions and details of field changes

6. Changes made by Modifications.

7. Details not on original Drawings.

8. References to related Shop Drawings and Modifications.

C. Survey all joints of water mains at the time of construction. Record on Drawings, water main invert elevation, elevation top of manway, and centerline horizontal location relative to baseline.

D. For large diameter water mains, mark specifications and addenda to record:

1. Manufacturer, trade name, catalog number and Supplier of each Product actually Installed.

2. Changes made by Modification or field order.

3. Other matters not originally specified.

E. Annotate Shop Drawings to record changes made after review.

1.04 SUBMITTALS

A. At closeout of the Contract, deliver Project record documents to Project Manager.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

Section 02084

FRAMES, GRATES, RINGS, AND COVERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Iron castings for manhole frames and covers, inlet frames and grates, catch basin frames and grates, meter vault frames and covers, adjustment rings, and extensions.

B. Ring grates.

C. Trench Drainage

D. Tree Grates

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. No payment will be made for frames, grates, rings, covers, and seals under this Section. Include payment in unit price for related item.

2. Payment to rack over existing manhole is on a unit price basis for each manhole.

3. Refer to Section 01270 - Measurement and Payment for unit price procedures

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for Work in this Section is included in total Stipulated Price.

1.03 REFERENCES

A. AASHTO - American Association of State Highway and Transportation Officials

1. Standard Specification for Highway Bridges

2. M306: Drainage, Sewer, Utility, and Related Castings

3. M105: Gray Iron Castings

B. ASTM A 48 - Standard Specification for Gray Iron Castings

C. ASTM A 615 - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement

D. AWS - D 12.1 Welding Reinforcing Steel.

1.04 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit copies of manufacturer's specifications, load tables, dimension diagrams, anchor details, and installation instructions.

C. Submit shop drawings for fabrication and installation of casting assemblies that are not included in Drawings or standard City of Houston details. Include plans, elevations, sections and connection details. Show anchorage and accessory items. Include setting drawings for location and installation of castings and anchorage devices.

PART 2 PRODUCTS

2.01 CASTINGS

A. All castings shall be made from gray cast iron conforming to the requirements of AASHTO M105 class 35b.

B. Castings intended for traffic service shall be clean castings capable of withstanding an application of 40,000 pound proof load as described in Section 5 of AASHTO M306 (includes items such as frames, grates, rings, covers, trench drainage, etc.)

C. Fabricate castings to conform to shapes, dimensions, and with wording or logos shown on Drawings.

D. All castings shall be manufactured in accordance with the requirement of Section 4 of AASHTO M306.

E. Unless otherwise indicated, all castings shall be provided uncoated.

F. Each individual casting shall include all markings as shown on the specification drawings and shall be identified by the producing foundry showing the following: Name of producing foundry; country of manufacturer preceded by the words "Made in," such as "Made in USA"; material designation, heat identification and cast date (MM/DD/YY), casting lettering as required by the purchaser. If a casting is melted and poured at one foundry and labeled with the name of another organization, manufacturer, or foundry the casting shall include the name of the producing foundry and the organization the casting is produced for. The name of the producing foundry and the organization the product is made for shall have lettering of

equal size, be in close proximity to each other, and be easily identified from the same side of the casting. The casting shall also include any additional markings as required in Section 9 of AASHTO M306 and Section 17 of AASHTO M105.

2.02 TESTING REQUIREMENTS

A. Testing shall be performed in accordance with the following inspection criteria unless otherwise specified in the contract or purchase order. The manufacturer/supplier shall be responsible for carrying out all of the required tests and inspections. All testing shall be conducted in the United States using purchaser approved reliable facilities. The manufacturer/supplier shall maintain complete records of all such tests and inspections. All testing shall be paid for by the manufacturer/supplier. If the producing foundry is located within the United States and operates in accordance with an approved Quality System they shall conduct testing in accordance with Subsection B. All others shall conduct testing in accordance with subsection C.

B. The manufacturer shall report and certify material information obtained from separately cast test bars. If there are more than three test bar failures in a calendar year the manufacturer shall report this to the purchaser and shall discontinue supplying product. In order to resume supplying product, documentation that a new Quality System is in place to ensure material compliance must be submitted to and accepted by the purchaser. The manufacturer may also supply under subsection C.

C. A test bar for determining the class of iron shall be cast on each casting in a place where it can be easily broken off with a breakage pattern remaining on the member. Test bars shall be of sufficient size in order to produce a machined test specimen complying with the dimension requirement for a Type B test bar as shown in AASHTO M105. For lots of 15 castings or less 30% of test bars shall be tested. For lot sizes between 16 to 100, 10% or a minimum of 5 test bars shall be tested. For lots greater than 100, 10% of all bars shall be tested. All castings for testing shall be selected at random. All castings that have a test bar removed shall also be inspected for dimensional and mass requirements. If any casting fails the material, dimension, or mass inspection that casting will be rejected and destroyed. In order for the remaining castings in the lot to be accepted, all castings in the lot shall be tested and need to meet the material, dimensional, and mass requirements. If any additional casting fails, the entire lot shall be rejected and destroyed. If the purchaser elects to select a casting for verification of test results, the member shall be furnished by the supplier at no cost to the purchaser.

2.03 SPECIAL FRAMES AND COVERS

A. Where indicated on Drawings, provide watertight manhole frames and covers with minimum of four bolts and gasket designed to seal cover to frame. Supply approved watertight manhole covers and frames.

B. Where shown on Drawing, provide manhole frames and covers with 48 inch diameter clear opening, with inner cover for 22 inch diameter clear opening. Provide approved inner cover with pattern shown on Drawings.

2.04 FABRICATED RING GRATES

A. Fabricate ring grates from reinforcing steel conforming to ASTM A 615.

B. Conform to welds connecting bars to AWS D 12.1.

2.05 ADJUSTMENT RINGS FOR ASPHALT OVERLAYS

A. Use castings conforming Section 2.01.

B. One piece casting with dimensions to fit frame and cover.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install castings according to approved shop drawings, instructions in related specifications, and applicable directions from manufacturer's printed materials.

B. Set castings accurately at required locations to proper alignment and elevation. Keep castings plumb, level, true, and free of rack. Measure location accurately from established lines and grades. Brace or anchor frames temporarily in form work until permanently set.

C. Fabricate ring grates in accordance with City of Houston standard detail, "Ring Grate for Open End of 18 Inch to 72 Inch Stubs to Ditch". Set in mortar in mouth of pipe bell.

D. Install adjustment rings in existing frames with clean bearing surfaces that are free from rocking.

END OF SECTION

Section 02085

VALVE BOXES, METER BOXES, AND METER VAULTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Valve boxes for water service.

B. Meter boxes for water service.

C. Meter vaults for water service.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. No separate payment will be made for valve boxes under this Section. Include payment in unit price for Section 02511 - Water Lines.

2. No separate payment will be made for meter boxes under this Section. Include payment in unit price for Section 02512 - Water Tap and Service Line Installation.

3. Payment for each size of meter vaults is on unit price basis per vault. Payment will be made for each vault installed, regardless of depth.

4. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 REFERENCES

A. ASTM A 48 - Standard Specification for Gray Iron Castings.

B. ASTM D 256 - Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics.

C. ASTM D 638 - Standard Test Method for Tensile Properties of Plastics.

D. ASTM D 648 - Standard Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position.

E. ASTM D 790 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.

F. ASTM D 2240 - Standard Test Method for Rubber Property-Durometer Hardness.

1.04 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit manufacturers' product data for following items for approval:

1. Each type of valve box and lid.

2. Each type of meter box and cover.

3. Each type of meter vault frame and cover.

C. Submit design calculations and shop drawings for precast vault elements, sealed by an Engineer registered in State of Texas.

D. Submit shop drawings for cast-in-place meter vaults for approval if proposed construction varies from Drawings.

E. Submit manufacturer's certification that plastic meter boxes meet requirements of Paragraph 2.05, Plastic Meter Boxes.

PART 2 PRODUCTS

2.01 VALVE BOXES

A. Provide approved Type A, cast-iron/ductile-iron, slide-type, valve boxes. Design of valve box shall minimize stresses on valve imposed by loads on box lid.

B. Cast letter "W" into lid, 1/2 inch in height and raised 3/32 inch, for valves serving potable water lines.

C. Unless otherwise specified, uncoated cast iron.

D. Riser Pipe.

1. Provide 6-inch PVC, Class 150, DR 18, riser pipes in accordance with Section 02506 - Polyvinyl Chloride Pipe or

2. 6-inch ductile-iron, thickness Class 51 riser pipes in accordance with Section 02501 – Ductile Iron Pipe and Fittings.

3. Provide single section of pipe.

E. Concrete for valve box placement:

1. For locations in new concrete pavement, provide strength and mix design of new pavement.

2. For other locations, provide concrete for sidewalks conforming to requirements of Section 02751 - Concrete Paving.

2.02 METER BOXES

A. Provide meter boxes for 5/8-inch through 1-inch meters of the following materials:

1. Non-traffic bearing locations: Cast iron, concrete or plastic.

2. Traffic bearing locations: Cast iron.

B. Provide meter boxes for 1 1/2-inch and 2-inch meters of cast iron.

C. Provide meter box with reading lid. Provide lids with spring-type latching devices. Lids shall contain sufficient metal that meter box can be easily located with metal detector. Cast words "CITY OF HOUSTON" and "WATER METER" into lid with letters of 1/2-inch height and raised 3/32 inch.

D. Meter box dimensions shall conform to the following approximate dimensions:

1. Length: At top – 15 1/2 inches; at bottom 20 inches

2. Width: At top – 12 1/2 inches; at bottom 14 3/4 inches

3. Height: 12 inches

E. Extensions: Meter box extensions 3 inches and 6 inches in height shall be available from manufacturer as standard item.

2.03 CAST-IRON METER BOXES

A. Cast-Iron Boxes: Clean and free from sand blow-holes or other defects conforming to requirements of ASTM A 48, Class 30B. Bearing surfaces shall be machined so that covers seat evenly in frames.

B. Boxes and lids shall have dipped, coal-tar-pitch, varnish finish.

C. Provide lock-type meter boxes when required by Drawings. Lock mechanisms shall work with ease.

2.04 CONCRETE METER BOXES

A. Concrete Meter Boxes: Made of Class A concrete, with minimum 4000 psi compressive strength, conforming to requirements of Section 03315 - Concrete for Utility Construction. Construct to dimensions shown on Drawings.

B. Castings: Free from fractures, large or deep cracks, blisters or surface roughness or any other defects that may affect serviceability.

2.05 PLASTIC METER BOXES

A. Plastic Meter Boxes: Made of high density polyethylene conforming to the following ASTM standards:

ASTM	REQUIREMENT
D 256	Impact Strength = 1.9 ft.-lb./inch (Izod, Notched)
D 256	Impact Strength = 6.4 ft.-lb./inch (Izod, Un-Notched)
D 638	Tensile Strength (2.0 min.) = 3400 psi
D 648	Deflection Temperature = 170 degrees F
D 2240	Shore D, Hardness, 55-65 Impact Strength, Falling Dart Method, 160 inch-lb.
D 790	Flexural Modulus = 90,000 psi

B. Meter boxes shall meet the following test requirements:

1. Static Load: Not less than 2500 pounds using 6-inch disc with direct compression exerted at center of top of meter box with solid plastic lid.

2. Deflection: Not less than 1000 pounds load required to deflect top edge of meter box 1/8- inch.

C. Meter box body, without lid, shall weigh approximately 7 pounds.

2.06 METER VAULTS

A. Meter vaults may be constructed of precast concrete, cast-in-place concrete, or common brick masonry unless a specific type of construction is required by Drawings.

B. Concrete for Meter Vaults: Class A concrete, conforming to requirements of Section 03315 - Concrete for Utility Construction with minimum compressive strength of 4000 psi at 28 days.

C. Reinforcing steel for meter vaults: Conform to requirements of Section 03315 Concrete for Utility Construction.

D. Grates and Covers: Conform to requirements of Section 02084 - Frames, Grates, Rings, and Covers.

PART 3 EXECUTION

3.01 EXAMINATION

A. Obtain approval from Project Manager for location of meter vault.

B. Verify lines and grade are correct.

C. Verify compacted subgrade will support loads imposed by vaults.

3.02 VALVE BOXES

A. Install riser pipe with suitable length for depth of cover indicated on Drawings or to accommodate actual finish grade.

1. Install with bell on top of valve

2. Place riser pipe in plumb, vertical position

B. Install valve box and riser piping plumbed in a vertical position. Provide 6-inches telescoping freeboard space between riser pipe top butt end, and interior contact flange of valve box, for vertical movement damping. End of pipe resting on valve shall be notched out sufficiently to provide a snug fit around the valve bonnet and to center valve inside of pipe.

C. Set, align, and adjust valve box so that lid is level with final grade.

D. Paint covers of new valve boxes in fluorescent orange when installed. After completion and acceptance by City, repaint covers black.

3.03 METER BOXES

A. Install cast iron or plastic boxes in accordance with manufacturer's instructions.

B. Construct concrete meter boxes to dimensions shown on Drawings.

C. Adjust top of meter boxes to conform to cover elevations specified in Paragraph 3.05, Frame and Cover for Meter Vaults.

D. Do not locate under paved areas unless approved by Project Manager. Use approved traffic-type box with cast iron lid when meter must be located in paved areas.

3.04 METER VAULTS

A. Construct concrete meter vaults to dimensions shown on Drawings. Do not cast in presence of water. Make bottom uniform. Verify lines and grades are correct and compacted subgrade will support loads imposed by vaults.

B. Precast Meter Vaults:

1. Install precast vaults in accordance with manufacturer's recommendations. Set level on a minimum 3-inch-thick bed of sand conforming to requirements of Section 02320 - Utility Backfill Materials.

2. Seal lifting holes with cement-sand mortar or non-shrink grout.

C. Meter Vault Floor Slab:

1. Construct floor slabs of 6-inch-thick reinforced concrete. Slope floor 1/4 inch per foot toward sump. Make sump 12 inches in diameter, or 12 inches square, and 4 inches deep, unless other dimensions are required by Drawings. Install dowels at maximum of 18 inches, center-to-center for keying walls to floor slab.

2. Precast floor slab elements may be used for precast vault construction

D. Cast-in-Place Meter Vault Walls:

1. Key walls to floor slab and form to dimensions shown on Drawings. Minimum wall thickness shall be 4 inches.

2. Cast walls monolithically. One cold joint will be allowed when vault depth exceeds 12 feet.

3. Set frame for cover in concrete

3.05 FRAME AND COVER FOR METER VAULTS

A. Set cast iron frame in a mortar bed and adjust elevation of cover as follows:

1. In unpaved areas, set top of meter box or meter vault cover 2 to 3 inches above natural grade

2. In paved areas, set top of meter box or meter vault cover flush with adjacent concrete but no higher than 1/2-inch

3.06 BACKFILL

A. Provide bank run sand in accordance with Section 02320 - Utility Backfill Materials and backfill and compact in accordance with Section 02317 - Excavation and Backfill for Utilities.

B. In unpaved areas, slope backfill around meter boxes and vaults to provide a uniform slope 1-to-5 slope from top to natural grade.

C. In paved areas, slope concrete down from meter box or vault to meet adjacent paved area.

END OF SECTION

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Section 02086

ADJUSTING MANHOLES, INLETS, AND VALVE BOXES TO GRADE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Adjusting elevation of manholes, inlets, and valve boxes to new grades.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. No separate payment will be made for adjusting inlets and valve boxes to grade for new construction under this Section. Include payment in unit price for related item.

2. Payment for adjusting existing manhole and frame and cover to new grade is on a unit price basis for each manhole and frame and cover.

3. Payment for adjusting existing utility structures to grade is on unit price basis for each:

   a. Inlet adjusted

   b. Valve box adjusted

4. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for Work in this Section is included in total Stipulated Price.

PART 2 PRODUCTS

2.01 CONCRETE MATERIALS

A. Provide concrete, conforming to requirements of Section 03315 - Concrete for Utility Construction.

B. Provide precast concrete manhole sections and adjustment rings conforming to requirements of Section 02082 - Precast Concrete Manholes.

C. Provide mortar conforming to requirements of Section 04061 - Mortar.

2.02 CAST-IRON MATERIALS

A. Provide cast-iron materials conforming to requirements of Section 02084 - Frames, Grates, Rings, and Covers.

2.03 PIPING MATERIALS

A. For riser pipes and fittings, refer to Sections 02501 - Ductile-iron Pipe and Fittings through 02528 - Polyethylene Wrap.

2.04 MASONRY MATERIALS FOR STORM SEWER MANHOLES AND INLETS

A. Provide brick masonry units conforming to the requirements of Section 04210 - Brick Masonry for Utility Construction.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine existing structure, valve box, frame and cover or inlet box, frame and cover or inlet, piping and connections for damage or defects affecting adjustment to grade. Report damage or defects to Project Manger.

3.02 ESTABLISHING GRADE

A. Coordinate grade related items with existing grade and finished grade or paving, and relate to established bench mark or reference line.

3.03 ADJUSTING MANHOLES AND INLETS

A. Rebuild adjustment portion of manhole or inlet by adding or removing Adjustments. Follow procedures for the type of structure being adjusted detailed in the following Sections:

1. Section 02081 - Cast-In-Place Concrete Manholes
2. Section 02082 - Precast Concrete Manholes
3. Section 02083 - Fiberglass Manholes
4. Section 02087 - Brick Manholes for Storm Sewers
5. Section 02632 - Cast-In-Place Inlets, Headwalls and Wingwalls
6. Section 02633 - Precast Concrete, Inlets, Headwalls and Wingwalls

B. Salvage and reuse cast-iron frame and cover or grate.

C. Protect or block off manhole or inlet bottom using wood forms shaped to fit so that no debris or soil falls to bottom during adjustment.

D. Verify that manholes and inlets are free of visible leaks as result of reconstruction. Repair leaks in manner subject to Project Manger's approval.

3.04 ADJUSTING VALVE BOXES

A. Salvage and reuse valve box and surrounding concrete block as approved by Project Manger. No separate pay.

B. Remove and replace 6 inch ductile iron riser pipe with suitable length for depth of cover required to establish adjusted elevation to accommodate actual finish grade.

C. Reinstall valve box and riser piping plumbed in vertical position. Provide minimum 6 inches telescoping freeboard space between riser pipe top butt end and interior contact flange of valve box for vertical movement damping.

D. After valve box has been set, aligned, and adjusted so that top lid is level with final grade.

3.05 BACKFILL AND GRADING

A. Backfill area of excavation surrounding each adjusted manhole, inlet, and valve box and compact according to requirements of Section 02316 - Excavation and Backfill for Structures.

B. Grade ground surface to drain away from each manhole and valve box. Place earth fill around manholes to level of upper rim of manhole frame. Place earth fill around valve box concrete slab.

C. In unpaved areas, grade surface at uniform slope of 1 to 5 from manhole frame to natural grade. Provide minimum of 4 inches of topsoil conforming to requirements of Section 02911 - Topsoil. Provide seeding in accordance with Section 02921 - Hydro-mulch Seeding, or if sodding in accordance with Section 02922 - Sodding.

END OF SECTION

Section 02221

REMOVING EXISTING PAVEMENTS AND STRUCTURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Removing concrete paving, asphaltic concrete pavement, brick pavement and base courses.

B. Removing concrete curbs, concrete curbs and gutters, sidewalks and driveways.

C. Removing pipe culverts, sewers, and sewer leads.

D. Removing existing inlets and manholes.

E. Removing and disposing of pre-stressed concrete beams and drill shafts.

F. Removing miscellaneous structures of concrete or masonry.

G. Removing existing bridge.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment for removing and disposing of asphaltic surfacing with or without base, regardless of thickness encountered, is on square yard basis measured between lips of gutters.

2. Payment for removing and disposing of reinforced concrete pavement, with or without asphalt overlay, regardless of its thickness, is on square yard basis measured from back-to-back of curbs. Payment includes concrete pavement, esplanade curbs, curbs and gutters, and paving headers.

3. Payment for removing and disposing of cement stabilized shell base course, with or without asphaltic surfacing, is on square yard basis.

4. Payment for removing and disposing of concrete sidewalks and driveways is on square yard basis.

5. Payment for removing asphaltic surface course only is on a square yard basis paid under item description "Asphalt Surface Mill." This includes removal of existing surface to pavement base.

6. Payment for removing and disposing of miscellaneous concrete and masonry is on cubic yard basis of structure in place.

7. Payment for removing and disposing of pipe culverts, sewers, and sewer leads is on linear foot basis for each diameter and each material type of pipe removed.

8. Payment for removing and disposing of existing inlets is on unit price basis for each inlet removed.

9. Payment for removing and disposing of prestressed concrete piles and drill shafts is on linear foot basis.

10. Payment for removing and disposing of existing bridge, including piles and abutments to minimum of 4 feet below ground level, is on a lump sum basis.

11. Payment for removing and disposing of existing manholes is on unit price basis for each manhole removed.

12. No payment for saw cutting of pavement, curbs, or curbs and gutters will be made under this section. Include cost of such work in unit prices for items listed in bid form requiring saw cutting.

13. No payment will be made for work outside maximum payment limits indicated on Drawings, or for pavements or structures removed for Contractor's convenience.

    a. For utility installations: Match actual pavement replaced but no greater than maximum pavement replacement limits shown on Drawings. Limits of measurement will be as shown on Street Cut Pavement Replacement Rules.

14. Refer to Section 01270 - Measurement and Payment for unit price procedures

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 REGULATORY REQUIREMENTS

A. Conform to applicable codes for disposal of debris.

B. Coordinate removal work with utility companies.

PART 2 P R O D U C T S - Not Used

PART 3 EXECUTION

3.01 PREPARATION

A. Obtain advance approval from Project Manager for dimensions and limits of removal work.

B. Identify known utilities below grade. Stake and flag locations.

3.02 PROTECTION

A. Protect following from damage or displacement:

1. Adjacent public and private property.
2. Trees, plants, and other landscape features designated to remain.
3. Utilities designated to remain.
4. Pavement and utility structures designated to remain.
5. Bench marks, monuments, and existing structures designated to remain.

3.03 REMOVALS

A. Remove pavements and structures by methods that will not damage underground utilities. Do not use drop hammer near existing underground utilities.

B. Minimize amount of earth loaded during removal operations.

C. Where existing pavement is to remain, make straight saw cuts in existing pavement to provide clean breaks prior to removal. Do not break concrete pavement or base with drop hammer unless concrete or base has been saw cut to minimum depth of 2 inches.

D. When street and driveway saw cut location is greater than one-half of pavement lane width, remove pavement for full lane width or to nearest longitudinal joint as directed by Project Manager.

E. Remove sidewalks and curbs to nearest existing dummy, expansion, or construction joint.

F. Where existing end of pipe culvert or end of sewer is to remain, install 8-inch-thick masonry plug in pipe end prior to backfill in accordance with requirements of Section 02316 - Excavation and Backfill for Structures.

3.04 BACKFILL

A. Backfill of removal areas shall be in accordance with requirements of Section 02316 - Excavation and Backfill for Structures.

3.05 DISPOSAL

A. Inlet frames, grates, and plates; and manhole frames and covers, may remain City property. Disposal shall be in accordance with requirements of Section 01576 - Waste Material Disposal.

B. Remove from site, debris resulting from work under this section in accordance with requirements of Section 01576 - Waste Material Disposal.

END OF SECTION

Section 02233

CLEARING AND GRUBBING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Removing surface debris and rubbish.

B. Clearing site of plant life and grass.

C. Removing trees and shrubs.

D. Removing root system of trees and shrubs.

E. Fence removal.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment for clearing and grubbing is on per acre basis.

2. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 REGULATORY REQUIREMENTS

A. Conform to applicable codes for disposal of debris.

B. Coordinate clearing work with utility companies.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.01 PREPARATION

A. Verify that existing plant life and features designated to remain are identified and tagged.

3.02 PROTECTION

A. Protect following from damage or displacement:

1. Living trees located 3 feet or more outside of intersection of side slopes and original ground line.
2. Plants other than trees and landscape features designated to remain.
3. Utilities designated to remain.
4. Bench marks, monuments, and existing structures designated to remain.

3.03 CLEARING

A. Remove stumps, main root ball, and root system to:

1. Depth of 24 inches below finished subgrade elevation in area bounded by lines two feet behind back of curbs.
2. Depth of 24 inches below finished surface of required cross section for other areas.

B. Clear undergrowth and deadwood without disturbing subsoil.

C. Remove vegetation from top soil scheduled for reuse.

3.04 REMOVAL

A. Remove debris, rubbish, and extracted plant material life from site in accordance with requirements of Section 01576 - Waste Material Disposal.

B. Remove on site fences. Materials generated from removal of fences become property of Contractor. Properly dispose of in accordance with applicable local, state and federal laws.

END OF SECTION

Section 02315

ROADWAY EXCAVATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Excavation and compaction of materials for roadways.

B. Excavation and compaction of materials for roadside ditches.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment for roadway excavation, with or without subgrade, is on cubic yard basis. Unless specified otherwise under the borrow (off-site) material or embankment fill work item, measurement for payment shall be based on the cut quantity shown on the drawing.

2. No payment will be made for material excavated under the following conditions:

   a. More than 2 feet outside of vertical planes behind back of curbs

   b. For portion within limits of trench for utilities 24-inch and greater constructed by open-cut methods

   c. As indicated otherwise on Drawings.

3. Measurement for the bid item "Regrade Ditches" is on a linear foot basis. No separate payment will be made for reshaping and regrading roadway ditch shoulder slope and side slope adjacent to installed temporary pavement upon removal of temporary pavement.

4. If specified, off-site borrow material including placement and compaction will be paid by final in-place quantity on cubic yard basis.

5. If specified and shown on the drawing, embankment fill including placement and compaction will be paid by final in-place quantity on cubic yard basis.

6. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 REFERENCES

A. ASTM D 698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12.44 ft-lbf/ft^3).

B. ASTM D 2216 - Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass.

C. ASTM D 2922 - Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).D. ASTM D 3017 - Standard Test Method for Water content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

E. ASTM D 4318 - Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

PART 2 PRODUCTS

2.01 MATERIALS

A. Provide topsoil conforming to requirements of Section 02911 - Topsoil.

B. Provide backfill which is excavated material, graded free of roots, lumps greater than 6 inches, rocks larger than 3 inches, organic material, and debris.

C. Provide structural backfill which is select material meeting following requirements:

1. Plasticity index: not less than 12 nor more than 20.

2. Maximum liquid limit: 45

PART 3 EXECUTION

3.01 PREPARATION

A. Identify required lines, levels, and datum. Coordinate with Section 01725 - Field Surveying.

B. Identify and flag surface and aerial utilities.

C. Notify utility companies to remove or relocate utilities.

D. Identify, stake, and flag known utility locations below grade. Make temporary or permanent relocation of underground pipes, ducts, or utilities where indicated on Drawings.

E. Upon discovery of unknown or badly deteriorated utilities, or concealed conditions, discontinue work. Notify Project Manager and obtain instructions before proceeding in such areas.

F. Obtain approval of top soil quality before excavating and stockpiling.

3.02 PROTECTION

A. Protect following from damage or displacement:

1. Trees, shrubs, lawns, existing structures, and other features outside of grading limits.

2. Utilities either above or below grade, which are to remain.

3.03 TOPSOIL REMOVAL

A. Strip off topsoil from area to be excavated to minimum depth of 6 inches, unless indicated otherwise on Drawings.

B. Stockpile topsoil in designated location for reuse. Stockpile topsoil to depth not exceeding 8 feet. Cover to protect from erosion.

3.04 SOIL EXCAVATION

A. Excavate to lines and grades shown on Drawings.

B. Remove unsuitable material not meeting specifications. Backfill with embankment materials and compact to requirements of Section 02330 - Embankment.

C. Record location and plug and fill inactive water and oil wells. Conform to Texas Department of Health, Texas Natural Resource Conservation Commission, and Texas Railroad Commission requirements. Notify Project Manager prior to plugging wells.

D. At intersections, grade back at minimum slope of one inch per foot. Produce smooth riding junction with intersecting street. Maintain proper drainage.

E. When area is inadvertently over excavated, fill area in accordance with requirements of Section 02330 - Embankment at no additional cost to City.

F. Remove material not qualified for use and excess soil not being reused from site in accordance with requirements of Section 01576 - Waste Material Disposal.

3.05 COMPACTION

A. Maintain optimum moisture content of subgrade to attain required density.

B. Compact to following minimum densities at moisture content of optimum to 3 percent above optimum as determined by ASTM D 698, unless otherwise indicated on Drawings:

1. Areas under future paving and shoulders: Minimum density of 95 percent of maximum dry density.

2. Other areas: Minimum density of 90 percent of maximum dry density.

3.06 TOLERANCES

A. Top of Compacted Surface: Plus or minus 1/2 inch in cross section, or in 16-foot length.

3.07 FIELD QUALITY CONTROL

A. Testing will be performed under provisions of Section 01454 - Testing Laboratory Services.

B. Test and analysis of soil materials will be performed in accordance with ASTM D 4318, ASTM D 2216, and ASTM D 698.

C. Compaction testing will be performed in accordance with ASTM D 698 or ASTM D 2922 and ASTM D 3017.

D. A minimum of three tests will be taken for each 1000 linear feet per lane of roadway.

E. When tests indicate work does not meet specified compaction requirements, recondition, recompact, and retest at no additional cost to City.

3.08 PROTECTION

A. Prevent erosion at all times. Maintain ditches and cut temporary swales to allow natural drainage in order to avoid damage to roadway. Do not allow water to pond.

B. Distribute construction traffic evenly over compacted areas, where practical, to aid in obtaining uniform compaction. Protect exposed areas having high moisture content from wheel loads that cause rutting.

C. Maintain excavation and embankment areas until start of subsequent work. Repair and recompact slides, washouts, settlements, or areas with loss of density.

END OF SECTION

Section 02317S

EXCAVATION AND BACKFILL FOR UTILITIES

The following supplements modify Section 02317 - Excavation and Backfill for Utilities Standard Specification. Where a portion of the Specification is modified or deleted by this Supplementary Specification, the unaltered portions of the Specification shall remain in effect.

1.03 DEFINITIONS: Delete paragraph H and replace with the following:

H. Suitable Material: Suitable soil materials are those meeting specification requirements. Materials mixed with lime, fly ash, or cement that can be compacted to required density and meeting requirements for suitable materials may be considered suitable materials, unless otherwise indicated.

Add the following:

V. Vacuum Excavation: An excavation technique performed by an experienced subcontractor in which water or air jets are used to slough off and vacuum away soil.

Delete paragraphs P and Q, and replace with the following:

P. Over-excavation and Backfill: Excavation of subgrade soils with unsatisfactory bearing capacity or composed of otherwise unsuitable materials below top of foundation as shown on Drawings, and backfilled with foundation bedding.

Q. Foundation Bedding: Natural soil or manufactured aggregate of controlled gradation, and geotextile filter fabrics as required, to control drainage and material separation. Foundation backfill material is placed and compacted as bedding to provide stable support. Foundation bedding materials may include concrete seal slabs.

2.02 MATERIAL CLASSIFICATIONS: Delete paragraph A and replace with the following and delete paragraph E entirely.

A. Embedment and Trench Zone Backfill Materials: Conform to classifications and product descriptions of Section 02320 - Utility Backfill Materials and Section 02321 - Cement Stabilized Sand.

3.01 STANDARD PRACTICE: Delete paragraph C.

3.03 CRITICAL LOCATION INVESTIGATION: Delete last sentence of Paragraph 3.03 A and replace with the following:

Unless otherwise approved by Project Manager, at Critical Locations shown on Drawings, perform vacuum excavation to field verify horizontal and vertical locations of such lines within zone of 2 feet vertically and 4 feet horizontally of proposed work.

Delete Paragraph 3.03 A.1 and replace with the following:

1. Verify location of existing utilities minimum of 7 working days in advance of pipe laying activities based on daily pipe laying rate or prior to beginning installation of auger pit or tunnel shaft. Use extreme caution and care when uncovering utilities designated by Critical Locate.

3.05 EXCAVATION: Add the following to Paragraph C.

Excavate trench so that pipe is centered in trench. Do not obstruct sight distance for vehicles utilizing roadway or detours with stockpiled materials.

3.07 TRENCH FOUNDATION: Delete paragraph C and replace with the following:

C. Perform over excavation, when directed by Project Manager, in accordance with Paragraph 3.07B above.

3.09 TRENCH ZONE BACKFILL PLACEMENT AND COMPACTION: Delete paragraphs B and F, and replace with the following:

B. For water lines, under pavement and to within one foot back of curb, use backfill materials described by trench limits.

1. For water lines 20 inches in diameter and smaller, use bank run sand or select backfill materials up to pavement base or subgrade.

2. For water lines 24 inches in diameter and larger, backfill with suitable on-site material (random backfill) up to 12 inches below pavement base or subgrade. Place minimum of 12 inches of select backfill below pavement base or subgrade.

F. Unless otherwise shown on Drawings. use one of the following trench zone backfills under pavement and to within one foot of edge of pavement. Place trench zone backfill in lifts and compact. Fully compact each lift before placement of next lift.

1. Class I. II. or III or combination thereof:

a. Place in maximum 12-inch thick loose layers.

b. Compact by vibratory equipment to minimum of 95 percent of maximum dry density determined according to ASTM D 698.

Section 02317

EXCAVATION AND BACKFILL FOR UTILITIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Excavation, trenching, foundation, embedment, and backfill for installation of utilities, including manholes and other pipeline structures.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices

1. No additional payment will be made for trench excavation, embedment and backfill under this Section. Include cost in unit price for installed underground piping, sewer, conduit, or duct work.

2. When Project Manager directs Contractor to over excavate trench bottom, Contractor will be paid by unit price bid per linear foot under bid item - 6" Over Excavation of Trench Bottom.

   a. No payment will be paid if Project Manager does not direct Contractor to over excavate trench bottom.

   b. No over excavation will be measured or paid when unsuitable conditions result from dewatering system not in conformance with Section 01578 - Control of Ground Water and Surface Water.

3. No additional payment will be made for performing Critical Location exploratory excavation. Include cost for unit price for work requiring critical location.

4. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for Work in this Section is included in total Stipulated Price

1.03 DEFINITIONS

A. Pipe Foundation: Suitable and stable native soils that are exposed at trench subgrade after excavation to depth of bottom of bedding as shown on Drawings, or foundation backfill material placed and compacted in over-excavations.

B. Pipe Bedding: Portion of trench backfill that extends vertically from top of foundation up to level line at bottom of pipe, and horizontally from one trench sidewall to opposite sidewall.

C. Haunching: Material placed on either side of pipe from top of bedding up to springline of pipe and horizontally from one trench sidewall to opposite sidewall.

D. Initial Backfill: Portion of trench backfill that extends vertically from springline of pipe (top of haunching) up to level line 12 inches above top of pipe, and horizontally from one trench sidewall to opposite sidewall.

E. Pipe Embedment: Portion of trench backfill that consists of bedding, haunching and initial backfill.

F. Trench Zone: Portion of trench backfill that extends vertically from top of pipe embedment up to pavement subgrade or up to final grade when not beneath pavement.

G. Unsuitable Material: Unsuitable soil materials are the following:

1. Materials that are classified as ML, CL-ML, MH, PT, OH, and OL according to ASTM D 2487.

2. Materials that cannot be compacted to required density due to gradation, plasticity, or moisture content.

3. Materials that contain large clods, aggregates, stones greater than 4 inches in any dimension, debris, vegetation, waste or any other deleterious materials.

4. Materials that are contaminated with hydrocarbons or other chemical contaminants.

H. Suitable Material: Suitable soil materials are those meeting specification requirements. Materials mixed with lime or cement that can be compacted to required density and meeting requirements for suitable materials may be considered suitable materials, unless otherwise indicated.

I. Backfill: Suitable material meeting specified quality requirements placed and compacted under controlled conditions.

J. Ground Water Control Systems: Installations external to trench, such as well points, eductors, or deep wells. Ground water control includes dewatering to lower ground water, intercepting seepage which would otherwise emerge from side or bottom of trench excavation, and depressurization to prevent failure or heaving of excavation bottom. Refer to Section 01578 - Control of Ground Water and Surface Water.

K. Surface Water Control: Diversion and drainage of surface water runoff and rain water away from trench excavation. Rain water and surface water accidentally entering trench shall be controlled and removed as part of excavation drainage.

L. Excavation Drainage: Removal of surface and seepage water in trench by sump pumping and using drainage layer, as defined in ASTM D 2321, placed on foundation beneath pipe bedding or thickened bedding layer of Class I material.

M. Trench Conditions are defined with regard to stability of trench bottom and trench walls of pipe embedment zone. Maintain trench conditions that provide for effective placement and compaction of embedment material directly on or against undisturbed soils or foundation backfill, except where structural trench support is necessary.

1. Dry Stable Trench: Stable and substantially dry trench conditions exist in pipe embedment zone as result of typically dry soils or achieved by ground water control (dewatering or depressurization) for trenches extending below ground water level.

2. Stable Trench with Seepage: Stable trench in which ground water seepage is controlled by excavation drainage.

   a. Stable Trench with Seepage in Clayey Soils: Excavation drainage is provided in lieu of or to supplement ground water control systems to control seepage and provide stable trench subgrade in predominately clayey soils prior to bedding placement.

   b. Stable Wet Trench in Sandy Soils: Excavation drainage is provided in embedment zone in combination with ground water control in predominately sandy or silty soils.

3. Unstable Trench: Unstable trench conditions exist in pipe embedment zone if ground water inflow or high water content causes soil disturbances, such as sloughing, sliding, boiling, heaving or loss of density.

N. Sub-trench: Sub-trench is special case of benched excavation. Sub-trench excavation below trench shields or shoring installations may be used to allow placement and compaction of foundation or embedment materials directly against undisturbed soils. Depth of sub-trench depends upon trench stability and safety as determined by Contractor.

O. Trench Dam: Placement of low permeability material in pipe embedment zone or foundation to prohibit ground water flow along trench.

P. Over-excavation and Backfill: Excavation of subgrade soils with unsatisfactory bearing capacity or composed of otherwise unsuitable materials below top of foundation as shown on Drawings, and backfilled with foundation backfill material.

Q. Foundation Backfill Materials: Natural soil or manufactured aggregate of controlled gradation, and geotextile filter fabrics as required, to control drainage and material separation. Foundation backfill material is placed and compacted as backfill to provide stable support for bedding. Foundation backfill materials may include concrete seal slabs.

R. Trench Safety Systems include both protective systems and shoring systems as defined in Section 02260 - Trench Safety Systems.

S. Trench Shield (Trench Box): Portable worker safety structure moved along trench as work proceeds, used as protective system and designed to withstand forces imposed on it by cave in, thereby protecting persons within trench. Trench shields may be stacked if so designed or placed in series depending on depth and length of excavation to be protected.

T. Shoring System: Structure that supports sides of an excavation to maintain stable soil conditions and prevent cave-ins, or to prevent movement of ground affecting adjacent installations or improvements.

U. Special Shoring: Shoring system meeting special shoring as specified in Paragraph 1.08, Special Shoring Design Requirements, for locations identified on Drawings.

1.04 REFERENCES

A. ASTM C 12 - Standard Practice for Installing Vitrified Clay Pipe Lines.

B. ASTM D 558 - Standard Test Methods for Moisture-Density Relations of Soil Cement Mixtures.

C. ASTM D 698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lb/ft).

D. ASTM D 1556 - Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method.

E. ASTM D 2321 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity Flow Applications.

F. ASTM D 2487 - Standard Classification of Soils for Engineering Purposes.

G. ASTM D 2922 - Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

H. ASTM D 3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

I. ASTM D 4318 - Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

J. TxDOT Tex-101-E - Preparing Soil and Flexible Base Materials for Testing.

K. TxDOT Tex-110-E - Particle Size Analysis of Soils.

L. Federal Regulations, 29 CFR Part 1926, Standards-Excavation, Occupational Safety and Health Administration (OSHA).

M. ASTM C76- Standard Specification for Reinforced Concrete Culverts, Storm Drain, and Sewer Pipe.

1.05 SCHEDULING

A. Schedule work so that pipe embedment can be completed on same day that acceptable foundation has been achieved for each section of pipe installation, manhole, or other structures.

1.06 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit planned typical method of excavation, backfill placement and compaction including:

1. Trench widths.

2. Procedures for foundation and pipe zone bedding placement, and trench backfill compaction.

3. Procedures for assuring compaction against undisturbed soil when pre-manufactured trench safety systems are proposed.

C. Submit backfill material sources and product quality information in accordance with requirements of Section 02320 - Utility Backfill Materials.

D. Submit trench excavation safety program in accordance with requirements of Section 02260 - Trench Safety System. Include designs for special shoring meeting requirements defined in Paragraph 1.08, Special Shoring Design Requirements contained herein.

E. Submit record of location of utilities as installed, referenced to survey control points. Include locations of utilities encountered or rerouted. Give stations, horizontal dimensions, elevations, inverts, and gradients.

F. Submit 11 inch by 17 inch or 12 inch by 18 inch copy of Drawing with plotted utility or obstruction location titled "Critical Location Report" to Project Manager.

1.07 TESTS

A. Testing and analysis of backfill materials for soil classification and compaction during construction will be performed by an independent laboratory provided by City in accordance with requirements of Section 01454 - Testing Laboratory Services and as specified in this Section.

B. Perform backfill material source qualification testing in accordance with requirements of Section 02320- Utility Backfill Materials.

1.08 SPECIAL SHORING DESIGN REQUIREMENTS

A. Have special shoring designed or selected by Contractor's Professional Engineer to provide support for sides of excavations, including soils and hydrostatic ground water pressures as applicable, and to prevent ground movements affecting adjacent installations or improvements such as structures, pavements and utilities. Special shoring may be a premanufactured system selected by Contractor's Professional Engineer to meet project site requirements based on manufacturer's standard design.

PART 2 PRODUCTS

2.01 EQUIPMENT

A. Perform excavation with hydraulic excavator or other equipment suitable for achieving requirements of this Section.

B. Use only hand-operated tamping equipment until minimum cover of 12 inches is obtained over pipes, conduits, and ducts. Do not use heavy compacting equipment until adequate cover is attained to prevent damage to pipes, conduits, or ducts.

C. Use trench shields or other protective systems or shoring systems which are designed and operated to achieve placement and compaction of backfill directly against undisturbed native soil.

D. Use special shoring systems where required which may consist of braced sheeting, braced soldier piles and lagging, slide rail systems, or other systems meeting requirements as specified in Paragraph 1.08, Special Shoring Design Requirements.

2.02 MATERIAL CLASSIFICATIONS

A. Embedment and Trench Zone Backfill Materials: Conform to classifications and product descriptions of Section 02320 - Utility Backfill Materials.

B. Concrete Backfill: Conform to requirements for Class B concrete as specified in Section 03315 - Concrete for Utility Construction.

C. Geotextile (Filter Fabric): Conform to requirements of Section 02621- Geotextile.

D. Concrete for Trench Dams: Concrete backfill or 3 sack premixed (bag) concrete.

E. Timber Shoring Left in Place: Untreated oak.

PART 3 EXECUTION

3.01 STANDARD PRACTICE

A. Install flexible pipe, including "semi-rigid" pipe, to conform to standard practice described in ASTM D 2321, and as described in this Section. Where an apparent conflict occurs between standard practice and requirements of this Section, this Section governs.

B. Install rigid pipe to conform to standard practice described in ASTM C 12 or C76 as applicable, and as described in this Section. Where an apparent conflict occurs between standard practice and requirements of this Section, this Section governs.

C. Classification of material will be determined by Project Manager.

3.02 PREPARATION

A. Establish traffic control to conform to requirements of Section 01555 - Traffic Control and Regulation. Maintain barricades and warning lights for streets and intersections affected by Work, and are considered hazardous to traffic movements.

B. Perform work to conform to applicable safety standards and regulations. Employ trench safety system as specified in Section 02260 - Trench Safety Systems.

C. Immediately notify agency or company owning any existing utility line which is damaged, broken, or disturbed. Obtain approval from Project Manager and agency for any repairs or relocations, either temporary or permanent.

D. Remove existing pavements and structures, including sidewalks and driveways, to conform to requirements of Section 02221 - Removing Existing Pavements and Structures, as applicable.

E. Install and operate necessary dewatering and surface-water control measures to conform to Section 01578 - Control of Ground Water and Surface Water. Provide stable trench to allow installation in accordance with Specifications.

F. Maintain permanent benchmarks, monumentation, and other reference points. Unless otherwise directed in writing, replace those which are damaged or destroyed in accordance with Section 01725 - Field Surveying.

3.03 CRITICAL LOCATION INVESTIGATION

A. Horizontal and vertical location of various underground lines shown on Drawings, including but not limited to water lines, gas lines, storm sewers, sanitary sewers, telecommunication lines, electric lines or power ducts, pipelines, concrete and debris, are based on best information available but are only approximate locations. At Critical Locations shown on Drawings, field verify horizontal and vertical locations of such lines within zone 2 feet vertically and 4 feet horizontally of proposed work.

1. Verify location of existing utilities minimum of 7 working days in advance of pipe laying activities based on daily pipe laying rate. Use extreme caution and care when uncovering these lines.

2. Notify Project Manager in writing immediately upon identification of obstruction. In event of failure to identify obstruction in minimum of 7 days, Contractor will not be entitled to extra cost for downtime including, but not limited to, payroll, equipment, overhead, demobilization and remobilization, until 7 days has passed from time Project Manager is notified of obstruction.

B. Notify involved utility companies of date and time that investigation excavation will occur and request that their respective utility lines be marked in field. Comply with utility or pipeline company requirements that their representative be present during excavation. Provide Project Manager with 48 hours notice prior to field excavation or related work.

C. Survey vertical and horizontal locations of obstructions relative to project baseline and datum and plot on 12 inch by 18 inch copy of Drawings. For large diameter water lines, submit to Project Manager for approval, horizontal and vertical alignment dimensions for connections to existing lines, tied into project baseline, signed and sealed by R.P.L.S.

3.04 PROTECTION

A. Protect trees, shrubs, lawns, existing structures, and other permanent objects outside of grading limits and within grading limits as designated on Drawings, and in accordance with requirements of Section 01562 - Tree and Plant Protection.

B. Protect and support above-grade and below-grade utilities which are to remain.

C. Restore damaged permanent facilities to pre-construction conditions unless replacement or abandonment of facilities is indicated on Drawings.

D. Take measures to minimize erosion of trenches. Do not allow water to pond in trenches. Where slides, washouts, settlements, or areas with loss of density or pavement failures or potholes occur, repair, re-compact, and pave those areas at no additional cost to City.

3.05 EXCAVATION

A. Except as otherwise specified or shown on Drawings, install underground utilities in open cut trenches with vertical sides.

B. Perform excavation work so that pipe, conduit, and ducts can be installed to depths and alignments shown on Drawings. Avoid disturbing surrounding ground and existing facilities and improvements.

C. Determine trench excavation widths using following schedule as related to pipe outside diameter (O.D.).

Nominal Pipe Size, Inches	Minimum Trench Width, Inches
Less than 18	O.D. + 18
18 to 30	O.D. + 24
36 to 42	O.D. + 36
Greater than 42	O.D. + 48

D. Use sufficient trench width or benches above embedment zone for installation of well point headers or manifolds and pumps where depth of trench makes it uneconomical or impractical to pump from surface elevation. Provide sufficient space between shoring cross braces to permit equipment operations and handling of forms, pipe, embedment and backfill, and other materials.

E. Upon discovery of unknown utilities, badly deteriorated utilities not designated for removal, or concealed conditions, discontinue work at that location. Notify Project Manager and obtain instructions before proceeding.

F. Shoring of Trench Walls.

1. Install Special Shoring in advance of trench excavation or simultaneously with trench excavation, so that soils within full height of trench excavation walls will remain laterally supported at all times.

2. For all types of shoring, support trench walls in pipe embedment zone throughout installation. Provide trench wall supports sufficiently tight to prevent washing trench wall soil out from behind trench wall support.

3. Leave sheeting driven into or below pipe embedment zone in place to preclude loss of support of foundation and embedment materials, unless otherwise directed by Project

Manager. Leave rangers, walers, and braces in place as long as required to support sheeting, which has been cut off, and trench wall in vicinity of pipe zone.

4. Employ special methods for maintaining integrity of embedment or foundation material. Before moving supports, place and compact embedment to sufficient depths to provide protection of pipe and stability of trench walls. As supports are moved, finish placing and compacting embedment.

5. If sheeting or other shoring is used below top of pipe embedment zone, do not disturb pipe foundation and embedment materials by subsequent removal. Maximum thickness of removable sheeting extending into embedment zone shall be equivalent of 1-inch-thick steel plate. As sheeting is removed, fill in voids left with grouting material.

G. Use of Trench Shields. When trench shield (trench box) is used as worker safety device, the following requirements apply:

1. Make trench excavations of sufficient width to allow shield to be lifted or pulled freely, without damage to trench sidewalls.

2. Move trench shields so that pipe, and backfill materials, after placement and compaction, are not damaged nor disturbed, nor degree of compaction reduced. Re-compact after shield is moved if soil is disturbed.

3. When required, place, spread, and compact pipe foundation and bedding materials beneath shield. For backfill above bedding, lift shield as each layer of backfill is placed and spread. Place and compact backfill materials against undisturbed trench walls and foundation.

4. Maintain trench shield in position to allow sampling and testing to be performed in safe manner.

5. Conform to applicable Government regulations.

H. Voids under paving area outside shield caused by Contractor's work will require removal of pavement, consolidation and replacement of pavement in accordance with Contract Documents. Repair damage resulting from failure to provide adequate supports.

I. Place sand or soil behind shoring or trench shield to prevent soil outside shoring from collapsing and causing voids under pavement. Immediately pack suitable material in outside voids following excavation to avoid caving of trench walls.

J. Coordinate excavation within 15 feet of pipeline with company's representative. Support pipeline with methods agreed to by pipeline company's representative. Use small, rubber-tired excavator, such as backhoe, to do exploratory excavation. Bucket that is used to dig in close proximity to pipelines shall not have teeth or shall have guard installed over teeth to approximate bucket

without teeth. Excavate by hand within 1 foot of Pipeline Company's line. Do not use larger excavation equipment than normally used to dig trench in vicinity of pipeline until pipelines have been uncovered and fully exposed. Do not place large excavation and hauling equipment directly over pipelines unless approved by Pipeline Company's representative.

K. When, during excavation to uncover pipeline company's pipelines, screwed collar or an oxy-acetylene weld is exposed, immediately notify Project Manager. Provide supports for collar or welds. Discuss with Pipeline Company's representative and determine methods of supporting collar or weld during excavation and later backfilling operations. When collar is exposed, request Pipeline Company to provide welder in a timely manner to weld ends of collar prior to backfilling of excavation.

3.06 HANDLING EXCAVATED MATERIALS

A. Use only excavated materials, which are suitable as defined in this Section and conforming to Section 02320 - Utility Backfill Materials. Place material suitable for backfilling in stockpiles at distance from trench to prevent slides or cave-ins.

B. When required, provide additional backfill material conforming to requirements of Section 02320 - Utility Backfill Materials.

C. Do not place stockpiles of excess excavated materials on streets and adjacent properties. Protect backfill material to be used on site. Maintain site conditions in accordance with Section 01504 - Temporary Facilities and Controls. Excavate trench so that pipe is centered in trench. Do not obstruct sight distance for vehicles utilizing roadway or detours with stockpiled materials.

3.07 TRENCH FOUNDATION

A. Excavate bottom of trench to uniform grade to achieve stable trench conditions and satisfactory compaction of foundation or bedding materials.

B. When wet soil is encountered on trench bottom and dewatering system is not required, over excavate an additional 6 inches with approval by Project Manager. Place non-woven geotextile fabric and then compact 12 inches of crushed stone in one lift on top of fabric. Compact crushed stone with four passes of vibratory-type compaction equipment.

C. Perform over excavation, if directed by Project Manager, in accordance with Paragraph 3.08B above. Removal of unstable or unsuitable material may be required if approved by Project Manager;

1. Even though Contractor has not determined material to be unsuitable, or

2. If unstable trench bottom is encountered and an adequate ground water control system is installed and operating according to Section 01578 - Control of Ground Water and Surface Water.

D. Place trench dams in Class I foundations in line segments longer than 100 feet between manholes and not less than one in every 500 feet of pipe placed. Install additional dams as needed to achieve workable construction conditions. Do not place trench dams closer than 5 feet from manholes.

3.08 PIPE EMBEDMENT, PLACEMENT, AND COMPACTION

A. Remove loose, sloughing, caving, or otherwise unsuitable soil from bottoms and sidewalls of trenches immediately prior to placement of embedment materials.

B. Place embedment including bedding, haunching, and initial backfill as shown on Drawings.

C. For pipe installation, manually spread embedment materials around pipe to provide uniform bearing and side support when compacted. Protect flexible pipe from damage during placing of pipe zone bedding material. Perform placement and compaction directly against undisturbed soils in trench sidewalls, or against sheeting which is to remain in place.

D. Do not place trench shields or shoring within height of embedment zone unless means to maintain density of compacted embedment material are used. If moveable supports are used in embedment zone, lift supports incrementally to allow placement and compaction of material against undisturbed soil.

E. Place geotextile to prevent particle migration from in-situ soil into open-graded (Class I) embedment materials or drainage layers.

F. Do not damage coatings or wrappings of pipes during backfilling and compacting operations. When embedding coated or wrapped pipes, do not use crushed stone or other sharp, angular aggregates.

G. Place haunching material manually around pipe and compact it to provide uniform bearing and side support. If necessary, hold small-diameter or lightweight pipe in place during compaction of haunch areas and placement beside pipe with sand bags or other suitable means.

H. Place electrical conduit, if used, directly on foundation without bedding.

I. Shovel in-place and compact embedment material using pneumatic tampers in restricted areas, and vibratory-plate compactors or engine-powered jumping jacks in unrestricted areas. Compact each lift before proceeding with placement of next lift. Water tamping is not allowed.

J. For water lines construction embedment, use bank run sand, concrete sand, gem sand, pea gravel, or crushed limestone as specified in Section 02320 - Utility Backfill Material. Adhere to the following subparagraph numbers 1 and 2.

1. Class I, II and III Embedment Materials:

a. Maximum 6 inches compacted lift thickness.

b. Compact to achieve minimum of 95 percent of maximum dry density as determined according to ASTM D 698.

c. Moisture content to be within -3 percent to +5 percent of optimum as determined according to ASTM D 698, unless otherwise approved by Project Manager.

2. Cement Stabilized Sand (where required for special installations):

a. Maximum 6 inches compacted thickness.

b. Compact to achieve minimum of 95 percent of maximum dry density as determined according to ASTM D 698.

c. Moisture content to be on dry side of optimum as determined according to ASTM D 698 but sufficient for effective hydration.

K. For Sanitary Sewers adhere to subparagraph number 1 and 2. For Storm Sewers provide cement stabilized sand per paragraph 2. This provision does not apply to Storm Sewers constructed of HDPE pipe installed under pavement.

1. Class I Embedment Materials.

a. Maximum 6-inches compacted lift thickness.

b. Systematic compaction by at least two passes of vibrating equipment. Increase compaction effort as necessary to effectively embed pipe to meet deflection test criteria.

c. Moisture content as determined by Contractor for effective compaction without softening soil of trench bottom, foundation or trench walls.

2. Class II Embedment and Cement Stabilized Sand.

a. Maximum 6-inches compacted thickness.

b. Compaction by methods determined by Contractor to achieve minimum of 95 percent of maximum dry density as determined according to ASTM D 698 for Class II materials and according to ASTM D 558 for cement stabilized materials.

c. Moisture content of Class II materials within 3 percent of optimum as determined according to ASTM D 698. Moisture content of cement stabilized

sands on dry side of optimum as determined according to ASTM D 558 but sufficient for effective hydration.

L. For Storm Sewers constructed of HDPE pipe and installed under pavement provide flowable fill pipe embedment as specified in Section 02322 Flowable Fill.

M.. Place trench dams in Class I embedment in line segments longer than 100 feet between manholes, and not less than one in every 500 feet of pipe placed. Install additional dams as needed to achieve workable construction conditions. Do not place trench dams closer than 5 feet from manholes.

3.09 TRENCH ZONE BACKFILL PLACEMENT AND COMPACTION

A. Place backfill for pipe or conduits and restore surface as soon as practicable. Leave only minimum length of trench open as necessary for construction.

B. For water lines, backfill in trench zone, including auger pits, intermediate and site pits, with bank run sand, select fill, or random backfill material as specified in Section 02320 - Utility Backfill materials.

C. For sewer pipes (Storm and Sanitary), use backfill materials described by trench limits. For "trench zone backfill" under pavement and to within one foot back of curb, use cement stabilized sand for pipes of nominal sizes 36 inches in diameter and smaller to level 12 inches below the pavement. For sewer pipes 42 inches in diameter and larger, under pavement or natural ground, in satisfactory soil conditions, backfill from 12 inches above top of pipe to 12 inches below pavement with suitable on-site material or select backfill. For sewer pipes 42 inches in diameter and larger, under pavement or natural ground, in unsatisfactory soil conditions, backfill from 12 inches above top of pipe to 12 inches below pavement with suitable on-site material or select backfill. Use select backfill for rigid pavements or flexible base material for asphalt pavements for 12- inch backfill directly under pavement. For backfill materials reference Section 02320 - Utility Backfill Materials. This provision does not apply where a Storm Sewer is constructed of HDPE pipe.

D. For Storm Sewers constructed of HDPE pipe and installed under pavement provide flowable fill as specified in Section 02322 Flowable Fill. For Storm Sewers constructed of HDPE pipe and not installed under pavement provide cement stabilized sand.

E. Where damage to completed pipe installation work is likely to result from withdrawal of sheeting, leave sheeting in place. Cut off sheeting 1.5 feet or more above crown of pipe. Remove trench supports within 5 feet from ground surface.

F. Place trench zone backfill in lifts and compact. Fully compact each lift before placement of next lift.

1. Class I, II, III or IV or combination thereof (Random Backfill):

a. Maximum 9-inches compacted lift thickness.

b. Compact by vibratory equipment to minimum of 95 percent of maximum dry density determined according to ASTM D 698.

c. Moisture content within zero percent to +5 percent of optimum determined according to ASTM D 698, unless otherwise approved by Project Manager.

2. Cement-Stabilized Sand:

a. Maximum lift thickness determined by Contractor to achieve uniform placement and required compaction, but do not exceed 12 inches.

b. Compact by vibratory equipment to minimum of 95 percent of maximum dry density determined according to ASTM D 558.

c. Moisture content on dry side of optimum determined according to ASTM D 558 but sufficient for cement hydration.

3. Select Backfill:

a. Place in maximum 8-inch loose layers.

b. Compaction by equipment providing tamping or kneading impact to minimum of 95 percent of maximum dry density determined according to ASTM D 698.

c. Moisture content within 2 percent below or 5 percent above optimum determined according to ASTM D 698, unless approved by Project Manager.

G. Unless otherwise shown on Drawings, for trench excavations not under pavement, random backfill of suitable material may be used in trench zone. This provision does not apply to HDPE storm sewers.

1. Fat clays (CH) may be used as trench zone backfill outside paved areas at Contractor's option. When required density is not achieved, at any additional cost to City, rework, dry out, use lime stabilization or other approved methods to achieve compaction requirements, or use different suitable material.

2. Maximum 9-inch compacted lift thickness for clayey soils and maximum 12-inch lift thickness for granular soils.

3. Compact to minimum of 90 percent of maximum dry density determined according to ASTM D 698.

4. Moisture content as necessary to achieve density.

H. For electric conduits, remove form work used for construction of conduits before placing trench zone backfill.

3.10 MANHOLES, JUNCTION BOXES AND OTHER PIPELINE STRUCTURES

A. Meet requirements of adjoining utility installations for backfill of pipeline structures, as shown on Drawings.

B. Below paved areas, encapsulate manhole with cement stabilized sand; minimum of 1 foot below base, minimum 1 foot around walls, up to within 12 inches of pavement subgrade. Compact in accordance with Paragraph 3.10.F.2 of this Section

C. In unpaved areas, use select fill for backfill. Existing material that qualifies as select material may be used, unless indicated otherwise on Drawings. Deposit backfill in uniform layers and compact each layer as specified. Maintain backfill material at no less than 2 percent below nor more than 5 percent above optimum moisture content, unless otherwise approved by Project Manager. Place fill material in uniform 8-inch maximum loose layers. Compact fill to at least 95 percent of maximum Standard Proctor Density according to ASTM D 698.

3.11 FIELD QUALITY CONTROL

A. Test for material source qualifications as defined in Section 02320 - Utility Backfill Materials.

B. Provide excavation and trench safety systems at locations and to depths required for testing and retesting during construction at no additional cost to City.

C. Tests will be performed on minimum of three different samples of each material type for plasticity characteristics, in accordance with ASTM D 4318, and for gradation characteristics, in accordance with Tex-101-E and Tex-110-E. Additional classification tests will be performed whenever there is noticeable change in material gradation or plasticity, or when requested by Project Manager.

D. At least three tests for moisture-density relationships will be performed initially for backfill materials in accordance with ASTM D 698, and for cement- stabilized sand in accordance with ASTM D 558. Perform additional moisture-density relationship tests once a month or whenever there is noticeable change in material gradation or plasticity.

E. In-place density tests of compacted pipe foundation, embedment and trench zone backfill soil materials will be performed according to ASTM D 1556, or ASTM D 2922 and ASTM D 3017, and at following frequencies and conditions.

1. For open cut construction projects and auger pits: Unless otherwise approved by Project Manager, successful compaction to be measured by one test per 40 linear feet measured along pipe for compacted embedment and two tests per 40 linear feet measured along pipe for compacted trench zone backfill material. Length of auger pits to be measured to arrive at 40 linear feet.

2. A minimum of three density tests for each full shift of Work.

3. Density tests will be distributed among placement areas. Placement areas are: foundation, bedding, haunching, initial backfill and trench zone.

4. The number of tests will be increased if inspection determines that soil type or moisture content are not uniform or if compacting effort is variable and not considered sufficient to attain uniform density, as specified.

5. Density tests may be performed at various depths below fill surface by pit excavation. Material in previously placed lifts may therefore be subject to acceptance/rejection.

6. Two verification tests will be performed adjacent to in-place tests showing density less than acceptance criteria. Placement will be rejected unless both verification tests show acceptable results.

7. Recompacted placement will be retested at same frequency as first test series, including verification tests.

8. Identify elevation of test with respect to natural ground or pavement.

F. Recondition, re-compact, and retest at Contractor's expense if tests indicate Work does not meet specified compaction requirements. For hardened soil cement with nonconforming density, core and test for compressive strength at Contractor's expense.

G. Acceptability of crushed rock compaction will be determined by inspection.

3.12 DISPOSAL OF EXCESS MATERIAL

A. Dispose of excess materials in accordance with requirements of Section 01576 - Waste Material Disposal.

END OF SECTION

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Section 02318 S

EXTRA UNIT PRICE WORK FOR EXCAVATION AND BACKFILL

The following supplements modify Section 02318 – Extra Unit Price Work for Excavation and Backfill Standard Specification. Where a portion of the Specification is modified or deleted by this Supplementary Specification, the unaltered portions of the Specification shall remain in effect.

1.02 UNIT PRICES: Delete paragraph F and add the following paragraphs F and G.

F. Extra Select Backfill: Payment for extra select backfill is on cubic yard basis, measu ed in place for a theoretical minimum trench width. The Project Manager may authorize extra select backfill when soil from the excavation work does not include adequate quantities for placement of suitable on-site material (random backfill).

G. Refer to Section 01270 - Measurement and Payment for unit price procedures.

1.03 DEFINITIONS: Add the following paragraph F.

F. Extra Select Backfill: Unsuitable material removed from the project and select backfill material hauled to the project, or conditioning unsuitable material on the site to make it select backfill. Provide select backfill material specified in Section 02320 - Utility Backfill Material.

END OF SUPPLEMENT

John J. Sakolosky, P.E.
Senior Assistant Director
Engineering, Construction & Real Estate Division

2/20/03
Date

c. Moisture content within zero percent to +5 percent of optimum determined according to ASTM D 698, unless otherwise approved by Project Manager.

2. Cement-Stabilized Sand:

a. Maximum lift thickness determined by Contractor to achieve uniform placement and required compaction, but do not exceed 12 inches.

b. Compact by vibratory equipment to minimum of 95 percent of maximum dry density determined according to ASTM D 558.

c. Moisture content on dry side of optimum determined according to ASTM D 558 but sufficient for cement hydration.

3. Class IVA and IVB (Clay Soils):

a. Place in maximum 8-inch thick loose lifts.

b. Compact by vibratory Sheepfoot Roller to minimum of 95 percent of maximum dry density determined according to ASTM D 698.

c. Moisture content within zero percent to +5 percent above optimum determined according to ASTM D 698, unless approved by Project Manager.

3.10 MANHOLES, JUNCTION BOXES AND OTHER PIPELINE STRUCTURES: Delete paragraph B and replace with the following:

B. Below paved areas or where shown on Drawings, encapsulate manhole with cement stabilized sand; minimum of 1 foot below base, minimum 1 foot around walls, up to within 12 inches of pavement subgrade. Compact in accordance with Paragraph 3.09.F.2 of this Section

END OF SUPPLEMENT

Approved by:

Reid K. Mrsny, P.E.
Senior Assistant Director
Engineering and Construction Division

8/26/08
Date

Section 02318

EXTRA UNIT PRICE WORK FOR EXCAVATION AND BACKFILL

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Measurement and payment applicable to extra unit price work items for excavation and backfill made necessary by unusual or unforeseen circumstances encountered during utility installations.

B. Extra unit price work for excavation and backfill is paid only when authorized in advance by Project Manager.

1.02 UNIT PRICES

A. Excavation Around Obstructions: Payment for excavation around obstructions is on cubic yard basis, measured in place, without deduction for volume occupied by portions of pipes, ducts, or other structures left in place across trenches excavated under this item.

B. Extra Hand Excavation: Payment for extra hand excavation is on cubic yard basis, measured in place.

C. Extra Machine Excavation: Payment for extra machine excavation is on cubic yard basis, measured in place.

D. Extra Placement of Backfill Material: Payment for extra placement of backfill material is on cubic yard basis, measured in place, for material installed as part of Work. At discretion of Project Manager, measurement of cubic yards may be calculated from volume of Extra Hand Excavation or Extra Machine Excavation for which replacement is made, minus volume of any Extra Placement of Granular Backfill authorized in conjunction with Work.

E. Extra Placement of Granular Backfill: Payment for extra placement of granular backfill material is on cubic yard basis, measured in place.

F. No separate payment will be made for surface water control, groundwater control, or for excavation drainage. Refer to Section 01270 - Measurement and Payment for unit price procedures.

1.03 DEFINITIONS

A. Excavation Around Obstructions: Excavation necessitated by obstruction of pipes (other than service connections 3 inches in diameter or less), ducts, or other structures, not shown on Drawings, and of an unusual or unforeseen nature which interfere with installation of utility piping by normal methods of excavation or auguring.

B. Extra Hand Excavation: Excavation by manual labor made necessary by unusual or unforeseen circumstances at locations approved in advance by Project Manager.

C. Extra Machine Excavation: Excavation by machine at or near project site to perform related work not included in original project scope but added for convenience of City, as approved in advance by Project Manager.

D. Extra Replacement of Backfill Material: Handling, backfill, and compaction of excavated material authorized under extra work bid items for Extra Hand Excavation or Extra Machine Excavation. Placement and compaction shall conform to requirements specified for excavation and backfill in Division 2- Site Work.

E. Extra Placement of Granular Backfill: Hauling, placing, and compacting granular backfill materials as approved by Project Manager in conjunction with Extra Replacement of Backfill Material. Materials placed under this item shall conform to requirements for Bank Run Sand, Cement Stabilized Sand, Concrete Sand, Gem Sand, Crushed Stone, or Crushed Concrete specified for backfill material in Division 2- Site Work.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

Section 02319

BORROW

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Soil materials for embankment.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment for borrow is on cubic yard basis calculated by theoretical quantities using average end area method based on Drawings.

2. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 REFERENCES

A. ASTM D 2216 - Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil, Rock, and Soil Aggregate Mixtures.

B. ASTM D 4318 - Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

1.04 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit location and description of proposed borrow area for approval.

C. Submit material samples for testing.

PART 2 PRODUCTS

2.01 SOIL MATERIAL

A. Grade borrow material used for embankment free of lumps greater than 6 inches, rocks larger than 3 inches, organic material, chemical waste or other contamination, and debris. Take borrow material from sources approved by Project Manager.

B. Use material with plasticity index not less than 12, nor more than 20 when tested in accordance with ASTM D 4318. Maximum liquid limit shall be 45, unless approved by Project Manager. Do not use blend of cohesive and granular soils to achieve required plasticity index.

PART 3 EXECUTION

3.01 PREPARATION

A. Notify Project Manager and testing laboratory 5 days in advance of opening borrow source to permit obtaining samples for qualification testing. When material does not meet specification requirements, locate another source of borrow.

B. Clear approved source area of trees, stumps, brush, roots, vegetation, organic matter, and other unacceptable material before excavation.

3.02 TESTS

A. Test and analyze soil materials in accordance with ASTM D 4318 and ASTM D 2216 under provisions of Section 01454 - Testing Laboratory Services.

3.03 EXCAVATION

A. Provide adequate drainage of surface water so that surface water run off does not enter borrow pit excavation.

3.04 HAULING

A. Use covered trucks. Conform to requirements of Section 01555 - Traffic Control and Regulation.

3.05 EMBANKMENT

A. Conform to requirements of Section 02330 - Embankment.

END OF SECTION

Section 02320

UTILITY BACKFILL MATERIALS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Material Classifications.

B. Utility Backfill Materials:

1. Concrete sand
2. Gem sand
3. Pea gravel
4. Crushed stone
5. Crushed concrete
6. Bank run sand
7. Select backfill
8. Random backfill

C. Material Handling and Quality Control Requirements.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. No payment will be made for backfill material. Include payment in unit price for applicable utility installation.
2. Payment for backfill material, when included as separate pay item or when directed by Project Manager, is on cubic yard basis for material placed and compacted within theoretical trench width limits and thickness of material according to Drawings, or as directed by Project Manager.
3. Payment for backfill of authorized over-excavation is in accordance with Section 02318 - Extra Unit Price Work for Excavation and Backfill.

4. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 DEFINITIONS

A. Unsuitable Material:

1. Materials classified as ML, CL-ML, MH, PT, OH, and OL according to ASTM D 2487.

2. Materials that cannot be compacted to required density due to gradation, plasticity, or moisture content.

3. Materials containing large clods, aggregates, or stones greater than 4 inches in any dimension; debris, vegetation, or waste; or any other deleterious materials.

4. Materials contaminated with hydrocarbons or other chemical contaminants.

B. Suitable Material:

1. Materials meeting specification requirements.

2. Unsuitable materials meeting specification requirements for suitable soils after treatment with lime or cement.

C. Foundation Backfill Materials: Natural soil or manufactured aggregate meeting Class I requirements and geotextile filter fabrics as required, to control drainage and material separation. Foundation backfill material is placed and compacted as backfill where needed to provide stable support for structure foundation base. Foundation backfill materials may include concrete fill and seal slabs.

D. Foundation Base: Crushed stone aggregate with filter fabric as required, cement stabilized sand, or concrete seal slab. Foundation base provides smooth, level working surface for construction of concrete foundation.

E. Backfill Material: Classified soil material meeting specified quality requirements for designated application as embedment or trench zone backfill.

F. Embedment Material: Soil material placed under controlled conditions within embedment zone extending vertically upward from top of foundation to an elevation 12 inches above top of pipe, and including pipe bedding, haunching and initial backfill.

G. Trench Zone Backfill: Classified soil material meeting specified quality requirements and placed under controlled conditions in trench zone from top of embedment zone to base course in paved areas or to surface grading material in unpaved areas.

H. Foundation: Either suitable soil of trench bottom or material placed as backfill of over-excavation for removal and replacement of unsuitable or otherwise unstable soils.

I. Source: Source selected by Contractor for supply of embedment or trench zone backfill material. Selected source may be project excavation, off-site borrow pits, commercial borrow pits, or sand and aggregate production or manufacturing plants.

J. Refer to Section 02317 - Excavation and Backfill for Utilities for other definitions regarding utility installation by trench construction.

1.04 REFERENCES

A. ASTM C 33 - Standard Specification for Concrete Aggregate.

B. ASTM C 40 - Standard Test Method for Organic Impurities in Fine Aggregates for Concrete.

C. ASTM C 123 - Standard Test Method for Lightweight Particles in Aggregate.

D. ASTM C 131 - Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in Los Angeles Machine.

E. ASTM C 136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.

F. ASTM C 142 - Standard Test Method for Clay Lumps and Friable Particles in Aggregates.

G. ASTM D 1140 - Standard Test Method for Amount of Material in Soils Finer Than No. 200 Sieve.

H. ASTM D 2487 - Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System).

I. ASTM D 4318 - Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

J. ASTM D 4643 - Standard Test Method for Determination of Water (Moisture) Content of Soil by Microwave Oven Method.

K. TxDOT Tex-110-E - Determining Particle Size Analysis of Soils.

L. TxDOT Tex-460-A - Material Finer Than 75 μm (No.200) Sieve In Mineral Aggregates (Decantation Test for Concrete Aggregates).

1.05 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit description of source, material classification and product description, production method, and application of backfill materials.

C. Submit test results for samples of off-site backfill materials. Comply with Paragraph 2.03, Material Testing.

D. Before stockpiling materials, submit copy of approval from landowner for stockpiling backfill material on private property.

E. Provide delivery ticket which includes source location for each delivery of material that is obtained from off-site sources or is being paid as specific bid item.

1.06 TESTS

A. Perform tests of sources for backfill material in accordance with Paragraph 2.03B.

B. Verification tests of backfill materials may be performed by City in accordance with Section 01454 - Testing Laboratory Services and in accordance with Paragraph 3.03.

PART 2 PRODUCTS

2.01 MATERIAL CLASSIFICATIONS

A. Classify materials for backfill for purpose of quality control in accordance with Unified Soil Classification Symbols as defined in ASTM D 2487. Material use and application is defined in utility installation specifications and Drawings either by class, as described in Paragraph 2.01B, or by product descriptions, as given in Paragraph 2.02.

B. Class Designations Based on Laboratory Testing:

1. Class I: Well-graded gravels and sands, gravel-sand mixtures, crushed well-graded rock, little or no fines (GW, SW):

   a. Plasticity index: non-plastic.

   b. Gradation: D_{60}/D_{10} - greater than 4 percent; amount passing No. 200 sieve - less than or equal to 5 percent.

2. Class II: Poorly graded gravels and sands, silty gravels and sands, little to moderate fines (GM, GP, SP, SM):

a. Plasticity index: non-plastic to 4.

b. Gradations:

1. Gradation (GP, SP): amount passing No. 200 sieve - less than 5 percent.

2. Gradation (GM, SM): amount passing No. 200 sieve - between 12 percent and 50 percent.
3. Borderline gradations with dual classifications (e.g., SP-SM): amount passing No. 200 sieve - between 5 percent and 12 percent.

3. Class III: Clayey gravels and sands, poorly graded mixtures of gravel, sand, silt, and clay (GC, SC, and dual classifications, e.g., SP-SC):

a. Plasticity index: greater than 7.

b. Gradation: amount passing No. 200 sieve - between 12 percent and 50 percent.

4. Class IVA: Lean clays (CL).

a. Plasticity Indexes:

1. Plasticity index: greater than 7, and above A line.

2. Borderline plasticity with dual classifications (CL-ML): PI between 4 and 7.

b. Liquid limit: less than 50.

c. Gradation: amount passing No. 200 sieve - greater than 50 percent.

d. Inorganic.

5. Class IVB: Fat clays (CH)

a. Plasticity index: above A line.

b. Liquid limit: 50 or greater.

c. Gradation: amount passing No. 200 sieve - greater than 50 percent.

d. Inorganic.

6. Use soils with dual class designation according to ASTM D 2487, and which are not defined above, according to more restrictive class.

2.02 PRODUCT DESCRIPTIONS

A. Soils classified as silt (ML) silty clay (CL-ML with PI of 4 to 7), elastic silt (MH), organic clay and organic silt (OL, OH), and organic matter (PT) are not acceptable as backfill materials. These soils may be used for site grading and restoration in unimproved areas as approved by Project Manager. Soils in Class IVB, fat clay (CH) may be used as backfill materials where allowed by applicable backfill installation specification. Refer to Section 02316 - Excavation and Backfill for Structures and Section 02317 - Excavation and Backfill for Utilities.

B. Provide backfill material that is free of stones greater than 6 inches, free of roots, waste, debris, trash, organic material, unstable material, non-soil matter, hydrocarbon or other contamination, conforming to following limits for deleterious materials:

1. Clay lumps: Less than 0.5 percent for Class I, and less than 2.0 percent for Class II, when tested in accordance with ASTM C 142.

2. Lightweight pieces: Less than 5 percent when tested in accordance with ASTM C 123.

3. Organic impurities: No color darker than standard color when tested in accordance with ASTM C 40.

C. Manufactured materials, such as crushed concrete, may be substituted for natural soil or rock products where indicated in product specification, and approved by Project Manager, provided that physical property criteria are determined to be satisfactory by testing.

D. Bank Run Sand: Durable bank run sand classified as SP, SW, or SM by Unified Soil Classification System (ASTM D 2487) meeting following requirements:

1. Less than 15 percent passing number 200 sieve when tested in accordance with ASTM D 1140. Amount of clay lumps or balls may not exceed 2 percent.

2. Material passing number 40 sieve shall meet the following requirements when tested in accordance with ASTM D 4318: Plasticity index: not exceeding 7.

E. Concrete Sand: Natural sand, manufactured sand, or combination of natural and manufactured sand conforming to requirements of ASTM C 33 and graded within following limits when tested in accordance with ASTM C 136:

Sieve	Percent Passing
3/8"	100
No. 4	95 to 100
No. 8	80 to 100
No. 16	50 to 85
No. 30	25 to 60
No. 50	10 to 30
No. 100	2 to 10

F. Gem Sand: Sand conforming to requirements of ASTM C 33 for course aggregates specified for number 8 size and graded within the following limits when tested in accordance with ASTM C 136:

Sieve	Percent Passing
3/8"	95 to 100
No. 4	60 to 80
No. 8	15 to 40

G. Pea Gravel: Durable particles composed of small, smooth, rounded stones or pebbles and graded within the following limits when tested in accordance with ASTM C 136:

Sieve	Percent Passing
1/2"	100
3/8"	85 to 100
No. 4	10 to 30
No. 8	0 to 10
No. 16	0 to 5

H. Crushed Aggregates: Crushed aggregates consist of durable particles obtained from an approved source and meeting the following requirements:

1. Materials of one product delivered for same construction activity from single source, unless otherwise approved by Project Manager.

2. Non-plastic fines.

3. Los Angeles abrasion test wear not exceeding 45 percent when tested in accordance with ASTM C 131.

4. Crushed aggregate shall have minimum of 90 percent of particles retained on No. 4 sieve with 2 or more crushed faces as determined by Tex-460-A, Part I.

5. Crushed stone: Produced from oversize plant processed stone or gravel, sized by crushing to predominantly angular particles from naturally occurring single source. Uncrushed gravel is not acceptable materials for embedment where crushed stone is shown on applicable utility embedment drawing details.

6. Crushed Concrete: Crushed concrete is an acceptable substitute for crushed stone as utility backfill. Gradation and quality control test requirements are same as crushed stone. Provide crushed concrete produced from normal weight concrete of uniform quality; containing particles of aggregate and cement material, free from other substances such as asphalt, reinforcing steel fragments, soil, waste gypsum (calcium sulfate), or debris.

7. Gradations, as determined in accordance with Tex-110-E.

Sieve	Percent Passing by Weight for Pipe Embedment by Ranges of Nominal Pipes Sizes		
	>15"	15" - 8"	<8"
1"	95 - 100	100	-
3/4"	60 - 90	90 - 100	100
1/2"	25 - 60	-	90 - 100
3/8"	-	20 - 55	40 - 70
No. 4	0 - 5	0 - 10	0 - 15
No. 8	-	0 - 5	0 - 5

I. Select Backfill: Class III clayey gravel or sand or Class IV lean clay with plasticity index between 7 and 20 or clayey soils treated with lime in accordance with Section 02951 - Pavement Repair and Resurfacing, to meet plasticity criteria.

J. Random Backfill: Any suitable soil or mixture of soils within Classes I, II, III and IV; or fat clay (CH) where allowed by applicable backfill installation specification. Refer to Section 02316 - Excavation and Backfill for Structures and Section 02317 - Excavation and Backfill for Utilities.

K. Cement Stabilized Sand: Conform to requirements of Section 02321 - Cement Stabilized Sand.

L. Concrete Backfill: Conform to Class B concrete as specified in Section 03315 - Concrete for Utility Construction.

M. Flexible Base Course Material: Conform to requirements of applicable portions of Section 02711 - Hot Mix Asphaltic Base Course, Section 02712 - Cement Stabilized Base Course, and Section 02713 - Crushed Concrete Base Course.

2.03 MATERIAL TESTING

A. Source Qualification. Perform testing to obtain tests by suppliers for selection of material sources and products not from the project site. Test samples of processed materials from current production representing material to be delivered. Use tests to verify that materials meet specification requirements. Repeat qualification test procedures each time source characteristics change or there is planned change in source location or supplier. Include the following qualification tests, as applicable:

1. Gradation. Report complete sieve analyses regardless of specified control sieves from largest particle through No. 200 sieve.

2. Plasticity of material passing No. 40 sieve

3. Los Angeles abrasion wear of material retained on No. 4 sieve

4. Clay lumps

5. Lightweight pieces

6. Organic impurities

B. Production Testing. Provide reports to Project Manager from an independent testing laboratory that backfill materials to be placed in Work meet applicable specification requirements.

C. Assist Project Manager in obtaining material samples for verification testing at source or at production plant.

PART 3 EXECUTION

3.01 SOURCES

A. Use of existing material in trench excavations is acceptable, provided applicable specification requirements are satisfied.

B. Identify off-site sources for backfill materials at least 14 days ahead of intended use so that Project Manager may obtain samples for verification testing.

C. Materials may be subjected to inspection or additional verification testing after delivery. Materials which do not meet requirements of specifications will be rejected. Do not use material which, after approval, has become unsuitable for use due to segregation, mixing with other materials, or by contamination. Once material is approved by Project Manager, expense for sampling and testing required to change to different material will be credited to City through change order.

D. Bank run sand, select backfill, and random backfill, if available in project excavation, may be obtained by selective excavation and acceptance testing. Obtain additional quantities of these materials and other materials required to complete work from off-site sources.

E. City does not represent or guarantee that any soil found in excavation work will be suitable and acceptable as backfill material.

3.02 MATERIAL HANDLING

A. When backfill material is obtained from either commercial or non-commercial borrow pit, open pit to expose vertical faces of various strata for identification and selection of approved material to be used. Excavate selected material by vertical cuts extending through exposed strata to achieve uniformity in product.

B. Establish temporary stockpile locations for practical material handling, control, and verification testing by Project Manager in advance of final placement. Obtain approval from landowner for storage of backfill material on adjacent private property.

C. When stockpiling backfill material near project site, use appropriate covers to eliminate blowing of materials into adjacent areas and prevent runoff containing sediments from entering drainage system.

D. Place stockpiles in layers to avoid segregation of processed materials. Load material by making successive vertical cuts through entire depth of stockpile.

3.03 FIELD QUALITY CONTROL

A. Quality Control

1. The Project Manager may sample and test backfill at:

   a. Sources including borrow pits, production plants and Contractor's designated off-site stockpiles.

b. On-site stockpiles.
c. Materials placed in Work.

2. The Project Manager may re-sample material at any stage of work or location if changes in characteristics are apparent.

B. Production Verification Testing: City's testing laboratory will provide verification testing on backfill materials, as directed by Project Manager. Samples may be taken at source or at production plant, as applicable.

END OF SECTION

Section 02321

CEMENT STABILIZED SAND

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Cement stabilized sand.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. No separate payment will be made for work performed under this Section. Include cost of such work in Contract unit prices for items listed in bid form requiring cement stabilized sand.

2. Refer to Paragraph 3.04 for material credit.

3. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 REFERENCES

A. ASTM C 33 - Standard Specification for Concrete Aggregates (Fine Aggregate).

B. ASTM C 40 - Standard Test Method for Organic Impurities in Fine Aggregates for Concrete.

C. ASTM C 42 - Standard Test Methods for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.

D. ASTM C 94 - Standard Specification for Ready-Mixed Concrete.

E. ASTM C 123 - Standard Test Method for Lightweight Particles in Aggregate.

F. ASTM C 142 - Standard Test Method for Clay Lumps and Friable Particles in Aggregates.

G. ASTM C 150 - Specification for Portland Cement.

H. ASTM D 558 - Standard Test Method for Moisture-Density Relations of Soil Cement-Mixtures.

I. ASTM D 1632 - Standard Practice for Making and Curing Soil-Cement Compression and Flexure Test Specimens in the Laboratory

J. ASTM D 1633 - Standard Test Method for Compressive Strength of Molded Soil-Cement Cylinders.

K. ASTM D 2487 - Standard Test Method for Classification of Soils for Engineering Purposes (Unified Soil Classification System).

L. ASTM D2922 - Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)

M. ASTM D 3665 - Standard Practice for Random Sampling of Construction Materials.

N. ASTM D 4318 - Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

1.04 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit proposed target cement content and production data for sand-cement mixture in accordance with requirements of Paragraph 2.03, Materials Qualifications.

1.05 DESIGN REQUIREMENTS

A. Use sand-cement mixture producing minimum unconfined compressive strength of 100 pounds per square inch (psi) in 48 hours.

1. Design will be based on strength specimens molded in accordance with ASTM D 558 at moisture content within 3 percent of optimum and within 4 hours of batching.

2. Determine minimum cement content from production data and statistical history. Provide no less than 1.1 sacks of cement per ton of dry sand.

PART 2 PRODUCTS

2.01 MATERIALS

A. Cement: Type I Portland cement conforming to ASTM C 150.

B. Sand: Clean, durable sand meeting grading requirements for fine aggregates of ASTM C 33, or requirements for bank run sand of Section 02320 - Utility Backfill Materials, and the following requirements:

1. Classified as SW, SP, SW-SM, SP-SM, or SM by Unified Soil Classification System of ASTM D 2487.

2. Deleterious materials:

   a. Clay lumps, ASTM C 142 - less than 0.5 percent.

   b. Lightweight pieces, ASTM C 123; less than 5.0 percent.

   c. Organic impurities, ASTM C 40, color no darker than standard color.

3. Plasticity index of 4 or less when tested in accordance with ASTM D 4318.

C. Water: Potable water, free of oils, acids, alkalies, organic matter or other deleterious substances, meeting requirements of ASTM C 94.

2.02 MIXING MATERIALS

A. Add required amount of water and mix thoroughly in pugmill-type mixer.

B. Stamp batch ticket at plant with time of loading. Reject material not placed and compacted within 4 hours after mixing.

2.03 MATERIAL QUALIFICATION

A. Determine target cement content of material as follows:

1. Obtain samples of sand-cement mixtures at production facility representing range of cement content consisting of at least three points.

2. Complete molding of samples within 4 hours after addition of water.

3. Perform strength tests (average of two specimens) at 48 hours and 7 days.

4. Perform cement content tests on each sample.

5. Perform moisture content tests on each sample.

6. Plot average 48-hour strength vs. cement content.

7. Record scale calibration date, sample date, sample time, molding time, cement feed dial settings, and silo pressure (if applicable).

B. Test raw sand for following properties at point of entry into pug-mill:

1. Gradation
2. Plasticity index
3. Organic impurities
4. Clay lumps and friable particles
5. Lightweight pieces
6. Moisture content
7. Classification

C. Present data obtained in format similar to that provided in sample data form attached to this Section.

D. The target content may be adjusted when statistical history so indicates. For determination of minimum product performance use formula:

f'_c% 1/2 standard deviation

PART 3 EXECUTION

3.01 PLACING

A. Place sand-cement mixture in maximum 12-inch-thick loose lifts and compact to 95 percent of maximum density as determined in accordance with ASTM D 558, unless otherwise specified. Refer to related specifications for thickness of lifts in other applications. Target moisture content during compaction is $\pm$3 percent of optimum. Perform and complete compaction of sand-cement mixture within 4 hours after addition of water to mix at plant.

B. Do not place or compact sand-cement mixture in standing or free water.

3.02 FIELD QUALITY CONTROL

A. Testing will be performed under provisions of Section 01454 - Testing Laboratory Services.

B. One sample of cement stabilized sand shall be obtained for each 150 tons of material placed per day with no less than one sample per day of production. Random samples of delivered cement stabililized sand shall be taken in the field at point of delivery in accordance with

ASTM 3665. Obtain three individual samples of approximately 12 to 15 lb each from the first, middle, and last third of the truck and composite them into one sample for test purpose.

C. Prepare and mold four specimens (for each sample obtained) in accordance with ASTM D 558, Method A, without adjusting moisture content. Samples will be molded at approximately same time material is being used, but no later than 4 hours after water is added to mix.

D. After molding, specimens will be removed from molds and cured in accordance with ASTM D 1632.

E. Specimens will be tested for compressive strength in accordance with ASTM D 1633, Method A. Two specimens will be tested at 48 hours plus or minus 2 hours and two specimens will be tested at 7 days plus or minus 4 hours.

F. A strength test will be average of strengths of two specimens molded from same sample of material and tested at same age. Average daily strength will be average of strengths of all specimens molded during one day's production and tested at same age.

G. Precision and Bias: Test results shall meet recommended guideline for precision in ASTM D 1633 Section 9.

H. Reporting: Test reports shall contain, as a minimum, the following information:

1. Supplier and plant number
2. Time material was batched
3. Time material was sampled
4. Test age (exact hours)
5. Average 48-hour strength
6. Average 7-day strength
7. Specification section number
8. Indication of compliance / non-compliance
9. Mixture identification
10. Truck and ticket numbers
11. The time of molding
12. Moisture content at time of molding
13. Required strength
14. Test method designations
15. Compressive strength data as required by ASTM D 1633
16. Supplier mixture identification
17. Specimen diameter and height, in.
18. Specimen cross-sectional area, sq. in.

3.03 ACCEPTANCE

A. Strength level of material will be considered satisfactory if:

1. The average 48-hour strength is greater than 100 psi with no individual strength test below 70 psi.

2. All 7-day individual strength tests (average of two specimens) are greater than or equal to 100 psi.

B. Material will be considered deficient when 7-day individual strength test (average of two specimens) is less than 100 psi but greater than 70 psi. See Paragraph 3.04 Adjustment for Deficient Strength.

C. The material will be considered unacceptable and subject to removal and replacement at Contractor=s expense when individual strength test (average of two specimens) has 7-day strength less than 70 psi.

D. When moving average of three daily 48-hour averages falls below 100 psi, discontinue shipment to project until plant is capable of producing material, which exceeds 100 psi at 48 hours. Five 48-hour strength tests shall be made in this determination with no individual strength tests less than 100 psi.

E. Testing laboratory shall notify Contractor, Project Manager, and material supplier by facsimile of tests indicating results falling below specified strength requirements within 24 hours.

F. If any strength test of laboratory cured specimens falls below the specified strength, Contractor may, at his own expense, request test of cores drilled from the area in question in accordance with ASTM C42. In such cases, three (3) cores shall be taken for each strength test that falls below the values given in 3.03.A.

G. Cement stabilized sand in an area represented by core tests shall be considered satisfactory if the average of three (3) cores is equal to at least 100 psi and if no single core is less that 70 psi. Additional testing of cores extracted from locations represented by erratic core strength results will be permitted.

3.04 ADJUSTMENT FOR DEFICIENT STRENGTH

A. When mixture produces 7-day compressive strength greater than or equal to 100 psi, then material will be considered satisfactory and bid price will be paid in full.

B. When mixture produces 7-day compressive strength less than 100 psi and greater than or equal to 70 psi, material shall be accepted contingent on credit in payment. Compute credit by the following formula:

$$\text{Credit per Cubic Yard} = \frac{\$30.00 \times 2\,(100\text{ psi} - \text{Actual psi})}{100}$$

C. When mixture produces 7-day compressive strength less than 70 pounds per square inch, then remove and replace cement-sand mixture and paving and other necessary work at no cost to City.

END OF SECTION

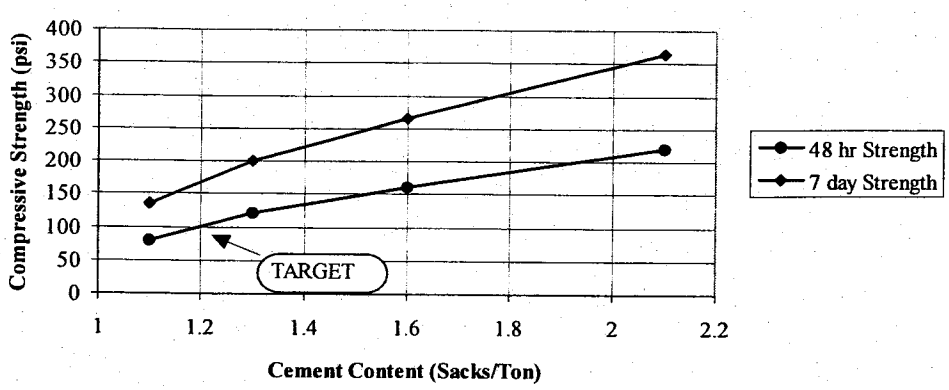
Supplier: City Stabilized Sand	**Plant No:** 1 - Main Street	**Date of Tests:** January 1, 1997

Item	Raw Sand	1.1 Sack	100 psi	1.5 Sack	2.0 Sack
Moisture Content	10.9	15.7	14.0	13.8	13.7
Cement Feed Dial Setting	--	2.25	2.5	2.75	3.75
Silo Pressure (psi)	--	4	4	4	4
Batch Time	10:00	10:10	10:15	10:20	10:25
Sample Time	--	10:10	10:15	10:20	10:25
Molding Time	--	12:30	12:45	1:00	1:15
Cement Content (sacks/ton)	--	1.1	1.3	1.6	2.1
Compressive Strength at 48 hrs. (avg of 2)	--	80	120	160	220
Compressive Strength at 7 days(avg of 2)	--	135	200	265	365

Sieve size	Percent Passing	COH Spec. Section 02320
3/8 Inch	100	--
No. 16	100	--
No. 40	100	--
No. 50	99	--
No. 100	41	--
No. 200	11	0 to 15

Raw Sand Tests	Result	City of Houston
Plasticity Index	Non-Plastic	4 Maximum
Organic Impurities	Passing	No Darker Than
Clay Lumps & Friable Parts (%)	0.0	0.5 % Maximum
Lightweight Pieces (%)	0.0	5.0 % Maximum
Classification	SP-SM	SW, SP, SW-SM, SP-SM, SM

Compressive Strength vs Cement Content



Section 02330

EMBANKMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Construction of embankments with excess excavated material and borrow.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. No separate payment will be made for embankment under this section. Include payment in unit price for excavation or borrow.

2. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 REFERENCES

A. ASTM D 698 - Standard Test Methods for Laboratory Compaction Characteristics of Soils Using Standard Effort (12,400 ft-lbf/ft^3 (600 kN-m/m^3)).

B. ASTM D 2922 - Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

C. ASTM D 3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

PART 2 PRODUCTS

2.01 MATERIALS

A. Refer to Section 02315 - Roadway Excavation for acceptable excess materials from roadway excavation.

B. Refer to Section 02317 - Excavation and Backfill For Utilities for acceptable excess materials from utility excavation and trenching.

C. Refer to Section 02319 - Borrow for acceptable borrow materials.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify borrow and excess excavated materials to be reused are approved.

B. Verify removals and clearing and grubbing operations have been completed.

3.02 PREPARATION

A. Backfill test pits, stump holes, small swales and other surface irregularities. Backfill and compact in designated lift depths to requirements for embankment compaction.

B. Record location and plug and fill inactive water and oil wells. Conform to Texas State Health Department, Texas Commission on Environmental Quality and Texas Railroad Commission requirements. Notify City Engineer prior to plugging wells.

C. Excavate and dispose of unsuitable soil and other unsuitable materials which will not consolidate. Backfill and compact to requirements for embankment. Unsuitable soil is defined in Section 02316 - Excavation and Backfill for Structures and Section 02320 - Utility Backfill Materials.

D. Backfill new utilities below future grade. Conform to requirements of Sections 02317 - Excavation and Backfill For Utilities, 02511 - Water Lines, 02531 - Gravity Sanitary Sewers, and 02532 - Sanitary Sewage Force Mains.

3.03 PROTECTION

A. Protect trees, shrubs, lawns, existing structures, and other features outside of embankment limits.

B. Protect utilities above and below grade, which are to remain.

C. Conform to protection requirements of Section 02315 - Roadway Excavation.

3.04 PLACING EMBANKMENT

A. Do not conduct placement operations during inclement weather or when existing ground or fill materials exceed 3 percent of optimum moisture content. Contractor may manipulate wet material to facilitate drying, by disking or windrowing.

B. Do not place embankment fill until density and moisture content of previously placed material comply with specified requirements.

C. Scarify areas to be filled to minimum depth of 4 inches to bond existing and new materials. Mix with first fill layer.

D. Spread fill material evenly, from dumped piles or windrows, into horizontal layers approximately parallel to finished grade. Place to meet specified compacted thickness. Break clods and lumps and mix materials by blading, harrowing, disking or other approved method. Extend each layer across full width of fill.

E. Each layer shall be homogeneous and contain uniform moisture content before compaction. Mix dissimilar abutting materials to prevent abrupt changes in composition of fill.

F. Layers shall not exceed the following compacted thickness:

1. Areas indicated to be under future paving or shoulders, to be constructed within 6 months: 6 inches when compacted with pneumatic rollers, or 8 inches when compacted with other rollers.

2. Other areas: 12 inches

G. For steep slopes, cut benches into slope and scarify before placing fill. Place increasingly wider horizontal layers of specified depth to level of each bench.

H. Build embankment layers on back slopes, adjacent to existing roadbeds, to level of old roadbed. Scarify top of old roadbed to minimum depth of 4 inches and recompact with next fill layer.

I. Construct to lines and grades shown on Drawings.

J. Remove unsuitable material and excess soil not being used for embankment from site in accordance with requirements of Section 01576 - Waste Material Disposal.

K. Maintain moisture content of embankment materials to attain required density.

L. Compact to following minimum densities at moisture content of optimum to 3 percent above optimum as determined by ASTM D 698, unless otherwise indicated on Drawings:

1. Areas under future paving and shoulders: Minimum density of 95 percent of maximum dry density.

2. Other areas: Minimum density of 90 percent of maximum dry density.

3.06 TOLERANCES

A. Top of compacted surface: Plus or minus 1/2 inch in cross section or 16 foot length.

3.07 FIELD QUALITY CONTROL

A. Compaction Testing will be performed in accordance with ASTM D 698 or ASTM D 2922 and ASTM D 3017 under provisions of Section 01454 - Testing Laboratory Services.

B. A minimum of three tests will be taken for each 1000 linear feet per lane of roadway or 500 square yards of embankment per lift.

C. If tests indicate work does not meet specified compaction requirements, recondition, recompact, and retest at no cost to City.

END OF SECTION

Section 02336

LIME STABILIZED SUBGRADE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Foundation course of lime stabilized subgrade material.

1. Application of lime slurry to subgrade.

2. Mixing, compaction, and curing of lime slurry, water, and subgrade into a stabilized foundation.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Measurement and payment for lime stabilized subgrade is on a square yard basis compacted in place to proper density. Separate measurement will be made for each required thickness of subgrade course.

   a. Limits of measurement shall match actual pavement replaced, but no greater than maximum pavement replacement limits shown on Drawings. Limits for measurement will be extended to include installed lime stabilized subgrade material that extends 2 foot beyond outside edge of pavement to be replaced, except where proposed pavement section shares common longitudinal or transverse edge with existing pavement section. No payment will be made for lime stabilized subgrade in areas beyond these limits.

   b. Limits of measurement and payment shall match pavement replacement limits shown on Drawings, except as noted in Paragraph 1.02.A.1.a, or as approved by Project Manager.

2. Measurement and payment for lime is by ton of 2000 pounds dry weight basis. Calculate weight of dry solids for lime slurry based on percentage by dry weight solids.

3. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for Work in this Section is included in total Stipulated Price.

1.03 DEFINITION

B. Moist Cure: Curing soil and lime to obtain optimum hydration.

C. 1000-Foot Roadway Section: 1000 feet per lane width or approximately 500 square yards of compacted subgrade for other than full-lane-width roadway sections.

1.04 REFERENCES

A. ASTM D 698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3 (600 kN-m/m^3).

B. ASTM D 2922 - Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

C. ASTM D 4318 - Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

D. TxDOT Tex-101-E (Part III) - Preparation of Soil and Flexible Base Material for Testing.

E. TxDOT Tex-140-E - Measuring Thickness of Pavement Layer.

F. TxDOT Tex-600-J - Sampling and Testing Hydrated Lime, Quicklime, and Commercial Lime Slurry.

1.05 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit certification that hydrated lime, quicklime, or commercial lime slurry complies with specifications.

C. Submit weight tickets, certified by supplier, with each bulk delivery of lime to work site.

1.06 DELIVERY, STORAGE AND HANDLING

A. Bagged lime shall bear manufacturer's name, product identification, and certified weight. Bags varying more than 5 percent of certified weight may be rejected; average weight of 50 random bags in each shipment shall not be less than certified weight.

B. Store lime in weatherproof enclosures. Protect lime from ground dampness.

PART 2 PRODUCTS

2.01 WATER

A. Use clean, clear water, free from oil, acids, alkali, or vegetation.

2.02 LIME

A. Type A - Hydrated Lime: Dry material consisting essentially of calcium hydroxide or mixture of calcium hydroxide and an allowable percentage of calcium oxide as listed in chemical composition chart.

B. Type B - Commercial Lime Slurry: Liquid mixture consisting essentially of lime solids and water in slurry form. Water or liquid portion shall not contain dissolved material in sufficient quantity to be injurious or objectionable for purpose intended.

C. Type C - Quicklime: Dry material consisting essentially of calcium oxide. Furnish quicklime in either of the following grades:

1. Grade DS: Pebble quicklime of gradation suitable for use in preparation of slurry for wet placing.

2. Grade S: Finely-graded quicklime for use in preparation of slurry for wet placing. Donor use grade S quicklime for dry placing.

D. Conform to the following requirements:

CHEMICAL COMPOSITION	TYPE		
	A	B	C
Active lime content, % by weight $Ca(OH)_2$+CaO	90.0 min[1]	87.0 min[2]	-
Unhydrated lime content, % by weight CaO	5.0 max	-	87.0 min
Free water content, % by weight H_2O :	5.0 max	-	-
SIZING			
Wet Sieve, as % by weight residue retained:			
No. 6	0.2 max	0.2 max[2]	8.0 max[3]
No. 30	4.0 max	4.0 max[2]	-
Dry sieve, as % by weight residue retained:			
1-inch	-	-	0.0
1/2-inch	-	-	10.0 max

Notes:
1. Maximum 5.0% by weight CaO shall be allowed in determining total active lime content.
2. Maximum solids content of slurry.
3. Total active lime content, as CaO, in material retained on No. 6 sieve shall not exceed 2.0% by weight of original Type C lime.

E. Deliver lime slurry to job site as commercial lime, or prepare at job site by using hydrated lime or quicklime. Provide slurry free of liquids other than water and of consistency that can be handled and uniformly applied without difficulty.

F. Lime containing magnesium hydroxide is prohibited.

2.03 SOIL

A. Soil to receive lime treatment may include borrow or existing subgrade material, existing pavement structure, or combination of all three. Where existing pavement or base material is encountered, pulverized or scarify material so that 100 percent of sampled material passes 2-inch sieve.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify compacted subgrade will support imposed loads.

B. Verify subgrade lines and grades.

3.02 PREPARATION

A. Complete backfill of utilities prior to stabilization.

B. Cut material to bottom of subgrade using an approved cutting and pulverizing machine meeting following requirements:

1. Cutters accurately provide smooth surface over entire width of cut to plane of secondary grade.

2. Provide cut to depth as specified or shown in the Drawings.

C. Alternatively, scarify or excavate to bottom of stabilized subgrade. Remove material or windrow to expose secondary grade. Obtain uniform stability.

D. Correct wet or unstable material below secondary grade by scarifying, adding lime, and compacting as directed by Project Manager.

E. Pulverize existing material so that 100 percent passes a 1-3/4-inch sieve.

3.03 LIME SLURRY APPLICATION

A. Apply slurry with distributor truck equipped with an agitator to keep lime and water in consistent mixture. Make successive passes over measured section of roadway to attain proper moisture and lime content. Limit spreading to an area where preliminary mixing operations can be completed on same working day.

B. Minimum lime content shall be 5 percent of dry unit weight of subgrade as determined by ASTM D 698

3.04 PRELIMINARY MIXING

A. Use approved single-pass or multiple-pass rotary speed mixers to mix soil, lime, and water to required depth. Obtain homogeneous friable mixture free of clods and lumps.

B. Shape mixed subgrade to final lines and grades.

C. Eliminate following operations and final mixing if pulverization requirements of Paragraph 3.05C can be met during preliminary mixing:

1. Seal subgrade as precaution against heavy rainfall by rolling lightly with light pneumatic rollers.

2. Cure soil lime material for 24 to 72 hours or as required to obtain optimum hydration. Keep subgrade moist during cure.

3.05 FINAL MIXING

A. Use approved single-pass or multiple-pass rotary speed mixers to uniformly mix cured soil and lime to required depth.

B. Add water to bring moisture content of soil mixture to optimum or above.

C. Mix and pulverize until all material passes 13/4-inch sieve; minimum of 85 percent, excluding non-slacking fractions, passes 3/4-inch sieve; and minimum of 60 percent excluding non-slacking fractions passes No. 4 sieve. Test according to TxDOT Tex-101-E, Part III using dry method.

D. Shape mixed subgrade to final lines and grades.

E. Do not expose hydrated lime to open air for 6 hours or more during interval between application and mixing. Avoid excessive hydrated lime loss due to washing or blowing.

3.06 COMPACTION

A. Aerate or sprinkle to attain optimum moisture content to 3 percent above optimum, as determined by ASTM D 698 on material sample from roadway after final mix with lime.

B. Start compaction immediately after final mixing.

C. Spread and compact in two or more equal layers where total compacted thickness is greater than equipment manufacturer's recommended range of mixing and compaction.

D. Compact with approved heavy pneumatic or vibrating rollers, or combination of tamping rollers and light pneumatic rollers. Begin compaction at bottom and continue until entire depth is uniformly compacted.

E. Do not allow stabilized subgrade to mix with underlying material. Correct irregularities or weak spots immediately by replacing material and recompacting.

F. Compact subgrade to minimum density of 95 percent of maximum dry density, according to ASTM D 698, at moisture content of optimum to 3 percent above optimum, unless otherwise indicated on Drawings:

G. Seal with approved light pneumatic tired rollers. Prevent surface hair line cracking. Rework and recompact at areas where hairline cracking develops.

3.07 CURING

A. Moist cure for minimum of 3 days before placing base or surface course, or opening to traffic. Subgrade may be opened to traffic after 2 days when adequate strength has been attained to prevent damage. Restrict traffic to light pneumatic rollers or vehicles weighing less than 10 tons.

B. Keep subgrade surface damp by sprinkling. Roll with light pneumatic roller to keep surface knit together.

C. Place base or surface within 14 days after final mixing and compaction. Restart compaction and moisture content of base material when time is exceeded.

3.08 TOLERANCES

A. Completed surface: smooth and conforming to typical section and established lines and grades.

B. Top of compacted surface: Plus or minus 1/4 inch in cross section or in 16-foot length.

C. Depth of lime stabilization shall be plus or minus one inch of specified depth for each 1000-foot roadway section.

3.09 FIELD QUALITY CONTROL

A. Testing will be performed under provisions of Section 01454 - Testing Laboratory Services.

B. Test soils, lime, and mixtures as follows:

1. Tests and analysis of soil materials will be performed in accordance with ASTM D 4318, using the wet preparation method.

2. Sampling and testing of lime slurry shall be in accordance with TxDOT Tex-600-J, except using a lime slurry cup.

3. Sample mixtures of hydrated lime or quicklime in slurry form will be tested to establish compliance with specifications.

4. Moisture-density relationship will be established on material sampled from roadway, after stabilization with lime and final mixing, in accordance with ASTM 698, Moist preparation Method.

C. In-place depth will be evaluated for each 1000-foot roadway section and determined in accordance with TxDOT Tex-140-E in hand excavated holes. For each 1000-foot section, 3 phenolphthalein tests will be performed. Average stabilization depth for 1000-foot section will be based on average depth for three tests.

D. Perform compaction testing in accordance with ASTM D 2922. Three tests will be performed for each 1000-foot roadway section.

E. Pulverization analysis will be performed as required by Paragraph 3.05C on material sampled during mixing of each production area. Three tests will be performed per 1000-foot roadway section or a minimum of once daily.

3.10 REWORK OF FAILED SECTIONS

A. Rework sections that do not meet specified thickness.

B. Perform the following steps when more than 72 hours have lapsed since completion of compaction.

1. Moist cure for minimum of 3 days after compaction to required density.

2. Add lime at rate of 25 percent of specified rate at no additional cost to City.

3. Moisture density test of reworked material must be completed by laboratory before field compaction testing can be completed.

3.11 PROTECTION

A. Maintain stabilized subgrade to lines and grades and in good condition until placement of base or surface course. Protect asphalt membrane from being picked up by traffic.

B. Repair defects immediately by replacing material to full depth.

END OF SECTION

Section 02337

LIME/FLY ASH STABILIZED SUBGRADE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Foundation course of lime/fly ash stabilized subgrade material.

1. Application of lime slurry and fly ash to subgrade

2. Mixing, compaction, and curing of lime, slurry, fly ash, water and subgrade into a stabilized foundation

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Measurement and payment for lime/fly ash stabilized subgrade is on a square yard basis compacted in place to proper density. Separate measurement will be made for each required thickness of subgrade course.

   a. Limits of measurement shall match actual pavement replaced, but no greater than the maximum pavement replacement limits shown on Drawings. Limits for measurement will be extended to include installed lime/fly ash stabilized subgrade material that extends 2 foot beyond outside edge of pavement to be replaced, except where proposed pavement section shares a common longitudinal or transverse edge with existing pavement section. No payment will be made for lime/fly ash stabilized subgrade in areas beyond these limits.

   b. Limits of measurement and payment shall match pavement replacement limits shown on Drawings, except as noted in Paragraph 1.02.A.1.a, or as approved by Project Manager

2. Payment for hydrated lime and quicklime is by ton of 2000 pounds dry-weight basis

3. Payment for commercial lime slurry is by ton of 2000 pounds of lime calculated on percentage by weight of dry solids for grade of slurry

4. Payment for fly ash is on unit price basis per ton

5. Refer to Section 01270 - Measurement and Payment for unit price procedures

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for Work in this Section is included in total Stipulated Price.

1.03 DEFINITIONS

A. Moist Cure: Curing soil lime/fly ash material to obtain optimum hydration.

B. 1000-Foot Roadway Section: 1000 feet per lane width or approximately 500 square yards of compacted subgrade for other than full-lane-width roadway sections.

1.04 REFERENCES

A. ASTM C 618 - Standard Specification for Coal Fly Ash and Raw or Calcinated Natural Pozzolan for use as Mineral Admixture in Portland Cement Concrete.

1.05 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit certification that fly ash, hydrated lime, quicklime, or commercial lime slurry complies with these specifications.

C. Submit weight tickets, certified by supplier, with each bulk delivery of materials to work site.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Conform to requirements of Section 02336 - Lime Stabilized Subgrade.

B. Quicklime can be dangerous; exercise extreme caution if used for Work. Become informed about recommended precautions in handling, storage and use of quicklime.

PART 2 PRODUCTS

2.01 MATERIALS

A. Water: clean, clear and free from oil, acids, alkali, or vegetable matter.

B. Conform to requirements of Section 02336 - Lime Stabilized Subgrade for Type A hydrated lime, Type C quicklime, and Type B commercial lime slurry.

C. Fly ash: Residue or ash remaining after burning finely pulverized coal at high temperatures conforming to requirements of ASTM C 618, Type 'C" or "F" and following:

1. Minimum CaO content of 20 percent
2. Loss on ignition not to exceed 3 percent

3. Contain no lignite ash

D. Asphaltic Seal Cure: Conform to requirements of Section 02336 - Lime Stabilized Subgrade.

PART 3 EXECUTION

3.01 INSTALLATION

A. Conform to Part 3 of Section 02336 - Lime Stabilized Subgrade with following exceptions:

1. Include fly ash in percentage amounts in lime or lime slurry as established from geotechnical evaluation for application, mixing, and compaction.

2. Apply lime/fly ash as single mix, single pass over lower PI soils.

3. Conduct operations to minimize elapsed time between mixing and compacting lime/fly ash stabilized subgrade in order to take advantage of rapid initial set characteristics. Complete compaction within 2 hours of commencing compaction and not more than 6 hours after adding and mixing last stabilizing agent.

3.02 QUALITY CONTROL

A. Testing will be performed under provisions of Section 01454 - Testing Laboratory Services.

B. Soil will be sampled to establish percent of fly ash and hydrated lime, quicklime, or lime slurry to be applied to subgrade material.

C. Testing will be in accordance with Part 3 of Section 2336-Lime-Stabilized Subgrade.

END OF SECTION

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Section 02505

HIGH DENSITY POLYETHYLENE (HDPE) SOLID AND PROFILE WALL PIPE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. High density polyethylene (HDPE) pipe for gravity sanitary sewers and drains, including fittings.

B. High density polyethylene (HDPE) pipe for sanitary sewer force mains, including fittings.

C. High density polyethylene (HDPE) pipe for gravity storm sewers and drains, including fittings.

D. High density polyethylene (HDPE) pipe for storm sewers culverts.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. No separate payment will be made for HDPE pipe under this Section. Include cost in unit prices for work, as specified in following sections:

   a. Section 02531 - Gravity Sanitary Sewers.

   b. Section 02532 - Sanitary Sewer Force Mains.

   c. Section 02631 - Storm Sewers.

2. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 REFERENCES

A. ASTM D 618 - Standard Practice for Conditioning Plastics for Testing.

B. ASTM D 1248 - Standard Specification for Polyethylene Plastics Extrusion Materials for Wire and Cable.

C. ASTM D 2321 - Standard Recommended Practice for Underground Installation of Flexible Thermoplastic Pipe.

D. ASTM D 2657 - Standard Practice for Heat Fusion Joining Polyolefin Pipe and Fittings.

E. ASTM D 2837 - Standard Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials.

F ASTM D 3035 - Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter.

G. ASTM D 3212 - Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals.

H. ASTM D 3350 - Standard Specification for Polyethylene Plastics Pipe and Fittings Materials.

I. ASTM F 477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.

J. ASTM F 714 - Standard Specification for Polyethylene Plastic (PE) Pipe (SDR-PR) Based on Outside Diameter.

K. ASTM F 894 - Standard Specification for Polyethylene (PE) Large-Diameter Profile Wall Sewer and Drain Pipe.

L. ASTM F 2306 – Standard Specification for 12 to 60 in. [300 to 1500 mm] Annular Corrugated Profile-Wall Polyethylene (PE) Pipe and Fittings for Gravity-Flow Storm Sewer and Subsurface Drainage Applications.

M. ASTM F 2487 – Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Corrugated High Density Polyethylene Pipelines.

N. ASTM F 2510 – Standard Specification for Resilient Connectors between Concrete Manhole Structures and Corrugated High Density Polyethylene Drainage Pipes.

1.04 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit shop drawings showing design of pipe and fittings indicating alignment and grade, pipe length, laying dimensions, fabrication, fittings, flanges, gasket material, and special details.

C. Submit detailed calculations for pipe design.

D. Submit details of Pipe Joints and jointing procedure for HDPE pipe.

1.05 QUALITY CONTROL

A. Provide manufacturer's certificate of conformance to Specifications.

B. Furnish pipe and fittings that are homogeneous throughout and free from visible cracks, holes, foreign inclusions, or other injurious defects. Provide pipe as uniform as commercially practical in color, opacity, density, and other physical properties.

C. Project Manager reserves right to inspect pipes or witness pipe manufacturing. Inspection shall in no way relieve manufacturer of responsibilities to provide products that comply with applicable standards and these Specifications.

1. Manufacturer's Notification: Should Project Manager wish to witness manufacture of specific pipes, manufacturer shall provide Project Manager with minimum three weeks notice of when and where production of those specific pipes will take place.

2. Failure to Inspect. Approval of products or tests is not implied by Project Manager's decision not to inspect manufacturing, testing, or finished pipes.

D. Pipe manufacturer to provide services of experienced, competent, and authorized representative to visit site to advise and consult Contractor during jointing and installation of pipe.

1.06 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing the products specified in this section with documented experience of minimum 5 years of pipe installations that have been in successful, continuous service for same type of service as proposed Work.

PART 2 PRODUCTS

2.01 GENERAL

A. Provide products manufactured by companies listed on the City of Houston Standard Product List.

B. Furnish solid wall pipe with plain end construction for heat joining (butt fusion) conforming to ASTM D 2657. Utilize controlled temperatures and pressures for joining to produce fused leak-free joint.

C. Furnish profile-wall gravity sanitary sewer pipe with bell-and-spigot end construction conforming to ASTM D 3212. Joining will be accomplished with elastomeric gasket in

accordance with manufacturer's recommendations. Use integral bell-and-spigot gasketed joint designed so that when assembled, elastomeric gasket, contained in machined groove on pipe spigot, is compressed radially in pipe bell to form positive seal. Design joint to avoid displacement of gasket when installed in accordance with manufacturer's recommendations.

D. Furnish solid wall pipe for sanitary sewer force mains with minimum working pressure rating of 150 psi, and with inside diameter equal to or greater than nominal pipe size indicated on Drawings.

E. Furnish corrugated profile-wall polyethylene (CPP) pipe for gravity storm sewer and storm sewer culvert pipe. Joints shall be installed such that connection of pipe sections will form continuous line free from irregularities in flow line. Suitable joints are:

1. Integral Bell and Spigot. Bell shall overlap minimum of two corrugations of spigot end when fully engaged.

2. Exterior Bell and Spigot. Bell shall be fully welded to exterior of pipe and overlap spigot end so that flow lines and ends match when fully engaged.

F. Jointing:

1. Gaskets:

a. Meet requirements of ASTM F 477. Use gasket molded into circular form or extruded to proper section and then spliced into circular form. When no contaminant is identified, use gaskets of properly cured, high-grade elastomeric compound. Basic polymer shall be natural rubber, synthetic elastomer, or blend of both.

b. Pipes allowed to be installed in potentially contaminated areas, where free product is found near elevation of proposed sewer, shall have the following gasket materials for noted contaminants:

CONTAMINANT	GASKET MATERIAL REQUIRED
Petroleum (diesel, gasoline)	Nitrile Rubber
Other Contaminants	As recommended by pipe manufacturer

2. Lubricant. Use lubricant for assembly of gasketed joints which has no detrimental effect on gasket or on pipe, in accordance with manufacturer's recommendations.

3. Gravity Storm Sewer Watertight Joints: When required, watertight joints shall be in accordance with the requirements of ASTM D 3212.

2.02 MATERIALS FOR SANITARY SEWER

A. Pipe and Fittings: High density, high molecular weight polyethylene pipe material meeting requirements of Type III, Class C, Category 5, Grade P34, as defined in ASTM D 1248. Material meeting requirements of cell classification in accordance with ASTM D 3350 are also suitable for making pipe products under these specifications.

B. Other Pipe Materials: Materials other than those specified in Paragraph 2.02A, Pipe and Fittings, may be used as part of profile construction, e.g., as core tube to support shape of profile during processing, provided that these materials are compatible with base polyethylene material and are completely encapsulated in finished product and in no way compromise performance of pipe products in intended use. Examples of suitable material include polyethylene and polypropylene.

2.03 MATERIALS FOR GRAVITY STORM SEWERS AND STORM SEWER CULVERTS

A. Pipe and Fittings: High density, high molecular weight polyethylene HDPE virgin compound material meeting requirements of cell class outlined in ASTM D 3350.
Manufacturing shall meet requirements of ASTM F 2306.

2.04 TEST METHODS FOR SANITARY SEWER

A. Conditioning. Conditioning of samples prior to and during tests is subject to approval by Project Manager. When referee tests are required, condition specimens in accordance with Procedure A in ASTM D 618 at 73.4 degrees F plus or minus 3.6 degrees F and 50 percent relative humidity plus or minus 5 percent relative humidity for not less than 40 hours prior to test. Conduct tests under same conditions of temperature and humidity unless otherwise specified.

B. Flattening. Flatten three specimens of pipe, prepared in accordance with Paragraph 2.05A, in suitable press until internal diameter has been reduced to 40 percent of original inside diameter of pipe. Rate of loading shall be uniform and at 2 inches per minute. Test specimens, when examined under normal light and with unaided eye, shall show no evidence of splitting, cracking, breaking, or separation of pipe walls or bracing profiles.

C. Joint Tightness. Test for joint tightness in accordance with ASTM D 3212, except replace shear load transfer bars and supports with 6-inch-wide support blocks that can be either flat or contoured to conform to pipe's outer contour.

D. Purpose of Tests. Flattening and joint tightness tests are not intended to be routine quality control tests, but rather to qualify pipe to a specified level of performance.

2.05 TEST METHODS FOR GRAVITY STORM SEWERS AND STORM SEWER CULVERTS

A. All testing and material requirements shall be in accordance with ASTM F 2306.

2.06 MARKING

A. Mark each standard and random length of pipe in compliance with these Specifications with following information:

1. Pipe size.

2. Pipe class.

3. Production code.

4. Material designation.

PART 3 EXECUTION

3.01 INSTALLATION

A. Conform to requirements of following Sections:

1. Section 02550 - Sliplining Sanitary Sewers.

2. Section 02531 - Gravity Sanitary Sewers.

3. Section 02532 - Sanitary Sewage Force Mains.

4. Section 02533 - Acceptance Testing for Sanitary Sewers.

5. Section 02631 - Storm Sewers

B. Install pipe in accordance with the manufacturers recommended installation procedures and ASTM D 2774.

C. HDPE pipe is not approved in applications requiring augering of pipe.

D. Bedding and backfill: Conform to requirements of Section 02317 - Excavation and Backfill for Utilities.

E. Use only workmen trained in the installation of HDPE Pipe.

F. Do not store pipe uncovered direct in direct sunlight. Allow pipe temperature to approach ground temperature before each individual pipe section is terminally connected.

G. Joints: Join sections of HDPE pipe into continuous lengths above ground by thermal butt fusion method in accordance with AWWA C906 and pipe manufacturer's recommendations for specified service. Fusion joints: meeting minimum requirements of manufacturer for cool down time and other fusing requirements. Socket fusion and extrusion welding or hot gas welding will not be accepted.

H. Cutting pipe: Comply with pipe manufacturer's recommendations. After cutting, leave end pipe in accordance with manufacturer's recommendations.

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Section 02506

POLYVINYL CHLORIDE PIPE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Polyvinyl chloride pressure pipe for water distribution, in nominal diameters 4 inches through 20 inches.

B. Polyvinyl chloride sewer pipe for gravity sewers in nominal diameters 4 inches through 48 inches.

C. Polyvinyl chloride pressure pipe for gravity sewers and force mains in nominal diameters 4 inches through 20 inches.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. No separate payment will be made for PVC pipe under this Section. Include cost in unit price for work included as specified in the following sections:

   a. Section 02511 - Water Lines

   b. Section 02531 - Gravity Sanitary Sewers

   c. Section 02532 - Sanitary Sewer Force Mains

   d. Section 02631 - Storm Sewers

2. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 REFERENCES

A. ANSI A 21.16 (AWWA C 116) - Protective Fusion Bonded Epoxy Coating for the Interior and Exterior Surfaces of Ductile Iron and Grey Iron Fittings for Water Supply Service.

B. ASTM D 1248 - Standard Specification for Polyethylene Plastics Molding and Extrusion Materials.

C. ASTM D 1784 - Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds.

D. ASTM D 2241 - Standard Specification for Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series).

E. ASTM D 2321 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.

F. ASTM D 2444 - Standard Test Method for Determination of the Impact Resistance of Thermoplastic Pipe and Fittings by Means of a Tup (Falling Weight).

G. ASTM D 2680 - Specification for Acrylonitrile-Butadiene-Styrene (ABS) and Poly (Vinyl Chloride) (PVC) Composite Sewer Piping.

H. ASTM D 3034 - Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.

I. ASTM D 3139 - Standard Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals.

J. ASTM D 3212 - Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals.

K. ASTM F 477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.

L. ASTM F 679 - Standard Specification for Poly (Vinyl Chloride) (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings.

M. ASTM F 794 - Standard Specification for Poly (Vinyl Chloride) (PVC) Profile Gravity Sewer Pipe and Fittings Based on Controlled Inside Diameter.

N. ASTM F 949 - Standard Specification for Poly (Vinyl Chloride) (PVC) Corrugated Sewer Pipe with Smooth Interior and Fittings.

O. AWWA C 110 - American National Standard for Ductile-Iron and Gray-Iron Fittings, 3 Inches Through 48 Inches for Water.

P. AWWA C 111 - American National Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.

Q. AWWA C 900 - Standard for Polyvinyl Chloride (PVC) Pressure Pipe, 4 Inches Through 12 Inches for Water Distribution.

R. AWWA C 905 - Standard for Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 14 In. Through 48 In., for Water Transmission and Distribution.

S. AWWA C 909 - Standard for Molecularly-Oriented Polyvinyl Chloride (PVCO) Pressure Pipe, 4 Inches through 12 Inches (100mm through 300 mm), for Water Distribution.

T. PPI TR3 - Policies and Procedures for Developing Recommended Hydrostatic Design Stresses for Thermoplastic Pipe Materials.

U. UNI-B-13 - Recommended Standard Performance Specification for Joint Restraint Devices for Use with Polyvinyl Chloride Pipe.

1.04 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit shop drawings showing design of new pipe and fittings indicating alignment and grade, laying dimensions, fabrication, fittings, flanges, and special details.

1.05 QUALITY CONTROL

A. Submit manufacturer's certifications that PVC pipe and fittings meet requirements of this Section and AWWA C 900, AWWA C 909 and AWWA C 905 for pressure pipe applications, or appropriate ASTM standard specified for gravity sewer pipe.

B. Submit manufacturer's certification that PVC pressure pipe for water lines and force mains has been hydrostatically tested at factory in accordance with AWWA C 900, AWWA C 909 and AWWA C 905, and this Section.

C. When foreign manufactured material is proposed for use, have material tested for conformance to applicable ASTM requirements by certified independent testing laboratory located in United States. Certification from other source is not acceptable. Furnish copies of test reports to Project Manager for review. Cost of testing paid by Contractor.

PART 2 PRODUCTS

2.01 MATERIAL

A. Use PVC compounds in manufacture of pipe that contain no ingredient in amount that has been demonstrated to migrate into water in quantities considered to be toxic.

B. Furnish PVC pressure pipe manufactured from Class 12454-A or Class 12454-B virgin PVC compounds as defined in ASTM D 1784. Use compounds qualifying for rating of 4000 psi for water at 73.4 F per requirements of PPI TR3. Provide pipe which is homogeneous

throughout, free of voids, cracks, inclusions, and other defects, uniform as commercially practical in color, density, and other physical properties. Deliver pipe with surfaces free from nicks and scratches with joining surfaces of spigots and joints free from gouges and imperfections which could cause leakage.

C. PVC Restrained Pipe: Must be listed on City's current Product Approval List.

1. Pipe Material:

a. DR 18: For restrained joints where shown on Drawings.

b. DR 14: For alternate to offset pipe sections shown on Drawings. Do not use PVC for offset sections with depth of cover greater than 20 feet or less than 4 feet. Do not use PVC in potentially petroleum contaminated areas.

D. Water Service.

1. Provide self-extinguishing PVC pipe that bears Underwriters' Laboratories mark of approval and is acceptable without penalty to Texas State Fire Insurance Committee for use in fire protection lines.

2. Bear National Sanitation Foundation Seal of Approval (NSF-PW).

E. Gaskets:

1. Gaskets shall meet requirements of ASTM F 477. Use elastomeric factory-installed gaskets to make joints flexible and watertight.

2. Flat Face Mating Flange: Full faces 1/8-inch-thick ethylene propylene (EPR) rubber.

3. Raised Face Mating Flange: Flat ring 1/8-inch ethylene propylene (EDR) rubber, with filler gasket between OD of raised face and flange OD to protect flange from bolting moment.

F. Lubricant for rubber-gasketed joints: Water soluble, non-toxic, non-objectionable in taste and odor imparted to fluid, non-supporting of bacteria growth, having no deteriorating effect on PVC or rubber gaskets.

H. Do not use PVC in potentially or known contaminated areas.

I. Do not use PVC in areas exposed to direct sunlight.

2.02 WATER SERVICE PIPE

A. Pipe 4 inch through 12 inch: AWWA C 900, AWWA C 909, Class 150, DR 18; AWWA C 900, Class 200, DR 14 as alternate to offset pipe sections; nominal 20-foot lengths; cast-iron equivalent outside diameters.

B. Pipe 14 inch through 20 inch: AWWA C 905; Class 235; DR 18; nominal 20-foot lengths; cast-iron equivalent outside diameter.

C. Provide Polyvinyl Chloride Pipe from approved manufacturers.

D. Make curves and bends by deflecting joints. Do not exceed maximum deflection recommended by pipe manufacturer. Submit details of other methods of providing curves and bends for review by Project Manager.

E. Hydrostatic Test: AWWA C 900, AWWA C 905, AWWA C 909, ANSI A 21.10 (AWWA C 110); at point of manufacture; submit manufacturer's written certification.

2.03 GRAVITY SEWER PIPE

A. PVC gravity sanitary sewer pipe and storm sewer pipe shall be in accordance with provisions in following table:

WALL CONSTRUCTION	MANUFACTURER	ASTM DESIGNATION	SDR (MAX.)/ STIFFNESS (MIN.)	DIAMETER SIZE RANGE
Solid	J-M Pipe CertainTeed Diamond Uponor ETI North American	D3034	SDR 26 / PS 115	6" to 10"
		D3034	SDR 35 / PS 46	12" & 15"
		F679	SDR 35 / PS 46	18" to 27"
		AWWA C900	DR 18 / N/A	4" to 12"
		AWWA C909	DR 18 / N/A	4" to 12"
		AWWA C905	DR 18 / N/A	14" to 16"
Truss (Gasketed)	Contech	D2680	N/A /200 psi	8" to 15"
Profile	Contech A-2000	F949	N/A / 46 psi	12" to 36"
	Contech A-2026	F949	N/A / 115 psi	8" to 10"
	ETI, Ultra-Rib	F794	N/A / 46 psi	8" to 30"
	ETI, Ultra-Corr	F794	N/A / 46 psi	24" to 36"

B. When solid wall PVC pipe 18 inches to 27 inches in diameter is required in SDR 26, provide pipe conforming to ASTM F 679, except provide wall thickness as required for SDR 26 and pipe strength of 115 psi.

C. For sewers up to 12-inch diameter crossing over water lines, or crossing under water lines with less than 2-feet separation, provide minimum 150 psi pressure-rated pipe conforming to ASTM D 2241 with suitable PVC adapter couplings.

D. Joints: Spigot and integral wall section bell with solid cross section elastomeric or rubber ring gasket conforming to requirements of ASTM D 3212 and ASTM F 477, or ASTM D 3139 and ASTM F 477. Gaskets shall be factory-assembled and securely bonded in place to prevent displacement. Manufacturer shall test sample from each batch conforming to requirements ASTM D 2444.

E. Fittings: Provide PVC gravity sewer sanitary bends, tee, or wye fittings for new sanitary sewer construction. PVC pipe fittings shall be full-bodied, either injection molded or factory fabricated. Saddle-type tee or wye fittings are not acceptable.

F. Conditioning. Conditioning of samples prior to and during tests is subject to approval by Project Manager. When referee tests are required, condition specimens in accordance with Procedure A in ASTM D 618 at 73.4 degrees F plus or minus 3.6 degrees F and 50 percent relative humidity plus or minus 5 percent relative humidity for not less than 40 hours prior to test. Conduct tests under same conditions of temperature and humidity unless otherwise specified.

G. Pipe Stiffness. Determine pipe stiffness at 5 percent deflection in accordance with Test Method D 2412. Minimum pipe stiffness shall be 46 psi. For diameters 4 inches through 18 inches, test three specimens, each a minimum of 6 inches (152 mm) in length. For diameters 21 inch through 36 inch, test three specimens, each a minimum of 12 inch (305 mm) in length.

H. Flattening. Flatten three specimens of pipe, prepared in accordance with Paragraph 2.04F, in suitable press until internal diameter has been reduced to 60 percent of original inside diameter of pipe. Rate of loading shall be uniform. Test specimens, when examined under normal light and with unaided eye, shall show no evidence of splitting, cracking, breaking, or separation of pipe walls or bracing profiles. Perform the flattening test in conjunction with pipe stiffness test.

I. Joint Tightness. Test for joint tightness in accordance with ASTM D 3212, except that joint shall remain watertight at minimum deflection of 5 percent. Manufacturer will be required to provide independent third party certification for joint testing each diameter of storm sewer pipe.

J. Purpose of Tests. Flattening and pipe stiffness tests are intended to be routine quality control tests. Joint tightness test is intended to qualify pipe to specified level of performance.

2.04 SANITARY SEWER FORCE MAIN PIPE

A. Provide approved PVC pressure pipe conforming to requirements for water service pipe, and conforming to minimum working pressure rating specified in Section 02532 - Sanitary Sewage Force Mains.

B. Acceptable pipe joints are integral bell-and-spigot, containing a bonded-in elastomeric sealing ring meeting requirements of ASTM F 477. In designated areas requiring restrained joint pipe and fittings, use approved joint restraint device conforming to UNI-B-13, for PVC pipe 12-inch diameter and less.

C. Fittings: Provide approved ductile iron fittings as per Section 02501 - Ductile Iron Pipe and Fittings, Paragraph 2.04, except furnish fittings with one of following approved internal linings:

1. Nominal 40 mils (35 mils minimum) virgin polyethylene complying with ASTM D 1248, heat fused to interior surface of fitting

2. Nominal 40 mils (35 mils minimum) polyurethane

3. Nominal 40 mils (35 mils minimum) ceramic epoxy

4. Nominal 40 mils (35 mils minimum) fusion bonded epoxy

D. Exterior Protection: Provide polyethylene wrapping of ductile-iron fittings as required by Section 02528 - Polyethylene Wrap.

E. Hydrostatic Tests: Hydrostatically test pressure rated pipe in accordance with Paragraph 2.02E.

2.05 BENDS AND FITTINGS FOR PVC PRESSURE PIPE

A. Bends and Fittings: ANSI A 21.10 or ANSI A 21.53, ductile iron; ANSI A 21.11 single rubber gasket push-on type joint; minimum 150 psi pressure rating. Approved restrained joints, 250 200 psi, may be provided for up to 12 inches in diameter (water or sanitary).

B. Provide approved restrained joint fittings: Integral restrained joint fittings and pipe do not require secondary restraint.

PART 3 EXECUTION

3.01 PROTECTION

A. Store pipe under cover out of direct sunlight and protect from excessive heat or harmful chemicals in accordance with manufacturer's recommendations.

3.02 INSTALLATION

A. Conform to requirements of Section 02511 - Water Lines, Section 02531 - Gravity Sanitary Sewers, and Section 02532 - Sanitary Sewer Force Mains, as applicable.

B. Install PVC pipe in accordance with Section 02317 - Excavation and Backfill for Utilities, ASTM D 2321 for Sewer Pipe, and manufacturer's recommendations.

C. Install PVC water service pipe to clear utility lines and have minimum depth of cover below property line grade of street, unless otherwise required by Drawings:

1. Water service pipe 12 inches in diameter and smaller 4 feet of cover.

2. Water service pipe 16 inches in diameter and larger 5 feet of cover.

D. Avoid imposing strains that will overstress or buckle pipe when lowering pipe into trench.

E. Hand shovel pipe bedding under pipe haunches and along sides of pipe barrel and compact to eliminate voids and ensure side support.

F. Store PVC pipe under cover out of direct sunlight. Protect pipe from excessive heat or harmful chemicals. Prevent damage by crushing or piercing.

G. Allow PVC pipe to cool to ground temperature before backfilling when assembled out of trench to prevent pullout due to thermal contraction.

3.03 PVC RESTRAINED MECHANISM

A. Do not apply lubricant to spline or pipe or coupling spline grooves.

B. Do not use excessive force while inserting the spline through coupling.

C. Insert spline until it is fully seated around circumference of pipe.

D. Field Cutting of Pipe Ends:

1. Perform by workers certified by manufacturer.

2. Use a PVC pipe cutter and provide square ends.

3. Use manufacturer approved power routing and grooving tool to field fabricate required pipe groove.

END OF SECTION

Section 02520S

FIRE HYDRANTS

The following supplement modifies Section 02520– Fire Hydrants Standard Specification. Where a portion of the Specification is modified or deleted by this Supplementary Specification, the unaltered portions of the Specification shall remain in effect.

1.03 REFERENCES: Add the following paragraph and re-letter remaining paragraphs accordingly:

"A. AWWA C 502 – Standard for Dry Barrel fire Hydrants (Latest Edition)".

2.01 HYDRANTS: Delete Paragraph 2.01 A and replace with the following:

"A. Provide fire hydrants in conformance with AWWA C 502, Standard for Dry Barrel Fire Hydrants (Latest Edition). Hydrants are approved by the City for issuance of a Certificate of Responsibility. The following hydrants are currently approved. Alternate hydrants will not be considered."

HYDRANT	ENGINEERING CONTROL DRAWING
U.S. Pipe and Foundry Co. M-94 Metropolitan 5-1/4" A495	DWG 960324 Rev. dated 2/06/02
Mueller Company Super Centurion 250 5-1/4" A423	DWG FH-70 Rev. B dated 7/2/08
American AVK Company AVK Series 2780 Nostalgic	DWG 2780-Houston-2 Rev. AAD3, dated 3/24/04

2.03 HYDRANT PAINTING: Replace Paragraphs under 2.03 B and 2.03 C and 2.03 C as shown below and replace Paragraphs 2.03 D, 2.03 E, and 2.03 E.1 with Paragraphs shown below:

"1. Surface preparation to be in accordance with SSPC-SP 10 (NACE 2) near white blast cleaned surface.

3. Colors - Primer: Manufacturer's standard color. Finish coat of hydrant body: ACRO 555 Crystal Blue or equivalent. Connection caps: Finish

coated white. Paint white band of finish coat two inches in width on hydrant body approximately six inches above and parallel to traffic flange. Intermediate coat: Contrasting color to blue finish, such as white."

C. Field Maintenance Painting (Exterior Above Traffic Flange): Delete Paragraph 2.03 C.2 and replace with the following:

"2. When surface is cleaned to bare metal (SSPC SP11) coat hydrant with three coat Alkyd/Silicone Alkyd system in accordance with Paragraph 2.03.B.2 as for new hydrants. When surface is cleaned to SSPC SP2 or SSPC SP3, coat hydrant with Silicone Alkyd Resin Enamel in general conformance with SSPC Paint Specification No. 21.Total dry film thickness of 3-6 mils."

"D. Exterior Below Traffic Flange (including lower barrel extensions)"

"E. Interior Surfaces Above and Below Water Line Valve (including lower barrel extensions)

1. Material used for internal coating of hydrant interior ferrous surfaces must be NSF certified as suitable for contact with potable water as required by Chapter 290, Rules and Regulations for Public Water Systems, Texas Commission on Environmental Quality"

END OF SUPPLEMENT

Approved by:

Per Hamlet Hovsepian, P.E.
Interim Senior Assistant Director
Engineering and Construction Division

Date 8/21/09

Section 02520

FIRE HYDRANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fire hydrants.

B. Adjustment of fire hydrants and gate valves.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment is on a unit price basis for each fire hydrant assembly, including 6-inch gate valve and box, installed regardless of barrel depth.

2. Payment for fire hydrant branches (leads) is on linear foot basis for each branch installed. Separate pay items are used for open-cut and augered branches.

3. Payment for salvaged fire hydrants is on unit price basis for each fire hydrant removed and returned to City's Maintenance Quadrant Stock yard.

4. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 REFERENCES

A. AWWA C 550 - Standard for Protective Epoxy Interior Coatings for Valves and Hydrants

B. SSPC SP2 - Hand Tool Cleaning

C. SSPC SP3 - Power Tool Cleaning

D. SSPC SP10 - Near-White Blast Cleaning

E. SSPC SP11 - Power Tool Cleaning to Bare Metal

F. SSPC Paint Spec No.21

G. SSPC-Paint 21 - White or Colored Silicone Alkyd Paint

H. SSPC-Paint 25 - Zinc Oxide, Alkyd, Linseed Oil Primer for Use Over Hand Cleaned Steel, Type I and Type II

I. SSPC-Paint 104 - White or Tinted Alkyd Paint

J. Federal Standard A-A-2962A - Enamel, Alkyd, Solvent Based Low VOC

1.04 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit name of hydrant manufacturer, type of bonnet paint, and engineering control drawing number for hydrant proposed for use.

PART 2 PRODUCTS

2.01 HYDRANTS

A. Provide approved fire hydrants.

B. The Project Manager may, at any time prior to or during installation of hydrants, randomly select furnished hydrant for disassembly and laboratory inspection, at City expense, to verify compliance with Specifications. When hydrant is found to be non-compliant, replace, at Contractor's expense, hydrants, with hydrants that comply with Specifications.

C. Provide lower hydrant barrel fabricated from Ductile Iron Pipe as single piece, connected to upper hydrant barrel by means of joint coupling that will provide three hundred sixty degree (360) rotation of upper barrel.

2.02 LEADS

A. Branches (Leads): Conform to requirements of Section 02501 - Ductile Iron Pipe and Fittings, Section 02502 - Steel Pipe and Fittings, and Section 02506 - Polyvinyl Chloride Pipe.

2.03 HYDRANT PAINTING

A. New hydrants and refurbished hydrants shall be shop coated as specified herein.

B. Exterior Above Traffic Flange (Including Bolts & Nuts).

1. Surface preparation to be in accordance with SSPC-SP 10 (MACE 2) near white blast cleaned surface.

2. Coat with three coat alkyd/silicone alkyd system with total dry film thickness (DFT) of 6 - 9 mils as follows:

   a. Prime Coat - Oil modified alkyd primer, to be in general conformance with SSPC Paint Specification No. 25. Total dry film thickness (DFT) 2 - 3 mils.

   b. Intermediate Coat - Heavy Duty Industrial Alkyd Enamel to be in general conformance with SSPC Paint Specification No. 104, and Federal Standard A-A-2962A. Total dry film thickness (DFT) of 2 -3 mils.

   c. Finish Coat - Silicone Alkyd Resin Enamelto be in general conformance with SSPC Paint Specification No. 21. Total dry film thickness (DFT) to be 2 - 3 mils. Exception - hydrant bonnet shall not be finished shop coated, only intermediate coated. Install color coded finish coating of bonnet in field.

   d. Bonnet Paint - Field apply finish coat of Silicone Alkyd Resin Enamel to be in general conformance with SSPC Paint Specification No. 21. Dry film thickness of 2 - 3 mils. Bonnet colors are to be as specified in Paragraph 3.01 to designate the appropriate size of water supply line.

3. Colors - Primer: Manufacturers standard color. Finish coat of hydrant body : Blue . Connection caps: Finished coated white. Paint white band of finish coat two (2) inches in width on hydrant body approximately six inches (6") above and parallel to traffic flange. Intermediate coat : Contrasting color to blue finish, such as white.

C. Field Maintenance Painting (Exterior Above Traffic Flange)

1. Surface Preparation to be in accordance with SSPC - SP2, Hand Tool Cleaning, or SSPC - SP3, Power Tool Cleaning, depending on condition of existing paint and extent of corrosion. It is not necessary to remove tightly adhered mill scale, rust, and paint. Mill scale, rust and paint are considered tightly adherent when they cannot be removed with dull putty knife. In some severe cases where it is necessary to remove majority of existing paint, surface should be cleaned in accordance with SSPC -SP11, Power Tool Cleaning to Bare Metal.

2. When surface is cleaned to bare metal (SSPC - SP11), coat hydrant with three coat Alkyd/Silicone Alkyd system in accordance with Paragraph 2.03.B.2 as for new hydrants. When surface is cleaned to SSPC - SP2 or SSPC - SP3, coat hydrant with Silicone Alkyd Resin Enamelin general conformance with SSPC Paint Specification No. 21. Total dry film thickness of 3 - 6 mils.

D. Exterior Below Traffic Flange

1. Surface preparation in accordance with SSPC- SP10 (MACE 2) Near White Blast Cleaned Surface.

2. Primer and intermediate coat: coal tar epoxy in general conformance with SSPC Paint Specification No. 16. Apply two (2) coats with dry film thickness (DFT) of 8 - 10 mils each for total DFT of 16 -20 mils.

3. Finish coat: Water based vinyl acrylic mastic Apply one coat with dry film thickness of 6 - 8 mils. Color of finish coat to be same as finish coat for exterior above traffic flange, i.e., blue. (Acro 555 Crystal Blue, or equivalent.)

E. Interior Surfaces Above and Below Water Line Valve

1. Material used for internal coating of hydrant interior ferrous surfaces below water line valve must be NSF certified as suitable for contact with potable water as required by Chapter 290, Rules and Regulations for Public Water Systems, Texas Natural Resources Conservation Commission.

2. Coating shall be liquid or powder epoxy system in accordance with AWWA Standard C - 550 (latest revision). Coating may be applied in two or three coats, according to manufacturer's recommendations, for total dry film thickness of 12 -18 mils.

PART 3 EXECUTION

3.01 INSTALLATION

A. Set fire hydrant plumb and brace at locations and grades as shown on Drawings. When barrel of hydrant passes through concrete slab, place 1-inch-thick piece of standard sidewalk expansion joint material around section of barrel passing through concrete.

B. Locate nozzle center line minimum 18 inches above finish grade.

C. Place 12-inch by 12-inch yellow indicators (plastic, sheet metal, plywood, or other material approved by Project Manager) on pumper nozzles of new or relocated fire hydrants installed on new water lines not in service. Remove indicators after new water line is tested and approved by Project Manager.

D. Do not cover drain ports when placing concrete thrust block.

E. Obtain Project Manager's approval in writing prior to installation of hydrants which require changes in bury depth due to obstructions not shown on Drawings. Unit price adjustments will not be allowed for changes in water line flow line or fire hydrant barrel length caused by obstructions.

F. Plug branch lines to valves and fire hydrants shown on Drawings to be removed. Deliver fire hydrants designated for salvage to nearest Utility Maintenance Quadrant Facility.

G. Install branches (leads) in accordance with Section 02511 - Water Lines.

H. Coating Requirements:

1. Apply coatings in strict accordance with manufacturer's recommendations. No requirements of this specification shall cancel or supersede written directions and recommendations of specific manufacturer so as to jeopardize integrity of applied system.

2. Furnish affidavit of compliance that coatings furnished complies with requirements of this specification and referenced standards, as applicable.

I. Use following color code for field coating of hydrant bonnet to indicate size of water line supplying hydrant:

Supply Water Line Diameter (inches)	**Bonnet Color**
6	Yellow
8	White
12-20	Green
24 and larger	Orange

J. Remove and dispose of unsuitable materials and debris in accordance with requirements of Section 01576 - Waste Material Disposal.

END OF SECTION

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Section 02526

WATER METERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Water meters, submeters, and fire service meters.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices

1. Measurement for water meters is on unit price basis for installation of each meter type and size.

2. Payment includes vault, piping and appurtenances necessary for complete installation of meter.

3. Measurement for relocating and reinstalling meter with new box is on unit price basis for each meter relocated and reinstalled.

4. No separate payment for adjustment of meter or meter box unless otherwise shown in Drawings.

5. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work is in this Section is included in total Stipulated Price.

1.03 REFERENCES

A. ASME B 16.1 - Cast-Iron Pipe Flanges and Flanged Fittings.

B. AWWA C 510 - Standard for Double Check Valve Backflow - Prevention Assembly.

C. AWWA C 700 - Standard for Cold-Water Meters - Displacement Type.

D. AWWA C 701 - Standard for Cold-Water Meters - Turbine Type for Customer Service.

E. AWWA C 702 - Standard for Cold-Water Meters - Compound Type.

F. AWWA C 703 - Standard for Cold-Water Meters - Fire Service Type.

G. AWWA Manual M6 - Water Meters - Selection, Installation, Testing, and Maintenance.

1.04 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit written certification of calibration and test results.

C. Submit manufacturer's certification that meters meet applicable requirements of this Specification Section.

D. Submit accuracy registration test certification from manufacturer for each 3-inch through 10-inch diameter meter.

1.05 QUALITY CONTROL

A. Submit manufacturer's warranty against defects in materials and workmanship for one year from date of Substantial Completion.

B. Provide vendor's unconditional guarantee that performance of each meter meets applicable AWWA standards and AWWA Manual M6 as follows:

1. Displacement type: 10 years from installation or register registration shown below, whichever comes first.

Size (inch)	Registration (million gallons)
5/8, 3/4	1.5
1	2.5
1-1/2	5.0
2	10.5

2. Turbine type: 1 year from date of installation.

3. Compound type: 1 year from date of installation.

4. Fire service type: 1 year from date of installation.

Operations of hermetically sealed register, 5/8-inch to 2-inch diameter, shall be unconditionally guaranteed for 15 years.

C. Provide manufacturer's unconditional guarantee for each sealed register against leakage, fogging, discoloration and stoppage for 15 years from date of installation.

D. Vendor may replace meters that become defective within guarantee period with meters that comply with this Specification. City will return defective meters to vendor at expense. Meters repaired or replaced under this guarantee must meet accuracy limits for new meters upon receipt and accuracy limits for remaining period of initial guarantee.

1.06 EASEMENT REQUIREMENTS

A. Install 2-inch and smaller water meters and shut-off valves (stop boxes) at right-of-way line when possible. Otherwise, install within 5 foot by 5 foot water meter easement.

B. Except for 10-inch fire service compound water meters, install 3-inch and larger water meters within minimum of 10 foot by 20 foot water meter easement.

C. Install 10-inch fire service proportional or compound water meters within minimum of 10-foot by 25-foot water meter easement.

D. Locate water meter easements contiguous with public right-of-way unless approved by Project Manager. Provide minimum fifteen foot wide access easement when not contiguous with public right-of-way.

PART 2 PRODUCTS

2.01 GENERAL

A. Provide meters of type and size as indicated on Drawings, unless otherwise indicated.

B. Provide bolted split casings. Main casings of meters and external fasteners: Copper alloy with minimum 75 percent copper for 5/8 inch to 2 inches, bronze or cast iron, hot-dipped galvanized or epoxy coating for 3 inches and larger.

C. Straightening Vanes: Non-corrosive material compatible with case material.

D. Intermediate gear train shall not come into contact with water and shall operate in suitable lubricant.

E. Registers: Automatic Meter Reading (AMR) type that provides pulse, contact closure, piezo switch or encoder generated output signal, compatible with City's radio and telephone AMR systems. Provide minimum 12-foot wire when permanently connected to register. Lens: impact resistant. Register box: tamper resistant by means of tamper screw or plug: Register: permanently sealed, straight-reading, center-sweep test hand, magnetic driven, U.S. gallons. Digits: 6, black in color, with lowest registering 3 digits (below 1,000-gallon registration) having contrasting digit and background color. Register capacity of meters: 9.99 million gallons for 5/8 inch to 2 inches and 999.999 million gallons for 3 inches and larger.

F. Connections: 5/8 inch to 1 inch: threads at each end; 1-1/2 to 2 inches: 2-bolt oval flanges each end; 3 inches and larger: flange at each end.

G. Stamp manufacturer's meter serial number on outer case. Stamp manufacturer's meter serial number on outside of register lid when provided. Manufacturer's serial numbers shall be individual and not duplicated.

H. Meters: Provide approved meters equip with AMR type register to connect to City of Houston's AMR system.

I. Manufacturing Quality Control shall permit successful interchangeability from one meter to another of same size including registers, measuring chambers and units, discs or pistons as units, change gears, bolts, nuts, and washers without affecting accuracy of new meter.

J. For water meter vaults provide:

1. 1/4-inch steel or aluminum with stainless steel hinge pins. Door shall open to 90 degrees and automatically lock in that position.
2. Provide approved meter vault covers.

2.02 METER APPLICATIONS

A. Sizes 5/8-inch to 2-inch Meters: Displacement type (except for constant flow where 2-inch turbine may apply).

B. Sizes 3-inch and above Meters:

1. Turbines:

Processing plants
Manufacturing facilities
Lawn sprinkler systems
Effluent water in treatment plants
Booster (pump) stations
Level controlled tank filling operations
Fire hydrants (transients)
Inter-systems sale or transfer
Sewer credit/sub-meter

2. Compounds:

Multi-family dwellings
Motels and hotels
Hospitals
Schools

Restaurants
Office buildings
Dormitories, nursing homes, department stores, shopping malls, and other commercial establishments

Note: Provide fire service type for sizes larger than 6 inches.

3. Fire Service Type: For designated fire protection lines. Provide proportional or compound type fire service meter assembly (AWWA C 703) when customer elects to use combination of potable and fire protection services in lieu of separate domestic meters and fire services.

2.03 MATERIALS

A. Cold-Water Meters:

1. Displacement Type: AWWA C 700; sizes 5/8 inch up to and including 2 inches; oscillating disc or piston of magnetic drive type; bolted split-case design, with either being removable.

2. Turbine Type: AWWA C 701; Class II; sizes 3 inches through 10 inches; flanged; straight-through measuring chamber; rotor construction: polypropylene or similar non-rubber material with specific gravity of approximately 1.0, equipped with near frictionless replaceable bearings in turbine working against rotor shaft positioned thrust bearing. Transient/Fire Hydrant Meter Inlet: Female fitting for attachment to hose nozzle with National Standard Fire hose thread. Outlet: 2-inch nipple with National Pipe Thread. Include restriction plate to limit flow through meter to 400 gpm at 65 psi.

3. Compound Type: AWWA C 702; sizes 2 inches through 6 inches. Measuring chambers: For use in continuous operation; separate units of copper alloy (minimum 84 percent copper) or approved polymer material, inert in corrosive potable water; with centering device for proper positioning. Measuring pistons: Non-pilot type with division plates of rubber covering vulcanized to stainless steel or other approved material of sufficient thickness to provide minimum piston oscillation noise. Measuring discs: Flat or conical type, one piece, mounted on monel or 316 stainless steel spindle. Measuring chamber strainer screen area: Twice area of main case inlet.

4. Fire-Service Type: sizes 4 inches through 10 inches; turbine-type, compound type, proportional type; AWWA C 703, with separate check valve conforming to AWWA C 510. Determine size of fire meter by adding fire flow and domestic flow.

2.04 STRAINERS

A. Displacement Potable Water Meters 5/8 inch through 2 inches: Self-straining by means of annular space between measuring chamber and external case or with strainer screens installed

in meter. Provide rigid screens which fit snugly, are easy to remove, with effective straining area at least double that of main case inlet.

B. Potable Water Meters 2-inch diameter and larger: Equip with separate external strainer with bronze body for diameters less than 8 inches. 8-inch diameter and larger may be cast iron, hot-dipped galvanized or epoxy coating. Strainers: Bolted to inlet side of meter, detachable from meter, easily removable lid. Strainer screen: Made of rounded cast bronze, stainless steel wire, having nominal screen size of 3-1/2 mesh-per-inch (U.S. Series) not less than 45 percent clear area.

C. Provide separate approved external strainers (when required by meter manufacturer) approved for use in fire service metered connections by Underwriters Laboratories. Bodies: Cast iron or copper alloy. Ends: Flanged in accordance with ASME B 16.1, Class 125. Provide stainless steel basket. Strainers shall be detachable from meter.

2.05 CONNECTIONS AND FITTINGS

A. Provide pipe for connections in accordance with Section 02501 - Ductile Iron Pipe and Fittings and Section 02506 - Polyvinyl Chloride Pipe. Use restrained joints and flanged joints only.

B. Fittings:

1. For meters 2 inches and smaller: Same type of fittings as Outlet End fittings for Curb Stop in accordance with Section 02512 - Water Tap and Service Line Installation.

2. For meters 3 inches and larger: Restrained ductile iron; push-on bell joints or mechanical joint fittings between water line and meter vault; Class 125 flanged inside meter vaults; cement mortar lined and sealed.

2.06 LAYING LENGTHS

A. Minimum laying lengths for meter and standard strainer shall be as shown on Drawings.

PART 3 EXECUTION

3.01 TAPPING AND METER SERVICE INSTALLATION

A. Refer to Section 02525 - Tapping Sleeves and Valves for tapping requirements.

B. Meter Service Line:

1. Use pipe and fittings conforming to requirements of Section 02501 - Ductile Iron Pipe and Fittings, or Section 02506 - Polyvinyl Chloride Pipe.

2. Limit pulling and deflecting of joints to limits recommended by manufacturer.

3. Make vertical adjustments with offset bends where room will permit. Minimize number of bends.

4. Provide minimum of ten pipe diameters of straight pipe length upstream and downstream of meter vault.

3.02 METER FITTING HOOKUP

A. Support meter piping and meter, level and plumb, during installation. Support meters 3 inches and larger with concrete at minimum of two locations.

B. Use round flanged fittings inside meter box or vault except for mechanical joint to flange adapter. Provide full-face 1/8-inch black neoprene or red rubber gasket material on flanged joints. Provide bolts and nuts made from approved corrosion-resistant material.

C. Tighten bolts in proper sequence and to correct torque.

D. Visually check for leaks under normal operating pressure following installation. Repair or replace leaking components.

3.03 METER BOX AND VAULT INSTALLATION

A. Conform to requirements of Section 02085 - Valve Boxes, Meter Boxes, and Meter Vaults.

B. Perform adjustment to existing meter in accordance with Section 02085 - Valve Boxes, Meter Boxes, and Meter Vaults.

3.04 TESTING

A. Accuracy registration tests will be conducted in accordance with latest revision of AWWA standard for type and size of meter.

1. Tests will be run by City of Houston on meters prior to installation at City's meter repair shop. Meters 2 inches and smaller will be tested at random at City's discretion. All 3 inches and larger meters will be tested.

2. Accuracy of displacement meters during guarantee period shall be as follows:

a. Initial period: of 18 months from date of shipment or 12 months from date of installation: 98.5% to 101.5% at standard and minimum flow rates; 98% to 101% at low flow rates.

b. Second period: AWWA new meter accuracy as tested below.

Meter Size (inches)	GUARANTEE PERIOD Age of Meter Years	Or	Million* Gallons	TEST FLOW RATE Minimum Rate (gpm)
5/8	>1 to <5		0.5	1/4
1	>1 to <5		1.0	3/4
1-1/2	>1 to <5		2.5	1-1/2
2	>1 to <5		5.5	2

* Total registration.

c. Third period: AWWA new meter accuracy for standard flow rates and AWWA repair meter accuracy for minimum flow rate as tested below.

Meter Size (inches)	GUARANTEE PERIOD Age of Meter Years	or	Million* Gallons	TEST FLOW RATE Standard Flow Rates (gpm)	and	Minimum Rate (gpm)
5/8	>5 to <10		1.5	2-15		1/4
1	>5 to <10		2.5	4-40		3/4
1-1/2	>5 to <10		5.0	8-50		1-1/2
2	>5 to <10		10.0	15-100		2

* Total registration.

3. Minimal acceptable accuracy in percent of low flow registration for turbine meters:

Meter Size (inches)	Minimum Flow (gpm)	% Accuracy Required
2	3	95
3	5	95
4	15	95
6	20	95
8	20	95
10	30	95

END OF SECTION

Section 02611

REINFORCED CONCRETE PIPE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Reinforced concrete pipe for sanitary sewers and storm sewers.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. No separate payment will be made for reinforced concrete pipe under this Section. Include cost in unit price Work as specified in following Sections:

   a. Section 02426 - Sewer Line in Tunnels.

   b. Section 02531 - Gravity Sanitary Sewers.

   c. Section 02631 - Storm Sewers.

2. Refer to Section 01270- Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for Work in this section is included in total Stipulated Price.

1.03 REFERENCES

A. ASTM C 76 - Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.

B. ASTM C 443 - Standard Specification for Joints for Circular Concrete Sewer and Culvert Pipe Using Rubber Gaskets.

C. ASTM C 497 - Standard Test Method for Concrete Pipe, Manhole Sections, or Tile.

D. ASTM C 506 - Standard Specification for Reinforced Concrete Arch Culvert, Storm Drain and Sewer Pipe

E. ASTM C 655 - Standard Specification for Reinforced Concrete D-load Culvert, Storm Drain and Sewer Pipe.

F. ASTM C 877 - Standard Specification for External Sealing Bands for Noncircular Concrete Sewer, Storm Drain, and Culvert Pipe.

1.04 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit complete product data for pipe, fittings and gaskets for approval. Indicate conformance to appropriate reference standards.

C. Submit manufacturer's certificate that concrete pipes meet applicable standards.

D. For jacking pipe, submit drawings and data describing grouting port design and closure procedures when required by Section 02431 - Tunnel Grout, including liner repair, as applicable.

PART 2 PRODUCTS

2.01 REINFORCED CONCRETE PIPE

A. Conform circular reinforced concrete pipe to requirements of ASTM C 76, for Class III wall "B" thickness. Conform to rubber gasket joints for sanitary sewers and storm sewers and tongue and groove for roadside ditch culverts to ASTM C 443.

B. Conform reinforced concrete arch pipe to requirements of ASTM C 506 for Class A-III. Joints shall conform to ASTM C 877.

C. Reinforced concrete elliptical pipe, either vertical or horizontal, shall conform to requirements of ASTM C 507 for Class VE-III for vertical or Class HE-III for horizontal. Use rubber gasket joints conforming to ASTM C 877.

D. Conform reinforced concrete D-load pipe requirements of ASTM C 655.

2.02 GASKETS

A. When no contaminant is identified, furnish rubber gasket conforming to ASTM C 443 for circular reinforced concrete pipe and rubber gasket conforming to ASTM C 877 for reinforced concrete elliptical pipe.

B. Use the following gasket materials for pipes to be installed in potentially contaminated areas, especially where free product is found near elevation of proposed sewer:

CONTAMINANT	GASKET MATERIAL REQUIRED
Petroleum (diesel, gasoline)	Nitrile Rubber
Other Contaminants	As recommended by pipe manufacturer

2.03 LINERS FOR SANITARY SEWER PIPE

A. Reinforced concrete pipe for sanitary sewers shall be PVC lined and conform to Section 02427 - Plastic Liner for Large Diameter Concrete Sewers and Structures.

B. Reinforced concrete pipes to be installed in potentially contaminated areas shall have liners recommended by manufacturer as resistant to contaminants identified in Phase II Environmental Site Assessment Report.

2.04 SOURCE QUALITY CONTROL

A. Representatives of City Engineer will inspect manufacturer's plant and casting operations as deemed necessary.

PART 3 EXECUTION

3.01 INSTALLATION

A. Conform to requirements of following Sections, as applicable:

1. Section 02448 - Pipe and Casing Augering for Sewers.
2. Section 02531 - Gravity Sanitary Sewers.
3. Section 02631 - Storm Sewers.
4. Section 02441 - Micro-tunneling and Pipe-Jacked Tunnels.

B. Install reinforced concrete pipe in accordance with manufacturer's recommendations.

END OF SECTION

Section 02631

STORM SEWERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. New storm sewers and appurtenances, modifications to existing storm sewer system and installation of roadside ditch culverts.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment for storm sewers, including elliptical or box, installed by open-cut, augered with or without casing, or tunneling is on linear foot basis. Measurement for storm sewers and roadside ditch culverts will be taken along center line of pipe from center line to center line of manholes or from end to end of culverts. Payment will be made for each linear foot installed complete in place, including connections to existing manholes and inlets.

2. Payment for storm sewer leads, including elliptical leads, is on a linear foot basis.

3. Payment for corrugated metal pipe storm sewer outfall, including timber bents, is on a linear foot basis.

4. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for Work in this Section is included in total Stipulated Price.

1.03 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit manufacturer's literature for product specifications and installation instructions.

C. Submit proposed methods, equipment, materials, and sequence of operations for sewer construction. Plan operations to minimize disruption of utilities to occupied facilities or adjacent property.

1.04 QUALITY ASSURANCE

A. The Condition for acceptance shall be watertight storm sewer that is watertight both in pipe-to-pipe joints and in pipe-to-manhole connections.

B. Provide manufacturer's certification to Specifications.

1.05 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Comply with manufacturer's recommendations.

B. Handle pipe, fittings, and accessories carefully with approved handling devices. Do not drop or roll pipe off trucks or trailers. Do not use Materials cracked, gouged, chipped, dented, or otherwise damaged shall not be use materials for installation.

C. Store pipe and fittings on heavy timbers or platforms to avoid contact with ground.

D. Unload pipe, fittings, and appurtenances as close as practical to location of installation to avoid unnecessary handling.

E. Keep interiors of pipe and fittings free of dirt and foreign matter.

F. Store PVC pipe out of direct sunlight.

PART 2 P R O D U C T S

2.01 PIPE

A. Provide piping materials for storm sewers shall be of sizes and types specified unless otherwise indicated on Drawings.

B. In diameters where material alternatives are available, provide pipe from single manufacturer for each pipe diameter, unless otherwise approved by Project Manager or otherwise shown on Drawings.

C. Existing pipe that has been removed during construction cannot be reused.

2.02 PIPE MATERIAL SCHEDULE

A. Storm Sewer Pipe: Use pipe materials that conforming to requirements specified in one or more of the following Sections as shown on the Drawings.

1. Section 02506 - Polyvinyl Chloride Pipe. Not allowed in the following applications:

a. Potentially Petroleum Contaminated Areas (PPCA).

b. Augering/ jacking

3. Section 02611 - Reinforced Concrete Pipe.

4. Section 02641 - Monolithic Reinforced Concrete Sewers.

5. Section 02612 - Precast Reinforced Concrete Box Sewers.

6. Section 02642 - Corrugated Metal Pipe use only where Corrugated Metal Pipe is shown on Drawings.

B. Driveway Culvert Pipe for Streets with Open Ditches: Use pipe materials that conforming to requirements specified in one or more of the following Sections as shown on the Drawings.

1. Section 02505 – Polyethylene Pipe. Use for Residential Culverts only. Use Concrete Pipe for long run culverts.

2. Section 02611 - Reinforced Concrete Pipe.

3. Section 02641 - Monolithic Reinforced Concrete Sewers.

4. Section 02612 - Precast Reinforced Concrete Box Sewers.

C. Provide pipe meeting minimum class, dimension ratio, or other criteria indicated.

D. Pipe materials other than those listed above shall not be used for storm sewers.

2.03 BEDDING, BACKFILL, AND TOPSOIL MATERIAL

A. Bedding and Backfill Material: Conform to requirements of Sections 02317 - Excavation and Backfill for Utilities, Section 02320 - Utility Backfill Material, and Section 2321 - Cement Stabilized Sand.

B. Topsoil: Conform to requirements of Section 02911 - Topsoil.

C. Use cement stabilized sand material for bedding and backfill in the pipe zone for all storm sewers.

D. For storm sewer pipes 42 inches in diameter and larger, use suitable on-site material or select backfill from 12 inches above the pipe to 12 inches below the pavement for backfill.

PART 3 EXECUTION

3.01 PREPARATION

A. Prepare traffic control plans and set up street detours and barricades in preparation for excavation when construction will affects traffic. Conform to requirements of Section 01555 - Traffic Control and Regulation.

B. Provide barricades, flashing warning lights, and signs for excavations. Conform to requirements of Section 01555 - Traffic Control and Regulation. Maintain barricades and warning lights for streets and intersections while Work is in progress or where traffic is affected by Work.

C. Immediately notify agency or company owning utility lines which are damaged, broken, or disturbed. Obtain approval from Project Manager and agency for repairs or relocations, either temporary or permanent.

D. Remove old pavements and structures, including sidewalks and driveways in accordance with requirements of Section 02221 - Removing Existing Pavements and Structures.

E. Install and operate dewatering and surface water control measures in accordance with Section 01578 - Control of Ground Water and Surface Water.

3.02 EXCAVATION

A. Earthwork. Conform to requirements of Section 02317 - Excavation and Backfill for Utilities. Use bedding as indicated on Drawings.

B. Line and Grade. Establish required uniform line and grade trench from benchmarks identified by Project Manager. Maintain this control for minimum of 100 feet behind and ahead of pipe-laying operation. Use laser beam equipment to establish and maintain proper line and grade of Work. Or use of appropriately sized grade boards which are substantially supported.

C. Trench Excavation. Excavate pipe trenches to level as indicated on Standard Details. Backfill excavation with specified bedding material to level of lower one-third of pipe barrel. Tamp and compact backfill to provide bedding at indicated grade. Form bedding foundation to minimum depth of one-eighth of pipe diameter, but not less than 6 inches.

3.03 PIPE INSTALLATION

A. Install in accordance with pipe manufacturer's recommendations and as specified in this section.

B. Install pipe only after excavation is completed, bottom of trench is shaped, bedding material is installed, and trench has been approved by Project Manager.

C. Install pipe to line and grade indicated on Drawings. Place pipe so that it has continuous bearing of barrel on bedding material with no voids, and is laid in trench so interior surfaces of pipe follows grades and alignments indicated.

D. Install pipe with bells of pipe facing upstream of anticipated flow.

E. Form concentric joint with each section of adjoining pipe to prevent offsets.

F. Place and drive home newly laid sections with a sling or come-a-long winches to eliminate damage to sections. Unless otherwise approved by Project Manager, provide end protection to prevent damage while using back hoes or similar powered equipment to drive home newly laid sections.

G. Keep interior of pipe clean as installation progresses.

H. Keep excavations free of water during construction and until final inspection.

I. When work is not in progress, cover exposed ends of pipes with pipe plug specifically designed to prevent foreign material from entering pipe.

J. For PVC Pipe:

1. Provide a minimum cover as per City Standard detail from top of pavement to top of pipe, but no less than 2 feet.

2. Accomplish transitions to different material of pipe in a manhole or inlet box. No adapter, coupling for dissimilar pipe, or saddle connections allowed.

3. Provide pipe sections in standard lengths with minimum length of 13 feet. Pipe may be field modified to shorten length no less than 4 feet, unless otherwise approved by Project Manager. Field modify pipe per manufacturer's recommendations.

4. No beveling at joint allowed. Cut to be perpendicular to longitudinal axis.

5. Provide gasketed bell and spigot joints installed per manufacturer's recommendations. Gasketed pipe joints; clean and free of debris, show no leakage after installation.

3.04 PIPE INSTALLATION OTHER THAN OPEN CUT

A. Conform to requirements of Section 02448 - Pipe and Casing Augering for Sewers where required.

B. Conform to requirements of Section 02441 - Microtunneling and Pipe-Jacking Tunnels where required.

C. Not allowed for plastic sewer pipe.

3.05 INSTALLATION OF APPURTENANCES

A. Construct manholes to conform to requirements of Sections 02081 - Cast-in-place Concrete Manholes, Section 02082 - Precast Concrete Manholes, and Section 2087 - Brick Manholes for Storm Sewers. Install frames, grate rings, and covers to conform to requirements of Section 02084 - Frames, Grates, Rings, and Covers.

B. Install PVC pipe culverts with approved end treatments. Approved end treatments include concrete headwalls, wingwalls and collars. Refer to City Standards detail for end treatment requirements.

C. Install inlets, headwalls, and wingwalls to conform to requirements of Section 02632 - Cast-in-place Inlets, Headwalls, and Wingwalls and Section 02633 - Precast Concrete Inlets, Headwalls, and Wingwalls.

D. Rehabilitate existing manholes to conform to requirements of Section 02555 - Manhole Rehabilitation. Adjust manhole covers and inlets to grade conforming to requirements of Section 02086 - Adjusting Manholes, Inlets, and Valve Boxes to Grade.

E. Dimension for Type C and Type E manholes shall be as shown on Drawings.

3.06 INSPECTION AND TESTING

A. Perform post installation television inspection in accordance with Section 02531 - Gravity Sanitary Sewers. Hand held cameras may be used in storm sewers in lieu of requirements of Paragraph 3.09 of Section 02531 – Gravity Sanitary Sewers. Clearly stencil distance markings on each joint of pipe to indicate distance from starting manhole when using hand held cameras.

3.07 BACKFILL AND SITE CLEANUP

A. Backfill trench after pipe installation is inspected and approved by Project Manager.

B. Backfill and compact soil in accordance with Section 02317 - Excavation and Backfill for Utilities.

C. Repair and replace removed or damaged pavement and sidewalks as specified in Section 02951 - Pavement Repair and Resurfacing.

D. In unpaved areas, grade surface as uniform slope to natural grade as indicated on Drawings. Provide minimum of 4 inches of topsoil and seed according to requirements of Section 02921 - Hydromulch Seeding, or Section 02922 - Sodding, as required.

END OF SECTION

Section 02714

FLEXIBLE BASE COURSE FOR TEMPORARY DRIVEWAYS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Foundation course of crushed concrete or stone.

1.02 MEASUREMENT AND PAYMENT

A. UNIT PRICES

1. Measurement for flexible base course payment is on each driveway basis. To maintain access or temporary driveway, separate measurement will be made for each different type of driveway (residential, commercial, or custom properties) or as identified on the construction drawings.

2. Payment limits for temporary driveways are based upon the width of the driveway access (not to exceed 12-feet for residential, 24-feet for commercial, or custom dimensioned properties) and the length from permanent or temporary roadway to the remaining permanent driveway or street right-of-way, as necessary to maintain access to properties.

3. No separate payment will be made for flexible base course for temporary roads, detour pavements, and shoulder under this Section unless it is included as an extra unit bid and as approved for payment by the project manager. Flexible base course for temporary driveways or access if included under the extra unit bid item is on a cubic yard basis.

4. Temporary driveways will be paid only once per driveway location shown to be replaced on the drawing and payment shall be made based upon actual installation.

5. Refer to Section 01270 - Payment Procedures for unit price procedures.

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

1.03 REFERENCES

A. ASTM D 1556 - Density of Soil in Place by the Sand-Cone Method.

B. ASTM D 698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12.44 ft-lbf/ft3).

C. ASTM D 2922 - Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

D. ASTM D 361 - Test Method for Water Content of Soils and Rock in Place by Nuclear Methods (shallow depth).

E. ASTM D 3017 - Test Method for Water Content of Soils and Rock in Place by Nuclear Methods.

F. ASTM D 4318 - Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

G. TxDOT Tex-101-E - Preparation of Soil and Flexible Base Materials for Testing.

H. TxDOT Tex-110-E - Determination of Particle Size Analysis of Soils.

1.04 SUBMITTALS

A. Submittals shall conform to requirements of Section 01330 - Submittals Procedures.

B. Submit samples of flexible base course and soil binder for testing.

1.05 TESTS

A. Tests and analysis of soil materials will be performed in accordance with ASTM C 131, ASTM D 698, ASTM D 4318, Tex-101-E, and Tex-110-E under provisions of Section 01454 - Testing Laboratory Services.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Provide materials from stockpiles that are protected during storage from contaminates that would be detrimental to the flexible base course.

B. Load materials from same area of stockpile to maintain uniformity of each successive delivery to the project site.

PART 2 PRODUCTS

2.01 MATERIALS

A. Crushed Stone or Concrete: Material retained on the No. 40 sieve meeting the following requirements:

1. Durable particles of crusher-run broken limestone, crushed concrete, crushed sandstone, or granite obtained from an approved source.

B. Soil Binder: Material passing the No. 40 sieve meeting the following requirements when tested in accordance with ASTM D 4318:

1. Maximum Liquid Limit: 40

2. Maximum Plasticity Index: 12

3. Maximum Lineal Shrinkage: 7 (when calculated from volumetric shrinkage at liquid limit).

C. Mixed Materials shall meet the following requirements:

1. Minimum compressive strength of 35 psi at 0 psi lateral pressure and 175 psi at 15 psi lateral pressure using triaxial testing procedures.

2. Grading in accordance with Tex-101-E and Tex-110-E within the following limits:

Sieve	Percent Retained
1-3/4 inch	0 to 10
No. 4	45 to 75
No. 40	60 to 85

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify compacted subgrade is ready to support imposed loads.

B. Verify lines and grades are correct.

3.02 PREPARATION

A. Complete backfill of new utilities below future grade.

B. Prepare subgrade in accordance with requirements of Section 02315 - Roadway Excavation or Sections 02336 - Lime Stabilized Subgrade and 02337 - Lime/Fly-ash Stabilized Subgrade.

C. Correct subgrade deviations in excess of plus or minus 1/2 inch in cross section, or in 16 foot length by loosening, adding or removing material, reshaping and recompacting by sprinkling and rolling.

D. Prepare sufficient subgrade in advance of base course operations.

3.03 PLACEMENT

A. Spread and shape in lifts to compacted thickness not to exceed 6 inches in depth. Complete spreading, shaping, and compacting on same day material is deposited.

B. Place base so that projecting reinforcing steel from curbs remain at approximate center of base. Secure a firm bond between reinforcement and base.

C. Start rolling operations as soon as possible after placement. Use sheepfoot, steel, or pneumatic rollers as approved. Roll longitudinally with subgrade starting from sides. Overlap successive strips by one-half width of each rear wheel.

D. Maintain moisture between optimum and 3 percent above optimum moisture.

E. Compact to 95 percent of Proctor density in accordance with ASTM D 698, unless otherwise indicated on the Drawings.

F. Finish to grade and compact lift before placing successive lift.

G. Maintain shape by grading throughout operation.

H. Provide total thickness indicated on Drawings.

3.04 TOLERANCES

Section 02741

ASPHALTIC CONCRETE PAVEMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface course of compacted mixture of coarse and fine aggregates and asphaltic binder.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment for hot-mix asphalt concrete pavement is on a per ton basis. Separate pay items are used for each different required thickness of pavement.

2. Payment for hot-mix asphalt concrete pavement includes payment for associated work performed in accordance with Section 02743 - Tack Coat.

3. Measurement for utility projects: Match actual pavement replaced but no greater than maximum pavement replacement limits shown on Drawings.

4. Payment for temporary detour pavement is on a square yard basis and includes surface and base materials, associated grading, maintenance and removal as well as restoration of ditches.

5. Payment for speed humps is on linear foot basis, and includes milling of existing pavement, tack coat, and placement and compaction of asphalt. Measurement of speed hump is along length of 12 foot wide speed hump, measured transverse to centerline of road. Separate payment is made for thermoplastic markings applied to speed hump.

6. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 REFERENCES

A. ASTM C 33 - Standard Specification for Concrete Aggregates.

B. ASTM C 131 - Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

C. TxDOT Tex-106-E - Calculating the Plasticity Index of Soils

D. TxDOT Tex-126-E - Molding, Testing, and Evaluating Bituminous Black Base Material.

E. TxDOT Tex-200-F - Sieve Analysis of Fine and Course Aggregates.

F. TxDOT Tex-203-F - Sand Equivalent Test.

G. TxDOT Tex-204-F - Design of Bituminous Mixtures.

H. TxDOT Tex 206-F - Compacting Test Specimens of Bituminous Mixtures.

I. TxDOT Tex-207-F - Determining Density of Compacted Bituminous Mixtures.

J TxDOT Tex-208-F - Test for Stabilometer Value of Bituminous Mixtures.

K. TxDOT Tex-217-F - Determining Deleterious Material and Decantation Test for Coarse Aggregates.

L. TxDOT Tex-227-F - Theoretical Maximum Specific Gravity of Bituminous Mixtures.

M. TxDOT Tex-530-C - Effect of Water on Bituminous Paving Mixtures.

N. TxDOT Tex-531-C - Prediction of Moisture Induced Damage to Bituminous Paving Materials Using Molded Specimens.

1.04 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit certificates that asphalt materials and aggregates meet requirements of Paragraph 2.01, Materials.

C. Submit proposed design mix and test data for surface course.

D. Submit manufacturer's description and characteristics of spreading and finishing machine for approval.

PART 2 PRODUCTS

2.01 MATERIALS

A. Coarse Aggregate:

1. Use gravel, crushed stone, or combination thereof, that is retained on No. 10 sieve, uniform in quality throughout and free from dirt, organic or other injurious matter occurring either free or as coating on aggregate. Use aggregate conforming to ASTM C 33 except for gradation. Furnish rock or gravel with Los Angeles abrasion loss not to exceed 40 percent by weight when tested in accordance with ASTM C 131.

2. Aggregate by weight shall not contain more than 1.0 percent by weight of fine dust, clay-like particles, or silt when tested in accordance with Tex-217-F, Part II.

B. Fine Aggregate: Sand, stone screenings or combination of both passing No. 10 sieve. Use aggregate conforming to ASTM C 33 except for gradation. Use sand composed of sound, durable stone particles free from loams or other injurious foreign matter. Furnish screenings of same or similar material as specified for coarse aggregate. Plasticity index of that part of fine aggregate passing No. 40 sieve shall be not more than 6 when tested by TxDOT Tex-106-E. Sand equivalent shall have minimum value of 45 when tested by TxDOT Tex-203-F.

C. Composite Aggregate: Conform to following limits when graded in accordance with TxDOT Tex-200-F. Use type specified on Drawings:

GRADATION OF COMPOSITE AGGREGATE		
	PERCENT PASSING	
SIEVE SIZE	Course Surface (TxDOT Type C)	Fine Surface (TxDOT Type D)
7/8"	100	---
5/8"	95 to 100	---
1/2"	--	100
3/8"	70 to 85	85 to 100
#4	43 to 63	50 to 70
#10	30 to 40	32 to 42
#40	10 to 25	11 to 26
#80	3 to 13	4 to 14
#200	1 to 6*	1 to 6*
VMA % minimum	13	14
* 2 to 8 when Test Method Tex-200-F, Part II (Washed Sieve Analysis) is used.		

D. Asphalt Binder: Moisture-free homogeneous material which will not foam when heated to 347 F, meeting the following requirements. .

PERFORMANCE GRADED BINDER	
CRITERIA / TEST	PERFORMANCE GRADE (PG64-22)
Average 7-day Maximum Pavement Design Temperature, C	< 64
Minimum Pavement Design Temperature, C	> -22
ORIGINAL BINDER	
Flash Point Temperature, T48; Minimum C	230
Viscosity, ASTM D 4402; Maximum, 3Pa*s (3000 cP) Test Temperature, C	135
Dynamic Shear, TP5; G*/sin[ ], Minimum, 1.00 kPa Test Temperature @ 10 rad/sec., C	64
ROLLING THIN FILM OVEN (T240) OR THIN FILM OVEN (T179) RESIDUE	
Mass Loss, Maximum , %	1.00
Dynamic Shear, TP5; G*/sin [ ], Minimum, 2.20 kPa Test Temperature @ 10 rad/sec., C	64
PRESSURE AGING VESSEL RESIDUE (PP1)	
PAV Aging Temperature, C	100
Dynamic Shear, TP5; G*/sin [ ], Minimum, 5000 kPa Test Temperature @ 10 rad/sec., C	25
Physical hardening	Report
Creep Stiffness, TP1; S, Maximum, 300 Mpa -value, Minimum, 0.300 Test Temperature @ 60 sec., C	-12
Direct Tension, TP3; Failure Strain, Minimum, 1.0% Test Temperature @ 1.0 mm/min, C	-12

E. Anti-stripping Agent:

1. Evaluate mixture of aggregate, asphalt, and additives proposed for use for moisture susceptibility and requirement for anti-stripping agents. To substantiate mix design, produce and test trial mixtures using proposed project materials and equipment prior to placement. Test for susceptibility to moisture and trial mixture may be waived by Project Manager when similar designs using same material have previously proven satisfactory.

2. Liquid Anti-stripping Agent. Use anti-stripping agent with uniform liquid with no evidence of crystallization, settling, or separation of components. Submit sample of anti-stripping agent proposed for use and manufacturer's product data, including recommended dosage range, handling and storage, and application instructions.

F. Pavement markings for speed humps: Conform to requirements of Section 02767 - Thermoplastic Pavement Markings.

2.02 EQUIPMENT

A. Mixing Plant: Weight-batching or drum mix plant with capacity for producing continuous mixtures meeting specifications. With exception of a drum mix plant, plant shall have satisfactory conveyors, power units, aggregate handling equipment, hot aggregate screens and bins, and dust collectors.

B. Provide equipment to supply materials adequately in accordance with rated capacity of plant and produce finished material within specified tolerances. Following equipment is essential:

1. Cold aggregate bins and proportioning device

2. Dryer

3. Screens

4. Aggregate weight box and batching scales

5. Mixer

6. Asphalt storage and heating devices

7. Asphalt measuring devices

8. Truck scales

B. Bins: Separate aggregate into minimum of four bins to produce consistently uniform grading and asphalt content in completed mix. Provide one cold feed bin per stockpile.

2.03 MIXES

A. Employ certified testing laboratory to prepare design mixes. Test in accordance with TxDOT Tex-126-E or Tex-204-F, Tex-206-F, Tex-208-F, Tex-530-C and Tex-531-C.

B. Density, Stability and Air Void Requirements:

Percent Density		Percent	HVEEM Stability Percent
Min	Max.	Optimum	Not Less Than
94.5	97.5	96	35

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify compacted base course is ready to support imposed loads.

B. Verify lines and grades are correct.

3.02 PREPARATION

A. Tack Coat: Conform to requirements of Section 02743 - Tack Coat. Where mixture will adhere to surface on which it is to be placed without use of tack coat, tack coat may be eliminated when approved by Project Manager.

B. Prepare subgrade in accordance with requirements of Section 02711 - Hot Mix Asphalt Base Course, Section 02712 - Cement Stabilized Base Course, or Section 02713 - Recycled Crushed Concrete Base Course.

C. Prepare subgrade in advance of asphalt concrete paving operation.

D. Perform pavement repair and resurfacing as indicated in Section 02951 - Pavement Repair and Resurfacing.

E. Do not use cutback asphalt.

G. Milling of pavement for speed humps: Mill pavement (concrete or asphalt) to depth of one inch and width between 18 and 24 inches around entire perimeter of proposed hump, as shown in detail for speed hump design.

3.03 PLACEMENT

A. Do not place asphalt pavement less than 2 inches thick when surface temperature taken in shade and away from artificial heat is below 50 F and falling. Asphalt may be placed when temperature is above 40 F and rising.

B. Haul prepared and heated asphaltic concrete mixture to project in tight vehicles previously cleaned of foreign material. Mixture temperature shall be between 250 F and 325 F when laid.

C. Spread material into place with approved mechanical spreading and finishing machine of screening or tamping type.

D. Surface Course Material: Surface course 2 inches or less in thickness may be spread in one lift. Spread lifts in such a manner that, when compacted, finished course will be smooth, of uniform density, and will be to section, line and grade as shown. Place construction joints on surface courses to coincide with lane lines or as directed by Project Manager.

E. Joints: Pass roller over unprotected ends of freshly laid mixture only when mixture has cooled. When work is resumed, cut back laid material to produce slightly beveled edge for full thickness of course. Remove old material which has been cut away and lay new mix against fresh cut.

F. When new asphalt is laid against existing or old asphalt, saw cut existing or old asphalt to full depth to provide straight smooth joint.

G. In smaller restricted areas where use of paver is impractical spread material by hand. Compact asphalt by mechanical means. Carefully place materials to avoid segregation of mix. Do not broadcast material. Remove lumps that do not break down readily.

3.04 COMPACTION

A. Construct test strip to identify correct type, number, and sequence of rollers necessary to obtain specified in-place density or air-voids when directed by the Project Manager. Prepare test strip at least 1,000 feet in length, comparable to placement and compaction conditions for Project.

B. Begin rolling while pavement is still hot and as soon as it will bear roller without shoving, displacement or hair cracking. Keep wheels properly moistened with water to prevent adhesion of surface mixture. Do not use excessive water or petroleum by-products.

C. Compact surface thoroughly and uniformly, first with power-driven, 3-wheel, or tandem rollers weighing a minimum of 8 tons. Obtain subsequent compression by starting at side and rolling longitudinally toward center of pavement, overlapping on successive trips by at least one-half width of rear wheels. Make alternate trips slightly different in length.

Continue rolling until no further compression can be obtained and rolling marks are eliminated. Complete rolling before mat temperature drops below 185 F.

D. Use tandem roller for final rolling. Double coverage with approved pneumatic roller on asphaltic concrete surface is acceptable after flat wheel and tandem rolling has been completed.

E. Along walls, curbs, headers and similar structures, and in locations not accessible to rollers, compact mixture thoroughly with lightly oiled tamps.

F. Compact binder course and surface course to a minimum density of 91 percent of maximum possible density of voidless mixture composed of same materials in like proportions.

3.05 TOLERANCES

A. Furnish templates for checking surface in finished sections. Maximum deflection of templates, when supported at center, shall not exceed 1/8 inch.

B. Completed surface, when tested with 10 foot straightedge laid parallel to center line of pavement, shall show no deviation in excess of 1/8 inch in 10 feet. Correct surface not meeting this requirement.

C. Dimensions of speed humps shall conform to details for speed hump design and speed hump height tolerances.

3.06 QUALITY CONTROL

A. Testing will be performed under provisions of Section 01454 - Testing Laboratory Services.

B. For in-place depth and density, take minimum of one core at random locations for each 1000 feet of single lane pavement. On a 2-lane pavement, take samples at random every 500 feet from alternating lanes. Take cores for parking lots every 500 square yards of base to determine in-place depth and density. If cul-de sac or streets are less than 500 feet, minimum of 2 cores (one per lane) will be procured. On small projects, take a minimum of two cores for each day's placement. For first days placement and prior to coring, minimum of 5 nuclear gauge readings will be performed at each core location to establish correlation between nuclear gauge (wet density reading) and core (bulk density). This process will continue for each day's placement until engineer determines that a good bias has been established for that nuclear gauge.

C. Determine in-place density in accordance with TxDOT Tex-207-F and Tex-227-F from cores or sections. Other methods of determining in-place density, which correlate satisfactorily with results obtained from roadway specimens, may be used when approved by Project Manager. Average densities for each street placed in a single day to determine compliance.

D. Contractor may request three additional cores in vicinity of cores indicating nonconforming in-place depths or density at no additional cost to City. In-place depth and density at these locations shall be average of four cores.

E. Fill cores and density test sections with new compacted asphaltic concrete.

F. Speed humps: Measure dimensions of completed speed hump, before applying pavement markings, at locations shown on Speed Hump Height Measurement Worksheet. Complete one worksheet for each speed hump, and send completed worksheets to City of Houston, Department of Public Works and Engineering, Traffic Management and Maintenance Branch, P.O. Box 1562, Houston, Texas, 77251-1562.

3.07 NONCONFORMING PAVEMENT

A. Recompact and retest nonconforming street sections not meeting surface test requirements or having unacceptable surface texture. Patch asphalt pavement sections in accordance with procedures established by Asphalt Institute. Retesting is at no cost to the City.

B. Remove and replace areas of asphalt surface found deficient in thickness by more than 10 percent. Use new asphaltic surface of thickness shown on Drawings. Remove and replace areas of asphalt surface found deficient in average density.

C. Replace speed humps which do not conform to requirements of details, or which are rejected by Project Manager.

3.08 PROTECTION

A. Do not open pavement to traffic until completion of rolling and temperature has cooled to set asphaltic concrete surface, or as shown on Drawings.

B. Maintain asphalt pavement in good condition until completion of Work.

C. Repair defects immediately by replacing asphalt pavement to full depth.

3.09 PAVEMENT MARKINGS FOR SPEED HUMPS

A. Apply pavement markings to speed humps in conformance with dimensions shown on detail for speed hump design.

END OF SECTION

Section 02742

PRIME COAT

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Prime coat for asphalt concrete paving

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. No separate payment will be made for prime coat under this Section. Include payment in unit price for material being primed.

2. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for Work in this Section is included in total Stipulated Price.

1.03 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit product data for proposed prime coat.

C. Submit report of recent calibration of distributor.

PART 2 PRODUCTS

2.01 CUTBACK ASPHALT

A. Provide moisture-free homogeneous material which will not foam when heated to 347 degrees F and which meets following requirements:

B. Asphalt material for prime coat shall be MC-30 or MC-70 and shall meet following requirements:

PROPERTIES	TYPE - GRADE			
	MC-30		MC-70	
	MIN.	MAX.	MIN.	MAX.
Water, Percent	---	0.2	---	0.2
Flash Point, T.O.C., °F	100	---	100	---
Kinematic Viscosity at 140°F, cst	30	60	70	140

1. Distillate shall be as follows, expressed as percent by volume of total distillate to 680 degrees F:

TEMPERATURE	TYPE-GRADE			
	MC-30		MC-70	
	MIN.	MAX.	MIN.	MAX.
to 437°F	---	25	---	20
to 500°F	40	70	20	60
to 600°F	75	93	65	90
Residue from 680°F Distillation, Volume, Percent	50	---	55	---

2. Tests on Distillation Residue:

TEST	TYPE-GRADE			
	MC-30		MC-70	
	MIN.	MAX.	MIN.	MAX.
Penetration at 77°F, 100g, 5 sec.	120	250	120	250
Ductility at 77°F, 5 cm/min. cms	100*	---	100*	---
Solubility in Trichloroethylene, %	99	---	99	---
Spot Test	All Negative			

* If penetration of residue is more than 200 and ductility at 77 degrees F is less than 100 cm, material will be acceptable when its ductility at 60 degrees F is more than 100.

2.02 EMULSIFIED PETROLEUM RESIN

A. EPR-1 Prime: Slow curing emulsion of petroleum resin and asphalt cement conforming to following requirements:

PROPERTIES	MIN.	MAX.
Fural Viscosity at 77°F, Sec	14	40
Residue by Evaporation, % by Weight	60	-
Sieve Test, %	-	0.1
Particle Charge Test	Positive	
Tests on Distillation Residue:		
Flash Point, COC (F)	400	-
Kinematic Viscosity @ 140 F (cst)	190	350

B. For use, EPR-1 may be diluted with water up to maximum three parts water to one part EPR-1 in order to achieve desired concentration of residual resin/asphalt to facilitate application.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify base is ready to support imposed loads.

B. Verify lines and grades are correct.

3.02 PREPARATION

A. Thoroughly clean base course surface of loose material by brooming prior to application of tack coat.

B. Prepare sufficient base in advance of paving for efficient operations.

3.03 APPLICATION, BASIC

A. Apply prime coat with approved type of self-propelled pressure distributor. Distribute prime coat evenly and smoothly under pressure necessary for proper distribution.

B. Keep storage tanks, piping, retorts, booster tanks, and distributors used in handling asphalt materials clean and in good operating condition. Conduct operations so asphalt material does not become contaminated.

C. If yield of asphaltic material appears to be in error, recalibrate distributor prior to continuing Work.

D. Maintain surface until Work is accepted by City.

3.04 APPLICATION, CUTBACK ASPHALT

A. Do not use cutback asphalt during period of April 16 through September 15.

B. Do not place prime coat when air temperature is below 60 degrees F and falling. Materials may be placed when air temperature taken in shade and away from artificial heat is above 50 degrees F and rising.

C. Distribute at rate of 0.25 to 0.35 gallons per square yard.

D. Equipment shall accurately determine temperature of asphaltic material in heating equipment and in distributor, for determining rate of application, and for obtaining uniformity at junction of two distributor loads. Maintain in accurate working order, including recording thermometer at storage heating unit.

E. Base temperature of application on temperature-viscosity relationship that will permit application of asphalt with viscosity of 100 to 125 centistokes. Maintain asphalt within 15 degrees F of temperature required to meet viscosity. Selected temperature shall be within following range.

Prime Coat Type	Minimum (°F)	Maximum (°F)
MC-30	70	150
MC-70	125	175

F. Do not allow temperature of MC-30 to exceed 175 degrees F.

G. Do not allow temperature of MC-70 to exceed 200 degrees F.

3.05 APPLICATION, EMULSIFIED PETROLEUM RESIN

A. Do not place prime coat when air temperature is below 36 degrees F and falling.

B. Distribute at rate of 0.15 to 0.25 gallons per square yard.

3.06 PROTECTION

A. Prevent traffic or placement of subsequent courses over freshly applied prime coat until authorized by Project Manager.

END OF SECTION

Section 02743

TACK COAT

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Tack coat for asphalt concrete paving.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. No separate payment will be made for tack coat under this Section. Include payment in unit price for asphaltic pavements.

2. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for Work in this Section is included in total Stipulated Price.

1.03 REFERENCES

A. ASTM D 244 - Standard Test Methods for Emulsified Asphalts.

1.04 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit product data for proposed tack coat.

C. Submit report of recent calibration of distributor.

PART 2 PRODUCTS

2.01 EMULSION

A. Provide homogeneous material which shows no separation of asphalt after mixing and meets viscosity requirements within 30 days after delivery.

B. Emulsion material for tack coat.

1. Emulsified asphalt: SS-1 or SS-1h meeting following criteria:

PROPERTIES	SS-1		SS-1h	
	MIN.	MAX.	MIN.	MAX.
Furol Viscosity at 77°F, sec.	20	100	20	100
Residue by Distillation, %	60	--	60	--
Oil Portion of Distillate, %	--	1/2	--	1/2
Sieve Test, %	--	0.10	--	0.10
Miscibility (Standard Test)	Passing			
Cement Mixing, %	--	2.0	--	2.0
Storage Stability, 1 Day, %	--	1	--	1
Test on Residue: Penetration at 77°F, 100g, 5 sec. Solubility in Trichloroethylene, % Ductility at 77°F, 5 cm/min., cms	 120 97.5 100	 160 -- --	 70 97.5 80	 100 -- --

2. Polymer Modified Emulsion, SS-1P, for use where thin overlays (less than or equal 2 inches) are placed on collector or arterial streets and for speed humps, especially over existing Portland cement concrete pavement.

PROPERTIES	SS-1P	
	MIN.	MAX.
Furol Viscosity at 77 F, sec.	30	100
Residue by Distillation, %	60	--
Oil Portion of Distillate, %	--	1/2
Sieve Test, %	--	0.10
Miscibility (Standard Test)	Passing	
Cement Mixing, %	--	2.0
Storage Stability, 1 Day, %	--	1
Test on Residue: Penetration at 77°F, 100g, 5 sec.; Solubility in Trichloroethylene, %Ductility at 77°F, 5 cm/min., cms; Viscosity at 140 F, poises	100 97 50 1300	140 -- -- --

3. For emulsions used for tack coats during period of April 16 through September 15,

volatile organic compound solvents (VOC) shall not exceed 12 percent by weight when tested in accordance with ASTM D 244.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify compacted base is ready to support imposed loads.

B. Verify lines and grades are correct.

3.02 PREPARATION

A. Thoroughly clean base course or concrete surface of loose material by brooming prior to tack coat application.

3.03 APPLICATION

A. Apply tack coat uniformly by use of approved distributor at rate not to exceed 0.05 gallons per square yard of surface depending on texture of underlying surface. Select an application rate that will provide appropriate asphalt residual.

B. Paint contact surfaces of curbs, structures, and joints with thin uniform coat of tack coat.

3.04 PROTECTION

A. Prevent traffic or placement of subsequent courses over freshly applied tack coat until authorized by Project Manager.

END OF SECTION

Section 02751

CONCRETE PAVING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Portland cement concrete paving.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment for concrete paving is on square yard basis. Separate pay items are used for each different required thickness of pavement.

2. Payment for concrete paving, high early strength, is on square yard basis.

3. Payment for pavement repair or pavement replacement for utility projects is on a square yard basis and includes base materials in accordance with Section 02951.

4. Refer to Section 01270 - Measurement and Payment for unit price procedures.

5. Refer to Paragraph 3.15, Unit Price Adjustment.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for Work in this Section is included in total Stipulated Price.

1.03 REFERENCES

A. ASTM A82 - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.

B. ASTM A185 - Standard Specifications for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.

C. ASTM A497 – Standard Specification for Steel Welded Wire Reinforcement, Deformed, for Concrete.

D. ASTM A615 - Standard Specification for Deformed and Plain Billet - Steel Bars for Concrete Reinforcement.

E. ASTM C 31 - Standard Practice for Making and Curing Concrete Test Specimens in the Field.

F. ASTM C 33 - Standard Specifications for Concrete Aggregates.

G. ASTM C 39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.

H. ASTM C 40 - Standard Test Method for Organic Impurities in Fine Aggregates for Concrete.

I. ASTM C 42 - Standard Test Method of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.

J. ASTM C 78 - Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Third Point Loading).

K. ASTM C 94 - Standard Specification for Ready-Mixed Concrete.

L. ASTM C 131 - Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

M. ASTM C 136 - Standard Method for Sieve Analysis of Fine and Coarse Aggregates.

N. ASTM C 138 - Standard Test Method for Unit Weight, Yield, and Air Content (Gravimetric) of Concrete.

O. ASTM C 143 - Standard Test Method for Slump of Hydraulic Cement Concrete.

P. ASTM C 150 - Standard Specification for Portland Cement.

Q. ASTM C 174 - Standard Test Method for Measuring Thickness of Concrete Elements Using Drilled Concrete Cores.

R. ASTM C 231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.

S. ASTM C 260 - Standard Specification for Air-Entraining Admixtures for Concrete.

T. ASTM C 494 - Standard Specification for Chemical Admixtures for Concrete.

U. ASTM C 618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for use as a Mineral Admixture in Portland Cement Concrete.

V. TxDOT Tex-203-F - Sand Equivalent Test.

W TxDOT Tex-406-A - Material Finer than 75 Φm (No. 200) Sieve In Mineral Aggregates (Decantation Test for Cement Aggregates).

1.04 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit proposed mix design and test data for each type and strength of concrete in Work. Include proportions and actual flexural strength obtained from design mixes at required test ages.

C. Submit for approval manufacturer's description and characteristics for mixing equipment, and for traveling form paver, when proposed for use.

D. Submit manufacturer's certificates giving properties of reinforcing steel. Include certificate of compliance with ASTM A 82. Provide specimens for testing when required by Project Manager.

1.05 HANDLING AND STORAGE

A. Do not mix different classes of aggregate without written permission of Project Manager.

B. Class of aggregate being used may be changed before or during Work with written permission of Project Manager. Comply new class with specifications.

C. Reject segregated aggregate. Before using aggregate whose particles are separated by size, mix them uniformly to grading requirements.

D. Reject aggregates mixed with dirt, weeds, or foreign matter.

E. Do not dump or store aggregate in roadbed.

PART 2 P R O D U C T S

2.01 MATERIALS

A. Portland Cement:

1. Sample and test cement to verify compliance with Standards of ASTM C 150, Type I or Type III.

2. Bulk cement which meets referenced standards may be used when method of handling is approved by Project Manager. When using bulk cement, provide satisfactory weighing devices.

3. Fly ash which meets standards of ASTM C 618 may be used as mineral fill when method of handling is approved by Project Manager.

B. Water: Conform to requirements for water in ASTM C 94.

C. Coarse Aggregate: Crushed stone, gravel, or combination thereof, which is clean, hard, and durable, conforms to requirements of ASTM C 33, and has abrasion loss not more than 45 percent by weight when subjected to Los Angeles Abrasion Test (ASTM C 131).

1. Maximum percentage by weight of deleterious substances shall not exceed following values:

Item	Percent by Weight of Total Sample Maximum
Clay lumps and friable particles	3.0
Material finer than 75-µm (No. 200) sieve:	
Concrete subject to abrasion	3.0*
All Other concrete	5.0*
Coal and lignite:	
Where surface appearance of concrete is of importance	0.5
All other concrete	1.0

* In case of manufactured sand, when material finer than 75-µm (No. 200) sieve consists of dust of fracture, essentially free from clay or shale, these limits may be increased to 5 and 7 percent, respectively.

2. Conform coarse aggregate (size 1 1/2 inch to No. 4 sieve) to requirements of ASTM C 33. Use gradation within following limits when graded in accordance with ASTM C 136:

Sieve Designation (Square Openings)	Percentage by Weight
Retained on 1 3/4" sieve	0
Retained on 1 1/2"sieve	0 to 5
Retained on 3/4" sieve	30 to 65
Retained on 3/8" sieve	70 to 90
Retained on No. 4 sieve	95 to 100
Loss by Decantation Test *Method Tex-406-A	1.0 maximum

* In case of aggregates made primarily from crushing of stone, when material finer than 200 sieve is dust of fracture essentially free from clay or shale as established by Part III of TxDOT Tex-406-A, percent may be increased to 1.5.

D. Fine Aggregate: Sand, manufactured sand, or combination thereof, composed of clean, hard, durable, uncoated grains, free from loams or other injurious foreign matter. Conform fine aggregate for concrete to requirements of ASTM C 33. Use gradation within following limits when graded in accordance with ASTM C 136:

Sieve Designation (Square Openings)	Percentage by Weight

Retained on 3/8" sieve	0
Retained on No. 4 sieve	0 to 5
Retained on No. 8 sieve	0 to 20
Retained on No. 16 sieve	15 to 50
Retained on No. 30 sieve	35 to 75
Retained on No. 50 sieve	65 to 90
Retained on No. 100 sieve	90 to 100
Retained on No. 200 sieve	97 to 100

1. When subjected to color test for organic impurities (ASTM C 40), fine aggregate shall not show color darker than standard color. Fine aggregate shall be subjected to Sand Equivalent Test (Tex-203-F). Sand equivalent value shall not be less than 80, unless higher value is shown on Drawings.

E. Mineral Filler: Type "C" or Type "F" fly ash of acceptable quality and meeting requirements of ASTM C 618 may be used as mineral admixture in concrete mixture. When fly ash mineral filler is used, store and inspect in accordance with ASTM C 618. Do not use fly ash in amounts to exceed 25 percent by weight of cementatious material in mix design. Cement content may be reduced when strength requirements can be met. Note: When fly ash is used, term "cement" is defined as cement plus fly ash.

F. Air Entraining Agent: Furnish air entraining agent conforming to requirements of ASTM C 260.

G. Water Reducer: Water reducing admixture conforming to requirements of ASTM C 494 may be used when required to improve workability of concrete. Amount and type of admixture is subject to approval by Project Manager.

H. Reinforcing Steel:

1. Provide new billet steel manufactured by open hearth process and conforming to ASTM A 615, Grade 60. Store steel to protect it from mechanical injury and rust. At time of placement, steel shall be free from dirt, scale, rust, paint, oil, or other injurious materials.

2. Cold bend reinforcing steel to shapes shown. Once steel has been bent, it may not be rebent.

3. Provide wire fabric conforming to ASTM A 82. Use fabric in which longitudinal and transverse wires have been electrically welded at points of intersection. Welds shall have sufficient strength not to be broken during handling or placing. Conform welding and fabrication of fabric sheets to ASTM A 185.

2.02 EQUIPMENT

A. Conform Equipment to requirements of ASTM C94.

2.03 MIXING

A. Flexural strength shall be as specified using test specimens prepared in accordance with ASTM C 31 and tested in accordance with ASTM C78 (using simple beam with third-point loading). Compressive strength shall be as specified using test specimens prepared in accordance with ASTM C 31 and tested in accordance with ASTM C 39. Determine and measure batch quantity of each ingredient, including water for batch designs and all concrete produced for Work. Mix shall conform to these specifications and other requirements indicated on Drawings.

B. Mix design to produce concrete which will have flexural strength of 500 psi at 7 days and 600 psi at 28 days. Minimum compressive strength shall be 3000 pounds per square inches for 7 days and 3500 pounds per square inches at 28 days when tested in accordance with ASTM C39. Slump of concrete shall be at least 2 inches but no more than 5 inches, when tested in accordance with ASTM C143.

1. Concrete pavement, including curb, curb and gutter, and saw-tooth curb, shall contain at least 5 1/2 sacks (94 pounds per sack) of cement per cubic yard, with not more than 6.5 gallons of water, net, per sack of cement (water-cement ratio maximum 0.57). Determine cement content in accordance with ASTM C 138. Addition of mineral filler may be used to improve workability or plasticity of concrete to limits specified.

2. Coarse dry aggregate shall not exceed 85 percent of loose volume of concrete.

3. Add air-entraining admixture to ensure uniform distribution of agent throughout batch. Base air content of freshly mixed air-entrained concrete upon trial mixes with materials to be used in Work, adjusted to produce concrete of required plasticity and workability. Percentage of air entrainment in mix shall be 4 1/2 percent plus or minus 1 1/2 percent. Determine air content by testing in accordance with ASTM C 231.

4. Use retardant when temperature exceeds 90 degrees F. Proportion as recommended by manufacturer. Use same brand as used for air-entraining agent. Add and batch material using same methods as used for air-entraining agent.

C. Use high early strength concrete pavement to limits shown on Drawings. Design to meet following:

1. Concrete Mix: Flexural strength greater than or equal to 500 psi at 72 hours.

2. Cement: Minimum of 7 sacks of cement per cubic yard of concrete.

3. Water-Cement Ratio maximum of 0.45. Slump of concrete shall a maximum of 5 inches, when tested in accordance with ASTM C 143.

4. Other requirements for proportioning, mixing, execution, testing, etc., shall be in accordance with this Section 02751 - Concrete Paving.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify compacted base is ready to support imposed loads and meets compaction requirements.

B. Verify lines and grades are correct.

3.02 PREPARATION

A. Properly prepare, shape and compact each section of subgrade before placing forms, reinforcing steel or concrete. After forms have been set to proper grade and alignment, use subgrade planer to shape subgrade to its final cross section. Check contour of subgrade with template.

B. Remove subgrade that will not support loaded form. Replace and compact subgrade to required density.

3.03 EQUIPMENT

A. Alternate equipment and methods, other than those required by this Section, may be used provided equal or better results will be obtained. Maintain equipment for preparing subgrade and for finishing and compacting concrete in good working order.

B. Subgrade Planer and Template:

1. Use subgrade planer with adjustable cutting blades to trim subgrade to exact section shown on Drawings. Select planer mounted on visible rollers which ride on forms. Planer frame must have sufficient weight so that it will remain on form, and have strength and rigidity that, under tests made by changing support from wheels to center, planer will not develop deflection of more than 1/8 inch. Tractors used to pull planer shall not produce ruts or indentations in subgrade. When slip form method of paving is used, operate subgrade planer on prepared track grade or have it controlled by electronic sensor system operated from string line to establish horizontal alignment and elevation of subbase.

2. Provide template for checking contour of subgrade. Template shall be long enough to rest upon side forms and have strength and rigidity that, when supported at center, maximum deflection shall not exceed 1/8 inch. Fit template with accurately adjustable rods projecting downward at 1 foot intervals. Adjust these rods to gauge cross sections of slab bottom when template is resting on side forms.

C. Machine Finisher: Provide power-driven, transverse finishing machine designed and operated to strike off and consolidate concrete. Machine shall have two screeds accurately adjusted to crown of pavement and with frame equipped to ride on forms. Use finishing machine with rubber tires when it operates on concrete pavement.

D. Hand Finishing:

1. Provide mechanical strike and tamping template 2 feet longer than width of pavement to be finished. Shape template to pavement section.

2. Provide two bridges to ride on forms and span pavement for finishing expansion and dummy joints. Provide floats and necessary edging and finishing tools.

E. Burlap Drag or transverse broom for Finishing Slab: Furnish four plies of 10 ounce burlap material fastened to bridge to form continuous strip of burlap full width of pavement. Maintain contact 3 foot width of burlap material with pavement surface. Keep burlap drags clean and free of encrusted mortar.

F. Vibrators: Furnish mechanically-operated, synchronized vibrators mounted on tamping bar which rides on forms and hand-manipulated mechanical vibrators. Furnish vibrators with frequency of vibration to provide maximum consolidation of concrete without segregation.

G. Traveling Form Paver: Approved traveling form paver may be used in lieu of construction methods employing forms, consolidating, finishing and floating equipment. Meet requirements of this specification for subgrade, pavement tolerances, pavement depth, alignments, consolidation, finishing and workmanship. When traveling form paver does not provide concrete paving that meets compaction, finish, and tolerance requirements of this Specification, immediately discontinue its use and use conventional methods.

1. Equip traveling paver with longitudinal transangular finishing float adjustable to crown and grade. Use float long enough to extend across pavement to side forms or edge of slab.

2. Ensure that continuous deposit of concrete can be made at paver to minimize starting and stopping. Use conventional means of paving locations inaccessible to traveling paver, or having horizontal or vertical curvature that traveling paver cannot negotiate.

3. Where Drawings require tie bars for adjacent paving, securely tie and support bars to prevent displacement. Tie bars may be installed with approved mechanical bar inserter mounted on traveling-form paver. Replace pavement in which tie bars assume final position other than that shown on Drawings.

3.04 FORMS

A. Side Forms: Use metal forms of approved shape and section. Preferred depth of form is equal to required edge thickness of pavement. Forms with depths greater or less than

required edge thickness of pavement will be permitted, provided difference between form depth and edge thickness when not greater than 1 inch, and further provided that forms of depth less than pavement edge are brought to required edge thickness by securely attaching wood or metal strips to bottom of form, or by grouting under form. Bottom flange of form shall be same size as thickness of pavement. Aluminum forms are not allowed. Forms shall be approved by Project Manager. Length of form sections shall be not less than 10 feet and each section shall provide for staking in position with not less than 3 pins. Flexible or curved forms of wood or metal of proper radius shall be used for curves of 200 foot radius or less. Forms shall have ample strength and shall be provided with adequate devices for secure setting so that when in-place they will withstand, without visible springing or settlement, impact and vibration of finishing machine. In no case shall base width be less than 8 inches for form 8 inches or more in height. Forms shall be free from warp, bends or kinks and shall be sufficiently true to provide straight edge on concrete. Top of each form section, when tested with straight edge, shall conform to requirements specified for surface of completed pavement. Provide sufficient forms for satisfactory placement of concrete. For short radius curves, forms less than 10 feet in length or curved forms may be used. For curb returns at street intersections and driveways, wood forms of good grade and quality may be used.

B. Form Setting:

1. Rest forms directly on subgrade. Do not shim with pebbles or dirt. Accurately set forms to required grade and alignment and, during entire operation of placing, compacting and finishing of concrete, do not deviate from this grade and alignment more than 1/8 inch in 10 feet of length. Do not remove forms for at least 8 hours after completion of finishing operations. Provide supply of forms that will be adequate for orderly and continuous placing of concrete. Set forms and check grade for at least 300 feet ahead of mixer or as approved by Project Manager.

2. Adjacent slabs may be used instead of forms, provided that concrete is well protected from possible damage by finishing equipment. Do not use adjacent slabs for forms until concrete has aged at least 7 days.

3.05 REINFORCING STEEL AND JOINT ASSEMBLIES

A. Place reinforcing steel and joint assemblies and position securely as indicated on Drawings. Wire reinforcing bars securely together at intersections and splices. Bars and coatings shall be free of rust, dirt or other foreign matter when concrete is placed. Secure reinforcing steel to chairs.

B. Position pavement joint assemblies at required locations and elevations, and rigidly secure in position. Install dowel bars in joint assemblies, each parallel to pavement surface and to center line of pavement, as shown.

C. Cut header boards, joint filler, and other material used for forming joints to receive each dowel bar.

D. Secure in required position to prevent displacement during placing and finishing of concrete.

E. Drill dowels into existing pavement, secure with epoxy, and provide paving headers as required to provide rigid pavement sections.

F. Use sufficient number of chairs for steel reinforcement bars to maintain position of bars within allowable tolerances. Place reinforcement as shown on Drawings. In plane of steel parallel to nearest surface of concrete, bars shall not vary from plan placement by more than 1/12 of spacing between bars. In plane of steel perpendicular to nearest surface of concrete, bars shall not vary from plan placement by more than 1/4 inch.

3.06 FIBROUS REINFORCING

A. Do not use fibrous reinforcing to replace structural, load-bearing, or moment-reinforcing steel.

3.07 PLACEMENT

A. Place concrete when air temperature taken in shade and away from artificial heat is above 35 degrees F and rising. Do not place concrete when temperature is below 40 degrees F and falling.

B. Place concrete within 90 minutes after initial water had been added. Remove and dispose of concrete not placed within this period.

C. Concrete slump during placement shall be 1 to 5 inches, except when using traveling-form paver, slump shall be maximum of 2 inches.

D. Deposit concrete continuously in successive batches. Distribute concrete in manner that will require as little rehandling as possible. Where hand spreading is necessary, distribute concrete with shovels or by other approved methods. Use only concrete rakes in handling concrete. At placement interruption of more than 30 minutes, place transverse construction joint at stopping point. Remove and replace sections less than 10 feet long.

E. Take special care in placing and spading concrete against forms and at longitudinal and transverse joints to prevent honeycombing. Voids in edge of finished pavement will be cause for rejection.

3.08 COMPACTION

A. Consolidate concrete using mechanical vibrators as specified herein. Extend vibratory unit across pavement, not quite touching side forms. Space individual vibrators at close enough intervals to vibrate and consolidate entire width of pavement uniformly. Mount mechanical vibrators to avoid contact with forms, reinforcement, transverse or longitudinal joints.

B. Furnish enough hand-manipulated mechanical vibrators for proper consolidation of concrete along forms, at joints and in areas not covered by mechanically controlled vibrators.

3.09 FINISHING

A. Finish concrete pavement with power-driven transverse finishing machines or by hand finishing methods.

1. Hand finish with mechanical strike and tamping template in same width as pavement to be finished. Shape template to pavement section shown on Drawings. Move strike template forward in direction of placement, maintaining slight excess of material in front of cutting edge. Make minimum of two trips over each area. Screed pavement surface to required section. Work screed with combined transverse and longitudinal motion in direction work is progressing. Maintain screed in contact with forms. Use longitudinal float to level surface.

B. On narrow strips and transitions, finish concrete pavement by hand. Thoroughly work concrete around reinforcement and embedded fixtures. Strike off concrete with strike-off screed. Move strike-off screed forward with combined transverse and longitudinal motion in direction work is progressing, maintaining screed in contact with forms, and maintaining slight excess of materials in front of cutting edge. Tamp concrete with tamping template. Use longitudinal float to level surface.

C. After completion of straightedge operation, make first pass of burlap drag or transverse broom as soon as construction operations permit and before water sheen has disappeared from surface. Follow with as many passes as required to produce desired texture depth. Permit no unnecessary delays between passes. Keep drag wet, clean and free from encrusted mortar during use.

3.10 JOINTS AND JOINT SEALING

A. Conform to requirements of Section 02752 - Concrete Pavement Joints.

3.11 CONCRETE CURING

A. Conform to requirements of Section 02753 - Concrete Pavement Curing.

3.12 TOLERANCES

A. Test entire surface before initial set and correct irregularities or undulations. Bring surface within requirements of following test and then finish. Place 10 foot straightedge parallel to center of roadway to bridge depressions and touch high spots. Do not permit ordinates measured from face of straight edge to surface of pavement to exceed 1/16 inch per foot from nearest point of contact. Maximum ordinate with 10 foot straightedge shall not exceed 1/8 inch. Grind spots in excess of required tolerances to meet surface test requirements. Restore texture by grooving concrete to meet surface finishing specifications.

3.13 FIELD QUALITY CONTROL

A. Perform testing under provisions of Section 01454 - Testing Laboratory Services.

B. Compressive Strength Test Specimens: Make four test specimens for compressive strength test in accordance with ASTM C 31 for each 150 cubic yards or less of pavement that is placed in one day. Test two specimens at 7 days or at number of hours as directed by the Project Manager for high early strength concrete. Test remaining two specimens at 28 days. Test specimens in accordance with ASTM C 39. Minimum compressive strength shall be 3000 pounds per square inch for first two specimens and 3500 pounds per square inch at 28 days.

C. When compressive test indicates failure, make yield test in accordance with ASTM C 138 for cement content per cubic yard of concrete. When cement content is found to be less than that specified per cubic yard, increase batch weights until amount of cement per cubic yard of concrete conforms to requirements.

D. Minimum of one 4 inch core will be taken at random locations per 375 feet per 12 feet lane or 500 square yards of pavement to measure in-place depth. Measure depth in accordance with ASTM C 174. Each core may be tested for 28 day compressive strength according to methods of ASTM C 42. 28 day compressive strength of each core tested shall be a minimum of 3000 pounds per square inch.

E. Request, at option, three additional cores in vicinity of cores indicating nonconforming in-place depths at no cost to City. In-place depth at these locations shall be average depth of four cores.

F. Fill cores and density test sections with new concrete paving or non shrink grout.

3.14 NONCONFORMING PAVEMENT

A. Remove and replace areas of pavement found deficient in thickness by more than 10 percent, or that fail compressive strength tests, with concrete of thickness shown on Drawings.

B. When measurement of any core is less than specified thickness by more than 10 percent, actual thickness of pavement in this area will be determined by taking additional cores at 10 foot intervals parallel to centerline in each direction from deficient core until, in each direction, core is taken which is not deficient by more than 10 percent. Exploratory cores for

deficient thickness will not be used in averages for adjusted unit price. Exploratory cores are to be used only to determine length of pavement in unit that is to be removed and replaced. Replace nonconforming pavement sections at no additional cost to City.

3.15 UNIT PRICE ADJUSTMENT

A. Unit price adjustments shall be made for in-place depth determined by cores as follows:

1. Adjusted Unit Price shall be ratio of average thickness as determined by cores to thickness bid upon, times unit price.

2. Apply adjustment to lower limit of 90 percent and upper limit of 100 percent of unit price.

3. Average depth below 90 percent but greater than 80 percent may be accepted by Project Manager at adjusted Unit Price of:

   a. Unit Price Bid - [2 x (1-ratio) x Unit Price Bid]

   b. Ratio equals average core thickness divided by thickness bid upon

   c. 0.9 ratio pays 80 percent of unit price and 0.8 ratio pays 60 percent of unit price.

4. Average depth below 80 percent will be rejected by Project Manager.

3.16 PAVEMENT MARKINGS

A. Restore pavement markings to match those existing in accordance with City of Houston standard specifications and details and Project Manager's requirements.

3.17 PROTECTION

A. Barricade pavement section to prevent use until concrete has attained minimum design strength. Cure barricade pavement section for minimum 72 hours before use. Do not open pavement to traffic until concrete is at least 10 days old. Pavement may be open to traffic earlier provided Contractor pays for testing and additional specimen once 7 day specified strength is obtained. Pavement may be opened when high early strength concrete is used meeting specified 72 hour strength.

B. High early strength concrete may be used to provide access at driveways, street intersections, esplanades and other locations approved by Project Manager.

C. On those sections of pavement to be opened to traffic, seal joints, clean pavement, and place earth against pavement edges before permitting use by traffic. Opening of pavement to traffic shall not relieve responsibility for Work.

D. Maintain concrete paving in good condition until completion of Work.

E. Repair defects by replacing concrete to full depth.

END OF SECTION

Section 02752

CONCRETE PAVEMENT JOINTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Joints for concrete paving; concrete sidewalks, concrete driveways, curbs, and curb and gutters.

B. Saw-cutting existing concrete or asphalt pavements for new joints.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment for street pavement expansion joints, with or without load transfer, is on linear foot basis.

2. Payment for horizontal dowels is on a unit price basis for each horizontal dowel.

3. No separate payment will be made for formed or sawed street pavement contraction joints and longitudinal weakened plane joints. Include payment in unit price for Concrete Paving.

4. No separate payment will be made for joints for Curb, Curb and Gutter, Saw-tooth Curb, Concrete Sidewalks, and Concrete Driveways. Include payment in unit price for Curb and Gutter, Concrete Sidewalks, and Concrete Driveways.

5. Payment will be made for Preformed Expansion Joints on a linear foot basis only when field conditions require that sidewalk be moved adjacent to existing concrete structure (i.e., street, back of curb, etc.).

6. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 REFERENCES

A. ASTM A 615 - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.

B. ASTM D 994 - Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type).

C. ASTM D 1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).

D. ASTM D 3405 - Standard Specification for Joint Sealants, Hot-Applied, for Concrete and Asphalt Pavements.

E. TxDOT Tex-525-C - Tests for Asphalt and Concrete Joint Sealers

1.04 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit product data for joint sealing compound and proposed sealing equipment for approval.

C. Submit samples of dowel cup, metal supports, and deformed metal strip for approval. Submit manufacturer's recommendation for placing sealant(s).

PART 2 PRODUCTS

2.01 BOARD EXPANSION JOINT MATERIAL

A. Filler board of selected stock. Use wood of density and type as follows:

1. Clear, all-heart cypress weighing no more than 40 pounds per cubic foot, after being oven dried to constant weight.

2. Clear, all-heart redwood weighing no more than 30 pounds per cubic foot, after being oven dried to constant weight.

2.02 PREFORMED EXPANSION JOINT MATERIAL

A. Bituminous fiber and bituminous mastic composition material conforming to ASTM D 994 and ASTM D 1751.

2.03 JOINT SEALING COMPOUND

A. Conform joint sealants to one of sealant classes described in this section.

B. Conform hot-poured rubber-asphalt compound to ASTM D 3405.

C. Two-component Synthetic Polymer.

1. Curing is to be by polymerization and not by evaporation of solvent or fluxing of harder particles.

2. Cure sufficiently at average temperature of 25 ∀ 1 C (77 ∀ 2 F) so as not to pick up under wheels of traffic in maximum three hours.

3. Performance requirements, when tested in accordance with TxDOT Tex-525-C, shall meet above curing times and requirements as follows:

Cold-Extruded and Cold-Pourable (Self-Leveling) Specifications	
Property	**Requirement**
Penetration, 25 C (77 F) 150 g Cone, 5 s, 0.1 mm (in.), maximum	130
Bond and Extension 50%, -29 C (-20 F), 3 cycles: X Dry Concrete Block X Steel blocks (Primed, if recommended by manufacturer) *Steel blocks shall be used when armor joints are specified	 Pass Pass
Flow at 70 C (158 F)	None
Water content % by mass, maximum	5.0
Resilience: X Original sample, % min. (cured) X Oven-aged at 70 C (158 F), % min.	 50 50
Cold-extruded material only - Cold Flow (10 minutes)	None

After bond and extension test, there shall be no evidence of cracking, separation or other opening that is over 3 millimeters (1/8 inch) deep in sealer or between sealer and test blocks.

4. Provide cold-extruded type for vertical or sloping joints.

5. Provide self-leveling type for horizontal joints.

D. Self-Leveling, Low Modulus Silicone or Polyurethane Sealant for Asphaltic Concrete and Portland Cement Concrete Joints. This shall be a single component self-leveling silicone or polyurethane material that is compatible with both asphalt and concrete pavements. The sealer shall not require a primer for bond; a backer rod shall be required which is compatible with the sealant; no reaction shall occur between rod and sealant.

When tested in accordance with TxDOT Tex-525-C, self-leveling sealant shall meet following requirements:

Self-Leveling, Low Modulus Silicone or Polyurethane Sealant	
Property	**Requirements**
Tack Free Time, 25 ∀ 1 C (77 ∀ 2 F), minutes	120 maximum
Nonvolatile content, % by mass	93 minimum
Tensile Strength and 24 Hour Extension Test: X Initial, 10-day cure, 25 ∀ 1 C (77 ∀ 2 F), kPa (psi) X After Water Immersion, kPa (psi) X After Heat Aging, kPa (psi) X After Cycling, -29 C (-20 F), 50%, 3 cycles, kPa (psi) X 24 Hour Extension	 X 21 to 69 (3 to 10) X 21 to 69 (3 to 10) X 21 to 69 (3 to 10) X 21 to 69 (3 to 10) X Pass (All Specimens) After 24 hours, there shall be no evidence of cracking, separation or other opening that is over 3 mm (1/8 in.) deep at any point in the sealer or between the sealer and test blocks.

2.04 LOAD TRANSMISSION DEVICES

A. Smooth, steel dowel bars conforming to ASTM A 615, Grade 60. When indicated on Drawings, encase one end of dowel bar in approved cap having inside diameter 1/16 inch greater than diameter of dowel bar.

B. Deformed steel tie bars conforming to ASTM A 615, Grade 60.

2.05 SUPPORTS FOR REINFORCING STEEL AND JOINT ASSEMBLY

A. Employ supports of approved shape and size that will secure reinforcing steel and joint assembly in correct position during placing and finishing of concrete. Space supports as directed by Project Manager.

PART 3 EXECUTION

3.01 PLACEMENT

A. When new Work is adjacent to existing concrete, place joints at same location as existing joints in adjacent pavement.

B. If limit of removal of existing concrete or asphalt pavement does not fall on existing joint, saw cut existing pavement minimum of 2 inches deep to provide straight, smooth joint surface without chipping, spalling or cracks.

3.02 CONSTRUCTION JOINTS

A. Place transverse construction joint wherever concrete placement must be stopped for more than 30 minutes. Place longitudinal construction joints at interior edges of pavement lanes using No. 6 deformed tie bars, 30 inches long and spaced 18 inches on centers.

3.03 EXPANSION JOINTS

A. Place 3/4 inch expansion joints at radius points of curb returns for cross street intersections, or as located in adjacent pavement but no further than 80 feet apart. Use no boards shorter than 6 feet. When pavement is 24 feet or narrower, use not more than 2 lengths of board. Secure pieces to form straight joint. Shape board filler accurately to cross section of concrete slab. Use load transmission devices of type and size shown on Drawings unless otherwise specified or shown as "No Load Transfer Device." Seal with joint sealing compound.

3.04 CONTRACTION JOINTS

A. Place contraction joints at same locations as in adjacent pavement or at spaces indicated on Drawings. Place smoothed, painted and oiled dowels accurately and normal to joint. Seal groove with joint sealing compound.

3.05 LONGITUDINAL WEAKENED PLANE JOINTS

A. Place longitudinal weakened plane joints at spaces indicated on Drawings. If more than 15 feet in width is poured, longitudinal joint must be saw cut. Seal groove with joint sealing compound.

3.06 SAWED JOINTS

A. Use sawed joints as alternate to contraction and weakened plane joints. Use circular cutter capable of cutting straight line groove minimum of 1/4 inch wide. Maintain depth of one quarter of pavement thickness. Commence sawing as soon as concrete has hardened sufficiently to permit cutting without chipping, spalling or tearing and prior to initiation of cracks. Once sawing has commenced, continue until completed. Make saw cut with one pass. Complete sawing within 24 hours of concrete placement. Saw joints at required spacing consecutively in sequence of concrete placement.

B. Concrete Saw: Provide sawing equipment adequate in power to complete sawing to required dimensions and within required time. Maintain ample supply of saw blades at work site during sawing operations. Maintain sawing equipment on job during concrete placement.

3.07 JOINTS FOR CURB, CURB AND GUTTER

A. Place 3/4 inch preformed expansion joints through curb and gutters at locations of expansion and contraction joints in pavement, at end of radius returns at street intersections and driveways, and at curb inlets. Maximum spacing shall be 120-foot centers.

3.08 JOINTS FOR CONCRETE SIDEWALKS

A. Provide 3/4 inch expansion joints conforming to ASTM A 1751 along and across sidewalk at back of curbs, at intersections with driveways, steps, and walls; and across walk at intervals not to exceed 36 feet. Provide expansion joint material conforming to ASTM D 994 for small radius curves and around fire hydrants and utility poles. Extend expansion joint material full depth of slab.

3.9 JOINTS FOR CONCRETE DRIVEWAYS

A. Provide 3/4-inch expansion joints conforming to ASTM D 1751 across driveway in line with street face of sidewalks, at existing concrete driveways, and along intersections with sidewalks and other structures. Extend expansion joint material full depth of slab.

3.10 JOINT SEALING

A. Seal joints only when surface and joints are dry, ambient temperature is above 50 degrees F and less than 85 degrees F and weather is not foggy or rainy.

B. Use joint sealing equipment in like new working condition throughout joint sealing operation, and be approved by Project Manager. Use concrete grooving machine or power-operated wire brush and other equipment such as plow, brooms, brushes, blowers or hydro or abrasive cleaning as required to produce satisfactory joints.

C. Clean joints of loose scale, dirt, dust and curing compound. The term joint includes wide joint spaces, expansion joints, dummy groove joints or cracks, either preformed or natural. Remove loose material from concrete surfaces adjacent to joints.

D. Fill joints neatly with joint sealer to depth shown. Pour sufficient joint sealer into joints so that, upon completion, surface of sealer within joint will be 1/4 inch above level of adjacent surface or at elevation as directed.

3.11 PROTECTION

A. Maintain joints in good condition until completion of Work.

B. Replace damaged joints material with new material as required by this Section.

END OF SECTION

Section 02754

CONCRETE DRIVEWAYS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Portland cement concrete driveways.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment for concrete driveways is on square foot basis, including excavation and stabilize subgrade.

2. No payment will be made for work in areas where driveway has been removed or replaced for Contractor's convenience.

3. Refer to Section 01270 - Measurement and Payment for unit price procedures.

Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for Work in this Section is included in total Stipulated Price.

RT 2 PRODUCTS

1 MATERIALS

A. Concrete: Conform to material and proportion requirements for concrete of Section 02751 - Concrete Paving.

B. Reinforcing Steel: Conform to material requirements for reinforcing steel of Section 02751 - Concrete Paving.

C. Preformed Expansion Joint Material: Conform to material requirements for preformed expansion joint material of Section 02752 - Concrete Pavement Joints.

D. Expansion Joint Filler: Conform to material requirements for expansion joint material of Section 02752 - Concrete Pavement Joints.

E. Subgrade Materials: Conform to subgrade material requirements of Section 02336 - Lime Stabilized Subgrade, Section 02337 - Lime/Fly-Ash Stabilized Subgrade, or Section 02338 - Portland Cement Stabilized Subgrade.

PART 3 EXECUTION

3.01 PREPARATION

A. Prepare subgrade in accordance with applicable portions of Section 02336 - Lime Stabilized Subgrade, Section 02337 - Lime/Fly-Ash Stabilized Subgrade, and Section 02338 - Portland Cement Stabilized Subgrade.

3.02 PLACEMENT

A. Place and finish concrete in accordance with applicable portions of Section 02751 - Concrete Paving.

3.03 JOINTS

A. Install joints in concrete driveway in accordance with Section 02752 - Concrete Pavement Joints.

3.04 CONCRETE CURING

A. Cure concrete driveway in accordance with Section 02753 - Concrete Pavement Curing.

3.05 PROTECTION

A. Conform to applicable requirements of Section 02753 - Concrete Pavement Curing.

END OF SECTION

Section 02761

COLORED CONCRETE FOR MEDIANS AND SIDEWALKS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Colored concrete for medians and sidewalks.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. No separate payment will be made for coloring agent under this Section. Include payment in unit price bid for concrete sidewalks, and concrete medians and directional islands.

2. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit product data for proposed coloring agent.

PART 2 PRODUCTS

2.01 MATERIALS

A. Coloring Agent: Provide dry-shake color hardener consisting of quartz-silica mixture of finely-graded, non-metallic aggregates, plasticizer and cement binder for producing color as shown on Drawings.

B. Concrete: Conform to material and proportion requirements of Section 02751 - Concrete Paving.

PART 3 EXECUTION

3.01 CONCRETE MEDIANS

A. Install concrete medians in accordance with requirements of Part 3 of Section 02772 - Concrete Medians and Directional Islands with addition of procedure for application of coloring agent as required by Paragraph 3.03, Coloring Agent.

3.02 CONCRETE SIDEWALKS

A. Install concrete sidewalks in accordance with requirements of Part 3 of Section 02775 - Concrete Sidewalks with addition of procedure for application of coloring agent as required by Paragraph 3.03, Coloring Agent.

3.03 COLORING AGENT

A. Apply coloring agent on newly finished concrete surface as soon as job conditions permit, but in no event later than 2 hours after concrete is placed, at rate recommended by manufacturer and approved by Project Manager.

B. Apply color hardener uniformly to surface by dry-shake method when no excess moisture shows at surface of concrete substrate, but while concrete is still plastic throughout. Do not sprinkle or otherwise add water to surface during application or finishing. Necessary moisture for color hardener shall come from concrete substrate in order to develop proper bond and assure adequate density for color-hardened surface.

C. First shake shall consume two-thirds of material. Withhold one-third for second shake and final touch-up. After first shake, float surface thoroughly by mechanical or hand methods. Do not trowel surface between first and second shakes.

D. Apply second shake evenly, then float and trowel surface. Retain small quantity of material from second shake for touching up nonuniform or weak-toned areas. Minimize hard troweling and use consistent finishing practices to ensure uniformity of color.

END OF SECTION

Section 02762

BLAST CLEANING OF PAVEMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Removal of existing pavement markings.

B. Preparation of pavement surfaces for new pavement markings.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment for blast cleaning of roadway lanes is on linear foot basis for each width, measured in place.

2. Payment for blast cleaning of symbols and legends is on square foot basis, measured in place.

3. Payment for removal of raised pavement markings, all types, is on a lump sum basis.

4. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit description and characteristics of proposed blasting medium and equipment for approval.

PART 2 PRODUCTS

2.01 MATERIALS

A. Blasting Media: Quality commercial product capable of producing specified surface cleanliness without deposition of deleterious materials on cleaned pavement surface. Do not use high silica content sand that may result in high levels of free crystalline silica dust particles as blasting agent.

2.02 EQUIPMENT

A. Equipment shall be power driven and of sufficient capacity to remove pavement markings. Equipment shall utilize moisture and oil traps of sufficient capacity to remove contaminants from air and prevent deposition of moisture, oil, or other contaminants on pavement surface.

PART 3 EXECUTION

3.01 REMOVAL OF EXISTING MARKINGS

A. Remove pavement markings where necessary to prevent driver confusion, or where indicated on Drawings. Included are areas where it will be necessary for drivers to cross existing markings which they would not normally cross. Remove or obliterate markings. Do not damage pavement surface.

3.02 CLEANING FOR PLACEMENT OF MARKERS

A. Remove old pavement markings, loose material, and other contaminants deleterious to adhesion of new pavement markings to be placed. On Portland cement concrete pavement, minimize over blasting to prevent damage to pavement surface. Small particles of tightly adhering existing pavement markings may remain when complete removal will result in pavement surface damage.

B. Follow manufacturer's written instructions for proper cleaning of pavement surfaces to receive pavement marking.

END OF SECTION

Section 02765

TEMPORARY AND REMOVABLE REFLECTORIZED PAVEMENT MARKINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary retroreflective preformed pavement markings.

B. Wet retroreflective markers.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment for temporary pavement markings is on linear foot basis, for each class, measured in place.

2. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 REFERENCES

A. ASTM D 1056 - Test Method for Flexible Cellular Materials Sponge or Expanded Rubber

B. ASTM D 4061 - Standard Test Method for Retroflectance of Horizontal Coatings.

C. ASTM E 1347 - Standard Test Method for Color and Color-Difference Measurement by Tristimulus (Filter) Colorimetry.

D. ASTM E 303 - Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester.

E. ASTM E 808 - Standard Practice for Describing Retroreflection.

F. ASTM E 809 - Standard Practice for Measuring Photometric Characteristics of Retroreflectors.

1.04 TEMPORARY PAVEMENT MARKING DEFINITIONS

A. Class I - Temporary preformed pavement markings suitable for longitudinal and word and symbol markings where removability will be required.

B. Class II - Temporary non-removable preformed pavement markings suitable for overlay lane lines, edge lines, and channelizing lines where pavement will be resurfaced.

C. Class III - Class I markers with wet reflective markers added every 8 feet.

D. Class IV - Class II markers with wet reflective markers added every 8 feet.

1.05 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit manufacturer's product data for each proposed class of marking material and installation instructions for approval. Include certificate by manufacturer that each class of marking conforms to requirements of this Section.

C. Submit details of manufacturer's removal and replacement policy for each class of marker.

1.06 DELIVERY AND STORAGE

A. Deliver preformed plastic marking material in rolls or strips.

B. Store material in cool dry conditions as recommended by manufacturer until application.

PART 2 PRODUCTS

2.01 PREFORMED MARKINGS

A. Retroreflective Preformed Markings: White or yellow retroreflective tape on conformable backing with pigments conforming to standard highway colors. Incorporate glass beads in film and bond reflective layer of beads to top surface of film. Adhere beads so that they cannot be easily removed by scratching with thumbnail.

B. Preformed marking shall be precoated with pressure sensitive adhesive and shall have demonstrated ability to adhere to roadways under climatic and traffic conditions normally encountered in construction work zone when properly applied.

C. Class I markings shall be removable from Portland cement and asphaltic concrete pavements intact, or in large pieces, at temperatures above 40 degrees F without use of heat, solvents,

grinding, or blast cleaning. Marking film shall be removable after exposure to following minimum traffic exposure when tested on transverse test decks with rolling traffic:

1. Time in Place (days) 632
2. ADT per lane (23% trucks, 3.5 axles/unit) 9,000
3. Minimum Axle Hits 13,000,000

D. Quality performance characteristics:

	CLASS I		CLASS II		TEST METHOD
	White	Yellow	White	Yellow	
1. Init. Retroreflectance (mcd x ft^{-2} x fc^{-1}), min.					
* @ 86.0E, 0.2E	1770	1310	1360	820	ASTM D 4061
* @ 86.5E, 1.0E	750	450	500	350	
2. Daytime Reflectance Factor "Y" %, min.	65	36	65	36	ASTM E 1347
3. Init. Skid Resistance, Avg. BPN	50		35		ASTM E 303
4. Refractive Index of Beads, min.	1.9		1.9		Liquid Immersion
5. Thickness, without adhesive, mils, min.	40		9		Caliper Gauge

* (Entrance Angle, Observation Angle).

2.02 RAISED WET REFLECTIVE MARKERS

A. Raised Markers: Expanded rubber extrusions capable of being elastically compressed and deflected when impacted by rotating vehicle tires. Marker body shall have following properties when tested in accordance with ASTM D 1056:

1. Compression deflection: less than 16 psi at 25 degrees deflection.
2. Oven aged compression deflection: +18 percent change
3. Compress set low: 10 percent.
4. Water absorption: less than 9 percent.

5. Density: 24 pounds per foot

B. Pre-coat markers with pressure sensitive adhesive capable of holding markers to top of preformed marking film.

C. Markers shall have enclosed retroreflective lens sheeting elements attached to marker bodies with pressure sensitive adhesive.

1. Retroreflective lenses elements shall have following initial minimum reflectance when measured in accordance with ASTM E 809:

Color	White	Yellow	White	Yellow	White	Yellow	White	Yellow
Observation Angle	0.2E		0.5E		1.0E		1.5E	
Coeff. of Luminous Intensity, R (cd x fc^{-1})	1.00	0.60	0.40	0.24	0.19	0.11	0.14	0.08

Notes: a. Test at entrance angle (Beta 2 horizontal entrance component described in ASTM E 808) of -4 degrees measured from axis perpendicular to top edge of marker when viewed from above.

b. Angle formed by reflective surface and base of marker shall be between 75 degrees and 90 degrees prior to measurement.

2. Marker reflective elements shall be visible at night, to motorists with low beam headlights, under following conditions:

a. Dry conditions: 1500 feet

b. Rainfall at rate of 1 inch per hour: 1000 feet

c. Rainfall at rate of 8 inches per hour: 250 feet

PART 3 EXECUTION

3.01 INSTALLATION

A. Apply markings to clean dry surfaces in accordance with manufacturer's recommendations at locations indicated on Drawings, or as directed by City Engineer.

B. Place markings on each paving lift that is to be opened to traffic prior to end of each day's work.

C. Maintain markings, and replace as needed, until they are covered with subsequent paving courses or replaced by permanent markings on final lifts.

3.02 REMOVAL

A. Remove and obliterate markings on existing and final lifts used for redirecting traffic during construction. When blast cleaning is required, comply with requirements of Section 02762 - Blast Cleaning of Pavement.

END OF SECTION

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Section 02767

THERMOPLASTIC PAVEMENT MARKINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. This item includes white thermoplastic pavement markings for crosswalks, stop lines, lane lines, and other types of traffic controls.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment for thermoplastic pavement markings is on a linear foot basis.

2. Payment for words and symbols is for each word or symbol.

3. Payment for railroad crossing markings, to include stop line and two transverse lines, is for each crossing marked.

   a. For multi-lane approaches to railroad crossings, the solid 8-inch lane lines will be measured in linear feet, complete in place.

4. Unit price bid for each item full compensation for furnishing and placing all materials, and for all manipulations, including blast cleaning, surface sealing and priming, labor, tools, equipment, and incidentals necessary to complete Work in accordance with drawings and specifications.

5. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). When Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 REFERENCES

A. ASTM E 28 - Standard Test Methods for Softening Point of Resins Derived from Naval Stores by Ring-and-Ball Apparatus.

B. ASTM G 152 - Standard Practice for Operating Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials.

C. ASTM G 153 - Standard Practice for Operating Enclosed Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials.

D. TxDOT Tex-822-B - Determining Refraction Index of Glass Beads.

E. TxDOT Tex-826-B - Water Absorption Test of Beads.

F. TxDOT Tex-839-B - Determining Color in Reflective Material.

G. TxDOT Tex-851-B - Evaluating the Abrasion Resistance of Pavement Marking Material.

1.04 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Product Data: Submit Manufacturer's literature indicating product specifications and instructions for handling, installation, and curing. Include performance test data sheets for each product.

C. Submit material supplier's certification of compliance with specifications.

D. Submit proposed methods, equipment, and sequence of operation for layout, surface preparation, and installation.

E. Chemical Analysis: Submit infrared analysis of Type B resins for each manufacturer used.

PART 2 PRODUCTS

2.01 MATERIAL REQUIREMENTS

A. General Requirements. Especially compound Type B thermoplastic pavement marking material for use on either asphaltic or Portland cement concrete surfaces. Clearly mark each container to indicate color, weight, type of material, and lot or batch number (consider lot or batch as each individual mix or blend that produces finished product ready for use). Package material in either suitable corrugated containers or thermal degradable plastic bags to avoid sticking during shipment or storage.

B. Thermoplastic markings shall not be slippery when wet, nor exhibit tacky, exposed surface. Cold ductility of material shall permit normal road surface expansion and contraction without chipping or cracking. Markings shall retain their original color, dimensions, and placement under normal traffic conditions at road surface temperatures of 158 F and below.

C. Prime and filler pigments shall pass U.S. Standard sieve No. 230 (0.0024 inch opening) when washed free of resins by solvent washing, and meet following specific requirements for each pigment.

1. Prime Pigments: White pigment shall be Rutile Titanium Dioxide.

2. Filler Pigment: Filler pigment shall be calcium carbonate, 95% purity.

D. Binder

1. Type B - Alkyd: Use binder consisting of mixture of resins, at least one of which is solid at room temperature, and high boiling point plasticizers. At least one-third of binder compositions shall be a maleic-modified glyceryl ester 012 Rosin and shall be no less than 8% by weight of entire material formulation.

F. Glass Traffic Beads: the total silica used in formulation shall be in form of glass traffic beads meeting the following requirements:

1. Manufacture. Use glass traffic beads having the following characteristics:

a. Manufactured from glass;

b. Spherical in shape;

c. Free of sharp angular particles;

d. Free of particles showing milkiness, surface scoring, or surface scratching;

e. Water white in color.

2. Contaminants. Use glass traffic beads having the following characteristics:

a. Containing less than 1/4 of 1% moisture by weight;

b. Free of trash, dirt, etc;

c. Showing no evidence of objectionable static electricity when flowing through regular traffic-bead dispenser.

3. Gradation:

a. Sieve Analysis. Glass traffic beads shall meet following gradation requirements:

Openings U.S. Standard Sieves	Percent Passing
No. 20	95 - 100
No. 30	80 - 95
No. 50	15 - 35
No. 100	0 - 4

b. Irregular Particles: Glass traffic beads, retained on screen used to determine gradation requirements, shall not contain more than 30% (by weight) irregular particles.

4. Index of Refraction: Glass traffic beads, when tested by TxDOT Tex-822-B, using liquid immersion method at 25 C (77 F) shall show index of refraction within range of 1.50 to 1.53.

5. Wetting. Use glass traffic beads capable of being readily wet with water when tested in accordance with TxDOT Tex-826-B.

6. Stability. Use glass traffic beads showing no tendency toward decomposition, surface etching, change in retro reflective characteristics, or change in color after:

a. One hour exposure to concentrated hydrochloric acid at 25 C (77 F);

b. Twenty-four-hour exposure to weak alkali;

c. One hundred hours of Weather-O-Meter exposure, in accordance with ASTM G 152 and ASTM G 153.

2.02 FINISHED PRODUCT REQUIREMENTS

A. Physical Characteristics. Finished thermoplastic pavement markings material shall be free flowing granular material, unless otherwise shown on Drawings. Material shall remain in free flowing state in storage at temperatures of 100 F or less. Materials shall be readily sprayed through nozzles commonly used on thermoplastic spray equipment at temperatures between 205 and 218 C (401 to 425 F).

B. Toxicity. At temperatures up to and including 230 C (446 F), materials shall not give off fumes which are toxic and otherwise injurious to persons, animals, or property.

C. Material shall not break down or deteriorate when held at 205 C (401 F) for 4 hours.

D. Temperature versus viscosity characteristics of material in plastic state shall remain constant throughout up to four reheatings at 205 C (401 F) and from batch to batch.

E. Material shall not be adversely altered by contact with sodium chloride, calcium chloride, or other similar chemicals on, or used on, roadway surface; by contact with oil content of pavement materials, or by contact from oil dropping from traffic.

F. Softening Point. After heating thermoplastic materials for two hours at 204 C (400 F) Type B Alkyd material shall have softening point greater than 90 C (194 F) when tested in accordance with ASTM E 28-58T - Ball and Ring Method.

G. Color. CIE chromaticity coordinates of materials, when determined in accordance with TxDOT Tex-839-B, shall fall within area having following corner points and shall meet following luminosity requirements.

CIE CHROMATICITY COORDINATE CORNER POINTS					
	Point 1	**Point 2**	**Point 3**	**Point 4**	
Color	X Y	X Y	X Y	X Y	Luminosity
White {tc \12 "White }	0.290 - 0.315	0.310 - 0.295	0.350 - 0.340	0.330 - .360	Min 65

Material shall meet above specified color requirements, before and after 70 hours of exposure in Weather-O-Meter (Atlas, Sunshine Type) fitted with 18 - 102 (18 minutes of sunshine and rain and 102 minutes of sunshine) cyclic gear. Prepare panels for testing with material as supplied.

H. Abrasion. Thermoplastic pavement marking materials shall have loss between 4.0 and 12.0 grams when tested for abrasion in accordance with TxDOT Tex-851-B. Test according to steps 1 through 8 of procedure utilizing following test parameters:

Test distance: 5 inches
Blast pressure: 40 psi
Sample angle: 10 degrees and 122 gram blast media
Blast Media: 1200 grams

I. Uniformity. Manufacture material so that, when sampled in accordance with TxDOT Manual of Testing Procedures, 100-gram sample will be representative of batch or lot of material.

J. When applied 1/8 inch thick, setting time shall not exceed characteristic straight-line curve, lower limit of which is four minutes at 59 F road surface temperatures, and upper limit of which is ten minutes at 90 F road surface temperature. Both temperatures are to be measured at maximum relative humidity of 90%.

2.03 FORMULAE

A. Type B - Alkyd Thermoplastic Marking:

	Pounds
Binder	18 - 23
Titanium Dioxide	12 - 15
Calcium Carbonate	20 - 42
Glass Traffic Beads	30 - 45
TOTAL	100

PART 3 EXECUTION

3.01 GENERAL

A. Spray apply pavement marking or extrude hot to pavement surface unless application method is specified on Drawings.

B. Provide continuous mixing and agitation of material. Provide clean, square, marking ends. Do not use pans, aprons, or similar appliances which die overruns.

C. Provide thermometer capable of measuring temperature of pavement marking material.

D. Use automatic bead dispenser attached to pavement marking equipment in manner that beads are dispensed uniformly and almost instantly upon marking as marking is being applied to road surface. Rate of application shall be sufficient to achieve retro-directive reflective characteristics specified. Provide automatic cut-off control for bead dispenser, synchronized with cut-off of pavement marking equipment.

E. Place markings in accordance with approved traffic control plan so that minimal interruption to traffic flow is achieved. Protect newly-installed pavement markings from damage by traffic.

F. Apply pavement markings onto clean, dry pavement having road surface temperature above 60 F for Portland cement concrete surface and above 50 F for asphaltic surface. When pavement marking application is by spray and operations cease for five or more minutes, flush spray head by spraying pavement marking material into pan or similar container until material is proper temperature for application.

G. Use markings that are completely reflectorized internally and externally.

H. Use crew experienced in work of installing pavement markings and supply all equipment and materials necessary for placement of pavement markings.

I. Apply material within temperature limits recommended by manufacturer.

J. Prior to placement of thermoplastic material, properly prepare pavement with primer.

3.02 LAYOUT

A. Place pavement markings in proper alignment with guidelines established on roadway. Do not deviate from alignment established greater than two inches. Do not deviate in alignment of marking being placed greater than one inch per 200 feet of marking and do not deviate abruption.

B. Place additional markings required to achieve alignment specified throughout both straight and horizontally curved sections of roadway. Additional markings placed on roadway for alignment purposes shall be temporary in nature and shall not establish permanent marking on roadway. Materials used for alignment markings and equipment used to place markings shall be approved by Engineer.

3.03 SURFACE PREPARATION

A. Clean pavement by sandblasting and prepare in accordance with recommendations of thermoplastic material manufacturer and to satisfaction of Engineer, prior to placement of markings. Surface scarification can be used with prior approval of Engineer.

B. Use cleaning methods approved by Engineer that completely remove contaminants, loose materials, and conditions deleterious to proper adhesion. Do not clean Portland cement concrete surfaces by grinding.

C. Prepare Portland cement concrete surfaces further after cleaning by completely sealing with epoxy or methyl methacrylate sealer, as recommended by thermoplastic material manufacturer. Placed sealer sufficiently in advance of thermoplastic to allow release of all solvents.

D. Prime asphaltic surfaces with sealer, as recommended by thermoplastic material manufacturer based on surface conditions. Include adhesive or adhesion promoter when asphaltic surfaces exhibit polished aggregate.

3.04. INSTALLATION

A. Install in widths of 4, 6, 8, or 12 inches, or shaped otherwise as shown on Drawings. Tolerances in width shall not exceed 1/8 inch. Tolerance shall not exceed 1/4 inch in case of undulation in pavement.

B. Material shall not prohibit adhesion of other thermoplastic markings if, at some future time, new markings are placed over existing materials.

C. Maintain uniform thickness of each pavement marking. Minimum thickness of markings, as measured above plane formed by pavement surface, shall not be less than 1/8 inch (125 mils), unless shown otherwise on Drawings. Maximum thickness shall be 3/16 inch. Supply device, approved by Engineer, to measure thickness of applied extruded markings.

3.05 TESTING

A. Maintain uniform cross section, density, quality, and thickness for markings. Markings shall be uniform throughout their thickness. Use applied markings that are 95% free of holes and voids, and free of blisters for minimum of 60 days after application.

END OF SECTION

Section 02771

CURB, CURB AND GUTTER, AND HEADERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Reinforced concrete curb, reinforced monolithic concrete curb and gutter, and mountable curb.

B. Paving headers and railroad headers poured monolithically with concrete base or pavement.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment for curbs, curbs and gutter, and esplanade curbs is on linear foot basis measured along face of curb.

2. Payment for 3 foot concrete valley gutter is on a linear foot basis.

3. Payment for mountable concrete curbs is on a square foot basis.

4. Payment for concrete paving headers and concrete railroad headers is on a linear foot basis.

5. Payment for headers is on linear foot basis measured between lips of gutters adjacent to concrete base and measured between backs of curbs adjacent to concrete pavement.

6. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit details of proposed form work for approval.

PART 2 PRODUCTS

2.01 MATERIALS

A. Concrete: Conform to material and proportion requirements for concrete of Section 02751 - Concrete Paving.

B. Reinforcing Steel: Conform to material requirements for welded wire fabric of Section 02751 - Concrete Paving.

C. Grout: Nonmetallic, nonshrink grout containing no chloride producing agents conforming to following requirements.

1. Compressive strength

   a. at 7 days: 3500 psi

   b. at 28 days: 8000 psi

2. Initial set time: 45 minutes

3. Final set time: 1.5 hours

D. Preformed Expansion Joint Material: Conform to material requirements for preformed expansion joint material of Section 02752 - Concrete Pavement Joints.

E. Expansion Joint Filler: Conform to material requirements for expansion joint filler of Section 02752 - Concrete Pavement Joints.

F. Mortar: Mortar finish composed of one part Portland cement and 1 1/2 parts of fine aggregate. Use only when approved by Project Manager.

PART 3 EXECUTION

3.01 PREPARATION

A. Prepare subgrade in accordance with applicable portions of sections on excavation and fill, embankment, and subgrade and roadbed.

3.02 PLACEMENT

A. Guideline: Set to follow top line of curb. Attach indicator to provide constant comparison between top of curb and guideline. Ensure flow lines for monolithic curb and gutters conform to slopes indicated on Drawings.

B. Forms: Brace to maintain position during pour. Use metal templates cut to section shown on Drawings.

C. Reinforcement: Secure in position so that steel will remain in place throughout placement. Reinforcing steel shall remain at approximate center of base or pavement as indicated on Drawings.

D. Joints: Place in accordance with Section 02752 - Concrete Pavement Joints. Place dummy groove joints at to match concrete pavement joints at right angles to curb lines. Cut dummy grooves 1/4 inch deep using approved edging tool.

E. Place concrete in forms to required depth. Consolidate thoroughly. Do not permit rock pockets in form. Entirely cover top surfaces with mortar.

3.03 MANUAL FINISHING

A. After concrete is in place, remove front curb forms. Form exposed portions of curb, and of curb and gutter, using mule which conforms to curb shape, as shown on Drawings.

B. Thin coat of mortar may be worked into exposed face of curb using mule and two-handled wooden darby at least 3 feet long.

C. Before applying final finish move 10 foot straightedge across gutter and up curb to back form of curb. Repeat until curb and gutter are true to grade and section. Lap straightedge every 5 feet.

D. Steel trowel finish surfaces to smooth, even finish. Make face of finished curb true and straight.

E. Edge outer edge of gutter with 1/4 inch edger. Finish edges with tool having 1/4 inch radius.

F. Finish visible surfaces and edges of finished curb and gutter free from blemishes, form marks and tool marks. Finished curb or curb and gutter shall have uniform color, shape and appearance.

3.04 MECHANICAL FINISHING

A. Mechanical curb forming and finishing machines may be used instead of, or in conjunction with, previously described methods, when approved by Project Manager. Use of mechanical methods shall provide specified curb design and finish.

3.05 CURING

A. Immediately after finishing operations, cure exposed surfaces of curbs and gutters in accordance with Section 02753 - Concrete Pavement Curing.

3.06 TOLERANCES

A. Top surfaces of curb and gutter shall have uniform width and shall be free from humps, sags or other irregularities. Surfaces of curb top, curb face and gutter shall not vary more than 1/8 inch from edge of straightedge laid along them, except at grade changes.

3.07 PROTECTION

A. Maintain curbs and gutters in good condition until completion of Work.

B. Replace damaged curbs and gutters to comply with this Section.

END OF SECTION

Section 02772

CONCRETE MEDIANS AND DIRECTIONAL ISLANDS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Portland cement concrete medians and directional islands.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment for concrete medians and directional islands is on square yard basis measured from back of curbs.

3. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

PART 2 PRODUCTS

2.01 MATERIALS

A. Concrete: Conform to material and proportion requirements for concrete of Section 02751 - Concrete Paving.

B. Reinforcing Steel: Conform to material requirements for welded wire fabric of Section 02751 - Concrete Paving.

C. Preformed Expansion Joint Material: Conform to material requirements for preformed expansion joint material of Section 02752 - Concrete Pavement Joints.

D. Expansion Joint Filler: Conform to material requirements for expansion joint filler of Section 02752 - Concrete Pavement Joints.

E. Subgrade Materials: Conform to subgrade material requirements of Section 02336 - Lime Stabilized Subgrade, Section 02337 - Lime/Fly-Ash Stabilized Subgrade and Section 02338 - Portland Cement Stabilized Subgrade.

PART 3 EXECUTION

3.01 SUBGRADE

A. Prepare subgrade in accordance with applicable portions of sections on excavation and fill and embankment. Section 02336 - Lime Stabilized Subgrade, Section 02337 - Lime/Fly-Ash Stabilized Subgrade and Section 02338 - Portland Cement Stabilized Subgrade.

3.02 PLACEMENT OF CONCRETE

A. Place and finish concrete in accordance with applicable portions of Section 02751 - Concrete Paving.

3.03 JOINTS

A. Install joints in accordance with Section 02752 - Concrete Pavement Joints.

3.04 CONCRETE CURING

A. Cure concrete in accordance with Section 02753 - Concrete Pavement Curing.

3.05 PROTECTION

A. Maintain concrete medians and directional islands in good condition until completion of work.

B. Replace damaged concrete medians and directional islands to comply with this Section.

END OF SECTION

Section 02775

CONCRETE SIDEWALKS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Reinforced concrete sidewalks.

B. Wheelchair ramps.

C. Reinforced slope paving.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment for concrete sidewalks is on square foot basis.

2. No payment will be made for work outside these limits or in areas where driveway has been removed or replaced for Contractor's convenience.

3. Payment for wheelchair ramps of each type specified is on square foot basis. Removal and replacement of existing sidewalk, curb or curb and gutter and saw-cutting is paid by unit cost for each item. Sodding will be paid one foot on each side of sidewalk unless otherwise noted. Staining of wheelchair ramps is included in cost of ramp.

4. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 REFERENCES

A. ASTM C 31 - Standard Practice for Making and Curing Concrete Test Specimens in Field.

B. ASTM C 39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.

C. ASTM C 42 - Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.

D. ASTM C 138 - Standard Test Method for Unit Weight, Yield, and Air Content (Gravimetric) of Concrete.

E. ASTM C 143 - Standard Test Method for Slump of Hydraulic Cement Concrete.

F. ASTM C 172 - Standard Practice for Sampling Freshly Mixed Concrete.

G. ASTM D 698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3 (600 kN-m/m^3).

H. Texas Accessibility Standards of Architectural Barriers Act, Article 9102, Texas Civil Statues.

1.04 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit certified testing results and certificates of compliance.

PART 2 PRODUCTS

2.01 MATERIALS

A. Concrete: Conform to material and proportion requirements for concrete of Section 02751 - Concrete Paving.

B. Reinforcing Steel: Conform to material requirements of Section 02751 - Concrete Paving for reinforcing steel. Use No. 3 reinforcing bars.

C. Preformed Expansion Joint Material: Conform to material requirements for preformed expansion joint material of Section 02752 - Concrete Pavement Joints.

D. Expansion Joint Filler: Conform to material requirements for expansion joint material of Section 02752 - Concrete Pavement Joints.

E. Forms: Use straight, unwarped wood or metal forms with nominal depth equal to or greater than proposed sidewalk thickness. The use of 2 inch by 4 inch lumber as forms will not be allowed.

F. Sand Bed: Conform to material requirements for bank run sand of Section 02320 - Utility Backfill Materials.

G. Sodding: Conform to material requirements for sodding of Section 02922 - Sodding.

H. Coloring for wheelchair ramps: Conform to material requirements for colored concrete of Section 02761 - Colored Concrete for Medians and Sidewalks. Color shall be Brick Red or as shown on the drawings.

PART 3 EXECUTION

3.01 REPLACEMENT

A. Replace sidewalks and slope paving which are removed or damaged during construction with thickness and width equivalent to one removed or damaged, unless otherwise shown on Drawings. Finish surface (exposed aggregate, brick pavers, etc.) to match existing sidewalk.

B. Provide replaced and new sidewalks with wheelchair ramps when sidewalk intersects curb at street or driveway.

3.02 PREPARATION

A. Identify and protect utilities which are to remain.

B. Protect living trees, other plant growth, and features designated to remain.

C. Conduct clearing and grubbing operations in accordance with Section 02233 - Clearing and Grubbing.

D. Excavate subgrade 6 inches beyond outside lines of sidewalk. Shape to line, grade and cross section. For soils with plasticity index above 40 percent, stabilize soil with lime in accordance with Section 02336 – Lime-Stabilized Subgrade. Compact subgrade to minimum of 90 percent maximum dry density at optimum to 3 percent above optimum moisture content, as determined by ASTM D 698.

E. Immediately after subgrade is prepared, cover with compacted sand bed to depth as shown on Drawings. Lay concrete when sand is moist but not saturated.

3.03 PLACEMENT

A. Setting Forms: Straight, unwarped wood or metal forms with nominal depth equal to or greater than proposed sidewalk thickness. Use of 2 by 4's as forms will not be allowed. Securely stake forms to line and grade. Maintain position during concrete placement.

B. Reinforcement:

1. Install reinforcing bars.

2. Install reinforcing steel as shown on the drawings. Lay longitudinal bars in walk

continuously, except through expansion joints.

3. Use sufficient number of chairs to support reinforcement in manner to maintain reinforcement in center of slab vertically during placement.

4. Drill dowels into existing paving, sidewalk and driveways, secure with epoxy, and provide headers as required.

5. Use sufficient number of chairs for steel reinforcement bars to maintain position of bars within allowable tolerances. Place reinforcement as shown on Drawings. In plane of steel parallel to nearest surface of concrete, bars shall not vary from plan placement by more than 1/12 of spacing between bars. In plane of steel perpendicular to nearest surface of concrete, bars shall not vary from plan placement by more than 1/4 inch.

C. Expansion Joints: Install expansion joints with load transfer units in accordance with Section 02752 - Concrete Pavement Joints.

E. Place concrete in forms to specified depth and tamp thoroughly with "jitterbug" tamp, or other acceptable method. Bring mortar to surface.

F. Strike off to smooth finish with wood strike board. Finish smoothly with wood hand float. Brush across sidewalk lightly with fine-haired brush.

G. Apply coating to wheelchair ramp with contrasting color in accordance with Section 02761 - Colored Concrete for Medians and Sidewalks.

H. Unless otherwise indicated on Drawings, mark off sidewalk joints 1/8 inch deep, at spacing equal to width of walk. Use joint tool equal in width to edging tool.

I. Finish edges with tool having 1/4 inch radius.

J. After concrete has set sufficiently, refill space along sides of sidewalk to one-inch from top of walk with suitable material. Tamp until firm and solid, place sod as applicable. Dispose of excess material in accordance with Section 01576 - Waste Material Disposal. Repair driveways and parking lots damaged by sidewalk excavation in accordance with Section 02951 - Pavement Repair and Resurfacing.

3.04 CURING

A. Conform to requirements of Section 02753 - Concrete Pavement Curing.

3.05 FIELD QUALITY CONTROL

A. Testing will be performed under provisions of Section 01454 - Testing Laboratory Services.

B. Compressive Strength Test Specimens: Four test specimens for compressive strength test will be made in accordance with ASTM C 31 for each 30 cubic yards or less of sidewalk that is placed in one day. Two specimens will be tested at 7 days. Remaining two specimens will be tested at 28 days. Specimens will be tested in accordance with ASTM C 39. Minimum compressive strength: 2500 psi at 7 days and 3000 psi at 28 days.

C. Yield test for cement content per cubic yard of concrete will be made in accordance with ASTM C 138. When cement content is found to be less than that specified per cubic yard, reduce batch weights until amount of cement per cubic yard of concrete conforms to requirements.

D. If the Contractor places concrete without notifying the laboratory, the City will have the concrete tested by means of core test as specified in ASTM C 42. When concrete does not meet specification, cost of test will be deducted from payment.

E. Sampling of fresh concrete shall be in accordance with ASTM C 172.

F. Take slump tests when cylinders are made and when concrete slump appears excessive.

G. Concrete shall be acceptable when average of two 28 day compression tests is equal to or greater than minimum 28 day strength specified.

H. If either of two tests on field samples is less than average of two tests by more than 10 percent, that entire test shall be considered erratic and not indicative of concrete strength. Core samples will be required of in-place concrete in question.

I. If 28 day laboratory test indicates that concrete of low strength has been placed, test concrete in question by taking cores as directed by Project Manager. Take and test at least three representative cores as specified in ASTM C 42 and deduct cost from payment due.

3.06 NONCONFORMING CONCRETE

A. Remove and replace areas that fail compressive strength tests, with concrete of thickness shown on Drawings.

B. Replace nonconforming sections at no additional cost to City.

3.07 PROTECTION

A. Maintain newly place concrete in good condition until completion of Work.

B. Replace damaged areas.

END OF SECTION

Section 02811

LANDSCAPE IRRIGATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Pipe and fittings, valves, sprinkler heads, and accessories.

B. Control system.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment for landscape irrigation will be made under this Section on lump sum basis.

2. Payment for capped irrigation sleeve, for connection to future system expansion, is on linear foot basis.

3. Refer to Section 01270 - Measurement and Payment.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 REFERENCES

A. ANSI/ASTM D 2564 - Standard Specification for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping Systems.

B. ASTM D 2241 - Standard Specification for Poly (Vinyl Chloride) (PVC) Pressure - Rated Pipe (SDR Series).

1.04 SYSTEM DESCRIPTION

A. Electric solenoid controlled underground irrigation system.

B. Source Power: 120 volt

1.05 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

1.06 QUALIFICATIONS

A. Manufacturer: Company specializing in performing work of this section with minimum three years documented experience.

1.07 REGULATORY REQUIREMENTS

A. Conform to applicable code for piping and component requirements.

1.08 PRE-INSTALLATION CONFERENCE

A. Convene one week prior to commencing work of this Section.

1.09 COORDINATION

A. Coordinate work with site landscape grading and delivery of plant life.

1.10 EXTRA MATERIALS

A. Furnish extra components under provisions of Section 00410 - Bid Form.

1. Two sprinkler heads of each type and size.
2. Two valve box keys.
3. Two wrenches for each type head core and for removing and installing each type head.

PART 2 PRODUCTS

2.01 PIPE MATERIALS

A. Pipe shall be continuously and permanently imprinted with manufacturer's name, size, schedules, type, and working pressure.

B. PVC Pipe ASTM D 2241; 200 psi pressure rated upstream from controls, 160 psi downstream; solvent welded sockets rubber gasket joints.

C. Fittings: Type and style of connection to match pipe.

D. Solvent Cement: ANSI/ASTM D 2564 for PVC pipe and fittings.

E. Sleeve material: 4 inch schedule 40 PVC.

2.02 OUTLETS

A. Manufacturer's or approved equal:

1. Rainbird Model 1804.

2. Rainbird Model 1812

3. Hunter Model PGP

B. Rotary type sprinkler head: Pop-up type with screens; fully adjustable for flow and pressure; size as indicated; with letter or symbol designating degree of arc and arrow indicating center of spray pattern.

C. Spray Type Sprinkler Head: Pop-up head with full circle, half circle, third circle, quarter circle, and square pattern.

2.03 VALVES

A. Manufacturer's or approved equal:

1. Rainbird Model PEB Series

B. Gate Valves: Bronze construction, non-rising stem, and sized to line.

C. Backflow Preventers: FEBCO 765 Bronze body construction, reduced pressure zone or pressure vacuum breaker type.

D. Valve Box and Cover: rectangular 10 inches by 4 inches or 9 inches round.

2.04 CONTROLLER

A. Manufacturer's or approved equal:

1. Rainbird Model RC1260C

B. Valves: Electric solenoid wiring including required fittings and accessories.

C. Wire conductors: color coded.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify site conditions under provisions of Section 01312 - Coordination and Meetings.

B. Verify location of existing utilities.

C. Verify that required utilities are available, in proper location, and ready for use.

3.02 PREPARATION

A. Piping layout indicated is diagrammatic only. Route piping to avoid plants, ground cover, and structures.

B. Layout and stake locations of system components.

C. Review layout requirements with other affected work. Coordinate locations of sleeves under paving to accommodate system.

3.03 TRENCHING

A. Trench and filling as required.

B. Trench size:

1. Minimum cover over installed supply piping: 18 inches.
2. Minimum cover over installed branch piping: 12 inches.
3. Minimum cover over installed outlet piping: 12 inches.

C. Trench to accommodate grade changes.

D. Maintain trenches free of debris, material, or obstructions that may damage pipe.

E. Do not leave trenches open overnight.

3.04 INSTALLATION

A. Install pipe, valves, controls, and outlets in accordance with manufacturer's instructions.

B. Connect to utilities.

C. Set outlets and box covers at finish grade elevations.

D. Install control wiring as required. Provide 10-inch expansion coil at each valve to which controls are connected, and at 100 foot intervals. Bury wire beside pipe. Mark valves with neoprene valve markers containing locking device. Set valve markers in 160 psi PVC pipe risers exiting from top of valve to finish grade.

E. After piping is installed, but before outlets are installed and filling commences, open valves and flush system with full head of water.

F. Coordinate pipe installation with conduit installation.

3.05 FIELD QUALITY CONTROL

A. Field inspection and testing will be performed.

B. Prior to filling, test system for leakage for whole system to maintain 100 psi pressure for one hour.

3.06 FILLING

A. Cover with 3 inches of sand over piping; fill trench and compact to subgrade elevation. Protect piping from displacement.

3.07 ADJUSTING

A. Adjust control system to achieve time cycles required.

B. Change and adjust head types for full water coverage as directed.

3.08 DEMONSTRATION

A. Demonstrate system under provisions of Section 01755 - Starting Systems.

B. Instruct City's personnel in operation and maintenance of system, including adjusting of sprinkler heads. Use operation and maintenance material as basis for demonstration.

END OF SECTION

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Section 02912

TREE, PLANT, AND HARDSCAPE PROTECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Section includes:

1. Tree root barriers; various depths and combinations may be required.
2. Tree trunk protectors.
3. Water barriers.
4. Staking and guying materials.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment for root barrier shall be on a linear foot basis for height noted.
2. Payment for tree trunk protector, water barriers and staking material shall be on a linear foot basis for height noted.
3. Refer to Section 01270-Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). When Contract is Stipulated Price Contract, payment for Work in this Section is included in total Stipulated Price.

1.03 REFERENCES

A. Standards of the following as referenced:

1. American National Standards Institute (ANSI).
2. American Society for Testing and Materials (ASTM).

1.04 DEFINITIONS

A. Terms:

1. Tree root barrier: Mechanical barrier and root deflector to prevent tree roots from damaging hardscapes and landscapes.

2. Tree trunk protector: Material to protect young tree trunks from rodents, string trimmers, and lawn mowers.

3. Water barriers:

   a. Controls run-off, preventing hardscape damage.

   b. Prevents irrigation water from percolating under pavement.

   c. Water corral for planting areas preventing pavement damage and saves water.

   d. Prevents snow, ice, and saltwater run-off from polluting planting areas adjacent to roadways and parking areas.

   e. Liner to separate golf greens and turf.

   f. Bamboo control.

1.05 SUBMITTALS

A. Product data: Manufacturers standard literature defining materials for use on this Project.

B. Shop drawings:

   1. Indicate locations and extent for tree root barrier material.

   2. Indicate trees receiving tree trunk protectors.

   3. Indicate locations and extent of water barriers.

   4. Indicate trees and plants to be staked and guyed.

C. Samples; if required by Architect:

   1. Tree root barrier: One full length panel.

   2. Tree trunk protector: One unit.

   3. Water barrier: One lineal foot of material.

   4. Staking and guying: One lineal foot.

D. Quality control submittals; manufacturer's instructions: Complete installation instructions for

each item specified; may be combined with product data.

1.06 QUALITY ASSURANCE

A. Qualifications; manufacturer: Minimum 20 years experience in tree and plant protection and accessories.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Packing and shipping: Provide materials in original unopened containers with manufacturer's labels intact and legible.

B. Acceptance at site:

1. Damaged materials determined by visual inspection will not be accepted.

2. Remove rejected materials from Project site immediately.

C. Storage and protection: Store materials in dry area in manufacturer's protective packaging; in original containers with labels and instruction instructions intact.

PART 2 PRODUCTS

2.01 MATERIALS

A. Acceptable manufacturers:

1. Products of manufacturers meeting indicated standards and specified material properties are acceptable for use, subject to approval of product list and samples.

B. Basic Material Properties of Tree Root Barriers

Material and Thickness		Homopolymer Polyethylene
Properties	ASTM Test Method	Value Homopolymer Polyethylene
Tensile Stress Yield	D638	3800
Elongation at Break %	D638	10%
Tensile Modulus	D638	155,000
Notched Izod Impact	D256A	0.4 – 0.4
Flexural Modulus 73 PSI	0790	145,000
Hardness Shore	D2240	P66

2.02 MANUFACTURED UNITS

A. Tree root barriers:
   a) Shall be produced 12" – 48" depth.
   b) Material: 0.080" wall thickness, nominal, injection molded 50% post-consumer recycled polypropylene panels with UV inhibitors.
   c) Panel Specifics:
      1. 7/16" Wide integral molded 0.08" thickness double top edge with stiffening ribs; bottom edge attached to vertical root deflecting ribs.
      2. Integral molded 0.080" thickness by 2" deep vertical root directing ribs spaced at 6.0" O.C.
      3. Integral molded 0.080" thickness by 2" long by 3/8" wide horizontal anti-lift ground lock tabs; minimum three per panel.
   d) Preassembled joiner system for panel connection to adjacent panel.
   e) Refer to standard details for root barrier installation.

B. Tree trunk protectors:

   1. Material: 0.060" thickness polyethylene with UV inhibitors, recyclable.

   2. Size: 9" high by single length accommodating tree up to 4" dia.

   3. Larger trees indicated for protection: Couple two or more sections together.

C. Water barriers:

   1. Product standard of quality: Water Barrier WB Series.

   2. Material: 0.030" 0.040" thickness High Density Polyethylene (HPDE).

   3. Sizes: 24", 30", and 36" wide by 300'-0" rolls.

   4. Manufacturers standard sealing tape.

   5. Sealant: Silicone type recommended by water barrier manufacturer for certain applications; applications requiring sealant indicated in manufacturers product data.

D. Staking and guying materials:

   1. Material: Flat, woven polypropylene; 900 lb. break strength.

   2. Size: wide by manufacturers standard roll lengths.

2.03 ACCESSORIES

A. Provide related materials for complete installation of specified materials.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verification of conditions:

1. Verify other work in other sections, in, at, and around landscaping work is complete to extent that no damage will occur to newly planted materials or, any possible construction related damage will be minimal and replacement plant material is readily available for planting at no additional cost.

2. Obtain verification, in writing, from work required in other Sections directly involving work in this Section regarding correct grades have been provided, coordination of topsoil spreading, and lawns and grasses planting.

3. The contractor shall fulfill the responsibilities below prior to beginning work. Failure to do so will require removal or replanting work in this section.

a. Provide written notification to Architect of unacceptable conditions

b. Receive verification of written notice

3.02 PREPARATION

A. Surface protection: Use methods necessary to prevent damage to completed site work performed in other Sections. Protect access to and areas around planted materials. Restore damaged areas to original compaction, grades, and lines; repair damaged grassed areas.

3.03 INSTALLATION

A. Tree root barriers: Install in accord with manufacturers reviewed installation instructions where indicated on reviewed shop drawings with vertical root directing ribs facing inwards towards trees or plants; connect panels together as required.

B. Tree trunk protectors:

1. Install in accord with manufacturers reviewed installation instructions where indicated on reviewed shop drawings.
2. Join two or more segments together for trees over 4" dia.

C. Water barriers:
1. Install where indicated on reviewed shop drawings in accord with manufacturers reviewed installation instructions using material widths required for conditions encountered.

2. Seal to hardscape surfaces with specified sealant.

3. Join material lengths with manufacturers sealing tape.

D. Staking and guying materials:

1. Immediately after planting, guy and stake designated trees and large plants.

2. Include tightening of guying materials to bring trees and plants to upright position.

END OF SECTION

Section 02915

TREE PLANTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Street right-of-way tree planting and maintenance.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment for tree planting is on unit price basis for each tree planted.

2. When shown on Drawings or directed by Project Manager to remove and relocate tree affected by trench zone, work shall be paid for under one of the following bid items.

   a. Bid item "Remove and Relocate Tree" includes moving tree with truck mounted tree spade and replanting same tree in new location. Payment is for each tree removed and relocated.

   b. Bid item "Remove, Temporary Store and Replant Tree" includes moving tree with truck mounted tree spade and replanting tree at temporary location, (determined by Contractor) maintaining tree until construction is complete and replanting same tree back to its original location. Payment is for each tree removed, stored and replanted.

3. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 REFERENCES

A. ANSI Z 60.1 - Nursery Stock.

1.04 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit certification from supplier that each type of tree conforms to these specification requirements.

C. For unpackaged materials, submit analysis by recognized laboratory made in accordance with methods established by Association of Official Agriculture Chemists, when applicable.

D. Submit name and experience of qualified Arborist to Project Manager.

E. Submit temporary tree storage location. Location must be outside public right-of-way and within 5 miles of project site, unless otherwise approved by Project Manager.

1.05 QUALITY ASSURANCE

A. Landscaper shall be a firm specializing in landscape and planting work.

B. Do not make substitutions of approved trees unless approved in writing by Project Manager. When specified planting material is not obtainable, submit proof of non-availability together with proposal for use of equivalent material. Substitutions of larger size or better grade than specified will be allowed, but with no increase in unit price.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Ship trees with Certificates of Inspection as required by governing authorities. Label each tree and shrub with securely attached waterproof tag bearing legible designation of botanical and common name. Do not remove container grown stock from containers before time of planting.

B. Deliver packaged materials in fully labeled original containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery, and while stored at Site.

C. Materials shall not be pruned prior to installation unless approved by Project Manager in writing. Do not bend or bind-tie trees or shrubs in such manner as to damage bark, break branches, or destroy natural shape. Use protective covering during delivery.

1.07 WARRANTY

A. Warrant trees against defects including death, unsatisfactory growth, or loss of shape due to improper pruning, maintenance, or weather conditions, for 1 year after completion of planting. Plumb leaning trees during warranty period.

B. Remove and replace trees found to be dead during warranty period. Remove and replace trees which are in doubtful condition at end of warranty period, or when approved by Project Manager, extend warranty period for trees for full growing season.

PART 2 PRODUCTS

2.01 TREES

A. Provide container grown trees which are straight and symmetrical and have persistently preferred main leader. Crown shall be in good overall proportion to entire height of tree with branching configuration as recommended by ANSI Z60.1 for type and species specified. Where clump is specified, furnish plant having minimum of three stems originating from common base at ground line. Measure trees by average caliper of trunk as follows:

1. For trunks up to 4 inches or less in diameter, measure caliper 6 inches above top of root ball.

2. For trunks more than 4 inches, measure caliper 12 inches above top of root ball.

3. Caliper measurements shall be by diameter tape measure. Indicated calipers on plans are minimum. Averaging of plant calibers will not be allowed.

B. Trees shall conform to following requirements:

1. Healthy, vigorous stock, grown in recognized nursery.

2. Free of disease, insects, eggs, larvae; and free of defects such as knots, sun-scald, injuries, abrasions, disfigurement, or borers and infestations.

2.02 SOIL PRODUCTS

A. Topsoil: Conform to requirements of Section 02911 - Topsoil.

B. Peat moss, bark, and fertilizer: Use material recommended by nursery for establishment of healthy stock after replanting.

2.03 STAKES AND GUYS

A. Provide minimum 8-foot long steel T-stakes and 1 inch wide plastic tree chains.

B. Where applicable for anchoring trees, use wood deadmen of at least 2 by 4 stock, 36 inches long and buried 3 feet. Provide white surveyor's plastic tape for flagging tree guys.

2.04 TREE WRAP, TWINE, AND SEAL

A. Wrap: First quality, bituminous impregnated tape, corrugated or crepe paper, specifically manufactured for tree wrapping and having qualities to resist insect infestation.

B. Twine: Lightly tarred, medium-coarse sisal (lath) yarn. Do not use nails or staples to fasten wrapping.

C. Seal: Commercially available asphaltic-base black emulsion specifically produced for use in sealing tree cuts and wounds.

2.05 WATER

A. Water shall be potable from municipal water supplies.

2.06 SOURCE QUALITY CONTROL

A. Notify Project Manager, prior to installation, of location where trees that have been selected for planting may be inspected. Plant material will be inspected for compliance with following requirements.

1. Genus, species, variety, size and quality.

2. Size and condition of balls and root systems, insects, injuries and latent defects.

PART 3 EXECUTION

3.01 PREPARATION

A. Schedule work so that planting can proceed rapidly as portions of site become available. Plant trees after final grades are established and prior to planting of lawns, unless otherwise approved by Project Manager in writing. When planting of trees occurs after seeding work, protect lawn areas and promptly repair damage to lawns resulting from tree planting operations.

B. Layout individual trees at locations shown on Drawings. In case of conflicts, notify Project Manager before proceeding with Work. Trees shall be staked and approved by Project Manager prior to planting.

3.02 PREPARATION OF PLANTING SOIL

A. Before mixing, clean topsoil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful or toxic to plant growth.

B. Strip and utilize 4 inch layer of top soil, placed on esplanades under Section 02921 - Hydro-mulch Seeding, for planting soil mixture.

C. Mix recommended soil amendments with topsoil at following rates:

1. Top soil: 50 percent.

2. Peat moss: 25 percent.

3. Well rotted Bark: 25 percent.

4. Fertilizer: Rate recommended by nursery.

D. Delay mixing of fertilizer when planting will not follow placing of planting soil within 48 hours, unless otherwise directed.

E. Incorporate amendments into soil as part of soil preparation process prior to fine grading, fertilizing, and planting. Broadcast or spread amendments evenly at specified rate over planting area. Thoroughly incorporate amendments into top 3 or 4 inches of soil until amendments are pulverized and have become homogeneous layer of topsoil ready for planting.

3.03 PLANTING

A. Excavate pits, beds, or trenches with vertical sides and with bottom of excavation raised minimum of 6 inches at center for proper drainage. Provide following minimum widths:

1. 15 gallon containers or larger, 2 feet wider than diameter of root ball.

2. 1 and 5 gallon containers, 6 inches wider than diameter of root ball.

B. When conditions detrimental to plant growth are encountered, such as unsatisfactory soil, obstructions, or adverse drainage conditions, notify Project Manager before planting.

C. Deliver trees after preparations for planting have been completed and plant immediately. When planting is delayed more than 6 hours after delivery, set trees and shrubs in shade, protect from weather and mechanical damage, and keep roots moist by covering with mulch, burlap, or other acceptable means of retaining moisture, and water as needed.

D. Set root ball on undisturbed soil in center of pit or trench and plumb plant. Place plants at level that, after settlement, natural relationship of plant crown with ground surface will be established.

E. When set, place additional backfill around base and sides of ball, and work each layer to settle backfill and eliminate voids and air pockets. When excavation is approximately 2/3 full, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.

F. Dish top of backfill to allow for mulching. Mulch pits, trenches and planted areas. Provide not less than 4 inch thickness of mulch, work into top of backfill, and finish level with adjacent finish grades. Cover entire root ball.

G. Prune, thin out and shape trees in accordance with standard horticultural practice. Prune trees to retain required height and spread. Unless otherwise directed in writing, do not cut tree leaders, and remove only injured and dead branches from flowering trees. Remove and replace excessively pruned or misformed stock resulting from improper pruning.

H. Inspect tree trunks for injury, improper pruning and insect infestation and take corrective measures.

I. Guy and stake trees immediately after planting.

J. Control dust caused by planting operations. Dampen surfaces as required. Comply with pollution control regulations of governing authorities.

3.04 FIELD QUALITY CONTROL

A. Project Manager may reject unsatisfactory or defective material at anytime during progress of Work. Remove rejected trees immediately from site and replace with specified materials. Plant material not installed in accordance with these Specifications will be rejected.

B. An inspection to determine final acceptance will be conducted by Project Manager at end of 12 month maintenance period. Additional inspections will be conducted for extended warranty periods provided for in paragraph 1.07B.

3.05 MOVING EXISTING TREES

A. Perform tree moving and replanting by a professional Arborist during dormant growth season.

B. Provide tree spade of adequate size as directed by professional Arborist.

3.06 MAINTENANCE

A. Maintain trees during planting operations and for period of 12 months after completion of planting.

B. Water trees to full depth minimum of once each week, or as required to maintain healthy vigorous growth.

C. Prune, cultivate, and weed as required for healthy growth. Restore planting saucers. Tighten and repair stake and guy supports, and reset trees and shrubs to proper grades or vertical position as required. Restore or replace damaged wrappings. Spray as required to keep trees and shrubs free of insects and disease.

3.07 CLEANUP AND PROTECTION

A. During planting work, keep pavements clean and work area in orderly condition.

B. Protect planting work and materials from damage due to planting operations. Maintain protection during installation and maintenance period. Treat, repair, or replace damaged planting work as directed by Project Manager.

C. Dispose of excess soil and waste in accordance with requirements of Section Waste 01576 - Waste Material Disposal. On-site burning of combustible cleared materials will not be permitted.

END OF SECTION

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Section 02922

SODDING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Restoration of existing lawn areas disturbed by construction shall be by installation of new sod.

B. Planting of sod within areas designated on Drawings for purpose of surface stabilization, channel stabilization or vegetation buffer strips.

C. Sod is defined as blocks, squares, strips of turfgrass, and adhering soil used for vegetative planting. To be placed edge to edge for complete coverage.

D. Lawn is defined as ground covered with fine textured grass kept neatly mowed.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Payment for sodding is on square yard basis.

2. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

1.04 QUALITY ASSURANCE

A. Sod only when weather and soil conditions are deemed by Project Manager to be suitable for proper placement.

B Water and fertilize new sod.

C. Guarantee sod to be growing 30 days after substantial completion.

D. Mainte Period:

1. Be intenance immediately after each section of grass sod is installed and continue for y period from date of substantial completion.

2. Re acceptable areas.

3. Wa rtilize, control disease and insect pests, mow, edge, replace unacceptable mat , and perform other procedures consistent with good horticultural practice to ens rmal, vigorous and healthy growth. Install disease control within guidelines set for tructural Pest Control Board of the State of Texas.

E. Notify t Manager 10 days before end of maintenance period for inspection.

PART 2 P R O T S

2.01 SOD

A. Specie nuda (Cynodon Dactylon), Buffalo (Buchloe Dactyloides), or St. Augustine (Steno n Secundatum) Gulf Coast variety to match existing sod.

B. Conte percent permanent grass suitable to climate in which it is to be placed; not more t ercent weeds and undesirable grasses; good texture, free from obnoxious grasse stones and foreign materials.

C. Size: wide strips, uniformly 2 inches thick with clean-cut edges.

D. Sod is upplied and maintained in healthy condition as evidenced by grass being norma color.

2.02 FERT

A. Availa ient percentage by weight: 12 percent nitrogen, 4 percent phosphoric acid, and 8 perc sh; or 15 percent nitrogen, 5 percent phosphoric acid, and 10 percent potash.

2.03 WEED NSECT TREATMENT

A. Provid table treatment to protect sod from weed and insect infestation. Submit treatm od to Project Manager for approval. Install insect and disease control within guidel forth by Structural Pest Control Board of the State of Texas.

2.04 WATER

A. Potable, available on-site through Contractor's water trucks. Contractor may use City of Houston hydrants when water use is measured through Contractor's meter. Do not use private resident's water.

2.05 BANK SAND

A. Free of clay lumps, roots, grass, salt or other foreign material.

PART 3 EXECUTION

3.01 PREPARATION

A. Verify that soil placement and compaction have been satisfactorily completed. Verify that soil is within allowable range of moisture content.

B. Top soil shall be free of weeds and foreign material immediately before sodding.

C. Do not start work until conditions are satisfactory. Do not start work during inclement or impending inclement weather.

D. Rake areas to be sodded smooth, free from unsightly variations, bumps, ridges or depressions.

E. Spread 2 inch layer of bank sand over areas to be sodded prior to planting of sod.

F. Apply fertilizer at rate of 25 pounds per 1000 square feet. Apply after raking soil surface and not more than 48 hours prior to laying sod. Mix thoroughly into upper 2 inches of soil. Lightly water to aid in dissipation of fertilizer.

3.02 APPLICATION

A. Full Sodding: Lay sod with closely fitted joints leaving no voids and with ends of sod strips staggered. Lay sod within 24 hours of harvesting.

B. On slopes 2:1 and steeper, lay sod perpendicular to slope and secure every row with wooden pegs at maximum 2 feet on center. Drive pegs flush with soil portion of sod.

C. Prior to placing sod, on slopes 3:1 or where indicated, place Hold/Gro or Roll Lite or equal over topsoil. Securely anchor in place with posts sunk firmly into ground at maximum 16 feet on center along pitch of slope and equal to width of wire mesh horizontally across slopes.

D. After sod is laid, irrigate thoroughly to secure 6-inch minimum penetration into soil below sod.

E. Tamp and roll sod with approved equipment to eliminate minor irregularities and to form close contact with soil bed immediately after planting and watering. Submit type of tamping and rolling equipment to be used to Project Manager for approval, prior to construction.

3.03 MAINTENANCE

A. Watering:

1. Water lawn areas once a day with minimum 1/2 inch water for first 3 weeks after area is sodded.

2. After 3 week period, water twice a week with 3/4 inch of water each time unless comparable amount has been provided by rain.

3. Make weekly inspections to determine moisture content of soil unless soil is in frozen condition.

4. Water in afternoon or at night to enable soil to absorb maximum amount of water with minimum evaporation.

B. Mowing:

1. Mow sod at intervals which will keep grass height from exceeding 3 1/2 inches.

2. Set mower blades at 2 1/2 inches.

3. Do not remove more than one-half of grass leaf surface.

4. Mow sodded areas requiring mowing within 1 month after installation with light-weight rotary type mower. Mow sod only when dry and not in saturated or soft condition.

5. Remove grass clippings during or immediately after mowing.

C. Fertilizer and Pest Control:

1. Evenly spread fertilizer composite at rate of 40 pounds per 5000 square feet or as recommended by manufacturer. Do not place fertilizer until 2 weeks after placement of sod.

2. Restore bare or thin areas by topdressing with mix of 50 percent sharp sand and 50 percent sphagnum peat moss.

3. Apply mixture 1/4 to 1/2 inch thick.

4. Treat areas of heavy weed and insect infestation as recommended by treatment manufacturer.

D. Restrict all traffic from sodded areas until sod is established or for minimum 10 days during growing season. Use wood lath and plastic tape to cordon sodded areas. Maintain tape and lath throughout for minimum 30 days during growing season.

3.04 CLEANUP

A. During course of planting, remove excess and waste materials; keep lawn areas clean and take precautions to avoid damage to existing structures, plants, grass, and streets.

B. Remove barriers, signs, and other Contractor material and equipment from project site at termination of establishment period.

C. Dispose of unused materials and rubbish in accordance with Section 01576 - Waste Material Disposal.

END OF SECTION

TxDOT SPECIAL PROVISIONS

SPECIAL PROVISION

000---002

Partnering

1. **General.** It is the intent of this provision to encourage the use of a Partnering arrangement between the Department and the Contractor. The use of Partnering on this project is voluntary, unless shown on the plans, and its use must be acceptable to both Department and Contractor personnel. Partnering can be initiated by TxDOT or the Contractor. The Partnering concept promotes an environment of trust, mutual respect, integrity and fair-dealing.

2. **Procedures for Initial Partnering Meeting.** The Partnering Workshop initial meeting may last from 2 hours to 2 days and may contain one or more of the partnering modules selected by the Engineer and the Contractor, and may be prior to or combined with the pre-construction conference.

   (1) Mutually agree upon an agenda (outline main elements-see modules for agenda contents), a location (city, hotel, etc.) and the scope and attendees. (The list of attendees will include the job title of each person, a contact, telephone and fax number.) The Department will furnish a recommended location list.

   (2) Use of facilitator:

   (a) The facilitator is to act as a neutral party seeking to advance proactive pre-project planning. There must be no perceived conflict of interest on the part of the facilitator in favor of either Engineer or Contractor.

   (b) Contract Facilitator - Select 3 potential facilitators from the Department's approved list . The Engineer will select 1 of the 3 proposed facilitators.

   (c) Internal Facilitator - The Engineer and the Contractor may choose a facilitator internal to one of their respective organizations to facilitate a workshop. This individual must have technical knowledge and ability to lead and guide discussions. This individual must be acceptable to both the Engineer and the Contractor. No payment will be made for internal facilitators.

   (d) The Engineer and the Contractor will provide the facilitator with a list of attendees. The meeting arrangements (meeting space, A/V equipment, etc.) will be the responsibility of the contract facilitator.

   The Contractor and the Department will be responsible for any arrangements for any expenses incurred by their respective employees, including but not limited to meals, travel and lodging.

(e) The Engineer and the Contractor should contact the facilitator at least 3 weeks prior to the workshop, and should have a conference call with the facilitator at least 10 calendar days prior to the workshop to discuss ideas and to finalize the agenda. The agenda will be based on the needs of the team, and may be as specific as deemed necessary. The facilitator is responsible for developing the full agenda in conjunction with both parties.

3. **Participation in Partnering.** It is the responsibility of the Engineer and the Contractor to compile a list of and invite the key project personnel (inspectors, foremen, superintendents, bookkeepers, project engineers, etc.) to participate in the initial partnering workshop. It is also important to have representatives of all interested parties in attendance. Examples include but are not limited to subcontractors, material suppliers, city and county officials, and utility companies. In addition, the Contractor and Engineer should actively encourage district staff to participate as well. The Contractor and Engineer must agree that each of their personnel identified will be assigned to the project for its duration.

4. **Payment.** The cost of the partnering workshop will be shared equally by the Contractor and the Department. Be responsible for the partnering workshop expenses (meeting room, AV, supplies, cost of facilitator, etc.). The Department will reimburse the Contractor for 1/2 of the partnering workshop expenses as extra work on the next monthly estimate.

5. **Partnering Performance.** If the partnering agreement is not followed and after reasonable efforts to salvage it have been unsuccessful, either party may withdraw from the partnering agreement by written notice to the other party. The sole remedy for non-performance of the partnership shall be termination of the partnering agreement.

SPECIAL PROVISION

000---003

Notice to All Bidders

To report bid rigging activities call:

1-800-424-9071

The U.S. Department of Transportation (DOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

SPECIAL PROVISION

000---004

Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246)

1. **General.** In addition to the affirmative action requirements of the Special Provision titled "Standard Federal Equal Employment Opportunity Construction Contract Specifications" as set forth elsewhere in this proposal, the Bidder's attention is directed to the specific requirements for utilization of minorities and females as set forth below.

2. **Goals.**

   a. Goals for minority and female participation are hereby established in accordance with 41 CFR 60-4.

   b. The goals for minority and female participation expressed in percentage terms for the Contractor's aggregate work force in each trade on all construction work in the covered area, are as follows:

Goals for minority participation in each trade (percent)	Goals for female participation in each trade (percent)
See Table 1	6.9

   c. These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and non-federally involved construction. The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Standard Federal Equal Employment Opportunity Construction Contract Specifications Special Provision and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority and female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

d. A contractor or subcontractor will be considered in compliance with these provisions by participation in the Texas Highway-Heavy Branch, AGC, Statewide Training and Affirmative Action Plan. Provided that each contractor or subcontractor participating in this plan must individually comply with the equal opportunity clause set forth in 41 CFR 60-1.4 and must make a good faith effort to achieve the goals set forth for each participating trade in the plan in which it has employees. The overall good performance of other contractors and subcontractors toward a goal in an approved plan does not excuse any covered contractor's or subcontractor's failure to make good faith efforts to achieve the goals contained in these provisions. Contractors or subcontractors participating in the plan must be able to demonstrate their participation and document their compliance with the provisions of this Plan.

3. **Subcontracting.** The Contractor shall provide written notification to the Department within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation pending concurrence of the Department in the award. The notification shall list the names, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.

4. **Covered Area.** As used in this special provision, and in the contract resulting from this solicitation, the geographical area covered by these goals for female participation is the State of Texas. The geographical area covered by these goals for other minorities are the counties in the State of Texas as indicated in Table 1.

5. **Reports.** The Contractor is hereby notified that he may be subject to the Office of Federal Contract Compliance Programs (OFCCP) reporting and record keeping requirements as provided for under Executive Order 11246 as amended. OFCCP will provide direct notice to the Contractor as to the specific reporting requirements that he will be expected to fulfill.

Table 1

County	Goals for Minority Participation	County	Goals for Minority Participation
Anderson	22.5	Concho	20.0
Andrews	18.9	Cooke	17.2
Angelina	22.5	Coryell	16.4
Aransas	44.2	Cottle	11.0
Archer	11.0	Crane	18.9
Armstrong	11.0	Crockett	20.0
Atascosa	49.4	Crosby	19.5
Austin	27.4	Culberson	49.0
Bailey	19.5	Dallam	11.0
Bandera	49.4	Dallas	18.2
Bastrop	24.2	Dawson	19.5
Baylor	11.0	Deaf Smith	11.0
Bee	44.2	Delta	17.2
Bell	16.4	Denton	18.2
Bexar	47.8	DeWitt	27.4
Blanco	24.2	Dickens	19.5
Borden	19.5	Dimmit	49.4
Bosque	18.6	Donley	11.0
Bowie	19.7	Duval	44.2
Brazoria	27.3	Eastland	10.9
Brazos	23.7	Ector	15.1
Brewster	49.0	Edwards	49.4
Briscoe	11.0	Ellis	18.2
Brooks	44.2	El Paso	57.8
Brown	10.9	Erath	17.2
Burleson	27.4	Falls	18.6
Burnet	24.2	Fannin	17.2
Caldwell	24.2	Fayette	27.4
Calhoun	27.4	Fisher	10.9
Callahan	11.6	Floyd	19.5
Cameron	71.0	Foard	11.0
Camp	20.2	Fort Bend	27.3
Carson	11.0	Franklin	17.2
Cass	20.2	Freestone	18.6
Castro	11.0	Frio	49.4
Chambers	27.4	Gaines	19.5
Cherokee	22.5	Galveston	28.9
Childress	11.0	Garza	19.5
Clay	12.4	Gillespie	49.4
Cochran	19.5	Glasscock	18.9
Coke	20.0	Goliad	27.4
Coleman	10.9	Gonzales	49.4
Collin	18.2	Gray	11.0
Collingsworth	11.0	Grayson	9.4
Colorado	27.4	Gregg	22.8
Comal	47.8	Grimes	27.4
Comanche	10.9	Guadalupe	47.8

County	Goals for Minority Participation	County	Goals for Minority Participation
Hale	19.5	Lavaca	27.4
Hall	11.0	Lee	24.2
Hamilton	18.6	Leon	27.4
Hansford	11.0	Liberty	27.3
Hardeman	11.0	Limestone	18.6
Hardin	22.6	Lipscomb	11.0
Harris	27.3	Live Oak	44.2
Harrison	22.8	Llano	24.2
Hartley	11.0	Loving	18.9
Haskell	10.9	Lubbock	19.6
Hays	24.1	Lynn	19.5
Hemphill	11.0	Madison	27.4
Henderson	22.5	Marion	22.5
Hidalgo	72.8	Martin	18.9
Hill	18.6	Mason	20.0
Hockley	19.5	Matagorda	27.4
Hood	18.2	Maverick	49.4
Hopkins	17.2	McCulloch	20.0
Houston	22.5	McLennan	20.7
Howard	18.9	McMullen	49.4
Hudspeth	49.0	Medina	49.4
Hunt	17.2	Menard	20.0
Hutchinson	11.0	Midland	19.1
Irion	20.0	Milam	18.6
Jack	17.2	Mills	18.6
Jackson	27.4	Mitchell	10.9
Jasper	22.6	Montague	17.2
Jeff Davis	49.0	Montgomery	27.3
Jefferson	22.6	Moore	11.0
Jim Hogg	49.4	Morris	20.2
Jim Wells	44.2	Motley	19.5
Johnson	18.2	Nacogdoches	22.5
Jones	11.6	Navarro	17.2
Karnes	49.4	Newton	22.6
Kaufman	18.2	Nolan	10.9
Kendall	49.4	Nueces	41.7
Kenedy	44.2	Ochiltree	11.0
Kent	10.9	Oldham	11.0
Kerr	49.4	Orange	22.6
Kimble	20.0	Palo Pinto	17.2
King	19.5	Panola	22.5
Kinney	49.4	Parker	18.2
Kleberg	44.2	Parmer	11.0
Knox	10.9	Pecos	18.9
Lamar	20.2	Polk	27.4
Lamb	19.5	Potter	9.3
Lampasas	18.6	Presidio	49.0
LaSalle	49.4	Rains	17.2

County	Goals for Minority Participation	County	Goals for Minority Participation
Randall	9.3	Webb	87.3
Reagan	20.0	Wharton	27.4
Real	49.4	Wheeler	11.0
Red River	20.2	Wichita	12.4
Reeves	18.9	Wilbarger	11.0
Refugio	44.2	Willacy	72.9
Roberts	11.0	Williamson	24.1
Robertson	27.4	Wilson	49.4
Rockwall	18.2	Winkler	18.9
Runnels	20.0	Wise	18.2
Rusk	22.5	Wood	22.5
Sabine	22.6	Yoakum	19.5
San Augustine	22.5	Young	11.0
San Jacinto	27.4	Zapata	49.4
San Patricio	41.7	Zavala	49.4
San Saba	20.0		
Schleicher	20.0		
Scurry	10.9		
Shackelford	10.9		
Shelby	22.5		
Sherman	11.0		
Smith	23.5		
Somervell	17.2		
Starr	72.9		
Stephens	10.9		
Sterling	20.0		
Stonewall	10.9		
Sutton	20.0		
Swisher	11.0		
Tarrant	18.2		
Taylor	11.6		
Terrell	20.0		
Terry	19.5		
Throckmorton	10.9		
Titus	20.2		
Tom Green	19.2		
Travis	24.1		
Trinity	27.4		
Tyler	22.6		
Upshur	22.5		
Upton	18.9		
Uvalde	49.4		
Val Verde	49.4		
Van Zandt	17.2		
Victoria	27.4		
Walker	27.4		
Waller	27.3		
Ward	18.9		
Washington	27.4		

SPECIAL PROVISION

000---006

Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246)

1. As used in these specifications:

   a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;

   b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;

   c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

   d. "Minority" includes:

      (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);

      (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);

      (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

      (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North American and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of $10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U. S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its

obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing contracts in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the contract is being performed. Goals are published periodically in the Federal Register in notice form and such notices may be obtained from any Office of Federal Contract Compliance Programs office or any Federal procurement contracting officer. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U. S. Department of Labor.

7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.

d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral Process has impeded the Contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and Collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of

applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these Specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both

minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

10. Nondiscrimination programs require that Federal-aid recipients, subrecipients, and contractors prevent discrimination and ensure nondiscrimination in all of their programs and activities, whether those programs and activities are federally funded or not. The factors prohibited from serving as a basis for action or inaction which discriminates include race, color, national origin, sex, age, and handicap/disability. The efforts to prevent discrimination must address, but not be limited to a program's impacts, access, benefits, participation, treatment, services, contracting opportunities, training opportunities, investigations of complaints, allocations of funds, prioritization of projects, and the functions of right-of-way, research, planning, and design.

11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

16. In addition to the reporting requirements set forth elsewhere in this contract, the Contractor and the subcontractors holding subcontracts, not including material suppliers, of $10,000 or more, shall submit for every month of July during which work is per-formed, employment data as contained under Form PR 1391 (Appendix C to 23 CFR, Part 230), and in accordance with the instructions included thereon.

SPECIAL PROVISION

000---009

Certification of Nondiscrimination in Employment

By signing this proposal, the bidder certifies that he has participated in a previous contract or subcontract subject to the equal opportunity clause, as required by Executive Orders 10925, 11114, or 11246, or if he has not participated in a previous contract of this type, or if he has had previous contract or subcontracts and has not filed, he will file with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

Note: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7(b)(1)), and must be submitted by bidders and proposed subcontractors only in connection with contracts and subcontracts which are subject to the equal opportunity clause. Contracts and subcontracts which are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally only contracts or subcontracts of $10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b)(1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U. S. Department of Labor.

SPECIAL PROVISION

000--1483

Notice of Changes to U.S. Department of Labor Required Payroll Information

Do not include employee addresses and social security numbers on the payroll submissions to the department. In lieu of the social security number, include an individually identifying number for each employee (Example: last four digits of the individual's social security number).

Maintain the full social security number and current address of each covered employee in files for 3 years after project completion and make the information available upon the Department's request.

Form FHWA 1273 and optional form WH-347 will be revised in the future to reflect these changes.

SPECIAL PROVISION

000--1493

Schedule of Liquidated Damages

For Amount of Original Contract		Amount of Daily Contract Administration Liquidated Damages per Working Day
From More Than	**To and Including**	
$0	100,000	**425**
100,000	500,000	**500**
500,000	1,000,000	**525**
1,000,000	2,000,000	**625**
2,000,000	5,000,000	**800**
5,000,000	10,000,000	**1100**
10,000,000	15,000,000	**1400**
15,000,000	25,000,000	**1550**
25,000,000	Over 25,000,000	**2800**

SPECIAL PROVISION
000--1676
On-the-Job Training Program

1. **Description.** The primary objective of this Special Provision is the training and advancement of minorities, women and economically disadvantaged persons toward journeyworker status. Accordingly, make every effort to enroll minority, women and economically disadvantaged persons to the extent that such persons are available within a reasonable area of recruitment. This training commitment is not intended, and shall not be used to discriminate against any applicant for training, whether or not he/she is a member of a minority group.

2. **Trainee Assignment.** Training assignments are determined based on the past contract volume of federal-aid work performed with the Department. Contractors meeting the selection criteria will be notified of their training assignment at the beginning of the reporting year by the Department's Office of Civil Rights.

3. **Program Requirements.** Fulfill all of the requirements of the On-the-Job Training Program including the maintenance of records and submittal of periodic reports documenting program performance. Trainees shall be paid at least 60% of the appropriate minimum journeyworker's rate specified in the contract for the first half of the training period, 75% for the third quarter and 90% for the last quarter, respectively. Contractors may be reimbursed $0.80 per training hour at no additional cost to the Department.

4. **Compliance.** The Contractor will have fulfilled the contractual responsibilities by having provided acceptable training to the number of trainees specified in their goal assignment. Noncompliance may be cause for corrective and appropriate measures pursuant to Article 8.6., "Abandonment of Work or Default of Contract," which may be used to comply with the sanctions for noncompliance pursuant to 23 CFR Part 230.

SPECIAL PROVISION

000--1966

Disadvantaged Business Enterprise in Federal Aid Contracts

1. **Description.** The purpose of this Special Provision is to carry out the U. S. Department of Transportation's (DOT) policy of ensuring nondiscrimination in the award and administration of DOT assisted contracts and creating a level playing field on which firms owned and controlled by individuals who are determined to be socially and economically disadvantaged can compete fairly for DOT assisted contracts. If the Disadvantaged Business Enterprise (DBE) goal is greater than zero, Article A, "Disadvantaged Business Enterprise in Federal Aid Contracts", of this Special Provision shall apply to this contract. If there is no DBE goal, Article B, "Race-Neutral DBE Participation", of this Special Provision shall apply to this contract. The percentage goal for DBE participation in the work to be performed under this contract will be shown on the proposal.

A. Article A. Disadvantaged Business Enterprise in Federal Aid Contracts.

1. **Policy**. It is the policy of the DOT and the Texas Department of Transportation (henceforth the "Department") that DBEs, as defined in 49 CFR Part 26, Subpart A and the Department's DBE Program, shall have the opportunity to participate in the performance of contracts financed in whole or in part with Federal funds. The DBE requirements of 49 CFR Part 26, and the Department's DBE Program, apply to this contract as follows:

   a. The Contractor will solicit DBEs through reasonable and available means, as defined in 49 CFR Part 26, Appendix A and the Department's DBE Program, or show a good faith effort to meet the DBE goal for this contract.

   b. The Contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate.

   c. The requirements of this Special Provision shall be physically included in any subcontract.

   d. By signing the contract proposal, the Bidder is certifying that the DBE goal as stated in the proposal will be met by obtaining commitments from eligible DBEs or that the Bidder will provide acceptable evidence of good faith effort to meet the commitment. The Department will determine the adequacy of a Contractor's efforts to meet the contract goal, within 10 business days,

excluding national holidays, from receipt of the information outlined in this Special Provision under Section 1.A.3, "Contractor's Responsibilities." If the requirements of Section 1.A.3 are met, the conditional situation will be removed and the contract will be forwarded to the Contractor for execution.

2. **Definitions.**

a. "Broker" is an intermediary or middleman that does not take possession of a commodity or act as a regular dealer selling to the public.

b. "Disadvantaged Business Enterprise" or "DBE" is defined in the standard specifications, Article 1, Definition of Terms.

c. "DBE Joint Venture" means an association of a DBE firm and 1 or more other firm(s) to carry out a single business enterprise for profit for which purpose they combine their property, capital, efforts, skills and knowledge, and in which the DBE is responsible for a distinct, clearly defined portion of the work of the contract and whose share in the capital contribution, control, management, risks, and profits of the joint venture are commensurate with its ownership interest.

d. "DOT" means the U.S. Department of Transportation, including the Office of the Secretary, the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), and the Federal Aviation Administration (FAA).

e. "Federal Aid Contract" is any contract between the Texas Department of Transportation and a Contractor which is paid for in whole or in part with DOT financial assistance.

f. "Good Faith Effort" means efforts to achieve a DBE goal or other requirement of this Special Provision which, by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the program requirement.

g. "Manufacturer" is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract and of the general character described by the specifications."

h. "Race-conscious" means a measure or program that is focused specifically on assisting only DBEs, including women-owned businesses.

i. "Race-neutral DBE Participation" means any participation by a DBE through customary competitive procurement procedures.

j. "Regular Dealer" is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. To be a regular dealer, the firm must be an established, regular business that engages in, as its principal business and under its own name, the purchase and sale or lease of the products in question.

A regular dealer in such bulk items as steel, cement, gravel, stone, and petroleum products need not keep such products in stock if it owns and operates distribution equipment for the products. Any supplementing of regular dealers own distribution equipment shall be by a long-term lease agreement and not on an ad hoc or contract-by-contract basis. Brokers, packagers, manufacturers' representatives, or other persons who arrange or expedite transactions shall not be regarded as a regular dealer.

k. "Texas Unified Certification Program" or "TUCP" provides one-stop shopping to applicants for certification, such that applicants are required to apply only once for a DBE certification that will be honored by all recipients of federal funds in the state. The TUCP by Memorandum of Agreement established six member entities to serve as certifying agents for Texas in specified regions.

3. **Contractor's Responsibilities**. These requirements must be satisfied by the Contractor.

a. After conditional award of the contract, the Contractor shall submit a completed Form SMS.4901 "DBE Commitment Agreement", From SMS 4901-T "DBE Trucking Commitment Agreement", or Form SMS.4901-MS "DBE Material & Supplier Commitment Agreement" for each DBE he/she intends to use to satisfy the DBE goal or a good faith effort to explain why the goal could not be reached, so as to arrive in the Department's Office of Civil Rights (OCR) in Austin, Texas not later than 5:00 p.m. on the 10th business day, excluding national holidays, after the conditional award of the contract. When requested, additional time, not to exceed 7 business days, excluding national holidays, may be granted based on documentation submitted by the Contractor.

b. DBE prime Contractors may receive credit toward the DBE goal for work performed by his/her own forces and work subcontracted to DBEs. A DBE prime must make a good faith effort to meet the goals. In the event a DBE prime subcontracts to a non-DBE, that information must be reported on Form SMS.4902.

c. A Contractor who cannot meet the contract goal, in whole or in part, shall make adequate good faith efforts to obtain DBE participation as so stated and defined in 49 CFR Part 26, Appendix A. The following is a list of the types of action that may be considered as good faith efforts. It is not intended to be a mandatory checklist, nor is it intended to be exclusive or exhaustive. Other factors or types of efforts may be relevant in appropriate cases.

- Soliciting through all reasonable and available means (e.g. attendance at prebid meetings, advertising, and/or written notices) the interest of all certified DBEs who have the capability to perform the work of the contract. The solicitation must be done within sufficient time to allow the DBEs to respond to it. Appropriate steps must be taken to follow up initial solicitations to determine, with certainty, if the DBEs are interested.

- Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the Contractor might otherwise prefer to perform the work items with its own forces.
- Providing interested DBEs with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.
- Negotiating in good faith with interested DBEs to make a portion of the work available to DBE subcontractors and suppliers and select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiations includes the names, addresses, and telephone numbers of DBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBEs to perform the work.
- A Bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional cost involved in finding and using DBEs is not in itself sufficient reason for a bidders failure to meet the Contract DBE goal as long as such cost are reasonable. Also, the ability or desire of the Contractor to perform the work of the Contract with its own organization does not relieve the Bidder of the responsibility to make good faith effort. Contractors are not, however, required to accept higher quotes from DBEs if the price difference is excessive or unreasonable.
- Not rejecting DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The Contractor's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate cause for the rejection or non-solicitation of bids and the Contractors efforts to meet the project goal.
- Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.
- Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.
- Effectively using the services of available minority/women community organizations; minority/women Contractors' groups; local, state, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBEs.

- If the Program Manager of the OCR determines that the Contractor has failed to meet the good faith effort requirements, the Contractor will be given an opportunity for reconsideration by the Director of the OCR.

d. Should the bidder to whom the contract is conditionally awarded refuse, neglect or fail to meet the DBE goal or comply with good faith effort requirements, the proposal guaranty filed with the bid shall become the property of the state, not as a penalty, but as liquidated damages to the Department.

e. The preceding information shall be submitted directly to the Office of Civil Rights, Texas Department of Transportation, 125 E. 11th Street, Austin, Texas 78701-2483.

f. The Contractor shall not terminate for convenience a DBE subcontractor named in the commitment submitted under Section 1.A.3.a, of this Special Provision. Prior to terminating or removing a DBE subcontractor named in the commitment, the Contractor must have a written consent of the Department.

g. The Contractor shall also make a good faith effort to replace a DBE subcontractor that is unable to perform successfully with another DBE, to the extent needed to meet the contract goal. The Contractor shall submit a completed Form 4901 "DBE Commitment Agreement", From SMS 4901-T "DBE Trucking Commitment Agreement", or Form SMS.4901-MS "DBE Material & Supplier Commitment Agreement" for the substitute DBE firm(s). Any substitution of DBEs shall be subject to approval by the Department. Prior to approving the substitution, the Department will request a statement from the DBE concerning it being replaced.

h. The Contractor shall designate a DBE liaison officer who will administer the Contractor's DBE program and who will be responsible for maintenance of records of efforts and contacts made to subcontract with DBEs.

i. Contractors are encouraged to investigate the services offered by banks owned and controlled by disadvantaged individuals and to make use of these banks where feasible.

4. Eligibility of DBEs.

a. The member entities of the TUCP certify the eligibility of DBEs and DBE joint ventures to perform DBE subcontract work on DOT financially assisted contracts.

b. The Department maintains the Texas Unified Certification Program DBE Directory containing the names of firms that have been certified to be eligible to participate as DBE's on DOT financially assisted contracts. This Directory is available from the Department's OCR. An update of the Directory can be found on the Internet at http://www.dot.state.tx.us/business/tucp/default.htm.

c. Only DBE firms certified at the time commitments are submitted are eligible to be used in the information furnished by the Contractor as required under Section 1.A.3.a. and 3.g. above. For purposes of the DBE goal on this project, DBEs will only be allowed to perform work in the categories of work for which they are certified.

d. Only DBE firms certified at the time of execution of a contract/subcontract/purchase order, are eligible for DBE goal participation.

5. **Determination of DBE Participation**. When a DBE participates in a contract, only the values of the work actually performed by the DBE, as referenced below, shall be counted by the prime contractor toward DBE goals:

a. The total amount paid to the DBE for work performed with his/her own forces is counted toward the DBE goal. When a DBE subcontracts part of the work of its contract to another firm, the value of the subcontracted work may be counted toward DBE goals only if the subcontractor is itself a DBE. Work that a DBE subcontracts to a non-DBE firm does not count toward DBE goals.

b. A Contractor may count toward its DBE goal a portion of the total value of the contract amount paid to a DBE joint venture equal to the distinct, clearly defined portion of the work of the contract performed by the DBE.

(1) A Contractor may count toward its DBE goal only expenditures to DBEs that perform a commercially useful function (CUF) in the work of a contract or purchase order. A DBE is considered to perform a CUF when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a CUF, the DBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself.

In accordance with 49 CFR Part 26, Appendix A, guidance concerning Good Faith Efforts, contractors may make efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services. Contractors may not however, negotiate the price of materials or supplies used on the contract by the DBE, nor may they determine quality and quantity, order the materials themselves, nor install the materials (where applicable), or pay for the material themselves. Contractors however, may share the quotations they receive from the material supplier with the DBE firm, so that the DBE firm may negotiate a reasonable price with the material supplier.

In all cases, prime or other non-DBE subcontractor assistance will not be credited toward the DBE goal.

(2) A DBE does not perform a CUF if its role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of DBE participation.

Consistent with industry practices and the DOT/Department's DBE program, a DBE subcontractor may enter into second-tier subcontracts, amounting up to 70% of their contract. Work subcontracted to a non-DBE does not count towards DBE goals. If a DBE does not perform or exercise responsibility for at least 30% of the total cost of its contract with its own work force, or the DBE subcontracts a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involved, it will be presumed that the DBE is not performing a CUF

(3) A DBE trucking firm (including an owner operator who is certified as a DBE is considered to be performing a CUF when the DBE is responsible for the management and supervision of the entire trucking operation on a particular contract and the DBE itself owns and operates at least 1 fully licensed, insured, and operational truck used on the contract.

(a) The Contractor receives credit for the total value of the transportation services the DBE provides on a contract using trucks it owns, insures, and operates using drivers it employs.

(b) The DBE may lease trucks from another DBE firm, including an owner operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the Contract.

(c) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit for the total value of transportation services provided by non-DBE lessees not to exceed the value of transportation services provided by the DBE-owned trucks on the contract. Additional participation by non-DBE lessees receive credit only for the fee or commission it receives as result of the lease arrangement

(d) A lease must indicate that the DBE has exclusive use of and control over the trucks giving the DBE absolute priority for use of the leased trucks. Leased trucks must display the name and identification number of the DBE.

(4) When a DBE is presumed not to be performing a CUF the DBE may present evidence to rebut this presumption.

(5) Project materials or supplies acquired from an affiliate of the prime contractor can not directly or indirectly (2nd or lower tier subcontractor) be used for DBE goal credit.

c. A Contractor may count toward its DBE goals expenditures for materials and supplies obtained from a DBE manufacturer, provided that the DBE assumes the actual and contractual responsibility for the materials and supplies. Count expenditures with DBEs for materials or supplies toward DBE goals as provided in the following:

(1) If the materials or supplies are obtained from a DBE manufacturer, count 100% of the cost of the materials or supplies toward DBE goals. (Definition of a DBE manufacturer found at 1A.c.(1) of this provision.)

For purposes of this Section (1.A.c.(1)), a manufacturer is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract and of the general character described by the specifications.

(2) If the materials or supplies are purchased from a DBE regular dealer, count 60% of the cost of the materials or supplies toward DBE goals.

For purposes of this Section (1.A.5.c.(2)), a regular dealer is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business:

(A) To be a regular dealer, the firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question.

(B) A person may be a regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone or asphalt without owning, operating, or maintaining a place of business as provided in the first paragraph under Section 1.A.5.c.(2), if the person both owns and operates distribution equipment for the products. Any supplementing of regular dealers' own distribution equipment shall be by a long-term lease agreement and not on an ad hoc or contract-by-contract basis.

(C) Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions are not regular dealers within the meaning of Section 1.A.5.c.(2).

(3) With respect to materials or supplies purchased from DBE which is neither a manufacturer nor a regular dealer, count the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site, toward DBE goals, provided you determine the fees to be reasonable and not excessive as compared with fees customarily allowed for similar services. Do not count any

portion of the cost of the materials and supplies themselves toward DBE goals.

(4) Count the entire amount of fees or commissions charged by a DBE firm for providing a bona fide service, such as professional, technical, consultant or managerial services, or for providing bonds or insurance specifically required for the performance of a DOT-assisted contract, toward DBE goals, provided you determine the fee to be reasonable and not excessive as compared with fees customarily allowed for similar services.

d. If the Contractor chooses to assist a DBE firm, other than a manufacturing material supplier or regular dealer, and the DBE firm accepts the assistance, the Contractor may act solely as a guarantor by use of a two-party check for payment of materials to be used on the project by the DBE. The material supplier must invoice the DBE who will present the invoice to the Contractor. The Contractor may issue a joint check to the DBE and the material supplier and the DBE firm must issue the remittance to the material supplier. No funds shall go directly from the Contractor to the material supplier. The DBE firm may accept or reject this joint checking arrangement.

The Contractor must obtain approval from the Department prior to implementing the use of joint check arrangements with the DBE. Submit to the Department, Joint Check Approval Form 2178 for requesting approval. Provide copies of cancelled joint checks upon request. No DBE goal credit will be allowed for the cost of DBE materials that are paid by the Contractor directly to the material supplier.

e. No DBE goal credit will be allowed for supplies and equipment the DBE subcontractor leases from the contractor or its affiliates.

f. No DBE goal credit will be allowed for the period of time determined by the Department that the DBE was not performing a CUF. The denial period of time may occur before or after a determination has been made by the department. In case of the denial of credit for non-performance of a CUF of a DBE, the Contractor will be required to provide a substitute DBE to meet the contract goal or provide an adequate good faith effort when applicable.

6. Records and Reports.

a. The Contractor shall submit monthly reports, after work begins, on DBE payments to meet the DBE goal and for DBE or HUB race-neutral participation. Report payments made to non-DBE HUBs. The monthly report is to be sent to the Area Engineer. These reports will be due within 15 days after the end of a calendar month. These reports will be required until all DBE subcontracting or material supply activity is completed. Form SMS.4903, "DBE Progress Report," is to be used for monthly reporting. Form. SMS.4904, "DBE Final Report," is to be used as a final summary of DBE payments submitted upon completion of the project. The original final report

b. DBE subcontractors and/or material suppliers should be identified on the monthly report by Vendor Number, name, and the amount of actual payment made to each during the monthly period. Negative reports are required when no activity has occurred in a monthly period.

c. All such records must be retained for a period of 3 years following completion of the contract work, and shall be available at reasonable times and places for inspection by authorized representatives of the Department or the DOT. Provide copies of subcontracts or agreements and other documentation upon request.

d. Prior to receiving final payment, the Contractor shall submit Form SMS.4904, "DBE Final Report". If the DBE goal requirement is not met, documentation supporting Good Faith Efforts, as outlined in Section 1.A.3.c of this Special Provision, must be submitted with the "DBE Final Report."

e. Provide a certification of prompt payment in accordance with the Department's prompt payment procedure to certify that all subcontractors and suppliers were paid from the previous months payments and retainage was released for those whose work is complete. Submit the completed form each month and the month following the month when final acceptance occurred at the end of the project.

7. **Compliance of Contractor**. To ensure that DBE requirements of this DOT assisted contract are complied with, the Department will monitor the Contractor's efforts to involve DBEs during the performance of this contract. This will be accomplished by a review of monthly reports submitted to the Area Engineer by the Contractor indicating his progress in achieving the DBE contract goal, and by compliance reviews conducted on the project site by the Department.

   The Contractor shall receive credit toward the DBE goal based on actual payments to the DBE subcontractor. The Contractor shall notify the Area Engineer if he/she withholds or reduces payment to any DBE subcontractor. The Contractor shall submit an affidavit detailing the DBE subcontract payments prior to receiving final payment for the contract.

   Contractors' requests for substitutions of DBE subcontractors shall be accompanied by a detailed explanation which should substantiate the need for a substitution. The Contractor may not be allowed to count work on those items being substituted toward the DBE goal prior to approval of the substitution from the Department.

The prime Contractor is prohibited from providing work crews and equipment to DBEs. DBE Goal credit for the DBE subcontractors leasing of equipment or purchasing of supplies from the prime contractor or its affiliates is not allowed.

When a DBE subcontractor named in the commitment under Section 1.A.3.a. of this Special Provision, is terminated or fails to complete its work on the contract for any reason, the prime contractor is required to make good faith efforts to find another DBE subcontractor to substitute for the original DBE. These good faith efforts shall be directed at finding another DBE to perform at least the same amount of work under the contract as the DBE that was terminated, to the extent needed to meet the contract goal.

A Contractor's failure to comply with the requirements of this Special Provision shall constitute a material breach of this contract. In such a case, the Department reserves the right to terminate the contract; to deduct the amount of DBE goal not accomplished by DBEs from the money due or to become due the Contractor, or to secure a refund, not as a penalty but as liquidated damages to the Department or such other remedy or remedies as the Department deems appropriate.

Forward Form 2371, "DBE Trucking Credit Worksheet," completed by the DBE trucker every month DBE credit is used.

B. **Article B. Race-Neutral Disadvantaged Business Enterprise Participation.** It is the policy of the DOT that Disadvantaged Business Enterprises (DBE) as defined in 49 CFR Part 26 Subpart A, be given the opportunity to compete fairly for contracts and subcontracts financed in whole or in part with Federal funds and that a maximum feasible portion of the Department's overall DBE goal be met using race-neutral means. Consequently, if there is no DBE goal, the DBE requirements of 49 CFR Part 26, apply to this contract as follows:

The Contractor will offer DBEs as defined in 49 CFR Part 26, Subpart A, the opportunity to compete fairly for contracts and subcontractors financed in whole or in part with Federal funds. Race-Neutral DBE and non-DBE HUB participation on projects with no DBE goal shall be reported on Form SMS.4903, "DBE or HUB Progress Report" and submitted to the Area Engineer each month and at project completion. Payments to DBEs reported on Form SMS.4903 are subject to the requirements of Section 1.A.5, "Determination of DBE Participation."

The Contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate.

CHILD SUPPORT STATEMENT

Under Section 231.006, Family Code, the vendor or applicant certifies that the individual or business entity named in this contract, bid, or application is not ineligible to receive the specified grant, loan, or payment and acknowledges that this contract may be terminated and payment may be withheld if this certification is inaccurate.

DIFFERING SITE CONDITIONS

Application of rates. - Once a firm's indirect cost rates are accepted under this paragraph, the recipient of the funds shall apply such rates for the purposes of contract estimation, negotiation, administration, reporting, and contract payment and shall not be limited by administrative or de facto ceilings of any kind.

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

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ATTACHMENTS

A. Employment Preference for Appalachian Contracts (included in Appalachian contracts only)

I. GENERAL

1. These contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

2. Except as otherwise provided for in each section, the contractor shall insert in each subcontract all of the stipulations contained in these Required Contract Provisions, and further require their inclusion in any lower tier subcontract or purchase order that may in turn be made. The Required Contract Provisions shall not be incorporated by reference in any case. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Required Contract Provisions.

3. A breach of any of the stipulations contained in these Required Contract Provisions shall be sufficient grounds for termination of the contract.

4. A breach of the following clauses of the Required Contract Provisions may also be grounds for debarment as provided in 29 CFR 5.12:

Section I, paragraph 2;
Section IV, paragraphs 1, 2, 3, 4, and 7;
Section V, paragraphs 1 and 2a through 2g.

5. Disputes arising out of the labor standards provisions of Section IV (except paragraph 5) and Section V of these Required Contract Provisions shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the U.S. Department of Labor (DOL) as set forth in 29 CFR 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the DOL, or the contractor's employees or their representatives.

6. **Selection of Labor:** During the performance of this contract, the contractor shall not:

a. discriminate against labor from any other State, possession, or territory of the United States (except for employment preference for Appalachian contracts, when applicable, as specified in Attachment A), or

b. employ convict labor for any purpose within the limits of the project unless it is labor performed by convicts who are on parole, supervised release, or probation.

II. NONDISCRIMINATION

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $10,000 or more.)

1. **Equal Employment Opportunity:** Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630 and 41 CFR 60) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The Equal Opportunity Construction Contract Specifications set forth under 41 CFR 60-4.3 and the provisions of the American Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the State highway agency (SHA) and the Federal Government in carrying out EEO obligations and in their review of his/her activities under the contract.

b. The contractor will accept as his operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job training."

2. **EEO Officer:** The contractor will designate and make known to the SHA contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of EEO and who must be assigned adequate authority and responsibility to do so.

3. **Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minority group employees.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. **Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed

in publications having a large circulation among minority groups in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The DOL has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)

c. The contractor will encourage his present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.

5. **Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of his avenues of appeal.

6. **Training and Promotion:**

a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.

7. **Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:

a. The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.

b. The contractor will use best efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the SHA and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The DOL has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the SHA.

8. **Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

a. The contractor shall notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.

b. Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use his best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of DBE construction firms from SHA personnel.

c. The contractor will use his best efforts to ensure subcontractor compliance with their EEO obligations.

9. **Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the SHA and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women;

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and

(4) The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.

b. The contractors will submit an annual report to the SHA

each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. If on-the job training is being required by special provision, the contractor will be required to collect and report training data.

III. NONSEGREGATED FACILITIES

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $10,000 or more.)

a. By submission of this bid, the execution of this contract or subcontract, or the consummation of this material supply agreement or purchase order, as appropriate, the bidder, Federal-aid construction contractor, subcontractor, material supplier, or vendor, as appropriate, certifies that the firm does not maintain or provide for its employees any segregated facilities at any of its establishments, and that the firm does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The firm agrees that a breach of this certification is a violation of the EEO provisions of this contract. The firm further certifies that no employee will be denied access to adequate facilities on the basis of sex or disability.

b. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive, or are, in fact, segregated on the basis of race, color, religion, national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override (e.g. disabled parking).

c. The contractor agrees that it has obtained or will obtain identical certification from proposed subcontractors or material suppliers prior to award of subcontracts or consummation of material supply agreements of $10,000 or more and that it will retain such certifications in its files.

IV. PAYMENT OF PREDETERMINED MINIMUM WAGE

(Applicable to all Federal-aid construction contracts exceeding $2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural minor collectors, which are exempt.)

1. **General:**

a. All mechanics and laborers employed or working upon the site of the work will be paid unconditionally and not less often than once a week and without subsequent deduction or rebate on any account [except such payroll deductions as are permitted by regulations (29 CFR 3) issued by the Secretary of Labor under the Copeland Act (40 U.S.C. 276c)] the full amounts of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment. The payment shall be computed at wage rates not less than those contained in the wage determination of the Secretary of Labor (hereinafter "the wage determination") which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor or its subcontractors and such laborers and mechanics. The wage determination (including any additional classifications and wage rates conformed under paragraph 2 of this Section IV and the DOL poster (WH-1321) or Form FHWA-1495) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. For the purpose of this Section, contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act (40 U.S.C. 276a) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of Section IV, paragraph 3b, hereof. Also, for the purpose of this Section, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in paragraphs 4 and 5 of this Section IV.

b. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed.

c. All rulings and interpretations of the Davis-Bacon Act and related acts contained in 29 CFR 1, 3, and 5 are herein incorporated by reference in this contract.

2. **Classification:**

a. The SHA contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.

b. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have been met:

(1) the work to be performed by the additional classification requested is not performed by a classification in the wage determination;

(2) the additional classification is utilized in the area by the construction industry;

(3) the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and

(4) with respect to helpers, when such a classification prevails in the area in which the work is performed.

c. If the contractor or subcontractors, as appropriate, the laborers and mechanics (if known) to be employed in the additional classification or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the DOL, Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, D.C. 20210. The Wage and Hour Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

d. In the event the contractor or subcontractors, as appropriate, the laborers or mechanics to be employed in the additional classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. Said Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary

e. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 2c or 2d of this Section IV shall be paid to all workers performing work in the additional classification from the first day on which work is performed in the classification.

3. **Payment of Fringe Benefits:**

a. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor or subcontractors, as appropriate, shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly case equivalent thereof.

b. If the contractor or subcontractor, as appropriate, does not make payments to a trustee or other third person, he/she may consider as a part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

4. **Apprentices and Trainees (Programs of the U.S. DOL) and Helpers:**

a. Apprentices:

(1) Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the DOL, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or if a person is employed in his/her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.

(2) The allowable ratio of apprentices to journeyman-level employees on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate listed in the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor or subcontractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman-level hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

(3) Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator for the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

(4) In the event the Bureau of Apprenticeship and Training, or a State apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor or subcontractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the comparable work performed by regular employees until an acceptable program is approved.

b. Trainees:

(1) Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the DOL, Employment and Training Administration.

(2) The ratio of trainees to journeyman-level employees on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(3) Every trainee must be paid at not less than the rate specified in the approved program for his/her level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman-level wage rate on the wage determination which provides for less than full fringe benefits for apprentices, in which case such trainees shall receive the same fringe benefits as apprentices.

(4) In the event the Employment and Training Administration withdraws approval of a training program, the contractor or subcontractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Helpers:

Helpers will be permitted to work on a project if the helper classification is specified and defined on the applicable wage determination or is approved pursuant to the conformance procedure set forth in Section IV.2. Any worker listed on a payroll at a helper wage rate, who is not a helper under a approved definition, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed.

5. **Apprentices and Trainees (Programs of the U.S. DOT):**

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

6. **Withholding:**

The SHA shall upon its own action or upon written request of an authorized representative of the DOL withhold, or cause to be withheld, from the contractor or subcontractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements which is held by the same prime contractor, as much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the SHA contracting officer may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

7. **Overtime Requirements:**

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen, or guards (including apprentices, trainees, and helpers described in paragraphs 4 and 5 above) shall require or permit any laborer, mechanic, watchman, or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman, or guard receives compensation at a rate not less than one-and-one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.

8. **Violation:**

Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in paragraph 7 above, the contractor and any subcontractor responsible thereof shall be liable to the affected employee for his/her unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer, mechanic, watchman, or guard employed in violation of the clause set forth in paragraph 7, in the sum of $10 for each calendar day on which such employee was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in paragraph 7.

9. **Withholding for Unpaid Wages and Liquidated Damages:**

The SHA shall upon its own action or upon written request of any authorized representative of the DOL withhold, or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 8 above.

V. STATEMENTS AND PAYROLLS

(Applicable to all Federal-aid construction contracts exceeding $2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural collectors, which are exempt.)

1. **Compliance with Copeland Regulations (29 CFR 3):**

The contractor shall comply with the Copeland Regulations of the Secretary of Labor which are herein incorporated by reference.

2. **Payrolls and Payroll Records:**

a. Payrolls and basic records relating thereto shall be maintained by the contractor and each subcontractor during the course of the work and preserved for a period of 3 years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work.

b. The payroll records shall contain the name, social security number, and address of each such employee; his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof the types described in Section 1(b)(2)(B) of the Davis Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid. In addition, for Appalachian contracts, the payroll records shall contain a notation indicating whether the employee does, or does not, normally reside in the labor area as defined in Attachment A, paragraph 1. Whenever the Secretary of Labor, pursuant to Section IV, paragraph 3b, has found that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis Bacon Act, the contractor and each subcontractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and show the cost anticipated or the actual cost incurred in providing benefits. Contractors or subcontractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprentices and trainees, and ratios and wage rates prescribed in the applicable programs.

c. Each contractor and subcontractor shall furnish, each week in which any contract work is performed, to the SHA resident engineer a payroll of wages paid each of its employees (including apprentices, trainees, and helpers, described in Section IV, paragraphs 4 and 5, and watchmen and guards engaged on work during the preceding weekly payroll period). The payroll submitted shall set out accurately and completely all of the information required to be maintained under paragraph 2b of this Section V. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal stock number 029-005-0014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.

d. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his/her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) that the payroll for the payroll period contains the information required to be maintained under paragraph 2b of this Section V and that such information is correct and complete;

(2) that such laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR 3;

(3) that each laborer or mechanic has been paid not less that the applicable wage rate and fringe benefits or cash equivalent for the classification of worked performed, as specified in the applicable wage determination incorporated into the contract.

e. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 2d of this Section V.

f. The falsification of any of the above certifications may subject the contractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 231.

g. The contractor or subcontractor shall make the records required under paragraph 2b of this Section V available for inspection, copying, or transcription by authorized representatives of the SHA, the FHWA, or the DOL, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the SHA, the FHWA, the DOL, or all may, after written notice to the contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

VI. RECORD OF MATERIALS, SUPPLIES, AND LABOR

1. On all Federal-aid contracts on the National Highway System, except those which provide solely for the installation of protective devices at railroad grade crossings, those which are constructed on a force account or direct labor basis, highway beautification contracts, and contracts for which the total final construction cost for roadway and bridge is less than $1,000,000 (23 CFR 635) the contractor shall:

a. Become familiar with the list of specific materials and supplies contained in Form FHWA-47, "Statement of Materials and Labor Used by Contractor of Highway Construction Involving Federal Funds," prior to the commencement of work under this contract.

b. Maintain a record of the total cost of all materials and supplies purchased for and incorporated in the work, and also of the quantities of those specific materials and supplies listed on Form FHWA-47, and in the units shown on Form FHWA-47.

c. Furnish, upon the completion of the contract, to the SHA resident engineer on Form FHWA-47 together with the data required in paragraph 1b relative to materials and supplies, a final labor summary of all contract work indicating the total hours worked and the total amount earned.

2. At the prime contractor's option, either a single report covering all contract work or separate reports for the contractor and for each subcontract shall be submitted.

VII. SUBLETTING OR ASSIGNING THE CONTRACT

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the State. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635).

a. "Its own organization" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of

a subcontractor, assignee, or agent of the prime contractor.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph 1 of Section VII is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the SHA contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the SHA contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the SHA has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

VIII. SAFETY: ACCIDENT PREVENTION

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the SHA contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, the following notice shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

NOTICE TO ALL PERSONNEL ENGAGED ON FEDERAL-AID HIGHWAY PROJECTS

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined not more that $10,000 or imprisoned not more than 5 years or both."

X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $100,000 or more.)

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.

2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.

3. That the firm shall promptly notify the SHA of the receipt of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

1. **Instructions for Certification - Primary Covered Transactions:**

(Applicable to all Federal-aid contracts - 49 CFR 29)

a. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this

transaction for cause of default.

d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations.

f. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded From Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph f of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Primary Covered Transactions

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgement rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and

d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

2. **Instructions for Certification - Lower Tier Covered Transactions:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions of $25,000 or more - 49 CFR 29)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and

frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

*****

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Covered Transactions:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

*****

XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

(Applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 - 49 CFR 20)

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

ATTACHMENT A - EMPLOYMENT PREFERENCE FOR APPALACHIAN CONTRACTS
(Applicable to Appalachian contracts only.)

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph 1c shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph 4 below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which he estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, he shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within 1 week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph 1c above.

5. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.

2. Identify the status of the covered Federal action.

3. Identify the appropriate classification of this report. If this is a followup report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.

4. Enter the full name, address, city, State and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.

5. If the organization filing the report in item 4 checks "Subawardee," then enter the full name, address, city, State and zip code of the prime Federal recipient. Include Congressional District, if known.

6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.

7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.

8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitation for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., "RFP-DE-90-001."

9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.

10. (a) Enter the full name, address, city, State and zip code of the lobbying registrant under the Lobbying Disclosure Act of 1995 engaged by the reporting entity identified in item 4 to influence the covered Federal action.

    (b) Enter the full names of the individual(s) performing services, and include full address if different from 10 (a). Enter Last Name, First Name, and Middle Initial (MI).

11. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

According to the Paperwork Reduction Act, as amended, no persons are required to respond to a collection of information unless it displays a valid OMB Control Number. The valid OMB control number for this information collection is OMB No. 0348-0046. Public reporting burden for this collection of information is estimated to average 10 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0046), Washington, DC 20503.

DISCLOSURE OF LOBBYING ACTIVITIES

Approved by OMB
0348-0046

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352
(See reverse for public burden disclosure.)

1. Type of Federal Action:	2. Status of Federal Action:	3. Report Type:
☐ a. contract b. grant c. cooperative agreement d. loan e. loan guarantee f. loan insurance	☐ a. bid/offer/application b. initial award c. post-award	☐ a. initial filing b. material change **For Material Change Only:** year _____ quarter _____ date of last report _____

4. Name and Address of Reporting Entity: ☐ **Prime** ☐ **Subawardee** Tier _____, *if known*: **Congressional District**, *if known*: 4c	**5. If Reporting Entity in No. 4 is a Subawardee, Enter Name and Address of Prime:** **Congressional District**, *if known*:
6. Federal Department/Agency:	**7. Federal Program Name/Description:** CFDA Number, *if applicable*: _____
8. Federal Action Number, *if known*:	**9. Award Amount**, *if known*: $
10. a. Name and Address of Lobbying Registrant (*if individual, last name, first name, MI*):	**b. Individuals Performing Services** (*including address if different from No. 10a*) (*last name, first name, MI*):
11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.	Signature: _____ Print Name: _____ Title: _____ Telephone No.: _____ Date: _____

Federal Use Only:	Authorized for Local Reproduction Standard Form LLL (Rev. 7-97)

DISCLOSURE OF LOBBYING ACTIVITIES
CONTINUATION SHEET

Approved by OMB
0348-0046

Reporting Entity: _____ Page _____ of _____

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Standard Form - LLL-A

SF - LLL - A

CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents of all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, United States Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

Organization: _____

Street address: _____

City, State, Zip: _____

_____
CERTIFIED BY: (type or print)

_____
TITLE:

_____ _____
(signature) (date)

STATEMENT OF NON-COLLUSION

We certify that this is a bona fide tender, and that we have not fixed or adjusted the amount of the tender by or under or in accordance with any agreement or arrangements with any other person. We also certify that we have not done and we undertake that we will not do at any time before the hour and date specified for the return of this tender any of the following acts:

1. Communicate to any person other than the person calling for those tenders the amount or approximate amount of the proposed tender, except where the disclosure, in confidence, of the approximate amount of the tender was necessary to obtain insurance premium quotations required for the preparation of the tender;

2. Enter into agreement or arrangements with any other person that he shall refrain from tendering or as to the amount of any tender to be submitted;

3. Offer or pay or give or agree to pay or give any sum of money or valuable consideration directly or indirectly to any person for doing or having done in relation to any other tender or proposed tender for the said work any act or thing of the sort described above.

   In this certificate, the word "person" includes any person and any body or association, corporate or unincorporated; and "any agreement or arrangement" includes any such transaction, formal or informal, and whether legally binding or not.

Signature: _____

Name in BLOCK LETTERS: _____

Address: _____

_____

Position in Company: _____

Duly authorised to sign tenders for and on behalf of:

Company's name: _____

Address: _____

Date: _____

(This form is to be used with contracts that have federal funding)

CERTIFICATION OF NONSEGREGATED FACILITIES (CONTRACTOR)

(Applicable to federally assisted construction contracts and related subcontracts exceeding $10,000 which are not exempt from the Equal Opportunity clause.)

The federally assisted construction contractor certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally assisted construction contractor certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally assisted construction contractor agrees that a breach of this certification is a violation of the Equal Opportunity clause in this contract.

As used in this certification, the term "segregated facilities" means any waiting rooms, work area, rest rooms and wash rooms, restaurants, and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are, in fact, segregated on the basis of race, creed, color, or national origin, because of habit, local custom, or otherwise. The federally assisted construction contractor agrees that (except where he has obtained identical certifications from proposed contractors for specific time periods) he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding $10,000 which are not exempt from the provisions of the Equal Opportunity clause, and that he will retain such certification in this file.

Contract #: _____

Contract Title: _____

Name of Company: _____

_____ _____

Authorized Signature Date

_____

Name and Title of Signer

PRISON PRODUCED MATERIALS

(a) Materials produced after July 1, 1991, by convict labor may only be incorporated in a Federal-aid highway construction project if such materials have been:

(1) Produced by convicts who are on parole, supervised release, or probation from a prison or

(2) Produced in a qualified prison facility and the cumulative annual production amount of such materials for use in Federal-aid highway construction does not exceed the amount of such materials produced in such facility for use in Federal-aid highway construction during the 12-month period ending July 1, 1987.

(b) *Qualified prison facility* means any prison facility in which convicts, during the 12-month period ending July 1, 1987, produced materials for use in Federal-aid highway construction projects.