SPECIFICATIONS AND CONTRACT DOCUMENTS

FOR CONSTRUCTION OF THE

US 82 PASS THROUGH FINANCE PROJECT

FROM FM 1840 TO SH 98
(TXDOT CSJ 0046-04-057)
(TXDOT PROJECT NO. PTF 2013 (400))

FOR
BOWIE COUNTY, TEXAS

BOWIE COUNTY COMMISSIONERS COURT

Sterling Lacy	Bowie County Judge
Sammy Stone	Commissioner Precinct 1
Tom Whitten	Commissioner Precinct 2
Kelly Blackburn	Commissioner Precinct 3
Pat McCoy	Commissioner Precinct 4

STAFF

William Tye	Bowie County Auditor & Purchasing Agent

Prepared by

H W LOCHNER, INC. (TBPE Firm #10488)
1828 ESE Loop 323, Suite 202
Tyler, Texas

Control	**0046-04-057**
Project	**PTF 2013 (400)**
Highway	**US 82**
County	**BOWIE**

BID PROPOSAL
TO BOWIE COUNTY
TXDOT 2004 SPECIFICATIONS
WORK CONSISTING OF REHABILITATING US 82
BOWIE COUNTY, TEXAS

The quantities in the bid package are approximate. The quantities of work and materials may be increased or decreased as considered necessary to complete the work as planned and contemplated.

This project is to be completed in **405** working days and will be accepted when fully completed and finished to the satisfaction of *Bowie County* and the TxDOT Executive Director or designee.

Provide a bid guaranty in the form of a Cashier's Check, Teller's Check (including an Official Check) or Bank Money Order on a State or National Bank or Savings and Loan Association, or State or Federally chartered Credit Union made payable to *Bowie County* in the following amount:

ONE HUNDRED THOUSAND (Dollars) **($100,000)**

A bid bond may be used as the required bid guaranty. The bond form may be detached from the bid for completion. The bid package may not be disassembled to remove the bond form. The bond must be in accordance with Item 2 of the specifications.

Any addenda issued amending this bid and/or the plans that have been acknowledged by the bidder, become part of this bid.

By signing the bid the bidder certifies:

1. the only persons or parties interested in this bid are those named and the bidder has not directly or indirectly participated in collusion, entered into an agreement or otherwise taken any action in restraint of free competitive bidding in connection with the above captioned project.
2. in the event of the award of a contract, the organization represented will secure bonds for the full amount of the contract.
3. the signatory represents and warrants that they are an authorized signatory for the organization for which the bid is submitted and they have full and complete authority to submit this bid on behalf of their firm.
4. that the certifications and representations contained in the bid are true and accurate and the bidder intends the bid to be taken as a genuine government record.
5. By submitting a bid for this project, the contractor is acknowledging the insurance requirements found in the General Conditions of the contract documents and the bidder is asserting that, if awarded this contract, he can comply with all insurance requirements as specified therein within 30 days of award of the contract. Should the awarded contractor fail to submit the required insurance certificate within 30 days of bid award, the awarded contractor shall forfeit his bid bond and understands that his bid shall be rejected.

• **Signed: ****

(1) _____ (2) _____ (3) _____

Print Name:

(1) Danny L. Hester (2) _____ (3) _____

Title:

(1) President (2) _____ (3) _____

Company:

(1) James Construction Group, LLC (2) _____ (3) _____

• Signatures to comply with Item 2 of the specifications.

**Note: Complete (1) for single venture, through (2) for joint venture and through (3) for triple venture.

*** When the working days field contains an asterisk (*) refer to the Special Provisions and General Notes.**

NOTICE TO CONTRACTORS

ALL CONTRACTORS INTENDING TO BID ON THIS PROJECT MUST BE PREQUALIFIED TO DO SO BY TxDOT.

ANY CONTRACTORS INTENDING TO BID ON ANY WORK TO BE AWARDED BY THE COUNTY (AND NOT PREVIOUSLY PREQUALIFIED TO BID BY TxDOT) MUST SUBMIT A SATISFACTORY "AUDITED FINANCIAL STATEMENT" AND "EXPERIENCE QUESTIONNAIRE" AT LEAST TEN DAYS PRIOR TO THE LETTING DATE.

UNIT PRICES MUST BE SUBMITTED IN ACCORDANCE WITH ITEM 2 OF THE STANDARD SPECIFICATIONS OR SPECIAL PROVISION TO ITEM 2 FOR EACH ITEM LISTED IN THIS BID.

BOWIE COUNTY
BID BOND

KNOW ALL PERSONS BY THESE PRESENTS,

That we, (Contractor Name) James Construction Group, LLC

Hereinafter called the Principal, and (Surety Name) Federal Insurance Company & Continental Casualty Company

a corporation or firm duly authorized to transact surety business in the State of Texas, hereinafter called the Surety, are held and firmly bound unto *Bowie County*, hereinafter called the Obligee, in the sum of not less than two percent (2%) of the engineer's estimate, rounded to the nearest one thousand dollars, not to exceed one hundred thousand dollars ($100,000) as a proposal guaranty (amount displayed on the *Bid Proposal to Bowie County*), the payment of which sum will and truly be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the principal has submitted a bid for the following project identified as:

Control	**0046-04-057**
Project	**PTF 2013 (400)**
Highway	**US 82**
County	**BOWIE**

NOW, THEREFORE, if the Obligee shall award the Contract to the Principal and the Principal shall enter into the Contract in writing with the Obligee in accordance with the terms of such bid, then this bond shall be null and void. If in the event of failure of the Principal to execute such Contract in accordance with the terms of such bid, this bond shall become the property of the Obligee, without recourse of the Principal and/or Surety, not as a penalty but as liquidated damages.

Signed this 25th Day of March 20 13

By: James Construction Group, LLC
(Contractor/Principal Name)

President
(Signature and Title of Authorized Signatory for Contractor/Principal)

*By: Federal Insurance Company & Continental Casualty Company
(Surety Name)

(Signature of Attorney-in-Fact)
Debbie L. Welsh, Attorney-in-Fact

*Attach Power of Attorney (Surety) for Attorney-in-Fact

This form may be removed from the proposal.

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

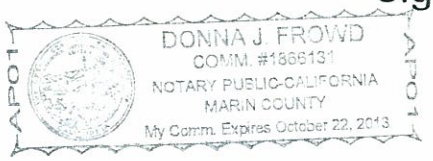
County of MARIN

On March 25, 2013 before me, Donna J. Frowd, Notary Public, personally appeared Debbie L. Welsh who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

(seal)



Signature Donna J. Frowd

Chubb Surety

POWER OF ATTORNEY

Federal Insurance Company
Vigilant Insurance Company
Pacific Indemnity Company

Attn: Surety Department
15 Mountain View Road
Warren, NJ 07059

Know All by These Presents, That **FEDERAL INSURANCE COMPANY**, an Indiana corporation, **VIGILANT INSURANCE COMPANY**, a New York corporation, and **PACIFIC INDEMNITY COMPANY**, a Wisconsin corporation, do each hereby constitute and appoint **Donna J. Frowd, Michael Brophy McGowan, Susan J. McGowan, Debbie L. Welsh and Donna L. Welsh of Novato, California** ----------

each as their true and lawful Attorney- in- Fact to execute under such designation in their names and to affix their corporate seals to and deliver for and on their behalf as surety thereon or otherwise, bonds and undertakings and other writings obligatory in the nature thereof (other than bail bonds) given or executed in the course of business, and any instruments amending or altering the same, and consents to the modification or alteration of any instrument referred to in said bonds or obligations.

In Witness Whereof, said **FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY,** and **PACIFIC INDEMNITY COMPANY** have each executed and attested these presents and affixed their corporate seals on this **23rd** day of **November, 2011.**

Kenneth C. Wendel, Assistant Secretary

David B. Norris, Jr., Vice President

STATE OF NEW JERSEY
County of Somerset ss.

On this **23rd** day of **November, 2011** before me, a Notary Public of New Jersey, personally came Kenneth C. Wendel, to me known to be Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY, the companies which executed the foregoing Power of Attorney, and the said Kenneth C. Wendel, being by me duly sworn, did depose and say that he is Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY and knows the corporate seals thereof, that the seals affixed to the foregoing Power of Attorney are such corporate seals and were thereto affixed by authority of the By- Laws of said Companies; and that he signed said Power of Attorney as Assistant Secretary of said Companies by like authority; and that he is acquainted with David B. Norris, Jr., and knows him to be Vice President of said Companies; and that the signature of David B. Norris, Jr., subscribed to said Power of Attorney is in the genuine handwriting of David B. Norris, Jr., and was thereto subscribed by authority of said By-Laws and in deponent's presence.

Notarial Seal

KATHERINE J. ADELAAR NOTARY PUBLIC NEW JERSEY

KATHERINE J. ADELAAR
NOTARY PUBLIC OF NEW JERSEY
No. 2316685
Commission Expires July 16, 2014

Notary Public

CERTIFICATION

Extract from the By- Laws of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY:

> "All powers of attorney for and on behalf of the Company may and shall be executed in the name and on behalf of the Company, either by the Chairman or the President or a Vice President or an Assistant Vice President, jointly with the Secretary or an Assistant Secretary, under their respective designations. The signature of such officers may be engraved, printed or lithographed. The signature of each of the following officers: Chairman, President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary and the seal of the Company may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing Assistant Secretaries or Attorneys- in- Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such power of attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached."

I, Kenneth C. Wendel, Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY (the "Companies") do hereby certify that

(i) the foregoing extract of the By- Laws of the Companies is true and correct,
(ii) the Companies are duly licensed and authorized to transact surety business in all 50 of the United States of America and the District of Columbia and are authorized by the U.S. Treasury Department; further, Federal and Vigilant are licensed in Puerto Rico and the U.S. Virgin Islands, and Federal is licensed in American Samoa, Guam, and each of the Provinces of Canada except Prince Edward Island; and
(iii) the foregoing Power of Attorney is true, correct and in full force and effect.

Given under my hand and seals of said Companies at Warren, NJ this 25th day of March, 2013

FEDERAL INSURANCE COMPANY INDIANA

PACIFIC INDEMNITY COMPANY INCORPORATED JULY 16, 1925 WISCONSIN

VIGILANT INSURANCE COMPANY NEW YORK

Kenneth C. Wendel, Assistant Secretary

IN THE EVENT YOU WISH TO NOTIFY US OF A CLAIM, VERIFY THE AUTHENTICITY OF THIS BOND OR NOTIFY US OF ANY OTHER MATTER, PLEASE CONTACT US AT ADDRESS LISTED ABOVE, OR BY Telephone (908) 903- 3493 Fax (908) 903- 3656
e-mail: surety@chubb.com

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That Continental Casualty Company, an Illinois insurance company, National Fire Insurance Company of Hartford, an Illinois insurance company, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania insurance company (herein called "the CNA Companies"), are duly organized and existing insurance companies having their principal offices in the City of Chicago, and State of Illinois, and that they do by virtue of the signatures and seals herein affixed hereby make, constitute and appoint

Michael Brophy Mc Gowan, Donna L Welsh, Donna J Frowd, Debbie L Welsh, Individually

of Novato, CA, their true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on their behalf bonds, undertakings and other obligatory instruments of similar nature

- In Unlimited Amounts -

and to bind them thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of their insurance companies and all the acts of said Attorney, pursuant to the authority hereby given is hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law and Resolutions, printed on the reverse hereof, duly adopted, as indicated, by the Boards of Directors of the insurance companies.

In Witness Whereof, the CNA Companies have caused these presents to be signed by their Vice President and their corporate seals to be hereto affixed on this 5th day of October, 2012.

Continental Casualty Company
National Fire Insurance Company of Hartford
American Casualty Company of Reading, Pennsylvania

Paul T. Bruflat — Vice President

State of South Dakota, County of Minnehaha, ss:

On this 5th day of October, 2012, before me personally came Paul T. Bruflat to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is a Vice President of Continental Casualty Company, an Illinois insurance company, National Fire Insurance Company of Hartford, an Illinois insurance company, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania insurance company described in and which executed the above instrument; that he knows the seals of said insurance companies; that the seals affixed to the said instrument are such corporate seals; that they were so affixed pursuant to authority given by the Boards of Directors of said insurance companies and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said insurance companies.

J. MOHR
NOTARY PUBLIC
SOUTH DAKOTA

My Commission Expires June 23, 2015

J. Mohr — Notary Public

CERTIFICATE

I, D. Bult, Assistant Secretary of Continental Casualty Company, an Illinois insurance company, National Fire Insurance Company of Hartford, an Illinois insurance company, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania insurance company do hereby certify that the Power of Attorney herein above set forth is still in force, and further certify that the By-Law and Resolution of the Board of Directors of the insurance companies printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said insurance companies this 25th day of March, 2013.

Continental Casualty Company
National Fire Insurance Company of Hartford
American Casualty Company of Reading, Pennsylvania

D. Bult — Assistant Secretary

Form F6853-4/2012

Authorizing By-Laws and Resolutions

ADOPTED BY THE BOARD OF DIRECTORS OF CONTINENTAL CASUALTY COMPANY:

This Power of Attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the Board of Directors of the Company at a meeting held on May 12, 1995:

"RESOLVED: That any Senior or Group Vice President may authorize an officer to sign specific documents, agreements and instruments on behalf of the Company provided that the name of such authorized officer and a description of the documents, agreements or instruments that such officer may sign will be provided in writing by the Senior or Group Vice President to the Secretary of the Company prior to such execution becoming effective."

This Power of Attorney is signed by Paul T. Bruflat, Vice President, who has been authorized pursuant to the above resolution to execute power of attorneys on behalf of Continental Casualty Company.

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company by unanimous written consent dated the 25th day of April, 2012:

"Whereas, the bylaws of the Company or specific resolution of the Board of Directors has authorized various officers (the "Authorized Officers") to execute various policies, bonds, undertakings and other obligatory instruments of like nature; and

Whereas, from time to time, the signature of the Authorized Officers, in addition to being provided in original, hard copy format, may be provided via facsimile or otherwise in an electronic format (collectively, "Electronic Signatures"); Now therefore be it resolved: that the Electronic Signature of any Authorized Officer shall be valid and binding on the Company."

ADOPTED BY THE BOARD OF DIRECTORS OF NATIONAL FIRE INSURANCE COMPANY OF HARTFORD:

This Power of Attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the Board of Directors of the Company by unanimous written consent dated May 10, 1995:

"RESOLVED: That any Senior or Group Vice President may authorize an officer to sign specific documents, agreements and instruments on behalf of the Company provided that the name of such authorized officer and a description of the documents, agreements or instruments that such officer may sign will be provided in writing by the Senior or Group Vice President to the Secretary of the Company prior to such execution becoming effective."

This Power of Attorney is signed by Paul T. Bruflat, Vice President, who has been authorized pursuant to the above resolution to execute power of attorneys on behalf of National fire Insurance Company of Hartford.

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company by unanimous written consent dated the 25th day of April, 2012:

"Whereas, the bylaws of the Company or specific resolution of the Board of Directors has authorized various officers (the "Authorized Officers") to execute various policies, bonds, undertakings and other obligatory instruments of like nature; and

Whereas, from time to time, the signature of the Authorized Officers, in addition to being provided in original, hard copy format, may be provided via facsimile or otherwise in an electronic format (collectively, "Electronic Signatures"); Now therefore be it resolved: that the Electronic Signature of any Authorized Officer shall be valid and binding on the Company."

ADOPTED BY THE BOARD OF DIRECTORS OF AMERICAN CASUALTY COMPANY OF READING, PENNSYLVANIA:

This Power of Attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the Board of Directors of the Company by unanimous written consent dated May 10, 1995:

"RESOLVED: That any Senior or Group Vice President may authorize an officer to sign specific documents, agreements and instruments on behalf of the Company provided that the name of such authorized officer and a description of the documents, agreements or instruments that such officer may sign will be provided in writing by the Senior or Group Vice President to the Secretary of the Company prior to such execution becoming effective."

This Power of Attorney is signed by Paul T. Bruflat, Vice President, who has been authorized pursuant to the above resolution to execute power of attorneys on behalf of American Casualty Company of Reading, Pennsylvania.

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company by unanimous written consent dated the 25th day of April, 2012:

"Whereas, the bylaws of the Company or specific resolution of the Board of Directors has authorized various officers (the "Authorized Officers") to execute various policies, bonds, undertakings and other obligatory instruments of like nature; and

Whereas, from time to time, the signature of the Authorized Officers, in addition to being provided in original, hard copy format, may be provided via facsimile or otherwise in an electronic format (collectively, "Electronic Signatures"); Now therefore be it resolved: that the Electronic Signature of any Authorized Officer shall be valid and binding on the Company."

Bond #: Federal - 82326601
Continental - 929566173

Originals: 3

Document A312™ – 2010

Conforms with The American Institute of Architects AIA Document 312

Performance Bond

CONTRACTOR:
(Name, legal status and address)
James Construction Group, LLC
11200 Industriplex Blvd., Suite 150
Baton Rouge, LA 70809

OWNER:
(Name, legal status and address)
Bowie County of the State of Texas
710 James Bowie Drive
New Boston, TX 75570

(Co-Sureties)

SURETY:
(Name, legal status and principal place of business)
Federal Insurance Company
Attn: Surety Dept., 15 Mountain View Road
Warren, NJ 07059

Continental Casualty Company
333 S. Wasbash Ave., Chicago, IL 60604

Mailing Address for Notices:

Federal Insurance Company
(same as above)

Continental Casualty Company
555 Mission St., Suite 200
San Francisco, CA 94105

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONSTRUCTION CONTRACT
Date:

Amount: $ 27,862,166.81 (Twenty-Seven Million Eight Hundred Sixty-Two Thousand One Hundred Sixty-Six & 81/100)

Description:
(Name and location) US 82 PASS THROUGH FINANCE PROJECT
FROM FM 1840 TO SH 98
(TXDOT CSJ 0046-04-057)
(TXDOT PROJECT NO. PTF 2013 (400))

BOND
Date: May 9, 2013
(Not earlier than Construction Contract Date)

Amount: $ 27,862,166.81 (Twenty-Seven Million Eight Hundred Sixty-Two Thousand One Hundred Sixty-Six & 81/100)

Modifications to this Bond: [X] None [ ] See Section 16

CONTRACTOR AS PRINCIPAL
Company: *(Corporate Seal)*
James Construction Group, LLC

Signature:
Name and Title: Danny L. Hester, President

Co- SURETY
Company: *(Corporate Seal)*
Federal Insurance Company &
Continental Casualty Company

Signature:
Name and Title: Debbie L. Welsh, Attorney-in-Fact

(Any additional signatures appear on the last page of this Performance Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:
M.B. McGowan & Associates Insurance Agency, Inc.
7250 Redwood Blvd., Suite 110
Novato, CA 94945
Tel: 415-892-1080

OWNER'S REPRESENTATIVE:
(Architect, Engineer or other party:)
Bowie County Auditor, 710 James Bowie Drive, New Boston, TX 75501
H.W. Lochner, Incorporated, 1828 East Southwest Loop, Suite 202, Tyler, TX 75701

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

.1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;

.2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

.3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
.2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and
.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

§ 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Definitions

§ 14.1 Balance of the Contract Price. The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 14.2 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 Contractor Default. Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL
Company: *(Corporate Seal)*

Signature: _____
Name and Title:
Address

SURETY
Company: *(Corporate Seal)*

Signature: _____
Name and Title:
Address

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

County of MARIN

On May 9, 2013 before me, Donna J. Frowd, Notary Public, personally appeared Debbie L. Welsh who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

(seal)

Signature Donna J. Frowd

DONNA J. FROWD
COMM. #1886131
NOTARY PUBLIC-CALIFORNIA
MARIN COUNTY
My Comm. Expires October 22, 2013

Chubb Surety

POWER OF ATTORNEY

Federal Insurance Company
Vigilant Insurance Company
Pacific Indemnity Company

Attn: Surety Department
15 Mountain View Road
Warren, NJ 07059

Know All by These Presents, That **FEDERAL INSURANCE COMPANY**, an Indiana corporation, **VIGILANT INSURANCE COMPANY**, a New York corporation, and **PACIFIC INDEMNITY COMPANY**, a Wisconsin corporation, do each hereby constitute and appoint **Donna J. Frowd, Michael Brophy McGowan, Susan J. McGowan, Debbie L. Welsh and Donna L. Welsh of Novato, California** ----------

each as their true and lawful Attorney- in- Fact to execute under such designation in their names and to affix their corporate seals to and deliver for and on their behalf as surety thereon or otherwise, bonds and undertakings and other writings obligatory in the nature thereof (other than bail bonds) given or executed in the course of business, and any instruments amending or altering the same, and consents to the modification or alteration of any instrument referred to in said bonds or obligations.

In Witness Whereof, said **FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY**, and **PACIFIC INDEMNITY COMPANY** have each executed and attested these presents and affixed their corporate seals on this **23rd** day of **November, 2011.**

Kenneth C. Wendel, Assistant Secretary

David B. Norris, Jr., Vice President

STATE OF NEW JERSEY
County of Somerset ss.

On this **23rd** day of **November, 2011** before me, a Notary Public of New Jersey, personally came Kenneth C. Wendel, to me known to be Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY, the companies which executed the foregoing Power of Attorney, and the said Kenneth C. Wendel, being by me duly sworn, did depose and say that he is Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY and knows the corporate seals thereof, that the seals affixed to the foregoing Power of Attorney are such corporate seals and were thereto affixed by authority of the By- Laws of said Companies; and that he signed said Power of Attorney as Assistant Secretary of said Companies by like authority; and that he is acquainted with David B. Norris, Jr., and knows him to be Vice President of said Companies; and that the signature of David B. Norris, Jr., subscribed to said Power of Attorney is in the genuine handwriting of David B. Norris, Jr., and was thereto subscribed by authority of said By- Laws and in deponent's presence.

Notarial Seal

KATHERINE J. ADELAAR NOTARY PUBLIC NEW JERSEY

KATHERINE J. ADELAAR
NOTARY PUBLIC OF NEW JERSEY
No. 2316685
Commission Expires July 16, 2014

Notary Public

CERTIFICATION

Extract from the By- Laws of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY:

"All powers of attorney for and on behalf of the Company may and shall be executed in the name and on behalf of the Company, either by the Chairman or the President or a Vice President or an Assistant Vice President, jointly with the Secretary or an Assistant Secretary, under their respective designations. The signature of such officers may be engraved, printed or lithographed. The signature of each of the following officers: Chairman, President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary and the seal of the Company may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing Assistant Secretaries or Attorneys- in- Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such power of attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached."

I, Kenneth C. Wendel, Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY (the "Companies") do hereby certify that

(i) the foregoing extract of the By- Laws of the Companies is true and correct,
(ii) the Companies are duly licensed and authorized to transact surety business in all 50 of the United States of America and the District of Columbia and are authorized by the U.S. Treasury Department; further, Federal and Vigilant are licensed in Puerto Rico and the U.S. Virgin Islands, and Federal is licensed in American Samoa, Guam, and each of the Provinces of Canada except Prince Edward Island; and
(iii) the foregoing Power of Attorney is true, correct and in full force and effect.

Given under my hand and seals of said Companies at Warren, NJ this 9th day of May, 2013.

FEDERAL INSURANCE COMPANY INDIANA

FEDERAL INDEMNITY COMPANY INCORPORATED JAN. 16, 1925 WISCONSIN

VIGILANT INSURANCE COMPANY NEW YORK

Kenneth C. Wendel, Assistant Secretary

IN THE EVENT YOU WISH TO NOTIFY US OF A CLAIM, VERIFY THE AUTHENTICITY OF THIS BOND OR NOTIFY US OF ANY OTHER MATTER, PLEASE CONTACT US AT ADDRESS LISTED ABOVE, OR BY Telephone (908) 903- 3493 Fax (908) 903- 3656
e-mail: surety@chubb.com

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That Continental Casualty Company, an Illinois insurance company, National Fire Insurance Company of Hartford, an Illinois insurance company, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania insurance company (herein called "the CNA Companies"), are duly organized and existing insurance companies having their principal offices in the City of Chicago, and State of Illinois, and that they do by virtue of the signatures and seals herein affixed hereby make, constitute and appoint

Michael Brophy Mc Gowan, Donna L Welsh, Donna J Frowd, Debbie L Welsh, Individually

of Novato, CA, their true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on their behalf bonds, undertakings and other obligatory instruments of similar nature

- In Unlimited Amounts -

and to bind them thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of their insurance companies and all the acts of said Attorney, pursuant to the authority hereby given is hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law and Resolutions, printed on the reverse hereof, duly adopted, as indicated, by the Boards of Directors of the insurance companies.

In Witness Whereof, the CNA Companies have caused these presents to be signed by their Vice President and their corporate seals to be hereto affixed on this 24th day of October, 2012.

Continental Casualty Company
National Fire Insurance Company of Hartford
American Casualty Company of Reading, Pennsylvania

Paul T. Bruflat — Vice President

State of South Dakota, County of Minnehaha, ss:

On this 24th day of October, 2012, before me personally came Paul T. Bruflat to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is a Vice President of Continental Casualty Company, an Illinois insurance company, National Fire Insurance Company of Hartford, an Illinois insurance company, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania insurance company described in and which executed the above instrument; that he knows the seals of said insurance companies; that the seals affixed to the said instrument are such corporate seals; that they were so affixed pursuant to authority given by the Boards of Directors of said insurance companies and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said insurance companies.

J. MOHR
NOTARY PUBLIC SOUTH DAKOTA

My Commission Expires June 23, 2015

J. Mohr — Notary Public

CERTIFICATE

I, D. Bult, Assistant Secretary of Continental Casualty Company, an Illinois insurance company, National Fire Insurance Company of Hartford, an Illinois insurance company, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania insurance company do hereby certify that the Power of Attorney herein above set forth is still in force, and further certify that the By-Law and Resolution of the Board of Directors of the insurance companies printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said insurance companies this 9th day of May, 2013.

Continental Casualty Company
National Fire Insurance Company of Hartford
American Casualty Company of Reading, Pennsylvania

D. Bult — Assistant Secretary

Form F6853-4/2012

Authorizing By-Laws and Resolutions

ADOPTED BY THE BOARD OF DIRECTORS OF CONTINENTAL CASUALTY COMPANY:

This Power of Attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the Board of Directors of the Company at a meeting held on May 12, 1995:

"RESOLVED: That any Senior or Group Vice President may authorize an officer to sign specific documents, agreements and instruments on behalf of the Company provided that the name of such authorized officer and a description of the documents, agreements or instruments that such officer may sign will be provided in writing by the Senior or Group Vice President to the Secretary of the Company prior to such execution becoming effective."

This Power of Attorney is signed by Paul T. Bruflat, Vice President, who has been authorized pursuant to the above resolution to execute power of attorneys on behalf of Continental Casualty Company.

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company by unanimous written consent dated the 25th day of April, 2012:

"Whereas, the bylaws of the Company or specific resolution of the Board of Directors has authorized various officers (the "Authorized Officers") to execute various policies, bonds, undertakings and other obligatory instruments of like nature; and

Whereas, from time to time, the signature of the Authorized Officers, in addition to being provided in original, hard copy format, may be provided via facsimile or otherwise in an electronic format (collectively, "Electronic Signatures"); Now therefore be it resolved: that the Electronic Signature of any Authorized Officer shall be valid and binding on the Company."

ADOPTED BY THE BOARD OF DIRECTORS OF NATIONAL FIRE INSURANCE COMPANY OF HARTFORD:

This Power of Attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the Board of Directors of the Company by unanimous written consent dated May 10, 1995:

"RESOLVED: That any Senior or Group Vice President may authorize an officer to sign specific documents, agreements and instruments on behalf of the Company provided that the name of such authorized officer and a description of the documents, agreements or instruments that such officer may sign will be provided in writing by the Senior or Group Vice President to the Secretary of the Company prior to such execution becoming effective."

This Power of Attorney is signed by Paul T. Bruflat, Vice President, who has been authorized pursuant to the above resolution to execute power of attorneys on behalf of National fire Insurance Company of Hartford.

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company by unanimous written consent dated the 25th day of April, 2012:

"Whereas, the bylaws of the Company or specific resolution of the Board of Directors has authorized various officers (the "Authorized Officers") to execute various policies, bonds, undertakings and other obligatory instruments of like nature; and

Whereas, from time to time, the signature of the Authorized Officers, in addition to being provided in original, hard copy format, may be provided via facsimile or otherwise in an electronic format (collectively, "Electronic Signatures"); Now therefore be it resolved: that the Electronic Signature of any Authorized Officer shall be valid and binding on the Company."

ADOPTED BY THE BOARD OF DIRECTORS OF AMERICAN CASUALTY COMPANY OF READING, PENNSYLVANIA:

This Power of Attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the Board of Directors of the Company by unanimous written consent dated May 10, 1995:

"RESOLVED: That any Senior or Group Vice President may authorize an officer to sign specific documents, agreements and instruments on behalf of the Company provided that the name of such authorized officer and a description of the documents, agreements or instruments that such officer may sign will be provided in writing by the Senior or Group Vice President to the Secretary of the Company prior to such execution becoming effective."

This Power of Attorney is signed by Paul T. Bruflat, Vice President, who has been authorized pursuant to the above resolution to execute power of attorneys on behalf of American Casualty Company of Reading, Pennsylvania.

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company by unanimous written consent dated the 25th day of April, 2012:

"Whereas, the bylaws of the Company or specific resolution of the Board of Directors has authorized various officers (the "Authorized Officers") to execute various policies, bonds, undertakings and other obligatory instruments of like nature; and

Whereas, from time to time, the signature of the Authorized Officers, in addition to being provided in original, hard copy format, may be provided via facsimile or otherwise in an electronic format (collectively, "Electronic Signatures"); Now therefore be it resolved: that the Electronic Signature of any Authorized Officer shall be valid and binding on the Company."

Bond #: Federal - 82326601
Continental - 929566173

Originals: 3

Document A312™ – 2010

Conforms with The American Institute of Architects AIA Document 312

Payment Bond

(Co-Sureties)

CONTRACTOR:
(Name, legal status and address)
James Construction Group, LLC
11200 Industriplex Blvd., Suite 150
Baton Rouge, LA 70809

SURETY:
(Name, legal status and principal place of business)
Federal Insurance Company
Attn: Surety Dept., 15 Mountain View Road
Warren, NJ 07059

Continental Casualty Company
333 S. Wabash Ave., Chicago, IL 60604

Mailing Address for Notices:
Federal Insurance Company
(same as above)

Continental Casualty Company
Attn: Surety Dept.
555 Mission St., Suite 200
San Francisco, CA 94105

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

OWNER:
(Name, legal status and address)
Bowie County of the State of Texas
710 James Bowie Drive
New Boston, TX 75570

CONSTRUCTION CONTRACT
Date:

Amount: $ 27,862,166.81 (Twenty-Seven Million Eight Hundred Sixty-Two Thousand One Hundred Sixty-Six & 81/100)

Description:
(Name and location)
US 82 PASS THROUGH FINANCE PROJECT
FROM FM 1840 TO SH 98
(TXDOT CSJ 0046-04-057)
(TXDOT PROJECT NO. PTF 2013 (400))

BOND
Date: May 9, 2013

(Not earlier than Construction Contract Date)

Amount: $ 27,862,166.81 (Twenty-Seven Million Eight Hundred Sixty-Two Thousand One Hundred Sixty-Six & 81/100)

Modifications to this Bond: [X] None [ ] See Section 18

CONTRACTOR AS PRINCIPAL
Company: *(Corporate Seal)*
James Construction Group, LLC

Signature:
Name and Title: Danny L. Hester, President

Co- SURETY
Company: *(Corporate Seal)*
Federal Insurance Company &
Continental Casualty Company

Signature:
Name and Title: Debbie L. Welsh, Attorney-in-Fact

(Any additional signatures appear on the last page of this Payment Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:
M.B. McGowan & Associates Insurance Agency, Inc.
7250 Redwood Blvd., Suite 110
Novato, CA 94945
Tel: 415-892-1080

OWNER'S REPRESENTATIVE:
(Architect, Engineer or other party:)
Bowie County Auditor, 710 James Bowie Drive, New Boston, TX 75501
H.W. Lochner, Incorporated, 1828 East Southwest Loop, Suite 202, Tyler, TX 75701

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

§ 5.1 Claimants, who do not have a direct contract with the Contractor,

- **.1** have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
- **.2** have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

§ 10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

§ 11 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

§ 14 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- **.1** the name of the Claimant;
- **.2** the name of the person for whom the labor was done, or materials or equipment furnished;
- **.3** a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- **.4** a brief description of the labor, materials or equipment furnished;
- **.5** the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- **.6** the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- **.7** the total amount of previous payments received by the Claimant; and
- **.8** the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

§ 16.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 16.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

§ 17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 18 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL		**SURETY**	
Company:	*(Corporate Seal)*	Company:	*(Corporate Seal)*
Signature: _____		Signature: _____	
Name and Title:		Name and Title:	
Address		Address	

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

County of MARIN

On May 9, 2013 before me, Donna J. Frowd, Notary Public, personally appeared Debbie L. Welsh who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

(seal)

Signature Donna J. Frowd

DONNA J. FROWD
COMM. #1866131
NOTARY PUBLIC-CALIFORNIA
MARIN COUNTY
My Comm. Expires October 22, 2013

CHUBB	**Chubb Surety**	**POWER OF ATTORNEY**	**Federal Insurance Company** **Vigilant Insurance Company** **Pacific Indemnity Company**	**Attn: Surety Department** **15 Mountain View Road** **Warren, NJ 07059**

Know All by These Presents, That **FEDERAL INSURANCE COMPANY**, an Indiana corporation, **VIGILANT INSURANCE COMPANY**, a New York corporation, and **PACIFIC INDEMNITY COMPANY**, a Wisconsin corporation, do each hereby constitute and appoint **Donna J. Frowd, Michael Brophy McGowan, Susan J. McGowan, Debbie L. Welsh and Donna L. Welsh of Novato, California** ----------

each as their true and lawful Attorney- in- Fact to execute under such designation in their names and to affix their corporate seals to and deliver for and on their behalf as surety thereon or otherwise, bonds and undertakings and other writings obligatory in the nature thereof (other than bail bonds) given or executed in the course of business, and any instruments amending or altering the same, and consents to the modification or alteration of any instrument referred to in said bonds or obligations.

In Witness Whereof, said **FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY**, and **PACIFIC INDEMNITY COMPANY** have each executed and attested these presents and affixed their corporate seals on this **23rd** day of **November, 2011.**

Kenneth C. Wendel, Assistant Secretary

David B. Norris, Jr., Vice President

STATE OF NEW JERSEY
County of Somerset ss.

On this **23rd** day of **November, 2011** before me, a Notary Public of New Jersey, personally came Kenneth C. Wendel, to me known to be Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY, the companies which executed the foregoing Power of Attorney, and the said Kenneth C. Wendel, being by me duly sworn, did depose and say that he is Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY and knows the corporate seals thereof, that the seals affixed to the foregoing Power of Attorney are such corporate seals and were thereto affixed by authority of the By- Laws of said Companies; and that he signed said Power of Attorney as Assistant Secretary of said Companies by like authority; and that he is acquainted with David B. Norris, Jr., and knows him to be Vice President of said Companies; and that the signature of David B. Norris, Jr., subscribed to said Power of Attorney is in the genuine handwriting of David B. Norris, Jr., and was thereto subscribed by authority of said By-Laws and in deponent's presence.

Notarial Seal

KATHERINE J. ADELAAR NOTARY PUBLIC NEW JERSEY

KATHERINE J. ADELAAR
NOTARY PUBLIC OF NEW JERSEY
No. 2316685
Commission Expires July 16, 2014

Notary Public

CERTIFICATION

Extract from the By- Laws of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY:

"All powers of attorney for and on behalf of the Company may and shall be executed in the name and on behalf of the Company, either by the Chairman or the President or a Vice President or an Assistant Vice President, jointly with the Secretary or an Assistant Secretary, under their respective designations. The signature of such officers may be engraved, printed or lithographed. The signature of each of the following officers: Chairman, President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary and the seal of the Company may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing Assistant Secretaries or Attorneys- in- Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such power of attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached."

I, Kenneth C. Wendel, Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY (the "Companies") do hereby certify that

(i) the foregoing extract of the By- Laws of the Companies is true and correct,
(ii) the Companies are duly licensed and authorized to transact surety business in all 50 of the United States of America and the District of Columbia and are authorized by the U.S. Treasury Department; further, Federal and Vigilant are licensed in Puerto Rico and the U.S. Virgin Islands, and Federal is licensed in American Samoa, Guam, and each of the Provinces of Canada except Prince Edward Island; and
(iii) the foregoing Power of Attorney is true, correct and in full force and effect.

Given under my hand and seals of said Companies at Warren, NJ this 9th day of May, 2013.

FEDERAL INSURANCE COMPANY INDIANA

PACIFIC INDEMNITY COMPANY INCORPORATED AUG. 16, 1915 WISCONSIN

VIGILANT INSURANCE COMPANY NEW YORK

Kenneth C. Wendel, Assistant Secretary

IN THE EVENT YOU WISH TO NOTIFY US OF A CLAIM, VERIFY THE AUTHENTICITY OF THIS BOND OR NOTIFY US OF ANY OTHER MATTER, PLEASE CONTACT US AT ADDRESS LISTED ABOVE, OR BY Telephone (908) 903- 3493 Fax (908) 903- 3656
e-mail: surety@chubb.com

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That Continental Casualty Company, an Illinois insurance company, National Fire Insurance Company of Hartford, an Illinois insurance company, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania insurance company (herein called "the CNA Companies"), are duly organized and existing insurance companies having their principal offices in the City of Chicago, and State of Illinois, and that they do by virtue of the signatures and seals herein affixed hereby make, constitute and appoint

Michael Brophy Mc Gowan, Donna L Welsh, Donna J Frowd, Debbie L Welsh, Individually

of Novato, CA, their true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on their behalf bonds, undertakings and other obligatory instruments of similar nature

- In Unlimited Amounts -

and to bind them thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of their insurance companies and all the acts of said Attorney, pursuant to the authority hereby given is hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law and Resolutions, printed on the reverse hereof, duly adopted, as indicated, by the Boards of Directors of the insurance companies.

In Witness Whereof, the CNA Companies have caused these presents to be signed by their Vice President and their corporate seals to be hereto affixed on this 24th day of October, 2012.

Continental Casualty Company
National Fire Insurance Company of Hartford
American Casualty Company of Reading, Pennsylvania

Paul T. Bruflat — Vice President

State of South Dakota, County of Minnehaha, ss:

On this 24th day of October, 2012, before me personally came Paul T. Bruflat to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is a Vice President of Continental Casualty Company, an Illinois insurance company, National Fire Insurance Company of Hartford, an Illinois insurance company, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania insurance company described in and which executed the above instrument; that he knows the seals of said insurance companies; that the seals affixed to the said instrument are such corporate seals; that they were so affixed pursuant to authority given by the Boards of Directors of said insurance companies and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said insurance companies.

J. MOHR
NOTARY PUBLIC
SOUTH DAKOTA

My Commission Expires June 23, 2015

J. Mohr — Notary Public

CERTIFICATE

I, D. Bult, Assistant Secretary of Continental Casualty Company, an Illinois insurance company, National Fire Insurance Company of Hartford, an Illinois insurance company, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania insurance company do hereby certify that the Power of Attorney herein above set forth is still in force, and further certify that the By-Law and Resolution of the Board of Directors of the insurance companies printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said insurance companies this 9th day of May, 2013.

Continental Casualty Company
National Fire Insurance Company of Hartford
American Casualty Company of Reading, Pennsylvania

D. Bult — Assistant Secretary

Form F6853-4/2012

Authorizing By-Laws and Resolutions

ADOPTED BY THE BOARD OF DIRECTORS OF CONTINENTAL CASUALTY COMPANY:

This Power of Attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the Board of Directors of the Company at a meeting held on May 12, 1995:

"RESOLVED: That any Senior or Group Vice President may authorize an officer to sign specific documents, agreements and instruments on behalf of the Company provided that the name of such authorized officer and a description of the documents, agreements or instruments that such officer may sign will be provided in writing by the Senior or Group Vice President to the Secretary of the Company prior to such execution becoming effective."

This Power of Attorney is signed by Paul T. Bruflat, Vice President, who has been authorized pursuant to the above resolution to execute power of attorneys on behalf of Continental Casualty Company.

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company by unanimous written consent dated the 25th day of April, 2012:

"Whereas, the bylaws of the Company or specific resolution of the Board of Directors has authorized various officers (the "Authorized Officers") to execute various policies, bonds, undertakings and other obligatory instruments of like nature; and

Whereas, from time to time, the signature of the Authorized Officers, in addition to being provided in original, hard copy format, may be provided via facsimile or otherwise in an electronic format (collectively, "Electronic Signatures"); Now therefore be it resolved: that the Electronic Signature of any Authorized Officer shall be valid and binding on the Company."

ADOPTED BY THE BOARD OF DIRECTORS OF NATIONAL FIRE INSURANCE COMPANY OF HARTFORD:

This Power of Attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the Board of Directors of the Company by unanimous written consent dated May 10, 1995:

"RESOLVED: That any Senior or Group Vice President may authorize an officer to sign specific documents, agreements and instruments on behalf of the Company provided that the name of such authorized officer and a description of the documents, agreements or instruments that such officer may sign will be provided in writing by the Senior or Group Vice President to the Secretary of the Company prior to such execution becoming effective."

This Power of Attorney is signed by Paul T. Bruflat, Vice President, who has been authorized pursuant to the above resolution to execute power of attorneys on behalf of National fire Insurance Company of Hartford.

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company by unanimous written consent dated the 25th day of April, 2012:

"Whereas, the bylaws of the Company or specific resolution of the Board of Directors has authorized various officers (the "Authorized Officers") to execute various policies, bonds, undertakings and other obligatory instruments of like nature; and

Whereas, from time to time, the signature of the Authorized Officers, in addition to being provided in original, hard copy format, may be provided via facsimile or otherwise in an electronic format (collectively, "Electronic Signatures"); Now therefore be it resolved: that the Electronic Signature of any Authorized Officer shall be valid and binding on the Company."

ADOPTED BY THE BOARD OF DIRECTORS OF AMERICAN CASUALTY COMPANY OF READING, PENNSYLVANIA:

This Power of Attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the Board of Directors of the Company by unanimous written consent dated May 10, 1995:

"RESOLVED: That any Senior or Group Vice President may authorize an officer to sign specific documents, agreements and instruments on behalf of the Company provided that the name of such authorized officer and a description of the documents, agreements or instruments that such officer may sign will be provided in writing by the Senior or Group Vice President to the Secretary of the Company prior to such execution becoming effective."

This Power of Attorney is signed by Paul T. Bruflat, Vice President, who has been authorized pursuant to the above resolution to execute power of attorneys on behalf of American Casualty Company of Reading, Pennsylvania.

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company by unanimous written consent dated the 25th day of April, 2012:

"Whereas, the bylaws of the Company or specific resolution of the Board of Directors has authorized various officers (the "Authorized Officers") to execute various policies, bonds, undertakings and other obligatory instruments of like nature; and

Whereas, from time to time, the signature of the Authorized Officers, in addition to being provided in original, hard copy format, may be provided via facsimile or otherwise in an electronic format (collectively, "Electronic Signatures"); Now therefore be it resolved: that the Electronic Signature of any Authorized Officer shall be valid and binding on the Company."

CERTIFICATE OF INSURANCE

Form 1560
(Rev. 07/12)
Previous editions of this form may not be used.

Texas Department of Transportation

Agents should complete the form providing all requested information then either fax or mail this form directly to the address listed on page two of this form. Copies of endorsements listed below are not required as attachments to this certificate.

This certificate is issued as a matter of information only and confers no rights upon the certificate holder. This certificate does not confer any rights or obligations other than the rights and obligations conveyed by the policies referenced on this certificate. The terms of the policies referenced in this certificate control over the terms of the certificate.

Insured: James Construction Group, LLC

Street/Mailing Address: 11200 Industriplex Blvd #150

City/State/Zip: Baton Rouge, LA 70809

Phone Number: (225) 295 - 4830

WORKERS' COMPENSATION INSURANCE COVERAGE:
Endorsed with a Waiver of Subrogation in favor of TxDOT.

Carrier Name: American Zurich Insurance Company			**Carrier Phone #:** (847) 605 - 6000	
Address: 1400 American Lane			**City, State, Zip:** Schaumburg, IL 60196	
Type of Insurance	**Policy Number**	**Effective Date**	**Expiration Date**	**Limits of Liability:**
Workers' Compensation	EWS 5490291-01	02/28/2013	02/28/2014	Not Less Than: Statutory - Texas

COMMERCIAL GENERAL LIABILITY INSURANCE:

Carrier Name: Zurich American Insurance Company			**Carrier Phone #:** (800) 987 - 3373	
Address: One Liberty Plaza, 165 Broadway, 53 Floor			**City, State, Zip:** New York, NY 10006	
Type of Insurance:	**Policy Number:**	**Effective Date:**	**Expiration Date:**	**Limits of Liability:**
Commercial General Liability Insurance	GLO 5490287-01	02/28/2013	02/28/2014	Not Less Than: $ 600,000 each occurrence

BUSINESS AUTOMOBILE POLICY:

Carrier Name: Zurich American Insurance Company			**Carrier Phone #:** (800) 987 - 3373	
Address: One Liberty Plaza, 165 Broadway, 53 Floor			**City, State, Zip:** New York, NY 10006	
Type of Insurance:	**Policy Number:**	**Effective Date:**	**Expiration Date:**	**Limits of Liability:**
Business Automobile Policy	BAP 5490286-01	02/28/2013	02/28/2014	Not Less Than: $ 600,000 combined single limit

UMBRELLA POLICY (if applicable):

Carrier Name: National Union Fire Insurance Company			**Carrier Phone #:** (302) 594 - 2000	
Address: 600 N King Street			**City, State, Zip:** Wilmington, DE 19801	
Type of Insurance:	**Policy Number:**	**Effective Date:**	**Expiration Date:**	**Limits of Liability:**
Umbrella Policy	BE 37709396	02/28/2013	02/28/2014	$10,000,000

Should any of the above described policies be cancelled before the expiration date thereof, notice will be delivered in accordance with the policy provisions.

THIS IS TO CERTIFY to the Texas Department of Transportation acting on behalf of the State of Texas that the insurance policies named are in full force and effect. *If this form is sent by facsimile machine (fax), the sender adopts the document received by TxDOT as a duplicate original and adopts the signature produced by the receiving fax machine as the sender's original signature.*

Agency Name	**Address**		**City, State, Zip Code**
McGriff, Seibels & Williams of Texas, Inc.	818 Town & Country Blvd, Suite 500		Houston, TX 77024
(800) 877 - 1449			05/09/2013
Authorized Agent's Phone Number		**Authorized Agent Original Signature**	**Date**

The Texas Department of Transportation maintains the information collected through this form. With few exceptions, you are entitled on request to be informed about the information that we collect about you. Under §§552.021 and 552.023 of the Texas Government Code, you also are entitled to receive and review the information. Under §559.004 of the Government Code, you are also entitled to have us correct information about you that is incorrect.

Fax completed form to: 512/416-2536

NOTES TO AGENTS:

Agents must provide all requested information then either fax or mail this form directly to the address listed below.

Pre-printed limits are the minimum required; if higher limits are provided by the policy, enter the higher limit amount and strike-through or cross-out the pre-printed limit.

To avoid work suspension, an updated insurance form must reach the address listed below **one business day prior** to the expiration date. **Insurance must be in force in order to perform any work.**

Binder numbers are not acceptable for policy numbers.

The certificate of insurance, once on file with the department, is adequate for subsequent department contracts provided adequate coverage is still in effect. Do not refer to specific projects/contracts on this form.

List the contractor's legal company name, including the DBA (doing business as) name as the insured. If a staff leasing service is providing insurance to the contractor/client company, list the staff leasing service as the insured and show the contractor/client company in parenthesis.

The TxDOT certificate of insurance form is the only acceptable proof of insurance for department contracts.

List the contractor's legal company name, including the DBA (doing business as) name as the insured or list both the contractor and staff leasing service as insured when a staff leasing service is providing insurance.

Over-stamping and/or over-typing entries on the certificate of insurance are not acceptable if such entries change the provisions of the certificate in any manner.

This form may be reproduced.

DO NOT COMPLETE THIS FORM UNLESS THE WORKERS' COMPENSATION POLICY IS ENDORSED WITH A WAIVER OF SUBROGATION IN FAVOR OF TXDOT.

The SIGNATURE of the agent is required.

CERTIFICATE OF INSURANCE REQUIREMENTS:

WORKERS' COMPENSATION INSURANCE:

The contractor is required to have Workers' Compensation Insurance if the contractor has any employees including relatives.

The word STATUTORY, under limits of liability, means that the insurer would pay benefits allowed under the Texas Workers' Compensation Law.

GROUP HEALTH or ACCIDENT INSURANCE is not an acceptable substitute for Workers' Compensation.

COMMERCIAL GENERAL LIABILITY INSURANCE:

MANUFACTURERS' or CONTRACTOR LIABILITY INSURANCE is not an acceptable substitute for Comprehensive General Liability Insurance or Commercial General Liability Insurance.

BUSINESS AUTOMOBILE POLICY:

If coverages are specified separately, they must be at least these amounts:

Bodily Injury	$500,000 each occurrence
	$100,000 each occurrence
Property Damage	$100,000 for aggregate

PRIVATE AUTOMOBILE LIABILITY INSURANCE is not an acceptable substitute for a Business Automobile Policy.

MAIL ALL CERTIFICATES TO:

Texas Department of Transportation
CST – Contract Processing Unit (RA/200 – 1st Fl.)
125 E. 11th Street
Austin, TX 78701-2483
512/416-2540 (Voice), 512/416-2536 (Fax)

BID FORM SUMMARY

In the space provided below, please enter your total bid amount for this project. Only this figure will be read publicly at the public bid opening.

It is understood and agreed by the bidder in signing this bid that the total bid amount entered below is not binding on either the bidder or the county. It is further agreed that **the official total bid amount for this bid will be determined by multiplying the unit bid prices for each pay item by the respective estimated quantities shown in this bid and then totaling all of the extended amounts.**

$ 27,862,166.81

Total Bid Amount

James Construction Group L.L.C.

CONTROL: 0046-04-057
PROJECT: PTF 2013 (400)
HIGHWAY: U.S. 82
COUNTY : Bowie

ALT NO.	ITEM NO.	ITEM CODE DESC. CODE	S.P. NO.	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
	100	2002	002	PREPARING ROW	STA	456.000	1,535.000	699,960.00	1
	106	2001		OBLITERATING ABANDONED ROAD	STA	15.750	580.000	9,135.00	2
	110	2001		EXCAVATION (ROADWAY)	CY	55,878.000	3.500	195,573.00	3
	132	2006		EMBANKMENT (FINAL)(DENS CONT)(TY C)	CY	159,920.000	7.700	1,231,384.00	4
	160	2003		FURNISHING AND PLACING TOPSOIL (4")	SY	283,004.000	0.600	169,802.40	5
	164	2009	002	BROADCAST SEED (TEMP) (WARM)	SY	209,412.000	0.090	18,847.08	6
	164	2011	002	BROADCAST SEED (TEMP) (COOL)	SY	209,412.000	0.070	14,658.84	7
	164	2013	002	STRAW/HAY MLCH SEED(PERM)(RURAL)(SANDY)	SY	418,824.000	0.190	79,576.56	8
	168	2001		VEGETATIVE WATERING	MG	7,539.000	13.700	103,284.30	9
	169	2001	002	SOIL RETENTION BLANKETS (CL 1) (TY A)	SY	120.000	2.800	336.00	10
	247	2054	033	FL BS (CMP IN PLC)(TY D GR 2)(FNAL POS)	CY	3,083.000	66.000	203,478.00	11
	247	2392	033	FL BS(CMP IN PLC)(TY D GR 5)(FNAL POS)	CY	176.000	54.000	9,504.00	12
	251	2026		REWORK BS MTL (TY B) (8") (ORD COMP)	SY	41,206.000	2.000	82,412.00	13
	260	2001	003	LIME (HYDRATED LIME (DRY))	TON	162.000	148.000	23,976.00	14
	260	2027	003	LIME TRT (EXST MATL)(8")	SY	12,109.000	2.000	24,218.00	15
	275	2001	003	CEMENT	TON	2,141.000	108.000	231,228.00	16
	275	2010	003	CEMENT TREAT (SUBGRADE) (8")	SY	158,524.000	1.350	214,007.40	17
	276	2224		CEM TRT(PLNT MX) (CL N)(TY E)(GR 4)(6")	SY	177,505.000	8.000	1,420,040.00	18
	276	2240		CEM TRT(PLNT MX)(CL N)(TY E)(GR 4)(10")	SY	3,941.000	15.000	59,115.00	19
	310	2001		PRIME COAT (MC-30)	GAL	59,827.000	4.500	269,221.50	20
	316	2005	016	ASPH (AC-15P)	GAL	9,130.000	4.750	43,367.50	21
	316	2125	016	AGGR(TY-PB GR-4 SAC-A)	CY	237.000	70.000	16,590.00	22
	351	2002		FLEXIBLE PAVEMENT STRUCTURE REPAIR(6")	SY	12,160.000	38.750	471,200.00	23
	354	2021		PLANE ASPH CONC PAV(0" TO 2")	SY	26,525.000	2.000	53,050.00	24
	354	2023		PLANE ASPH CONC PAV(0" TO 4")	SY	17,369.000	2.100	36,474.90	25
	354	2031		PLANE ASPH CONC PAV(0" TO 12")	SY	10,734.000	4.000	42,936.00	26
	354	2123		PLANE ASPH CONC PAV (6"TO 10")	SY	41,555.000	3.000	124,665.00	27
	360	2004	003	CONC PVMT (CONT REINF-CRCP)(11")	SY	262,180.000	48.000	12,584,640.00	28
	361	2010	001	FULL-DEPTH REPAIR CPCD (9")	SY	500.000	150.000	75,000.00	29
	400	2006		CUT & RESTORING PAV	SY	756.000	95.000	71,820.00	30
	402	2001		TRENCH EXCAVATION PROTECTION	LF	146.000	1.000	146.00	31
	416	2029	001	DRILL SHAFT (RDWY ILL POLE) (30 IN)	LF	20.000	175.000	3,500.00	32
	416	2031	001	DRILL SHAFT (TRF SIG POLE) (30 IN)	LF	26.000	175.000	4,550.00	33

James Construction Group L.L.C.

CONTROL: 0046-04-057
PROJECT: PTF 2013 (400)
HIGHWAY: U.S. 82
COUNTY : Bowie

ALT NO.	ITEM CODE ITEM NO.	DESC. CODE	S.P. NO.	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
416	2032		001	DRILL SHAFT (TRF SIG POLE) (36 IN)	LF	26.000	195.000	5,070.00	34
420	2013		002	CL C CONC (MISC)	CY	131.000	300.000	39,300.00	35
420	2022		002	CL E CONC (SEAL)	CY	21.200	130.000	2,756.00	36
432	2005			RIPRAP (STONE TY R)(DRY)(6 IN)	CY	276.000	105.000	28,980.00	37
432	2039			RIPRAP (MOW STRIP)(4 IN)	CY	17.900	350.000	6,265.00	38
432	2050			RIPRAP (CONC)(CL B)(5 IN)	CY	16.200	350.000	5,670.00	39
432	2084			RIPRAP (CONC) (CL B) (4")	CY	16.000	350.000	5,600.00	40
442	2048		016	STRUCTURAL STEEL(MISC NON-BRIDGE)	LB	8,381.000	4.100	34,362.10	41
462	2001		015	CONC BOX CULV (3 FT X 2 FT)	LF	112.000	170.000	19,040.00	42
462	2002		015	CONC BOX CULV (3 FT X 3 FT)	LF	126.000	155.000	19,530.00	43
462	2003		015	CONC BOX CULV (4 FT X 2 FT)	LF	284.000	195.000	55,380.00	44
462	2004		015	CONC BOX CULV (4 FT X 3 FT)	LF	90.000	210.000	18,900.00	45
462	2015		015	CONC BOX CULV (7 FT X 4 FT)	LF	116.000	350.000	40,600.00	46
462	2022		015	CONC BOX CULV (8 FT X 7 FT)	LF	126.000	430.000	54,180.00	47
464	2003		006	RC PIPE (CL III)(18 IN)	LF	3,329.000	28.000	93,212.00	48
464	2005		006	RC PIPE (CL III)(24 IN)	LF	2,343.000	52.000	121,836.00	49
464	2007		006	RC PIPE (CL III)(30 IN)	LF	60.000	58.000	3,480.00	50
466	2019			WINGWALL (FW-0)(HW=3 FT)	EA	2.000	3,700.000	7,400.00	51
466	2024			WINGWALL (FW-0)(HW=8 FT)	EA	1.000	14,000.000	14,000.00	52
467	2101			SET (TY I)(S= 3 FT)(HW= 3 FT)(4:1)(C)	EA	2.000	4,200.000	8,400.00	53
467	2107			SET (TY I)(S= 4 FT)(HW= 3 FT)(4:1)(C)	EA	2.000	5,300.000	10,600.00	54
467	2126			SET (TY I)(S= 7 FT)(HW= 4 FT)(4:1)(C)	EA	2.000	6,400.000	12,800.00	55
467	2222			SET (TY II)(18 IN)(RCP)(4:1)(C)	EA	24.000	375.000	9,000.00	56
467	2224			SET (TY II)(24 IN)(RCP)(4:1)(C)	EA	39.000	520.000	20,280.00	57
467	2286			SET (TY II)(18 IN)(RCP)(6:1)(P)	EA	243.000	410.000	99,630.00	58
467	2288			SET (TY II)(24 IN)(RCP)(6:1)(P)	EA	55.000	650.000	35,750.00	59
467	2290			SET (TY II)(30 IN)(RCP)(6:1)(P)	EA	34.000	1,900.000	64,600.00	60
467	2358			SET (TY II)(18 IN)(RCP)(3:1)(P)	EA	4.000	360.000	1,440.00	61
467	2370			SET (TY I)(S= 4 FT)(HW= 2 FT)(4:1)(C)	EA	6.000	3,700.000	22,200.00	62
467	2403			SET (TY I)(S=3 FT)(HW= 2 FT)(4:1)(C)	EA	2.000	3,200.000	6,400.00	63
481	2001			PVC PIPE (SDR-35)(4 IN)	LF	315.000	20.000	6,300.00	64
500	2001		011	MOBILIZATION	LS	1.000	2,700,000.000	2,700,000.00	65
502	2001		033	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	20.000	15,000.000	300,000.00	66

James Construction Group L.L.C.

CONTROL: 0046-04-057
PROJECT: PTF 2013 (400)
HIGHWAY: U.S. 82
COUNTY : Bowie

ALT NO.	ITEM CODE NO.	DESC. CODE	S.P. NO.	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
	508	2002		CONSTRUCTING DETOURS	SY	12,529.000	59.000	739,211.00	67
	529	2001		CONC CURB (TY I)	LF	80.000	10.000	800.00	68
	529	2003		CONC CURB & GUTTER (TY I)	LF	269.000	22.500	6,052.50	69
	529	2006		CONC CURB (MONO) (TY II)	LF	338.000	10.000	3,380.00	70
	530	2010	006	DRIVEWAYS (CONC)	SY	22,971.000	28.000	643,188.00	71
	530	2011	006	DRIVEWAYS (ACP)	SY	5,110.000	26.000	132,860.00	72
	530	2017	006	TURNOUTS (ACP)	SY	855.000	22.500	19,237.50	73
	531	2004		CONC SIDEWALKS (6")	SY	18.000	25.000	450.00	74
	531	2005		CURB RAMPS (TY 1)	EA	1.000	1,250.000	1,250.00	75
	531	2010		CURB RAMPS (TY 7)	EA	2.000	1,250.000	2,500.00	76
	531	2014		CURB RAMPS (TY 22)	EA	1.000	1,250.000	1,250.00	77
	531	2040		CURB RAMPS (TY 5)	EA	1.000	1,250.000	1,250.00	78
	540	2014	031	MTL W-BEAM GD FEN (LOW FILL CULVERT)	LF	187.500	23.000	4,312.50	79
	540	2044	031	DOWNSTREAM ANCHOR TERMINAL(DAT)SECTION	EA	1.000	895.000	895.00	80
	542	2001		REMOVING METAL BEAM GUARD FENCE	LF	125.000	3.000	375.00	81
	542	2002		REMOVING TERMINAL ANCHOR SECTION	EA	2.000	150.000	300.00	82
	544	2001	001	GUARDRAIL END TREATMENT (INSTALL)	EA	1.000	2,140.000	2,140.00	83
	544	2003	001	GUARDRAIL END TREATMENT (REMOVE)	EA	2.000	200.000	400.00	84
	552	2001		WIRE FENCE (TY A)	LF	200.000	16.000	3,200.00	85
	556	2014		PIPE UNDERDRAINS (TY 9)(4")	LF	800.000	16.000	12,800.00	86
	560	2006	001	MAILBOX INSTALL-S (RR-POST) TY 4 FND-TB	EA	98.000	148.000	14,504.00	87
	610	2042	015	INS RD IL AM (TY SA) 50T-8 (.4 KW)S	EA	2.000	3,425.000	6,850.00	88
	618	2018		CONDT (PVC) (SCHD 40) (2")	LF	445.000	6.000	2,670.00	89
	618	2022		CONDT (PVC) (SCHD 40) (3")	LF	200.000	7.000	1,400.00	90
	618	2024		CONDT (PVC) (SCHD 40) (4")	LF	60.000	9.000	540.00	91
	618	2035		CONDT (PVC) (SCHD 80) (2") (BORE)	LF	70.000	18.000	1,260.00	92
	618	2039		CONDT (PVC) (SCHD 80) (3") (BORE)	LF	110.000	20.000	2,200.00	93
	618	2041		CONDT (PVC) (SCHD 80) (4") (BORE)	LF	245.000	26.000	6,370.00	94
	620	2009	001	ELEC CONDR (NO. 6) BARE	LF	1,130.000	1.100	1,243.00	95
	620	2010	001	ELEC CONDR (NO. 6) INSULATED	LF	130.000	1.120	145.60	96
	620	2012	001	ELEC CONDR (NO. 8) INSULATED	LF	2,180.000	1.100	2,398.00	97
	620	2016	001	ELEC CONDR (NO.12) INSULATED	LF	320.000	0.750	240.00	98
	621	2002		TRAY CABLE (3 CONDR) (12 AWG)	LF	1,091.000	1.750	1,909.25	99

James Construction Group L.L.C.

CONTROL: 0046-04-057
PROJECT: PTF 2013 (400)
HIGHWAY: U.S. 82
COUNTY : Bowie

ALT NO.	ITEM CODE ITEM NO.	DESC. S.P. NO.	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
624	2008	014	GROUND BOX TY A (122311) W/APRON	EA	6.000	585.000	3,510.00	100
624	2012	014	GROUND BOX TY C (162911) W/APRON	EA	8.000	610.000	4,880.00	101
628	2074	003	ELC SRV TY D 120/240 060 (NS)SS(E)PS(U)	EA	2.000	4,750.000	9,500.00	102
628	2188	003	ELC SRV TY D 120/240 070 (NS)SS(E)PS(U)	EA	1.000	4,650.000	4,650.00	103
636	2001	014	ALUMINUM SIGNS (TY A)	SF	1,234.000	20.000	24,680.00	104
636	2002	014	ALUMINUM SIGNS (TY G)	SF	204.000	24.000	4,896.00	105
644	2001		IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	2.000	455.000	910.00	106
644	2004		IN SM RD SN SUP&AM TY10BWG(1)SA(T)	EA	7.000	520.000	3,640.00	107
644	2006		IN SM RD SN SUP&AM TY10BWG(1)SA(U)	EA	3.000	585.000	1,755.00	108
644	2025		IN SM RD SN SUP&AM TYS80(1)SA(T)	EA	9.000	725.000	6,525.00	109
644	2081		IN SM RD SN SUP&AM TYTWT(1)WS(P)	EA	131.000	295.000	38,645.00	110
647	2001		INSTALL LRSS (STRUCT STEEL)	LB	2,107.000	4.750	10,008.25	111
658	2261		INSTL DEL ASSM (D-SW)SZ (TYC)GF1(BI)	EA	3.000	20.000	60.00	112
658	2316		INSTL OM ASSM (OM-2Z)(FLX)GND	EA	6.000	38.000	228.00	113
662	2004		WK ZN PAV MRK NON-REMOV (W) 4" (SLD)	LF	96,290.000	0.100	9,629.00	114
662	2016		WK ZN PAV MRK NON-REMOV (W) 24" (SLD)	LF	20.000	3.000	60.00	115
662	2032		WK ZN PAV MRK NON-REMOV (Y) 4" (SLD)	LF	96,290.000	0.100	9,629.00	116
662	2053		WK ZN PAV MRK REMOV (REFL) TY I-C	LF	4,985.000	3.100	15,453.50	117
662	2055		WK ZN PAV MRK REMOV (REFL) TY II-A-A	LF	4,985.000	3.100	15,453.50	118
662	2061		WK ZN PAV MRK REMOV (TRAF BTN) TY W	LF	99,663.000	0.250	24,915.75	119
662	2063		WK ZN PAV MRK REMOV (TRAF BTN) TY Y	LF	99,663.000	0.250	24,915.75	120
666	2003		REFL PAV MRK TY I (W) 4" (BRK)(100MIL)	LF	120.000	0.500	60.00	121
666	2012		REFL PAV MRK TY I (W) 4" (SLD)(100MIL)	LF	4,011.000	0.500	2,005.50	122
666	2048		REFL PAV MRK TY I (W) 24"(SLD)(100MIL)	LF	204.000	5.500	1,122.00	123
666	2105		REFL PAV MRK TY I (Y) 4" (BRK)(100MIL)	LF	330.000	0.500	165.00	124
666	2111		REFL PAV MRK TY I (Y) 4" (SLD)(100MIL)	LF	5,987.000	0.500	2,993.50	125
668	2118		PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA	7.000	50.000	350.00	126
672	2012	034	REFL PAV MRKR TY I-C	EA	459.000	3.800	1,744.20	127
672	2015	034	REFL PAV MRKR TY II-A-A	EA	1,913.000	3.800	7,269.40	128
677	2001		ELIM EXT PAV MRK & MRKS (4")	LF	143,471.000	0.280	40,171.88	129
678	2001		PAV SURF PREP FOR MRK (4")	LF	212,985.000	0.050	10,649.25	130
678	2003		PAV SURF PREP FOR MRK (8")	LF	1,281.000	0.150	192.15	131
678	2004		PAV SURF PREP FOR MRK (12")	LF	472.000	1.000	472.00	132

James Construction Group L.L.C.

CONTROL: 0046-04-057
PROJECT: PTF 2013 (400)
HIGHWAY: U.S. 82
COUNTY : Bowie

ALT NO.	ITEM CODE ITEM NO.	DESC. CODE	S.P. NO.	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
678	2006			PAV SURF PREP FOR MRK (24")	LF	802.000	1.000	802.00	133
678	2007			PAV SURF PREP FOR MRK (ARROW)	EA	20.000	20.000	400.00	134
678	2018			PAV SURF PREP FOR MRK (WORD)	EA	20.000	25.000	500.00	135
678	2020			PAV SURF PREP FOR MRK (36") (YLD TRI)	EA	7.000	15.000	105.00	136
680	2002			INSTALL HWY TRF SIG (ISOLATED)	EA	1.000	17,450.000	17,450.00	137
681	2001		002	TEMP TRAF SIGNALS	EA	1.000	42,270.000	42,270.00	138
682	2001		003	BACK PLATE (12 IN) (3 SEC)	EA	6.000	75.000	450.00	139
682	2002		003	BACK PLATE (12 IN) (4 SEC)	EA	4.000	95.000	380.00	140
682	2022		003	VEH SIG SEC (12 IN) LED (GRN ARW)	EA	4.000	224.000	896.00	141
682	2023		003	VEH SIG SEC (12 IN) LED (GRN)	EA	8.000	212.000	1,696.00	142
682	2024		003	VEH SIG SEC (12 IN) LED (YEL ARW)	EA	4.000	211.000	844.00	143
682	2025		003	VEH SIG SEC (12 IN) LED (YEL)	EA	8.000	215.000	1,720.00	144
682	2026		003	VEH SIG SEC (12 IN) LED (RED ARW)	EA	2.000	211.000	422.00	145
682	2027		003	VEH SIG SEC (12 IN) LED (RED)	EA	8.000	208.000	1,664.00	146
682	2066		003	PED SIG SEC (12 IN) LED (COUNTDOWN)	EA	6.000	485.000	2,910.00	147
684	2010			TRF SIG CBL (TY A) (12 AWG) (5 CONDR)	LF	356.000	2.000	712.00	148
684	2012			TRF SIG CBL (TY A) (12 AWG) (7 CONDR)	LF	228.000	2.250	513.00	149
684	2015			TRF SIG CBL (TY A) (12 AWG) (10 CONDR)	LF	165.000	3.000	495.00	150
684	2017			TRF SIG CBL (TY A) (12 AWG) (12 CONDR)	LF	240.000	3.500	840.00	151
684	2025			TRF SIG CBL (TY A) (12 AWG) (20 CONDR)	LF	495.000	4.750	2,351.25	152
685	2001		014	INSTALL RDSD FLASH BEACON ASSEMBLY	EA	2.000	1,400.000	2,800.00	153
686	2029			INS TRF SIG PL AM(S) 1 ARM (28') LUM	EA	2.000	6,750.000	13,500.00	154
686	2049			INS TRF SIG PL AM(S) 1 ARM (48') LUM	EA	2.000	9,110.000	18,220.00	155
687	2001		004	PED POLE ASSEMBLY	EA	5.000	1,150.000	5,750.00	156
1122	2001		001	ROCK FILTER DAMS (INSTALL) (TY 1)	LF	312.000	20.000	6,240.00	157
1122	2002		001	ROCK FILTER DAMS (INSTALL) (TY 2)	LF	208.000	25.000	5,200.00	158
1122	2003		001	ROCK FILTER DAMS (INSTALL) (TY 3)	LF	130.000	55.000	7,150.00	159
1122	2009		001	ROCK FILTER DAMS (REMOVE)	LF	650.000	6.800	4,420.00	160
1122	2016		001	CONSTRUCTION EXITS (INSTALL) (TY 1)	SY	780.000	12.000	9,360.00	161
1122	2019		001	CONSTRUCTION EXITS (REMOVE)	SY	780.000	7.000	5,460.00	162
1122	2022		001	EARTHWORK (ERSN & SEDM CONT, IN VEH)	CY	330.000	17.000	5,610.00	163
1122	2032		001	SANDBAGS FOR EROSION CONTROL (6")	LF	435.000	5.000	2,175.00	164
1122	2037		001	TEMPORARY SEDIMENT CONTROL FENCE INSTLL	LF	41,775.000	2.000	83,550.00	165

James Construction Group L.L.C.

CONTROL: 0046-04-057
PROJECT: PTF 2013 (400)
HIGHWAY: U.S. 82
COUNTY : Bowie

ALT NO.	ITEM CODE ITEM NO.	DESC. CODE	S.P. NO.	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
	1122	2047	001	BIOGRD EROSN CONT LOGS (8" DIA) INSTALL	LF	870.000	3.800	3,306.00	166
	1122	2056	001	BIODEGRADBLE EROSION CONTROL LOGS REMOV	LF	870.000	0.500	435.00	167
	1122	2057	001	TEMPORARY SEDIMENT CONTROL FENCE REMOVE	LF	41,775.000	0.150	6,266.25	168
	3268	2031		D - GR HMA TY - C PG76 - 22	TON	3,314.000	85.450	283,181.30	169
	3268	2047		D - GR HMA TY - D SAC - A PG76 - 22	TON	3,341.000	87.350	291,836.35	170
	3268	2049		D - GR HMA TY - D PG76 - 22	TON	7,882.000	85.300	672,334.60	171
	3268	2052		D - GR HMA TY - F PG64 - 22	TON	14,427.000	100.000	1,442,700.00	172
	5284	2001		TEMPORARY DRIVEWAYS	SY	16,018.000	10.000	160,180.00	173
	6007	2001		REMOVING TRAFFIC SIGNALS	EA	1.000	3,500.000	3,500.00	174
	6266	2001	017	VIVDS PROCESSOR SYSTEM	EA	1.000	6,800.000	6,800.00	175
	6266	2002	017	VIVDS CAMERA ASSEMBLY	EA	4.000	1,320.000	5,280.00	176
	6266	2003	017	VIVDS SET-UP SYSTEM	EA	1.000	650.000	650.00	177
	6266	2004	017	VIVDS CENTRAL CONTROL	EA	1.000	1,000.000	1,000.00	178
	6266	2005	017	VIVDS COMMUNICATION CABLE (COAXIAL)	LF	915.000	2.950	2,699.25	179
	6266	2007	017	VIVDS TEMPORARY	EA	1.000	17,565.000	17,565.00	180
	6473	2001	001	MULTIPOLYMER PAV MRK (W)(4")(SLD)	LF	88,755.000	0.400	35,502.00	181
	6473	2002	001	MULTIPOLYMER PAV MRK (W)(4")(BRK)	LF	7,670.000	0.500	3,835.00	182
	6473	2007	001	MULTIPOLYMER PAV MRK (W)(8")(SLD)	LF	1,281.000	2.450	3,138.45	183
	6473	2009	001	MULTIPOLYMER PAV MRK (W)(12")(SLD)	LF	472.000	3.000	1,416.00	184
	6473	2011	001	MULTIPOLYMER PAV MRK (Y)(4")(SLD)	LF	95,822.000	0.400	38,328.80	185
	6473	2012	001	MULTIPOLYMER PAV MRK (Y)(4")(BRK)	LF	2,620.000	0.500	1,310.00	186
	6473	2019	001	MULTIPOLYMER PAV MRK (BLK)(4")(BRK)	LF	7,670.000	0.500	3,835.00	187
	6473	2021	001	MULTIPOLYMER PAV MRK (W)(24")(SLD)	LF	606.000	7.500	4,545.00	188
	6473	2025	001	MULTIPOLYMER PAV MRK (W)(ARROW)	EA	20.000	140.000	2,800.00	189
	6473	2026	001	MULTIPOLYMER PAV MRK (W)(WORD)	EA	12.000	150.000	1,800.00	190
	6834	2001	002	PORTABLE CHANGEABLE MESSAGE SIGN	DAY	108.000	55.000	5,940.00	191
	8615	2001		RADAR ADVANCE DETECTION DEVICE	EA	2.000	8,500.000	17,000.00	192
	8821	2001		RADAR VEHICLE SENSING DEVICE	EA	3.000	8,500.000	25,500.00	193
	8835	2001		ACCESSIBLE PEDESTRIAN SIGNAL UNITS	EA	6.000	1,375.000	8,250.00	194
				CONTRACTOR BONUS (PART) ITEM 585 RIDE QUALITY	LS	1.000	71,000.000	71,000.00	195
				CONTRACTOR BONUS (PART) ITEM 3268 PRODUCTION & PLA	LS	1.000	104,000.000	104,000.00	196
				CONTRACTOR FORCE ACCOUNT WORK (PART) EROSN CONTR M	LS	1.000	30,000.000	30,000.00	197

James Construction Group L.L.C.

CONTROL: 0046-04-057
PROJECT: PTF 2013 (400)
HIGHWAY: U.S. 82
COUNTY : Bowie

ALT NO.	ITEM NO.	ITEM CODE DESC. CODE	S.P. NO.	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
							Total Bid Amount:	$27,862,166.81	

James Construction Group L.L.C.

CONTROL: 0046-04-057
PROJECT: PTF 2013 (400)
HIGHWAY: U.S. 82
COUNTY : Bowie

ALT NO.	ITEM CODE NO.	ITEM DESC. CODE	S.P. NO.	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.

James Construction Group,L.L.C. certifies that the unit prices shown on this complete computer print-out for all of the bid items and the alternates contai in this proposal are the unit prices intended and that its bid will be tabulated using these unit prices and no other information from this print-out. Jam Construction Group,L.L.C. acknowledges and agrees that the total bid amount shown will be read as its total bid and further agrees that the official total amount will be determined by multiplying the unit bid prices shown in this print-out by the respective estimated quantities shown in the proposal and then totaling all of the extended amounts.

Signed: _____

Title: President

Date: 3-25-13

CERTIFICATION OF INTEREST IN OTHER BID PROPOSALS FOR THIS WORK

By signing this bid, the bidding firm and the signer certify that the following information, as indicated by checking "Yes" or "No" below, is true, accurate, and complete.

A. Quotation(s) have been issued in this firm's name to other firm(s) interested in this work for consideration for performing a portion of this work.

_____ YES

_X_ NO

B. If this bid is the low bid, the bidder agrees to provide the following information prior to award of the contract.

1. Identify firms which bid as a prime contractor and from which the bidder received quotations for work on this project.
2. Identify all the firms which bid as a prime contractor to which the bidder gave quotations for work on this project.

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. grant
   For material change only: year _____ quarter _____ date of last report _____

4. **Name and Address of Reporting Entity:**

5. **If Reporting Entity in No. 4 is Subawardee,** Enter Name and Address of Prime:

☐ Prime ☐ Subawardee
Tier _____, if known:

Congressional District, if known:

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 Entity (if individual, last name, first name, MI):

b. Individuals Performing Services (including address if different from No. 10a) (last name, first name, MI):

(attach Continuation Sheet(s) SF-LLL-A, if necessary)

11. Amount of Payment (check all that apply):
$ _____ actual planned

12. Form of Payment (check all that apply)
a. cash
b. in-kind; specify: nature _____ value _____

13. Type of Payment (check all that apply):
   a. retainer
   b. one-time fee
   c. commission
   d. contingent fee
   e. deferred
   f. other; specify: _____

14. Brief Description of Services Performed or to be Performed and Date(s) of Service, including officer(s), employee(s), or Member(s) contacted, for Payment Indicated in Item 11:

(attach Continuation Sheet(s) SF-LLL-A, if necessary)

15. **Continuation Sheet(s) SF-LLL-A attached:** ☐ Yes ☒ No

16. 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 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

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. Use the SF-LLL-A Continuation Sheet for additional information if the space on the form is inadequate. 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 follow-up 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 or 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 sub awardee, e.g., the first sub awardee 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 entity 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. Enter the amount of compensation paid or reasonably expected to be paid by the reporting entity (item 4) to the lobbying entity (item 10). Indicate whether the payment has been made (actual) or will be made (planned). Check all boxes that apply. If this is a material change report, enter the cumulative amount of payment made or planned to be made.
12. Check the appropriate box(es). Check all boxes that apply. If payment is made through an in-kind contribution, specify the nature and value of the in-kind payment.
13. Check the appropriate box(es). Check all boxes that apply. If other, specify nature.
14. Provide a specific and detailed description of the services that the lobbyist has performed, or will be expected to perform, and the date(s) of any services rendered. Include all preparatory and related activity, not just time spent in actual contact with Federal officials. Identify the Federal official(s) or employee(s) contacted or the officer(s), employee(s), or Member(s) of Congress that were contacted.
15. Check whether or not a SF-LLL-A Continuation Sheet(s) is attached.
16. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

DISCLOSURE OF LOBBYING ACTIVITIES

Approved by OMB

0348-0046

CONTINUATION SHEET

Reporting Entity: _____ Page _____ of _____

Contractor's Assurance

(Subcontracts-Federal Aid Projects)

By signing this Bid the contractor is giving assurances that all subcontract agreements of $10,000 or more on this project will incorporate the following:

Special Provision	"Certification of Nondiscrimination in Employment"
Special Provision	"Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity" (Executive Order 11246)
Special Provision	"Standard Federal Equal Employment Opportunity Construction Contract Specifications" (Executive Order 11246)
Form FHWA 1273	"Required Contract Provisions Federal-aid Construction Contracts" (Form FHWA 1273 must also be physically attached to subcontracts and purchase orders of $10,000 or more)
Applicable	"Wage Determination Decision"

Also, by signing this proposal the contractor is giving assurances that all subcontract agreements will incorporate the Standard Specification and Special Provisions to Section 9.6.B "Payment Provisions for Subcontractors".

STANDARD FORM OF AGREEMENT

STATE OF TEXAS

COUNTY OF BOWIE }

THIS AGREEMENT, made and entered into this 17TH day of May, A.D. 2013, by and between *Bowie County of the State of Texas, acting through Kelly Blackburn, Precinct 3 Bowie County Commissioner*, thereunto duly authorized so to do, Party of the First Part, hereinafter termed **OWNER**, and **James Construction Group, LLC** of the City of **Baton Rouge**, County of **East Baton Rouge Parish** and State of **Louisiana**, Party of the Second part, hereinafter termed **CONTRACTOR**.

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned, to be made and performed **OWNER**, and under the conditions expressed in the bond bearing even date herewith, the **CONTRACTOR**, hereby agrees with the **OWNER** to commence and complete the construction of certain improvements described as follows:

US 82 Pass Through Finance Project following the Pass-Through Agreement for Payment of Pass-Through Tolls by the Department executed May 27, 2011 between TxDOT and Bowie County;

and all extra work in connection therewith, under the terms as stated herein, and at his (or their) own proper cost and expense to furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said construction, in accordance with the conditions and prices stated in the bid attached hereto, and in accordance with the Addenda (if any); Notice to Bidders; General Instructions to Bidders; Bid Form; Bid Bond; Bond Affidavit; General Specifications; Special Provisions; Wage Rates; Standard Form of Agreement; Performance Bond; Payment Bond; Certificate of Insurance; Technical Specifications; Plans and other drawings and printed or written explanatory matter thereof, as prepared by *Bowie County*, **OWNER**, each of which has been identified by the **CONTRACTOR** and, together with the **CONTRACTOR'S** written Bid hereto attached; all of which are made a part hereof and collectively evidence and constitute the entire contract.

THE CONTRACTOR hereby agrees to commence work within *Sixty (60)* days after the date written notice to do so shall have been given to him, and to complete the same within **405 working days** after the date of the written Notice to Proceed with work, subject to such extensions of time as are provided by the General Specifications and Special Provisions.

THE OWNER agrees to pay the **CONTRACTOR** in current funds a price not to exceed **$ 27,862,166.81**, such payments to be subject to the General Specifications and Special Provisions of the contract.

IN WITNESS WHEREOF, the parties to these presents have executed this Agreement in the year and day first above written.

BowieCounty
Party of the First Part (**OWNER**)

By: _____
Kelly Blackburn
Precinct 3 County Commissioner

ATTEST: _____

James Construction Group, LLC
Party of the Second Part (**CONTRACTOR**)

_____
Danny L. Hester
President

ATTEST: _____

APPROVED AS TO FORM:

_____
Attorney's Office

This contract shall be administered on the county's behalf by: *Bowie County Auditor and H.W Lochner, Incorporated*. All notices, documentation, or questions arising under this agreement should be addressed to *both Bowie County Auditor at 710 James Bowie Drive; New Boston, Texas 75501 and H.W Lochner, Incorporated at 1828 East Southwest Loop 323, Suite 202; Tyler, Texas 75701*.

Contract No. PT2009-008-01
CSJ No. 0046-04-057
Federal Highway Administration
CFDA#20.205

RECEIVED ON
MAY 11 2011
TEXAS DIVISION
FHWA

RECEIVED
MAY 12 2011
GENERAL COUNSEL

STATE OF TEXAS §
COUNTY OF TRAVIS §

PASS-THROUGH AGREEMENT FOR PAYMENT OF PASS-THROUGH TOLLS BY THE DEPARTMENT

THIS AGREEMENT is entered between the State of Texas and the Developer under Transportation Code, §222.104.

Contracting Parties:
The Department: The Texas Department of Transportation
The Developer: Bowie County_____

BACKGROUND

Texas Transportation Code, §201.103, authorizes the Department to plan and to make policies for the location, construction, and maintenance of a comprehensive system of state highways and public roads. Transportation Code, §222.104, authorizes the Department to enter into pass-through agreements for the purpose of improving the state highway system. The Texas Transportation Commission has implemented this provision by enacting rules to be found at 43 TAC Chapter 5, Subchapter E. On September 24, 2009, the Texas Transportation Commission passed Minute Order 111977, authorizing the Department to negotiate a pass-through agreement with Developer for the development and construction of a Project on US 82, the location of which is shown on **Attachment A**, which is attached to and incorporated by reference in this agreement. On December 17, 2009, the Texas Transportation Commission passed Minute Orders 112074, authorizing the Department to enter a pass-through agreement with the Developer in furtherance of the Project. On June 8, 2010, the Texas Transportation Commission passed Minute Order 112293, which requires all pass-through toll agreements negotiated with the selected public entities to contain a provision that limits reimbursement to the actual costs incurred by the public entity. The governing body of the Developer has authorized entering into this agreement by resolution or ordinance dated February 14, 2011, which is attached to and incorporated by reference in this agreement as **Attachment G**. In consideration of the mutual promises contained in this agreement, the Department and the Developer now agree as follows.

AGREEMENT

1. **Effective Date**
   This agreement becomes effective when signed by the last party whose signing makes the agreement fully executed.

2. **Amendments**
   Amendments to this agreement must be in writing and executed by both parties.

3. **Scope of Work**
   The scope of work of the Project consists mainly of developing and constructing on US 82, between SH 98 and FM 1840, a two-lane section with a passing lane (Super 2 highway section) that will alternate in the westbound and eastbound directions. The scope of work

is described in more detail in **Attachment B**, which is attached to and incorporated by reference in this agreement. A Typical Section Layout and Project Schedule are contained in **Attachments E** and **F**, respectively, which are attached to and incorporated by reference in this agreement. Before any design, development, or construction work is performed, the Developer shall ensure that Department funding for the Project is included in the Department's Unified Transportation Program and the Statewide Transportation Improvement Program.

4. Sources and Uses of Funds

a. The total estimated cost of the Project is shown in **Attachment C**, which is attached to and incorporated by reference in this agreement. **Attachment C** includes expected cash contributions from each source of funding. The Department will pay for only those Project costs that have been approved by the Texas Transportation Commission. If the Developer will perform any work under this agreement for which reimbursement will be provided by or through the Department, the Developer must complete training before a letter of authority is issued. Training is complete when at least one individual who is working actively and directly on the Project successfully completes and receives a certificate for the course entitled *Local Government Project Procedures Qualification for the Texas Department of Transportation*. The Developer shall provide the certificate of qualification to the Department. The individual who receives the training certificate may be an employee of the Developer or an employee of a firm that has been contracted by the Developer to perform oversight of the Project. The Department in its discretion may deny reimbursement if the Developer has not designated a qualified individual to oversee the Project.

b. The Department is responsible only for securing the funding specifically identified as the responsibility of the Department and for making that funding available to the Developer as set forth on **Attachment C**.

(i) The Department will reimburse the Developer with pass-through payments in the percentages and resulting amounts (the Department's Proportional Share) identified on **Attachment C** for the actual costs of labor and materials incurred in construction of the Project as determined by the low bid award of the construction contract (Actual Cost of Construction). The amount of the low bid award will be certified by the Developer in accordance with Paragraph 10. For purposes of reimbursement under this agreement, construction engineering costs are not eligible construction costs.

(ii) Unless and to the extent that this agreement is amended, the Department will not be responsible for funding in excess of the Maximum Pass-Through Reimbursement to Developer identified on **Attachment C**. The Developer shall be responsible for all costs associated with the Project that are not shown as the responsibility of the Department.

c. The Department's obligation to reimburse its Proportional Share of the Actual Cost of Construction is subject to the following two exceptions.

(i) The Department will reimburse its Proportional Share of the amount by which the Actual Cost of Construction exceeds the Estimated Total Construction Cost identified on **Attachment C** (cost overrun). The Department's total payment obligation for the Project, however, will not exceed the Maximum Pass-Through Reimbursement amount identified on **Attachment C** (110% of Allowable Construction Costs).

(ii) The Department will reimburse to the Developer the amount by which the Actual Cost of Construction is less than the Estimated Total Construction Cost identified on **Attachment C** (cost underrun), up to a maximum of 10 percent of the Estimated Total Construction Cost, only if all of the following conditions are met:

(A) the total of actual cost and underrun reimbursements by the Department may not exceed the Department's Allowable Construction Costs identified on **Attachment C**;

(B) the amount of cost underrun received by the Developer must either be expended on the Project, or on other mutually acceptable state highway projects located in the Developer's jurisdiction;

(C) the amount of cost underrun received by the Developer may be expended on the actual costs of an eligible project's environmental clearance and mitigation, right of way acquisition, land surveys, engineering, utility relocation, construction, construction engineering and inspection, and financing, but not on overhead or contingent profits; and

(D) the Developer receives the Department's prior written consent for the expenditures.

If the above conditions are not met, there will be no reimbursement for a cost underrun.

5. Project Implementation

a. Unless otherwise specified in this agreement, all actions required of the Developer shall be taken by the Developer's Program Manager, who shall be an individual designated by name by the Developer. The Developer's Program Manager shall be authorized by the Developer to perform all or specified aspects of the Project development and implementation. Evidence of authorization shall be submitted to the Department immediately after the effective date of this agreement. The Developer's Program Manager may delegate responsibility to another person in a writing provided to the Department. The Developer must notify the Department in writing as soon as possible, but no later than three (3) business days after authorizing a change in Program Managers.

b. Unless otherwise specified in this agreement, all actions required of the Department shall be taken by the Department's district engineer for the Atlanta District. The district engineer will designate an engineer (the TxDOT Engineer), who will be assisted by other Department personnel, to oversee and monitor compliance with all responsibilities under this agreement including all phases of Project development. The district engineer may delegate responsibility to the TxDOT Engineer or another person in a writing provided to the Developer. Whenever this agreement requires an action to be taken by the Department's executive director, that responsibility may be delegated to another Department employee who is not below the level of district engineer. On request, the Department will provide the Developer with a copy of the executive director's delegation of authority.

c. The roles, the responsibilities, and the working relationship between the Developer and the Department during the implementation of the Project are defined in **Attachment D**, which is attached to and incorporated by reference in this agreement.

6. Environmental Assessment and Mitigation

Development of the Project shall comply with all applicable federal and state environmental laws, including the National Environmental Policy Act of 1969, the National Historic Preservation Act of 1966, the Clean Water Act, the Endangered Species Act, 43 TAC §2.5, and Natural Resources Code, Chapter 191.

a. The Developer is responsible for the identification and assessment of any environmental problems associated with the development of the Project to the extent permitted by law.
b. The Developer is responsible for the cost of all environmental permitting, mitigation, remediation, and compliance.
c. The Developer is responsible for preparing for and providing all public meetings or public hearings required for development of the environmental decision and for summary and analysis of all public meetings or public hearings. When applicable, the Developer is also responsible for certifying that a public hearing has been held in accordance with applicable rules, the Civil Rights Act of 1964, and the Civil Rights Restoration Act of 1987. Public hearings may not be held before environmental documents are approved for further processing and may not be held before approval of all highway schematics for the particular Project.
d. The Developer is responsible for the preparation of all documents required for the environmental clearance of the Project.
e. The Developer shall submit all requests for permits, all reports, and all findings relating to the Natural Resources Code, Chapter 191, through the Department. The Developer shall provide the Department with final drafts of all necessary requests for permits, reports, and findings required by law. The Department is responsible for all coordination under those acts and for making all necessary filings with the appropriate agencies, and the Department will provide copies of those filings to the Developer. The Developer is responsible for obtaining all other permits and is responsible for obtaining all permits and approvals resulting from changes that occur after environmental approval is first obtained, except as otherwise required by law or by agreement between the Department and a state or federal agency.
f. Before construction is begun, the Developer shall provide the Department with written certification that all required permits and commitments are complete. The Developer shall provide the Department with copies of all permit applications and approvals from each regulatory agency with environmental jurisdiction over the Project.
g. All environmental reports and findings shall comply with the latest version of the Department's manuals. The Developer shall provide the Department with physical and electronic copies of all environmental documentation in a format approved by the Department.

7. Right of Way and Real Property

a. The Developer is responsible for the provision and acquisition of all real property needed for the Project, including easements. All property interests shall be acquired in the State's name. The Developer may not acquire right of way until all environmental clearance procedures have been completed and either (1) right of way maps and property descriptions (field notes and plats) have been prepared, or (2) a segment of the right of way map (consisting or one or more contiguous parcels) and the field notes and plat maps for such parcel(s) have been prepared and certified to fall within the right of way limits of the approved schematic. The Developer must comply with all applicable state and federal laws, regulations, policies, and procedures, including the requirements

of the Right of Way Manual Collection of the Department's Online Manual System and Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, 42 U.S.C. §4601 et seq. Documentation to support compliance must be maintained by the Developer. The Developer must obtain advance approval from the Department for any variance in established procedures. The Department's executive director may exercise discretion in authorizing an alternative procedure if it is sufficient to discharge the Department's responsibilities for acquiring real property. The Department may monitor and audit the Developer's acquisition of right of way on the Project at any time. On request, the Developer shall furnish the Department with satisfactory proof of compliance with applicable state and federal laws, regulations, policies, and procedures. If the Department determines that right of way maps, field notes, parcel plats, appraisals, access designations, acquisition documentation, relocation assistance benefits, or any other acquisition requirement is not in compliance with this agreement, the Developer shall take all necessary steps to achieve compliance. The cost for additional work to achieve compliance shall be borne by the Developer.

b. The Developer is responsible for any required relocation assistance along the route of the right of way as may be determined to be eligible under the relocation assistance program. The relocation assistance plan must provide reasonable time frames for orderly relocation of residents and businesses being displaced by the Project. All costs associated with the relocation assistance, including payments to residents and businesses, will be assumed by the Developer.

8. Utilities

If the Project requires the adjustment, removal, or relocation of existing utilities, the Developer shall be responsible for determining the scope of utility work and notifying the appropriate utility company to schedule adjustments. The Developer shall be responsible for the adjustment, removal, or relocation of utility facilities in accordance with applicable state and federal laws, regulations, rules, policies, and procedures, including 43 TAC §21.31 et seq. (Utility Accommodation); and 23 CFR Chapter 1, Part 645. The Developer shall be responsible for all costs associated with additional adjustment, removal, or relocation during the construction of the Project unless this work is provided by the owners of the utility facilities. Before a construction contract for the Project is let, a utility certification must be made available to the Department stating that all utilities needing to be adjusted for completion of the construction activity have been adjusted.

9. Architectural and Engineering Services

The Developer has responsibility for the performance of architectural and engineering services, including the responsibility of ensuring that all permits, issues, coordination, mitigation, and commitments are adequately addressed in design of the Project and carried out during construction of the Project. The engineering plans shall be developed in accordance with the latest version of the Department's manuals. The Department's executive director may exercise discretion in authorizing alternative criteria or granting exceptions to this requirement on a case-by-case basis if a particular criterion could not reasonably be met because of physical, environmental, or other relevant factors and if the proposed design is a prudent engineering solution. The procurement of professional services must be competitive and shall comply with Government Code Chapter 2254, Subchapter A and all federal requirements including those described in 23 CFR Part 172 and those relating to participation by disadvantaged business enterprises (DBEs), the

Americans with Disabilities Act, and environmental matters. Access to the facility shall be in compliance with the Department's access management policy.

10. Construction Responsibilities

a. The Developer shall advertise for construction bids, issue bid proposals, receive and tabulate the bids, and award and administer the contract for construction of the Project. Administration of the contract includes the responsibility for construction engineering, material acceptance testing, and construction quality acceptance, and for issuance of any change orders, supplemental agreements, amendments, or additional work orders, which may become necessary after the award of the construction contract. The bidding process must be competitive and must comply with all applicable federal and state laws. The Project and bidding process must be authorized by the Department and Federal Highway Administration before it is advertised for letting. Within ten (10) days after the award of the construction contract, the Developer shall provide to the Department a certified statement that describes the total amount of the award and identifies the bid amount for each of the major component parts.

b. The Developer has the responsibility of overseeing all construction operations, including the responsibility of ensuring that all environmental permits, issues, coordination, mitigation, and commitments are adequately addressed, of assessing potential environmental effects of contract revisions, and of obtaining environmental permits, issues, coordination, mitigation, and commitments that may be required by contract revisions.

c. Contract revisions including change orders shall comply with the latest version of all national and state administrative criteria and manuals. No contract revision may be made without the prior written approval of the Department's executive director if it would affect prior environmental approvals, significantly revise the scope of the Project or the geometric design, or change the cost to the Department. Procedures governing approval are contained in **Attachment D**.

d. The Department may conduct any and all oversight activities it deems reasonably necessary or advisable to ensure compliance with this agreement and all state and federal requirements. The TxDOT Engineer or designee may attend the Developer's construction status meetings and long-term strategy meetings, and may visit the Project periodically and as reasonably necessary to comply with oversight requirements.

e. When the Project is complete, the Developer shall issue and sign a "Notification of Completion" certifying that all work has been completed in accordance with the requirements of this agreement, all governmental approvals, and applicable law. Within thirty (30) days after receipt of this notification, the Department will perform a final inspection and provide to the Developer a list of items, if any, to be completed prior to acceptance by the Department. Once the items have been addressed to the satisfaction of the Department, the Department will issue a "Letter of Acceptance" to the Developer. Within six (6) months after the Department has issued the "Letter of Acceptance," the Developer shall file with the Department a set of as-built plans that incorporate any contract revisions. These plans shall be signed, sealed, and dated by a professional engineer licensed in Texas, who shall certify that the Project was constructed in accordance with the plans and specifications through the development and submittal of an "Engineer's Certification of Completion".

f. The Developer is responsible for providing adequate inspection to ensure its contractor's compliance with the provisions of this agreement. At any time the Department may audit the construction process to ensure the adequate inspection of construction and may conduct its own inspection of construction.

g. The parties to this agreement shall comply with federal construction requirements cited in 23 CFR Part 635 and with requirements cited in 23 CFR Part 633, and shall include the latest version of Form FHWA-1273 in the contract bidding documents. If force account work will be performed, a finding of cost effectiveness shall be made in compliance with 23 CFR 635, Part B.

h. The Developer shall be responsible for purchasing, installing and maintaining the traffic counter equipment for the term of the agreement at the specified Project count sites as shown in **Attachment A**, Location Map. The Developer shall provide permanent site traffic counter equipment in accordance with the Department specifications. The Developer shall provide installation, preventive and remedial maintenance, inspection, testing and repair of traffic data collection equipment including labor, equipment, materials and parts. The Developer shall provide the above described service including installation of new components and repairs at specified locations. The Department's Atlanta District Office shall be responsible for collecting the traffic data and then providing this data to the Department's Transportation Planning and Programming Division (TPP) for verification. The number of vehicle-miles travelled on the Project during a year will be based on actual traffic data, to the extent the data is available, or the Department's traffic estimates, which shall be performed in good faith and shall be conclusive and not subject to litigation in any forum For traffic counter equipment malfunctions or breakdowns, a three (3) month traffic data average will be used. The Developer shall confirm the traffic count provided by the Department, and upon agreement of the traffic count, shall give sixty (60) days prior notification of payment, by letter or invoice, to the Atlanta District Office. The Atlanta District Office will then verify and approve the invoice and prepare a reimbursement pay form to be submitted to the Department, Finance Division, Accounting Management Section, at least thirty (30) days before the payment is due to the Developer.

11. Maintenance

The Department shall be responsible for maintenance of the Project after completion and acceptance of the work.

12. Repayment

a. The Department will reimburse the Developer by paying an annual amount equal to $0.07 for each vehicle-mile travelled on the Project during the previous year. Under no circumstances will the annual payment be less than $1,310,000.00 or more than $2,620,000.00, and under no circumstances will the total payment under this Paragraph during the course of this agreement exceed $28,820,000.00 unless approved by the Texas Transportation Commission and formalized in an amendment to this agreement. The number of vehicle-miles travelled on the Project during a year will be based on actual traffic data, to the extent the data is available, or the Department's traffic estimates in accordance with Paragraph 10.

b. For purposes of repayment under this agreement, "Substantial Completion" is defined as all travel lanes open to traffic as approved by the Department, and no further work is remaining that requires lane closures affecting the mobility of the traveling public. When the Project is Substantially Complete, the Developer may issue and sign a

"Notification of Substantial Completion" certifying that all work has been substantially completed in accordance with the requirements of this agreement, all governmental approvals, and applicable law. Within thirty (30) days after receipt of this notification, the Department will perform an inspection and provide to the Developer a list of items, if any, to be completed prior to approval by the Department. Once the items have been addressed to the satisfaction of the Department, the Department will issue a "Letter of Approval for Payment" to the Developer. In lieu of a Notification of Substantial Completion, the Developer may proceed directly to a Notice of Completion in accordance with Paragraph 10.

c. The first payment shall be made within sixty (60) days after the first anniversary of the Project's Substantial Completion and the Department's issuance of a Letter of Approval for Payment, or in the event that a Letter of Approval for Payment was not issued, then within sixty (60) days after the first anniversary of the Project's completion and the Department's issuance of a Letter of Acceptance. Annual payments shall continue within sixty (60) days after each succeeding anniversary of the Letter of Approval for Payment or the Letter of Acceptance as applicable.
d. The number of annual payments and the amount of the final payment will be consistent with payment of the total reimbursement amount determined in accordance with Paragraph 4. Payment under this agreement beyond the end of the current fiscal biennium is subject to availability of appropriated funds.

13. Mutual Cooperation

The Department and the Developer shall use all reasonable efforts to meet all deadlines specified in this agreement. The Department and the Developer shall use best efforts to provide each other with all necessary documents, information, and approvals in a prompt and timely fashion.

14. Default

If either party fails to comply with its obligations under this agreement and such failure continues for a period of thirty (30) days or more after written notice of the breach from the other party, the party failing to comply will be in default and the other party may proceed with its remedies under Paragraphs 15 and16.

15. Termination

This agreement terminates automatically when the Department has reimbursed the Developer fully. In addition, the agreement may be terminated:

a. in writing with the mutual consent of the parties;
b. by either party because of a material breach by the other party; or
c. by the Department if the Developer has not commenced construction of the Project (including each individual project if this agreement covers multiple projects) within three (3) years of the date of execution of this agreement.

16. Remedies

This agreement shall not be considered as specifying the exclusive remedy for any default, but either party may avail itself of any remedy existing at law or in equity, and all remedies shall be cumulative.

17. Notices

All notices to either party shall be delivered personally or sent by certified U.S. mail, postage prepaid, addressed to that party at the following address:

Developer:	Department:
_Bowie County_____	Texas Department of Transportation___
_Attn: County Judge_____	_Attn: Assistant Executive Director for Engineering Operations_____
_P.O, Box 248 _____	_125 East 11th Street_____
_New Boston, Texas 75570_____	_ Austin, Texas 78701 _____

All notices shall be deemed given on the date delivered in person or deposited in the mail. Either party may change the above address by sending written notice of the change to the other party. Either party may request in writing that notices shall be delivered personally or by certified U.S. mail, and that request shall be carried out by the other party.

18. Development Contracts, Subcontracts, and Assignment

a. Within ten (10) days after execution of this agreement, the Developer shall provide the Department with a fully executed copy of any agency contract or project development contract between the Developer and a private entity for the design, financing, maintenance, operation, or construction of the Project (a Development Contract). For a Development Contract between the Developer and a private entity entered into after execution of this agreement, the Developer shall provide to the Department an executed copy within fifteen (15) days after the Development Contract is executed. A Development Contract must be subject to all applicable terms and conditions of this agreement.

b. A subcontract by Developer, its agent, or a subcontractor in excess of $10,000 shall contain all applicable terms and conditions of this agreement and shall be submitted to the Department for review and approval prior to its execution.

c. Except as otherwise provided by law or this Paragraph, neither party shall assign any interest in this agreement. In the event that the Developer pledges or assigns its right to receive any revenues derived from this agreement in connection with a loan or with the issuance of bonds, the pledge or assignment shall not operate as an assignment of an interest in this agreement. In that case the Developer shall provide the Department with copies of the loan or bond documentation no less than ten (10) days before the loan is executed or the bonds are issued. Under no circumstances will the Department be liable in any way for debt in any form incurred by the Developer, and any loan or bond documentation will state clearly that the Department has no obligation of repayment.

d. No Development Contract, subcontract, or assignment will relieve the Developer of its responsibility under this agreement.

19. Ownership of Property

After completion or termination of this agreement, all documents prepared by the Department shall remain the property of the Department. All data prepared under this agreement shall be made available to the Department without restriction or limitation on further use. All documents produced or approved or otherwise created by the Developer shall be transmitted to the Department in the form of photocopy reproduction on a monthly basis as required by the Department. The originals shall remain the property of the Developer. The Developer shall transmit to the Department an electronic copy, in Department format, of all files, including graphic, data and design files, developed in performance of the agreement. The Developer shall grant the Department an irrevocable, perpetual, nonexclusive license to use all intellectual property acquired or developed under this contract.

20. Developer Resources

All employees of the Developer shall have adequate knowledge and experience to enable them to perform the duties to which they are assigned. The Developer certifies that it currently has adequate qualified personnel in its employment to perform the work required under this agreement or will be able to obtain adequate qualified personnel from sources other than the Department. On receipt of written notice from the Department detailing supporting factors and evidence, the Developer shall remove from the Project any employee of the Developer who is incompetent or whose conduct becomes detrimental to the work. Unless otherwise specified, the Developer shall furnish all equipment, materials, supplies, and other resources required to perform the work.

21. Responsibilities of the Parties

Each party acknowledges that it is not an agent, servant, or employee of the other party. Each party is responsible for its own acts and deeds and for those of its agents, servants, or employees.

22. Compliance with Laws

The parties shall comply with all federal, state, and local laws, statutes, ordinances, rules, and regulations, and with the orders and decrees of any courts or administrative bodies or tribunals in any manner affecting the performance of this agreement. When requested, the Developer shall furnish the Department with satisfactory proof of this compliance. The Developer shall provide or obtain all applicable permits, plans, or other documentation required by a federal or state entity.

23. Legal Construction

In case one or more of the provisions contained in this agreement shall for any reason be held invalid, illegal, or unenforceable in any respect, that invalidity, illegality, or unenforceability shall not affect any other provisions and this agreement shall be construed as if it did not contain the invalid, illegal, or unenforceable provision.

24. Insurance

To the extent that this agreement authorizes the Developer or its contractor to perform any work on Department right of way, before beginning work the entity performing the work shall provide the Department with a fully executed copy of the Department's Form 1560 Certificate of Insurance verifying the existence of coverage in the amounts and types specified on the Certificate of Insurance for all persons and entities working on Department right of way. This coverage shall be maintained until all work on the Department right of way is complete. If coverage is not maintained, all work on Department right of way shall cease immediately, and the Department may recover damages and all costs of completing the work.

25. Hold Harmless

To the extent permitted by law, the Developer shall save harmless the Department and its officers and employees from all claims and liability due to materials used or supplied by the Developer or activities of the Developer, its agents, or employees, performed under this agreement, and that are caused by or result from error, omission, or negligent act of the Developer or of any person employed by the Developer. To the extent permitted by law, the Developer shall also indemnify and save harmless the Department from any and all expense, including but not limited to attorney fees that may be incurred by the Department in litigation or otherwise resisting the claim or liabilities that may be imposed on the Department as a result of such activities by the Developer, its agents, or employees.

26. Sole Agreement

This agreement constitutes the only agreement between the parties and supersedes any prior understandings or written or oral agreements concerning the agreement's subject matter.

27. Compliance with Texas Accessibility Standards and ADA

All parties to this agreement shall ensure that the plans for and the construction of the Project are in compliance with the Texas Accessibility Standards issued by the Texas Department of Licensing and Regulation and with the Americans with Disability Act Accessibility Guidelines issued by the U.S. Architectural and Transportation Barriers Compliance Board.

28. Gratuities

Any person who is doing business with or who may do business with the Department under this agreement may not make any offer of benefits, gifts, or favors to employees of the Department. The only exceptions allowed are ordinary business lunches and items that have received the advanced written approval of the Department's executive director.

29. Conflict of Interest

The Developer shall not assign an employee to the Project if the employee:

a. owns an interest in or is an officer or employee of a business entity that has or may have a contract with the Department relating to the Project;
b. has a direct or indirect financial interest in the outcome of the Project;
c. has performed services regarding the subject matter of the Project for an entity that has a direct or indirect financial interest in the outcome of the Project or that has or may have a contract with the Department; or
d. is a current part-time or full-time employee of the Department.

30. Signatory Warranty

The signatories to this agreement warrant that each has the authority to enter into this agreement on behalf of the party represented.

31. Cost Principles

The parties shall comply with the cost principles established in OMB Circular A-87.

32. Procurement and Property Management Standards

The parties shall adhere to the procurement standard established in 49 CFR §18.36 and with the property management standard established in 49 CFR §18.32.

33. Audit

a. The Department may audit the project at any time. Upon completion of the Project, the Department or an independent auditor approved by the Department, at the Department's option, may perform an audit of the Project costs. Any funds due to the Developer, the Department, or others shall be paid by the owing party within thirty (30) days after notification that funds are due.

b. The State Auditor may conduct an audit or investigation of any entity receiving funds from the state directly under this agreement or indirectly through a subcontract under this agreement. Acceptance of funds directly under this agreement or indirectly through a subcontract under this agreement acts as acceptance of the authority of the State Auditor, under the direction of the legislative audit committee, to conduct an audit or investigation in connection with those funds. An entity that is the subject of an audit or investigation must provide the State Auditor with access to any information the State Auditor considers relevant to the investigation or audit.

34. Inspection of Books and Records

The parties shall maintain all books, documents, papers, accounting records, and other documentation relating to costs incurred under this agreement and shall make those materials available to the Department, the Developer, the Federal Highway Administration (FHWA), and the U.S. Office of the Inspector General for review and inspection at its office during the contract period and for four (4) years from the date of completion of work defined under this agreement or until any impending claims are resolved. Additionally, the Department, the Developer, and the FHWA shall have access to all the governmental records that are directly applicable to this agreement for the purpose of making audits, examinations, excerpts, and transcriptions, including records in the possession of the Developer's agents to the extent that they relate to expenditures for which reimbursement is requested. At the request of the Department, the Developer shall submit any information required by the Department in the format directed by the Department.

35. Office of Management and Budget (OMB) Audit Requirements

The parties shall comply with the requirements of the Single Audit Act of 1984, P.L. 98-502, ensuring that the single audit report includes the coverage stipulated in OMB Circular A-133.

36. Civil Rights Compliance

The Developer shall comply with the regulations of the Department of Transportation as they relate to nondiscrimination (49 CFR Part 21 and 23 CFR Parts 200 and 230), and with Executive Order 11246, titled "Equal Employment Opportunity," as amended by Executive Order 11375 and as supplemented in the Department of Labor Regulations (41 CFR Part 60).

37. Disadvantaged Business Enterprise Program Requirements

The parties shall comply with the Disadvantaged/Minority Business Enterprise Program requirements established in 49 CFR Part 26. The Developer's program and goals are subject to approval by the Department.

38. Debarment Certifications

The parties are prohibited from making any award at any tier to any party that is debarred or suspended or otherwise excluded from or ineligible for participation in Federal Assistance Programs under Executive Order 12549, "Debarment and Suspension." By executing this agreement, the Developer certifies that it is not currently debarred, suspended, or otherwise excluded from or ineligible for participation in Federal Assistance Programs under Executive Order 12549. The parties to this agreement shall require any party to a subcontract or purchase order awarded under this agreement to certify its eligibility to receive Federal funds and, when requested by the Department, to furnish a copy of the certification.

39. Lobbying Certification

In executing this agreement, each signatory certifies that:

a. No federal appropriated funds have been paid or will be paid by or on behalf of the parties 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 agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with federal contracts, grants, loans, or cooperative agreements, the signatory for the Developer shall complete and submit the federal Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

c. The parties 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.

By executing this agreement, the parties affirm this lobbying certification with respect to the Project and affirm this certification of the material representation of facts upon which reliance will be made. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Title 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.

THE UNDERSIGNED PARTIES bind themselves to the faithful performance of this agreement.

Texas Department Of Transportation

Authorized Signature

Amadeo Saenz, Jr., P.E.
Executive Director
Texas Department of Transportation
Typed or Printed Name and Title

Date: 5/19/11

Bowie County
Developer's Name

Authorized Signature

Sterling E. Lacy
County Judge
Bowie County
Typed or Printed Name and Title

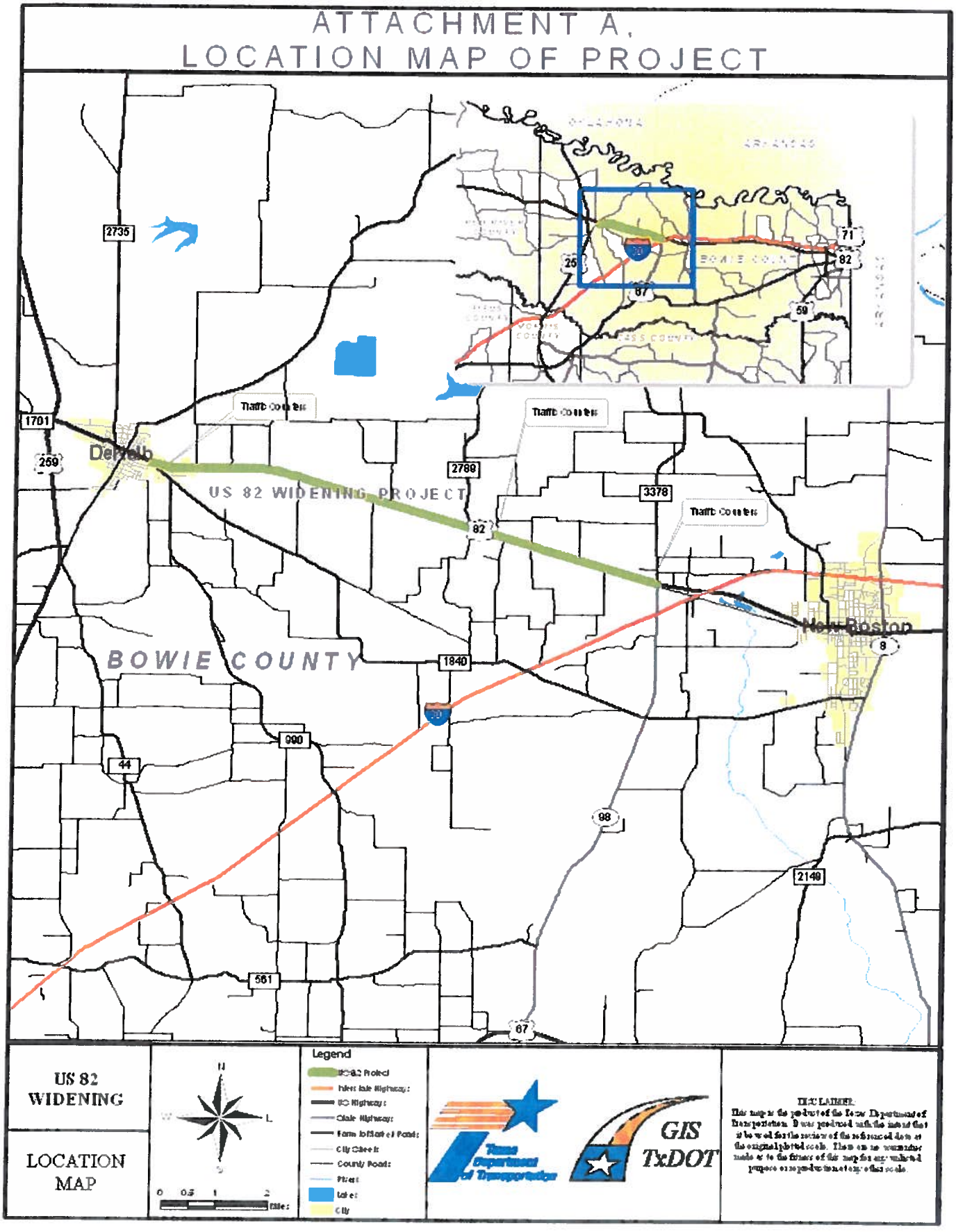
Date: 5-3-2011

Authorized Signature

John Addington
County Commissioner, Precinct 2
Bowie County
Typed or Printed Name and Title

Date: 27 May 2011

ATTACHMENT A,
LOCATION MAP OF PROJECT



ATTACHMENT B

Scope of Work

US 82
From: SH 98 to FM 1840

ULTIMATE DESIGN

The ultimate design will provide for improvements to the US 82 corridor from IH 30 to US 259, a distance of approximately 10.45 miles. The proposed typical section in the rural areas includes four 12-foot main lanes, a 16-foot flush median and two 10-foot outside shoulders. The proposed typical section in the urban area of the City of Dekalb includes four 12-foot main lanes, a 16-foot flush median, two 10-foot outside shoulders with curb and gutter. The ultimate design includes improvements at intersections with state, county and city roadways.

The proposed roadway Right of Way will typically incorporate fifty feet (50') of the existing, abandoned railroad Right of Way on the South side of the roadway. Additional ROW will be obtained on the North side of the roadway as necessary. Access to the facility will be controlled through design and through the use of the Department's Access Management Manual. An Access Denial Line will be developed along the proposed South Right of Way line.

PASS-THROUGH DESIGN

The Project will provide for improvements to the US 82 corridor from SH 98 to FM 1840, a distance of approximately 8.66 miles. The proposed typical section consists mainly of three 12-foot lanes, one 4-foot shoulder and one 10-foot shoulder and will also include sections with two 12-foot lanes and a continuous left turn lane as noted in Attachment E. The proposed typical section will conform to, and become part of the proposed ultimate 4 lane divided facility when constructed.

The Scope of Work to be performed by the Developer includes the development of an approved design schematic, the development of a railroad schematic and associated documents, the application for and the approval of the release of railroad Right of Way from the Surface Transportation Board, the development of an approved environmental document, any required wetland mitigation, the development of a ROW Map and property descriptions, utility relocations/adjustments, the development of the Plans, Specifications and Estimates, project letting, and the construction of the Project.

The Department will perform concrete pavement repair work, prior to construction of the Project, and will widen US 82, from SH 98 to IH 30 to a four lane undivided section. The Department will also perform the quality control testing for the Project.

This Project includes all of the work associated with the ultimate design except:

- The roadway design schematic will, at a minimum, be prepared for the length of roadway between the identified Project limits and will include the intersections at SH 98 and FM 1840 and transitions to the existing pavement. The typical section will reflect a minimum of 50 feet of pavement. Sections at intersections with on-system roadways will provide for left turn bays. Cross sections of the ultimate design will be prepared and will demonstrate the existence of sufficient Right of Way for the ultimate design.
- The railroad schematic will be prepared for the length of the Project and will be extended West of FM 1840 approximately 0.65 miles. The associated submittals, for the release of right-of-way from the Surface Transportation Board, will be developed for the length of the project and will be extended to a point approximately 0.65 miles West of FM 1840.
- The environmental document will, at a minimum, be prepared for the length of roadway between the identified Project limits including transitions to the existing pavement.
- The Plans, Specifications and Estimates will, at a minimum, be prepared for the length of roadway between the identified Project limits and will include the intersections at SH 98 and FM 1840 and transitions to the existing pavement.
- Construction will, at a minimum, be performed for the length of the roadway between the identified Project limits and include the intersections at SH 98 and FM 1840 and transitions to the existing pavement.

During performance of this Project, Right of Way will be acquired to the limits necessary for the ultimate design, within the Project limits. All acquired Right of Way will be cleared and prepared. Use of the Right of Way for permanent stockpiles or material sources will not be allowed unless approved by the Department. Release of Railroad Right of Way will be obtained from the Surface Transportation Board, from SH 98 to approximately 0.65 miles West of FM 1840.

The Access Denial Line will be incorporated into the right of way map, property descriptions, deeds, construction plans and related documents. Monuments will be set at property corners and at access openings. Access openings will be negotiated with the adjacent property owners. Driveway permits and exhibits will be developed for each existing driveway. A temporary or permanent easement or a Right of Entry will be obtained, if needed, to properly construct driveways according to the Department's Roadway Design Manual.

Utilities will not be allowed to be placed on alignments which will conflict with the ultimate design or will necessitate the future relocation of the utility due to the construction of the ultimate design.

Cross drainage structures will be designed hydraulically, vertically and horizontally to satisfy the ultimate configuration, but will only be constructed to the extent necessary for the Project. All cross drainage structures will be constructed with appropriate end treatments.

Pavement structure used in the Project will conform to the Pavement Design Report prepared by the Department and as shown in Attachment E. Asphaltic and base materials removed from existing state-owned roadways, if not used in the permanent construction, will remain the property of the Department and will be stockpiled at locations determined by the Department within 10 miles of the project.

Borrow material from off-ROW locations will be tested for the presence of soluble sulfates and expansive clays. Acceptable limits of potentially detrimental minerals will be determined by the Department and incorporated into the construction contract documents. Each borrow site will be tested by the Developer and the Department will verify each test. Each off-ROW borrow site will need to be approved by the Department prior to use.

ATTACHMENT C

TOTAL ESTIMATED COSTS AND SOURCES OF FUNDING

Project Highway Improvement	Estimated Total Project Cost	Estimated Total Construction Cost	Allowable Construction Costs for Payment of Pass-Through Tolls and Percentage of Total Construction Cost (Department's Proportional Share)	Department's Maximum Pass-Through Reimbursement to Developer (110% of Allowable Construction Costs)	Developer Funding	Other Funding Sources
US 82	$31,921,000	$26,200,000	$26,200,000 (100%)	$28,820,000	$31,921,000	$0
Total	$31,921,000	$26,200,000	$26,200,000 (100%)	$28,820,000	$31,921,000	$0

ATTACHMENT D

Project Implementation

Overview

This Attachment defines the roles, the responsibilities, and the working relationship between the Developer and the Department during the implementation of the Project.

1. Environmental Studies and Mitigation

1.1. The Developer shall complete all environmental studies and documents required to secure environmental approval, including each of the following items.

1.1.1. Preparation and completion of environmental studies, including obtaining right of entry to perform such studies. All environmental studies will be performed by environmental specialists who meet the requirements to perform those studies.

1.1.2. Submission of appropriate documentation (categorical exclusion, environmental assessment, and environmental impact statement, including reevaluation, and supplemental documentation) for Department review and approval. Department review is detailed in section 1.2 below.

1.1.3. Preparation of any document revisions.

1.1.4. Submission to the Department of copies of the environmental studies and documentation adequate for distribution.

1.1.5. Preparation of legal and public notices in accordance with 43 TAC §2.4 for Department review and use.

1.1.6. Arrangements for appropriate public involvement, including court reporters and accommodations for persons with special communication or physical needs related to the public hearing, if requested. The Department will serve as the Hearing Official at any public hearing with the assistance of the Developer.

1.1.7. Preparation of public meeting and hearing materials.

1.1.8. Preparation of any necessary responses to comments.

1.1.9. Preparation of the public meeting and public hearing summary and analysis, and the comment and response reports.

1.1.10. Submission to the Department of a verbatim transcript of any public hearing and the original certification of the pubic involvement process as described in 43 TAC § 2.4

1.1.11. Preparation of required US Army Corps of Engineers permit applications and associated drawings for impacts to jurisdictional waters, including mitigation requirements. The Developer will be responsible wholly for any and all mitigation that would be required. The permits will be issued in the Developer's name.

1.1.12. The Developer is responsible for all Project-related environmental permits, issues, and commitments, including any mitigation or remediation that may be required under any law or regulation.

1.1.13. Submission to the Department of documentation showing that all environmental permits, issues, and commitments have been or will be completed, including copies of permits or other approvals required prior to construction in accordance with 23 CFR §771.109.

1.2. As set forth in Exhibit 1, Roles and Responsibilities, the Department will conduct environmental reviews throughout the clearance process in an attempt to receive the environmental approval of the Project.

1.2.1. Except as otherwise required by law or by agreement between the Department and a state or federal agency, the Developer is responsible for coordinating with local governmental entities and applicable agencies throughout the Project planning process to assure compliance with applicable laws. The Developer and Department will make every reasonable effort to resolve disagreements with local governments and with state or federal agencies as they relate to environmental approval of the Project.

1.2.2. The Developer will coordinate the submission of documents for Agency review with the Department.

1.2.3. The Department is responsible for coordinating all review activities listed in the review schedule defined in Exhibit 2, General Review Schedule. The Department is responsible for working with the lead agency, the cooperating agencies and any affected entities to ensure a timely and thorough coordination process through a specified staff working group. The Developer will be an integral participant throughout the review process to rapidly address comments and concerns necessary to secure clearance within the review schedule.

2. Right of Way Acquisition

2.1. As provided in Paragraph 7 of this agreement, the Developer is responsible for the acquisition and provision of any right of way or real property needed for the Project (New Right of Way).

2.2. Right of Way acquired from the existing abandoned railroad corridor shall typically be fifty feet (50') in width, but may vary depending on the criterion needed to satisfy the Surface Transportation Board's release of the railroad Right of Way. The Right of Way acquired for this Project shall be sufficient to construct the ultimate design described in **Attachment B**, within the limits of the Project. The Developer shall make all necessary arrangements with the Surface Transportation Board, Rails-To-Trails Conservancy, railroad, the Trail Manager, and others as required. Arrangements include any agreements that may be required for the development and construction of the Project. The Developer will submit to the Department all agreements for review, comment and approval.

2.3. The Developer will establish and maintain a project tracking system that is acceptable to the Department and that shows the right of way surveying and mapping, appraisal, acquisition, and relocation status of each parcel.

2.4. The Developer and the Department will, upon commencement of the Project, agree on the form and format of all required conveyance documents and other right of way related deliverables required by the Department for their permanent files.

2.4.1. Within ten (10) days after commencement of work on the Project, the Developer will confirm in writing to the Department all agreed-upon terms relating to the acquisition of right of way.

2.4.2. The Developer will provide the Department with a certification that it has received the Department's Right of Way Manual Collection and that it will comply with the procedures in that collection.

2.4.3. The Developer shall execute the Certificate of Compliance appended to **Attachment H** "Programmatic Procedures for Right of Way Oversight of Pass-Through Toll Projects" as Exhibit "A" and, for each parcel to be acquired, the Developer will use checklists attached as Exhibit "B" to the **Attachment H** "Programmatic Procedures".

2.5. The Developer will prepare right of way maps, property descriptions (field notes and parcel plats), and other data as needed to describe the right of way and access rights necessary for the Project.

2.5.1. The field notes and parcel plats will be signed and sealed by a Registered Professional Land Surveyor currently licensed by the "Texas Board of Professional Land Surveying."

2.5.2. Copies of this data will be delivered to the Department for review, comment and approval at least four (4) weeks before beginning the standard process for acquisition of right of way for the Project.

2.6. The Developer will acquire fee simple title to the New Right of Way, any required drainage channel easements, and any required access rights, free and clear of all liens and encumbrances for all land to be used as right of way for the Project. Title to all real property rights will be acquired in the name of the State of Texas.

2.6.1. Title to New Right of Way will exclude oil, gas, and sulfur from the deed without any right in the owners to ingress or egress to or from the surface of the land for the purpose of exploring, developing, drilling, or mining.

2.5.2. The Developer will also provide the Department with title insurance for each individual parcel of New Right of Way in the name of the State of Texas as the insured owner.

2.7. The Developer is responsible for the negotiation of access points at the time of acquisition based on Department's Roadway Design Manual, the Department's Access Management Manual, and the preferred access points shown on the approved schematic for the highway improvement.

2.7.1. The access points for each highway improvement and the access denial line as depicted on the approved schematic will be incorporated into the deed when the property is acquired. Any proposed changes to the access denial line shall be submitted to the Department for review and approval.

2.7.2. The Developer shall develop driveway permits and associated exhibits acceptable to the Department for each access point and obtain, at a minimum, three original signed copies from the respective property owners.

2.8. The Developer will ensure that all right of way used in constructing the Project will be free and clear of all hazardous materials and contaminants. All costs associated with the detection and remediation of the hazardous materials and contaminants shall be borne by the Developer. The Developer shall provide written documentation from appropriate regulatory agencies that all known hazardous materials and contaminants in the right of way have been adequately mitigated or that the Developer otherwise meets the requirements for regulatory closure.

2.9. The Developer will provide tracings and electronic files of right of way maps and property descriptions to the Department and will also provide the Department a final map (digital and hard copy in a format approved by the Department) showing the final location of all utility lines that were adjusted or remained in place and joint use numbers assigned to those utilities.

3. Utilities

3.1. The Developer is responsible for determining the scope of utility work if the Project requires the adjustment, removal, or relocation of a utility facility. Utilities will not be adjusted, removed, or relocated before environmental approval is secured.

3.2. The Developer is responsible for notifying the appropriate utility company to schedule adjustments.

3.3. The Department will grant the Developer or its authorized representative site access to State right of way where required to execute the work and will issue right of entry for the performance of utility relocation.

3.4. The Developer is responsible for all costs associated with additional adjustment, removal, or relocation during the construction of the Project unless this work is provided by the owners of the utility facilities.

3.5. The Developer and the Department will, upon commencement of the Project, agree on the form and format of all required utility agreements, including joint use acknowledgments.

4. Engineering Services

4.1. The Developer will remain the single point of contact for engineering and design issues. All correspondence and instruction to the design consultants will be the sole responsibility of the Developer.

4.2. At the commencement of an individual highway improvement, the Developer will coordinate a Design Concept Conference with the Department to establish the performance parameters and design requirements for the Project, including the Pavement Design, Hydraulic Design, Design Concept Conference Forms and Typical Sections, which will remain in place throughout the implementation of the highway improvement.

4.3. All plans, specifications, and estimates developed by or on behalf of the Developer shall conform to the latest version of the Department's Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges, and the special specifications and special provisions related thereto, and shall conform to the latest edition and revisions of the State's Roadway Design Manual. The construction plans furnished to the Department shall be reproducible tracings on mylar or equivalent.

4.4. If the Department determines that the complete plans, specifications, and estimates are unacceptable, the Developer shall correct the design documents to the Department's satisfaction. Should additional specifications or data be required by the Department, the Developer shall redesign the plans and specifications to the Department's satisfaction. The costs for additional work on the plans, specifications, and estimates shall be borne by the Developer.

4.5. If exceptions to the Department's design criteria are required as specified in the Department Roadway Design Manual, a request for exceptions shall follow the procedure set forth in that manual.

4.5.1. If it becomes necessary to change a design after it has been approved by the Department, and if that change does not require the adoption of alternative design criteria or an exception to the Department's design criteria, the Developer will coordinate with the Department and FHWA for approval of the change.

4.5.2. The Department shall have no more than ten (10) business days either (1) to approve the design change as proposed by the Developer or (2) to respond with a Department-recommended alternative to the design change.

4.5.3. If the Department responds with an alternative to the design change, the Developer and the Department shall work diligently to develop a mutually agreeable design solution.

4.5.4. The Department is responsible for obtaining any necessary approval from FHWA.

4.6. Reviews

4.6.1. When the development of the Plans, Specifications and Estimates (PS&E) package is approximately thirty (30) percent complete, the Developer shall submit a completed pavement design to the Department. The Department may request additional information related to the pavement design, and the Developer shall provide that information promptly. The pavement design must be approved by the Department before letting. After the pavement design has been approved by the Department, it may not be changed by either party without the written consent of the other.

4.6.2. After the design schematic has been approved and when development of the PS&E is 30% complete, the Developer will coordinate the submission of the following design information for review by the Department to allow comments and concerns to be addressed by the Developer within the expedited review schedule defined in Exhibit 2, General Review Schedule.

4.6.3. The following will be reviewed as set forth in Exhibit 1, Roles and Responsibilities.

1) Preliminary cross sections showing existing utility lines, R.O.W.
2) Plan and profile sheet showing existing and proposed:
   a) R.O.W. lines
   b) Roadway alignments and profiles
   c) Intersecting streets
   d) Curb and lane lines
   e) Existing Utilities
3) Existing and proposed typical sections including pavement section
4) Preliminary title and index sheets.
5) Preliminary drainage area map, discharge relationships and drainage calculations.
6) Storm drainage master plan.
7) Preliminary culvert layouts.
8) Preliminary bridge and bridge classification culvert layouts, including test hole information.
9) Preliminary retaining wall layout, including test hole information.
10) Sequence of work outline for traffic control.
11) Preliminary traffic control typical sections and layouts.
12) Preliminary intersection layouts.
13) Preliminary utility layouts - identify potential conflicts and exchange of information with existing utilities.
14) Update estimates and prepare preliminary roadway and drainage quantity summary sheets.
15) Updated design contract schedule.
16) Facility typical sections and pavement design.

4.6.4. When the Project design is final, the Developer will coordinate the submission of the following information to the Department for review to allow comments and concerns to be addressed by the Developer to secure approval of the Department and FHWA within the expedited review schedule defined in Exhibit 2, General Review Schedule.

1) Seven (7) copies of final plans, specifications, and engineer's estimate.
2) Revisions to the preliminary design submittal.
3) Proposal to award construction contract in compliance with applicable state and federal requirements.
4) Proposed contract administration procedures for the construction contract with criteria that comply with the applicable national or state administration criteria and manuals.
5) Documentation of all environmental permits, issues, and commitments that will be addressed in construction.

4.6.5. Approval by the Department of this final design submittal will constitute authorization for the Developer to advertise for construction bids.

4.6.6. For any individual highway improvement with a construction cost over $25 million, the Developer shall conduct a value engineering workshop. Proposed changes to the design shall be submitted to the Department for review and approval.

5. Construction Responsibilities

5.1. The Developer will supervise and inspect all work performed during construction and provide engineering inspection and testing services as may be required to ensure that the Project is accomplished in accordance with the approved plans and specifications.

5.1.1. Unless the parties enter a separate agreement to the contrary, all correspondence and instruction to the contractor performing the work will be the sole responsibility of the Developer.

5.1.2. All work will be performed, unless otherwise specifically stated in the contract documents for the Project, in accordance with the latest edition of the Department's Guide Schedule for Sampling and Testing, the Quality Assurance Program Manual as amended by the Atlanta District Office, the Construction Contract Administration Manual, and the Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges or special specifications or provisions approved by the Department.

5.2. The Department will grant the Developer or its authorized representative access to State right of way to perform any activities required to execute the work and issue a right of entry for the performance of all construction activity.

5.3. Subject to Paragraph 10 of the agreement, the Developer will negotiate and approve all change orders and other contract revisions that the Developer finds necessary or convenient to accomplish the construction activities for the Project. For change orders and other contract revisions that affect prior environmental approvals or result in non-conformity with the specifications and standards agreed upon for the Project, the Developer must assess any potential environmental effects and any additional or revised environmental permits, issues, coordination, mitigation, and commitments required as a result of the contract revisions.

5.3.1. The Developer will document any such changes, including a proposed course of action.

5.3.2. The Developer will notify the Department of the need for such changes and submit the appropriate documentation for approval prior to the work being performed.

5.3.3. If the Department responds with revisions, the Developer and the Department will work diligently and in good faith to develop mutually agreeable changes that shall then be implemented by the Developer.

5.3.4. The Developer shall be responsible for obtaining any required approvals from federal, state, or local governmental authorities, with the exception of the Department and FHWA, and except as otherwise specified in this agreement.

5.3.5. To the extent that a change orders requires the adoption of alternative design criteria, an exception to the Department's design criteria, or a change in the approved design, the design must be approved as set forth in Sections 4.3, 4.4, or 4.5, as applicable.

5.4. The Developer will comply with applicable Federal requirements throughout the procurement and construction process in order to maintain the Department's eligibility for Federal reimbursement for Project costs. The Developer's compliance with requirements necessary to maintain eligibility for federal reimbursement is a condition precedent to performance by the Department.

5.5. Within six (6) months after issuance of the "Letter of Acceptance" for the Project,, the Developer will provide to the Department all documents and submittals identified in the Department's Construction Contract Administration Manual. This documentation includes:

1) Record Drawings and Final Construction Records,
2) Engineer Certification of Project Completion, and
3) Right of Way Parcel Information (Exhibits, Descriptions, Right of Way Maps, Field Notes, etc.)

6. General

6.1. The Developer and the Department will agree on a transition plan at the time of or before completion of the Project..

6.2. The Developer will schedule regular meetings with the Department to maintain the communication necessary to successfully implement the Project.

6.3. The Developer will prepare program organizational and management documents, including Program Management Plan and Quality Control/Quality Assurance Plan for all work products. The Developer will provide these documents to the Department for all contracted firms participating in the Project.

6.4. The Developer will maintain all documentation relative to implementation and completion of the Project, including without limitation documentation relating to environmental issues, acquisition of right of way, preliminary and final design, and bidding, award, and construction of the Project.

Exhibit 1: Roles and Responsibilities for Each Entity

	Responsible Party
Preliminary Engineering	
Retain Consultant	Developer
Develop Preliminary Design	Developer
Develop Preliminary Cost Estimate	Developer
Develop Design Schematic	Developer
Schematic Approval	Department, FHWA
Develop Surface Transportation Board Study	Developer
Define Right of Way Requirements	Developer
TxDOT Review and Approval of Preliminary Engineering Report	Developer, Department
Environmental Review	
Retain Consultant	Developer
Draft Environmental Documents	Developer
Schedule & Conduct Public Meetings	Developer, Department
Review of Environmental Documentation	Developer, Department, FHWA
Notification and Documentation of Comments	Developer
Publish and Hold Public Hearings	Developer, Department
Analyze and Document Public Hearings	Developer
Final Review	Developer, Department, FHWA
Document Approval	Department, FHWA
Environmental Permits, Issues, and Commitments	Developer
Permitting	
Develop Required Permit Applications	Developer
Submit Required Permit Applications	Developer, Department
Right of Way Acquisition	
Develop Right of Way Budget	Developer
Retain Surveyor	Developer
Develop Right of Way Map	Developer
Right of Way Map Review and Approval	Department
Retain Appraisers	Developer
Work with Owners on Donations, Access, Etc.	Developer
Purchase Parcels After NEPA Process	Developer
Eminent Domain Proceedings	Developer
Utility Identification and Relocation	Developer
Oversight and Audit of Right of Way Process	Department

	Responsible Party
Design	
Retain Designer, Geotech, Surveyor, and other professional service providers	Developer
Develop 30% Submittal Package	Developer
30% Submittal for Department Review	Developer
Review/Comment of 30% Submittal	Department
Final Submittal for Department Review	Developer
Review/Comment of Final	Department
Approval of Design	Department, FHWA
Bid for Construction	
Preparation of Bid Documents	Developer
Approval of Bid Documents	Department
Advertisement for Bids	Developer
Bid Opening, Evaluation, and Award	Developer
Certified Final Award	Developer
Construction	
Coordination with Utilities for Relocation	Developer
Issuance of Construction Notice To Proceed	Developer
Administration of Construction Contract	Developer
Inspection of Construction	Developer, Department
Issuance of Notification of Substantial Completion	Developer
Issuance of Letter of Approval for Payment	Department
Issuance of Notification of Completion	Developer
Issuance of Letter of Acceptance	Department
Issuance of Engineer's Certification of Completion	Developer

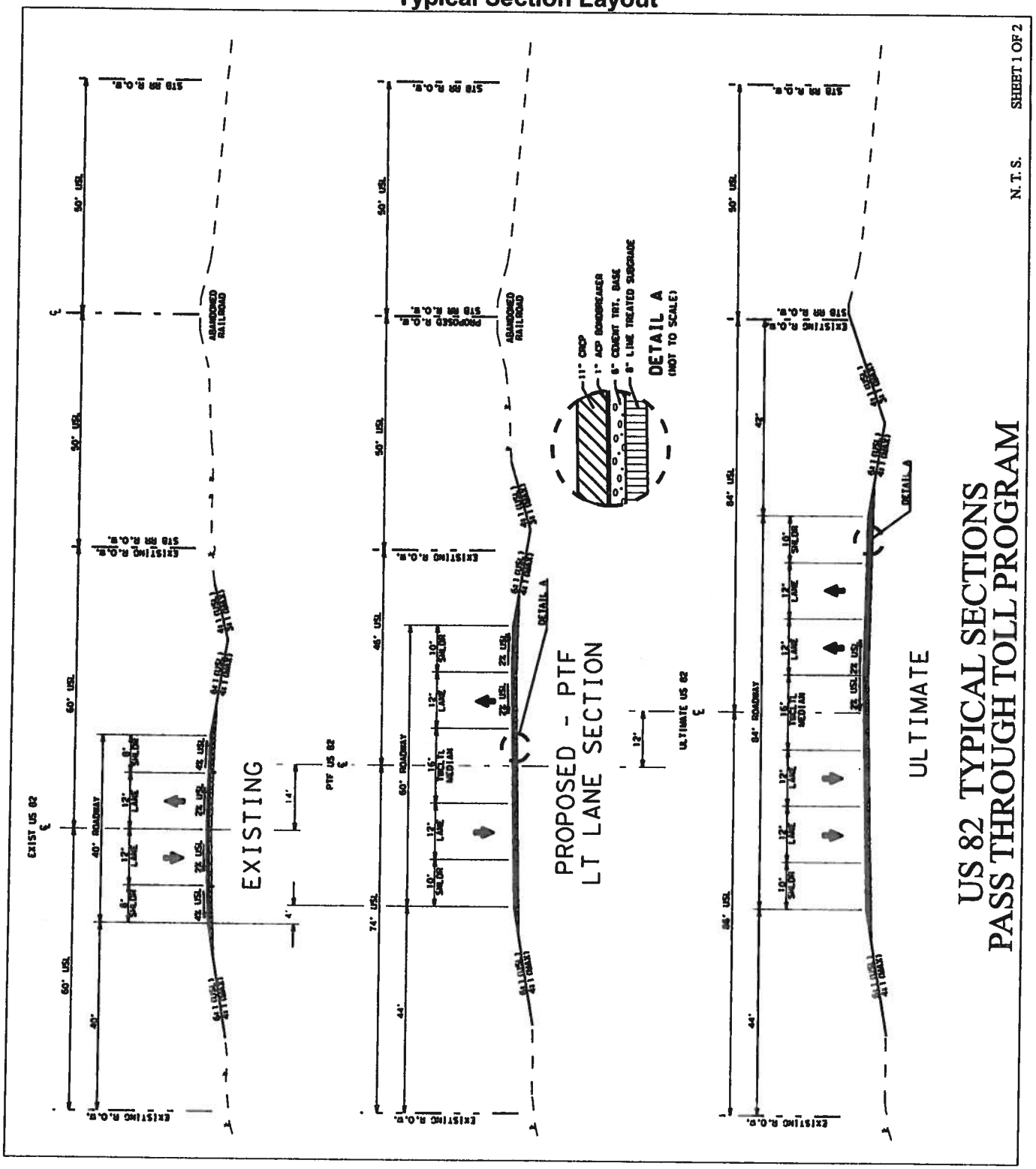
Exhibit 2: General Review Schedule
Specific timelines are incorporated into the timeline for the Project.

The Department will attempt to perform reviews within the times shown in this schedule. Review times may vary as circumstances warrant.

	Type of Review		Review Time
1	Preliminary/Schematic Layout Review (each occurrence)		2 weeks
2	Environmental Review	Initial Joint Environmental Review	2 weeks
		Review (Department)	8 weeks
		Resource Agency Review	To be determined
		FHWA Review (draft document)	To be determined (minimum 4 weeks)
		Release by the Department to Public Hearing • Advertising for public hearing • Conducting Public Hearing • Receipt of written comments	6 weeks plus 10 days for receipt of written comments
		Developer Addresses Comments from Public Hearing (note, 3 weeks is minimum for non-controversial projects, and is not realistic for a developer-type project)	6 weeks
		Department Review of Comments (2 weeks district; 2 weeks ENV)	4 weeks
		FHWA Review of Comments and issues determination document	To be determined (minimum 4 weeks)
	ROW Map Review	100% Completion	4 weeks
3	Review of Plans, Specifications, and Estimates	30% Completion	2 weeks
		100% Completion	8 weeks
		Federal Approval of Letter of Authority	1 week

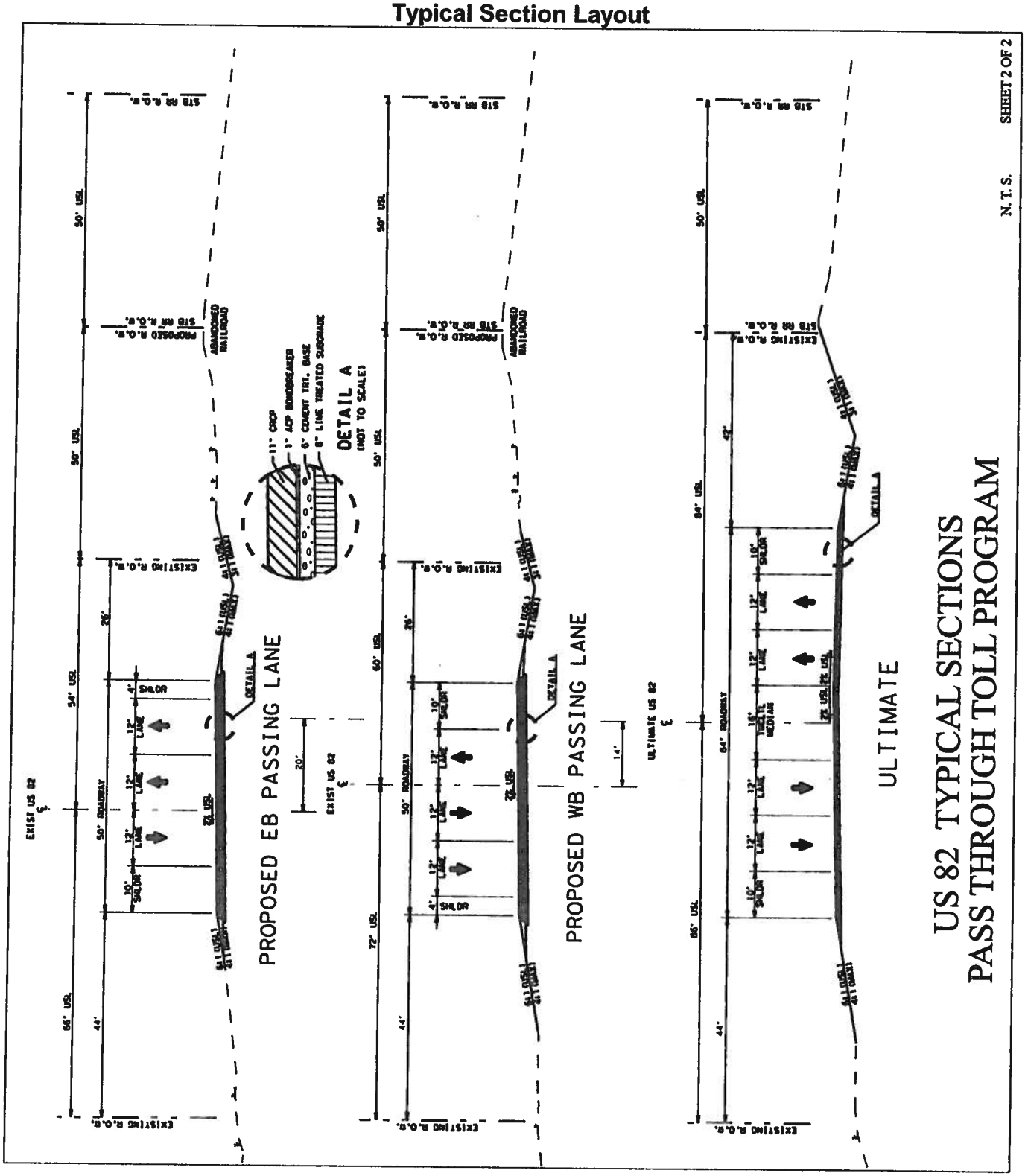
ATTACHMENT E

Typical Section Layout



ATTACHMENT E

Typical Section Layout



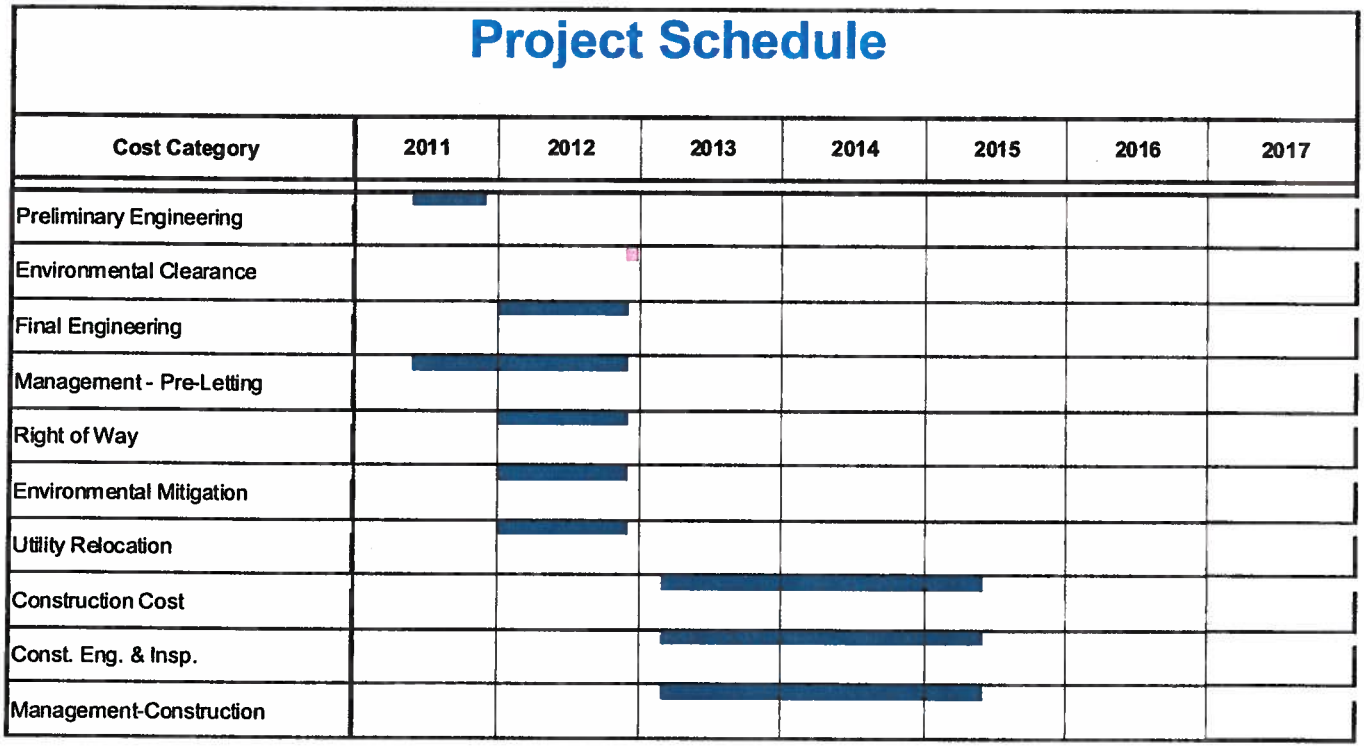
ATTACHMENT E

Typical Section Layout – Project Description Table

FROM STATION	TO STATION	LENGTH FT	WIDTH FT	REMARKS
623+00.00	626+00.00	300.00	50	Transition from existing 2 lane to proposed 3 lane section. ACP widening and level up.
626+00.00	633+00.00	700.00	50	3 lane urban section at FM1840: 6-12-14-12-6 Begin concrete pavement.
633+00.00	643+00.00	1000.00	50	Transition from proposed 3 lane section to 2 lane section.
643+00.00	653+00.00	1000.00	50	Transition from 2 lane section to WB Passing Lane.
653+00.00	755+00.00	10200.00	50	WB passing lane section: 4-12-12-12-10
755+00.00	765+00.00	1000.00	50	Transition from WB passing lane section to 2 lane section.
765+00.00	775+00.00	1000.00	50	Transition from 2 lane section to EB Passing Lane.
775+00.00	875+00.00	10000.00	50	EB passing lane section: 10-12-12-12-4
875+00.00	885+00.00	1000.00	50	Transition from EB passing lane section to 2 lane section.
885+00.00	895+00.00	1000.00	55	Transition from 2 lane section to 3 Lane Rural Section.
895+00.00	907+00.00	1200.00	60	3 Lane Rural Section at Malta School: 10-12-16-12-10
907+00.00	917+00.00	1000.00	55	Transition from proposed 3 lane section to 2 lane section.
917+00.00	927+00.00	1000.00	50	Transition from 2 lane section to WB Passing Lane.
927+00.00	977+00.00	5000.00	50	WB passing lane section: 4-12-12-12-10
977+00.00	987+00.00	1000.00	50	Transition from WB passing lane section to 2 lane section.
987+00.00	997+00.00	1000.00	50	Transition from 2 lane section to EB Passing Lane.
997+00.00	1044+00.00	4700.00	50	EB passing lane section: 10-12-12-12-4
1044+00.00	1054+00.00	1000.00	50	Transition from EB passing lane section to 2 lane section.
1054+00.00	1064+00.00	1000.00	55	Transition from 2 lane section to 3 Lane Rural Section. End concrete pavement.
1064+00.00	1072+00.00	800.00	60	3 Lane Rural Section at SH 98: 10-12-16-12-10. ACP widening and level up.
1072+00.00	1080+00.00	800.00	55	Transition from proposed 3 lane to existing 2 lane section. ACP widening and level up.

ATTACHMENT F

Project Schedule



ATTACHMENT G

Resolution or Ordinance

COUNTY OF BOWIE

STATE OF TEXAS

RESOLUTION

WHEREAS, The Highway 82 Project will provide for much needed improvements along Highway 82 between FM 1840 and SH 98; and

WHEREAS, This segment of Highway 82 has seen many accidents and several deaths in recent years; and

WHEREAS, This project is vital to the economic growth of Bowie County; and

WHEREAS, This Project is in keeping with the statewide priority of the Texas Department of Transportation (TxDOT); and

WHEREAS, The Texas Department of Transportation considers this project critical to the transportation mobility needs of Northeast Texas; and

WHEREAS, On December 17, 2009, the Texas Transportation Commission passed Minute Order 112074, authorizing TxDOT to enter into a pass-through agreement with Bowie County for the reconstruction and widening of US 82 from FM 1840 to SH 98 to a two lane section with either a two-way left turn lane or passing lanes; and

WHEREAS, pass-through financing is a tool created by the state to stretch limited transportation funds; and

WHEREAS, pass-through financing agreements allow local communities to get needed transportation projects financed and built earlier than traditional funding will allow; now, therefore, be it

RESOLVED, that the Bowie County Commissioners Court hereby authorizes Bowie County to enter into a pass-through agreement for furtherance of the Highway 82 project; and be it further

RESOLVED, that the Bowie County Commissioners Court will proceed with calling a bond election for May 2011 to provide for the necessary funds to complete this project and allow the will of the taxpayers to be heard; and be it further

RESOLVED that the Bowie County Commissioners Court authorize Commissioner John Addington to sign all necessary contractual agreements on behalf of Bowie County related to this project; and be it further

RESOLVED, that the Bowie County Commissioners Court request that local cities, chambers of commerce, community organizations and elected officials also pass/adopt a like Resolution in support of Highway 82.

Adopted the 14th Day of February, 2011

Signed and entered on the above date by the following members of the Commissioners Court:

Sterling E. Lacy
Bowie County Judge

Jack Stone
Bowie County Commissioner, Pct. 1

John Addington,
Bowie County Commissioner, Pct. 2

Kelly Blackburn
Bowie County Commissioner, Pct. 3

Pat McCoy
Bowie County Commissioner, Pct. 4

COMMISSIONERS COURT, BOWIE COUNTY, TEXAS

ATTEST: Natalie Nichols

Natalie Nichols

Bowie County Clerk

Ex-Officio Clerk of the Commissioners Court

ATTACHMENT H

PROGRAMMATIC PROCEDURE FOR RIGHT OF WAY OVERSIGHT OF PASS-THROUGH PROJECTS

For those Pass-Through projects where a Pass-Through Agreement has been entered into by and between the Texas Department of Transportation (TxDOT) and a local public agency (county or municipality), and in conjunction with such Agreement the local public agency (LPA) has also executed a "Certification of Compliance" in the form as attached hereto as Exhibit "A", TxDOT shall provide right of way monitoring and audit of the acquisition of right of way in the following manner:

1. Following the execution by the LPA of the Certification of Compliance, schedule a meeting as soon as practical with the LPA officials who will be providing oversight and management of the Project for the LPA, and also with the project manager(s) of any engineering consultant hired by the LPA to directly manage the Project, to include those individuals both from the LPA and under contract with the engineering consultant to handle right of way acquisition.

   A. At this meeting, discuss the need to establish separate right of way parcel files for each parcel of land or easement to be acquired for the Project, and to include and retain within each parcel file, documentation that establishes that all certifications contained in the "Certification of Compliance" have been met. Emphasize that a detailed written "negotiator's report" for all negotiation contacts must be included within each parcel file (as provided for in the on line Right of Way Manual Collection).

   B. Provide a copy of the "Expanded Parcel Review Checklist" (a copy of which is attached hereto as Exhibit "B") which TxDOT will be utilizing when it monitors and audits a random selection of parcel files each month during the progress of the right of way acquisitions for the Project.

   C. Provide a copy of the form for the conveyance instruments to be utilized for initial acquisition of right of way interests in accordance with the Agreement and also the form for the final conveyance of all right of way interests acquired from the LPA (Developer in the Agreement) to the State of Texas upon completion of each Project.

2. Beginning the month following the initiation of right of way acquisition by the LPA, TxDOT shall not less than once a month meet with the LPA and any consultants retained by the LPA that are handling right of way parcel acquisition and randomly select from those parcels for which acquisition has been completed or are in the process of being submitted for eminent domain proceedings during the prior month, either three of such parcels, or 10% of the total number of such parcels reaching such status during the prior month (which ever is more), and audit such parcel files using the Expanded Parcel Review Checklist.

A. For those parcels so audited which according to the audit and completion of the checklist appear to be in compliance with Title III guidelines, place one copy of the checklist within the parcel file, and retain an additional copy of the check list for TxDOT's monitoring and auditing file for this Project.

B. For any parcel so audited for which one or more check list items indicate non-compliance with Title III guidelines, TxDOT shall provide written notice to the LPA containing detailed information about such non-compliance, together with recommended action to be taken by the LPA in order to remedy such non-compliance. An additional copy of such written notice shall be placed in the parcel file and a copy also retained by TxDOT for the Department's monitoring and auditing file for this Project.

C. During any subsequent month's TxDOT review of parcel files as required under this paragraph 2. above, in addition to auditing the number of new parcel files required above, TxDOT shall specifically re-review any parcel files for which non-compliance notices were provided, and additional written documentation placed in such parcel file indicating the current status relating to the prior non-compliance, and if the non-compliance status still exists, provide an additional written notice of this to the LPA. If, after the third month's review of a parcel with a non-compliance notice, the non-compliance status remains, and it appears to the TxDOT personnel conducting the review that the LPA is not taking sufficient steps to remedy the non-compliance, the TxDOT Right of Way Division shall be provided a copy of all prior notices of non-compliance for review. If this review determines there is definitely continuing non-compliance without adequate basis or other justification, a letter will be issued from the Right of Way Division to the LPA, informing the LPA that acquisition of the parcel does not meet the requirements of the "Uniform Act" which could result in the Project being ineligible for State and Federal participation in reimbursement payments, and unless remedied, such could be considered a material breach of the Agreement. A copy of this letter will be provided to the local FHWA Realty office and also to TxDOT Office of General Counsel.

Contract No. _____
CSJ No. _____
CFDA_____

ATTACHMENT H
EXHIBIT "A"

CERTIFICATION OF COMPLIANCE

___Bowie____ County, the Developer under a Pass-Through Toll Agreement with the Texas Department of Transportation (TxDOT) for the purpose of constructing and operating improvements to ___US 82_____, pursuant to Texas Transportation Commission Minute Order ___112074___ (the Project), hereby certifies that:

(1) real property will be acquired for the Project right of way in compliance with all applicable State and Federal laws and requirements, including the policies and practices of the Right of Way Manual Collection of TxDOT's Online Manual System and Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, 42 U.S.C. §4601 et seq.;

(2) it has received and has continuing access to the Online Right of Way Manual Collection; and

(3) prior to the implementation of any procedures that are at variance with established TxDOT policies and practices for the acquisition of real property, __Bowie_____ County will submit such procedures in writing to TxDOT's District Engineer for the _Atlanta____ District and the Executive Director's approval must be obtained.

For purposes of this Project, it is understood that references in the Right of Way Manual Collection to TxDOT personnel, District personnel, District, District Engineer, ROW Division, Director of the ROW Division, and other similar TxDOT employees or titles involved in the acquisition process shall be deemed to mean __Bowie_____ County and its authorized agents. It is the intent of this provision to allow __Bowie_____ County to acquire real property for the Project on behalf of the State without prior review and approval of TxDOT, subject to compliance with all applicable State and Federal laws and requirements as described above, the variance procedure, and TxDOT's audit and enforcement obligations.

Date: 5/3, 20 11

___Bowie_____ COUNTY

By: _____

County Judge

ACCEPTED:

TEXAS DEPARTMENT
OF TRANSPORTATION

By: John A. Barton, P.E.
John Barton., P.E.
Assistant Executive Director
for Engineering Operations

FEDERAL HIGHWAY ADMINISTRATION

By: _____
Printed Name: _____
Title: _____

Contract No. _____
CSJ No. _____
CFDA_____

EXHIBIT B
TITLE III PARCEL REVIEW CHECKLIST FOR LPAs

County:
District:
ROW CSJ No.:
Parcel No.:
Acquiring Agency:

General

Was the informational notice given to owner? Yes ☐ No ☐

Date of the notice:

Was the "Landowner's Bill of Rights Statement" properly provided prior to initiation of negotiations? Yes ☐ No ☐

Date provided:

Appraisal

Was the real property appraised before the initiation of negotiations? Yes ☐ No ☐

Approval date of the appraisal:

Was the owner or his designated representative given the opportunity to accompany the appraiser during inspection of the property? Yes ☐ No ☐

Did the appraisal disregard any decrease or increase in value caused by the proposed facility? Yes ☐ No ☐

Did the written appraisal of the parcel conform to the established standards for appraisal? Yes ☐ No ☐

Does the acquiring agency require compliance with the Uniform Standards of Professional Appraisal Practices (USPAP) and Uniform Appraisal Standards for Federal Land Acquisition (UASFLA) for appraisals? Yes ☐ No ☐

Were the appraiser and review appraiser qualified by the acquiring agency? Yes ☐ No ☐

Were there any apparent conflicts of interest on the project on behalf of the appraiser or review appraiser? Yes ☐ No ☐

Was a written appraisal review report prepared, and an executed certification provided by a qualified review appraiser? Yes ☐ No ☐

Were all items of real estate included in the appraisal? Yes ☐ No ☐

Were retention values for any improvements retained by the owner properly documented? Yes ☐ No ☐

Negotiation

Did the review appraiser negotiate for acquisition? Yes ☐ No ☐

Did the appraiser negotiate for any parcel for which the appraised just compensation was more than $2,500? Yes ☐ No ☐

Were acquisition policies and procedures explained to the owner? Yes ☐ No ☐

Was prompt written offer made to acquire real property for the full amount of the approved appraisal of just compensation? Yes ☐ No ☐

Date of the first written offer:

The written offer included the following:

☐ statement of the full amount established as just compensation

☐ separate statement as to damages (if applicable)

☐ description and location identification of the ROW parcel, and of the interest in the real property to be acquired

☐ identification of the buildings, structures and other improvements considered to be real property for which the offer is made

☐ identification of separately owned interests (if applicable)

☐ a copy of the appraisal report delivered to the owner at the time the offer was made

Was the offer and its basis discussed with the owner? Yes ☐ No ☐

Was the owner given reasonable opportunity to consider the offer and to present material believed to be relevant to valuation of the property? Yes ☐ No ☐

Was any evidence discovered which suggests that coercive action was taken to compel agreement on price paid for the property? Yes ☐ No ☐

Was the owner required to surrender possession before payment was made or proper award deposited in court? Yes ☐ No ☐

If the property was donated, was the owner advised of his right to receive just compensation? Yes ☐ No ☐

Was every reasonable effort made to acquire the property expeditiously by negotiation? Yes ☐ No ☐

Was property acquired under Title VI requirements, without regard to race, color, age, religion, sex, national origin, or handicap? Yes ☐ No ☐

Relocation Assistance

The acquisition of this property resulted in the displacement of: (check all that apply)

None ☐ Residence ☐ Business ☐ Farm Operation ☐ Non-Profit Organization ☐ Personal Property Only ☐

If residential, was a replacement housing supplement computed utilizing comparable decent, safe, and sanitary replacement housing? Yes ☐ No ☐

Amount of the supplement: Date approved:

Amount of actual replacement housing payment: Date of payment:

If a non-residential displacement, list all payments made.

☐ Moving Payment - Business, Farm, or Non-Profit

Amount(s): Date(s):

☐ Moving Payment - Personal Property

Amount(s): Date(s):

☐ Reestablishment Payment

Amount(s): Date(s):

Were applicable Relocation Assistance Advisory Services offered to the displaced resident, business, or farm operation, or non-profit organization? Yes ☐ No ☐

Was a 90-Day Notice given to the displaced person? Yes ☐ No ☐

Date of notice:

Was a 30-Day Notice to Vacate given to the displaced person? Yes ☐ No ☐

Date of notice:

Were all relocation benefits calculated and paid in accordance with the "Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, and amendments thereto."? Yes ☐ No ☐

Based on review, is the acquiring agency complying with all *Title III* guidelines? Yes ☐ No ☐

Parcel Legal Description / Plat

Do the survey and mapping technical requirements comply with the technical requirements as set forth in applicable Department manuals? Yes ☐ No ☐

Does a broad review of the parcel legal description / plat and comparison to the right of way map indicate the presence of all component parts? Yes ☐ No ☐

_____ _____

Signature of TxDOT Review Agent Date

ENGINEER SEAL

Control	**0046-04-057**
Project	**PTF 2013 (400)**
Highway	**US 82**
County	**Bowie**

The enclosed Texas Department of Transportation Special Specifications, Special Provisions, General Notes and Specification Data in this document have been selected by me, or under my responsible supervision as being applicable to this project. Alteration of a sealed document without proper notification to the responsible engineer is an offense under the Texas Engineering Practice Act.

The seal appearing on this document was authorized by John B. Goodwin, P.E.

Employed by
H W Lochner, Inc.
TBPE Firm # 10488

GENERAL NOTES:

GENERAL:

Catalog numbers or trade names of any manufacturer for any part of the installation shown on these plans, are for the purpose of identification only. Furnish manufacturer's materials that are of equal quality and comply with the specifications for this project.

The following standard detail sheets have been modified: (None)

Prior to final acceptance, all new structures and structures being extended shall be cleaned out by the contractor. This work will be considered subsidiary to the various bid items of the contract.

Clean the existing curb and gutter, curb outlets and curb inlets in accordance with Art 427.4.B.1.a.(2) "Blast Cleaning" as part of the final clean up. Surfaces will exhibit a uniform appearance free from stains, marks, and all foreign matter. This work will be subsidiary to the pertinent bid items.

ITEM 2: INSTRUCTIONS TO BIDDERS

Sealed bids addressed to the Honorable Judge and County Commissioners of Bowie County, Texas, will be received at the Office of the County Judge, Bowie County Courthouse, 710 James Bowie Drive, New Boston, Texas 75570 until 1:30 pm local time on March 28, 2013, to furnish all labor and materials and perform all work for construction of the project.

An optional Pre-Bid meeting will be conducted for this project. One meeting will be held. The meeting date is March 15, 2013 at 1:30 pm local time in the Commissioners Courtroom located on the 2nd floor of the Bowie County Courthouse, 710 James Bowie Drive, New Boston, Texas.

Questions regarding the project plans & specifications shall be submitted in writing to Mr. John B. Goodwin, P.E., with H. W. Lochner, Inc. at jgoodwin@hwlochner.com . Questions shall be submitted no later than March 20, 2013.

ITEM 5:

Prior to contract letting, bidders may obtain a free computerized transfer of files (from jgoodwin@hwlochner.com) that contains the earthwork information, for bidder viewing and printing.

Prior to beginning work in the area of exiting utilities, the contractor shall consult with the utility companies for exact locations to prevent any damage or interference with present facilities. This action shall in no way be interpreted as relieving the contactor of his responsibilities, under the terms of the contact and as set out in the plans and specifications. The contractor shall repair any damage caused by his operations, at his own expense and shall restore facilities to service in a timely manner.

ITEM 6:

Mixing of materials, storing of materials, storing of equipment, or repairing of equipment on top of concrete pavement will not be permitted unless specifically authorized by the Engineer in writing.

Submit all fabrication and shop drawings to the Engineer for review and approval, unless otherwise directed.

ITEM 7:

The contractor shall not initiate activities in a project specific location (PSL) associated with a U.S. Army Corps of Engineers (USACE) permit area that have not been previously evaluated by the USACE as part of the permit review of this project. Such activities include, but are not limited to, haul roads, equipment staging areas, borrow and disposal sites. Associated defined here means materials are delivered to or from the PSL. The permit area includes all waters of the U.S. or associated wetlands affected by activities associated with this project. Special restrictions may be required for such work. The contractor shall be responsible for any and all consultations with the USACE regarding activities, including project specific locations (PSLs), that have not been previously evaluated by the USACE. The Contractor shall provide the Engineer with a copy of all consultation(s) or approval(s) from the USACE prior to initiating activities.

The contractor may proceed with activities in PSLs that do not affect a USACE permit area if a self determination has been made that the PSL is non-jurisdictional or proper USACE clearances have been obtained in jurisdictional areas or have been previously evaluated by the USACE as part of the permit review of this project. The contractor is solely responsible for documenting any determination(s) that their activities do not affect a USACE permit area. The contractor shall maintain copies of their determination(s) for review by the Engineer, the department, or any regulatory agency.

The contractor must document and coordinate with the USACE, if required, prior to any excavation hauled from or embankment hauled into a USACE permit area by either (1) or (2) below.

1) **Restricted Use of Materials for the Previously Evaluated Permit Areas.** The Contractor will document both the project specific location (PSL) and their authorization. The contractor will maintain copies for review by the Engineer or any regulatory agency. When an area within the project limits has been evaluated by the USACE as part of the permit process for this project:

a. Suitable excavation of required material in the areas shown on the plans and cross sections as specified in Item 110 is used for permanent or temporary fill (Item 132, Embankment) within a USACE permit area;
b. Suitable embankment (Item 132) from within the USACE permit area is used as fill within a USACE evaluated area; and,
c. Unsuitable excavation or excess excavation ["Waste"] (Item 110) that is disposed of at a location approved by the Engineer within a USACE evaluated area.

2) **Contractor Materials from Areas Other than Previously Evaluated Areas.** The Contractor will provide the Engineer with a copy of all USACE coordination or approval(s) prior to initiating any activities for an area within the project limits that has not been evaluated by the USACE or for any off right of way locations used for the following, but not limited to, haul roads, equipment staging areas, borrow and disposal sites:

a. Item 132, Embankment, used for temporary or permanent fill within a USACE permit area; and,
b. Unsuitable excavation or excess excavation ["Waste"] (Item 110, Excavation) that is disposed of outside a USACE evaluated area.

This project is covered by a U.S. Army Corps of Engineers Nationwide 14 permit with coordination. Obtain a copy of permit and conditions at the Engineer's office. Negotiate and obtain any additional permits required by the Corps of Engineers for construction methods not covered by the existing permit.

The Nationwide 14 permit for this project has an expiration date. See permit for date.

The Engineer will conduct a meeting with the contractor detailing the terms and conditions of this permit prior to beginning construction activities. The Engineer will notify U. S. Army Corps of Engineers (USACE) Regulatory Branch having jurisdiction over this project, of the preconstruction meeting at least two weeks in advance of the meeting and provide written confirmation to the USACE that the meeting was held, within two weeks following the meeting.

The total area disturbed for this project is 79 acres. The disturbed area in this project, all project locations in the Contract, and the Contractor project specific locations (PSLs) within 1 mile of the project limits will be used to establish the authorization requirements for storm water discharges. The Contractor will obtain an authorization to discharge storm water from the Texas Commission on Environmental Quality (TCEQ) for the construction activities shown on the plans and for Contractor PSLs for construction support activities on or off the ROW. When the total area disturbed in the Contract and PSLs within 1 mile of the project limits exceeds 5 acres, provide a copy of the Contractor NOI for PSLs on the ROW to the Engineer and to the local government that operates a separate storm sewer system.

Transmit copies of correspondence between Contractor and resource agencies as listed in Article 7.19 “Preservation of Cultural and Natural Resources and the Environment”.

RAP material generated may be used for ingress and egress to drives and intersections or construction exits. When removed, stockpile this material separately from other RAP material.

Care shall be taken by the contractor to protect and avoid disturbance to survey and right-of-way monuments. If survey or right-of-way monuments are disturbed by the contractor, or its subcontractors, the contractor shall notify the inspector. Survey or right-of-way monuments disturbed by the contractor, or its subcontractors, shall be restored by a Registered Professional Land Surveyor at the expense of the contractor.

Remove all vegetation from pavement edges, intersections, and driveways prior to planning, surface treatment, or ACP operations. This work will be subsidiary to the various bid items.

Mow tall grass and weeds within the project work area at driveways, at mailbox locations, and at intersections that negatively affects traffic safety in the opinion of the Engineer. Mow in accordance with Item 730 “Roadside Mowing” except for measurement and payment. This work will be subsidiary to pertinent bid items.

ITEM 8:

Working days will be charged in accordance with Section 8.3.A.1, “Five-Day Workweek”.

Critical Path Method (CPM) scheduling will be required for this project. See Special Provision to Item 8 for details.

This contract includes disincentives in accordance with 000---070, Article 8.11.B for failure to substantially complete work on time for Milestone 1.

Milestone 1 begins when the Contractor begins work on the contract and working day charges for the contract begin and ends when the project is “Substantially Complete” in accordance with Section 12 (Repayment) in the Pass-Through Agreement for Payment of Pass-Through Tolls by the Department executed May 27, 2011 between Bowie County and TxDOT.

Failure to complete Milestone 1 within 370 working days will result in the assessment of disincentives using the daily road-user cost for each working day in excess of those allowed. These assessments will be deducted from any moneys due or to become due the Contractor.

Road-user cost disincentive deductions will be in addition to any contract administration liquidated damages, in accordance with Article 8.5, “Failure to Complete Work on Time.”

The daily road-user cost is $4764 per day.

Do not begin work on the roadway until 30 minutes after sunrise and have all equipment and personnel off of the road and lanes opened to traffic 30 minutes before sunset when utilizing temporary lane closures.

In the event utility lines needing unforeseen adjustments are encountered during construction operations, alter operations and continue to prosecute the contract in such a manner that will allow utility adjustments to be made by others.

For all subcontracts, physically attach all provisions listed in the "Contractor's Assurance" to the subcontact agreement. Provide a copy of subcontracts, with attachments, for all DBE subcontractors. Submit the subcontracts to the Engineer when submitting the subcontract approval request.

See Special Provision to Item 8 for details regarding beginning of working day charges.

ITEM 100:

Grind stumps as directed.

After removing edge drain, allow adequate air drying then backfill and ordinary compact trenches to the satisfaction of the Engineer.

ITEM 110 & 132:

Compact subgrade in earth cut sections, in accordance with Article 132.3. D.2 , Density Control.

ITEM 110:

As cut slopes are constructed, round off the tops of back slopes to blend into the natural ground.

Excavation of existing stabilized materials will be measured and paid for as road excavation.

Remove abandoned underground utility lines encountered. This work will be subsidiary to the pertinent bid items.

Flare ditches to prevent erosion of the toe of slope in areas of transition from cut to fill.

Excavated materials not meeting the requirements for Type C embankment will be considered waste. Dispose of as directed.

ITEM 132:

Furnish material, from sources outside of the right of way, with a soluble sulfate concentration less than 3000 PPM when tested using test methods Tex-145-E and Tex-146-E.

Test borrow sources and furnish results to the Engineer.

Where fill height is 5 feet or more above natural ground, the specified density will not be required on the first 2 feet of embankment, unless otherwise directed.

Remove deleterious material, organic matter and sediment, etc., from all ponds, lakes, sloughs, channels and existing roadway ditches prior to placement of embankment. This work will be subsidiary to this item.

The top 12" of Ty C embankment underneath pavement shall have a PI less than 18.

ITEM 132, 247, 275, and 276:

Furnish material with an organic content less than 1.0%. The Engineer will test using UV-VIS equipment and procedure determined by TxDOT. Allow two weeks for testing.

ITEM 160 & 164:

Finish slopes with a tracked vehicle running vertically up and down the slope.

ITEM 164:

Mow tall growing vegetation as directed, to provide optimum growing conditions for temporary or permanent seeded areas in accordance with Item 730 "Roadside Mowing" except for measurement and payment. This work will be subsidiary to pertinent bid items.

Repair areas, damaged by causes other than the Contractor's operations, as directed using seeding and fertilizer. This work will be measured and paid for in accordance with the applicable bid items of the contract.

ITEM 164:

PERMANENT PLANTING MIXTURE

Species and Rates
(lb. PLS/ac.)

(Season: February 1 to May 15)

Green Sprangletop	0.3
Bermudagrass	2.1
Weeping Lovegrass	1.3
Sand Lovegrass	0.6
Lance-Leaf Coreopsis	1.0

(Season: September 1 to February 1)
Bermuda (Unhulled) 12
Crimson Clover 10

TEMPORARY SEEDING FOR EROSION CONTROL

Warm Season
(Season: May 15 to August 31)

Bermudagrass 12

Cool Season
(Season: September 1 to November 30)
Tall Fescue 4.5
Oats 24
Wheat 34

Adjust the seeding mixture and rates if directed.

Inoculate crimson clover seed with a legume inoculant. Sow inoculated seed dry, with either hand operated or mechanical equipment, after the fertilizer is placed.

Do not use Bahiagrass.

Finish slopes with a tracked vehicle running vertically up and down the slope.

Use broadcast seeding for temporary erosion control, when and as directed.
Use additional temporary seeding if permanent seeding is placed outside the optimum growing season shown for this item, if directed.

ITEM 166:

When seeding between September 1 and January 1, place one-half of the amount of fertilizer specified for seeding with the seeds and place the remainder the following spring unless otherwise directed. When seeding is placed between January 1 and June 1, place one-half the amount of fertilizer specified for seeding with the seeds and place the remainder 30 days later unless otherwise directed.

ITEM 247:

Furnish clean 5 gallon plastic buckets with lids and wire handles for sampling, transporting, and shipping aggregate and base.

Compact Ty D GR 5 low fines flexible base in accordance with Item 247.4.C.1. “Ordinary Compaction.”

Do not use iron ore.

Notify the Engineer before stockpiling operations begin at the source or sources of base material.

Keep the Engineer informed on progress of stockpiling operations. A minimum of 14 days is required for testing after stockpiling of materials is completed.

Engineer tests each stockpile.

Ensure Ty D Gr 2 base has a minimum PI of 3%.

Ensure Ty D Gr 5 low fines flexible base has a minimum of 5% and a maximum of 12% passing the #200 sieve. Minus #40 material shall be the product from crushing oversized quarried aggregate. Ensure Ty D Gr 5 base has a minimum PI of 0. Ensure material has a maximum magnesium sulfate soundness, when subjected to 5 cycles, of 20 percent.

For this project, Ty E Grade 4 flexible base shall consist of a mixture of new flexible base meeting the requirements of Type D Grade 2 flexible base, salvaged base from the existing shoulders of US 82, and recycled asphalt pavement (RAP) from US 82 pavement planning operations. Use a minimum of 50% new base, a maximum of 25% salvaged base, and a maximum of 25% RAP for the resulting Ty E Grade 4 flexible base mixture unless otherwise approved by the engineer in writing.

ITEM 247, 251, 260, 275, & 276:

Drill or dig one or more holes for thickness measurement, refill, and re-compact material at the location and frequency as directed. This work is considered subsidiary to these items.

ITEM 251 & 354:

Assume ownership of material removed under these Items and use in cement treated base for this project. Cement treatment laboratory design using 25% Item 251 material, 25% RAP material from Item 354, and 50% new Ty A Gr 2 flexible base material is available from the Engineer for contractor information. Contractor remains responsible for proposed mix designs and meeting material specifications for all work.

Stockpile material in accordance with Item 247.4 “Construction” or as directed.

ITEM 260:

Rates and locations of application of lime for pretreating subgrade shown in the plans are for estimating purposes only. Actual rate and location of application will be determined during

construction for each land. The Engineer will determine the percent lime using Texas Test Method Tex-121-E. The minimum lime content shall be 2.125 lbs/sy per inch depth of lime treatment (17 lbs/sy for 8 inch depth of lime treatment).

Apply in essentially dust free manner as approved.

ITEM 275:

Apply all cement in an essentially dust free manner as approved.

Rates of application of cement for subgrade shown in the plans are for estimating purposes only. Actual rate of application will be determined during construction for each land by the Engineer. The estimated rate of application is 27 lbs/sy. Pretreat with lime under Item 260 when the soil PI is greater than 18. The application rates will be determined by the Engineer.

ITEM 276:

Use Class N cement treated base with a minimum cement content of 3% and a maximum cement content of 4%. The minimum 7-day unconfined compressive strength shall be 275 psi. Mold three specimens from production every second production day and test for unconfined compressive strength at seven days. Mold, cure and test specimens according to Test method Tex-120-E. Furnish Ty E Gr 4 flexible base described under Item 247 for flexible base, before the addition of cement..

ITEM 301 & 3268:

Add hydrated lime to the aggregate by the following method only: mix in an approved pug mill mixer with damp aggregate containing water at least 2% above saturated surface dry conditions.

ITEM 316:

The Engineer may require the use of emulsion instead of AC if conditions so dictate. Apply AC unless otherwise directed.

Cure the surface treatment under traffic a minimum of 14 days before placement of any subsequent surface courses.

Remove vegetation and blade pavement edges as directed.

ITEM 351 & 361:

The Engineer will determine if concrete pavement repair is required and determine repair locations.

ITEM 354 & 3268:

Provide and obtain written approval from the Engineer of station to station work limits of ACP level-up and work limits of planning areas prior to beginning existing pavement surface corrective work in Phase 2.

ITEM 360:

Use Class 3 (hot poured rubber) joint sealing compound for concrete pavement.

Obtain written approval from the Engineer if the concrete design requires greater than 5.5 sacks of cementitious material per cubic yard. Between May 1 and October 1, place only concrete pavement mixes containing a minimum of 25% by weight of Class “F” Fly Ash.

Use 7-Day flexural strength testing for job control.

Use aggregates with low coefficient of thermal expansion (CTE) meeting Standard CRCP(1A) when tested in accordance with TEX-428-A. Prior to construction, submit aggregate test specimens as directed. TxDOT Construction Division will perform the testing. Test results are final. Testing is required for naturally occurring aggregates.

ITEM 361:

Use SS-1 asphalt for curing paving repairs.

ITEM 420:

Chamfer or tool exposed edges or joints of concrete as directed.

ITEM 420, 421, 430, 462 & 464:

When unstable foundation materials are encountered, the Engineer will have the option of directing the placement of a foundation seal of Class "A" concrete instead of an undercut.

ITEM 421:

Elevate beam tanks a minimum of one foot above the ground.

Provide fine aggregate with a sand equivalent value of at least 90.

Produce Grade 3 aggregate so that the percent passing the No. 4 sieve is from 0-10.

Entrained air is required in all bridge deck and slip formed concrete (bridge rail, concrete traffic barrier, pavement, etc.) Adjust the dosage of air entraining agent for low air contents as directed

or allowed by the Engineer. If entrained air is provided where not required, only the upper limits of the Special Provision will be enforced.

When a water tank is provided, the Engineer will approve the following: Post and maintain the message "Caution Lime Solution, Eye and Skin Irritant". The message must be visible from every direction the tank can be approached. The letters must be clearly legible at all times. Provide a copy of the MSDS sheet for the lime in use and personal protective equipment (PPE) for TxDOT use only as listed: a face shield, a pair of chemical gloves at least 18 inches in length and a chemical apron. Store the MSDS sheet and PPE in a clean dry location adjacent to the beam tank. Provide an eye wash station capable of providing a 15 minute flush as required by the United States Occupational Safety and Health Administration (OSHA). The eye wash station shall be located within ten feet of the beam tank. When a tank heater is required ensure that all electrical wiring, receptacles, and devices meet National Electrical Code and Underwriters Laboratories Inc. requirements.

ITEM 427:

Provide an adhesive grout finish for surface area II

Clean surfaces of curb and gutter, curb outlets, and curb inlets in accordance with Article 427.4.B.1.a.(2). Provide surfaces with a uniform appearance free from stains, marks, and foreign matter. Removal of dirt, vegetation, or trash from areas to be cleaned is subsidiary to this item of the contract.

ITEM 430:

Remove trees, bushes, and underbrush as directed. This work will be subsidiary to the pertinent bid items.

ITEM 432:

Provide expansion joint material with an area equal to the area of contact between the two concrete surfaces. The Engineer will visually inspect the joint material for approval.

ITEM 464:

Backfill driveway culverts to obtain a minimum cover of 6 inches. Place backfill in accordance with Article 132.3.D.1 “Ordinary Compaction” using approved equipment.

The Engineer will determine flow lines of pipes under private driveways.

ITEM 467:

Provide precast safety end treatments with a toewall measuring at least 12 inches. Construct toewalls for cast-in-place safety end treatments as shown in the plans.

ITEM 502:

Length of lane closures will be as directed based on the demonstrated ability to prosecute the work within the closed section. Lane closures exceeding 2 miles in length will not be permitted unless approved by the Engineer in writing.

Plan and coordinate ACP placements so that traffic lanes will not be left with open longitudinal joints for more than 2 days placement.

Maintain access to abutting property at all times using approved materials and methods. Unless otherwise provided in the plans, work required to maintain ingress and egress within the limits of this project will not be paid for directly, but is subsidiary to the pertinent bid items.

Restrict the movement of equipment across traffic lanes to an absolute minimum.

Use strobe lights or rotating beacons on all motorized equipment, operating on or adjacent to the road surface.

Place and maintain U.S. mailboxes within project limits in such a manner as to ensure continuous mail service.

ITEM 504:

Provide a fully operational Type B structure or an approved equivalent at the onset of contract work. The structure shall be for the sole use of Bowie County and its engineering representatives unless otherwise directed by the Engineer. Any hazardous materials stored or utilized in the structure shall be with the approval of the Engineer; any unauthorized hazardous materials in the structure when it arrives at the site shall be removed by the contractor or his agents before work begins and the facility is utilized by Bowie County.

Provide for exclusive Bowie County use a secure broadband internet connection with a minimum speed of 5 Mbps download and 768 Kbps upload, unless otherwise approved. Provide equipment for WiFi connections to the internet for multiple computers. This will not be paid for directly, but will be considered subsidiary to various bid items.

Provide a 240 volt electrical entrance service. The service will consist of a minimum of four 120 volt circuits with 20 amp breakers and no more than two grounded convenience outlets per circuit and provisions for a minimum of two 220 volt ovens with vents to the outside. Provide a minimum of 2 convenience outlets per wall, and a utility sink with an adequate clean potable water supply for testing. Provide HVAC as approved.

The use of space heaters for the purpose of heating the structure is unacceptable. The building must be structurally sound and pose no safety hazards. The laboratory must meet all the above requirements within two (2) weeks prior to beginning of work.

The field office structure shall be furnished prior to the beginning of work. In addition to the other requirements, a minimum of three desks; six chairs; one file cabinet; two equipment storage closets; and one laser printer equipped with WiFi connectivity and capable of printing, copying, and scanning 8.5x11 and 11x17 inch size paper shall be provided. Each closet shall provide a minimum of 3 feet by 3 feet of floor space or equivalent and shall have provisions for locking securely.

Provide a structure (beam house) for use as a curing location, tank room and test area for concrete beams and cylinders made for this project. The contractor must supply all of the curing tanks and adequate space for storage. The structure shall include a water faucet.

Provide bottled water and a means to deliver cold water such as using a water fountain or bottled water fountain.

ITEM 529:

Before placing machine laid curb, paint the surface with a coating of cement paste, having the consistency of a thick paint, or with another approved adhesive.

Use an approved curb template that will match the existing curb.

At the Contractor's option, place the Type II curb and gutter monolithically.

ITEM 530:

Unless otherwise shown in the plans for concrete driveways, furnish 6"x 6"-W6xW6 welded wire reinforcing and place an approved 1/2 inch preformed expansion joint material at the junction with other concrete surfaces.

Meet the requirements of Item 110, "Excavation" and Item 132, "Embankment, Type "B", except for measurement and payment, for construction of driveways and turnouts.

ITEM 540:

Furnish round timber posts unless otherwise shown.

ITEM 540 & 544:

Place sufficient dry batch concrete mix in holes to ensure minimum of 2 inch embedment of tubes and posts.

ITEM 542:

Stockpile salvageable metal beam guard fence, fittings and appurtenances on the right of way for TxDOT pick up at the following location: Intersection of US 82 and SH 98

ITEM 552:

All wood posts and braces will be treated.

Place fence wire on the field side of post unless otherwise directed.

ITEM 560:

Furnish Size 3 (6”x12”) object markers for mailbox reflectors.

ITEM 585:

Use surface test Type B pay adjustment schedule 2 to evaluate ride quality of travel lanes on US 82 in accordance with this Item. Use surface test Type A on all other surfaces.

Only full width through lanes and full width passing lanes on US 82 will be considered travel lanes under this item.

ITEM 610:

Luminaires placed on traffic poles will not be paid for directly, but are subsidiary to Item 680, “Installation of Highway Traffic Signals”.

Ballast supplies shall be isolated winding, lag-type magnetic regulator ballasts conforming to the specifications in the plans.

Luminaires for safety lighting will be 240 volts.

Luminaires will be 250 watt high pressure sodium.

ITEM 618:

Install a continuous bare or green insulated copper wire, No. 6 awg or larger, in the conduit throughout the electrical system in accordance with the electrical detail sheets, and the latest edition of the National Electrical Code.

The locations of conduit as shown are for diagrammatic purposes only and may be varied to meet local conditions, subject to approval.

All conduit placed under existing pavement will be bored as directed. Cutting, trenching or jacking across roadways or driveways will not be permitted without approval.

Install a 3 inch warning tape on trenched conduit runs during backfill operations. The tape will be red polyethylene marked “CAUTION-BURIED ELECTRIC LINE”. Place the tape 12 inches above the conduit. Measurement and payment is subsidiary to Item 618, “Conduit”.

When backfilling bore pits, ensure the conduit does not become damaged. Place select backfill in three equal lifts to the bottom of the conduit or place sand to a point 2 inches above the conduit. Compact the backfill to obtain a density equal to the existing, adjacent soil. Prevent backfill material from entering the conduit.

Excavate bore pits no closer than 2 feet from the edge of pavement or base.

The vertical and horizontal tolerances of bored conduits are not to exceed 18 inches as measured from the target point.

ITEM 620:

For both transformer and shoe-base type illumination poles, provide double-pole breakaway fuse holder as shown on the Texas Department of Transportation (TxDOT) - Construction Division's (CST) materials producers list. Category is "Roadway Illumination and Electrical Supplies." Fuse holder is shown on list under Items 610 & 620.

Provide 10 amp time delay fuses.

For Flashing Beacons (Item 685) and Ped poles (Item 687) within the project, provide single-pole breakaway disconnects.

Use Bussman HEBW, Littelfuse LEB, Ferraz-Shawmut FEB,or equal on ungrounded conductors. For all grounded conductors, use Bussman HET, Littelfuse LET, Ferraz-Shawmut FEBN, or equal; These breakaway connectors have a white colored marking and a permanently installed solid neutral.

Grounding conductors sharing the same conduit, junction box, ground box or structure will be bonded together at accessible points in accordance with the current edition of the National Electrical Code.

Complete splices using approved splicing methods and insulate with an approved thermosetting compound, heavy duty heat shrinkable tubing with sealant, or heat shrinkable tape with sealant suitable for outdoor use.

Electrical certification for this project will be as per Item 7 of the current Texas Standard Specifications and any applicable Special Provision to Item 7.

ITEM 624:

Locations of ground boxes are approximate. Final locations will be as approved.

Provide an apron for ground boxes as shown on standard ED(3).

ITEM 628:

Construct the proposed electrical service as shown on ED(4) and (5), and in accordance with Item 628, "Electrical Services". Make arrangements for electrical service, and comply with local standards and practices for proper installation.

ED(4) requires that the enclosure and disconnect combination be rated as service entrance equipment. Assemblage of UL listed components alone will not meet this specification and will not be accepted.

Specifications for electrical items requiring UL listed products will be understood to mean UL listed or CSA listed.

Use 10-foot ground rods on pedestal services.

Equip electric meters with a meter bypass to allow for access to the meter without disrupting service to the signals.

ITEM 636:

Ensure the location and details of the fabrication, assembly and erection of the aluminum signs are in accordance with the details shown on the plans.

Ensure the Contractor's working drawings, for extruded aluminum signs, conform to the details shown on the plans.

Install sign stiffeners as shown on SMD sheets.

Transport signs in such a manner as to not damage the high intensity reflective sheeting. Carry signs in a standing position within a divider rack assembly.

Ensure new sign panels have edge molding as detailed in the edge molding standard sheet. Edge molding will be subsidiary to this item. Install sign clamps on the sign before the installation of the edge molding.

ITEM 644:

Replace the casting and locking collar for the triangular slip base sign support with a casting that requires a minimum of three set screws. This casting is to be furnished from an approved

manufacturer. The list of approved manufacturers may be obtained from the Traffic Operations Division.

All signs, mounts and miscellaneous hardware removed from this project will become the property of the Contractor and be disposed of outside the state right of way

ITEM 662:

Non-removable pavement markings may be paint and beads.

ITEM 680:

Perform adjustments needed due to conflicts with utilities.

Cover new signal heads so that the faces cannot be seen from the time of installation until the signals are placed in operation. Burlap, trash bags, paper, etc. are not acceptable coverings for signal heads. Signal head covers will be weather resistant and will have straps made of the same material as the cover for use in securing to the signal head. Provide signal head covers. Covers will become the property of the State upon completion of the project. All covers will be approved by the Engineer prior to installation. Signal head covers will not be paid for separately but will be subsidiary to this item.

Luminaires drawn on the plans are for diagrammatic purposes only. Mount Luminaires perpendicular to the roadway.

Provide and install dampening devices for mast arms 40 feet or greater.

Maintain the integrity and function of each existing signalized intersection. Once the integrity or function of the signal has been altered by the Contractor, continue working at that location without delay or interruption until operation is restored to the original or proposed operational design.

Maintain the existing signal system in operating order until the new or temporary system is in place and properly operating.

Perform staking to the approval of the Engineer.

Use aluminum tie wire to wrap signal cable to messenger cable. Tie-wrap strips, if used, will be 3/8 inch in width and UV protected.

For removal purposes, existing signal systems consist of the existing service poles, arms, strain or mast arm pole assemblies, luminaires, signal heads, controller and other accessories. Immediately after removal, transport the entire existing signal system to the District Headquarters Maintenance Yard. The yard is located at 701 East Main Street, Atlanta, Texas. Stockpile as directed. Other traffic signal materials salvaged from this project will become the

property of the Contractor. Remove these salvaged materials from the project and dispose of in accordance with all applicable State and Local laws and regulations.

Provide a complete signal, installed, connected, tested and ready for operation. Perform, furnish or properly install, all work, materials and services not expressly called for in the specifications or shown on the plans, which is necessary for a complete and properly operating signal system. The additional work and materials will not be paid for directly, but are subsidiary to the pertinent bid items.

ITEM 682:

Furnish signal head components constructed from plastic.

ITEM 686:
Each pole foundation will have two spare 1 1/2 inch rigid PVC conduits stubbed out. Align stub-outs in the direction of each adjacent street.

ITEM 1122:

Sprinkle water for dust control. Meet the requirements of Item 204, “Sprinkling” except for measurement and payment. Sprinkling will be considered subsidiary to this Item.

Maintenance of placed silt fence consisting of replacing one or more components of a placed silt fence installation will be subsidiary to placed silt fence.

Provide and install additional erosion or water pollution control measures deemed necessary by the Engineer as prescribed by this item and in accordance with the appropriate specification. Payment for erosion control measures for which applicable pay items are not included in the Contract shall be made in accordance with Article 9.4, “Payment for Extra Work” or Article 9.5, “Force Account”.

ITEM 3268:

Use field sand with a sand equivalent value of at least 35 when sampled and tested in accordance with TEX-203-F.

The Engineer will determine the correction when the total thickness of the ACP, at any location, is deficient by more than 1/4 in. The correction may include adjusting the profile grade or removing and replacing the pavement structure to the correct grade, lines and thickness as shown on the plans. Correction of defective work will be in accordance with Article 5.3.B “Correction of Defective or Unauthorized Work”.

Use a Texas Gyratory Compactor (TGC) to design the mixture.

Furnish clean 5 gallon plastic buckets with lids and wire handles for sampling, transporting, and shipping aggregate and base.

Design and produce the mix at 96.5% target lab molded density.

Design and produce the job mix formula so that the total percent passing the No. 8 sieve is from 36 to 44 percent.

For final surfaces, furnish aggregate with a minimum "A" surface aggregate classification.

ITEM 5284:

Recycled asphalt pavement (RAP) and Grade 2 crushed stone flexible base are approved base and surfacing material for this item. Obtain Engineer approval for use of other crush material or mixture of materials for other proposed base and surfacing material.

Use this item for driveway access traffic handling during Phase 2 as shown in the TCP. Obtain Engineer approval for alternate driveway access traffic handling concepts to meet field conditions and the contractor's construction operations.

ITEM 6473:

Place pavement markings only after the pavement has cured to the satisfaction of the Engineer.

Mark the lateral locations of pavement markings with pilot lines. Obtain approval of the location and alignment of the pilot lines before application of permanent markings.

Placement of markings in proper alignment will be strictly enforced on this project. Irregular lines placed on both sides of the existing markings or pilot line will not be accepted.

Place Contrasting (Black) Pavement Markings at locations shown in the plans.

ITEM 6266:

Provide the VIVDS processor unit with a TS2 interface.

The primary communications link between the sensor units and the VIVDS processor unit will be composite, 4 conductors, 2 elements: Element #1 16 AWG 3 conductors 19/28 bare copper, 0.25" high density polyethylene, CM wrap, .045" polyethylene jacket black IMSA 20-1 (indent print). Element #2 20 AWG 1 conductor solid bare copper, 83% solid polyethylene, 98% tinned copper braid, overall 98% tinned copper braid, .035" polyethylene jacket black, 0.25" polyethylene jacket black over entire cable (indent print legend) 8261163CR201JKT

All connection cables run from the equipment cabinet to the cameras will be continuous without splices from terminal point to terminal point.

Mount the camera assemblies with pedestal mounts on the mast arms as shown in the plans. The pedestal mounts will be subsidiary to Item 686, "Traffic Signal Pole Assemblies" (Steel).

The VIVDS system will have dial-up telephone, secondary communication links between the central office locations (TxDOT signal shop and the TxDOT traffic section) and the VIVDS processor unit at the controller. The secondary communication link will be subsidiary to the pertinent bid items.

Install VIVDS detection zones as shown on "VIVDS detection zone requirements" standard sheet.

SPECIFICATION DATA
TEST TO BE IN ACCORDANCE WITH DEPARTMENT OF TRANSPORTATION TEST METHODS

		GRADING REQUIREMENTS PERCENT RETAINED - SIEVES				SOIL CONSTANTS		
						L.L	P.I.	
ITEM	*DESCRIPTION*	*2-1/2"*	*1-3/4"*	*No. 4*	*No. 40*	MAX.	MAX.	MIN.
132	Embankment (Type C) Except top 12" under pavement					50	25	4
132	Embankment (Type C) Top 12" under pavement					50	18	4

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	UNIT	QUANTITY
164	Broadcast Seed Area (Temp and Perm)	Surface Area (See Typical Sections)	sq. yd.	418824
*166	Fertilizer (13-13-13)	1 lb./6.25 sq. yd. of seeding area	ton	34
168	Vegetative Watering	9 gals/sq. yd. of seeding area (2 apps.)	mg.	7539
*210	Rolling (Surface Treatment)	1 hr./1,000 sq. yd.	hr.	26
260	Lime Treatment	Surface Area	sq. yd.	12109
260	Lime	27 lb./sq. yd.	Ton	162
275	Cement Treatment	Surface Area	sq. yd.	158524
275	Cement	27 lb./sq.yd.	Ton	2141
*310	Prime Area	Surface Area	sq. yd.	186959
310	Prime Coat (MC-30)	0.32 gal./sq. yd.	gal.	59827
*310	Blotter	1 cy./400 sq. yd.	cu. yd.	468
*316	Surface Treatment	Surface Area	sq. yd.	26086
316	Asph. (AC-15P)	0.35 gal./sq yd.	gal.	9130
316	Aggr. (TY-PB GR-4 SAC-A)	1 cy./110 sq. yd.	cu. yd.	237

*FOR CONTRACTOR'S INFORMATION ONLY.

ACP SUMMARY

ACP (TY D) (LEVEL-UP)

LOCATION	AREA sq. yd.	DEPTH in.	RATE lb./sq. yd.	ACP ton
Phase 1 crown reversal	1156	7.5 avg.	825 avg.	477
Phase 1 crown reversal	30714	1.63avg.	179 avg.	2749
Phase 1 temp connections	20391	1.63avg.	179 avg.	1825
Phase 2 pavement correction	48246	1.0avg.	110 avg.	2653
Phase 2 driveways	1996	1.63avg.	179 avg.	178
TOTALS				7882

ACP (TY C) (BASE)

LOCATION	AREA sq. yd.	DEPTH in.	RATE lb./sq. yd.	ACP ton
Side roads	13238	2	220	1456
US 82 End Transitions	6754	5 avg.	550 avg.	1858
TOTALS				3314

ACP (TY D) (SURFACE)

LOCATION	AREA sq. yd.	DEPTH in.	RATE lb./sq. yd.	ACP ton
All final ACP riding surfaces	30368	2	220	3341
TOTALS				3341

ACP (TY F) (BONDBREAKER)

LOCATION	AREA sq. yd.	DEPTH in.	RATE lb./sq. yd.	ACP ton
Under all concrete pavement	262329	1	110	14427
TOTALS				14427

Control	**0046-04-057**
Project	**PTF 2013 (400)**
Highway	**US 82**
County	**BOWIE**

DISADVANTAGED BUSINESS
ENTERPRISES REQUIREMENTS

The following goal for disadvantaged business enterprises is established:

DBE
6.0%

Certification of DBE Goal Attainment

By *signing* the bid, the Bidder certifies that the above DBE goal will be met by obtaining commitments equal to or exceeding the DBE percentage or that the Bidder will provide a good faith effort to substantiate the attempt to meet the goal.

Failure to provide commitments to meet the stated goal or provide a satisfactory good faith effort will be considered a breach of the requirements of the bid. As a result, the bid proposal guaranty of the bidder will become property of the City and the Bidder will be excluded for rebidding on the project when it is re-advertised.

Control	**0046-04-057**
Project	**PTF 2013 (400)**
Highway	**US 82**
County	**BOWIE**

STATE ON-THE-JOB TRAINING (OJT)
PROGRAM REQUIREMENTS

The following On-the-Job Training Program goal is established:

OJT

0 Trainee(s)

Certification of State OJT Program Goal Attainment

By *signing* the bid, the Bidder certifies that every effort will be made to enroll, train and graduate minority, female and disadvantaged trainees sufficient to meet the above referenced State OJT program goal. The successful Bidder will be responsible for demonstrating the steps taken to meet the goal prior to a determination of compliance with the State On-the-Job Training (OJT) Program for American Recovery and Reinvestment Act (ARRA) of 2009 Projects as incorporated in the bid.

Failure to meet the stated goal or provide a satisfactory good faith effort will be considered a breach of the contractual requirements. As a result, there may be cause for corrective and appropriate measures pursuant to Article 8.6., Abandonment of Work or Default of Contract, Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges.

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.

CONTROL : 0046-04-057
PROJECT : PTF 2013 (400)
HIGHWAY : US 82
COUNTY : BOWIE

TEXAS DEPARTMENT OF TRANSPORTATION

GOVERNING SPECIFICATIONS AND SPECIAL PROVISIONS

ALL SPECIFICATIONS AND SPECIAL PROVISIONS APPLICABLE TO THIS PROJECT ARE IDENTIFIED AS FOLLOWS:

STANDARD SPECIFICATIONS: ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORATION JUNE 1, 2004. STANDARD SPECIFICATIONS ARE INCORPORATED INTO THE CONTRACT BY REFERENCE.

ITEMS	1 TO 9	INCL., GENERAL REQUIREMENTS AND COVENANTS
ITEM	100	PREPARING RIGHT OF WAY (103) (104) (497)
ITEM	106	OBLITERATING ABANDONED ROAD
ITEM	110	EXCAVATION (132)
ITEM	132	EMBANKMENT (100) (204) (210) (216) (400)
ITEM	160	TOPSOIL
ITEM	164	SEEDING FOR EROSION CONTROL (162) (166) (168) (730)
ITEM	168	VEGETATIVE WATERING
ITEM	169	SOIL RETENTION BLANKETS
ITEM	247	FLEXIBLE BASE (105) (204) (210) (216)
ITEM	251	REWORKING BASE COURSES (210) (216) (247) (520)
ITEM	260	LIME TREATMENT (ROAD-MIXED)
ITEM	275	CEMENT TREATMENT (ROAD-MIXED) (132) (204) (210) (216) (247) (300) (310) (520)
ITEM	276	CEMENT TREATMENT (PLANT-MIXED) (204) (210) (216) (247) (300) (310) (520)
ITEM	310	PRIME COAT (300) (316)
ITEM	316	SURFACE TREATMENTS (210) (300) (302)
ITEM	351	FLEXIBLE PAVEMENT STRUCTURE REPAIR (132) (204) (247) (260) (263) (275) (276) (292) (310) (316) (330) (334) (340)
ITEM	354	PLANING AND TEXTURING PAVEMENT
ITEM	360	CONCRETE PAVEMENT (300) (420) (421) (438) (440) (529) (585)
ITEM	361	FULL-DEPTH REPAIR OF CONCRETE PAVEMENT (360) (421) (438) (440)
ITEM	400	EXCAVATION AND BACKFILL FOR STRUCTURES (132) (401) (402) (403) (416) (420) (421) (423)
ITEM	402	TRENCH EXCAVATION PROTECTION
ITEM	416	DRILLED SHAFT FOUNDATIONS (420) (421) (440) (448)
ITEM	420	CONCRETE STRUCTURES (400) (404) (421) (426) (427) (438) (440) (441) (448)

ITEM	432	RIPRAP (247) (420) (421) (427) (431) (440)
ITEM	442	METAL FOR STRUCTURES (441) (445) (446) (447) (448) (449)
ITEM	462	CONCRETE BOX CULVERTS AND STORM DRAINS (400) (420) (421) (424) (440) (464) (476)
ITEM	464	REINFORCED CONCRETE PIPE (400) (476)
ITEM	466	HEADWALLS AND WINGWALLS (400) (420) (421) (430) (440) (464)
ITEM	467	SAFETY END TREATMENT (400) (420) (421) (430) (432) (440) (445) (460) (464)
ITEM	481	PVC PIPES FOR DRAINS (400)
ITEM	500	MOBILIZATION
ITEM	502	BARRICADES, SIGNS, AND TRAFFIC HANDLING
ITEM	504	FIELD OFFICE AND LABORATORY
ITEM	508	CONSTRUCTING DETOURS (132) (340)
ITEM	529	CONCRETE CURB, GUTTER, AND COMBINED CURB AND GUTTER (360) (420) (421) (440)
ITEM	530	INTERSECTIONS, DRIVEWAYS, AND TURNOUTS (247) (260) (263) (275) (276) (292) (316) (330) (334) (340) (360) (421) (440)
ITEM	531	SIDEWALKS (104) (360) (420) (421) (440) (530)
ITEM	540	METAL BEAM GUARD FENCE (421) (441) (445) (492) (529) (542) (544)
ITEM	542	REMOVING METAL BEAM GUARD FENCE
ITEM	544	GUARDRAIL END TREATMENTS
ITEM	552	WIRE FENCE (445) (492)
ITEM	556	PIPE UNDERDRAINS (402) (432)
ITEM	560	MAILBOX ASSEMBLIES
ITEM	610	ROADWAY ILLUMINATION ASSEMBLIES (421) (441) (442) (445) (446) (449) (616) (620)
ITEM	618	CONDUIT (400) (445) (476) (622)
ITEM	620	ELECTRICAL CONDUCTORS
ITEM	621	TRAY CABLE
ITEM	624	GROUND BOXES (420) (421) (432) (440) (618) (620)
ITEM	628	ELECTRICAL SERVICES (441) (445) (449) (618) (620) (627) (656)
ITEM	636	ALUMINUM SIGNS (643)
ITEM	644	SMALL ROADSIDE SIGN SUPPORTS AND ASSEMBLIES (421) (440) (441) (442) (445) (634) (636) (643) (656)
ITEM	647	LARGE ROADSIDE SIGN SUPPORTS AND ASSEMBLIES (421) (440) (441) (442) (445) (643)
ITEM	658	DELINEATORS AND OBJECT MARKER ASSEMBLIES (445)
ITEM	662	WORK ZONE PAVEMENT MARKINGS (666) (668) (672) (677)
ITEM	666	REFLECTORIZED PAVEMENT MARKINGS (316) (318) (662) (677) (678)
ITEM	668	PREFABRICATED PAVEMENT MARKINGS (678)
ITEM	672	RAISED PAVEMENT MARKERS (677) (678)
ITEM	677	ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS (300) (302) (316)
ITEM	678	PAVEMENT SURFACE PREPARATION FOR MARKINGS (677)
ITEM	680	INSTALLATIONS OF HIGHWAY TRAFFIC SIGNALS (610) (625) (627) (634) (636) (656)
ITEM	681	TEMPORARY TRAFFIC SIGNALS (628) (680)
ITEM	682	VEHICLE AND PEDESTRIAN SIGNAL HEADS
ITEM	684	TRAFFIC SIGNAL CABLES

ITEM 685 ROADSIDE FLASHING BEACON ASSEMBLIES (441) (442) (445) (449) (656) (687)
ITEM 686 TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL) (416) (421) (441) (442) (445) (449)
ITEM 687 PEDESTAL POLE ASSEMBLIES (445) (449) (656)

SPECIAL PROVISIONS: SPECIAL PROVISIONS WILL GOVERN AND TAKE PRECEDENCE OVER THE SPECIFICATIONS ENUMERATED HEREON WHEREVER IN CONFLICT THEREWITH.

REQUIRED CONTRACT PROVISIONS, FEDERAL-AID CONSTRUCTION CONTRACTS (FORM FHWA 1273, MAY 2012)

WAGE RATES

SPECIAL PROVISION	"NOTICE TO ALL BIDDERS" (000---003)		
SPECIAL PROVISION	"NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY" (000---004)		
SPECIAL PROVISION	"STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITYCONSTRUCTION CONTRACT SPECIFICATIONS" (000---006)		
SPECIAL PROVISION	"CERTIFICATION OF NONDISCRIMINATION IN EMPLOYMENT" (000---009)		
SPECIAL PROVISION	"DEPARTMENT DIVISION MAILING AND PHYSICAL ADDRESS" (000---011)		
SPECIAL PROVISION	"NOTICE OF CHANGES TO U.S. DEPARTMENT OF LABOR REQUIRED PAYROLL INFORMATION" (000--1483)		
SPECIAL PROVISION	"ON-THE-JOB TRAINING PROGRAM" (000--1676)		
SPECIAL PROVISION	"DISADVANTAGED BUSINESS ENTERPRISE IN FEDERAL AID CONTRACTS" (000--1966)		
SPECIAL PROVISION	"PARTNERING" (000---2329)		
SPECIAL PROVISION	"SCHEDULE OF LIQUIDATED DAMAGES" (000--2332)		
SPECIAL PROVISION	"NONDISCRIMINATION" (000---2607)		
SPECIAL PROVISION	"IMPORTANT NOTICE TO CONTRACTOR" (000---ROW)		
SPECIAL PROVISION	TO ITEM	1	(001---015) (001---PTF)
SPECIAL PROVISION	TO ITEM	2	(002---017)
SPECIAL PROVISION	TO ITEM	3	(003---033)
SPECIAL PROVISION	TO ITEM	4	(004---017)
SPECIAL PROVISION	TO ITEM	5	(005---004)
SPECIAL PROVISION	TO ITEM	6	(006---030) (006---047)
SPECIAL PROVISION	TO ITEM	7	(007---918)
SPECIAL PROVISION	TO ITEM	8	(008---006) (008---070) (008---086) (008---119)
SPECIAL PROVISION	TO ITEM	9	(009---009) (009---015)
SPECIAL PROVISION	TO ITEM	100	(100---002)
SPECIAL PROVISION	TO ITEM	161	(161---006)
SPECIAL PROVISION	TO ITEM	164	(164---002)
SPECIAL PROVISION	TO ITEM	166	(166---001)
SPECIAL PROVISION	TO ITEM	169	(169---002)

SPECIAL PROVISION	TO ITEM	247	(247---033)
SPECIAL PROVISION	TO ITEM	260	(260---003)
SPECIAL PROVISION	TO ITEM	275	(275---003)
SPECIAL PROVISION	TO ITEM	300	(300---039)
SPECIAL PROVISION	TO ITEM	302	(302---010)
SPECIAL PROVISION	TO ITEM	316	(316---016)
SPECIAL PROVISION	TO ITEM	318	(318---010)
SPECIAL PROVISION	TO ITEM	330	(330---001)
SPECIAL PROVISION	TO ITEM	340	(340---003)
SPECIAL PROVISION	TO ITEM	360	(360---003)
SPECIAL PROVISION	TO ITEM	361	(361---001)
PECIAL PROVISION	TO ITEM	416	(416---001)
SPECIAL PROVISION	TO ITEM	420	(420---002)
SPECIAL PROVISION	TO ITEM	421	(421---035)
SPECIAL PROVISION	TO ITEM	424	(424---002)
SPECIAL PROVISION	TO ITEM	431	(431---001)
SPECIAL PROVISION	TO ITEM	440	(440---006)
SPECIAL PROVISION	TO ITEM	441	(441---007)
SPECIAL PROVISION	TO ITEM	442	(442---016)
SPECIAL PROVISION	TO ITEM	447	(447---002)
SPECIAL PROVISION	TO ITEM	448	(448---002)
SPECIAL PROVISION	TO ITEM	462	(462---015)
SPECIAL PROVISION	TO ITEM	464	(464---006)
SPECIAL PROVISION	TO ITEM	476	(476---003)
SPECIAL PROVISION	TO ITEM	492	(492---001)
SPECIAL PROVISION	TO ITEM	500	(500---011)
SPECIAL PROVISION	TO ITEM	502	(502---033)
SPECIAL PROVISION	TO ITEM	530	(530---006)
SPECIAL PROVISION	TO ITEM	540	(540---031)
SPECIAL PROVISION	TO ITEM	544	(544---001)
SPECIAL PROVISION	TO ITEM	560	(560---001)
SPECIAL PROVISION	TO ITEM	610	(610---015)
SPECIAL PROVISION	TO ITEM	620	(620---001)
SPECIAL PROVISION	TO ITEM	624	(624---014)
SPECIAL PROVISION	TO ITEM	628	(628---003)
SPECIAL PROVISION	TO ITEM	636	(636---014)
SPECIAL PROVISION	TO ITEM	643	(643---001)
SPECIAL PROVISION	TO ITEM	672	(672---034)
SPECIAL PROVISION	TO ITEM	681	(681---002)
SPECIAL PROVISION	TO ITEM	682	(682---003)
SPECIAL PROVISION	TO ITEM	685	(685---014)
SPECIAL PROVISION	TO ITEM	687	(687---004)
SPECIAL PROVISION	TO SPECIAL SPECIFICATION ITEM	1122	(1122--001)
SPECIAL PROVISION	TO SPECIAL SPECIFICATION ITEM	6266	(6266--017)
SPECIAL PROVISION	TO SPECIAL SPECIFICATION ITEM	6473	(6473--001)
SPECIAL PROVISION	TO SPECIAL SPECIFICATION ITEM	6834	(6834--002)

SPECIAL SPECIFICATIONS:

ITEM	1122	TEMPORARY EROSION, SEDIMENTATION, AND ENVIRONMENTAL CONTROLS (161) (432) (556)
ITEM	3268	DENSE-GRADED HOT-MIX ASPHALT (300) (301) (320) (520) (585)
ITEM	5284	TEMPORARY DRIVEWAYS
ITEM	6007	REMOVING TRAFFIC SIGNALS
ITEM	6266	VIDEO IMAGING VEHICLE DETECTION SYSTEM
ITEM	6473	MULTIPOLYMER PAVEMENT MARKINGS (MPM) (677) (678) (8094)
ITEM	6834	PORTABLE CHANGEABLE MESSAGE SIGN
ITEM	8094	MOBILE RETROREFLECTIVITY DATA COLLECTION FOR PAVEMENT MARKINGS
ITEM	8615	RADAR ADVANCE DETECTION DEVICES
ITEM	8821	RADAR VEHICLE SENSING DEVICE (RVSD)
ITEM	8835	ACCESSIBLE PEDESTRIAN SIGNAL UNITS (618) (624) (682) (684) (688)

GENERAL: THE ABOVE LISTED SPECIFICATION ITEMS ARE THOSE UNDER WHICH PAYMENT IS TO BE MADE. THESE, TOGETHER WITH SUCH OTHER PERTINENT ITEMS, IF ANY, AS MAY BE REFERRED TO IN THE ABOVE LISTED SPECIFICATION ITEMS, AND INCLUDING THE SPECIAL PROVISIONS LISTED ABOVE, CONSTITUTE THE COMPLETE SPECIFICATIONS FOR THIS PROJECT.

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. General
II. Nondiscrimination
III. Nonsegregated Facilities
IV. Davis-Bacon and Related Act Provisions
V. Contract Work Hours and Safety Standards Act Provisions
VI. Subletting or Assigning the Contract
VII. Safety: Accident Prevention
VIII. False Statements Concerning Highway Projects
IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
X. Compliance with Governmentwide Suspension and Debarment Requirements
XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, 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.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

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, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) 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 provisions of the Americans with 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 contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its 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, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program 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 minorities and women.

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 minorities and women 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 minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women 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, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such 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 its 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 their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

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. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

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 employees who are minorities and women 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 good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 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 good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith 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 contracting agency 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 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 minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. 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 contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. 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. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor 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 contracting agency deems appropriate.

11. 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 the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours 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; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency 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. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics 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 issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, 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 29 CFR 5.5(a)(4). 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. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) 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.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), 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 Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The 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.

(3) In the event the contractor, the laborers or mechanics to be employed in the 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 Wage and Hour 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.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. 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 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.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as 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.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor 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 contracting agency 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.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of 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. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) 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 shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each 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 Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) 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 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, 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 FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action 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.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

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 U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or 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 Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen 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 worker 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 on 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 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's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

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 journeymen 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 determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

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 U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman 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 wage rate on the wage determination which provides for less than full fringe benefits for apprentices. 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.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor 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. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. 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.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 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 U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the 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 or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys 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 (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

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 contracting agency. 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 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased 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 or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;
(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

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 or propose 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 VI 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 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 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 contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

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 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. 3704).

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.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

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, Form FHWA-1022 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:

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 under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier 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 first tier 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 first tier 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 contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier 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," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first 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 entering into this transaction.

g. The prospective first tier 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 contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

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 is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective 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.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant 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 participating in covered transactions by any Federal 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 governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(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.

b. Where the prospective 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 Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200)

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," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

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 exceeding the $25,000 threshold.

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 is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

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 Participants:

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 participating in covered transactions 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.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is 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 its bid or proposal that the participant 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 AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

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 the participant 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, the participant 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 one 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 provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. 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.

General Decision Number: TX130011 01/04/2013 TX11

Superseded General Decision Number: TX20120011

State: Texas

Construction Types: Heavy and Highway

Counties: Bowie, Gregg, Rusk, Smith and Upshur Counties in Texas.

HEAVY & HIGHWAY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	01/04/2013

* SUTX2011-004 08/02/2011

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER (Paving and Structures)	$ 13.16	
ELECTRICIAN	$ 19.87	
FORM BUILDER/FORM SETTER		
Paving & Curb	$ 13.93	
Structures	$ 13.38	
LABORER		
Asphalt Raker	$ 12.02	
Flagger	$ 8.50	
Laborer, Common	$ 10.08	
Laborer, Utility	$ 12.70	
Pipelayer	$ 14.64	
Work Zone Barricade Servicer	$ 11.46	
POWER EQUIPMENT OPERATOR:		
Asphalt Distributor	$ 13.88	
Asphalt Paving Machine	$ 12.35	
Broom or Sweeper	$ 10.08	
Crane, Lattice Boom 80 tons or less	$ 13.85	
Crawler Tractor	$ 13.62	
Excavator 50,000 pounds or less	$ 13.67	
Excavator Operator over 50,000 pounds	$ 13.52	
Foundation Drill, Truck Mounted	$ 22.05	
Front End Loader , over 3 cy	$ 12.33	
Front End Loader, 3 cy or less	$ 13.40	

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     Loader/Backhoe.............$ 12.97
     Mechanic...................$ 17.47
     Milling Machine............$ 12.22
     Motor Grader, Fine Grade....$ 16.88
     Motor Grader, Rough.........$ 15.83
     Pavement Marking Machine....$ 13.10
     Roller, Asphalt............$ 11.96
     Roller, Other..............$ 10.44
     Scraper....................$ 10.85
     Spreader Box...............$ 13.12

Servicer.......................$ 14.11

Steel Worker (Reinforcing).....$ 17.53

TRUCK DRIVER
     Lowboy-Float...............$ 13.41
     Off-Road Hauler............$ 10.08
     Single Axle................$ 10.75
     Single or Tandem Axle Dump..$ 11.95
     Tandem Axle Tractor w/Semi
     Trailer....................$ 12.50
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WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

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


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The body of each wage determination lists the classification
and wage rates that have been found to be prevailing for the
cited type(s) of construction in the area covered by the wage
determination.  The classifications are listed in alphabetical
order of "identifiers" that indicate whether the particular
rate is union or non-union.


Union Identifiers

An identifier enclosed in dotted lines beginning with
characters other than "SU" denotes that the union
classification and rate have found to be prevailing for that
classification. Example:  PLUM0198-005 07/01/2011.  The first
four letters , PLUM, indicate the international union and the
four-digit number, 0198, that follows indicates the local union
number or district council number where applicable , i.e.,
Plumbers Local 0198.  The next number, 005 in the example, is
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an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

WAGE DETERMINATION APPEALS PROCESS

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

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

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

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

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

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

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

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

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

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

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

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END OF GENERAL DECISION

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---011

Department Division Mailing and Physical Addresses

For this project, Item 000, "Department Division Mailing and Physical Addresses," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Use the information in Table 1 to contact the Department Divisions referenced in the Standard Specifications or Special Provisions and Special Specifications in the Contract. This listing is for the purposes of providing addresses for transmission of information in accordance with the specifications. Unless otherwise stated in the specifications, address all correspondence and transmission of information to the Engineer responsible for the oversight of construction. Submit bidding documents to the location shown in the official advertisement. Address changes will be posted on the Department's Internet site at http://www.dot.state.tx.us/.

Table 1
Department Division Mailing and Physical Addresses

Division/Section Name	U.S. Post Office Address	Physical Address
Bridge Division		
	Texas Department of Transportation Bridge Division 125 E 11th Street Austin TX 78701-2483	Bridge Division Fabrication Branch 118 E. Riverside Dr. Austin, Texas 78704 (512) 416-2187
Construction Division		
Construction Section	Texas Department of Transportation Construction Division Construction Section 200 E. Riverside Drive Austin TX 78704	Construction Division 200 E. Riverside Dr. 1st floor, 1B.1 Austin, TX 78704 (512) 416-2490 1-800-687-3525
Materials & Pavements Section	Texas Department of Transportation Construction Division Materials & Pavements (CP51) 125 E 11th Street Austin TX 78701-2483	Construction Division Materials & Pavements Cedar Park Campus, Bldg. 51 9500 Lake Creek Parkway Austin, TX 78717 512-506-5800

Division/Section Name	U.S. Post Office Address	Physical Address
Maintenance Division		
Maintenance Section	Texas Department of Transportation Maintenance Division Maintenance Section 125 E 11th Street Austin, TX 78701	Maintenance Division Maintenance Section 150 East Riverside Drive Fourth Floor, North Tower Austin, TX 78704 (512) 416-3185
Vegetation Management Section	Texas Department of Transportation Maintenance Division Vegetation Management Section 125 E 11th Street Austin, TX 78701	Maintenance Division Vegetation Management Section 150 East Riverside Drive Fourth Floor, North Tower Austin, TX 78704 (512) 416-3093
Traffic Operations Division		
Traffic Operations Division	Texas Department of Transportation Traffic Operations Division 125 E 11th Street Austin TX 78701	Texas Department of Transportation Traffic Operations Division 200 E. Riverside Bldg. 118 Austin, Texas 78704 512-416-3200
Traffic Engineering	Texas Department of Transportation Traffic Operations Division Traffic Engineering Section 125 E 11th Street Austin TX 78701	Texas Department of Transportation Traffic Operations Division Traffic Engineering Section 200 E. Riverside Bldg. 118 Austin, Texas 78704 (512) 416-3118
Traffic Management-ITS Branch	Texas Department of Transportation Traffic Operations Division Traffic Management Section 125 E 11th Street Austin TX 78701	Texas Department of Transportation Traffic Operations Division Traffic Management Section Cedar Park Campus, Bldg. 51 9500 Lake Creek Parkway Austin, TX 78717 512-506-5100
Traffic Management-Signal/Radio Branch	Texas Department of Transportation Traffic Operations Division Traffic Management Section-Signal/Radio Branch 125 E 11th Street Austin TX 78701	Texas Department of Transportation Traffic Operations Division Traffic Management Section-Signal/Radio Branch Cedar Park Campus, Bldg. 51 9500 Lake Creek Parkway Austin, TX 78717 512-506-5100

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 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 (2^{nd} 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 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.

SPECIAL PROVISION
000--2329
Partnering

1. General. It is the intent of this provision to promote an environment of trust, mutual respect, integrity, and fair-dealing between the Department and the Contractor.

2. Definitions.

A. Informal Partnering. Partnering that does not make use of a facilitator.

B. Formal Partnering. Partnering where the services of a facilitator (internal or external) are utilized.

3. Procedures for Partnering Meetings and Format. Informal Partnering is required for this project, unless Formal Partnering is mutually agreed to in lieu of the Informal Partnering.

Facilitators. The facilitator is to act as a neutral party seeking to initiate cooperative working relationships. This individual must have the technical knowledge and ability to lead and guide discussions. Choose either an internal or external facilitator. The facilitator must be acceptable to the Engineer.

(1) Internal Facilitators. A Department or Contractor internal (staff) facilitator may be selected as the facilitator at no additional cost to either party.

(2) External Facilitators. A private firm or individual that is independent of the Contractor and the Department may be selected as the facilitator. Submit the facilitator's name and estimated fees for approval prior to contracting with the facilitator.

Meetings and Arrangements. Coordinate with the Engineer for meeting dates and times, locations including third party facilities, and other needs and appurtenances including but not limited to audio/visual equipment. Make all meeting arrangements for Formal Partnering. Use Department facilities or facilities in the vicinity of the project if available. Submit the estimated meeting costs for approval prior to finalizing arrangements.

Coordinate facilitator discussions prior to the partnering meeting to allow the facilitator time to prepare an appropriate agenda. Prepare a list of attendees with job titles and include critical contractor, subcontractor, and supplier staff in the list. Provide the facilitator the list of attendees and invite the attendees listed.

The Department will invite and provide a list of attendees that includes but is not limited to Department, City, County, law enforcement, railroad, and utility representatives.

Participate in additional partnering meetings as mutually agreed.

4. Payment. Expenses for employee time, contractor equipment, or overhead will not be allowed. Markups will not be allowed.

Informal Partnering will be conducted with each party responsible for their own costs.

For Formal Partnering using internal facilitators, the Contractor will be responsible for arrangements and for expenses incurred by its internal facilitator, including but not limited to meals, travel, and lodging. Department facilitators may be used at no additional cost.

For Formal Partnering using external facilitators, submit an invoice to the Engineer for reimbursement. The Department will reimburse the Contractor for half of the eligible expenses as approved. For external facilitators not approved by the Department but used at the Contractor's option, the Contractor will be responsible for all costs of the external facilitator.

For meeting facilities and appurtenances, submit an invoice to the Engineer for reimbursement. The Department will reimburse the Contractor for half of the eligible expenses as approved.

SPECIAL PROVISION

000--2332

Schedule of Liquidated Damages

For Dollar Amount of Original Contract		Dollar Amount of Daily Contract Administration Liquidated
From More Than	**To and Including**	**Damages per Working Day**
0	100,000	**570**
100,000	500,000	**590**
500,000	1,000,000	**610**
1,000,000	1,500,000	**685**
1,500,000	3,000,000	**785**
3,000,000	5,000,000	**970**
5,000,000	10,000,000	**1125**
10,000,000	20,000,000	**1285**
20,000,000	Over 20,000,000	**2590**

SPECIAL PROVISION

000---2607

Nondiscrimination

Description. All recipients of federal financial assistance are required to comply with various nondiscrimination laws including Title VI of the Civil Rights Act of 1964, as amended, (Title VI). Title VI forbids discrimination against anyone in the United States on the grounds of race, color, or national origin by any agency receiving federal funds.

Texas Department of Transportation, as a recipient of Federal financial assistance, and under Title VI and related statutes, ensures that no person shall on the grounds of race, religion (where the primary objective of the financial assistance is to provide employment per 42 U.S.S. § 2000d-3), color, national origin, sex, age or disability be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination under any Department programs or activities.

Definition of Terms. Where the term "contractor" appears in the following six nondiscrimination clauses, the term "contractor" is understood to include all parties to contracts or agreements with the Texas Department of Transportation.

Nondiscrimination Provisions. During the performance of this contract, the contractor agrees as follows:

(1) Compliance with Regulations: The Contractor shall comply with the Regulations relative to nondiscrimination in Federally-assisted programs of the Department of Transportation (hereinafter, "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.

(2) Nondiscrimination: The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

(3) Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.

(4) Information and Reports: The contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the Texas Department of Transportation to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information the contractor shall so certify to the Recipient, or the Texas Department of Transportation as appropriate, and shall set forth what efforts it has made to obtain the information.

(5) Sanctions for Noncompliance: In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, the Recipient shall impose such contract sanctions as it or the Texas Department of Transportation may determine to be appropriate, including, but not limited to:

(a) withholding of payments to the contractor under the contract until the contractor complies, and/or

(b) cancellation, termination or suspension of the contract, in whole or in part.

(6) Incorporation of Provisions: The contractor shall include the provisions of paragraphs (1) through (6) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The contractor shall take such action with respect to any subcontract or procurement as the Recipient or the Texas Department of Transportation may direct as a means of enforcing such provisions including sanctions for non-compliance: Provided, however, that, in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request the Recipient to enter into such litigation to protect the interests of the Recipient, and, in addition, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

SPECIAL PROVISION

000---ROW

Important Notice to Contractors

The Contractor's attention is directed to the fact that all right-of-way required for the construction of this project has been acquired as of February 15, 2013, with the exception of the parcels listed herein. In addition, all utility adjustments required for the construction of this project have been adjusted as of the aforementioned date with the exception of the utilities listed herein.

Bowie County anticipates possession of these listed parcels and the adjustment of the listed utilities by the dates set out below. This should be sufficient time to prevent any undue delay to the Contractor in his normal operation. Requests for additional compensation or working days will be made in accordance with the standard specifications, if necessary.

For the Contractor's information the following is a list of outstanding right-of-way to be acquired and utilities that have not been adjusted as of the aforementioned date. The Contractor is invited to review the outstanding right-of-way with the Engineer assigned to the project. A right-of-way map reflecting the location, etc., is on file with the Engineer.

OUTSTANDING RIGHT OF WAY TO BE ACQUIRED			
Parcel Number	**Owner**	**Location**	**Date of Possession (Estimated)**
ROW-CSJ 0046-04-058			
1	Allen Cooper	Parcel @ FM 1840 for FM 1840 Intersection Relocation	August 1, 2013
2	Barbara Vercellona	Parcel @ FM 1840 for FM 1840 Intersection Relocation	August 1, 2013
3	Bowie County	Parcel releasing north 50 feet of old Texas and Pacific RR ROW between Sta. 592 to Sta. 1082	May 1, 2013
4	Bowie County	Parcel relinquishing reversionary clause of existing US 82 ROW obtained from Texas and Pacific RR between Sta. 592 to 613	May 1, 2013

OUTSTANDING UTILITY ADJUSTMENTS		
Owner	**Utility Location**	**Completion of Adjustment (Estimated)**
Bowie-Cass Elect Coop	Overhead service electric within project work area	April 16, 2013
AEP-SWEPCO	Overhead service electric within project work area	April 16, 2013
Central Bowie WSC	Underground water lines within project work area	April 16, 2013
Windstream Comm.	Underground telecommunication lines within project work area	April 16, 2013
DeKalb	Underground water lines in western project work area	April 16, 2013
Texarkana (majority owner)	Member Cities underground 16” water line between Station 916+00 and 1078+00	May 15, 2013
Texarkana (majority owner)	Member Cities underground 16” water line between Station 622+00 and Station 916+00	December 31, 2013

The utilities listed will be adjusted by others and will not be the responsibility of the Contractor. It will be the responsibility of the Contractor to prosecute the work in such a manner and sequence that there will be no interference with the work of others in adjusting utilities. The Contractor shall allow free ingress to and egress from these areas over the Right of Way to these workers.

SPECIAL PROVISION

001---015

Definition of Terms

For this project, Item 001, "Definition of Terms," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

The following Articles are voided and replaced by the following:

1.50. Disadvantaged Business Enterprise (DBE). A small business certified through the Texas Unified Certification Program in accordance with 49 CFR Part 26, that is at least 51% owned by one or more socially and economically disadvantaged individuals, or in the case of a publicly owned business, in which is at least 51% of the stock is owned by one or more socially and economically disadvantaged individuals, and whose management and daily business operations are controlled by one or more of the individuals who own it.

1.128. Subcontractor. A Subcontractor is defined as an individual, partnership, limited liability company, corporation, or any combination thereof that the Contractor sublets, or proposes to sublet, any portion of a Contract, excluding a material supplier, a hauling firm hauling only from a commercial source to the project, truck owner-operator, wholly owned subsidiary, or specialty-type businesses such as security companies and rental companies.

The following Articles are voided and not replaced.

1.97. Proposal.

1.98. Proposal Form.

1.99. Proposal Guaranty.

This Item is supplemented by the following:

1.148. Additive Alternate. A bid item contained in a proposal that is not a regular item or a designated alternate bid item. The additive alternate item(s) include work that may be added to the base bid work.

1.149. Base Bid. The total bid (includes regular bid items or corresponding alternate bid items if lower) amount without additive alternates.

1.150. Affiliates. Two or more firms are affiliated if:

- they share common officers, directors, or stockholders;

- a family member of an officer, director, or stockholder of one firm serves in a similar capacity in another of the firms;

- an individual who has an interest in, or controls a part of, one firm either directly or indirectly also has an interest in, or controls a part of, another of the firms;

- the firms are so closely connected or associated that one of the firms, either directly or indirectly, controls or has the power to control another firm;

- one firm controls or has the power to control another of the firms; or,

- the firms are closely allied through an established course of dealings, including but not limited to the lending of financial assistance.

1.151. Bid. The offer of the bidder for performing the work described in the plans and specifications including any changes made by addenda.

1.152. Bid Guaranty. The security furnished by the bidder as a guaranty that the bidder will enter into a contract if awarded.

1.153. Electronic Bid Form. The bid form contained in the Department's Electronic Bidding System.

1.154. Electronic Bidding System (EBS). The Department's automated system that allows bidders to enter and submit their bid information electronically.

1.155. Electronic Vault. The secure location where electronic bids are stored prior to bid opening.

1.156. Family Member. A family member of an individual is the individual's parent, parent's spouse, step-parent, step-parent's spouse, sibling, sibling's spouse, spouse, child, child's spouse, spouse's child, spouse's child's spouse, grandchild, grandparent, uncle, uncle's spouse, aunt, aunt's spouse, first cousin, or first cousin's spouse.

1.157. Printed Bid Form. The bidding form printed and sent to the bidder by the department or printed by the bidder from the department's Electronic Bidding System.

1.158. Bid Form. The form provided by the Department used by the bidder to submit a bid. The bid form is a Department mailed bidder's form (traditional proposal submitted manually), a Department EBS printed bid form (submitted manually), or the bid form submitted electronically through the Department's EBS.

SPECIAL PROVISION
001---PTF
Prosecution and Progress

For this project, Item 001, "Definition of Terms," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 1.1 is voided and replaced by the following:

1.1 Applicability. Wherever the following terms are used in these specifications or other Contract documents, the intent and meaning will be interpreted as shown below unless such interpretation conflicts with the terms, duties, and responsibilities delegated to Bowie County in the Pass-Through Agreement for Payment of Pass-Through Tolls by the Department (PTF Agreement) executed May 27, 2011 between Bowie County and TxDOT with Bowie County acting as a Developer for TxDOT. In the event of conflicts, term meaning will take into account the intent and meaning contained in the PTF Agreement.

SPECIAL PROVISION

002---017

Instructions to Bidders

For this project, Item 002, "Instruction to Bidders," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Except for Article 2.1 the remainder of Item 2 is voided and replaced by the following:

2.2. Eligibility of Bidders. Submit for approval a Confidential Questionnaire Form and an audited financial statement or a Bidder's Questionnaire Form at least 10 days before the date that bids are to be opened. Once approved, the eligibility is valid for a period of one year. Bidders prequalified with a Bidder's Questionnaire Form are not eligible to bid on a project that requires the Confidential Questionnaire Form and audited financial statements. Comply with all technical prequalification requirements in the bid form. Obtain prequalification forms from the Construction Division.

2.3. Issuing Bid Forms. The Department will issue a bid form to a prequalified Bidder meeting the requirements of the bid form on request if the estimated cost of the proposed Contract is within that Bidder's available bidding capacity. Request bid forms orally, in writing, or electronically.

In the case of a joint venture, all joint venture participants must be prequalified. An equally divided portion of the Engineer's estimate must be within each participant's available bidding capacity.

The Department will not issue a bid form for a proposed Contract if one or more of the following apply:

- the Bidder is disqualified by an agency of the federal government.
- the Bidder is suspended or debarred by the Commission, or is prohibited from rebidding a specific proposal because of bid error or failure to enter into a Contract of the first awarded bid.
- the Bidder has not fulfilled the requirements for prequalification.
- the Bidder or a subsidiary or affiliate of the Bidder has received compensation from the Department to participate in the preparation of the plans or specifications on which the bid or Contract is based.
- the Bidder did not attend an advertised mandatory pre-bid conference.

2.4. Interpreting Estimated Quantities. The quantities listed in the bid form are approximate and will be used for the comparison of bids. Payments will be made for the work performed in accordance with the Contract.

2.5. Examining Documents and Work Locations. Examine the bid form, plans, specifications, and specified work locations before submitting a bid for the work contemplated. Submitting a bid will be considered evidence that the Bidder has performed this examination. Borings, soil profiles, water elevations, and underground utilities shown on the plans were obtained for use of the Department in the preparation of plans. This information is provided for the Bidder's information only and the Department makes no representation as to the accuracy of the data. Be aware of the difficulty of accurately classifying all material encountered in making foundation investigations, the possible erosion of stream channels and banks after survey data have been obtained, and the unreliability of water elevations other than for the date recorded.

Oral explanations, instructions, or consideration for contractor-proposed changes in the Items of work, specifications, plans or bid forms given during the bidding process are not binding. Only requirements included in the bid form, associated specifications, plans and Department-issued addenda are binding. Request explanations of documents in adequate time to allow the Department to reply before the bid opening date..

Immediately notify the Department of any error, omission, or ambiguity discovered in any part of the bid form, specifications or plans. The Department will issue an addendum when appropriate.

2.6. Preparing the Bid. Prepare the bid on the form furnished by the Department. Bid forms may be printed or electronic. Informational forms will not be accepted.

Specify a unit price in dollars and cents for each Item for which an estimated quantity is given. When "Working Days" is an Item, submit the number of working days to be used to complete the Contract, or phases of the Contract shown on the plans.

An Item left blank will constitute an incomplete bid and will be handled as prescribed in Article 2.14, "Tabulating Bids." Include unit bid prices for each Item in the Item group or alternate Item group, except for instances when alternate Items pertain to foreign steel or iron materials.

If a bid form contains both regular bid Items for domestic and alternate bid Items pertaining to foreign steel or iron materials the bidder must either:

- submit unit bid prices for domestic bid items only, or
- submit unit bid prices for both the alternate foreign bid items and domestic bid items.

Verify whether addenda have been issued on a proposed Contract. Acknowledge all addenda.

A. Printed Bid Forms. Make all entries and execute the bid form in ink. Acknowledge all addenda by checking the appropriate box on the addendum acknowledgement page. Provide the complete and correct name of the Bidder submitting the bid. A person authorized to bind the Bidder must sign the bid form. In the case of a joint venture, provide the complete and correct name of all Bidders submitting the bid. The bid form must be signed by person(s) authorized to bind the Bidder(s).

As an alternative to hand writing the unit prices in the bid form, submit a computer printout signed by the person authorized to bind the Bidder or for a joint venture the persons authorized to bind the Bidders. As a minimum, computer printouts must contain the information in the format shown on the "Example of Bid Prices Submitted by Computer Printout" form in the bid form.

As an additional alternative, the bidder may prepare the bid using EBS and print out the bid form. Execute the bid form. A person authorized to bind the Bidder must sign the bid form. In the case of a joint venture, provide the complete and correct name of all Bidders submitting the bid. The bid form must be signed by persons authorized to bind the Bidders.

B. Electronic Bid Forms. Use the electronic bid form in EBS. Acknowledge an addendum by initialing each addendum listed under the addenda tab in EBS. Digitally sign the bid form using a digital certificate issued by the department. In the case of a joint venture, the person signing the bid form must be authorized to bind all joint venture participants.

2.7. Nonresponsive Bids. A bid that has one or more of the deficiencies listed below is nonresponsive and will not be considered.

A. The person or, in the case of a manually submitted joint venture bid, persons did not sign the bid form.

B. The proposal guaranty did not comply with the requirements contained in Article 2.8, "Bid Guaranty."

C. The bid was in a form other than the official bid form issued to the Bidder or Bidders.

D. The bid was not in the hands of the letting official at the time and location specified in the advertisement. For electronic bids, "in the hands of the letting official" means EBS vault acknowledgement.

E. The bid form submitted had the incorrect number of Items.

F. A computer printout, when used, was not signed in the name of the Bidder (or joint Bidders, in the case of a joint venture), or omitted required Items or included an Item or Items not shown in the bid form.

G. The Bidder was not authorized to receive a bid form under Article 2.3, "Issuing Bid Forms."

H. The Bidder failed to acknowledge receipt of all addenda issued.

I. The Bidder bid more than the maximum or less than the minimum number of allowable working days shown on the plans when working days was an Item.

J. The Bidder modified the bid in a manner that altered the conditions or requirements for work as stated in the bid form.

K. The Bidder did not attend a specified mandatory pre-bid conference.

The department will not accept or read any of the bids submitted on the same project by:

- a joint venture and one or more of its partners, or

- affiliated bidders.

2.8. Bid Guaranty. The bid guaranty amount is fixed at the amount indicated on the bid form on the date the bid form is released to the public. Provide a bid guaranty in the amount indicated on the bid form as follows:

- For printed bids, use either a guaranty check or a bid bond. An electronic bid bond may be used as the guaranty for a bid form printed from EBS. (The bid bond number is printed on the form printed from EBS and the Department verifies the bond through EBS at the letting.)

- For electronic bids, use an electronic bid bond. Do not use guaranty checks or printed bid bonds on electronic bids.

A. Guaranty Check. The guaranty check must be payable to the Texas Transportation Commission and must be a cashier's check, money order, or teller's check drawn by or on a state or national bank, a savings and loan association, or a state or federally chartered credit union (collectively referred to as "bank"). The check must be dated on or before the date of the bid opening. Post dated checks will not be accepted. The type of check or money order must be indicated on the face of the instrument and the instrument must be no more than 90 days old. A check must be made payable at or through the institution issuing the instrument; be drawn by a bank and on a bank; or be payable at or through a bank. The Department will not accept personal checks, certified checks, or other types of money orders as a bid guaranty.

B. Bid Bond. The bid bond must be on the form provided by the Department, with powers of attorney attached, and in the amount specified on the bid bond form. The bond form must be dated on or before the date of the bid opening, bear the impressed seal of the Surety and be signed by the Bidder or Bidders, in the case of a joint venture, and an authorized individual of the Surety. As an alternative for joint venture Bidders, each of the Bidders may submit a separate bid bond, completed as outlined in this Subarticle. Bid bonds will only be accepted from Sureties authorized to execute a bond under and in accordance with state law.

C. Electronic Bid Bond. Use the most current version of the electronic bond issued by the department. For a joint venture, the bond must be in the name of all joint venture participants. Enter the bond authorization code into EBS. Use bond authorization codes issued by the companies listed in most recent version of EBS.

2.9. Submittal of Bid. Bids may be submitted either manually or electronically.

A. Manually Submitted Bids.

Place the completed bid form and the bid guaranty in a sealed envelope marked to indicate the contents.

When submitting by mail or delivery service, place the envelope in another sealed envelope and address as indicated in the official advertisement. It is the bidder's responsibility to ensure that the sealed bid arrives at the location described in the official advertisement of the project on or before the time and date set for the opening. The bid must be in the hands of the Letting Official by that time, regardless of the method chosen for delivery, in order to be accepted.

In addition to the requirements above, all pages of a bid form printed from EBS must be submitted.

B. Electronically Submitted Bids. Submit the electronic bid to the electronic vault using EBS. It is the bidder's responsibility to ensure that the bid is received by the electronic vault on or before the time and date set for the opening.

2.10. Revising Bid Forms. Revisions to bids will be handled as follows:

A. Manually Submitted Bids.

1. Before Submission. Make desired changes to the printed bid form in ink and initial the changes.

2. After Submission. Withdraw the bid in accordance with Article 2.11, "Withdrawing Bids." Make desired changes to the printed bid form in ink and initial the changes. Resubmit to the Letting Official in accordance with Article 2.9, "Delivery of Bid." The Department will not make revisions to a bid on behalf of a Bidder.

B. Electronically Submitted Bids. Make desired changes up until the time and date set for the opening of bids using EBS. The electronically submitted bid with the latest time stamp by the electronic vault will be used for tabulation purposes.

C. After Bid Opening. Revisions to bids are not allowed after the time and date set for the opening.

2.11. Withdrawing Bids.

A. Manually Submitted Bids. Submit a signed written request to the Letting Official. The Department will not accept telephone or electronic requests, but will accept a properly signed telefacsimile request. The request must be made by a person authorized to bind the Bidder, and must be in the hands of the Letting Official before the time and date set for the opening. In the case of joint venture, the department will accept a request from any person authorized to bind a party to the joint venture to withdrawal a bid.

B. Electronically Submitted Bids. Submit an electronic or written request to withdraw the bid. The electronic request must be made using EBS. For a written request, submit a signed request to the Letting Official. A request to withdraw an electronic bid must be made by a person authorized to bind the Bidder and must be made prior to the time and date set for the opening. For written request for withdrawals of electronic bids and in the case of joint venture, the department will accept a request from any person authorized to bind a party to the joint venture to withdrawal a bid.

2.12. Opening and Reading of Bids. At the time, date and location specified in the official advertisement, the Letting Official will publicly:

- open and read manually submitted bids; and
- read electronically submitted bids.

2.13. Gratuities. Do not offer Department employees benefits, gifts, or favors. The only exceptions allowed are ordinary business lunches. Failure to honor this policy may result in the termination of the Contract and sanctions under the Texas Administrative Code. Termination of the Contract will be in accordance with Article 8.7, "Termination of Contract."

2.14. Tabulating Bids.

A. Official Total Bid Amount. The Department will sum the products of the quantities and the unit prices bid in the bid form to determine the official total bid amount. Except as provided in Section 2.14.G, "Special Item Considerations," the official total bid amount is the basis for determining the apparent low Bidder. The total bid amounts will be compared and the results made public.

B. Consideration of Bid Format. When a Bidder submits both an electronic bid and a properly completed manual bid, the unit bid prices in the manual bid will be used to determine the total bid amount. If a bidder submits an electronic bid and an incomplete manual bid, the electronic bid will be used in the tabulation of the total bid amount.

If a bidder submits two or more manual bids, all responsive bids will be tabulated. The bid with the lowest tabulation will be used to determine the total bid amount.

C. Rounding of Unit Prices. The Department will round off all unit bids involving fractional parts of a cent to the nearest one-tenth cent ($0.001) in determining the amount of the bid as well as computing the amount due for payment of each Item under the Contract. For rounding purposes, entries of five-hundredths of a cent ($0.0005) or more will be rounded up to the next highest tenth of a cent, while entries less than five-hundredths of a cent will be rounded down to the next lowest tenth of a cent.

D. Interpretation of Unit Prices. The Department will make a documented determination of the unit bid price for tabulation purposes if a unit bid price is illegible. The Department's determination will be final.

E. Consideration of Unit Prices. Unit bid price entries such as no dollars and no cents, zero dollars and zero cents, or numerical entries of $0.00, will be tabulated as one-tenth of a cent ($0.001).

The Department will consider proposals where unit bid prices have been left blank incomplete and nonresponsive. If a proposal has a regular and a corresponding alternate Item or group of Items, the bid will be considered complete if:

- the regular Item or group of regular Items has unit prices entered, or
- the alternate Item or group of alternate Items has unit prices entered.

The bid will be considered incomplete and nonresponsive if:

- a regular Item or group of regular Items is left blank, and
- a corresponding alternate Item or group of alternate Items is left blank.

F. Consideration of Alternate Items. The Department will make two calculations using one-tenth of a cent ($0.001) for each Item if:

- a regular Item or a group of Items have an entry such as no dollars and no cents, zero dollars and zero cents, or numerical entries of $0.00, and

- a corresponding alternate Item or group of Items, have an entry such as no dollars and no cents, zero dollars and zero cents, or numerical entries of $0.00.

The Department will select the regular Item or Items or the alternate Item or Items at the Department's discretion if both the regular and alternate bid results in the same cost to the State.

The Department will use the unit price that is greater than zero for bid tabulation if:

- a unit price greater than zero has been entered for either a regular bid or a corresponding alternate Item or group of Items, and

- an entry of no dollars and no cents, zero dollars and zero cents, or a numerical entry of $0.00 has been entered for the other corresponding Item or group of Items.

If a unit price has been entered for both the regular Item and a corresponding alternate Item, the Department will select the option (regular or alternate) that results in the lowest cost to the State. The Department will select the regular Item or Items or the alternate Item or Items at the Department's discretion if both the regular and alternate bid results in the same cost to the State.

G. Special Item Considerations.

1. Rubber Additives. For proposed Contracts without federal funds, if an alternate Item for "Hot Asphalt-Rubber Surface Treatments" or "Hot Mix Asphalt Concrete Pavement" which contains ground tire rubber is shown in the bid form and the Bidder bids that alternate Item, the amounts bid for "Hot Asphalt-Rubber" and "Aggregate" or "Hot Mix Asphalt Concrete" will be reduced to 85% of the amounts actually bid. This reduction will only be used for the purposes of determining the lowest Bidder. To qualify, the ground tire rubber used must be produced from scrap tire ground in a facility in Texas. Payment for "Hot Asphalt-Rubber" and "Aggregate" or "Hot Mix Asphalt Concrete" will be at the actual unit prices bid.

2. "Buy America." For proposed Contracts where unit bid prices are submitted for both domestic and foreign steel or iron materials, the total bid amount will be calculated using both the domestic and foreign steel unit bid prices. If the total bid amount using the foreign steel or iron materials is the low bid, and the lowest bid using domestic steel or iron materials exceeds the low bid using foreign steel or iron materials by 25% or more, the apparent low Bidder will be the bid using foreign steel or iron materials. If the difference between the low bid using foreign steel or iron materials and the lowest bid using domestic steel or iron materials is less than 25%, the apparent low Bidder will be the bid using domestic steel or iron materials.

3. Home State Bidding Preference. For the purpose of determining the apparent low Bidder on proposed Contracts without federal funds, the total bid amount will be based upon the reverse application of the non-resident Bidder's home state bidding preference, if any.

2.15. Consideration of Bid Errors. The Department will consider a claim of a bid error by the apparent low Bidder if the following requirements have been met:

- Submit written notification to the Department within 5 business days after the date the bid is opened.

- Identify the Items of work involved and include bidding documentation. The Department may request clarification of submitted documentation.

The Department will evaluate the claim of an error by the apparent low Bidder by considering the following:

- The bid error relates to a material Item of work.

- The bid error amount is a significant portion of the total bid.

- The bid error occurred despite the exercise of ordinary care.

- The delay of the proposed work will not impact cost and safety to the public.

Acceptance of the bid error claim by the Department will result in the rejection of all bids. The erring Contractor will not be allowed to bid the project when it is relet. Rejection of bids due to the Contractor's bid error may result in the application of sanctions by the Department.

2.17. Electronic Bidding. Take responsibility for correctly installing the EBS software. Secure the digital certificate issued by the department at all times. Promptly report compromised digital certificates to the Department. Select an Internet Service Provider. The Department will not be responsible for Internet unavailability. The Department will not provide a computer for preparing, submitting, revising or withdrawing an electronic bid.

2.18. Bid Form Content. The electronic and the EBS printed bid form do not contain such things as the special provisions, special specifications, and general notes. These documents are included by reference. Manual bid forms (traditional proposals) will include such provisions.

SPECIAL PROVISION

003---033

Award and Execution of Contract

For this project, Item 003, "Award and Execution of Contract," of the Standard Specifications, is amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed.

Article 3.4. Execution of Contract, Section B, Bonds. The first paragraph is supplemented by the following:

Sample versions of the standard performance and payment bonds may be viewed on the department's Internet site at:

http://www.txdot.gov/txdot_library/consultants_contractors/forms/contractors.htm

SPECIAL PROVISION

004---017

Scope of Work

For this project, Item 4, "Scope of Work," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 4.2. Changes in the Work. The first paragraph is supplemented by the following:

The Contractor is responsible for notifying the sureties of any changes to the contract.

Article 4.2. Changes in the Work. The sixth paragraph is voided and replaced by the following:

When the quantity of work to be done under any major item of the Contract is less than 75% of the original quantity stated in the Contract, then either party to the Contract may request an adjustment to the unit price. When mutually agreed, the unit price may be adjusted by multiplying the Contract unit price by the factor in Table 1. If an adjusted unit price cannot be agreed upon, the Engineer may determine the unit price by multiplying the Contract unit price by the factor in Table 1.

Table 1
Quantity-Based Price Adjustment Factors

% of Original Quantity	Factor
≥ 50 and < 75	**1.05**
≥ 25 and < 50	**1.15**
< 25	**1.25**

Article 4.4. Requests and Claims for Additional Compensation, Section A., Delay Claims is voided and replaced by the following:

A. Damages. Damages occur when impacts that are the responsibility of the Department result in additional costs to the contractor that could not have been reasonably anticipated at the time of letting. Costs of performing additional work are not considered damages. For contractor damages, the intent is to reimburse the Contractor for actual expenses arising out of a compensable impact. No profit or markups, other than labor burden, will be allowed. For damages, labor burden will be reimbursed at 35% unless the Contractor can justify higher actual cost. Justification for a higher percentage must be in accordance with the methodology provided by the Department, submitted separately for project overhead labor and direct labor, and determined and submitted by a Certified Public Accountant (CPA). Submit CPA-prepared labor burden rates directly to the Contract Letting and Contractor Prequalification Branch of the Construction Division.

1. **Delay Damages.** If the Contractor requests compensation for delay damages and the delay is determined to be compensable, then standby equipment costs and project overhead compensation will be based on the duration of the compensable delay and will be limited as follows:

   a. **Standby Equipment Costs.**

      - Standby costs will not be allowed during periods when the equipment would have otherwise been idle.
      - No more than 8 hr. of standby will be paid during a 24-hr. day, nor more than 40 hr. per week, nor more than 176 hr. per month.
      - For Contractor-owned equipment, standby will be paid at 50% of the rental rates found in the Rental Rate Blue Book for Construction Equipment and calculated by dividing the monthly rate by 176 and multiplying by the regional adjustment factor and the rate adjustment factor. For leased equipment on standby, 100% of the invoice cost of the leased equipment will be paid. Operating costs will not be allowed.

   b. **Project Overhead.** Project overhead is defined as the administrative and supervisory expenses incurred at the work locations. When delay to project completion occurs, reimbursement for project overhead for the prime contractor will be made using the following options:
      - reimbursed at 6% (computed as daily cost by dividing 6% of the original contract amount by the as-let number of working days) or
      - actual documented costs for the impacted period.

      Project overhead for delays impacting sub-contractors will be determined from actual documented costs submitted by the Contractor.

      The granting of time extensions and suspensions alone will not be justification for reimbursement for project overhead.

   c. **Home Office Overhead.** The Department will not compensate the Contractor for home office overhead.

Article 4.4. Requests and Claims for Additional Compensation, Section B., Dispute or Claims Procedure is voided and replaced by the following:

B. Dispute or Claims Procedure. Work with the Engineer to resolve or escalate all issues in accordance with the procedures outlined at the pre-construction conference. Establish with the Engineer an issue escalation ladder and adhere to the following:

1. **Project Pledge.** At a minimum, Contractor representatives at the level of foreman and above will certify in writing they will approach the construction of this project in a manner consistent with delivering a high quality project in a safe, cost-effective, and timely manner, and they will be committed to not allowing personality conflicts or personal interests to interfere with providing the public with a quality project. Failure to uphold this commitment may result in grounds for removal from the project by the District Engineer.

2. **Issue Resolution Process.** An issue is any aspect of the contract where representatives of the participants in the contract do not agree. The individuals identified at the lowest level of the issue escalation ladder will initiate the issue resolution process by escalating any issue that remains unresolved within the time frame outlined in the issue escalation ladder.

   Use the Department's automated issue tracking system to submit and track issues escalated to the area engineer or above. Do not use the automated issue tracking system for routine issues resolved on the project.

   Once the issue is recorded in the automated issue tracking system, the issue will be escalated to the district engineer within 15 calendar days.

   The district engineer will issue written direction within 7 calendar days.

Work with the district to resolve all issues during the course of the contract. In the event the district and the Contractor cannot resolve an issue, the Contractor may file a contract claim after the completion of the contract to be handled in accordance with the Department's contract claim procedure. Contract claims will not be presented to the Contract Claims Committee for consideration prior to the final payment to the Contractor. It is the Contractor's responsibility to prove or justify all claims and requests in a timely manner.

The deadline for filing a claim in accordance with 43 TAC Section 9.2, is the earlier of 1 year after the date of final acceptance, date of default, or date of termination except that claims for warranty enforcement can be made up to 1 year after expiration of the warranty period.

SPECIAL PROVISION

005---004

Control of the Work

For this project, Item 005, "Control of the Work," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 5.2 Plans and Working Drawings, is supplemented with the following:

Submit shop drawings electronically for the fabrication of structural items as documented in the "Guide to Electronic Shop Drawing Submittal" available on the internet at ftp://ftp.dot.state.tx.us/pub/txdot-info/library/pubs/bus/bridge/e_submit_guide.pdf and as directed by the Engineer for other items required by the standard specifications. References to 11 x 17 sheets in individual specifications for structural items imply electronic CAD sheets.

SPECIAL PROVISION

006---030

Control of Materials

For this project, Item, Item 006, "Control of Materials," of the Standard Specifications is amended hereby with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 6.9. Recycled Materials is voided and replaced by the following:

The Department will not allow hazardous wastes, as defined in 30 TAC 335, proposed for recycling. Use nonhazardous recyclable materials (NRMs) only if the Specification for the Item does not disallow or restrict use. Determine if NRMs are regulated under 30 TAC 312, 330, 332, 334, or 335, and comply with all general prohibitions and requirements. Use NRMs in accordance with DMS-11000, "Evaluating and Using Nonhazardous Recyclable Materials Guidelines," and furnish all documentation required by that Specification.

Article 6.10. Hazardous Materials is voided and replaced by the following:

Use materials that are free of hazardous materials as defined in Item 1, "Definition of Terms."

Notify the Engineer immediately when a visual observation or odor indicates that materials in required material sources or on sites owned or controlled by the Department may contain hazardous materials. Except in the case of Section 6.10.A.1.a, "Cleaning and Painting Steel" below, the Department is responsible for testing and removing or disposing of hazardous materials not introduced by the Contractor on sites owned or controlled by the Department as indicated below. The plans will indicate locations where paint on steel is suspected to contain hazardous materials and where regulated asbestos containing materials have been found. The Engineer may suspend work wholly or in part during the testing, removal, or disposition of hazardous materials on sites owned or controlled by the Department, except in the case of Section 6.10.A.1.a.

When a visual observation or odor indicates that materials delivered to the work locations by the Contractor may contain hazardous materials, have an approved commercial laboratory test the materials for contamination. Remove, remediate, and dispose of any of these materials found to be contaminated. Testing, removal, and disposition of hazardous materials introduced onto the work locations by the Contractor will be at the Contractor's expense. Working day charges will not be suspended and extensions of working days will not be granted for activities related to handling hazardous material delivered by the Contractor.

A. Painted Steel Requirements. As shown on the plans, existing paint on steel may contain hazardous materials. Perform work in accordance with the following:

1. Removing Paint from Steel.

a. Cleaning and Painting Steel. For contracts that are primarily for painting existing steel, perform the work in accordance with Item 446, "Cleaning and Painting Steel."

b. Other Contracts. For all other projects when an existing paint must be removed to perform other work, perform paint removal work in accordance with Item 446, "Cleaning and Painting Steel" unless the paint is shown or determined to contain hazardous materials. If the paint is shown or determined to contain hazardous materials, the Department will provide for a separate contractor to remove paint prior to or during the Contract to allow dismantling of the steel for the Contractor's salvaging, reuse, or recycling or where paint must be removed to perform other work. For steel that is dismantled by unbolting, no paint stripping will be required. Use care to not damage existing paint. When dismantling is performed using flame or saw-cutting methods to remove steel elements coated with paint containing hazardous materials, the plans will show stripping locations. Coordinate with the separate contractor for stripping work to be performed during the Contract.

2. Removal and Disposal of Painted Steel. For Contracts where painted steel is to be removed and disposed of by the Contractor, painted steel may be reused or disposed of at a steel recycling or smelting facility. If the paint is shown or determined to contain hazardous materials, maintain and make available to the Engineer invoices and other records showing the reuse owner or for recycling, records obtained from the recycling or smelting facility showing the received weight of the steel and the facility name. Painted steel to be retained by the Department will be shown on the plans.

B. Asbestos Requirements. The plans will indicate locations or elements where asbestos containing materials (ACM) have been found. At these locations or at locations where previously unknown ACM has been found, the Department will arrange for abatement by a separate contractor during the Contract. For work at these locations, notify the Engineer of proposed dates of demolition or removal of structural elements with ACM at least 60 days before work is to begin to allow the Department sufficient time to abate the asbestos.

When the work by a separate contractor for removal of paint or asbestos abatement is to be performed during the Contract, provide traffic control as shown on the plans and coordinate and cooperate with the separate contractor. Continue other work detailed in the plans not directly involved in the paint removal or asbestos abatement work. Coordinate with the Department the timing of the separate contractor's work in advance in order to allow the Department to schedule work with the separate contractor. Work for the traffic control and other work will not be paid for directly but will be subsidiary to pertinent Items.

SPECIAL PROVISION

006---047

Control of Materials

For this project, Item 006, "Control of Materials," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 6.4. Sampling, Testing and Inspection is supplemented by the following:

Meet with the Engineer and choose either the Department or a Department-selected Commercial Lab (CL) for conducting the subset of project-level sampling and testing shown in Table 1, "Select Guide Schedule Sampling and Testing." Selection may be made on a test by test basis. CLs will meet the testing turnaround times shown (includes test time and time for travel/sampling and reporting) and in all cases issue test reports as soon as possible.

If the Contractor chooses a Department-selected CL for any Table 1 sampling and testing:

- notify the Engineer, District Lab, and the CL of project scheduling that may require CL testing;
- provide the Engineer, District Lab, and CL at least 24 hours notice by phone and e-mail;
- reimburse the Department for CL Table 1 testing using the contract fee schedule for the CL (including mileage and travel/standby time) at the minimum guide schedule testing frequencies;
- reimburse the Department for CL Table 1 testing above the minimum guide schedule frequencies for retesting when minimum frequency testing results in failures to meet specification limits;
- agree with the Engineer and CL upon a policy regarding notification for testing services;
- give any cancellation notice to the Engineer, District Lab, and CL by phone and e-mail;
- reimburse the Department a $150 cancellation fee to cover technician time and mileage charges for previously scheduled work cancelled without adequate notice, which resulted in mobilization of technician and/or equipment by the CL; and
- all CL charges will be reimbursed to the Department by a deduction from the Contractor's monthly pay estimate.

If the CL does not meet the Table 1 turnaround times, testing charge to the Contractor will be reduced by 50% for the first late day and an additional 5% for each succeeding late day.

Approved CL project testing above the minimum testing frequencies in the Guide Schedule of Sampling and Testing, and not as the result of failing tests, will be paid by the Department.

Other project-level Guide Schedule sampling and testing not shown on Table 1 will be the responsibility of the Department.

Table 1
Select Guide Schedule Sampling and Testing (Note 1)

TxDOT Test	Test Description	Turn-Around Time (Calendar days)
SOILS/BASE		
Tex-101-E	Preparation of Soil and Flexible Base Materials for Testing (included in other tests)	
Tex-104-E	Liquid Limit of Soils (included in 106-E)	
Tex-105-E	Plastic Limit of Soils (included in 106-E)	
Tex-106-E	Calculating the Plasticity Index of Soils	7
Tex-110-E	Particle Size Analysis of Soils	6
Tex-113-E	Moisture-Density Relationship of Base Materials	7
Tex-114-E	Moisture-Density Relationship of Subgrade and Embankment Soil	7
Tex-115-E	Field Method for In-Place Density of Soils and Base Materials	2
Tex-116-E	Ball Mill Method for the Disintegration of Flexible Base Material	5
Tex-117-E, Part II	Triaxial Compression Tests For Disturbed Soils and Base Materials (Part II)	6
Tex-113-E **w/** Tex-117-E	Moisture-Density Relationship of Base Materials **with** Triaxial Compression Tests For Disturbed Soils and Base Materials (Part II)	10
Tex-140-E	Measuring Thickness of Pavement Layer	2
Tex-145-E	Determining Sulfate Content in Soils - Colorimetric Method	4
HOT MIX ASPHALT		
Tex-200-F	Sieve Analysis of Fine and Coarse Aggregate (dry, from ignition oven with known correction factors)	1 (Note 2)
Tex-203-F	Sand Equivalent Test	3
Tex-206-F **w/** Tex-207-F, Part I, **w/** Tex-227-F	**(Lab-Molded Density of Production Mixture – Texas Gyratory)** Method of Compacting Test Specimens of Bituminous Mixtures **with** Density of Compacted Bituminous Mixtures, Part I - Bulk Specific Gravity of Compacted Bituminous Mixtures, **with** Theoretical Maximum Specific Gravity of Bituminous Mixtures	1 (Note 2)
Tex-207-F, Part I **&/or** Part VI	**(In-Place Air Voids of Roadway Cores)** Density of Compacted Bituminous Mixtures, Part I- Bulk Specific Gravity of Compacted Bituminous Mixtures **&/or** Part VI - Bulk Specific Gravity of Compacted Bituminous Mixtures Using the Vacuum Method	1 (Note 2)
Tex-207-F, Part V	Density of Compacted Bituminous Mixtures, Part V- Determining Mat Segregation using a Density-Testing Gauge	3
Tex-207-F, Part VII	Density of Compacted Bituminous Mixtures, Part VII - Determining Longitudinal Joint Density using a Density-Testing Gauge	4
Tex-212-F	Moisture Content of Bituminous Mixtures	3
Tex-217-F	Deleterious Material and Decantation Test for Coarse Aggregate	4
Tex-221-F	Sampling Aggregate for Bituminous Mixtures, Surface Treatments, and LRA (included in other tests)	
Tex-222-F	Sampling Bituminous Mixtures (included in other tests)	
Tex-224-F	Determination of Flakiness Index	3
Tex-226-F	Indirect Tensile Strength Test (production mix)	4
Tex-235-F	Determining Draindown Characteristics in Bituminous Materials	3
Tex-236-F (Correction Factors)	Asphalt Content from Asphalt Paving Mixtures by the Ignition Method (Determining Correction Factors)	4
Tex-236-F	Asphalt Content from Asphalt Paving Mixtures by the Ignition Method (Production Mixture)	1 (Note 2)
Tex-241-F **w/** Tex-207-F, Part I, **w/** Tex-227-F	**(Lab-Molded Density of Production Mixture – Superpave Gyratory)** Superpave Gyratory Compacting of Specimens of Bituminous Mixtures (production mixture) **with** Density of Compacted Bituminous Mixtures, Part I- Part I - Bulk Specific Gravity of Compacted Bituminous Mixtures, **with** Theoretical Maximum Specific Gravity of Bituminous Mixtures	1 (Note 2)

Tex-242-F	Hamburg Wheel-Tracking Test (production mix, molded samples)	3
Tex-244-F	Thermal Profile of Hot Mix Asphalt	1
Tex-246-F	Permeability of Water Flow of Hot Mix Asphalt	3
Tex-280-F	Flat and Elongated Particles	3
Tex-530-C	Effect of Water on Bituminous Paving Mixtures (production mix)	4
AGGREGATES		
Tex-400-A	Sampling Flexible Base, Stone, Gravel, Sand, and Mineral Aggregates	3
Tex-410-A	Abrasion of Coarse Aggregate Using the Los Angeles Machine	5
Tex-411-A	Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate	12
Tex-461-A	Degradation of Coarse Aggregate by Micro-Deval Abrasion	5
CHEMICAL		
Tex-612-J	Acid Insoluble Residue for Fine Aggregate	4
GENERAL		
HMA Production Specialist [TxAPA – Level 1-A] ($/hr)		
HMA Roadway Specialist [TxAPA – Level 1-B] ($/hr)		
Technician Travel/Standby Time ($/hr)		
Per Diem ($/day – meals and lodging)		
Mileage Rate ($/mile from closest CL location)		

Note 1– Turn-Around Time includes test time and time for travel/sampling and reporting.
Note 2 – These tests require turn-around times meeting the governing specifications. Provide test results within the stated turn-around time. CL is allowed one additional day to provide the signed and sealed report.

SPECIAL PROVISION

007---918

Legal Relations and Responsibilities

For this project, Item 7, "Legal Relations and Responsibilities" of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 7.4. Insurance and Bonds is voided and replaced by the following:

As specified in Article 3.4, "Execution of Contract," provide the Department with a Certificate of Insurance verifying the types and amounts of coverage shown in Table 1. The Certificate of Insurance must be in a form approved by the Texas Department of Insurance Any Certificate of Insurance provided shall be available for public inspection.

Table 1
Insurance Requirements

Type of Insurance	Amount of Coverage
Commercial General Liability Insurance	Not Less Than: $600,000 each occurrence
Business Automobile Policy	Not Less Than: $600,000 combined single limit
Workers' Compensation	Not Less Than: Statutory
All Risk Builder's Risk Insurance (For building-facilities contracts only)	100% of Contract Price

By signing the Contract, the Contractor certifies compliance with all applicable laws, rules, and regulations pertaining to workers' compensation insurance or legitimate alternates. This certification includes all subcontractors. Pay all deductibles stated in the policy. Subcontractors must meet the requirements of Table 1 either through their own coverage or through the Contractor's coverage.

Insurances must cover the contracted work for the duration of the Contract and must remain in effect until final acceptance. Failure to obtain and maintain insurance for the contracted work may result in suspension of work or default of the Contract. If the insurance expires and coverage lapses for any reason, stop all work until the Department receives an acceptable Certificate of Insurance.

The Workers' Compensation policy must include a waiver of subrogation endorsement in favor of the State.

For building-facilities contracts, provide All Risk Builder's Risk Insurance to protect the Department against loss by storm, fire or extended coverage perils on work and materials intended for use on the project including the adjacent structure. Name the Department under the Lost Payable Clause.

Provide a substitute Surety on the Contract bonds in the original full Contract amount within 15 days of notification if the Surety is declared bankrupt or insolvent, the Surety's underwriting limitation drops below the Contract amount or the Surety's right to do business is terminated by the State. The substitute Surety must be authorized by the laws of the State and acceptable to the Department. Work will be suspended until a substitute Surety is provided. Working day charges will be suspended for 15 days or until an acceptable Surety is provided, whichever is sooner.

Article 7.8. Hauling and Loads on Roadways and Structures is supplemented by the following:

D. Stockpiling of Materials. Do not store or stockpile material on bridge structures without written permission. If required, submit a structural analysis and supporting documentation by a licensed professional engineer for review by the Engineer. Permission may be granted if the Engineer finds that no damage or overstresses in excess of those normally allowed for occasional overweight loads will result to structures that will remain in use after Contract completion. Provide temporary matting or other protective measures as directed.

Article 7.14. Contractor's Responsibility for Work, Section B. Appurtenances is voided and replaced by the following:

B. Appurtenances.

1. **Unreimbursed Repair.** Except for destruction (not reusable) due to hurricanes, reimbursement will not be made for repair of damage to the following temporary appurtenances, regardless of cause:
   - signs,
   - barricades,
   - changeable message signs, and
   - other work zone traffic control devices.

   Crash cushion attenuators and guardrail end treatments are the exception to the above listing and are to be reimbursed in accordance with Section 7.14.B.2, "Reimbursed Repair."

   For the devices listed in this section, reimbursement may be made for damage due to hurricanes. Where the contractor retains replaced appurtenances after completion of the project, the Department will limit the reimbursement to the cost that is above the salvage value at the end of the project.

2. **Reimbursed Repair.** Reimbursement will be made for repair of damage due to the causes listed in Section 7.14.A, "Reimbursable Repair," to appurtenances (including temporary and permanent crash cushion attenuators and guardrail end treatments).

Article 7.15. Electrical Requirements, Section A. Definitions, Section 3. Certified Person is voided and replaced by the following:

> **3. Certified Person.** A certified person is a person who has passed the test from the TxDOT course TRF450, "TxDOT Roadway Illumination and Electrical Installations" or other courses as approved by the Traffic Operations Division. Submit a current and valid TRF certification upon request. On June 1, 2011, Texas Engineering Extension Service (TEEX) certifications for "TxDOT Electrical Systems" course will no longer be accepted. All TRF 450 certifications that have been issued for "TxDOT Roadway Illumination and Electrical Installations" course that expire before June 1, 2011 will be accepted until June 1, 2011.

Article 7.15. Electrical Requirements, Section A. Definitions, Section 4. Licensed Electrician is voided and replaced by the following:

> **4. Licensed Electrician.** A licensed electrician is a person with a current and valid unrestricted master electrical license, or unrestricted journeyman electrical license that is supervised or directed by an unrestricted master electrician. An unrestricted master electrician need not be on the work locations at all times electrical work is being done, but the unrestricted master electrician must approve work performed by the unrestricted journeyman. Licensed electrician requirements by city ordinances do not apply to on state system work.

The unrestricted journeyman and unrestricted master electrical licenses must be issued by the Texas Department of Licensing and Regulation or by a city in Texas with a population of 50,000 or greater that issues licenses based on passing a written test and demonstrating experience.

The Engineer may accept other states' electrical licenses. Submit documentation of the requirements for obtaining that license. Acceptance of the license will be based on sufficient evidence that the license was issued based on:

- passing a test based on the NEC similar to that used by Texas licensing officials, and
- sufficient electrical experience commensurate with general standards for an unrestricted master and unrestricted journeyman electrician in the State of Texas.

Article 7.19. Preservation of Cultural and Natural Resources and the Environment is supplemented by the following:

G. Asbestos Containing Material. In Texas, the Department of State Health Services (DSHS), Asbestos Programs Branch, is responsible for administering the requirements of the National Emissions Standards for Hazardous Air Pollutants, 40 CFR, Subpart M (NESHAP) and the Texas Asbestos Health Protection Rules (TAHPR). Based on EPA guidance and regulatory background information, bridges are considered to be a regulated "facility" under NESHAP. Therefore, federal standards for demolition and renovation apply.

Provide notice to the Department of demolition or renovation to the structures listed in the plans at least 30 calendar days prior to initiating demolition or renovation of each structure or load bearing member. Provide the scheduled start and completion date of structure demolition, renovation, or removal.

When demolition, renovation, or removal of load bearing members is planned for several phases, provide the start and completion dates identified by separate phases.

DSHS requires that notifications be postmarked at least 10 working days prior to initiating demolition or renovation. If the date of actual demolition, renovation, or removal is changed, the Department will be required to notify DSHS at least 10 days in advance of the work. This notification is also required when a previously scheduled (notification sent to DSHS) demolition, renovation or removal is delayed. Therefore, if the date of actual demolition, renovation, or removal is changed, provide the Engineer, in writing, the revised dates in sufficient time to allow for the Department's notification to DSHS to be postmarked at least 10 days in advance of the actual work.

Failure to provide the above information may require the temporary suspension of work under Article 8.4, "Temporary Suspension of Work or Working Day Charges," due to reasons under the control of the Contractor. The Department retains the right to determine the actual advance notice needed for the change in date to address post office business days and staff availability.

Article 7.20, **Agricultural Irrigation.** This Item is supplemented by the following:

Regulate the sequence of work and make provisions as necessary to provide for agricultural irrigation or drainage during the work. Meet with the Irrigation District or land owner to determine the proper time and sequence when irrigation demands will permit shutting-off water flows to perform work.

Unless otherwise provided on the plans, the work required by these provisions will not be paid for directly but shall be considered as subsidiary work pertaining to the various bid items of this contract.

SPECIAL PROVISION

008---006

Prosecution and Progress

For this project, Item 008, "Prosecution and Progress," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 8.3. Computation of Contract Time for Completion. The first sentence of the first paragraph is voided and replaced by the following:

Working day charges will begin 60 calendar days after the date of the written authorization to begin work, or the first day of construction activity if work is initiated within the 60 calendar day period.

SPECIAL PROVISION

008---070

Prosecution and Progress

For this project, Item 008, "Prosecution and Progress," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

This Item is supplemented by the following:

8.11. Incentive Using Road-User Cost or Contract Administration Liquidated Damage Values and Disincentive Using Road-User Cost. This special provision is for the application of incentives and disincentives as follows:

- incentives for early Contract completion using contract administration liquidated damage or substantial completion of work ahead of time using daily road-user cost values as basis and
- disincentives for late substantial completion of work using daily road-user costs.

Incentive provisions, based on contract administration liquidated damages, will apply when shown on the plans. Incentive provisions, based on road-user cost, will apply when shown on the plans. Disincentive provisions, based on road-user cost, will apply when road-user cost incentive provisions are shown on the plans. The disincentive provisions, based on road-user cost, will also apply when shown separately on the plans (without an associated road-user cost incentive). Definitions are as follows:

- **Contract Completion** - The final acceptance date (day) unless performance, establishment and maintenance periods occur. In the case of performance, establishment and maintenance periods, completion shall be considered when all work is complete and accepted except for performance, establishment and maintenance periods, with time computed to the suspension of time charges for the acceptance process.
- **Substantial Completion of Work** - The date (day) when all project work (or the work for a specified milestone or phase) requiring lane or shoulder closures or obstructions is completed, and traffic is following the lane arrangement as shown on the plans for the finished roadway (or the specified milestone or phase of work); all pavement construction and resurfacing are complete; and traffic control devices and pavement markings are in their final position (or as called for on the plans for the specified milestone of work). The Engineer may make an exception for permanent pavement markings provided the lack of markings does not cause a disruption to traffic flow or an unsafe condition for the traveling public, and work zone pavement markings are in place.

When A + B Bidding provisions are included in the Contract, the B working days bid will be considered as the time allowed for completion, contract or substantial as applicable. In addition, the plans will show either the number of working days or a specific date for the purposes of computing substantial completion incentives or disincentives.

Time charge adjustments will be made in accordance with the schedule required to meet Article 8.1, "Prosecution of Work" and Article 8.2, "Progress Schedules," the proposal, and the plans. For Contracts with milestone dates, time charges for the completion incentives and disincentives will not be adjusted for weather, weekends, holidays, or other unforeseeable events not under the control or responsibility of the Department. However, time charges for completion incentives or disincentives may be adjusted by the Engineer when;

- work, under the control of the Department, such as extension of limits or changes in scope, change the actual duration of completion,
- delays occur due to unadjusted utilities or unclear right-or-way when clearance is not the responsibility of the Contractor, or
- catastrophic events occur, such as a declared state of emergency or natural disaster, if the event directly affects the Contractor's prosecution.

A. Incentives. When shown on the plans and in accordance with the Contract, the Department will pay an incentive for the early Contract completion or substantial completion of work under the number of working days stipulated in the Contract. The maximum number of working days used in computing the credit will be 30 days for each milestone and Contract completion incentive unless otherwise shown in the Contract. The amount of the credit will be added to money due or to become due to the Contractor.

1. **Early Contract Completion Incentive.** The incentive will be based on the difference between the actual early Contract completion days and the Contract completion days in the Contract. The difference will then be multiplied by the daily contract administration liquidated damage value shown in the proposal.
2. **Early Substantial Completion of Work Incentive.** The incentive will be based on the differences between the actual early substantial completion of work and the Contract days allowed to substantially complete the work (or the specified milestone or phase of work). The difference will then be multiplied by the daily road-user cost values specified for substantial Contract completion (or road-user cost specified for the corresponding milestone or phase of work).

B. Disincentives for Failure to Substantially Complete Work on Time. When shown on the plans and in accordance with the Contract, failure to substantially complete the work (or specified milestone or phase of work) within the established number of working days will result in the assessment of disincentives using the daily road-user cost shown on the plans for each working day in excess of those allowed. The road-user cost disincentive

deductions will be in addition to any Contract administration liquidated damages, in accordance with Article 8.5, “Failure to Complete Work on Time.” The amount of the disincentive will be deducted from money due or to become due to the Contractor. The road-user cost disincentives will be assessed not as a penalty, but for added expense incurred by the traveling public.

SPECIAL PROVISION

008---086

Prosecution and Progress

For this project, Item 8 "Prosecution and Progress," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of the Item are waived or changed.

Article 8.2 Progress Schedules, Section B. Construction Contracts is voided and replaced by the following:

B. Construction Contracts. Before starting work on a construction Contract, prepare and submit your progress schedule based on the sequence of work and traffic control plan shown in the Contract. Prepare the progress schedule using the Critical Path Method (CPM). Include all planned work activities and sequences. Show number of working days for Contract completion using anticipated production rates, major material procurements, known utility relocations, and other activities that may affect the completion of the Contract. Show a beginning date, ending date, and duration in number of working days for each activity. Do not use activities exceeding 20 working days, except for agreed upon activities. Show an anticipated production rate per working day for each work activity.

Create and maintain the CPM schedule using computer software fully compatible with version 3.1 of Primavera Systems, Inc., Primavera Project Planner (P3), or SureTrak Project Scheduler. If using SureTrak Project Scheduler, save the schedule in Primavera format setting activities as tasks and durations in days.

1. **Personnel.** Provide a person proficient in CPM analysis to create and maintain the project schedule and to be available when requested.

2. **Project Schedule.** Format the project schedule according to the following:

   - Begin the project schedule on the date of the start of Contract time or start of activities affecting compensable work on the project, whichever occurs first;
   - Show the sequence and interdependence of activities required for complete performance of the work;
   - Ensure all work sequences are logical and show a coordinated plan of the work;
   - Show a predecessor and successor for each activity;
   - Clearly and accurately identify the critical path as the longest continuous path;
   - Provide a legend for all abbreviations and include the schedule filename, run date, data date, project start date, and project completion date in the title block of each schedule submittal, and;

- Through the use of calendars, incorporate seasonal weather conditions into the schedule for work (e.g., earthwork, concrete paving, structures, asphalt, drainage, etc.) that may be influenced by temperature or precipitation. Also, incorporate non-work periods such as holidays, weekends, or other non-work days as identified in the Contract.

For each activity on the project schedule provide:

- a logical activity number utilizing an alphanumeric designation system tied to the sequence of work and traffic control plans;
- a concise description of the work represented by the activity;
- an activity duration in whole working days;
- calculated activity durations by dividing the quantity of work for each individual activity by the estimated production rate;
- the quantity of work and estimated production rate for each activity; and,
- Coded activities so that organized plots of the schedule may be produced.

Total float is the amount of time between the early start date and the late start date, or the early finish date and the late finish date, whichever is least, for each activity in the schedule. Total float is a shared commodity between the Department and the Contractor.

a. Preliminary Schedule. Seven days prior to the preconstruction meeting, submit both plotted and electronic copies of the project schedule showing work to be performed in the first 90 calendar days of the project. Submit the electronic backup copy saved in Primavera format on a computer disc.

b. Baseline Schedule. The baseline schedule will be considered the Contractor's plan to successfully construct the project within the timeframe and construction sequencing indicated in the Contract. Prior to the first monthly estimate after the start of Contract time or start of compensable work, whichever occurs first, submit the baseline schedule showing all activities required to complete the entire Contract. Submit both plotted and electronic copies of the baseline schedule. Submit two plots of the schedule, one organized with the activities logically grouped using the activity coding; and, the other plot showing only the critical path determined by the longest path, not based on critical float. Show the following on both plots:

- Activity number;
- Activity description;
- Quantity of work;
- Original duration;
- Early start;

- Early finish;
- Total float;
- Show Activity bars and timescale; and
- Legend showing the data listed above.

Create layouts for both of the plots in the electronic copy and submit an electronic backup copy saved on computer disc.

c. Review. Within 15 calendar days of receipt of the baseline schedule, the Engineer will evaluate the schedule for compliance with this specification, and inform the Contractor if the schedule is acceptable. If the schedule is unacceptable, the Engineer will provide reasons for the unacceptability. If the schedule is found unacceptable, provide a revision, correction, or reasons for not doing so within five calendar days. The Engineer's review and acceptance of the project schedule is for conformance to the requirements of the Contract documents only and does not relieve the Contractor of any responsibility for meeting the interim milestone dates (if specified) or the Contract completion date. Review and acceptance does not expressly or by implication warrant, acknowledge, or admit the reasonableness of the logic or durations of the project schedule. If the Contractor fails to define any element of work, activity, or logic and the Engineer's review does not detect this omission or error, the Contractor is responsible for correcting the error or omission in the next monthly schedule update.

If the baseline schedule is found to not comply with this specification, the Engineer may withhold payment of estimates until compliance is achieved.

3. Maintenance, Revision, and Updating of the Project Schedule. The project schedule will be maintained for use by both the Contractor and the Engineer. It will become an as-built record of the daily progress achieved on the project. In order to maintain an accurate as-built record of each activity, actual start date, actual finish dates, actual quantity placement, and actual production rates must be recorded in the project schedule when they occur. If continuous progress of an activity is interrupted for any reason except non-work periods (such as holidays, weekend, or interference from temperature or precipitation), then the activity will show the actual finish date as that date of the start of the interruption and the activity will be broken into a subsequent activity (or activities, based on the number of interruptions) similarly numbered with successive alpha character as necessary. The original duration of the subsequent activity will be that of the remaining duration of the original activity. Relationships of the subsequent activity will match those of the original activity so that the integrity of the project schedule logic is maintained. Once established the original durations and actual dates of all activities must remain unchanged.

Revisions to the schedule may be made as necessary. The project schedule shall be revised when changes in construction phasing and sequencing, changes in the Traffic Control Plan, or other changes that cause deviation from the original project schedule occur. Any revisions to the schedule must be listed in the monthly update narrative with the purpose of the revision and description of the impact on the project schedule's critical

path and project completion date. Submit an electronic backup of the schedule that includes the revision. Create the schedule revision using the latest update before the start of the revision.

Monthly updating of the project schedule shall include updating of:

- the actual start dates for activities started;
- the actual finish dates for activities completed;
- the quantity of work completed and remaining duration for each activity started but not yet completed; and
- the calendars to show days actual work was performed on the various work activities.

The cut-off day for recording monthly progress will be the 25th of each month. Submit the updated project schedule no later than the 5th calendar day of the following month. The Engineer will evaluate the updated schedule for compliance with this specification within 5 calendar days of receipt and inform the Contractor if the schedule is acceptable. If the schedule is unacceptable, the Engineer will provide reasons for the unacceptability. If the schedule is found unacceptable, provide a revision, correction, or reasons for not doing so within 5 calendar days. Submit the following information:

- one electronic backup of the schedule after update changes and after recalculating the schedule;
- notice to the Engineer if resource-leveling is being used;
- two logically organized plots (as outlined for the baseline schedule) of the schedule update, labeled with the time period represented, and showing accurately updated data regarding all items listed above;
- a monthly update narrative that includes an explanation of project progress for the period represented, which includes: 1.) a report (on a form provided by the Department) showing the status of the project completion date and listing the reasons why any change may have occurred; 2.) a list of all activities that have been added, deleted, or otherwise changed in the schedule with explanations for the modifications and description of the impacts each has on the project schedule; 3.) any revisions that may have been performed to the schedule, providing the purpose of the revision and description of the impact to the project critical path and completion dates; and, 4.) the status of the critical path, explaining reasons for any changes in critical path, impacts to the critical path that occurred during the period represented, or identifying any potential impacts that are apparent to occur within the following 3 months, including but not limited to material deliveries, utility and right of way clearances, or other potential impacts; and,
- other detailed schedule information as required by plan note.

If the schedule updates and narrative are not submitted by the 5th calendar day of the following month, the Engineer may withhold estimate payments until an update complying with this specification is submitted.

4. **Notice of Potential Time Impact.** Submit a "Notice of Potential Time Impact" when a Contract time extension or adjustment of milestone dates may be justified. If the potential impact is identified between schedule updates, submit this notice no later than 5 calendar days after the start of the impact. If the potential impact is identified as a result of the updating process, submit this notice with the schedule update.

   Failure to provide this notice in the timeframes outlined above will compromise the Department's ability to mitigate the impacts and the Contractor forfeits the right to request a time extension or adjustment of milestone dates unless the circumstances are such that the Contractor could not reasonably have had knowledge of the impact at the time.

5. **Time Impact Analysis.** A time impact analysis is an evaluation of the effects of impacts on the project. A time impact analysis consists of the following steps:

   Step 1. Establish the status of the project immediately before the impact.

   Step 2. Predict the effect of the impact on the schedule update used in Step 1.

   Step 3. Track the effects of the impact on the schedule during its occurrence.

   Step 4. Establish the status of the project after the impact is complete and provide details identifying any mitigating actions or circumstances used to keep the project ongoing during the impact period.

   Submit Step 1 and Step 2, if requested by the Department, with the "Notice of Potential Time Impact." Incorporate Step 3 into schedule updates until the impact is complete. Submit Step 4 no later than 15 calendar days after the completion of an impact.

   Determine the time impact by comparing the status of the work prior to the impact (Step 1) to the prediction of the effect of the impact (Step 2), if requested, and to actual effects of the impact once it is complete (Step 4). Unless otherwise approved by the Engineer, steps 1, 3, and 4, shall be completed before consideration of a Contract time extension or adjustment of a milestone date will be provided. Time extensions will only be considered when delays that affect milestone dates or the Contract completion date are beyond the Contractor's control.

   Submit one electronic backup copy of the complete time impact analysis and a copy of the full project schedule incorporating the time impact analysis. If the project schedule is revised after the submittal of a time impact analysis, but prior to its approval, indicate in writing the need for any modification to the time impact analysis.

   The Engineer will review the time impact analysis upon completion of step 4 of the time impact analysis. If this review detects revisions or changes to the schedule that had not been performed and identified in a narrative, the Engineer may reject the time impact analysis. If the Engineer is in agreement with the time impact analysis, a change order may be issued to grant additional working days, or to adjust interim milestones. Once a change order has been executed, incorporate the time impact analysis into the project schedule. The time impact analysis may also be used to support the settlement of delay and inefficiency disputes and claims; however, compensation of such delays or inefficiencies related to the time impact analysis may not be provided until completion of

the project and determination can be made regarding the true role the impact played on the final completion of the project following subsequent actions that may have been allowed or enacted to minimize impacts of time or cost.

No direct compensation will be made for fulfilling these requirements, as this work is considered subsidiary to the Items of the Contract.

SPECIAL PROVISION

008---119

Prosecution and Progress

For this project, Item 8, “Prosecution and Progress,” of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 8.8. Subcontracting, is supplemented with the following:

For all DBE subcontracts including all tiered DBE subcontracts, submit a copy of the executed subcontract agreement.

SPECIAL PROVISION

009---009

Measurement and Payment

For this project, Item 009, "Measurement and Payment," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 9.6. Progress Payments, Section A, Retainage is voided and replaced by the following:

A. Retainage. Retainage will not be withheld on this project.

Article 9.6. Progress Payments, Section B, Payment Provisions for Subcontractors is voided and replaced by the following:

B. Payment Provisions for Subcontractors. For the purposes of this Article only, the term subcontractor includes suppliers and the term work includes materials provided by suppliers at a location approved by the department. Pay the subcontractors for work performed within 10 days after receiving payment for the work performed by the subcontractor. Also, pay any retainage on a subcontractor's work within 10 days after satisfactory completion of all of the subcontractor's work. Completed subcontractor work includes vegetative establishment, test, maintenance, performance, and other similar periods that are the responsibility of the subcontractor.

For the purpose of this Section, satisfactory completion is accomplished when:

- the subcontractor has fulfilled the Contract requirements of both the Department and the subcontract for the subcontracted work, including the submittal of all information required by the specifications and the Department; and

- the work done by the subcontractor has been inspected, approved, and paid by the Department.

The inspection and approval of a subcontractor's work does not eliminate the Contractor's responsibilities for all the work as defined in Article 7.14, "Contractor's Responsibility for Work."

The Department may pursue actions against the Contractor, including withholding of estimates and suspending the work, for noncompliance with the subcontract requirements of this Section upon receipt of written notice with sufficient details showing the subcontractor has complied with contractual obligations as described in this Article.

These requirements apply to all tiers of subcontractors. Incorporate the provisions of this Article into all subcontract or material purchase agreements.

SPECIAL PROVISION

009---015

Measurement and Payment

For this project, Item 9, "Measurement and Payment," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 9.5. Force Account, B. Insurance and Taxes is replaced by the following:

B. Labor Burden. An additional 55% of the labor cost, excluding the 25% compensation provided in Section 9.5.A, "Labor," will be paid as compensation for labor insurance and labor taxes including the cost of premiums on non-project specific liability (excluding vehicular) insurance, workers compensation insurance, Social Security, unemployment insurance taxes, and fringe benefits.

SPECIAL PROVISION

100---002

Preparing Right of Way

For this project, Item 100, "Preparing Right of Way," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 100.4. Payment. The second paragraph is voided and replaced by the following:

Total payment of this Item will not exceed 10% of the original contract amount until final acceptance. The remainder will be paid on the estimate after the final acceptance under Article 5.8, "Final Acceptance."

SPECIAL PROVISION
161---006
Compost

For this project, Item 161, "Compost," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 161.2. Materials. Table 1 and following two paragraphs are voided and replaced by the following:

Table 1
Physical Requirements for Compost

Property	Test Method	Requirement
Particle Size	TMECC[1] 02.02-B, "Sample Sieving for Aggregate Size Classification"	95% passing 5/8 in. 70% passing 3/8 in.
Heavy Metals Content	TMECC 04.06, "Heavy Metals and Hazardous Elements": 04.06-As, Arsenic 04.06-Cd, Cadmium 04.06-Cu, Copper 04.06-Pb, Lead 04.06-Hg, Mercury 04.06-Mo, Molybdenum 04.06-Ni, Nickel 04.06-Se, Selenium 04.06-Zn, Zinc	Pass
Salinity	TMECC 04.10-A, "1:5 Slurry Method, Mass Basis"	5.0 dS/m Max[2]
pH	TMECC 04.11-A, "1:5 Slurry pH"	5.5-8.5
Maturity	TMECC 05.05-A, "% Emergence and Relative Seedling Vigor"	> 80%
Organic Matter Content	TMECC 05.07-A, "Loss-On-Ignition Organic Matter Method"	25-65% (dry mass)
Stability	TMECC 05.08-B, "Carbon Dioxide Evolution Rate"	≤ 8
Fecal Coliform	TMECC 07.01-B, "Fecal Coliforms"	1,000 MPN/g Max

1. "Test Methods for the Examination of Composting and Compost," published by the United States Department of Agriculture and the USCC.
2. A soluble salt content up to 10.0 dS/m for compost used in compost-manufactured topsoil will be acceptable.

Maintain compost in designated stockpiles at the producer's site. The Department reserves the right to sample compost at the jobsite. Material may be tested to verify compliance with this Specification by an STA-certified lab. Make payment to the STA-certified lab approved by the Department. Submit lab invoices for passing tests to the Department for reimbursement. Maintain a complete record of all test reports for the previous and current calendar year.

SPECIAL PROVISION

164---002

Seeding For Erosion Control

Item 164, "Seeding For Erosion Control," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 164.3. Construction. The following is added after the first sentence:

Use approved equipment to vertically track the seedbed as shown on the plans or as directed by the Engineer.

SPECIAL PROVISION

166---001

Fertilizer

Item 166, "Fertilizer," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 166.2. Materials is voided and replaced by the following:

Use a complete fertilizer containing nitrogen (N), phosphoric acid (P), and potash (K) nutrients unless otherwise specified on the plans. At least 50% of the nitrogen component must be a slow–release sulfur coated urea. Ensure that fertilizer is in an acceptable condition for distribution in containers labeled with the analysis. Fertilizer is subject to testing by the Texas A&M Feed and Fertilizer Control Service in accordance with the Texas Fertilizer Law.

Article 166.3. Construction is voided and replaced by the following:

Deliver and apply the complete fertilizer uniformly at a rate equal to 60 lb. of nitrogen per acre or at the analysis and rate specified on the plans.

Apply fertilizer as a dry material and do not mix with water to form a slurry.

Incorporate fertilizer during seedbed preparation as specified in the plans.

SPECIAL PROVISION

169---002

Soil Retention Blankets

For this project, Item 169, "Soil Retention Blankets," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 169.2 Materials. The first sentence is voided and replaced by the following:

Provide only SRB that meet the requirements of DMS-6370 and are on the Approved Products List, "Erosion Control Approved Products."

Article 169.2. Materials, Section B. Class 2 – Flexible Channel Liners is voided and replaced with the following:

1. **Type E.** Biodegradable materials with shear stress less than 2.0 lbs. per square foot,
2. **Type F.** Biodegradable materials with shear stress less than 4.0 lbs. per square foot,
3. **Type G.** Non-biodegradable materials with shear stress less than 6.0 lbs. per square foot,
4. **Type H.** Non-biodegradable materials with shear stress less than 8.0 lbs. per square foot.

Article 169.3. Construction is voided and replaced by the following:

Provide a copy of the manufacturer's installation instructions to the Engineer prior to placement of the material. Place the SRB within 24 hr. after the seeding or sodding operation, or when directed. Installation and anchorage of the SRB shall be in strict accordance with the recommendations contained within the manufacturer's published literature. Installation includes the repair of ruts, reseeding or resodding, and the removal of rocks, clods, and other foreign materials which may prevent contact of the blanket with the soil.

SPECIAL PROVISION

247---033

Flexible Base

For this project, Item 247, "Flexible Base," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 247.2. Materials, Section A. Aggregate, Table 1. Material Requirements is replaced by the following:

Table 1
Material Requirements

Property	Test Method	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
Master gradation sieve size (cumulative % retained)	Tex-110-E				As shown on the plans	
2-1/2 in.		–	0	0		0
1-3/4 in.		0	0–10	0–10		0-5
7/8 in.		10–35	–	–		10–35
3/8 in.		30–50	–	–		35–65
No. 4		45–65	45–75	45–75		45–75
No. 40		70–85	60–85	50–85		70–90
Liquid Limit, % max.[1]	Tex-104-E	35	40	40	As shown on the plans	35
Plasticity Index, max.[1]	Tex-106-E	10	12	12	As shown on the plans	10
Plasticity index, min.[1]		As shown on the plans				
Wet ball mill, % max.[2]	Tex-116-E	40	45	–	As shown on the plans	40
Wet ball mill, % max. increase passing the No. 40 sieve		20	20	–	As shown on the plans	20
Classification, max. [3]	Tex-117-E	When shown on the plans	When shown on the plans	–	As shown on the plans	-
Min. compressive strength, psi	Tex-117-E				As shown on the plans	
lateral pressure 0 psi		45	35	–		–
lateral pressure 3 psi		–	–	–		90
lateral pressure 15 psi		175	175	–		175

1. Determine the plastic index in accordance with Tex-107-E (linear shrinkage) when liquid limit is unattainable as defined in Tex-104-E.
2. When a soundness value is required by the plans, test material in accordance with Tex-411-A.
3. When Classification is required by the plans, a triaxial Classification of 1.0 or less for Grades 1 and 2.3 or less for Grade 2 is required. The Classification requirement for Grade 4 will be as shown on the plans.

Article 247.2. Materials, Section A. Aggregate, Section 3. Recycled Material, Section b. Recycled Material (Including Crushed Concrete) Requirements, Section (1), Contractor Furnished Recycled Materials is supplemented by the following:

Provide recycled materials that have a maximum sulfate content of 3000 ppm when tested in accordance with Tex-145-E.

Article 247.4. Construction, Section C. Compaction is supplemented by the following:

Before final acceptance, the Engineer will select the locations of tests and measure the flexible base depth in accordance with Tex-140-E when Complete in Place measurement is specified. Correct areas deficient by more than 1/2 in. in thickness by scarifying, adding material as required, reshaping, recompacting, and refinishing at the Contractor's expense.

Article 247.4. Construction, Section C. Compaction, Section 2. Density Control first paragraph is replaced by the following:

Compact to at least 100% of the maximum dry density determined by Tex-113-E, unless otherwise shown on the plans. Maintain moisture during compaction at not less than 1 percentage point below the optimum moisture content determined by Tex-113-E. Determine the moisture content of the material in accordance with Tex-115-E or Tex-103-E during compaction daily and report the results the same day to the Engineer, unless otherwise shown on the plans or directed.

SPECIAL PROVISION

260---003

Lime Treatment (Road-Mixed)

For this project, Item 260, “Lime Treatment (Road-Mixed),” of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 260.2. Materials, Section A. Lime. The first two sentences are voided and replaced by the following:

Furnish lime that meets the requirements of DMS-6350 "Lime and Lime Slurry," and DMS-6330, "Prequalification of Lime Sources." Use hydrated lime, commercial lime slurry, quicklime, or carbide lime slurry as shown on the plans.

Article 260.3. Equipment, Section B. Slurry Equipment. The last sentence of the second paragraph is voided and replaced by the following:

Equip the distributor truck with a sampling device in accordance with Tex-600-J, Part I, when using commercial lime slurry or carbide lime slurry.

Article 260.4. Construction, Section C. Application of Lime, Section 2. Slurry Placement. The first paragraph is voided and replaced with the following:

Provide slurry free of objectionable materials, at or above the minimum dry solids content, and with a uniform consistency that will allow ease of handling and uniform application. Deliver commercial lime slurry or carbide lime slurry to the jobsite, or use hydrated lime or quicklime to prepare lime slurry at the jobsite or other approved location, as specified. When dry quicklime is applied as a slurry, use 80 percent of the amount shown on the plans.

Article 260.4. Construction, Section D. Mixing. The third paragraph is voided and replaced with the following:

After mixing, the Engineer may sample the mixture at roadway moisture and test in accordance with Tex-101-E, Part III, to determine compliance with the gradation requirements in Table 1.

Article 260.5. Measurement, Section A. Lime is supplemented by the following:

4. Carbide Lime Slurry. Lime slurry will be measured by the ton (dry weight) as calculated from the minimum percent dry solids content of the slurry, multiplied by the weight of the slurry in tons delivered.

Article 260.6. Payment. The first paragraph is voided and replaced by the following:

The work performed and materials furnished in accordance with this Item and measured as provided under “Measurement” will be paid in accordance with Section 260.6.A, “Lime,” and Section 260.6.B, “Lime Treatment.”

Article 260.6. Payment, Section A. Lime. The first sentence is voided and replaced by the following:

A. Lime. Lime will be paid for at the unit price bid for "Lime" of one of the following types:

- Hydrated Lime (Dry),
- Hydrated Lime (Slurry),
- Commercial Lime Slurry,
- Quicklime (Dry),
- Quicklime (Slurry), or
- Carbide Lime Slurry.

Article 260.6. Payment, Section B. Lime Treatment is voided and replaced by the following:

B. Lime Treatment. Lime treatment will be paid for at the unit price bid for “Lime Treatment (Existing Material),” “Lime Treatment (New Base),” or “Lime Treatment (Mixing Existing Material and New Base),” for the depth specified. No payment will be made for thickness or width exceeding that shown on the plans. This price is full compensation for shaping existing material, loosening, mixing, pulverizing, spreading, applying lime, compacting, finishing, curing, curing materials, blading, shaping and maintaining shape, replacing mixture, disposing of loosened materials, processing, hauling, preparing secondary subgrade, water, equipment, labor, tools, and incidentals.

SPECIAL PROVISION

275---003

Cement Treatment (Road-Mixed)

For this project, Item 275, "Cement Treatment (Road-Mixed)," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 275.4. Construction, Section D. Mixing. The second paragraph is voided and replaced with the following:

After mixing, the Engineer may sample the mixture at roadway moisture and test in accordance with Tex-101-E, Part III, to determine compliance with the gradation requirements in Table 1.

Article 275.4. Construction, Section E. Compaction. The first paragraph is voided and replaced by the following:

Compact the mixture in one lift using density control unless otherwise shown on the plans. Complete compaction within 2 hours after the application of water to the mixture of material and cement.

Article 275.6 Payment. The first paragraph is voided and replaced by the following:

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid in accordance with Section 275.5.A, "Cement," and Section 275.5.B, "Cement Treatment."

Article 275.6 Payment, Section B. Cement Treatment is voided and replaced by the following:

B. Cement Treatment. Cement treatment will be paid for at the unit price bid for "Cement Treatment (Existing Material)," "Cement Treatment (New Base)," or "Cement Treatment (Mixing Existing Material and New Base)," for the depth specified. No payment will be made for thickness or width exceeding that shown on the plans. This price is full compensation for shaping existing material, loosening, mixing, pulverizing, spreading, applying cement, compacting, finishing, curing, curing materials, blading, shaping and maintaining shape, replacing mixture, disposing of loosened materials, processing, hauling, preparing secondary subgrade, water, equipment, labor, tools, and incidentals.

SPECIAL PROVISION

300---039

Asphalts, Oils, and Emulsions

For this project, Item 300, "Asphalts, Oils, and Emulsions," of the Standard Specifications is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 300.2. Materials. The first paragraph is voided and replaced by the following:

Provide asphalt materials that meet the stated requirements when tested in accordance with the referenced Department, AASHTO, and ASTM test methods. Unless otherwise shown in the plans and specifications, provide asphalt materials that have been preapproved for use by the Construction Division, in accordance with Tex-545-C, "Asphalt Binder Quality Program."

Article 300.2. Materials, Section C, Cutback Asphalt. Table 4 "Rapid-Curing Cutback Asphalt" is voided and replaced by the following:

Table 4
Rapid-Curing Cutback Asphalt

Property	Test Procedure	Type–Grade					
		RC-250		RC-800		RC-3000	
		Min	Max	Min	Max	Min	Max
Kinematic viscosity, 140°F, cSt	T 201	250	400	800	1,600	3,000	6,000
Water, %	D 95	–	0.2	–	0.2	–	0.2
Flash point, T.O.C., °F	T 79	80	–	80	–	80	–
Distillation test:	T 78						
Distillate, percentage by volume of total distillate to 680°F							
to 437°F		40	75	35	70	20	55
to 500°F		65	90	55	85	45	75
to 600°F		85	–	80	–	70	–
Residue from distillation, volume %		70	–	75	–	82	–
Tests on distillation residue:							
Penetration, 100 g, 5 sec., 77°F	T 49	80	120	80	120	80	120
Ductility, 5 cm/min., 77°F, cm	T 51	100	–	100	–	100	–
Solubility in trichloroethylene, %	T 44	99.0	–	99.0	–	99.0	–
Spot test	Tex-509-C	Neg.		Neg.		Neg.	

300.2. Materials, Section C, Cutback Asphalt. Table 5 "Medium-Curing Cutback Asphalt" is voided and replaced by the following:

Table 5
Medium-Curing Cutback Asphalt

Property	Test Procedure	Type–Grade							
		MC-30		MC-250		MC-800		MC-3000	
		Min	Max	Min	Max	Min	Max	Min	Max
Kinematic viscosity, 140°F, cSt	T 201	30	60	250	500	800	1,600	3,000	6,000
Water, %	D 95	–	0.2	–	0.2	–	0.2	–	0.2
Flash point, T.O.C., °F	T 79	100	–	150	–	150	–	150	–
Distillation test:	T 78								
Distillate, percentage by volume of total distillate to 680°F									
to 437°F		–	25	–	10	–	–	–	–
to 500°F		40	70	15	55	–	35	–	15
to 600°F		75	93	60	87	45	80	15	75
Residue from distillation, volume %		50	–	67	–	75	–	80	–
Tests on distillation residue:									
Penetration, 100 g, 5 sec., 77°F	T 49	120	250	120	250	120	250	120	250
Ductility, 5 cm/min., 77°F, cm[1]	T 51	100	–	100	–	100	–	100	–
Solubility in trichloroethylene, %	T 44	99.0	–	99.0	–	99.0	–	99.0	–
Spot test	Tex-509-C	Neg.		Neg.		Neg.		Neg.	

1. If the penetration of residue is more than 200 and the ductility at 77°F is less than 100 cm, the material is acceptable if its ductility at 60°F is more than 100 cm.

300.2. Materials, Section C, Cutback Asphalt. Table 6 “Special-Use Cutback Asphalt” is voided and replaced by the following:

Table 6
Special-Use Cutback Asphalt

Property	Test Procedure	Type–Grade					
		MC-2400L		SCM I		SCM II	
		Min	Max	Min	Max	Min	Max
Kinematic viscosity, 140°F, cSt	T 201	2,400	4,800	500	1,000	1,000	2,000
Water, %	D 95	–	0.2	–	0.2	–	0.2
Flash point, T.O.C., °F	T 79	150	–	175	–	175	–
Distillation test:	T 78						
Distillate, percentage by volume of total distillate to 680°F							
to 437°F		–	–	–	–	–	–
to 500°F		–	35	–	0.5	–	0.5
to 600°F		35	80	20	60	15	50
Residue from distillation, volume %		78	–	76	–	82	–
Tests on distillation residue:							
Polymer		SBR		–		–	
Polymer content, % (solids basis)	Tex-533-C	2.0	–	–	–	–	–
Penetration, 100 g, 5 sec., 77°F	T 49	150	300	180	–	180	–
Ductility, 5 cm/min., 39.2°F, cm	T 51	50	–	–	–	–	–
Solubility in trichloroethylene, %	T 44	99.0	–	99.0	–	99.0	–

SPECIAL PROVISION

302---010

Aggregates For Surface Treatments

Item 302, "Aggregates for Surface Treatments," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 302.2. Materials, Section A. Aggregate. The fourth paragraph is voided and replaced by the following:

Furnish aggregates that meet the quality requirements shown in Table 3, unless otherwise shown on the plans. When Limestone Rock Asphalt (LRA) is used, furnish in accordance with DMS-9210, "Limestone Rock Asphalt (LRA)." Provide aggregates from sources listed in the Department's *Bituminous Rated Source Quality Catalog* (BRSQC). If a source is not listed in the catalog or its listed ratings do not meet requirements of the plans, material from that source may be used only when tested by the Engineer and approved before use. Allow 30 calendar days for testing of material from such sources.

Article 302.2. Materials, Section A. Aggregate, Table 2 is voided and replaced by the following:

Table 2
Aggregate Gradation Requirements (Cumulative % Retained[1])

Sieve	Grade								
	1	2	3S[2]	3		4S[2]	4	5S[2]	5[3]
				Non-lightweight	Lightweight				
1"	-	-	-	-	-	-	-	-	-
7/8"	0-2	0	-	-	-	-	-	-	-
3/4"	20–35	0–2	0	0	0	-	-	-	-
5/8"	85–100	20-40	0–5	0–5	0–2	0	0	-	-
1/2"	-	80–100	55–85	20–40	10–25	0–5	0–5	0	0
3/8"	95–100	95–100	95–100	80–100	60–80	60–85	20–40	0–5	0–5
1/4"	-	-	-	95–100	95–100	-	-	65–85	-
#4	-	-	-	-	-	95-100	95-100	95-100	50-80
#8	99–100	99–100	99–100	99–100	98–100	98–100	98–100	98–100	98–100

1. Round test results to the nearest whole number.
2. Single-size gradation.
3. Grade 5S may be substituted for Grade 5 for LRA only, unless otherwise approved by the Engineer.

Article 302.2. Materials, Section A. Aggregate. Table 3 is voided and replaced by the following:

Table 3
Aggregate Quality Requirements

Property	Test Method	Requirement	Remarks
SAC	AQMP	As shown on the plans	
Deleterious Material, %, Max	Tex-217-F, Part I	2.0	Not required for lightweight aggregate.
Decantation, %, Max	Tex-406-A	1.5	
Flakiness Index, Max	Tex-224-F	17	Unless otherwise shown on the plans
Los Angeles Abrasion, %, Max	Tex-410-A	35	
Magnesium Sulfate Soundness, 5 Cycle, %, Max	Tex-411-A	25	
Micro-Deval Abrasion, %, Max	Tex-461-A	–	Not used for acceptance purposes. Used by the Engineer as an indicator for further investigation.
Coarse Aggregate Angularity, 2 Crushed Faces, %, Min	Tex-460-A, Part I	85	Unless otherwise shown on the plans. Only required for crushed gravel
Additional Requirements for Lightweight Aggregate			
Dry Loose Unit Wt., lb./cu. ft.	Tex-404-A	35–60	
Pressure Slaking, %, Max	Tex-431-A	6.0	
Freeze-Thaw Loss, %, Max	Tex-432-A	10.0	
Water Absorption, 24°hr., %, Max	Tex-433-A	12.0	Unless otherwise shown on plans.

Article 302.2. Materials, Section B. Precoating. First paragraph is voided and replaced with the following:

When precoating is shown on the plans, precoat aggregate uniformly and adequately with asphalt material to the satisfaction of the Engineer. When shown on the plans, specific aggregates may be prohibited from being precoated. Meet Table 2 and 3 requirements before precoating. Furnish precoated aggregate that spreads uniformly using approved mechanical spreading equipment.

Article 302.2. Materials, Section B. Precoating, Section 1. Asphalt Material is voided and replaced with the following:

1**. Asphalt Material.** Precoat the aggregates with asphalt material that meets the requirements of Item 300, “Asphalts, Oils, and Emulsions.” Unless a specific precoat material is specified on the plans, use any asphalt material that meets the requirements of Item 300.

SPECIAL PROVISION

316---016

Surface Treatments

For this project, Item 316, "Surface Treatments", of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 316.3.A.3. Computerized Distributor. This section is voided and not replaced.

Article 316.4.D.3. Asphalt Material Designed for Winter Use. This section is voided and replaced by the following:

A. Cold Weather Surface Treatments. When asphalt application is allowed outside of the above temperature restrictions, the Engineer will approve the binder grade and the air and surface temperatures for asphalt material application. Apply surface treatment at air and surface temperatures as directed.

Article 316.5.A. Asphalt Material. This section is voided and replaced by the following:

B. Asphalt Material. Asphalt material will be measured at the applied temperature by strapping the tank just before and just after road application and determining the net volume in gallons from the distributor's calibrated strap stick. The quantity to be measured for payment will be the number of gallons used, as directed, in the accepted surface treatment.

SPECIAL PROVISION

318---010

Hot Asphalt-Rubber Surface Treatments

For this project, Item 318, "Hot Asphalt-Rubber Surface Treatments", of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 318.3.A. Distributor. The second sentence is voided and not replaced.

Articles 318.3.I. Truck Scales. This article is voided and not replaced.

Article 318.5. Measurement. The first paragraph is voided and replaced by the following:

A. A-R Binder. A-R binder, including all components, will be measured at the applied temperature by strapping the tank just before and just after road application and determining the net volume in gallons from the distributor's calibrated strap stick. The quantity to be measured for payment will be the number of gallons used, as directed, in the accepted surface treatment.

SPECIAL PROVISION

330---001

Limestone Rock Asphalt Pavement

For this project, Item 330, "Limestone Rock Asphalt Pavement," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 330.2. Materials is voided and replaced by the following:

A. LRA Mixture. Furnish LRA according to DMS-9210 of the type, grade, and surface aggregate classification shown on the plans.

B. Tack Coat. Unless otherwise shown on the plans or approved, furnish CSS-1H, SS-1H, or a performance-graded (PG) binder with a minimum high-temperature grade of PG 58 for tack coat binder in accordance with Item 300, "Asphalts, Oils, and Emulsions." Do not dilute emulsified asphalts at the terminal, in the field, or at any other location before use. If required, verify that emulsified asphalt proposed for use meets the minimum residual asphalt percentage specified in Item 300.

The Engineer will obtain at least one sample of the tack coat per project and test the sample for specification compliance. The Engineer will obtain the sample from the asphalt distributor, immediately before use.

Article 330.3 Equipment is voided and replaced by the following:

Provide required or necessary equipment in accordance with Item 320, "Equipment for Asphalt Concrete Pavement."

Article 330.4 Construction, Section A. QCP is voided and replaced by the following:

A. Quality Control Plan (QCP). Develop a written QCP and submit to the Engineer for approval prior to beginning production. Follow QCP in detail. Obtain approval from the Engineer for changes to the QCP made during the project. The Engineer may suspend operations if the Contractor fails to comply with the QCP.

Include the following items in the QCP:

1. **Project Personnel.** For project personnel, include:
   - a list of individuals responsible for quality control with authority to take corrective action and
   - contact information for each individual listed.

2. **Loading and Transporting.** For loading and transporting, include:
   - type and application method for release agents and
   - truck and rail car loading procedures to avoid segregation.

3. **Placement and Compaction.** For placement and compaction, include:
   - proposed arrangements for any required prepaving meetings, including dates and locations;
   - type and application method for release agents in the paver and on rollers, shovels, lutes, and other utensils;
   - procedures for the transfer of mixture into the paver while avoiding segregation and preventing material spillage;
   - process to balance production, delivery, paving, and compaction to achieve continuous placement operations;
   - paver operations (e.g., operation of wings, height of mixture in auger chamber) to avoid physical and thermal segregation and other surface irregularities; and
   - procedures to construct quality longitudinal and transverse joints.

Article 330.4 Construction, Section B. Stockpiling of Aggregates and LRA is voided and replaced by the following:

B. Stockpiling of LRA. If storing LRA at the project site, provide a smooth and well-drained area, cleared of trash, weeds, and grass. Stockpile, handle, and load LRA in a manner that will minimize aggregate degradation and segregation. Avoid contamination and mixing of stockpiles. The Engineer may reject stockpiled materials that come in contact with the earth or other objectionable material.

Article 330.4 Construction, Sections C. Storage and Heating of Fluxing Material, D. Job-Mix Formula, and E. Mixing are deleted and remaining Sections renumbered accordingly.

Article 330.5. Measurement is voided and replaced by the following.

LRA pavement will be measured by the ton of composite LRA pavement of the type actually used in the completed and accepted work in accordance with the plans and specifications for the project. Measure on scales in accordance with Item 520, "Weighing and Measuring Equipment." Keep records on tare weight, gross weight, and net weight of the LRA paving mixture for each load of the same type of mixture. The Construction Division will measure and report the moisture content of the LRA paving mixture used to determine payment at the plant. All water and light hydrocarbon volatiles in the mixture, in excess of 6.0% by weight at the time of weighing, will be deducted from the net weight to determine the quantity for payment.

SPECIAL PROVISION

340---003

Dense-Graded Hot-Mix Asphalt (Method)

For this project, Item 340, "Dense-Graded Hot-Mix Asphalt (Method)," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 340.2. Materials, Section A. Aggregate, Section 2. RAP is voided and replaced by the following:

2. RAP. RAP is salvaged, milled, pulverized, broken, or crushed asphalt pavement. Crush or break RAP so that 100% of the particles pass the 2-in. sieve.

Use of Contractor-owned RAP including HMA plant waste is permitted, unless otherwise noted in the plans. Department-owned RAP stockpiles are available for the Contractor's use when the stockpile locations are shown on the plans. Department-owned RAP generated through required work on the Contract is available for the Contractor's use when shown on the plans. Perform any necessary tests to ensure Contractor or Department-owned RAP is appropriate for use. Unless otherwise shown on the plans, the Department will not perform any tests or assume any liability for the quality of the Department-owned RAP.

Fractionated RAP is defined as having 2 or more RAP stockpiles whereas the RAP is divided into coarse and fine fractions. The coarse RAP stockpile will contain only material retained by processing over a 3/8 in. screen or 1/2 in. screen unless otherwise approved. The fine RAP stockpile will contain only material passing the 3/8 in. screen or 1/2 in. screen unless otherwise approved. The Engineer may allow the Contractor to use an alternate to the 3/8 in. screen or 1/2 in. screen to fractionate the RAP. The maximum percentages of fractionated RAP may be comprised of coarse or fine fractionated RAP or the combination of both coarse and fine fractionated RAP. Utilize a separate cold feed bin for each stockpile of fractionated RAP used.

Determine asphalt content and gradation of RAP stockpiles for mixture design purposes. Perform other tests on RAP when shown on the plans. Unless otherwise shown on the plans, use no more than 10% unfractionated RAP in surface mixtures and no more than 20% unfractionated RAP in non-surface mixtures that are placed within 8 in. of the final riding surface. Use no more than 30% unfractionated RAP in non-surface mixtures that are placed 8 in. or more from the final riding surface. Unless otherwise shown on the plans, use no more than 20% fractionated RAP in surface mixtures and no more than 30% fractionated RAP in non-surface mixtures that are placed within 8 in. of the final riding surface. Use no more than 40% fractionated RAP in non-surface mixtures that are placed 8 in. or more from the final riding surface. "Surface" mixtures are defined as mixtures that will be the final lift or riding surface of the pavement structure."Non-Surface" mixtures are defined as mixtures that will be an intermediate or base layer in the pavement structure. Do not use Department or Contractor owned RAP contaminated with dirt or other objectionable materials. Do not use Department or Contractor owned RAP if

the decantation value exceeds 5% and the plasticity index is greater than 8. Test the stockpiled RAP for decantation in accordance with the laboratory method given in Tex-406-A, Part I. Determine the plasticity index using Tex-106-E if the decantation value exceeds 5%. The decantation and plasticity index requirements do not apply to RAP samples with asphalt removed by extraction.

Do not intermingle Contractor-owned RAP stockpiles with Department-owned RAP stockpiles. Remove unused Contractor-owned RAP material from the project site upon completion of the project. Return unused Department-owned RAP to the designated stockpile location.

Article 340.2. Materials, Section A. Aggregate. is supplemented by the following:

4. Recycled Asphalt Shingles (RAS). The contractor may use post-manufactured RAS or post-consumer RAS; however, the use of post-consumer RAS may be restricted when shown on the plans. RAS are defined as processed asphalt shingle material from manufacturing of asphalt roofing shingles or from re-roofing residential structures. “Post-manufactured RAS” are processed manufacturer’s shingle scrap by-product. “Post-consumer RAS,” or “tear-offs,” are processed shingle scrap removed from residential structures.

Process the RAS by ambient grinding or granulating such that 100% of the particles pass the 1/2 in. sieve when tested in accordance with Tex-200-F, Part I. Add sand meeting the requirements of Table 1 and Table 2 to RAS stockpiles, if needed, to keep the processed material workable. Use a maximum of 4% sand by weight of RAS. Perform a sieve analysis on processed RAS material prior to extraction of the asphalt.

Determine asphalt content and gradation of the RAS material for mixture design purposes in accordance with Tex-236-F. Unless otherwise shown on the plans, use no more than 5% processed RAS of the total mixture weight. When RAS is used, whether in conjunction with RAP or not, calculate and ensure the ratio of the virgin binder to total binder is greater than 65% in surface mixtures and 60% in non-surface mixtures. “Surface” mixtures are defined as mixtures that will be final lifts or riding surfaces of a pavement structure. “Non-Surface” mixtures are defined as mixtures that will be intermediate or base layers in a pavement structure. When RAS is used in conjunction with fractionated RAP, use no more than 20% combined RAS and RAP for surface mixtures, and no more than 30% combined RAS and RAP in non-surface mixtures, unless otherwise shown on the plans. When RAS is used in conjunction with un-fractionated RAP, use no more than 10% combined RAS and RAP for surface mixtures, and no more than 20% combined RAS and RAP in non-surface mixtures, unless otherwise shown on the plans.

Certify compliance of the RAS with specification DMS-11000, “Evaluating and Using Nonhazardous Recyclable Materials Guidelines”. If the RAS has not come into contact with any hazardous materials, treat it as an established NRM. Do not use RAS if deleterious materials as measured by Tex-217-F, Part I, are more than 1.5% of the stockpiled RAS.

SPECIAL PROVISION

360---003

Concrete Pavement

For this project, Item 360, "Concrete Pavement," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 360.3. Equipment, Section E. Curing Equipment. The third sentence is voided and replaced by the following:

Provide curing equipment that is independent of all other equipment when required to meet the requirements of Article 360.4.I, "Curing."

Article 360.4. Construction, Section H. Spreading and Finishing, Section 2. Maintenance of Surface Moisture. The first and second sentences are voided and replaced by the following:

Prevent surface drying of the pavement before application of the curing system by means that may include water fogging, the use of wind screens and the use of evaporation retardants.

Article 360. 4. Construction, Section I. Curing. The first sentence is voided and replaced by the following:

Keep the concrete pavement surface from drying as described in Section 360.4.H.2, "Maintenance of Surface Moisture," until the curing material has been applied.

Article 360. 4. Construction, Section I. Curing, Section 1. Membrane Curing. The first paragraph is voided and replaced by the following:

Spray the concrete surface uniformly with 2 coats of membrane curing compound at an individual application rate of not more than 180 sq. ft. per gallon. Do not allow the concrete surface to dry before applying the curing compound. Use a towel or absorptive fabric to remove any standing pools of bleed water that may be present on the surface before applying the curing compound. Apply the first coat within 10 min. after completing texturing operations. Apply the second coat within 30 min. after completing texturing operations.

SPECIAL PROVISION

361---001

Full-Depth Repair of Concrete Pavement

For this project, Item 361, "Full-Depth Repair of Concrete Pavement," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 361.2. Materials is supplemented by the following:

- Item 438, "Cleaning and Sealing Joints and Cracks (Rigid Pavement and Bridge Decks)"
- DMS 6310, "Joint Sealants and Fillers"

Article 361.3. Construction. The second paragraph is voided and replaced by the following:

Remove or repair loose or damaged base material, and replace or repair it with approved base material to the original top of base grade. Place at least 1 in. of asphalt concrete or a polyethylene sheet at least 4 mils thick as a bond breaker at the interface of the base and the new pavement. Allow concrete used as a base material to attain sufficient strength to prevent displacement when placing pavement concrete.

Article 361.3.Construction. The fifth paragraph is voided and replaced by the following:

Cure repaired area for at least 72 hr. or until overlaid with asphalt concrete, if required, or until the area is opened to traffic. For repair areas to be opened to traffic before 72 hr.:

- Use curing mats to maintain a minimum concrete surface temperature of 70ºF when the air temperature is less than 70ºF.
- The Engineer may waive the requirements of Section 360.4.G.4, "Temperature Restrictions," but the repair areas must then be cured using wet curing mats.

Saw and seal contraction joints in the repair area in accordance with Item 360, "Concrete Pavement." Remove repair area debris from the right of way each day.

SPECIAL PROVISION

416---001

Drilled Shaft Foundations

For this project, Item 416, "Drilled Shaft Foundations," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 416.5. Payment, Section A. Drilled Shaft is voided and replaced by the following.

A. Drilled Shaft. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Drilled Shaft" or "Drilled Shaft (Non-reinforced)" or "Drilled Shaft (Sign Mounts)" or "Drilled Shaft (High Mast Pole)" or "Drilled Shaft (Roadway Illumination Pole)" or "Drilled Shaft (Traffic Signal Pole)" of the specified diameter, subject to the limitations for overruns authorized by the Engineer given in Section 416.5.A.1, "Overrun."

Article 416.5. Payment, Section A. Drilled Shaft, Section 2. Maximum Plan Length Shaft is supplemented by the following.

- For roadway illumination poles, the maximum plan length shaft is the maximum length shaft, regardless of diameter, for any roadway illumination pole included in the contract.
- For traffic signal poles, the maximum plan length shaft is the maximum length shaft, regardless of diameter, for any traffic signal pole included in the contract.

SPECIAL PROVISION

420---002

Concrete Structures

For this project, Item 420, "Concrete Structures," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 420.4. Construction, Section I, "Finish of Bridge Slabs". The tenth paragraph is supplemented with the following:

For bridge approach slabs the carpet drag, burlap drag, or broom finish may be applied either longitudinally or transversely.

Article 420.4. Construction, Section I, "Finish of Bridge Slabs". The first sentence of the fourteenth paragraph is voided and replaced by the following:

Unless noted otherwise, saw-cut grooves in the hardened concrete of bridge slabs, bridge approach slabs, and direct-traffic culverts to produce the final texturing after completion of the required curing period.

Article 420.4. Construction, Section I, "Finish of Bridge Slabs". The fourteenth paragraph is amended by the following:

When saw-cut grooves are not required in the plans, provide either a carpet drag or broom finish for micro-texture. In this case insure that an adequate and consistent micro-texture is achieved by applying sufficient weight to the carpet and keeping the carpet or broom from getting plugged with grout. For surfaces that do not have adequate texture, the Engineer may require corrective action including diamond grinding or shot blasting.

Article 420.4. Construction, Section J. Curing Concrete. The first sentence of the fourth paragraph is voided and replaced by the following:

For upper surfaces of bridge slabs, bridge approach slabs, median and sidewalk slabs, and culvert top slabs constructed using Class S concrete, apply interim curing using a Type 1-D curing compound before the water sheen disappears but no more than 45 minutes after application of the evaporation retardant. Do not allow the concrete surface to dry before applying the interim cure, and do not place the interim cure over standing water.

Article 420.6 Payment. The pay adjustment formula given in the sixth bullet of the fourth paragraph is voided and replaced by the following:

$A = Bp[-5.37(Sa/Ss)^2 + 11.69(Sa/Ss) – 5.32]$

Where:
A = Amount to be paid
Sa = Actual strength from cylinders or cores
Ss = Specified design strength
Bp = Unit bid price

SPECIAL PROVISION

421---035

Hydraulic Cement Concrete

For this project, Item 421, "Hydraulic Cement Concrete," of the Standard Specifications is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 421.2.D. Water, Table 1. Chemical Limits for Mix Water is voided and replaced by the following:

Table 1
Chemical Limits for Mix Water

Contaminant	Test Method	Maximum Concentration (ppm)
Chloride (Cl)	ASTM C 114	
Prestressed concrete		500
Bridge decks and superstructure		500
All other concrete		1,000
Sulfate (SO_4)	ASTM C 114	2,000
Alkalies ($Na_2O + 0.658K_2O$)	ASTM C 114	600
Total Solids	ASTM C 1603	50,000

Article 421.2.B. Supplementary Cementing Materials (SCM) is supplemented with the following:

6. **Modified Class F Fly Ash (MFFA).** Furnish MFFA conforming to DMS-4610, "Fly Ash."

Article 421.2.D. Water, Table 2. Acceptance Criteria for Questionable Water Supplies is voided and replaced by the following:

Table 2
Acceptance Criteria for Questionable Water Supplies

Property	Test Method	Limits
Compressive strength, min. % control at 7 days	ASTM C 31, ASTM C 39[1,2]	90
Time of set, deviation from control, h:min.	ASTM C 403[1]	From 1:00 early to 1:30 later

1. Base comparisons on fixed proportions and the same volume of test water compared to the control mix using 100% potable water or distilled water.
2. Base comparisons on sets consisting of at least two standard specimens made from a composite sample.

Article 421.2.E.1 Coarse Aggregate. The fourth paragraph is voided and replaced by the following:

Unless otherwise shown on the plans, provide coarse aggregate with a 5-cycle magnesium sulfate soundness when tested in accordance with Tex-411-A of not more than 25% when air

entrainment is waived and 18% when air entrainment is not waived. Crushed recycled hydraulic cement concrete is not subject to the 5-cycle soundness test.

Article 421.2.E.2 Fine Aggregate. The fifth paragraph is voided and replaced by the following:

Acid insoluble (%) = {(A1)(P1)+(A2)(P2)}/100
where:

A1 = acid insoluble (%) of aggregate 1
A2 = acid insoluble (%) of aggregate 2
P1 = percent by weight of aggregate 1 of the fine aggregate blend
P2 = percent by weight of aggregate 2 of the fine aggregate blend

Article 421.2.E.2. Fine Aggregate. The final paragraph is voided and replaced by the following:

For all classes of concrete, provide fine aggregate with a fineness modulus between 2.3 and 3.1 as determined by Tex-402-A.

Article 421.2.E. Aggregate is supplemented by the following:

4. **Intermediate Aggregate.** When necessary to complete the concrete mix design, provide intermediate aggregate consisting of clean, hard, durable particles of natural or lightweight aggregate or a combination thereof. Provide intermediate aggregate free from frozen material and from injurious amounts of salt, alkali, vegetable matter, or other objectionable material, and containing no more than 0.5% clay lumps by weight in accordance with Tex-413-A.

   If more than 30% of the intermediate aggregate is retained on the No. 4 sieve, the retained portion must meet the following requirements:

   - must not exceed a wear of 40% when tested in accordance with Tex-410-A.
   - must have a 5-cycle magnesium sulfate soundness when tested in accordance with Tex-411-A of not more than 25% when air entrainment is waived and 18% when air entrainment is not waived.

   If more than 30% of the intermediate aggregate passes the 3/8" sieve, the portion passing the 3/8" sieve must not show a color darker than standard when subjected to the color test for organic impurities in accordance with Tex-408-A and must have an acid insoluble residue, unless otherwise shown on the plans, for concrete subject to direct traffic equal to or greater than the value calculated with the following equation:

$$AIi_a \geq \frac{60 - (AI_{fa})(P_{fa})}{(P_{ia})}$$

   where:

   AI_{fa} = acid insoluble (%) of fine aggregate or fine aggregate blend
   P_{fa} = percent by weight of the fine aggregate or fine aggregate blend as a percentage of the total weight of the aggregate passing the 3/8" sieve in the concrete mix design
   P_{ia} = percent by weight of the intermediate aggregate as a percentage of the total weight of the aggregate passing the 3/8" sieve in the concrete mix design

Article 421.2.F. Mortar and Grout is supplemented by the following:

Section 421.4.A.6, "Mix Design Options," does not apply for mortar and grout.

Article 421.3.A. Concrete Plants and Mixing Equipment is supplemented by the following:

When allowed by the plans or the Engineer, for concrete classes not identified as structural concrete in Table 5 or for Class C concrete not used for bridge-class structures, the Engineer may inspect and approve all plants and trucks in lieu of the NRMCA or non-Department engineer sealed certifications. The criteria and frequency of Engineer approval of plants and trucks is the same used for NRMCA certification.

Article 421.3.A.2. Volumetric Mixers is supplemented by the following:

Unless allowed by the plans or the Engineer, volumetric mixers may not supply classes of concrete identified as structural concrete in Table 5.

Article 421.4.A Classification and Mix Design. The first paragraph is voided and replaced by the following:

Unless a design method is indicated on the plans, furnish mix designs using ACI 211, "Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete," Tex-470-A, or other approved procedures for the classes of concrete required in accordance with Table 5. Perform mix design and cement replacement using the design by weight method unless otherwise approved. Do not exceed the maximum water-to-cementitious-material ratio.

Article 421.4.A. Classification and Mix Design, Table 5 Concrete Classes is voided and replaced by the following:

Table 5
Concrete Classes

Class of Concrete	Design Strength, Min. 28-day f'_c (psi)	Maximum W/C Ratio[1]	Coarse Aggregate Grades[2,3]	General Usage[4]
A	3,000	0.60	1–4, 8	Inlets, manholes, curb, gutter, curb & gutter, conc. retards, sidewalks, driveways, backup walls, anchors
B	2,000	0.60	2–7	Riprap, small roadside signs, and anchors
C[5]	3,600	0.45	1–6	Drilled shafts, bridge substructure, bridge railing, culverts except top slab of direct traffic culverts, headwalls, wing walls, approach slabs, concrete traffic barrier (cast-in-place)
C(HPC)[5]	3,600	0.45	1-6	As shown on the plans
D	1,500	0.60	2–7	Riprap
E	3,000	0.50	2–5	Seal concrete
F[5]	Note 6	0.45	2–5	Railroad structures; occasionally for bridge piers, columns, or bents
F(HPC)[5]	Note 6	0.45	2–5	As shown on the plans
H[5]	Note 6	0.45	3–6	Prestressed concrete beams, boxes, piling, and concrete traffic barrier (precast)
H(HPC)[5]	Note 6	0.45	3–6	As shown on the plans
S[5]	4,000	0.45	2–5	Bridge slabs, top slabs of direct traffic culverts

Class of Concrete	Design Strength, Min. 28-day f'_c (psi)	Maximum W/C Ratio[1]	Coarse Aggregate Grades[2,3]	General Usage[4]
S(HPC)[5]	4,000	0.45	2–5	As shown on the plans
P	See Item 360	0.45	2–3	Concrete pavement
DC[5]	5,500	0.40	6	Dense conc. overlay
CO[5]	4,600	0.40	6	Conc. overlay
LMC[5]	4,000	0.40	6–8	Latex-modified concrete overlay
SS[5]	3,600[7]	0.45	4–6	Slurry displacement shafts, underwater drilled shafts
K[5]	Note 6	0.45	Note 6	Note 6
HES	Note 6	0.45	Note 6	Note 6

1. Maximum water-cement or water-cementitious ratio by weight.
2. Unless otherwise permitted, do not use Grade 1 coarse aggregate except in massive foundations with 4-in. minimum clear spacing between reinforcing steel bars. Do not use Grade 1 aggregate in drilled shafts.
3. Unless otherwise approved, use Grade 8 aggregate in extruded curbs.
4. For information only.
5. Structural concrete classes.
6. As shown on the plans or specified.
7. Use a minimum cementitious material content of 650 lb/cy of concrete. Do not apply Table 6 over design requirements to Class SS concrete.

Article 421.4.A. Classification and Mix Design, Table 6 Over Design to Meet Compressive Strength Requirements. Footnote 3 is supplemented by the following:

For Class K and concrete classes not identified as structural concrete in Table 5 or for Class C concrete not used for bridge-class structures, the Engineer may designate on the plans an alternative over-design requirement up to and including 1,000 psi for specified strengths less than 3,000 psi and up to and including 1,200 psi for specified strengths from 3,000 to 5,000 psi.

Article 421.4.A.1. Cementitious Materials is supplemented by the following:

The upper limit of 35% replacement of cement with Class F fly ash specified by mix design Options 1 and 3 may be increased to a maximum of 45% for mass placements, high performance concrete, and precast members when approved.

Article 421.4.A.3. Chemical Admixtures is supplemented by the following:

When a corrosion-inhibiting admixture is required, use a 30% calcium nitrite solution. The corrosion-inhibiting admixture must be set neutral unless otherwise approved. Dose the admixture at the rate of gallons of admixture per cubic yard of concrete shown on the plans.

Article 421.4.A.4 Air Entrainment is voided and replaced by the following:

Air entrain all concrete except for Class B and concrete used in drilled shafts unless otherwise shown on the plans. Unless otherwise shown on the plans, target an entrained air content of 4.0% for concrete pavement and 5.5% for all other concrete requiring air entrainment. To meet the air-entraining requirements, use an approved air-entraining admixture. Unless otherwise shown on the plans, acceptance of concrete loads will be based on a tolerance of ± 1.5% from the target air content. If the air content is more than 1.5 but less than 3.0% above the target air, the concrete

may be accepted based on strength tests. For specified concrete strengths above 5,000 psi, a reduction of 1% is permitted.

Article 421.4.A Table 7 Air Entrainment is voided.

Article 421.4.A.6. Mix Design Options. The first and second paragraphs are voided and replaced by the following:

For structural concrete identified in Table 5 and any other class of concrete designed using more than 520 lb. of cementitious material per cu. yd., use one of the mix design Options 1–8 shown below, unless otherwise shown on the plans.

For concrete classes not identified as structural concrete in Table 5 and designed using less than 520 lb. of cementitious material per cu. yd., use one of the mix design Options 1–8 shown below, except that Class C fly ash may be used instead of Class F fly ash for Options 1, 3, and 4 unless sulfate-resistant concrete is shown on the plans.

Do not use mix design Options 6 or 7 when High Performance Concrete (HPC) is required. Option 8 may be used when HPC is required provided: a minimum of 20% of the cement is replaced with a Class C fly ash; Tex-440-A, "Initial Time of Set of Fresh Concrete" is performed during mix design verification; the additional requirements for permeability are met; and the concrete is not required to be sulfate-resistant.

Article 421.4.A.6.b. Option 2 is voided and replaced by the following:

b. Option 2. Replace 35 to 50% of the cement with GGBFS or MFFA.

Article 421.4.A.6.c. Option 3 is voided and replaced by the following:

c. Option 3. Replace 35 to 50% of the cement with a combination of Class F fly ash, GGBFS, MFFA, UFFA, metakaolin, or silica fume; however, no more than 35% may be fly ash, and no more than 10% may be silica fume.

Article 421.4.A.6.f. Option 6 is voided and replaced by the following:

f. Option 6. Use lithium nitrate admixture at a minimum dosage determined by testing conducted in accordance with Tex-471-A, "Lithium Dosage Determination Using Accelerated Mortar Bar Testing." Before use of the mix, provide an annual certified test report signed and sealed by a licensed professional engineer, from a laboratory on the Department's List of Approved Lithium Testing Laboratories, certified by the Construction Division as being capable of testing according to Tex-471-A, "Lithium Dosage Determination Using Accelerated Mortar Bar Testing."

Article 421.4.A.6.g. Option 7 is voided and replaced by the following:

g. Option 7. When using hydraulic cement only, ensure that the total alkali contribution from the cement in the concrete does not exceed 3.5 lb. per cubic yard of concrete when calculated as follows:

$$\text{lb. alkali per cu. yd.} = \frac{(\text{lb. cement per cu. yd.}) \times (\%\ Na_2O \text{ equivalent in cement})}{100}$$

In the above calculation, use the maximum cement alkali content reported on the cement mill certificate.

Do not use Option 7 when any of the aggregates in the concrete are listed on the Department's List of Aggregate Sources Excluded from Option 7 ASR Mitigation.

Article 421.4.A.6.h. Option 8 is voided and replaced by the following:

h. Option 8. For any deviations from Options 1–5, perform annual testing on coarse, intermediate, and fine aggregate separately in accordance with ASTM C 1567. Before use of the mix, provide a certified test report signed and sealed by a licensed professional engineer, from a laboratory on the Department's List of Approved ASTM C 1260 Laboratories, demonstrating that the ASTM C 1567 test result for each aggregate does not exceed 0.08% expansion at 14 days.

Do not use Option 8 when any of the aggregates in the concrete are listed on the Department's List of Aggregate Sources Excluded from Option 8 ASR Mitigation. When HPC is required, provide a certified test report signed and sealed by a licensed professional engineer demonstrating that AASHTO T 277 test results indicate the permeability of the concrete is less than 1,500 coulombs tested immediately after either of the following curing schedules:

- Moist cure specimens 56 days at 73ºF.
- Moist cure specimens 7 days at 73ºF followed by 21 days at 100ºF.

Article 421.4.B. Trial Batches is supplemented by the following:

Once a trial batch substantiates the mix design, the proportions and mixing methods used in the trial batch become the mix design of record.

Article 421.4.B. Trial Batches. The fourth sentence of the second paragraph is voided and replaced by the following:

Test at least one set of design strength specimens, consisting of two specimens per set, at 7-day, 28-day, and at least one additional age.

Article 421.4.D. Measurement of Materials, Table 9 is voided and replaced by the following:

Table 9
Measurement Tolerances – Non-Volumetric Mixers

Material	Tolerance (%)
Cement, wt.	-1 to +3
SCM wt.	-1 to +3
Cement + SCM (cumulative weighing), wt.	-1 to +3
Water, wt. or volume	±3
Fine aggregate, wt.	±2
Coarse aggregate, wt.	±2
Fine + coarse aggregate (cumulative weighing), wt.	±1
Chemical admixtures, wt. or volume	±3

Article 421.4.E. Mixing and Delivering Concrete. The first paragraph is supplemented with the following:

Do not top-load new concrete onto returned concrete.

Article 421.4.E.3. Truck-Mixed Concrete. The first paragraph is voided and replaced by the following:

Mix the concrete in a truck mixer from 70 to 100 revolutions at the mixing speed designated by the manufacturer to produce a uniform concrete mix. Deliver the concrete to the project in a thoroughly mixed and uniform mass and discharge the concrete with a satisfactory degree of uniformity. Additional mixing at the job site at the mixing speed designated by the manufacturer is allowed as long as the requirements of Section 421.4.A.5, “Slump” and Section 421.4.E, “Mixing and Delivering Concrete” are met.

SPECIAL PROVISION

424---002

Precast Concrete Structures (Fabrication)

For this project, Item 424, "Precast Concrete Structures (Fabrication)," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 424.3. Construction, Section B. Fabrication, Section 4. Quality of Concrete. The first paragraph is voided and replaced by the following:

Provide concrete in accordance with Item 421, "Hydraulic Cement Concrete," except for the following:

- Air-entrained concrete will not be required in precast concrete members, unless otherwise shown on the plans.
- Use a minimum of 25% Class F fly ash with mix design Option 1 from Section 421.4.A.6, "Mix Design Options," for all precast concrete members.
- Do not use mix design Options 6, 7, or 8 from Section 421.4.A.6., "Mix Design Options" for all precast concrete members.

For each type of structure or unit, use the class of concrete shown on the plans or in the pertinent Item.

SPECIAL PROVISION

431---001

Pneumatically Placed Concrete

For this project, Item 431, "Pneumatically Placed Concrete," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 431.2 Materials. The first paragraph is supplemented with the following:

Unless otherwise shown on the plans pre-bagged materials meeting the following requirements may be used in lieu of Class I or II concrete:

- Min. Compressive strength of 5000 psi at 28 days tested per ASTM C 42,
- Max. Absorption of 17% tested per ASTM C 642,
- Max. 28-day permeability of 1500 coulombs tested per ASTM C 1202,
- Max. 28-day shrinkage of 0.10% per ASTM C 157, and
- Min. Slant Shear of 1500 psi tested per ASTM C 882,

Submit pre-bagged materials for approval. Material testing may be required prior to approval and installation test panels will be required in accordance with Section 431.2.D. "Proportioning and Mixing."

SPECIAL PROVISION
440---006
Reinforcing Steel

For this project, Item 440, "Reinforcing Steel" of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 440.2 Materials, Section A. Approved Mills is supplemented by the following:

Contact the Construction Division with the name and location of the producing mill for stainless steel reinforcement at least 4 weeks prior to ordering any material.

Article 440.2. Materials, Section D. Weldable Reinforcing Steel is supplemented by the following:

Do not weld stainless reinforcing steel without permission from the Engineer. If welding is required, provide stainless steel reinforcing suitable for welding and submit welding procedures and electrodes to the Engineer for approval.

Article 440.2. Materials, Section F. Epoxy Coating. The second paragraph is voided and replaced by the following:

Furnish coated reinforcing steel meeting the requirements in Table 3.

Article 440.2. Materials, Section F. Epoxy Coating. Paragraph four is voided and not replaced.

Article 440.2. Materials, Section G. Mechanical Couplers is voided and replaced by the following:

When mechanical splices in reinforcing steel bars are shown on the plans, use couplers of the type specified in DMS-4510, "Mechanical Couplers for Reinforcing Steel," Article 4510.5.A, "General Requirements."

Furnish only couplers produced by a manufacturer pre-qualified in accordance with DMS-4510. Do not use sleeve-wedge type couplers on coated reinforcing. Sample and test couplers for use on individual projects in accordance with DMS-4510. Furnish couplers only at locations shown on the plans.

Furnish couplers for stainless reinforcing steel with the same alloy designation as the reinforcing steel.

Article 440.2. Materials is supplemented by the following:

H. Fibers. When allowed by the plans, supply fibers at the minimum dosage listed on the Material Producer List maintained by the Materials and Pavements Section of the Construction Division. When shown on the plans, use fibers that do not corrode due to carbonation of concrete or the use of deicing salts.

I. Stainless Steel. When stainless reinforcing steel is required in the plans, provide deformed steel bars of the types listed in Table 3a and conforming to ASTM A 955, GR 60 or higher.

Table 3a
Acceptable Types of Deformed Steel Bar

UNS Designation	S31653	S31803	S24100	S32304
AISI Type	316LN	2205	XM-28	2304

Article 440.3.Construction, Section A. Bending is supplemented by the following:

Bend stainless reinforcing steel in accordance with ASTM A955.

Article 440.3.Construction, Section C. Storage is supplemented by the following:

Do not allow stainless steel reinforcement to be in direct contact with uncoated steel reinforcement, nor with galvanized reinforcement. This does not apply to stainless steel wires and ties. Store stainless steel bar reinforcement separately, off the ground on wooden supports.

Article 440.3. Construction, Section D. Splices. The fifth bullet is voided and replaced by the following:

- For box culvert extensions with less than 1 ft. of fill, lap the existing longitudinal bars with the new bars as shown in Table 5. For extensions with more than 1 ft. of fill, lap at least 1 ft. 0 in.

Article 440.3. Construction, is supplemented by the following:

G. Handling and Placing Stainless Steel Reinforcing.
Handle, cut, and place stainless steel bar reinforcement using tools that are not used on carbon steel. Do not use carbon steel tools, chains, slings, etc. when handling stainless steel. Use only nylon or polypropylene slings. Cut stainless steel using shears, saws, abrasive cutoff wheels, or torches. Remove any thermal oxidation using pickling paste. Do not field bend stainless steel without approval.

Use 16 gauge fully annealed stainless steel tie wire conforming to the material properties listed in 440.2.I. “Stainless Steel”. Support all stainless steel on solid plastic, stainless steel, or epoxy coated steel chairs. Do not use uncoated carbon steel chairs in contact with stainless steel.

SPECIAL PROVISION

441---007

Steel Structures

For this project, Item 441, "Steel Structures," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 441.3, "Construction," Section A, "General Requirements," Section 1, "Applicable Codes," is voided and replaced by the following:

Perform all fabrication in accordance with AASHTO/NSBA Steel Bridge Collaboration S2.1, including fabrication of non-bridge members. Follow all applicable provisions of the appropriate AWS code (D1.5 or D1.1) except as otherwise noted in the plans or in this Item. Weld sheet steel (thinner than 1/8 in.) in accordance with ANSI/AWS D1.3, Structural Welding Code—Sheet Steel. Unless otherwise stated, requirements of this Item are in addition to the requirements of S2.1. In case of a conflict between this Item and S2.1, follow the more stringent requirement. Perform all bolting in accordance with Item 447, "Structural Bolting."

Article 441.3, "Construction," Section A, "General Requirements," Section 5, "Qualification of Plant, Laboratories, and Personnel," Section b, "Nondestructive Examination (NDE)," is voided and replaced by the following:

Personnel performing NDE must be qualified in accordance with the applicable AWS code. Level III personnel that qualify Level II inspectors shall be certified in accordance with CP189. Testing agencies and individual third-party contractors must also successfully complete periodic audits for compliance, performed by the Department. In addition, ultrasound technicians must pass a hands-on test administered by the Construction Division. A technician who fails the hands-on test must wait 6 months before taking the test again. Qualification to perform ultrasonic testing for the Department will be revoked when the technician's employment is terminated, and recertification based on a new hands-on test will be required.

Article 441.3, "Construction," Section A, "General Requirements," Section 8, "Submerged-Arc Welding (SAW)," is voided and replaced by the following:

a. Submerged-Arc Welding(SAW). Provide equipment with automatic guidance capable of maintaining the position of the arc and controlling the speed of travel so that, when once set by the operator, little manipulation is needed. Small adjustments to compensate for acceptable plate waviness, acceptable tilt of flange, etc. will be permitted. Do not use hand-held semiautomatic SAW for welding bridge members unless altered to provide automatic guidance to otherwise approved.

b. Flux Cored Arc Welding (FCAW). Flux Cored Arc Welding is permitted on web to flange welds provided an external shielding gas is used.

Article 441.3, "Construction," Section A, "General Requirements," Section 9, "Inspection." The second paragraph is voided and replaced by the following:

Provide the Inspector with the helpers and equipment needed to move material to allow inspection. QC is solely the responsibility of the Contractor. The Contractor must have a QC staff qualified in accordance with the applicable AWS code. Welding inspectors must be current AWS Certified Welding Inspectors. The QC staff must provide inspection of all materials and workmanship prior to inspection by the Department.

Article 441.3, "Construction," Section B, "Welding," Section 5, "Nondestructive Examination (NDE)," Section c, "Magnetic Particle Testing." The first sentence is voided and not replaced.

Article 441.3, "Construction," Section D, "Dimensional Tolerances," Section 2, "Flange Straightness." The second sentence is voided and replaced by the following:

Rolled material must meet this straightness requirement before being laid out or worked.

Article 441.3, "Construction," Section D, "Dimensional Tolerances," Section 3, "Alignment of Deep Webs in Welded Field Connection." The first sentence is voided and replaced by the following:

For girders 48 in. deep or deeper, the webs may be slightly restrained while checking compliance with tolerances of S2.1 for lateral alignment at welded field connections.

Article 441.3, "Construction," Section D, "Dimensional Tolerances," Section 4, "Bearings," Section c, "Shoes," is supplemented by the following:

- For a pin and rocker type expansion shoe, the axis of rotation coincides with the central axis of the pin.
- When the shoe is completely assembled, as the top bolster travels through its full anticipated range, no point in the top bolster plane changes elevation by more than 1/16 in. and the top bolster does not change inclination by more than 1 degree, for the full possible travel.

Article 441.3, "Construction," Section D, "Dimensional Tolerances," Section 4, "Bearings," is supplemented by the following:

d. Beam supports. Fabricate beam support planes true to the box girder bearing to 1/16 in. in the short direction and true to the vertical axis of the nesting girders to 1/16 in.

Article 441.3, "Construction," Section G, "Shop Assembly," Section 1, "General Shop Assembly." The first paragraph is voided and replaced by the following:

1. General Shop Assembly. Shop-assemble field connections of primary members of trusses, arches, continuous beam spans, bents, towers (each face), plate girders, field connections of floor beams and stringers (including for railroad structures), field-bolted plate diaphragms for curved plate girders and railroad underpasses, and rigid frames. Field-bolted crossframes and rolled-section diaphragms do not require shop assembly. Complete fabrication, welding (except for shear studs), and field splice preparation before members are removed from shop assembly. Obtain approval for any deviation from this procedure. The Contractor is responsible for accurate geometry.

SPECIAL PROVISION

442---016

Metal for Structures

For this project, Item 442, "Metal for Structures," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 442.2, "Materials," Section A, "Structural Steel," Section 1, "Bridge Structures." The third sentence is voided and not replaced.

Article 442.5, "Payment," is voided and replaced by the following:

442.5. Payment. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Structural Steel" of the type (Rolled Beam, Plate Girder, Tub Girder, Box Girder, Railroad Through-Girder, Railroad Deck-Girder, Miscellaneous Bridge, Miscellaneous Non-Bridge) specified. This price is full compensation for materials, fabrication, transportation, erection, paint, painting, galvanizing, equipment, tools, labor, and incidentals.

SPECIAL PROVISION

447---002

Structural Bolting

For this project, Item 447, “Structural Bolting,” of the Standard Specifications is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 447. Section 4. Construction, Section C. Preparation of Faying Surfaces. The second paragraph is voided and replaced by the following:

Perform blast-cleaning or painting of faying surfaces in accordance with Item 446, "Cleaning and Painting Steel." Provide an SSPC-SP 10 blast cleaning prior to shipment if surfaces to be in contact after final bolting will be left unpainted. Do not wire-brush uncoated faying surfaces. Roughen galvanized faying surfaces by hand wire-brushing. For main girder splices, perform a brush-blast to provide an SSPC-SP 6 finish not sooner than 48 hours prior to assembling the connection unless otherwise approved.

Article 447.4. Construction, Section D. Bolt Installation, Section 3. Tension Bolts is supplemented by the following:

Tension all bolts in a connection within 10 days of installation. Bolts not tensioned within 10 days of installation are subject to field R-C testing. Relubricate or replace any installed bolts that do not have sufficient lubrication as determined by the field R-C test.

Article 447.4. Construction, Section E. Bolt Tensioning, Section 1. Turn-of-the-Nut Method, Table 2. Note 1 below Table 2 is voided and replaced by the following:

1. Nut rotation is relative regardless of the element (nut or bolt) being turned. The tolerance is –0°, +30° for bolts installed by 1/2 turn or less and –0°, +45° for bolts installed by 2/3 turn or more.

SPECIAL PROVISION

448---002

Structural Field Welding

For this project, Item 448, "Structural Field Welding," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 448.3 Equipment is voided and replaced by the following:

Provide electrode drying and storing ovens that can maintain the required temperatures specified in Section 448.4.C.1, "Electrode Condition." Each oven must have a door that is sealed and can be latched. Each oven must have a small port that may be opened briefly to insert a thermometer or the oven must be equipped with a thermometer that allows for direct reading of temperature inside the oven without opening the oven. Provide equipment able to preheat and maintain the temperature of the base metal as required and as shown on the plans. Provide approved equipment, temperature indicator sticks, infrared thermometer, etc., for checking preheat and interpass temperatures at all times while welding is in progress. Provide welding equipment meeting the requirements of the approved welding procedure specifications (WPS), if required, and capable of making consistent high-quality welds.

Article 448.4.B.2.Certified Steel Structures Welder. The second bulleted item is voided and replaced by the following:

- Use metal for test plates that meets Item 442, "Metal for Structures," with a minimum yield point of 36 ksi. The minimum width of test plate must be sufficient to accommodate the radiograph inspection of 6 continuous inches of the weld, not counting the ends of the weld.

Article 448.4.C.5. Welding Practice. The second paragraph is voided and replaced by the following:

Use the stringer-bead technique where possible for groove welds. In vertical welding passes, progress upward using a back-step sequence keeping the end of the low-hydrogen electrode contained within the molten metal and shield of flux, unless the electrode manufacturer's specifications indicate otherwise

Article 448.4.C.7. Radiographic Inspection is supplemented by the following:

Meet the requirements specified in Section 441.3.B.5.a, "Radiographic Testing" for radiograph film quality.

SPECIAL PROVISION

462---015

Concrete Box Culverts and Storm Dains

For this project, Item, 462, "Concrete Box Culverts and Storm Drains," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 462.2. Materials, Section A. General. The last two paragraphs are voided and replaced by the following:

Furnish material for machine-made precast boxes in accordance with DMS-7310, "Reinforced Concrete Pipe and Machine-Made Precast Box Culvert Fabrication and Plant Qualification."

Article 462.2. Materials, Section B. Fabrication, 3. Machine-Made Precast is voided and replaced by the following:

Machine-made precast box culvert fabrication plants must be approved in accordance with DMS-7310, "Reinforced Concrete Pipe and Machine-Made Precast Box Culvert Fabrication and Plant Qualification." The Construction Division maintains a list of approved machine-made precast box culvert plants.

Fabricate machine-made precast boxes in accordance with DMS-7310.

Article 462.2. Materials, Section C. Testing, 2. Formed Precast is voided and replaced by the following:

Make, cure, and test compressive test specimens in accordance with Tex-704-I.

Article 462.2 Materials, Section C. Testing, 3. Machine-Made Precast is voided and replaced by the following:

Make, cure, and test compressive test specimens in accordance with DMS-7310.

Article 462.2. Materials, Section D. Lifting Holes. The first paragraph is voided and replaced by the following:

For precast boxes, provide no more than 4 lifting holes in each section. Lifting holes may be cast, cut into fresh concrete after form removal, or drilled. Provide lifting holes of sufficient size for adequate lifting devices based on the size and weight of the box section. Do not use lifting holes larger than 3 in. in diameter. Do not cut more than 5 in. in any direction of reinforcement per layer for lifting holes.

Article 462.2. Materials, Section E. Marking. The first paragraph is voided and replaced by the following:

Mark precast boxes with the following:

- name or trademark of fabricator and plant location;
- ASTM designation;
- date of manufacture;
- box size;
- minimum and maximum fill heights;
- designated fabricator's approval stamp;
- boxes to be used for jacking and boring (when applicable);
- designation "SR" for boxes meeting sulfate-resistant concrete plan requirements (when applicable); and
- match marks for proper installation, when required under Section 462.2.F, "Tolerances."

Article 462.2. Materials, Section F. Tolerances. is voided and replaced by the following:

Ensure that precast sections meet the permissible variations listed in ASTM C 1577 and the following requirement:

- The sides of a section at each end do not vary from being perpendicular to the top and bottom by more than 1/2 in. when measured diagonally between opposite interior corners.

Ensure that wall and slab thicknesses are not less than shown on the plans except for occasional deficiencies not greater than 3/16 in. or 5%, whichever is greater. If proper jointing is not affected, thicknesses in excess of plan requirements are acceptable.

Deviations from the above tolerances will be acceptable if the sections can be fitted at the plant or job site and the joint opening at any point does not exceed 1 in. Use match marks for proper installation on sections that have been accepted in this manner.

1. **Boxes for Jacking Operations.** For boxes to be used for jacking operations (as defined in Item 476, "Jacking, Boring, or Tunneling Pipe or Box,") meet the following additional requirements:
    - The box ends must be square such that no point deviates more than 3/8 in. from a plane placed on the end of the box that is perpendicular to the box sides, and
    - The slab and wall thicknesses must not be less than specified on the plans and must not exceed the specified thickness by more than 1/2 in.

Article 462.2. Materials, Section G. Defects and Repair. The following paragraph is added:

Repair machine-made precast boxes in accordance with DMS-7310, "Reinforced Concrete Pipe and Machine-Made Precast Box Culvert Fabrication and Plant Qualification."

Article 462.2. Materials, Section H. Storage and Shipment. The following paragraph is added:

Store and ship machine-made precast boxes in accordance with DMS-7310, "Reinforced Concrete Pipe and Machine-Made Precast Box Culvert Fabrication and Plant Qualification."

Article 462.3 Construction, Section C. Jointing. The first paragraph is voided and replaced by the following:

Unless otherwise shown on the plans, use any of the jointing materials in accordance with the joint requirements specified in Item 464, "Reinforced Concrete Pipe." Rubber gasketed joints may be substituted for tongue and groove joints, provided they meet the requirements of ASTM C 1677 for design of the joints and permissible variations in dimensions.

SPECIAL PROVISION

464---006

Reinforced Concrete Pipe

For this project, Item 464, "Reinforced Concrete Pipe," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 464.2. Materials, Section A. Fabrication is voided and replaced by the following:

Fabrication plants must be approved by the Construction Division in accordance with DMS-7310, "Reinforced Concrete Pipe and Machine-Made Precast Concrete Box Culvert Fabrication and Plant Qualification," before furnishing precast reinforced concrete pipe for Department projects. The Construction Division maintains a list of approved reinforced concrete pipe plants.

Furnish material and fabricate reinforced concrete pipe in accordance with DMS-7310, "Reinforced Concrete Pipe and Machine-Made Precast Concrete Box Culvert Fabrication and Plant Qualification."

Article 464.2. Materials, Section B. Design, 1. General. Table 2 is voided and replaced by the following:

Table 2
Arch Pipe

Design Size	Equivalent Diameter (in.)	Rise (in.)	Span (in.)
1	18	13-1/2	22
2	21	15-1/2	26
3	24	18	28-1/2
4	30	22-1/2	36-1/4
5	36	26-5/8	43-3/4
6	42	31-5/16	51-1/8
7	48	36	58-1/2
8	54	40	65
9	60	45	73
10	72	54	88

Article 464.2 Materials, Section C. Physical Test Requirements is voided and not replaced.

Article 464.2. Materials, Section D. Markings. The first paragraph is voided and replaced by the following:

Furnish each section of reinforced concrete pipe marked with the following information specified in DMS-7310, "Reinforced Concrete Pipe and Machine-Made Precast Concrete Box Culvert Fabrication and Plant Qualification":

- class or D-Load of pipe,
- ASTM designation,
- date of manufacture,
- pipe size,
- name or trademark of fabricator and plant location,
- designated fabricator's approval stamp,
- pipe to be used for jacking and boring (when applicable), and
- designation "SR" for pipe meeting sulfate-resistant concrete plan requirements (when applicable).

Article 464.2. Materials, Section E. Inspection is voided and replaced by the following:

Provide access for inspection of the finished pipe at the project site before and during installation.

Article 464.2. Materials, Section F. Causes for Rejection is voided and replaced by the following:

Individual section of pipe may be rejected for any of the conditions stated in the Annex of DMS-7310, "Reinforced Concrete Pipe and Machine-Made Precast Concrete Box Culvert Fabrication and Plant Qualification."

Article 464.2. Materials, Section G. Repairs is voided and replaced by the following:

Make repairs if necessary as stated in the Annex of DMS-7310, "Reinforced Concrete Pipe and Machine-Made Precast Concrete Box Culvert Fabrication and Plant Qualification."

Article 464.2. Materials, Section H. Rejections is voided and not replaced.

SPECIAL PROVISION

476---003

Jacking, Boring, or Tunneling Pipe or Box

For this project, Item 476, "Jacking, Boring, or Tunneling Pipe or Box," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 476.3. Construction, Section A. Jacking. The third paragraph is voided and replaced by the following:

Ensure that excavation for the underside of the pipe for at least 1/3 of the circumference of the pipe conforms to the contour and grade of the pipe. Ensure that the excavation for the bottom slab of the box conforms to the grade of the box. If desired, over excavate to provide not more than 2 in. of clearance for the upper portion of the pipe or box. Taper this clearance to zero at the point where the excavation conforms to the contour of the pipe or box. When jacking of pipe has begun, the operation shall be carried on without interruption, insofar as practicable, to prevent the pipe from becoming firmly set in the embankment. Pressure-grout any over excavation of more than 1 in. When shown on the plans, pressure-grout between the carrier pipe and casing.

Article 476.3. Construction, Section B. Boring. The fifth paragraph is voided and replaced by the following:

1. **Larger Diameter Boring Methods**. For drainage and large utility borings, use the pilot hole or auger method. Pressure-grout any over excavation of more than 1 in. When shown on the plans, pressure-grout between the carrier pipe and casing.

    a. **Pilot Hole Method**. Bore a 2 in. pilot hole the entire length of the crossing, and check it for line and grade on the opposite end of the bore from the work shaft. This pilot hole will serve as centerline for the larger diameter hole to be bored.

    b. **Auger Method**. Use a steel encasement pipe of the appropriate diameter equipped with a cutter head to mechanically perform the excavation. Use augers of sufficient diameter to convey the excavated material to the work shaft.

2. **Electrical and Communication Conduit Boring.** For electrical and communication conduit borings, limit over excavation to the dimensions shown in Table 1. Increased boring diameters will be allowed for outer diameters of casing and couplings. Pressure grouting will not be required for electrical and communication conduit borings.

Table 1

Allowable Bore Diameter for Electrical or Communication Conduit or Casing

Single Conduit Bores		**Multiple Conduit Bores**	
Conduit Size (in.)	Maximum Allowable Bore (in.)	Conduit Size (in.)[1]	Maximum Allowable Bore (in.)
2	4	4	6
3	6	5	8
4	6	6	10
6	10	7	12
		8	12

1. The diameter of multiple conduits is the sum of the outside diameter of the two largest conduits for placement of up to 4 conduits in one bore. Submit boring diameters for the Engineer's approval when more than 4 conduits are to be placed in a bore.

Article 476.3. Construction, Section C. Tunneling is supplemented by the following:

When shown on the plans, pressure-grout between the carrier pipe and liner plate.

SPECIAL PROVISION

492---001

Timber Preservative and Treatment

For this project, Item 492, "Timber Preservative and Treatment," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 492.2 Materials. Table 1 Minimum Retention of Preservative is voided and replaced by the following:

Table 1
Minimum Retention of Preservative

Product	Creosote (lb./cu. ft.)	Creosote–Coal Tar Solution (lb./cu. ft.)	Pentachlorophenol (lb./cu. ft.)	Copper Naphthenate (lb./cu. ft.)	ACA[1] or CCA[2] (lb./cu. ft.)	AWPA Standard for Treatment
AWPA Preservative Standard	**P1/P13**	**P2**	**P8/P9**	**P8/P9**	**P5**	
Timber piling for land or freshwater use, including foundation piles[3]	12		0.6	0.10		C3
Timber piling for use in coastal waters[3]	20	20				C18
Round guard fence posts[4]	10		0.5	0.069	0.5	C14
Rectangular guard fence posts[4]	12		0.6	0.075	0.5	C14
Guard fence blocks[4]	10		0.5	0.069	0.5	C14
Wire fence posts (round)[4]	8		0.4	0.055	0.4	C5
Sign posts[4]	10		0.5	0.060	0.4	C14
Timber and lumber[5]	12		0.6	0.075	0.6	C14
Structural glued laminated timber[6]	10		0.6	0.060	0.4[7]	C28

1. Ammoniacal copper arsenate
2. Chromated copper arsenate
3. Retention determined by assay (0 to 3.0-in. zone except 0 to 2.0-in. zone for foundation piles in land and freshwater use)
4. Retention determined by assay (0 to 1.0-in. zone)
5. Retention determined by assay (0 to 0.6-in. zone for up to 2-in.-thick material, and 0 to1.0-in. zone for over 2-in.-thick material)
6. Retention determined by assay (0.5 to 1.0-in. zone)
7. Treat individual laminations before gluing

SPECIAL PROVISION

500---011

Mobilization

For this project, Item 500, "Mobilization," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 500.1. Description is supplemented by the following:

Work for this Item includes submissions required by the Contract.

Article 500.3. Payment, Section A is voided and replaced by the following:

A. Payment will be made upon presentation of a paid invoice for the payment or performance bonds and required insurance. The combined payment for bonds and insurance will be no more than 10% of the mobilization lump sum or 1% of the total Contract amount, whichever is less. However, payment will be made for the actual cost of the paid invoice when the combined payment for bonds and insurance exceeds 10% of the mobilization lump sum or 1% of the total Contract amount, whichever is less.

Article 500.3. Payment, Section F is voided and replaced by the following:

F. Upon final acceptance, 97% of the mobilization lump sum bid will be paid. Previous payments under this Item will be deducted from this amount.

Article 500.3. Payment is supplemented by the following:

G. Payment for the remainder of the lump sum bid for "Mobilization" will be made after all submittals are received, final quantities have been determined and when any separate vegetative establishment and maintenance, test and performance periods provided for in the Contract have been successfully completed.

SPECIAL PROVISION

502---033

Barricades, Signs, and Traffic Handling

For this project, Item 502, "Barricades, Signs, and Traffic Handling," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 502.4. Payment, Section C. Maximum Total Payment Prior to Acceptance is voided and replaced by the following:

C. Maximum Total Payment Prior to Acceptance. The total payment for this Item will not exceed 10% of the total Contract amount before final acceptance in accordance with Article 5.8, "Final Acceptance." The remaining balance will be paid in accordance with Section 502.4.E, "Balance Due."

SPECIAL PROVISION

530---006

Intersections, Driveways, and Turnouts

For this project, Item 530, "Intersections, Driveways, and Turnouts," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 530.5. Payment. The first paragraph is voided and replaced by the following:

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Intersections," "Driveways," "Turnouts," "Intersections, Driveways, and Turnouts," or "Driveways and Turnouts" of the surface specified.

SPECIAL PROVISION

540---031

Metal Beam Guard Fence

For this project, Item 540, "Metal Beam Guard Fence," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 540.2. Materials, Section A. Metal Beam Rail Elements. The first paragraph is replaced by the following:

Furnish new metal beam rail elements for rail, terminal anchor sections, transitions and downstream anchor terminal that meet the requirements of Table 1.

The third paragraph is replaced by the following:

Furnish metal beam rail elements from a manufacturer on the Department's approved Material Producer List, entitled "Metal Beam Guard Fence Rail Element Manufacturers."

Article 540.2. Materials, Section B. Posts, Section 2. Steel Posts is voided and replaced by the following:

2. Steel Posts. Provide rolled sections conforming to the material requirements of ASTM A 36. Drill or punch posts for standard rail attachment as shown on the plans. Galvanize in accordance with Item 445, "Galvanizing." Low fill culvert posts may be fabricated as galvanized "blanks" with the hole to accept the rail and the final height field fabricated. Treat all exposed post surfaces caused by the field fabrication in accordance with Section 445.3.D. "Repairs."

Article 540.2. Materials, Section B. Posts, Table 1, Rail Element Requirements. The section entitled "**Markings"** is voided and replaced by the following:

Markings	Permanently mark each metal beam rail element with the information required in AASHTO M 180. Permanently mark all curved sections of metal beam rail element, in addition, with the radius of the curved section in the format "R=xx ft." These additional markings (die-imprinted) must be on the back of the metal beam rail section away from traffic and visible after erection.

Article 540.2. Materials, Section B. Posts is supplemented by the following:

3. Composite Posts. Meet the requirements of DMS-7210, "Composite Material Posts and Blocks for Metal Beam Guard Fence."

Article 540.2. Materials is supplemented by the following:

H. Terminal Anchor Posts. Furnish new terminal anchor posts from steel conforming to the material requirements of ASTM A 36. Fabricate posts in accordance with Item 441, "Steel Structures." Galvanize terminal anchor posts after fabrication in accordance with Item 445, "Galvanizing."

I. Driveway Terminal Anchor Posts. Furnish new terminal anchor posts from steel conforming to the material requirements of ASTM A 36. Fabricate posts in accordance with Item 441, "Steel Structures." Galvanize terminal anchor posts after fabrication in accordance with Item 445, "Galvanizing."

J. Downstream Anchor Posts. Furnish new terminal anchor posts consisting of new rectangular timber and new steel foundation tubes in accordance with details shown in the plans.

K. Downstream Anchor Hardware. Furnish new hardware (brackets, plates, struts, cable, etc.) in accordance with the details shown on the plans and galvanized in accordance with Item 445, "Galvanizing."

L. Controlled Released Terminal (CRT) Posts. Furnish new controlled released terminal (CRT) posts conforming to the requirements of DMS-7200, "Timber Posts and Blocks for Metal Beam Guard Fence." in accordance to the details shown on the plans.

Article 540.3. Construction, Section B. Rail Elements is supplemented by the following:

Short Radius. Special rail fabrication will be required at installations having a curvature of less than 150 ft. radius. The required radius shall be as shown on the plans. Short radius metal beam guard fence requires the placement of controlled release terminal (CRT) posts of the quantity shown on the plans.

Article 540.3. Construction is supplemented by the following:

G. Driveway Terminal Anchor Posts. Embed terminal anchor posts in concrete unless otherwise shown on the plans.

Article 540.4. Measurement is supplement by the following:

D. Short Radius. Measurement will be by the foot to the nearest whole foot along the face of the rail in place, from beginning of radius (and first CRT post) to the end of radius.

E. Driveway Terminal Anchor Section. Measurement will be by each section, complete in place, consisting of a driveway terminal anchor post and one 6 ft. section of rail element.

F. Downstream Anchor Terminal. Measurement will be by each section, complete in place, consisting of two downstream anchor posts and one 9 ft. – 4 ½" section of rail element.

G. Long Span System. Measurement will be by the foot of fence. Fence shall be measured on the face of the rail in place, from first CRT post in the system to the last CRT post in the system.

Article 540.5. Payment. The first paragraph is voided and replaced by the following:
540.5. Payment. The work performed and material furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Metal W-Beam Guard Fence" of the post type specified, "Metal Thrie-Beam Guard Fence" of the post type specified, "Terminal Anchor Section," "Metal Beam Guard Fence Transition" of the type specified, "Metal W-Beam Guard Fence Adjustment," "Metal Thrie-Beam Guard Fence Adjustment," "Terminal Anchor Section Adjustment," "Transition Adjustment," "Short Radius," "Driveway Terminal Anchor Section, "Downstream Anchor Terminal," or "Metal Beam Guard Fence (Long Span System)." When weathering steel is required, Type IV will be specified.

Article 540.5. Payment, Section C. Transition is voided and replaced by the following:

C. Transition. The price bid for "Metal Beam Guard Fence Transition" is full compensation for furnishing nested sections of thrie-beam; nested sections of W-beam; thrie-beam-to-W-beam transitional rail piece, posts, concrete, curb, and connections to W-beam guard fence and bridge rails; thrie-beam terminal connectors and terminal connectors; excavation and backfilling; and equipment, labor, tools, and incidentals.

Article 540.5. Payment is supplemented by the following:

E. Short Radius. The price bid for "Short Radius" is full compensation for furnishing special rail fabricated metal beam guard fence, controlled release terminal (CRT) posts, materials, hauling, erection, blocks, driving posts, excavating, backfilling, equipment, labor, tools, and incidentals.

F. Driveway Terminal Anchor Section. The price bid for "Driveway Terminal Anchor Section " is full compensation for furnishing the rail element, driveway anchor assembly, driveway terminal anchor post, and foundations; installing the rail element anchor assembly and the driveway terminal anchor post and foundations; excavation and backfilling; and equipment, labor, tools, and incidentals.

G. Downstream Anchor Terminal. The price bid for "Downstream Anchor Terminal" is full compensation for furnishing the rail element, w-beam end section, guardrail anchor bracket, shelf angle bracket, channel strut, downstream anchor posts, Breakaway Cable Terminal (BCT) cable anchor assembly, and foundations; installing the BCT cable anchor assembly and the downstream anchor post and foundations; excavation and backfilling; and equipment, labor, tools, and incidentals.

H. Long Span System. The price bid for "Metal Beam Guard Fence (Long Span System)" is full compensation for furnishing the rail element, controlled release terminal (CRT) posts, materials, hauling, erection, blocks, driving posts, excavating, backfilling, equipment, labor, tools, and incidentals.

SPECIAL PROVISION

544---001

Guardrail End Treatments

For this project, Item 544, "Guardrail End Treatments," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 544.5 Payment. The first sentence is voided and replaced by the following:

The work performed and the materials furnished in accordance with this Item and measured as provided for under "Measurement" will be paid for at the unit price bid for "Guardrail End Treatment (Install,)" of the post and type specified where applicable, "Guardrail End Treatment (Move and Reset), or "Guardrail End Treatment (Remove)."

SPECIAL PROVISION

560---001

Mailbox Assemblies

For this project, Item 560, "Mailbox Assemblies," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 560.5. Payment is voided and replaced by the following:

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Mailbox Installation (Single)," of the type specified, "Mailbox Installation (Double)," of the type specified, or "Mailbox Installation (Multiple)," of the type specified. This price is full compensation for installing mailboxes and reflectors in permanent locations, materials, equipment, labor, tools, and incidentals. Removing existing and temporary mailbox assemblies and installing and moving temporary mailbox assemblies will not be paid for directly, but will be subsidiary to pertinent Items.

SPECIAL PROVISION

610---015

Roadway Illumination Assemblies

For this project, Item 610, "Roadway Illumination Assemblies," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 610.2. Materials. The fourth paragraph is voided and replaced by the following:

Do not provide shop drawings for complete assemblies that are fabricated in accordance with this Item and standard details shown on the plans. Electronically submit shop drawings for optional multi-sided steel pole designs, optional aluminum pole designs, and non-standard designs required when basic wind speeds and/or pole base mounting heights at the installation locations are in excess of that shown on the Roadway Illumination Pole (RIP) standard. Manufacturers may request that the Department add the shop drawings and design calculations they submit for this Item to a pre-approved list of optional and non-standard pole designs. The submittal requirements and procedures for these optional and non-standard illumination pole shop drawings and calculations are linked to the "Shop Drawings" page located online at:

http://www.dot.state.tx.us/business/contractors_consultants/bridge/shop_drawings/default.htm

SPECIAL PROVISION

620---001

Electrical Conductors

For this project, Item 620, "Electrical Conductors," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 620.2 Materials. The fourth and fifth paragraphs are void and replaced by the following:

Use white insulation for grounded (neutral) conductors, except that grounded conductors AWG No. 4 and larger may be black with white tape marking at every accessible location. Do not use white insulation or marking for any other conductor except control wiring specifically shown on the plans.

Ensure that insulated grounding conductors are green except that insulated grounding conductors AWG No. 4 and larger may be black with green tape marking at every accessible location. Do not use green insulation or marking for any other conductor except control wiring specifically shown on the plans.

SPECIAL PROVISION

624---014

Ground Boxes

For this project, Item 624, "Ground Boxes," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 624.1. Description is voided and replaced by the following:

Construct, furnish, and install ground boxes complete with lids. Remove existing ground boxes.

Article 624.2 Construction and Materials. The first paragraph is voided and replaced by the following:

Provide new materials that comply with the details shown on the plans and meet the following requirements:

- Construct cast-in-place concrete ground boxes and aprons in accordance with Item 420, "Concrete Structures," and Item 440, "Reinforcing Steel."
- Provide fabricated precast polymer concrete ground boxes, and precast concrete ground boxes that comply with DMS-11070, "Ground Boxes."
- Construct a concrete apron, when shown on the plans, in accordance with Item 432, "Riprap," and Item 440, "Reinforcing Steel."

Article 624.2. Construction and Materials is supplemented by the following:

Remove existing ground boxes to at least 6 in. below the conduit level. Uncover conduit to a sufficient distance so that 90 degree bends can be removed and conduit reconnected. Clean the conduit in accordance with Item 618, "Conduit" and pull, splice, or terminate new conductors as indicated in the plans. Cleaning of conduit is subsidiary to this Item. Pulling, splicing, or terminating conductors will be paid under Item 620, "Electrical Conductors." Backfill area to ground level with acceptable material upon completing adjacent work related to conduit and conductors.

Article 624.3. Measurement is voided and replaced by the following:

This Item will be measured by each ground box complete in place or by each ground box removed.

Article 624.4. Payment is voided and replaced by the following:

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Ground Boxes" of the types and sizes specified and for "Remove Existing Ground Boxes." This price is full compensation for excavating and backfilling; constructing, furnishing, installing, and removing the ground boxes and concrete aprons when required; and equipment, labor, materials, tools, and incidentals.

SPECIAL PROVISION

628---003

Electrical Services

For this project, Item 628, "Electrical Services," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 628.5. Payment, **A. Installation** is voided and replaced by the following:

A. Installation. Except as provided for in the following paragraph, this price is full compensation for paying all fees, permits, and other costs; making arrangements with the utility company for all work and materials provided by the utility company; furnishing, installing, and connecting all components including poles, service supports, foundations, anchor bolts, riprap, enclosures, switches, breakers, conduit (from the service equipment including the elbow below ground), fittings, conductors (from the service equipment including the elbow below ground), brackets, bolts, hangers, and hardware; and equipment, labor, tools, and incidentals.

Costs for utility-owned power line extensions, connection charges, meter charges, and other charges will be paid for by the Department. The Department will reimburse the contractor the amount billed by the utility plus an additional 5% of the invoice cost will be paid for labor, equipment, administrative costs, superintendence, and profit.

SPECIAL PROVISION

636---014

Aluminum Signs

For this project, Item 636, "Aluminum Signs," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 636.1. Description is voided and replaced by the following:

- **Installation.** Furnish, fabricate, and erect signs. Sign supports are provided for under other Items.
- **Replacement.** Replace existing signs on existing sign supports.
- **Refurbishing.** Refurbish existing signs on existing sign supports.

Article 636.2. Materials, Section A. Sign Blanks is voided and replaced by the following:

A. Sign Blanks. Furnish sign blank substrates in accordance with DMS-7110, "Aluminum Sign Blanks" or DMS-8305, "Fiberglass Sign Substrate," and in accordance with the types shown on the plans. Use single-piece sheet-aluminum substrates for Type A (small) signs. Use either extruded aluminum or fiberglass substrates for Type G (ground-mounted) or Type O (overhead-mounted) signs as shown on the plans.

Article 636.2. Materials, Section B. Sign Face Reflectorization is supplemented by the following:

Ensure that sign legend, symbols, borders, and background exhibit uniform color, appearance, and retroreflectivity when viewed both day and night.

Article 636.2. Materials, Section C. Sign Messages. The last two bullets are voided and replaced by the following:

- Fabricate non-reflective black film legend from materials meeting DMS-8300.
- Furnish direct-applied route markers and other attachments within the parent sign face, unless otherwise specified in the plans.

Article 636.2. Materials, Section D. Hardware is supplemented by the following:

Furnish sign hardware for fiberglass signs in accordance with the fiberglass substrate manufacturer's recommendations.

Article 636.3. Construction, Section A. Fabrication, Part 1. Sign Blanks. The first paragraph is voided and replaced by the following:

Furnish sign blanks to the sizes and shapes shown on the plans and that are free of buckles, warps, burrs, dents, cockles, or other defects. Do not splice individual extruded aluminum or fiberglass panels.

Article 636.3. Construction, Section A. Fabrication, Part 2. Sheeting Application is voided and replaced by the following:

2. Sheeting Application. Apply sheeting to sign blanks in conformance with the sheeting manufacturer's recommended procedures. Meet the fabrication requirements of DMS-8300, Section 8300.7.F, "Sign Fabrication" for white, orientation non-compliant sheeting listed on the Department's Material Producer List entitled "Sign Face Materials." Clean and prepare the outside surface of extruded aluminum or fiberglass flanges in the same manner as the sign panel face.

Minimize the number of splices in the sheeting. Overlap the lap-splices by at least 1/4 in. Use butt splices for Type C microprismatic, Type D, and Type E reflective sheeting. Provide a 1-ft. minimum dimension for any piece of sheeting. Do not splice sheeting for signs fabricated with transparent screen inks or colored transparent films.

Article 636.3. Construction, Section A. Fabrication, Part 3. Sign Assembly. The first paragraph is voided and replaced by the following:

3. Sign Assembly. Assemble extruded aluminum signs in accordance with the details shown on the plans. Assemble fiberglass signs in accordance with the fiberglass manufacturer's recommendations located on the Department's Material Producer List entitled "Fiberglass Sign Substrates." Sign face surface variation must not exceed 1/8 in. per foot. Surface misalignment between panels in multi-panel signs must not exceed 1/16 in. at any point.

Article 636.3. Construction, Section B. Storage and Handling. The last paragraph is voided and replaced by the following:

Store all finished signs off the ground and in a vertical position until erected. Store finished sheet-aluminum substrate signs in a weatherproof building. Extruded aluminum and fiberglass substrate signs may be stored outside.

Article 636.3. Construction, Section E. Replacement is supplemented by the following:

Mounting hardware for fiberglass signs will be per the fiberglass substrate manufacturer's recommendations.

Article 636.3. Construction, Section H. Documentation is added.

H. Documentation. Provide a notarized original of the Signing Material Statement (Form 2273) with the proper attachments for verification of compliance.

Article 636.5. Payment. The first paragraph is voided and replaced by the following:

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Aluminum Signs," "Fiberglass Signs," "Signs," "Replacing Existing Aluminum Signs," "Replacing Existing Fiberglass Signs," "Refurbishing Aluminum Signs," or "Refurbishing Fiberglass Signs," of the type specified.

Article 636.5. Payment, Section B. Replacement is voided and replaced by the following:

B. Replacement. This price is full compensation for: furnishing and installing new aluminum or fiberglass signs and hardware; removal of existing signs; fabrication of sign panels; treatment of sign panels required before application of the background materials; application of the background materials and messages to the sign panels; furnishing and fabricating frames, wind beams, stiffeners, or required joint backing strips; furnishing bolts, rivets, screws, fasteners, clamps, brackets, and sign support connections; assembling and erecting the signs; preparing and cleaning the signs; salvaging and disposing of unsalvageable material; and equipment, materials, labor, tools, and incidentals.

SPECIAL PROVISION

643---001

Sign Identification Decals

For this project, Item 643, "Sign Identification Decals," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 643.2. Materials. Figure 1 and Table 1 are replaced by the following:

TxDOT												
C	**Fabrication Date**										**T**	**1**
J	F	M	A	M	J	J	A	S	O	N	D	**2**
	200		201		202		203		204			**3**
	0	1	2	3	4	5	6	7	8	9		**4**
Sheeting MFR - Substrate												
A	B	C	D	E	F	G	H	J	K	L	M	**5**
Film/Ink MFR												
A	B	C	D	E	F	G	H	J	K	L	M	**6**
Sheeting MFR - Legend												
A	B	C	D	E	F	G	H	J	K	L	M	**7**
Installation Date												
				0	1	2	3					**8**
	0	1	2	3	4	5	6	7	8	9		**9**
J	F	M	A	M	J	J	A	S	O	N	D	**10**
	200		201		202		203		204			**11**
	0	1	2	3	4	5	6	7	8	9		**12**

Figure 1
Decal Design (row numbers explained in Table 1).

Table 1
Decal Description

Row Explanation
1 – Sign Fabricator
2 – Month Fabricated
3 – First 3 Digits of Year Fabricated
4 – Last Digit of Year Fabricated
5 – Manufacturer of the Sheeting Applied to the Substrate
6 – Film (colored transparent or non-reflective black) or Screen Ink Manufacturer
7 – Manufacturer of the Sheeting for the Legend
8 – Tens digit of Date Installed
9 – Ones Digit of Date Installed
10 – Month Installed
11 – First 3 Digits of Year Installed
12 – Last Digit of Year Installed

Article 643.3. Construction, Section A. Sign Fabricator. Replace the first bullet with the following:

- "C" if fabricated by a commercial sign fabricator or "T" if fabricated by the Department or the Texas Department of Criminal Justice,

Article 643.3. Construction, Section A. Sign Fabricator. Replace the last bullet with the following:

- sheeting, film, and ink manufacturers (codes for these manufacturers are located in the Department's approved Material Producer List, "Sign Face Materials")

Article 643.3. Construction, Section B. Contractor. This section is voided and not replaced.

SPECIAL PROVISION

672---034

Raised Pavement Markers

For this project, Item 672, "Raised Pavement Markers," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 672.2. Materials, Section B. Adhesives is supplemented by the following:

- The Contractor may propose alternate adhesive materials for consideration and approval by the Engineer.

Article 672.3. Construction. The sixth paragraph is voided and replaced by the following:

Use the following adhesive materials for placement jiggle bar tile, reflectorized pavement markers, and traffic buttons unless otherwise shown on the plans:

- standard or flexible bituminous adhesive for applications on bituminous pavements.
- epoxy adhesive or flexible bituminous adhesive for applications on hydraulic cement concrete pavements.

Use epoxy adhesive for plowable reflectorized pavement markers.

Article 672.3. Construction is supplemented by the following:

Provide a 30-day performance period that begins the day following written acceptance for each separate location. The date of written acceptance will be the last calendar day of each month for the RPMs installed that month for the completed separate project locations. This written acceptance does not constitute final acceptance.

Replace all missing, broken or non-reflective RPMs. Visual evaluations will be used for these determinations. Upon request, the Engineer will allow a Contractor representative to accompany the Engineer on these evaluations.

The Engineer may exclude RPMs from the replacement provisions of the performance, provided the Engineer determines that the failure is a result of causes other than defective material or inadequate installation procedures. Examples of outside causes are extreme wear at intersections, damage by snow or ice removal, and pavement failure.

Replace all missing or non-reflective RPMs identified during the performance period within 30 days after notification. The end of the performance period does not relieve the Contractor from the performance deficiencies requiring corrective action identified during the performance period.

Article 672.5. Payment is supplemented by the following:

No additional payment will be made for replacement of RPMs failing to meet the performance requirements.

RPMs INSTALLATION RECORD

The 30 day performance period begins the day after written acceptance for each separate location. The date of written acceptance will be the last calendar day of each month for the RPMs installed that month for the completed separate project locations.

COUNTY HIGHWAY	CONTROL PROJECT	LIMITS FROM LIMITS TO	MONTH/YR OF INSTALLATION

Contractor signature _____ _____
Date

Department signature _____ _____
Date

SPECIAL PROVISION

681---002

Temporary Traffic Signals

For this project, Item 681, "Temporary Traffic Signals," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 681.4. Payment. The third paragraph is voided and replaced by the following:

Costs for utility-owned power line extensions, connection charges, meter charges, and other charges will be paid for by the Department. The Department will reimburse the contractor the amount billed by the utility plus an additional 5% of the invoice cost will be paid for labor, equipment, administrative costs, superintendence, and profit.

SPECIAL PROVISION

682---003

Vehicle and Pedestrian Signal Heads

For this project, Item 682, "Vehicle and Pedestrian Signal Heads," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 682.2. Materials, Section B. General. The first and second paragraphs are voided and replaced by the following:

Provide vehicle signal heads in accordance with DMS-11120, "Vehicle Signal Heads" and DMS-11121, "12 Inch LED Traffic Signal Lamp Unit." Provide vehicle signal heads from manufacturers prequalified by the Department. The Traffic Operations Division maintains a list of prequalified vehicle signal head manufacturers.

Provide pedestrian signal heads in accordance with DMS-11130, "Pedestrian Signal Heads," and DMS-11131, "Pedestrian LED Countdown Signal Modules." Provide pedestrian signal heads from manufacturers pre-qualified by the Department. The Traffic Operations Division maintains a list of pre-qualified pedestrian signal head manufacturers.

SPECIAL PROVISION

685---014

Roadside Flashing Beacon Assemblies

For this project, Item 685, "Roadside Flashing Beacon Assemblies," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 685.5. Payment. The second paragraph is voided and replaced by the following:

New conduit will be paid for under Item 618, "Conduit", except for conduit in the foundation and within 6 inches of the foundation. New electrical conductors will be paid for under Item 620, "Electrical Conductors." New tray cable will be paid for under Item 621, "Tray Cable." New duct cable will be paid for under Item 622, "Duct Cable." New ground boxes will be paid for under Item 624, "Ground Boxes". New electrical services will be paid for under Item 628, "Electrical Services." New signs will be paid for under Item 634, "Plywood Signs," or Item 636, "Aluminum Signs." New signal heads will be paid for under Item 682,"Vehicle and Pedestrian Signal Heads." New traffic signal cable will be paid for under Item 684, "Traffic Signal Cable."

Article 685.5. Payment, A. Installation is voided and replaced by the following:

A. Installation. This price is full compensation for furnishing, fabricating, galvanizing, assembling, and erecting the roadside flashing beacon assemblies; foundations; conduit in the foundation and within 6 inches of the foundation; furnishing and placing anchor bolts, nuts, washers, and templates; controller; and equipment, materials, labor, tools, and incidentals.

Article 685.5. Payment, B. Relocation is voided and replaced by the following:

B. Relocation. This price is full compensation for removing the roadside flashing beacon assemblies; removing existing foundations; installing new foundations; installing new conduit in the foundation and within 6 inches of the foundation; furnishing, fabricating, and installing any new components as required and replacing the assembly on its new foundations with all manipulations and electrical work; controller; salvaging; disposal of unsalvageable material; loading and hauling; and equipment, material, labor, tools, and incidentals.

SPECIAL PROVISION

687---004

Pedestal Pole Assemblies

For this project, Item 687, "Pedestal Pole Assemblies," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 687.2. Materials is supplemented by the following:

C. Pedestrian Push Button Pole Assembly. Provide diameter as shown in the plans, schedule 40 steel pipe or tubing, aluminum pipe (alloy 6061-T6), or rigid metal conduit. Do not use aluminum conduit. Galvanize pedestrian push button post in accordance with Item 445, "Galvanizing," unless otherwise shown on the plans.

Article 687.3 Construction. The second and third paragraphs are voided and replaced by the following:

B. Installation. Install pedestal pole assemblies and pedestrian push button pole assemblies as shown on the plans or as directed. Pedestal pole assemblies include foundation, pole shaft, base, anchor bolts, anchor bolt nuts, anchor bolt template, shims, and miscellaneous components. Pedestrian push button post assemblies include foundation, pole, pedestrian button and post cap and pedestrian sign.

C. Painted Finish. When required, paint pedestal pole and pedestrian push button post assemblies in accordance with details shown on the plans.

Article 687.4 Measurement is voided and replaced by the following:

This Item will be measured by each pedestal pole assembly or each pedestrian push button post assembly."

Article 687.5 Payment is voided and replaced by the following:

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Pedestal Pole Assembly" or by the unit bid price for "Pedestrian Push Button Post Assembly."

SPECIAL PROVISION
TO
SPECIAL SPECIFICATION
1122--001
Temporary Erosion, Sedimentation, and Environmental Controls

For this project, Special Specification Item 1122, "Temporary Erosion, Sedimentation, and Environmental Controls" is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 3.C. Training is supplemented by the following:

The Environmental Management System (EMS) eLearning Courses and Department's EMS Policy Statement can be found at http://txdot.gov/business/ems_courses.htm. The following training has been developed in compliance with the Department's EMS program.

All Contractor and subcontractor employee's involved in the earthwork activities, small or large structures, storm water control measures, and seeding activities must complete the following training located at to https://www.txdot.gov/inside-txdot/division/environmental/programs/ems-courses.html. Training is provided by the Department at no cost to the Contractor and is valid for 3 years from the date of completion. The Engineer may require training at a frequency less than 3 years based on environmental needs.

- "Environmental Management System: Awareness Training for the Contractor (English and Spanish) (Approximate running time 20 minutes)," and
- "Storm Water: Environmental Requirements During Construction (English and Spanish) (Approximate running time 20 minutes)."

The CRPe, alternate CRPe designated for emergencies, Contractor's superintendent, and Contractor and subcontractor lead personnel involved in SWP3 activities must enroll and complete the training located at http://www.uta.edu/ced/static/ttsenvonline.shtml. Training is provided by a third party and is valid for 3 years from the date shown on the Certificate of Completion. Coordinate enrollment through the third party and pay associated fees for the following training:

- "Revegetation During Construction,"
- "Construction General Permit Compliance," and
- "Construction Stage Gate Checklist (CSGC)."

Training and associated fees will not be measured or paid for directly but are considered subsidiary to this Item.

SPECIAL PROVISION
TO
SPECIAL SPECIFICATION
6266--017
Video Imaging Vehicle Detection System

For this project, Special Specification Item 6266, "Video Imaging Vehicle Detection System," is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 1. **Description.** The second paragraph is voided and replaced by the following:

A VIVDS configuration for a single intersection will consist of variable focal length cameras, VIVDS card rack processor system, and all associated equipment required to setup and operate in a field environment including a video monitor and/or laptop (if required), connectors and camera mounting hardware.

Article 6. **Camera Assembly, Section B. Camera and Lens Assembly.** Section 2 is voided and replaced by the following:

2. The enclosure must allow the camera to operate satisfactorily over an ambient temperature range from -30°F to +140°F while exposed to precipitation as well as direct sunlight.

SPECIAL PROVISION
TO
SPECIAL SPECIFICATION
6473--001
Multipolymer Pavement Markings (MPM)

For this project, Special Specification Item 6473, "Multipolymer Pavement Markings (MPM)," is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 3. **Equipment, Section C. Retroreflectivity, Section 2. Mobile Retroreflectometer** is voided and replaced by the following:

2. Mobile Retroreflectometer. Provide a mobile retroreflectometer that:

- is approved by the Construction Division (CST) and certified by the Texas Transportation Institute Mobile Retroreflectomter Certification Program for project evaluation of retroreflectivity
- is calibrated daily, before measuring retroreflectivity on any pavement stripe, with a portable retroreflectometer meeting the following requirements: ASTM E 1710, entrance angle of 88.76°, observation angle of 1.05°, and an accuracy of ±15%;
- requires no traffic control when retroreflectivity measurements are taken and is capable of taking continuous readings at posted speeds

Furnish mobile retroreflectivity measurements in compliance with Special Specification Mobile Retroreflectivity Data Collection for Pavement Markings unless otherwise approved by the Engineer. The Engineer may require an occasional field comparison check with a portable retroreflectometer meeting the requirements listed above to insure accuracy.

SPECIAL PROVISION
TO
SPECIAL SPECIFICATION
6834--002
Portable Changeable Message Sign

For this project, Special Specification Item 6834, "Portable Changeable Message Sign," is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 2. **Materials, Section A. Minimum Luminance Requirements**, is voided and not replaced.

Article 2. **Materials, Section C. Changeable Message Sign.** The second paragraph is voided and replaced by the following:

Provide a sign with 3 separate lines of text and 8 characters per line minimum. Provide a minimum 18 in. character height. Provide a 5 x 7 character pixel matrix. Provide a message legibility distance of 600 ft. for nighttime conditions and 800 ft. for normal daylight conditions. Provide for manual and automatic dimming light sources.

SPECIAL SPECIFICATION

1122

Temporary Erosion, Sedimentation, and Environmental Controls

1. Description. Install, maintain, and remove erosion, sedimentation, and environmental control measures to prevent or reduce the discharge of pollutants in accordance with the Storm Water Pollution Prevention Plan (SWP3) as provided in the plans and the Texas Pollutant Discharge Elimination System (TPDES) General Permit TXR150000. Control measures are defined as Best Management Practices used to prevent or reduce the discharge of pollutants. Control measures include but are not limited to rock filter dams, temporary pipe slope drains, temporary paved flumes, construction exits, earthwork for erosion control, pipe, construction perimeter fence, sandbags, temporary sediment control fence, biodegradable erosion control logs, vertical tracking, temporary or permanent seeding, and other measures. Perform work in a manner to prevent degradation of receiving waters, facilitate project construction, and comply with applicable federal, state, and local regulations. Ensure the installation and maintenance of control measures is performed in accordance with the manufacturer's or designer's specifications.

By signing the Contractor Certification of Compliance, the Contractor certifies they have read and understand the requirements applicable to this project pertaining to the SWP3, the plans, and the TPDES General Permit TXR150000. The Contractor is responsible for any penalties associated with non-performance of installation or maintenance activities required for compliance. Provide the Contractor Certification of Compliance to the Engineer prior to performing earthwork operations. The most current version of the Contractor Certification of Compliance can be found at http://txdot.gov/business/ems_courses.htm. A sample of the language has been attached to this specification. Ensure the most current version of the certificate is executed for this project.

2. Materials. Furnish materials in accordance with the following:

- Item 161, "Compost"
- Item 432, "Riprap"
- Item 556, "Pipe Underdrains"

A. Rock Filter Dams.

1. Aggregate. Furnish aggregate with hardness, durability, cleanliness, and resistance to crumbling, flaking, and eroding acceptable to the Engineer. Provide the following:

- **Types 1, 2, and 4 Rock Filter Dams.** Use 3 to 6 in. aggregate.
- **Type 3 Rock Filter Dams.** Use 4 to 8 in. aggregate.

2. Wire. Provide minimum 20 gauge galvanized wire for the steel wire mesh and tie wires for Types 2 and 3 rock filter dams. Type 4 dams require:

- A double-twisted, hexagonal weave with a nominal mesh opening of 2-1/2 in. x 3-1/4 in.;
- Minimum 0.0866 in. steel wire for netting;
- Minimum 0.1063 in. steel wire for selvages and corners; and minimum 0.0866 in. for binding or tie wire.

3. Sandbag Material. Furnish sandbags meeting "Sandbags for Erosion Control," except that any gradation of aggregate may be used to fill the sandbags.

B. Temporary Pipe Slope Drains. Provide corrugated metal pipe, polyvinyl chloride (PVC) pipe, flexible tubing, watertight connection bands, grommet materials, prefabricated fittings, and flared entrance sections that conform to the plans. Recycled and other materials meeting these requirements are allowed if approved.

Furnish concrete in accordance with Item 432, "Riprap."

C. Temporary Paved Flumes. Furnish asphalt concrete, hydraulic cement concrete, or other comparable non-erodible material that conforms to the plans. Provide rock or rubble with a minimum diameter of 6 in. and a maximum volume of 1/2 cu. ft. for the construction of energy dissipaters.

D. Construction Exits. Provide materials that meet the details shown on the plans and this Section.

1. Rock Construction Exit. Provide crushed aggregate for long and short-term construction exits. Furnish aggregates that are clean, hard, durable, and free from adherent coatings such as salt, alkali, dirt, clay, loam, shale, soft or flaky materials and organic and injurious matter. Use 4- to 8-in. aggregate for Type 1 and 2- to 4-in. aggregate for Type 3.

2. Timber Construction Exit. Furnish No. 2 quality or better railroad ties and timbers for long-term construction exits, free of large and loose knots and treated to control rot. Fasten timbers with nuts and bolts or lag bolts, of at least 1/2 in. diameter, unless otherwise shown on the plans or allowed. For short-term exits, provide plywood or pressed wafer board at least 1/2 in. thick.

3. Foundation Course. Provide a foundation course consisting of flexible base, bituminous concrete, hydraulic cement concrete, or other materials as shown on the plans or directed.

E. Embankment for Erosion Control. Provide rock, loam, clay, topsoil, or other earth materials that will form a stable embankment to meet the intended use.

F. Pipe. Provide pipe outlet material in accordance with Item 556, "Pipe Underdrains," and details shown on the plans.

G. Construction Perimeter Fence.

1. **Posts.** Provide essentially straight wood or steel posts that are at least 60 in. long. Furnish soft wood posts with a minimum diameter of 3 in. or use 2 x 4 boards. Furnish hardwood posts with a minimum cross-section of 1-1/2 x 1-1/5 in. Furnish T- or L-shaped steel posts with a minimum weight of 1.3 lb. per foot.

2. **Fence.** Provide orange construction fencing as approved by the Engineer.

3. **Fence Wire.** Provide 12-1/2 gauge or larger galvanized smooth or twisted wire. Provide 16 gauge or larger tie wire.

4. **Flagging.** Provide brightly-colored flagging that is fade-resistant and at least 3/4 in. wide to provide maximum visibility both day and night.

5. **Staples.** Provide staples with a crown at least 1/2 in. wide and legs at least 1/2 in. long.

6. **Used Materials.** Previously used materials meeting the applicable requirements may be used if accepted by the Engineer.

H. Sandbags. Provide sandbag material of polypropylene, polyethylene, or polyamide woven fabric with a minimum unit weight of 4 oz. per square yard, a Mullen burst-strength exceeding 300 psi, and an ultraviolet stability exceeding 70%.

Use natural coarse sand or manufactured sand meeting the gradation given in Table 1 to fill sandbags. Filled sandbags must be 24 to 30 in. long, 16 to 18 in. wide, and 6 to 8 in. thick.

Table 1
Sand Gradation

Sieve #	Retained (% by Weight)
4	MAXIMUM 3%
100	MINIMUM 80%
200	MINIMUM 95%

Aggregate may be used in lieu of sand for situations where sandbags are not adjacent to traffic. The aggregate size shall not exceed 3/8 in.

I. Temporary Sediment Control Fence. Provide a net-reinforced fence using woven geo-textile fabric. Logos visible to the traveling public will not be allowed.

1. **Fabric.** Provide fabric materials in accordance with DMS-6230, "Temporary Sediment Control Fence Fabric."

2. **Posts.** Provide essentially straight wood or steel posts with a minimum length of 48 in., unless otherwise shown on the plans. Soft wood posts must be at least 3 in. in diameter or nominal 2 x 4in. Hardwood posts must have a minimum cross-section of 1-1/2 x 1-1/2 in. T- or L-shaped steel posts must have a minimum weight of 1.3 lb. per foot.

3. **Net Reinforcement.** Provide net reinforcement of at least 12-1/2 gauge galvanized welded wire mesh, with a maximum opening size of 2 x 4 in., at least 24 in. wide, unless otherwise shown on the plans.

4. **Staples.** Provide staples with a crown at least 3/4 in. wide and legs 1/2 in. long.

5. **Used Materials.** Use recycled material meeting the applicable requirements if accepted by the Engineer.

J. Biodegradable Erosion Control Logs.

1. **Core Material.** Furnish core material that is biodegradable or recyclable. Except where specifically called out in plans, material may be compost, mulch, aspen excelsior wood fibers, chipped site vegetation, agricultural rice or wheat straw, coconut fiber, 100% recyclable fibers, or any other acceptable material. No more than 5% of the material is permitted to escape from the containment mesh. Furnish compost meeting the requirements of Item 161, "Compost."

2. **Containment Mesh.** Furnish containment mesh that is 100% biodegradable, photodegradable or recyclable such as burlap, twine, UV photodegradable plastic, polyester, or any other acceptable material.

   a. Furnish biodegradable or photodegradable containment mesh when log will remain in place as part of a vegetative system.

   b. Furnish recyclable containment mesh for temporary installations.

3. **Size.** Furnish biodegradable erosion control logs with diameters shown on the plans or as directed. Stuff containment mesh densely so logs do not deform.

3. Qualifications, Training, and Employee Requirements.

A. Contractor Responsible Person Environmental (CRPe) Qualifications and Responsibilities. Provide and designate in writing at the preconstruction conference a CRPe who has overall responsibility for the storm water management program. The CRPe will identify and implement storm water and erosion control practices; will oversee and observe storm water control measure monitoring and management; will monitor the project site daily to ensure compliance with the SWP3 and TPDES General Permit TXR150000; and will document daily monitoring reports and provide the reports to the Department within 48 hours. The CRPe will provide recommendations to the Engineer on how to improve the effectiveness of control measures. Attend the Department's preconstruction conference for the project. Administer the training identified in Article 3.C. *Training.* Document and submit a list to the Engineer of employees who have completed the training. The list should include the employee's name, the training course name, and date the employee completed the training. Provide the most current list to the Engineer at the preconstruction conference or prior to earth disturbing activities. Maintain the list as needed and make available for inspection.

B. Contractor Superintendent Qualifications and Responsibilities. Provide a superintendent that is competent and has experience with and knowledge of storm water management and is knowledgeable of the requirements and the conditions of the TPDES General Permit TXR150000. The superintendent is responsible for managing and overseeing the day to day operations and activities at the project site; working with the CRPe to provide effective storm water management at the project site; representing and acting on-behalf of the Contractor; and attending the Department's preconstruction conference for the project.

C. Training. All Contractor and subcontractor employees directly involved in the earthwork activities, small or large structures, storm water control measures, and seeding activities are required to complete the training identified by the Department prior to working in the right of way. Training may take place at a location at the discretion of the Contractor.

4. Construction.

A. Contractor Responsibilities. Implement the SWP3 for the project site in accordance with in accordance with the plans and specifications, TPDES General Permit TXR150000, and as directed by the Engineer. Coordinate storm water management with all other work on the project. Develop and implement an SWP3 for project-specific material supply plants within and outside of the Department's right of way in accordance with the specific or general storm water permit requirements. Prevent water pollution from storm water associated with construction activity from entering any surface water or private property on or adjacent to the project site.

B. Implementation. The CRPe, or an alternate, must be accessible by phone and able to respond to storm water management emergencies 24 hours per day.

1. Commencement. Implement the SWP3 as shown and as directed. Contractor proposed recommendations for changes will be allowed as approved. Conform to the established guidelines in the TPDES General Permit TXR150000 to make changes. Do not implement changes until approval has been received and changes have been incorporated into the plans by the Engineer. Minor adjustments to meet field conditions are allowed and will be recorded by the Engineer in the SWP3.

2. Phasing. Implement control measures prior to the commencement of activities that result in soil disturbance. Phase and minimize the soil disturbance to the areas shown on the plans. Coordinate temporary control measures with permanent control measures and all other work activities on the project to assure economical, effective, safe, continuous water pollution prevention. Provide control measures that are appropriate to the construction means, methods, and sequencing allowed by the Contract. Exercise precaution throughout the life of the project to prevent pollution of ground waters and surface waters. Schedule and perform clearing and grubbing operations so that stabilization measures will follow immediately thereafter if project conditions permit. Bring all grading sections to final grade as soon as possible and implement temporary and permanent control measures at the earliest time possible. Implement temporary control measures when required by the TPDES General Permit TXR150000 or otherwise necessitated by project conditions.

Do not prolong final grading and shaping. Preserve vegetation where possible throughout the project and minimize clearing, grubbing, and excavation within stream banks, bed, and approach sections.

C. General.

1. **Temporary Alterations or Control Measure Removal.** Altering or removal of control measures is allowed when control measures are restored within the same working day.

2. **Stabilization.** Initiate stabilization for disturbed areas no more than 14 days after the construction activities in that portion of the site has temporarily or permanently ceased. Establish a uniform vegetative cover or utilize another stabilization practice in accordance with the TPDES General Permit TXR150000.

3. **Finished Work.** Upon the Engineer's acceptance of vegetative cover or other stabilization practice, remove and dispose of all temporary control measures unless otherwise directed. Complete soil disturbing activities and establish a uniform perennial vegetative cover. A project will not be considered for acceptance until a vegetative cover of 70% density of existing adjacent undisturbed areas is obtained or equivalent permanent stabilization is obtained in accordance with the TPDES General Permit TXR150000. An exception will be allowed in arid areas as defined in the TPDES General Permit TXR150000.

4. **Restricted Activities and Required Precautions.** Do not discharge onto the ground or surface waters any pollutants such as chemicals, raw sewage, fuels, lubricants, coolants, hydraulic fluids, bitumens, or any other petroleum product. Operate and maintain equipment on site in a manner as to prevent actual or potential water pollution. Manage, control, and dispose of litter on site such that no adverse impacts to water quality occur. Prevent dust from creating a potential or actual unsafe condition, public nuisance, or condition endangering the value, utility, or appearance of any property. Wash out concrete trucks only as described in the TPDES General Permit TXR150000. Utilize appropriate controls to minimize the offsite transport of suspended sediments and other pollutants if it is necessary to pump or channel standing water (i.e. dewatering). Prevent discharges that would contribute to a violation of Edwards Aquifer Rules, water quality standards, the impairment of a listed water body, or other state or federal law.

D. Installation, Maintenance, and Removal Work. Perform work in accordance with the SWP3, according to manufacturers' guidelines, and in accordance with the TPDES General Permit TXR150000. Install and maintain the integrity of temporary erosion and sedimentation control devices to accumulate silt and debris until earthwork construction and permanent erosion control features are in place or the disturbed area has been adequately stabilized as determined by the Engineer.

The Department will inspect and document the condition of the control measures at the frequency shown on the plans and will provide the Construction SWP3 Field Inspection and Maintenance Reports to the Contractor. Make corrections as soon as possible before the next anticipated rain event or within 7 calendar days after being able to enter the work site for each control measure.

The only acceptable reason for not accomplishing the corrections with the time frame specified is when site conditions are "Too Wet to Work". If a correction is deemed critical by the Engineer, immediate action is required. When corrections are not made within the established time frame, all work will cease on the project and time charges will continue while the control measures are brought into compliance. Once the Engineer reviews and documents the project is in compliance, work may commence. Commencing work does not release the contractor of the liability for noncompliance of the SWP3, plans, or TPDES General Permit TXR150000.

The Engineer may limit the disturbed area if in the opinion of the Engineer the Contractor cannot control soil erosion and sedimentation resulting from the Contractor's operations. Implement additional controls as directed.

Remove devices upon approval or as directed. Upon removal, finish-grade and dress the area. Stabilize disturbed areas in accordance with the permit, and as shown on the plans or directed. The Contractor retains ownership of stockpiled material and must remove it from the project when new installations or replacements are no longer required.

1. Rock Filter Dams for Erosion Control. Remove trees, brush, stumps, and other objectionable material that may interfere with the construction of rock filter dams. Place sandbags as a foundation when required or at the Contractor's option.

For Types 1, 2, 3, and 5, place the aggregate to the lines, height, and slopes specified, without undue voids. For Types 2 and 3, place the aggregate on the mesh and then fold the mesh at the upstream side over the aggregate and secure it to itself on the downstream side with wire ties, or hog rings, or as directed. Place rock filter dams perpendicular to the flow of the stream or channel unless otherwise directed. Construct filter dams according to the following criteria, unless otherwise shown on the plans:

a. Type 1 (Non-reinforced).

(1) Height. At least 18 in. measured vertically from existing ground to top of filter dam.

(2) Top Width. At least 2 ft.

(3) Slopes. At most 2:1.

b. Type 2 (Reinforced).

(1) Height. At least 18 in. measured vertically from existing ground to top of filter dam.

(2) Top Width. At least 2 ft.

(3) Slopes. At most 2:1.

c. Type 3 (Reinforced).

(1) Height. At least 36 in. measured vertically from existing ground to top of filter dam.

(2) Top Width. At least 2 ft.

(3) Slopes. At most 2:1.

d. Type 4 (Sack Gabions). Unfold sack gabions and smooth out kinks and bends. For vertical filling, connect the sides by lacing in a single loop–double loop pattern on 4- to 5-in. spacing. At one end, pull the end lacing rod until tight, wrap around the end, and twist 4 times. At the filling end, fill with stone, pull the rod tight, cut the wire with approximately 6 in. remaining, and twist wires 4 times.

For horizontal filling, place sack flat in a filling trough, fill with stone, and connect sides and secure ends as described above.

Lift and place without damaging the gabion. Shape sack gabions to existing contours.

e. Type 5. Provide rock filter dams as shown on the plans.

2. Temporary Pipe Slope Drains. Install pipe with a slope as shown on the plans or as directed. Construct embankment for the drainage system in 8-in. lifts to the required elevations. Hand-tamp the soil around and under the entrance section to the top of the embankment as shown on the plans or as directed. Form the top of the embankment or earth dike over the pipe slope drain at least 1 ft. higher than the top of the inlet pipe at all points. Secure the pipe with hold-downs or hold-down grommets spaced a maximum of 10 ft. on center. Construct the energy dissipaters or sediment traps as shown on the plans or as directed. Construct the sediment trap using concrete or rubble riprap in accordance with Item 432, "Riprap," when designated on the plans.

3. Temporary Paved Flumes. Construct paved flumes as shown on the plans or as directed. Provide excavation and embankment (including compaction of the subgrade) of material to the dimensions shown on the plans, unless otherwise indicated. Install a rock or rubble riprap energy dissipater, constructed from the materials specified above to a minimum depth of 9 in. at the flume outlet to the limits shown on the plans or as directed.

4. Construction Exits. When tracking conditions exist, prevent traffic from crossing or exiting the construction site or moving directly onto a public roadway, alley, sidewalk, parking area, or other right of way areas other than at the location of construction exits. Construct exits for either long or short-term use.

a. Long-Term. Place the exit over a foundation course, if necessary. Grade the foundation course or compacted subgrade to direct runoff from the construction exits to a sediment trap as shown on the plans or as directed. Construct exits with a

width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed.

(1) Type 1. Construct to a depth of at least 8 in. using crushed aggregate as shown on the plans or as directed.

(2) Type 2. Construct using railroad ties and timbers as shown on the plans or as directed.

b. Short-Term.

(1) Type 3. Construct using crushed aggregate, plywood, or wafer board. This type of exit may be used for daily operations where long-term exits are not practical.

(2) Type 4. Construct as shown on the plans or as directed.

5. Earthwork for Erosion Control. Perform excavation and embankment operations to minimize erosion and to remove collected sediments from other erosion control devices.

a. Excavation and Embankment for Erosion Control Features. Place earth dikes, swales, or combinations of both along the low crown of daily lift placement, or as directed, to prevent runoff spillover. Place swales and dikes at other locations as shown on the plans or as directed to prevent runoff spillover or to divert runoff. Construct cuts with the low end blocked with undisturbed earth to prevent erosion of hillsides. Construct sediment traps at drainage structures in conjunction with other erosion control measures as shown on the plans or as directed.

Where required, create a sediment basin providing 3,600 cu. ft. of storage per acre drained, or equivalent control measures for drainage locations that serve an area with 10 or more disturbed acres at one time, not including offsite areas.

b. Excavation of Sediment and Debris. Remove sediment and debris when accumulation affects the performance of the devices, after a rain, and when directed.

6. Construction Perimeter Fence. Construct, align, and locate fencing as shown on the plans or as directed.

a. Installation of Posts. Embed posts 18 in. deep or adequately anchor in rock, with a spacing of 8 to 10 ft.

b. Wire Attachment. Attach the top wire to the posts at least 3 ft. from the ground. Attach the lower wire midway between the ground and the top wire.

c. Flag Attachment. Attach flagging to both wire strands midway between each post. Use flagging at least 18 in. long. Tie flagging to the wire using a square knot.

7. Sandbags for Erosion Control. Construct a berm or dam of sandbags that will intercept sediment-laden storm water runoff from disturbed areas, create a retention pond, detain

sediment, and release water in sheet flow. Fill each bag with sand so that at least the top 6 in. of the bag is unfilled to allow for proper tying of the open end. Place the sandbags with their tied ends in the same direction. Offset subsequent rows of sandbags 1/2 the length of the preceding row. Place a single layer of sandbags downstream as a secondary debris trap. Place additional sandbags as necessary or as directed for supplementary support to berms or dams of sandbags or earth.

8. Temporary Sediment-Control Fence. Provide temporary sediment-control fence near the downstream perimeter of a disturbed area to intercept sediment from sheet flow. Incorporate the fence into erosion-control measures used to control sediment in areas of higher flow. Install the fence as shown on the plans, as specified in this Section, or as directed.

a. Installation of Posts. Embed posts at least 18 in. deep, or adequately anchor, if in rock, with a spacing of 6 to 8 ft. and install on a slight angle toward the run-off source.

b. Fabric Anchoring. Dig trenches along the uphill side of the fence to anchor 6 to 8 in. of fabric. Provide a minimum trench cross-section of 6 x 6 in. Place the fabric against the side of the trench and align approximately 2 in of fabric along the bottom in the upstream direction. Backfill the trench, then hand-tamp.

c. Fabric and Net Reinforcement Attachment. Unless otherwise shown under the plans, attach the reinforcement to wooden posts with staples, or to steel posts with T-clips, in at least 4 places equally spaced. Sewn vertical pockets may be used to attach reinforcement to end posts. Fasten the fabric to the top strand of reinforcement by hog rings or cord every 15 in. or less.

d. Fabric and Net Splices. Locate splices at a fence post with a minimum lap of 6 in. attached in at least 6 places equally spaced, unless otherwise shown under the plans. Do not locate splices in concentrated flow areas.

Requirements for installation of used temporary sediment-control fence include the following:

- fabric with minimal or no visible signs of biodegradation (weak fibers),
- fabric without excessive patching (more than 1 patch every 15 to 20 ft.),
- posts without bends, and
- backing without holes.

9. Biodegradable Erosion Control Logs. Install biodegradable erosion control logs near the downstream perimeter of a disturbed area to intercept sediment from sheet flow. Incorporate the biodegradable erosion control logs into the erosion measures used to control sediment in areas of higher flow. Install, align and locate the biodegradable erosion control logs as specified below, as shown in plans or as directed.

Secure biodegradable erosion control logs in a method adequate to prevent displacement as a result of normal rain events, prevent damage to the logs, and to the satisfaction of the Engineer such that flow is not allowed under the logs. Temporarily removing and replacing biodegradable erosion logs as to facilitate daily work is allowed at the Contractor's expense.

10. Vertical Tracking. Perform vertical tracking on slopes to temporarily stabilize soil. Provide equipment with a track undercarriage capable of producing a linear soil impression measuring a minimum of 12 inches in length by 2 to 4 inches in width by 1/2 to 2 inches in depth. Do not exceed 12 inches between track impressions. Install continuous linear track impressions where the 12 inch length impressions are perpendicular to the slope.

E. Monitoring and Documentation. Monitor the control measures on a daily basis. Monitoring will consist of, but is not limited to, observing, inspecting, and documenting site locations with control measures and discharge points to provide maintenance and inspection of controls as described in the SWP3. Keep written records of daily monitoring. Document in the daily monitoring report the control measure condition, the date of inspection, required corrective actions, responsible person for making the corrections, and the date corrective actions were completed. Maintain records of all monitoring reports at the project site or at a place approved by the Engineer. Provide copies to the Engineer. Together, the CRPe and an Engineer's representative will complete the Construction Stage Gate Checklist on a periodic basis as determined by the Engineer.

5. Measurement.

A. Rock Filter Dams. Installation or removal of rock filter dams will be measured by the foot or by the cubic yard. The measured volume will include sandbags, when used.

1. Linear Measurement. When rock filter dams are measured by the foot, measurement will be along the centerline of the top of the dam.

2. Volume Measurement. When rock filter dams are measured by the cubic yard, measurement will be based on the volume of rock computed by the method of average end areas.

a. Installation. Measurement will be made in final position.

b. Removal. Measurement will be made at the point of removal.

B. Temporary Pipe Slope Drains. Temporary pipe slope drains will be measured by the foot.

C. Temporary Paved Flumes. Temporary paved flumes will be measured by the square yard of surface area. The measured area will include the energy dissipater at the flume outlet.

D. Construction Exits. Construction exits will be measured by the square yard of surface area.

E. Earthwork for Erosion and Sediment Control.

1. Equipment and Labor Measurement. Equipment and labor used will be measured by the actual number of hours the equipment is operated and the labor is engaged in the work.

2. Volume Measurement.

a. In Place.

(1) Excavation. Excavation will be measured by the cubic yard in its original position and the volume computed by the method of average end areas.

(2) Embankment. Embankment will be measured by the cubic yard in its final position by the method of average end areas. The volume of embankment will be determined between:

- the original ground surfaces or the surface upon that the embankment is to be constructed for the feature and
- the lines, grades and slopes of the accepted embankment for the feature.

b. In Vehicles. Excavation and embankment quantities will be combined and paid for under "Earthwork (Erosion and Sediment Control, In Vehicle)." Excavation will be measured by the cubic yard in vehicles at the point of removal. Embankment will be measured by the cubic yard in vehicles measured at the point of delivery. Shrinkage or swelling factors will not be considered in determining the calculated quantities.

F. Construction Perimeter Fence. Construction perimeter fence will be measured by the foot.

G. Sandbags for Erosion Control. Sandbags will be measured as each sandbag or by the foot along the top of sandbag berms or dams.

H. Temporary Sediment-Control Fence. Installation or removal of temporary sediment-control fence will be measured by the foot.

I. Biodegradable Erosion Control Logs. Installation or removal of biodegradable erosion control logs will be measured by the linear foot along the centerline of the top of the control logs.

J. Vertical Tracking. Vertical tracking will not be measured or paid for directly but is considered subsidiary to this Item.

6. Payment. The following will not be paid for directly but are subsidiary to pertinent Items:

- erosion-control measures for Contractor project-specific locations (PSLs) inside and outside the right of way (such as construction and haul roads, field offices, equipment and supply areas, plants, and material sources);

- removal of litter; unless a separate pay item is shown in the plans.
- repair to devices and features damaged by Contractor operations;
- added measures and maintenance needed due to negligence, carelessness, lack of maintenance, and failure to install permanent controls;
- removal and reinstallation of devices and features needed for the convenience of the Contractor;
- finish grading and dressing upon removal of the device; and
- minor adjustments including but not limited to plumbing posts, reattaching fabric, minor grading to maintain slopes on an erosion embankment feature, or moving small numbers of sandbags.

Stabilization of disturbed areas will be paid for under pertinent Items.

Furnishing and installing pipe for outfalls associated with sediment traps and ponds will not be paid for directly but is subsidiary to the excavation and embankment under this Item.

A. Rock Filter Dams. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid as follows:

1. Installation. Installation will be paid for as "Rock Filter Dams (Install)" of the type specified. This price is full compensation for furnishing and operating equipment, finish backfill and grading, lacing, proper disposal, labor, materials, tools, and incidentals.

2. Removal. Removal will be paid for as "Rock Filter Dams (Remove)." This price is full compensation for furnishing and operating equipment, proper disposal, labor, materials, tools, and incidentals.

When the Engineer directs that the rock filter dam installation or portions thereof be replaced, payment will be made at the unit price bid for "Rock Filter Dams (Remove)" and for "Rock Filter Dams (Install)" of the type specified. This price is full compensation for furnishing and operating equipment, finish backfill and grading, lacing, proper disposal, labor, materials, tools, and incidentals.

B. Temporary Pipe Slope Drains. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Temporary Pipe Slope Drains" of the size specified. This price is full compensation for furnishing materials, removal and disposal, furnishing and operating equipment, labor, tools, and incidentals.

Removal of temporary pipe slope drains will not be paid for directly but is subsidiary to the installation Item. When the Engineer directs that the pipe slope drain installation or portions thereof be replaced, payment will be made at the unit price bid for "Temporary Pipe Slope Drains" of the size specified, which is full compensation for the removal and reinstallation of the pipe drain.

Earthwork required for the pipe slope drain installation, including construction of the sediment trap, will be measured and paid for under "Earthwork for Erosion and Sediment Control."

Riprap concrete or stone, when used as an energy dissipater or as a stabilized sediment trap, will be measured and paid for in accordance with Item 432, "Riprap."

C. Temporary Paved Flumes. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Temporary Paved Flume (Install)" or "Temporary Paved Flume (Remove)." This price is full compensation for furnishing and placing materials, removal and disposal, equipment, labor, tools, and incidentals.

When the Engineer directs that the paved flume installation or portions thereof be replaced, payment will be made at the unit prices bid for "Temporary Paved Flume (Remove)" and "Temporary Paved Flume (Install)." These prices are full compensation for the removal and replacement of the paved flume and for equipment, labor, tools, and incidentals.

Earthwork required for the paved flume installation, including construction of a sediment trap, will be measured and paid for under "Earthwork for Erosion and Sediment Control."

D. Construction Exits. Contractor-required construction exits from off right of way locations or on-right of way PSLs will not be paid for directly but are subsidiary to pertinent Items.

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" for construction exits needed on right of way access to work areas required by the Department will be paid for at the unit price bid for "Construction Exits (Install)" of the type specified or "Construction Exits (Remove)." This price is full compensation for furnishing and placing materials, excavating, removal and disposal, cleaning vehicles, labor, tools, and incidentals.

When the Engineer directs that a construction exit or portion thereof be removed and replaced, payment will be made at the unit prices bid for "Construction Exit (Remove)" and "Construction Exit (Install)" of the type specified. These prices are full compensation for the removal and replacement of the construction exit and for equipment, labor, tools, and incidentals.

Construction of sediment traps used in conjunction with the construction exit will be measured and paid for under "Earthwork for Erosion and Sediment Control."

E. Earthwork for Erosion and Sediment Control.

1. Initial Earthwork for Erosion and Sediment Control. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Excavation (Erosion and Sediment Control, In Place)", "Embankment (Erosion and Sediment Control, In Place)", "Excavation (Erosion and Sediment Control, In Vehicle)", "Embankment (Erosion and

Sediment Control, In Vehicle)", or "Earthwork (Erosion and Sediment Control, In Vehicle)".

This price is full compensation for excavation and embankment including hauling, disposal of material not used elsewhere on the project; embankments including furnishing material from approved sources and construction of erosion-control features; equipment, labor; tools, and incidentals.

Sprinkling and rolling required by this Item will not be paid for directly, but will be subsidiary to this Item.

2. **Maintenance Earthwork for Erosion and Sediment Control for Cleaning and/or Restoring Control Measures.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for by a Contractor Force Account Item.

   This price is full compensation for excavation, embankment, and re-grading including removal of accumulated sediment in various erosion control installations as directed, hauling, and disposal of material not used elsewhere on the project; excavation for construction of erosion-control features; embankments including furnishing material from approved sources and construction of erosion-control features; and equipment, labor; tools, and incidentals.

   Earthwork needed to remove and obliterate of erosion-control features will not be paid for directly but is subsidiary to pertinent Items unless otherwise shown on the plans.

   Sprinkling and rolling required by this Item will not be paid for directly, but will be subsidiary to this Item.

F. Construction Perimeter Fence. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Construction Perimeter Fence." This price is full compensation for furnishing and placing the fence; digging, fence posts, wire, and flagging; removal and disposal; and materials, equipment, labor, tools, and incidentals.

Removal of construction perimeter fence will be not be paid for directly but is subsidiary to the installation Item. When the Engineer directs that the perimeter fence installation or portions thereof be removed and replaced, payment will be made at the unit price bid for "Construction Perimeter Fence," which is full compensation for the removal and reinstallation of the construction perimeter fence.

G. Sandbags for Erosion Control. Sandbags will be paid for at the unit price bid for "Sandbags for Erosion Control" (of the height specified when measurement is by the foot). This price is full compensation for materials, placing sandbags, removal and disposal, equipment, labor, tools, and incidentals.

Removal of sandbags will not be paid for directly but is subsidiary to the installation Item. When the Engineer directs that the sandbag installation or portions thereof be replaced,

payment will be made at the unit price bid for "Sandbags for Erosion Control," which is full compensation for the reinstallation of the sandbags.

H. **Temporary Sediment-Control Fence.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid as follows:

1. **Installation.** Installation will be paid for as "Temporary Sediment-Control Fence (Install)." This price is full compensation for furnishing and operating equipment finish backfill and grading, lacing, proper disposal, labor, materials, tools, and incidentals.

2. **Removal.** Removal will be paid for as "Temporary Sediment-Control Fence (Remove)." This price is full compensation for furnishing and operating equipment, proper disposal, labor, materials, tools, and incidentals.

I. Biodegradable Erosion Control Logs. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid as follows:

1. **Installation.** Installation will be paid for as "Biodegradable Erosion Control Logs (Install)" of the size specified. This price is full compensation for furnishing and operating equipment finish backfill and grading, staking, proper disposal, labor, materials, tools, and incidentals.

2. **Removal.** Removal will be paid for as "Biodegradable Erosion Control Logs (Remove)." This price is full compensation for furnishing and operating equipment, proper disposal, labor, materials, tools, and incidentals.

J. Vertical Tracking. Vertical tracking will not be measured or paid for directly but is considered subsidiary to this Item.

CONTRACTOR CERTIFICATION OF COMPLIANCE
WITH STORM WATER REQUIREMENTS

I, _____ certify that I am the duly appointed representative of the Contractor with authority to make this Contractor certification. I have read and understand the requirements applicable to this project pertaining to storm water discharge authorization under Texas Pollutant Discharge Elimination System (TPDES) General Permit (GP) TXR150000. The Contractor agrees to comply with the terms of the permit that are expressly stated in the contract documents as being the responsibility of the Contractor. I have read and understand the Storm Water Pollution Prevention Plan (SWP3) developed by the Department for this project. The Contractor agrees it will be implemented prior to construction according to permit requirements and the contract documents. I understand that failure to comply with the terms of the permit that are expressly stated in the contract documents, plans, and specifications as being the responsibility of the Contractor may result in civil penalties.

The Contractor acknowledges its responsibility to satisfy the following requirements:

- Implement the SWP3 for the project in accordance with the plans and specifications and the TPDES GP TXR150000.
- Install and maintain control measures on the project in accordance with the manufacturer's or designer's specifications.
- Collaborate with the Department for joint monitoring of best management practices (BMPs) on a regular basis to verify that BMPs are performing as intended in accordance with the plans and specifications and with TPDES GP TXR150000.
- Collaborate with the Department for joint identification of BMP maintenance needs and carry out such maintenance in accordance with the plans and specifications, TPDES GP TXR150000 and as directed by the Engineer.
- Repair the integrity of any BMP as directed by the Engineer as soon as reasonably possible.
- If appropriate, recommend changes needed in the SWP3 to the Engineer in order to prevent, to the extent practicable, water pollution associated with construction activities from entering any surface water or private property on or adjacent to the project site by storm water discharges.
- Stabilize disturbed areas, as soon as practicable, in accordance with the TPDES GP TXR150000 and as directed by the Engineer.
- If applicable, obtain appropriate authorizations for activities associated with any Project Specific Location under the authority of the Contractor and provide appropriate documentation of compliance to the Engineer.
- Satisfy any other responsibility indicated in the contract documents that are expressly stated as the responsibility of the Contractor.

Signature and Title: _____

Date: _____

SPECIAL SPECIFICATION

3268

Dense-Graded Hot-Mix Asphalt

1. **Description.** Construct a hot-mix asphalt (HMA) pavement layer composed of a compacted, dense-graded mixture of aggregate and asphalt binder mixed hot in a mixing plant. Pay adjustments will apply to HMA placed under this specification unless the HMA is deemed exempt in accordance with Section 3268.4.I.4, "Exempt Production."

2. **Materials.** Furnish uncontaminated materials of uniform quality that meet the requirements of the plans and specifications.

   Notify the Engineer of all material sources. Notify the Engineer before changing any material source or formulation. When the Contractor makes a source or formulation change, the Engineer will verify that the specification requirements are met and may require a new laboratory mixture design, trial batch, or both. The Engineer may sample and test project materials at any time during the project to verify specification compliance in accordance with Item 6, "Control of Materials."

   A. **Aggregate.** Furnish aggregates from sources that conform to the requirements shown in Table 1 and as specified in this Section. Aggregate requirements in this Section, including those shown in Table 1, may be modified or eliminated when shown on the plans. Additional aggregate requirements may be specified when shown on the plans. Provide aggregate stockpiles that meet the definitions in this Section for coarse, intermediate, or fine aggregate. Aggregate from reclaimed asphalt pavement (RAP) is not required to meet Table 1 requirements unless otherwise shown on the plans. Supply aggregates that meet the definitions in Tex-100-E for crushed gravel or crushed stone. The Engineer will designate the plant or the quarry as the sampling location. Samples must be from materials produced for the project. The Engineer will establish the surface aggregate classification (SAC) and perform Los Angeles abrasion, magnesium sulfate soundness, and Micro-Deval tests. Perform all other aggregate quality tests listed in Table 1. Document all test results on the mixture design report. The Engineer may perform tests on independent or split samples to verify Contractor test results. Stockpile aggregates for each source and type separately. Determine aggregate gradations for mixture design and production testing based on the washed sieve analysis given in Tex-200-F, Part II.

      1. **Coarse Aggregate.** Coarse aggregate stockpiles must have no more than 20% material passing the No. 8 sieve. Aggregate from sources listed in the Department's *Bituminous Rated Source Quality Catalog* (BRSQC) located at http://www.txdot.gov/business/resources/producer-list.html are preapproved for use.

For sources not listed on the Department's BRSQC:

- build an individual stockpile for each material;
- request the Department test the stockpile for specification compliance; and
- once approved, do not add material to the stockpile unless otherwise approved.

Use only the rated values for hot mix listed in the BRSQC. Rated values for surface treatment (ST) do not apply to coarse aggregate sources used in hot mix. Provide aggregate from non-listed sources only when tested by the Engineer and approved before use. Allow 30 calendar days for the Engineer to sample, test, and report results for non-listed sources.

Provide coarse aggregate with at least the minimum SAC as shown on the plans. SAC requirements apply only to aggregates used on the surface of travel lanes. SAC requirements apply to aggregates used on surfaces other than travel lanes when shown on the plans. The SAC for sources on the Department's Aggregate Quality Monitoring Program (AQMP) is listed in the BRSQC.

a. Blending Class A and Class B Aggregates. Class B aggregate meeting all other requirements in Table 1 may be blended with a Class A aggregate in order to meet requirements for Class A materials. When blending Class A and B aggregates to meet a Class A requirement, ensure that at least 50% by weight of the material retained on the No. 4 sieve comes from the Class A aggregate source. Blend by volume if the bulk specific gravities of the Class A and B aggregates differ by more than 0.300. For blending purposes, coarse aggregate from RAP and Recycled Asphalt Shingles (RAS) will be considered as Class B aggregate.

When the Contractor blends Class A and B aggregates to meet a Class A requirement, the Engineer may perform tests at any time during production to ensure that at least 50% by weight of the material retained on the No. 4 sieve comes from the Class A aggregate source. In such cases where the Engineer elects to verify conformance, the Engineer will use the Department's mix design Excel template to calculate the percent of Class A aggregate retained on the No. 4 sieve by inputting the bin percentages shown from readouts in the control room at the time of production and stockpile gradations measured at the time of production. The Engineer may determine the gradations based on either washed or dry sieve analysis from samples obtained from individual aggregate cold feed bins or aggregate stockpiles. The Engineer may perform spot checks using the gradations supplied by the Contractor on the mixture design report as an input for the Excel template; however, a failing spot check will require confirmation with a stockpile gradation determined by the Engineer.

b. Micro-Deval Abrasion. The Engineer will perform a minimum of one Micro-Deval abrasion test in accordance with Tex-461-A for each coarse aggregate source used in the mixture design that has a Rated Source Soundness

Magnesium (RSSM) loss value greater than 15 as listed in the BRSQC. The Engineer will perform testing prior to the start of production and may perform additional testing at any time during production. The Engineer may obtain the coarse aggregate samples from each coarse aggregate source or may require the Contractor to obtain the samples. The Engineer may elect to waive all Micro-Deval testing based on a satisfactory test history of the same aggregate source.

When tested, the Engineer will estimate the magnesium sulfate soundness loss for each coarse aggregate source using the following formula:

$Mg_{est.} = (RSSM)(MD_{act.}/RSMD)$

where:

Mg_{est} = magnesium sulfate soundness loss

MD_{act} = actual Micro-Deval percent loss

RSMD = Rated Source Micro-Deval

When the estimated magnesium sulfate soundness loss is greater than the maximum magnesium sulfate soundness loss specified, the coarse aggregate source will not be allowed for use unless otherwise approved by the Engineer. The Engineer will consult the Geotechnical, Soils, and Aggregates Branch of the Construction Division, and additional testing may be required prior to granting approval.

2. **Intermediate Aggregate.** Aggregates not meeting the definition of coarse or fine aggregate will be defined as intermediate aggregate. When used, supply intermediate aggregates that are free from organic impurities. The Engineer may test the intermediate aggregate in accordance with Tex-408-A to verify the material is free from organic impurities. When used, supply intermediate aggregate from coarse aggregate sources that meet the requirements shown in Table 1 unless otherwise approved.

   If 10% or more of the stockpile is retained on the No. 4 sieve, test the stockpile and verify that it meets the requirements in Table 1 for coarse aggregate angularity (Tex-460-A) and flat and elongated particles (Tex-280-F).

3. **Fine Aggregate.** Fine aggregates consist of manufactured sands, screenings, and field sands. Fine aggregate stockpiles must meet the gradation requirements in Table 2. Supply fine aggregates that are free from organic impurities. The Engineer may test the fine aggregate in accordance with Tex-408-A to verify the material is free from organic impurities. At most 15% of the total aggregate may be field sand or other uncrushed fine aggregate. With the exception of field sand, use fine aggregate from coarse aggregate sources that meet the requirements shown in Table 1 unless otherwise approved.

If 10% or more of the stockpile is retained on the No. 4 sieve, test the stockpile and verify that it meets the requirements in Table 1 for coarse aggregate angularity (Tex-460-A) and flat and elongated particles (Tex-280-F).

Table 1
Aggregate Quality Requirements

Property	Test Method	Requirement
Coarse Aggregate		
SAC	AQMP	As shown on plans
Deleterious material, %, max	Tex-217-F, Part I	1.5
Decantation, %, max	Tex-217-F, Part II	1.5
Micro-Deval abrasion, %, max	Tex-461-A	Note 1
Los Angeles abrasion, %, max	Tex-410-A	40
Magnesium sulfate soundness, 5 cycles, %, max	Tex-411-A	30
Coarse aggregate angularity, 2 crushed faces, %, min	Tex-460-A, Part I	85[2]
Flat and elongated particles @ 5:1, %, max	Tex-280-F	10
Fine Aggregate		
Linear shrinkage, %, max	Tex-107-E	3
Combined Aggregate[3]		
Sand equivalent, %, min	Tex-203-F	45

1. Used to estimate the magnesium sulfate soundness loss in accordance with Section 3268.2.A.1, "Coarse Aggregate."
2. Only applies to crushed gravel.
3. Aggregates, without mineral filler, RAP, RAS, or additives, combined as used in the job-mix formula (JMF).

Table 2
Gradation Requirements for Fine Aggregate

Sieve Size	% Passing by Weight or Volume
3/8"	100
#8	70–100
#200	0–30

B. Mineral Filler. Mineral filler consists of finely divided mineral matter, such as agricultural lime, crusher fines, hydrated lime, or fly ash. Mineral filler is allowed unless otherwise shown on the plans. Do not use more than 2% mineral hydrated lime unless otherwise shown on the plans. If a substitute binder is used, do not use more than 1% hydrated lime unless otherwise shown on the plans or allowed by the Engineer. Test all mineral fillers except hydrated lime and fly ash in accordance with Tex-107-E to ensure specification compliance. The plans may require or disallow specific mineral fillers. When used, provide mineral filler that:

- is sufficiently dry, free-flowing, and free from clumps and foreign matter;
- does not exceed 3% linear shrinkage when tested in accordance with Tex-107-E; and
- meets the gradation requirements in Table 3.

Table 3
Gradation Requirements for Mineral Filler

Sieve Size	% Passing by Weight or Volume
#8	100
#200	55–100

C. Baghouse Fines. Fines collected by the baghouse or other dust-collecting equipment may be reintroduced into the mixing drum.

D. Asphalt Binder. Furnish the type and grade of performance-graded (PG) asphalt specified on the plans.

E. Tack Coat. Furnish CSS-1H, SS-1H, or a PG binder with a minimum high-temperature grade of PG 58 for tack coat binder in accordance with Item 300, "Asphalts, Oils, and Emulsions." Specialized or preferred tack coat materials may be allowed by the Engineer or required when shown on the plans. Do not dilute emulsified asphalts at the terminal, in the field, or at any other location before use.

The Engineer will obtain at least one sample of the tack coat binder per project in accordance with Tex-500-C, Part III, and test it to verify compliance with Item 300. The Engineer will obtain the sample from the asphalt distributor immediately before use.

F. Additives. Use the type and rate of additive specified when shown on the plans. Other additives that facilitate mixing, compaction, or improve the quality of the mixture may be allowed when approved. Provide the Engineer with documentation such as the bill of lading showing the quantity of additives used in the project unless otherwise directed.

1. **Lime and Liquid Antistripping Agent.** When lime or a liquid antistripping agent is used, add in accordance with Item 301, "Asphalt Antistripping Agents." Do not add lime directly into the mixing drum of any plant where lime is removed through the exhaust stream unless the plant has a baghouse or dust collection system that reintroduces the lime into the drum.

2. **Warm Mix Asphalt (WMA).** Warm Mix Asphalt (WMA) is defined as HMA that is produced within a target temperature discharge range of 215ºF and 275ºF using Department-approved WMA additives or processes. The Department's Material Producer List of WMA additives and processes is located at http://www.txdot.gov/business/resources/producer-list.html.

   WMA is allowed for use on all projects and is required when shown on plans. The maximum placement or target discharge temperature for WMA may be set at a value less than 275ºF when shown on the plans.

   Department-approved WMA additives or processes may be used to facilitate mixing and compaction of HMA produced at target discharge temperatures greater than 275ºF; however, such mixtures will not be defined as WMA.

G. Recycled Materials. Use of RAP and RAS is permitted unless otherwise shown on the plans. Do not exceed the maximum allowable percentages of RAP and RAS shown in Table 4. The allowable percentages shown in Table 4 may be decreased or increased when shown on the plans. Determine asphalt content and gradation of the RAP and RAS stockpiles for mixture design purposes in accordance with Tex-236-F. The Engineer may verify the asphalt content of the stockpiles at any time during production. Perform other tests on RAP and RAS when shown on the plans. Asphalt binder from RAP and RAS is designated as recycled asphalt binder. When RAP or RAS is used, calculate and ensure that the ratio of the recycled asphalt binder to total binder does not

exceed the percentages shown in Table 5 during mixture design and HMA production. During HMA production, use a separate cold feed bin for each stockpile of RAP and RAS.

Surface, intermediate, and base mixes referenced in Tables 4 and 5 are defined as follows:

- "Surface" mixes are the final lift or riding surface of the pavement structure;
- "Intermediate" mixes are non-surface mixtures placed less than or equal to 8 inches from the riding surface; and
- "Base" mixes are non-surface mixtures placed greater than 8 inches from the riding surface.

1. RAP. RAP is salvaged, milled, pulverized, broken, or crushed asphalt pavement. Crush or break RAP so that 100% of the particles pass the 2 in. sieve.

Use of Contractor-owned RAP including HMA plant waste is permitted unless otherwise shown on the plans. Department-owned RAP stockpiles are available for the Contractor's use when the stockpile locations are shown on the plans. If Department-owned RAP is available for the Contractor's use, the Contractor may use Contractor-owned fractionated RAP and replace it with an equal quantity of Department-owned RAP. This allowance does not apply to a Contractor using unfractionated RAP. Department-owned RAP generated through required work on the Contract is available for the Contractor's use when shown on the plans. Perform any necessary tests to ensure Contractor- or Department-owned RAP is appropriate for use. The Department will not perform any tests or assume any liability for the quality of the Department-owned RAP unless otherwise shown on the plans. The Contractor will retain ownership of RAP generated on the project when shown on the plans.

Fractionated RAP is defined as having two or more RAP stockpiles, divided into coarse and fine fractions. The coarse RAP stockpile will contain only material retained by processing over a 3/8 in. screen or 1/2 in. screen unless otherwise approved. The fine RAP stockpile will contain only material passing the 3/8 in. screen or 1/2 in. screen unless otherwise approved. The Engineer may allow the Contractor to use an alternate to the 3/8 in. screen or 1/2 in. screen to fractionate the RAP. The maximum percentages of fractionated RAP may be comprised of coarse or fine fractionated RAP or the combination of both coarse and fine fractionated RAP.

Do not use Department- or Contractor-owned RAP contaminated with dirt or other objectionable materials. Do not use Department- or Contractor-owned RAP if the decantation value exceeds 5% and the plasticity index is greater than 8. Test the stockpiled RAP for decantation in accordance with Tex-406-A, Part I. Determine the plasticity index in accordance with Tex-106-E if the decantation value exceeds 5%. The decantation and plasticity index requirements do not apply to RAP samples with asphalt removed by extraction or ignition.

Do not intermingle Contractor-owned RAP stockpiles with Department-owned RAP stockpiles. Remove unused Contractor-owned RAP material from the project site upon completion of the project. Return unused Department-owned RAP to the designated stockpile location.

Table 4
Maximum Allowable Amounts of RAP[1]

Maximum Allowable Fractionated RAP[2] (%)			Maximum Allowable Unfractionated RAP[3] (%)		
Surface	**Intermediate**	**Base**	**Surface**	**Intermediate**	**Base**
20.0	30.0	40.0	10.0	10.0	10.0

1. Must also meet the recycled binder to total binder ratio shown in Table 5.
2. Up to 5% RAS may be used separately or as a replacement for fractionated RAP.
3. Unfractionated RAP may not be combined with fractionated RAP or RAS.

2. RAS. Use of post-manufactured RAS or post-consumer RAS (tear-offs) is permitted unless otherwise shown on the plans. Up to 5% RAS may be used separately or as a replacement for fractionated RAP in accordance with Table 4 and Table 5. RAS is defined as processed asphalt shingle material from manufacturing of asphalt roofing shingles or from re-roofing residential structures. Post-manufactured RAS is processed manufacturer's shingle scrap by-product. Post-consumer RAS is processed shingle scrap removed from residential structures. Comply with all regulatory requirements stipulated for RAS by the Texas Commission on Environmental Quality (TCEQ). RAS may be used separately or in conjunction with RAP.

Process the RAS by ambient grinding or granulating such that 100% of the particles pass the 3/8 in. sieve when tested in accordance with Tex-200-F, Part I. Perform a sieve analysis on processed RAS material prior to extraction (or ignition) of the asphalt.

Add sand meeting the requirements of Table 1 and Table 2 or fine RAP to RAS stockpiles if needed to keep the processed material workable. For any stockpile that contains RAS, the entire stockpile will be considered a RAS stockpile and be limited to no more than 5.0% of the HMA mixture in accordance with Table 4.

Certify compliance of the RAS with DMS-11000, "Evaluating and Using Nonhazardous Recyclable Materials (NRM) Guidelines." If the RAS has not come into contact with any hazardous materials, treat it as an established NRM. Use RAS from shingle sources on the Department's Material Producer List of NRM located at http://www.txdot.gov/business/resources/producer-list.html. Prior to use, remove substantially all materials that are not part of the shingle, such as wood, paper, metal, plastic, and felt paper. Determine the deleterious content of RAS material for mixture design purposes in accordance with Tex-217-F, Part III. Do not use RAS if deleterious materials are more than 0.5% of the stockpiled RAS unless otherwise approved. Submit a sample for approval to the Engineer prior to submitting the mixture design. The Department will perform the testing for deleterious material of RAS to determine specification compliance.

H. Substitute Binders. Unless otherwise shown on the plans, the Contractor may use a substitute PG binder listed in Table 5 in lieu of the PG binder originally specified, if the substitute PG binder and mixture made with the substitute PG binder meet the following:

- the substitute binder meets the specification requirements for the substitute binder grade in accordance with Section 300.2.J, "Performance-Graded Binders";
- the substitute binder has an un-aged dynamic shear value less than or equal to 2.00 kPa and an RTFO aged dynamic shear value less than or equal to 5.00 kPa at the PG test temperature; and
- the mixture has less than 10.0 mm of rutting on the Hamburg Wheel test (Tex-242-F) after the number of passes required for the originally specified binder. Use of substitute PG binders may only be allowed at the discretion of the Engineer if the Hamburg Wheel test results are between 10.0 mm and 12.5 mm.

Table 5
Allowable Substitute PG Binders and Maximum Recycled Binder Ratios

Originally Specified PG Binder	Allowable Substitute PG Binder	Maximum Ratio of Recycled Binder[1] to Total Binder (%)		
		Surface	Intermediate	Base
HMA				
76-22[2]	70-22 or 64-22	20.0	20.0	20.0
	70-28 or 64-28	30.0	35.0	40.0
70-22[2]	64-22	20.0	20.0	20.0
	64-28 or 58-28	30.0	35.0	40.0
64-22[2]	58-28	30.0	35.0	40.0
76-28[2]	70-28 or 64-28	20.0	20.0	20.0
	64-34	30.0	35.0	40.0
70-28[2]	64-28 or 58-28	20.0	20.0	20.0
	64-34 or 58-34	30.0	35.0	40.0
64-28[2]	58-28	20.0	20.0	20.0
	58-34	30.0	35.0	40.0
WMA[3]				
76-22[2]	70-22 or 64-22	30.0	35.0	40.0
70-22[2]	64-22 or 58-28	30.0	35.0	40.0
64-22[4]	58-28	30.0	35.0	40.0
76-28[2]	70-28 or 64-28	30.0	35.0	40.0
70-28[2]	64-28 or 58-28	30.0	35.0	40.0
64-28[4]	58-28	30.0	35.0	40.0

1. Combined recycled binder from RAP and RAS.
2. Use no more than 20.0% recycled binder when using this originally specified PG binder.
3. WMA as defined in Section 3268.2.F.2, "Warm Mix Asphalt (WMA)."
4. When used with WMA, this originally specified PG binder is allowed for use at the maximum recycled binder ratios shown in this table.

3. Equipment. Provide required or necessary equipment in accordance with Item 320, "Equipment for Asphalt Concrete Pavement."

4. Construction. Produce, haul, place, and compact the specified paving mixture. In addition to tests required by the specification, Contractors may perform other QC tests as deemed necessary. At any time during the project, the Engineer may perform production and placement tests as deemed necessary in accordance with Item 5, "Control of the Work." On or before the first day of paving, it is mandatory to schedule and participate in a pre-paving meeting with the Engineer unless otherwise shown on the plans.

A. Certification. Personnel certified by the Hot Mix Asphalt Center Certification Program must conduct all mixture designs, sampling, and testing in accordance with Table 6. Supply the Engineer with a list of certified personnel and copies of their current certificates before beginning production and when personnel changes are made. Provide a mixture design that is developed and signed by a Level 2 certified specialist. Provide a Level 1A certified specialist at the plant during production operations. Provide a Level 1B certified specialist to conduct placement tests.

Table 6
Test Methods, Test Responsibility, and Minimum Certification Levels

Test Description	Test Method	Contractor	Engineer	Level
1. Aggregate and Recycled Material Testing				
Sampling	Tex-400-A	✓	✓	1A
Dry sieve	Tex-200-F, Part I	✓	✓	1A
Washed sieve	Tex-200-F, Part II	✓	✓	1A
Deleterious material	Tex-217-F, Parts I & III	✓	✓	1A
Decantation	Tex-217-F, Part II	✓	✓	1A
Los Angeles abrasion	Tex-410-A		✓	
Magnesium sulfate soundness	Tex-411-A		✓	
Micro-Deval abrasion	Tex-461-A		✓	
Coarse aggregate angularity	Tex-460-A	✓	✓	2
Flat and elongated particles	Tex-280-F	✓	✓	2
Linear shrinkage	Tex-107-E	✓	✓	2
Sand equivalent	Tex-203-F	✓	✓	2
Organic impurities	Tex-408-A	✓	✓	2
2. Asphalt Binder & Tack Coat Sampling				
Asphalt binder sampling	Tex-500-C, Part II	✓	✓	1A/1B
Tack coat sampling	Tex-500-C, Part III	✓	✓	1A/1B
3. Mix Design & Verification				
Design and JMF changes	Tex-204-F	✓	✓	2
Mixing	Tex-205-F	✓	✓	2
Molding (TGC)	Tex-206-F	✓	✓	1A
Molding (SGC)	Tex-241-F	✓	✓	1A
Laboratory-molded density	Tex-207-F	✓	✓	1A
VMA[1] (calculation only)	Tex-204-F	✓	✓	2
Rice gravity	Tex-227-F	✓	✓	1A
Ignition oven correction factors[2]	Tex-236-F	✓	✓	2
Indirect tensile strength	Tex-226-F	✓	✓	2
Hamburg wheel test	Tex-242-F	✓	✓	2
Boil test	Tex-530-C	✓	✓	1A
4. Production Testing				
Selecting random numbers	Tex-225-F, Part I		✓	1A
Mixture sampling	Tex-222-F	✓	✓	1A
Molding (TGC)	Tex-206-F	✓	✓	1A
Molding (SGC)	Tex-241-F	✓	✓	1A
Laboratory-molded density	Tex-207-F	✓	✓	1A
VMA[1] (calculation only)	Tex-204-F	✓	✓	1A
Rice gravity	Tex-227-F	✓	✓	1A
Gradation & asphalt content[2]	Tex-236-F	✓	✓	1A
Control charts	Tex-233-F	✓	✓	1A
Moisture content	Tex-212-F	✓	✓	1A
Hamburg Wheel test	Tex-242-F	✓	✓	2
Micro-Deval abrasion	Tex-461-A		✓	
Boil test	Tex-530-C	✓	✓	1A
Aging ratio	Tex-211-F		✓	
Overlay test	Tex-248-F		✓	
Cantabro loss	Tex-245-F		✓	
5. Placement Testing				
Selecting random numbers	Tex-225-F, Part II		✓	1A/1B
Trimming roadway cores	Tex-207-F	✓	✓	1A/1B
In-place air voids	Tex-207-F	✓	✓	1A/1B
Establish rolling pattern	Tex-207-F	✓		1B
Control charts	Tex-233-F	✓	✓	1A
Ride quality measurement	Tex-1001-S	✓	✓	Note 3
Segregation (density profile)	Tex-207-F, Part V	✓	✓	1B
Longitudinal joint density	Tex-207-F, Part VII	✓	✓	1B
Thermal profile	Tex-244-F	✓	✓	1B

1. Voids in mineral aggregates.
2. Refer to Section 3268.4.I.2.c for exceptions to using an ignition oven.
3. Profiler and operator are required to be certified at the Texas Transportation Institute facility when Surface Test Type B is specified.

B. Reporting and Responsibilities. Use Department-provided Excel templates to record and calculate all test data including but not limited to mixture design, production and placement QC/QA, control charts, thermal profiles, segregation density profiles, and longitudinal joint density. Obtain the latest version of the Excel templates at http://www.txdot.gov/inside-txdot/forms-publications/consultants-contractors/forms/site-manager.html or from the Engineer. The Engineer and the Contractor will provide any available test results to the other party when requested. The maximum allowable time for the Contractor and Engineer to exchange test data is as given in Table 7 unless otherwise approved. The Engineer and the Contractor will immediately report to the other party any test result that requires suspension of production or placement, a payment penalty, or that fails to meet the specification requirements. Record and submit all test results and pertinent information on Department-provided Excel templates to the Engineer electronically by means of a portable USB flash drive, compact disc, or via email.

Subsequent sublots placed after test results are available to the Contractor, which require suspension of operations, may be considered unauthorized work. Unauthorized work will be accepted or rejected at the discretion of the Engineer in accordance with Section 5.3, "Conformity with Plans, Specifications, and Special Provisions."

Table 7
Reporting Schedule

Description	Reported By	Reported To	To Be Reported Within
Production Quality Control			
Gradation[1] Asphalt content[1] Laboratory-molded density[2] Moisture content[3] Boil test[3]	Contractor	Engineer	1 working day of completion of the sublot
Production Quality Assurance			
Gradation[3] Asphalt content[3] Laboratory-molded density[1] Hamburg wheel test[2] Boil test[3] Binder tests[2]	Engineer	Contractor	1 working day of completion of the sublot
Placement Quality Control			
In-place air voids[2] Segregation[1] Longitudinal joint density[1] Thermal profile[1]	Contractor	Engineer	1 working day of completion of the lot
Placement Quality Assurance			
In-place air voids[1] Segregation[2] Longitudinal joint density[2] Thermal profile[2] Aging ratio[2]	Engineer	Contractor	1 working day of receipt of the trimmed cores for in-place air voids[4]
Pay adjustment summary	Engineer	Contractor	2 working days of performing all required tests and receiving Contractor test data

1. These tests are required on every sublot.
2. Optional test. To be reported as soon as results become available.
3. To be performed at the frequency specified on the plans.
4. 2 days are allowed if cores cannot be dried to constant weight within 1 day.

The Engineer will use the Department-provided Excel template to calculate all pay adjustment factors for the lot. Sublot samples may be discarded after the Engineer and Contractor sign off on the pay adjustment summary documentation for the lot.

Use the procedures described in Tex-233-F to plot the results of all quality control (QC) and quality assurance (QA) testing. Update the control charts as soon as test results for each sublot become available. Make the control charts readily accessible at the field laboratory. The Engineer may suspend production for failure to update control charts.

C. Quality Control Plan (QCP). Develop and follow the QCP in detail. Obtain approval from the Engineer for changes to the QCP made during the project. The Engineer may suspend operations if the Contractor fails to comply with the QCP.

Submit a written QCP to the Engineer before the mandatory pre-paving meeting. Receive the Engineer's approval of the QCP before beginning production. Include the following items in the QCP:

1. **Project Personnel.** For project personnel, include:
   - a list of individuals responsible for QC with authority to take corrective action;
   - contact information for each individual listed; and
   - copies of certification documents for individuals performing specified QC functions.

2. **Material Delivery and Storage.** For material delivery and storage, include:
   - the sequence of material processing, delivery, and minimum quantities to assure continuous plant operations;
   - aggregate stockpiling procedures to avoid contamination and segregation;
   - frequency, type, and timing of aggregate stockpile testing to assure conformance of material requirements before mixture production; and
   - procedure for monitoring the quality and variability of asphalt binder.

3. **Production.** For production, include:
   - loader operation procedures to avoid contamination in cold bins;
   - procedures for calibrating and controlling cold feeds;
   - procedures to eliminate debris or oversized material;
   - procedures for adding and verifying rates of each applicable mixture component (e.g., aggregate, asphalt binder, RAP, RAS, lime, liquid antistrip);
   - procedures for reporting job control test results; and
   - procedures to avoid segregation and drain-down in the silo.

4. **Loading and Transporting.** For loading and transporting, include:
   - type and application method for release agents; and
   - truck loading procedures to avoid segregation.

5. **Placement and Compaction.** For placement and compaction, include:

   - proposed agenda for mandatory pre-paving meeting, including date and location;
   - proposed paving plan (e.g., paving widths and lift thicknesses);
   - type and application method for release agents in the paver and on rollers, shovels, lutes, and other utensils;
   - procedures for the transfer of mixture into the paver, while avoiding segregation and preventing material spillage;
   - process to balance production, delivery, paving, and compaction to achieve continuous placement operations and good ride quality;
   - paver operations (e.g., operation of wings, height of mixture in auger chamber) to avoid physical and thermal segregation and other surface irregularities; and
   - procedures to construct quality longitudinal and transverse joints.

D. Mixture Design.

1. **Design Requirements**. The Contractor may elect to design the mixture using a Texas Gyratory Compactor (TGC) or a Superpave Gyratory Compactor (SGC) unless otherwise shown on the plans. Use the typical weight design example given in Tex-204-F, Part I, when using a TGC. Use the Superpave mixture design procedure given in Tex-204-F, Part IV, when using a SGC. Design the mixture to meet the requirements listed in Tables 1, 2, 3, 4, 5, 8, 9, and 10.

   a. **Target Laboratory Molded Density When The TGC Is Used.** Design the mixture at a 96.5% target laboratory-molded density or as noted in Table 9. The target laboratory-molded density may be increased in 0.5% increments, not to exceed 97.0%, at the Contractor's discretion.

   b. **Design Number of Gyrations (Ndesign) When The SGC Is Used.** Design the mixture at 50 gyrations (Ndesign). Use a target laboratory-molded density of 96.0% to design the mixture; however, adjustments can be made to the Ndesign value as noted in Table 9. The Ndesign level may be reduced to no less than 35 gyrations at the Contractor's discretion.

   Use an approved laboratory to perform the Hamburg Wheel test and provide results with the mixture design, or provide the laboratory mixture and request that the Department perform the Hamburg Wheel test. The Department maintains the Material Producer List of approved laboratories located at http://www.txdot.gov/business/resources/producer-list.html. The Engineer will be allowed 10 working days to provide the Contractor with Hamburg Wheel test results on the laboratory mixture design.

   The Engineer will provide the mixture design when shown on the plans. The Contractor may submit a new mixture design at any time during the project. The Engineer will verify and approve all mixture designs (JMF1) before the Contractor can begin production.

Provide the Engineer with a mixture design report using the Department-provided Excel template. Include the following items in the report:

- the combined aggregate gradation, source, specific gravity, and percent of each material used;
- asphalt content and aggregate gradation of RAP and RAS stockpiles;
- the target laboratory-molded density (or Ndesign level when using the SGC);
- results of all applicable tests;
- the mixing and molding temperatures;
- the signature of the Level 2 person or persons that performed the design;
- the date the mixture design was performed; and
- a unique identification number for the mixture design.

Table 8
Master Gradation Limits (% Passing by Weight or Volume)
and VMA Requirements

Sieve Size	A Coarse Base	B Fine Base	C Coarse Surface	D Fine Surface	F Fine Mixture
2"	100.0[1]	–	–	–	–
1-1/2"	98.0–100.0	100.0[1]	–	–	–
1"	78.0–94.0	98.0–100.0	100.0[1]	–	–
3/4"	64.0–85.0	84.0–98.0	95.0–100.0	100.0[1]	–
1/2"	50.0–70.0	–	–	98.0–100.0	100.0[1]
3/8"	–	60.0–80.0	70.0–85.0	85.0–100.0	98.0–100.0
#4	30.0–50.0	40.0–60.0	43.0–63.0	50.0–70.0	70.0–90.0
#8	22.0–36.0	29.0–43.0	32.0–44.0	35.0–46.0	38.0–48.0
#30	8.0–23.0	13.0–28.0	14.0–28.0	15.0–29.0	12.0–27.0
#50	3.0–19.0	6.0–20.0	7.0–21.0	7.0–20.0	6.0–19.0
#200	2.0–7.0	2.0–7.0	2.0–7.0	2.0–7.0	2.0–7.0
Design VMA, % Minimum					
–	12.0	13.0	14.0	15.0	16.0
Production (Plant-Produced) VMA, % Minimum					
–	11.0	12.0	13.0	14.0	15.0

1. Defined as maximum sieve size. No tolerance allowed.

Table 9
Laboratory Mixture Design Properties

Mixture Property	Test Method	Requirement
Target laboratory-molded density, % (TGC)	Tex-207-F	96.5[1]
Design gyrations (Ndesign for SGC)	Tex-241-F	50[2]
Indirect tensile strength (dry), psi	Tex-226-F	85–200[3]
Boil test[4]	Tex-530-C	–

1. May be adjusted in 0.5% increments within a range of 96.0% to 97.5% when shown on the plans or specification or when mutually agreed between the Engineer and Contractor.
2. May be adjusted within a range of 35–100 gyrations when shown on the plans or specification or when mutually agreed between the Engineer and Contractor.
3. The Engineer may allow the IDT strength to exceed 200 psi if the corresponding Hamburg Wheel rut depth is greater than 3.0 mm and less than 12.5 mm.
4. Used to establish baseline for comparison to production results. May be waived when approved.

Table 10
Hamburg Wheel Test Requirements

High-Temperature Binder Grade	Test Method	Minimum # of Passes[1] @ 12.5 mm[2] Rut Depth, Tested @ 50°C
PG 64 or lower	Tex-242-F	10,000
PG 70		15,000
PG 76 or higher		20,000

1. May be decreased or waived when shown on the plans.
2. When the rut depth at the required minimum number of passes is less than 3 mm, the Engineer may require the Contractor to increase the target laboratory-molded density (TGC) by 0.5% to no more than 97.5% or lower the Ndesign level (SGC) to no less than 35 gyrations.

2. Job-Mix Formula Approval. The job-mix formula (JMF) is the combined aggregate gradation, target laboratory molded density (or Ndesign level), and target asphalt percentage used to establish target values for hot mix production. JMF1 is the original laboratory mixture design used to produce the trial batch. When WMA is used, JMF1 may be designed and submitted to the Engineer without including the WMA additive. When WMA is used, document the additive or process used and recommend rate on the JMF1 submittal. The Engineer and the Contractor will verify JMF1 based on plant-produced mixture from the trial batch unless otherwise approved. The Engineer may accept an existing mixture design previously used on a Department project and may waive the trial batch to verify JMF1. The Department may require the Contractor to reimburse the Department for verification tests if more than two trial batches per design are required.

a. Contractor's Responsibilities.

(1) Providing Gyratory Compactor. Use a TGC calibrated in accordance with Tex-914-K when electing or required to design the mixture in accordance with Tex-204-F, Part I, for molding production samples. Furnish an SGC calibrated in accordance with Tex-241-F when electing or required to design the mixture in accordance with Tex-204-F, Part IV, for molding production samples. If the SGC is used, locate the SGC at the Engineer's field laboratory and make the SGC available to the Engineer for use in molding production samples.

(2) Gyratory Compactor Correlation Factors. Use Tex-206-F, Part II, to perform a gyratory compactor correlation when the Engineer uses a different gyratory compactor. Apply the correlation factor to all subsequent production test results.

(3) Submitting JMF1. Furnish the Engineer a mix design report (JMF1) with representative samples of all component materials and request approval to produce the trial batch. If opting to have the Department perform the Hamburg Wheel test on the laboratory mixture, provide the Engineer with approximately 10,000 g of the design mixture and request that the Department perform the Hamburg Wheel test.

(4) Supplying Aggregate. Provide the Engineer with approximately 40 lb. of each aggregate stockpile unless otherwise directed.

(5) Supplying Asphalt. Provide the Engineer at least 1 gal. of the asphalt material and sufficient quantities of any additives proposed for use.

(6) Ignition Oven Correction Factors. Determine the aggregate and asphalt correction factors from the ignition oven in accordance with Tex-236-F. Prior to the trial batch production, provide the Engineer with split samples of the mixtures, including all additives (except water), and blank samples used to determine the correction factors for the ignition oven used for quality assurance testing during production. Correction factors established from a previously approved mixture design may be used for the current mixture design, if the mixture design and ignition oven are the same as previously used unless otherwise directed.

(7) Boil Test. Perform the test and retain the tested sample from Tex-530-C until completion of the project or as directed by the Engineer. Use this sample for comparison purposes during production. The Engineer may waive the requirement for the boil test.

(8) Trial Batch Production. Upon receiving conditional approval of JMF1 and authorization from the Engineer to produce a trial batch, provide a plant-produced trial batch, including the WMA additive or process, if applicable, for verification testing of JMF1 and development of JMF2. Produce a trial batch mixture that meets the requirements in Table 4, Table 5, and Table 11. In lieu of a new trial batch, the Engineer may accept test results from recent production of the same mixture.

(9) Trial Batch Production Equipment. To produce the trial batch, use only equipment and materials proposed for use on the project.

(10) Trial Batch Quantity. Produce enough quantity of the trial batch to ensure that the mixture meets the specification requirements.

(11) Number of Trial Batches. Produce trial batches as necessary to obtain a mixture that meets the specification requirements.

(12) Trial Batch Sampling. Obtain a representative sample of the trial batch and split it into three equal portions, in accordance with Tex-222-F. Label these portions as "Contractor," "Engineer," and "Referee." Deliver samples to the appropriate laboratory as directed.

(13) Trial Batch Testing. Test the trial batch to ensure that the mixture produced using the proposed JMF1 meets the mixture requirements in Table 11. The trial batch mixture must also be in compliance with the Hamburg Wheel requirement in Table 10. Use an approved laboratory to perform the Hamburg Wheel test on the trial batch mixture or request that the Department perform the Hamburg Wheel test. The Engineer will be allowed 10 working days to provide the Contractor with Hamburg Wheel

test results on the trial batch. Provide the Engineer with a copy of the trial batch test results.

(14) Development of JMF2. After the Engineer grants full approval of JMF1 based on results from the trial batch, evaluate the trial batch test results, determine the optimum mixture proportions, and submit as JMF2. Adjust the asphalt content or gradation to achieve the specified target laboratory-molded density. The asphalt content established for JMF2 is not required to be within any tolerance of the optimum asphalt content established for JMF1; however, mixture produced using JMF2 must meet the voids in mineral aggregates (VMA) requirements for production shown in Table 8. If the optimum asphalt content for JMF2 is more than 0.5% lower than the optimum asphalt content for JMF1, the Engineer may perform or require the Contractor to perform Tex-226-F on Lot 1 production to confirm the indirect tensile strength does not exceed 200 psi. Verify that JMF2 meets the mixture requirements in Table 5.

(15) Mixture Production. After receiving approval for JMF2 and receiving a passing result from the Department's or a Department-approved laboratory's Hamburg Wheel test on the trial batch, use JMF2 to produce Lot 1 as described in Section 3268.4.I.3.a.(1), "Lot 1 Placement." As an option, once JMF2 is approved, proceed to Lot 1 production at the Contractor's risk without receiving the results from the Department's Hamburg Wheel test on the trial batch.

If electing to proceed without Hamburg Wheel test results from the trial batch, notify the Engineer. Note that the Engineer may require up to the entire sublot of any mixture failing the Hamburg Wheel test to be removed and replaced at the Contractor's expense.

(16) Development of JMF3. Evaluate the test results from Lot 1, determine the optimum mixture proportions, and submit as JMF3 for use in Lot 2.

(17) JMF Adjustments. If necessary, adjust the JMF before beginning a new lot. The adjusted JMF must:

- be provided to the Engineer in writing before the start on a new lot;
- be numbered in sequence to the previous JMF;
- meet the mixture requirements in Table 4 and Table 5;
- meet the master gradation limits shown in Table 8; and
- be within the operational tolerances of JMF2 listed in Table 11.

(18) Requesting Referee Testing. If needed, use referee testing in accordance with Section 3268.4.I.1, "Referee Testing," to resolve testing differences with the Engineer.

Table 11
Operational Tolerances

Description	Test Method	Allowable Difference Between Trial Batch and JMF1 Target	Allowable Difference from Current JMF Target	Allowable Difference between Contractor and Engineer[1]
Individual % retained for #8 sieve and larger	Tex-200-F or Tex-236-F	Must be Within Master Grading Limits in Table 8	±5.0[2,3]	±5.0
Individual % retained for sieves smaller than #8 and larger than #200			±3.0[2,3]	±3.0
% passing the #200 sieve			±2.0[2,3]	±1.6
Asphalt content, %	Tex-236-F	±0.5	±0.3[3]	±0.3
Laboratory-molded density, %	Tex-207-F	±1.0	±1.0	±1.0
In-place air voids, %		N/A	N/A	±1.0
Laboratory-molded bulk specific gravity		N/A	N/A	±0.020
VMA, %, min	Tex-204-F	Note 4	Note 4	N/A
Theoretical maximum specific (Rice) gravity	Tex-227-F	N/A	N/A	±0.020

1. Contractor may request referee testing only when values exceed these tolerances.
2. When within these tolerances, mixture production gradations may fall outside the master grading limits; however, the % passing the #200 will be considered out of tolerance when outside the master grading limits.
3. Only applies to mixture produced for Lot 1 and higher.
4. Test and verify that Table 8 requirements are met.

b. Engineer's Responsibilities.

(1) Gyratory Compactor. For mixtures designed in accordance with Tex-204-F, Part I, the Engineer will use a Department TGC, calibrated in accordance with Tex-914-K, to mold samples for trial batch and production testing. The Engineer will make the Department TGC and the Department field laboratory available to the Contractor for molding verification samples, if requested by the Contractor.

For mixtures designed in accordance with Tex-204-F, Part IV, the Engineer will use a Department SGC, calibrated in accordance with Tex-241-F, to mold samples for laboratory mixture design verification. For molding trial batch and production specimens, the Engineer will use the Contractor-provided SGC at the field laboratory or provide and use a Department SGC at an alternate location. The Engineer will make the Contractor-provided SGC in the Department field laboratory available to the Contractor for molding verification samples.

(2) Conditional Approval of JMF1 and Authorizing Trial Batch. Within 2 working days of receiving the mixture design report (JMF1) and all required materials and Contractor-provided Hamburg Wheel test results, the Engineer will review the Contractor's mix design report and verify conformance with all aggregates, asphalt, additives, recycled materials, and mixture specifications. The Engineer will grant the Contractor conditional approval of JMF1, if the information provided on the paper copy of JMF1 indicates that the Contractor's mixture design meets the specifications. When the Contractor does not provide Hamburg Wheel test results with laboratory mixture design, 10 working days is allowed for

conditional approval of JMF 1. The Engineer will base full approval of JMF1 on test results on mixture from the trial batch.

Unless waived, the Engineer will determine the Micro-Deval abrasion loss in accordance with Section 3268.2.A.1.b, "Micro-Deval Abrasion." If the Engineer's test results are pending after 2 working days, conditional approval of JMF1 will still be granted within 2 working days of receiving JMF1. When the Engineer's test results become available, they will be used for specification compliance.

After conditionally approving JMF1, including either Contractor- or Department-supplied Hamburg Wheel test results, the Contractor is authorized to produce a trial batch.

(3) Hamburg Wheel Testing of JMF1. If the Contractor requests the option to have the Department perform the Hamburg Wheel test on the laboratory mixture, the Engineer will mold samples in accordance with Tex-242-F to verify compliance with the Hamburg Wheel test requirement in Table 10.

(4) Ignition Oven Correction Factors. The Engineer will use the split samples provided by the Contractor to determine the aggregate and asphalt correction factors for the ignition oven used for quality assurance testing during production in accordance with Tex-236-F.

(5) Testing the Trial Batch. Within 1 full working day, the Engineer will sample and test the trial batch to ensure that the mixture meets the requirements in Table 11. If the Contractor requests the option to have the Department perform the Hamburg Wheel test on the trial batch mixture, the Engineer will mold samples in accordance with Tex-242-F to verify compliance with the Hamburg Wheel test requirement in Table 10.

The Engineer will have the option to perform the following tests on the trial batch:

- Tex-226-F, to verify that the indirect tensile strength meets the requirement shown in Table 9; and
- Tex-530-C, to retain and use for comparison purposes during production.

(6) Full Approval of JMF1. The Engineer will grant full approval of JMF1 and authorize the Contractor to proceed with developing JMF2 if the Engineer's results for the trial batch meet the requirements in Table 11. The Engineer will notify the Contractor that an additional trial batch is required if the trial batch does not meet these requirements.

(7) Approval of JMF2. The Engineer will approve JMF2 within 1 working day if the mixture meets the requirements in Table 5 and the gradation meets the master grading limits shown in Table 8. The asphalt content established for JMF2 is not required to be within any tolerance of the optimum asphalt content established for JMF1; however, mixture

produced using JMF2 must meet the VMA requirements shown in Table 8. If the optimum asphalt content for JMF2 is more than 0.5% lower than the optimum asphalt content for JMF1, the Engineer may perform or require the Contractor to perform Tex-226-F on Lot 1 production to confirm the indirect tensile strength does not exceed 200 psi.

(8) Approval of Lot 1 Production. The Engineer will authorize the Contractor to proceed with Lot 1 production (using JMF2) as soon as a passing result is achieved from the Department's or a Department-approved laboratory's Hamburg Wheel test on the trial batch. The Contractor may proceed at its own risk with Lot 1 production without the results from the Hamburg Wheel test on the trial batch.

If the Department's or Department-approved laboratory's sample from the trial batch fails the Hamburg Wheel test, the Engineer will suspend production until further Hamburg Wheel tests meet the specified values. The Engineer may require up to the entire sublot of any mixture failing the Hamburg Wheel test be removed and replaced at the Contractor's expense.

(9) Approval of JMF3 and Subsequent JMF Changes. JMF3 and subsequent JMF changes are approved if they meet the mixture requirements shown in Table 4, Table 5, the master grading limits shown in Table 8, and are within the operational tolerances of JMF2 shown in Table 11.

E. Production Operations. Perform a new trial batch when the plant or plant location is changed. Take corrective action and receive approval to proceed after any production suspension for noncompliance to the specification. Submit a new mix design and perform a new trial batch when the asphalt content of:

- either RAP stockpile used in the mix is more than 0.5% higher than the value shown on the mixture design report; or
- RAS stockpile used in the mix is more than 2.0% higher than the value shown on the mixture design report.

1. Storage and Heating of Materials. Do not heat the asphalt binder above the temperatures specified in Item 300, "Asphalts, Oils, and Emulsions," or outside the manufacturer's recommended values. On a daily basis, provide the Engineer with the records of asphalt binder and hot-mix asphalt discharge temperatures (in legible and discernible increments) in accordance with Item 320, "Equipment for Asphalt Concrete Pavement." Do not store mixture for a period long enough to affect the quality of the mixture, nor in any case longer than 12 hr unless otherwise approved.

2. Mixing and Discharge of Materials. Notify the Engineer of the target discharge temperature and produce the mixture within 25°F of the target. Monitor the temperature of the material in the truck before shipping to ensure that it does not exceed 350°F (or 275ºF for WMA) and is not lower than 215°F. The Department will not pay for or allow placement of any mixture produced at more than 350°F.

When WMA is required, produce the WMA within the target temperature discharge range of 215ºF and 275ºF. Take corrective action any time the discharge temperature of the WMA exceeds the target discharge range. The Engineer may suspend production operations if the Contractor's corrective action is not successful at controlling the production temperature within the target discharge range. Note that when WMA is produced, it may be necessary to adjust burners to ensure complete combustion such that no burner fuel residue remains in the mixture.

Control the mixing time and temperature so that substantially all moisture is removed from the mixture before discharging from the plant. If requested, determine the moisture content by oven-drying in accordance with Tex-212-F, Part II, and verify that the mixture contains no more than 0.2% of moisture by weight. Obtain the sample immediately after discharging the mixture into the truck, and perform the test promptly.

F. Hauling Operations. Before use, clean all truck beds to ensure that mixture is not contaminated. When a release agent is necessary, use a release agent on the Department's Material Producer List to coat the inside bed of the truck.

Use only equipment for hauling as defined in Section 3268.4.G.3.c, "Hauling Equipment." Other hauling equipment may be used when allowed by the Engineer.

G. Placement Operations. Collect haul tickets from each load of mixture delivered to the project and provide the Department's copy to the Engineer approximately every hour, or as directed by the Engineer. When the Pave-IR system is not used for specification compliance, use a non-contact infrared thermometer to measure and record the internal temperature of the mixture as discharged from the truck or material transfer device prior to or as the mix enters the paver and an approximate station number or GPS coordinates on each ticket. Calculate the daily yield and cumulative yield for the specified lift and provide to the Engineer at the end of paving operations for each day unless otherwise directed. The Engineer may suspend production if the Contractor fails to produce and provide haul tickets and yield calculations by the end of paving operations for each day.

Prepare the surface by removing raised pavement markers and objectionable material such as moisture, dirt, sand, leaves, and other loose impediments from the surface before placing mixture. Remove vegetation from pavement edges. Place the mixture to meet the typical section requirements and produce a smooth, finished surface with a uniform appearance and texture. Offset longitudinal joints of successive courses of hot mix by at least 6 in. Place mixture so that longitudinal joints on the surface course coincide with lane lines, or as directed. Ensure that all finished surfaces will drain properly. Place the mixture at the rate or thickness shown on the plans. The Engineer will use the guidelines in Table 12 to determine the compacted lift thickness of each layer when multiple lifts are required. The thickness determined is based on the rate of 110 lb./sq. yd. for each inch of pavement unless otherwise shown on the plans.

Table 12
Compacted Lift Thickness and Required Core Height

Mixture Type	Compacted Lift Thickness Guidelines		Minimum Untrimmed Core Height (in.) Eligible for Testing
	Minimum (in.)	Maximum (in.)	
A	3.00	6.00	2.00
B	2.50	5.00	1.75
C	2.00	4.00	1.50
D	1.50	3.00	1.25
F	1.25	2.50	1.25

1. Weather Conditions.

a. When Using a Pave-IR System for Specification Compliance. The Contractor may pave any time the roadway is dry and the roadway surface temperature is at least 32°F; however, the Engineer may restrict the Contractor from paving surface mixtures if the ambient temperature is likely to drop below 32°F within 12 hours of paving. Operate the Pave-IR system in accordance with Tex-244-F and demonstrate to the Engineer that no recurring severe thermal segregation exists. Provide the Engineer with the automated report described in Tex-244-F on a daily basis unless otherwise directed.

b. When Not Using a Pave-IR System for Specification Compliance. Place mixture when the roadway surface temperature is equal to or higher than the temperatures listed in Table 13 unless otherwise approved or as shown on the plans. Measure the roadway surface temperature with a handheld infrared thermometer. The Engineer may allow mixture placement to begin prior to the roadway surface reaching the required temperature requirements, if conditions are such that the roadway surface will reach the required temperature within 2 hours of beginning placement operations. Place mixtures only when weather conditions and moisture conditions of the roadway surface are suitable in the opinion of the Engineer. The Engineer may restrict the Contractor from paving if the ambient temperature is likely to drop below 32°F within 12 hours of paving.

Table 13
Minimum Pavement Surface Temperatures

	Minimum Pavement Surface Temperatures in Degrees Fahrenheit	
Originally Specified High Temperature Binder Grade	Subsurface Layers or Night Paving Operations	Surface Layers Placed in Daylight Operations
PG 64 or lower	45	50
PG 70	55[1]	60[1]
PG 76 or higher	60[1]	60[1]

1. Contractors may pave at temperatures 10°F lower than these values when utilizing a paving process including WMA or equipment that eliminates thermal segregation. In such cases, the Contractor must use either a hand held thermal camera or a hand held infrared thermometer operated in accordance with Tex-244-F to demonstrate to the satisfaction of the Engineer that the uncompacted mat has no more than 10°F of thermal segregation.

2. **Tack Coat.** Clean the surface before placing the tack coat. Unless otherwise approved, apply tack coat uniformly at the rate directed by the Engineer. The Engineer will set the rate between 0.04 and 0.10 gal. of residual asphalt per square yard of surface area. Apply the tack coat in a uniform manner to avoid streaks and other irregular patterns. Apply a thin, uniform tack coat to all contact surfaces of curbs, structures, and all joints. Allow adequate time for emulsion to break completely prior to placing any material. Prevent splattering of tack coat when placed adjacent to curb, gutter, and structures. Roll the tack coat with a pneumatic-tire roller to remove streaks and other irregular patterns when directed.

3. **Lay-Down Operations.**

   a. **Thermal Profile.** Use a thermal camera or an infrared thermometer to obtain thermal profiles on each sublot in accordance with Tex-244-F. When the Pave-IR system is not used for specification compliance, the Engineer will obtain a thermal profile at least once per project. Thermal profiles are not applicable in areas described in Section 3268.4.I.3.a(4), "Miscellaneous Areas."

      Within 1 working day of the completion of each lot, provide the Engineer with the thermal profile of every sublot within the lot. Report the results of each thermal profile in accordance with Section 3268.4.B, "Reporting and Responsibilities."

      (1) Moderate Thermal Segregation. Any areas that have a temperature differential greater than 25°F but not exceeding 50°F are deemed as having moderate thermal segregation. Take immediate corrective action to eliminate the moderate thermal segregation. Evaluate areas with moderate thermal segregation by performing density profiles in accordance with Section 3268.4.I.3.c(2), "Segregation (Density Profile)."

      (2) Severe Thermal Segregation. Any areas that have a temperature differential greater than 50°F are deemed as having severe thermal segregation. When the Pave-IR system is not used for specification compliance, no production or placement bonus will be paid for any sublot that contains severe thermal segregation. Suspend operations and take immediate corrective action to eliminate severe thermal segregation unless otherwise directed. Resume operations when the Engineer determines that subsequent production will meet the requirements of this Section. Evaluate areas with severe thermal segregation by performing density profiles in accordance with Section 3268.4.I.3.c(2), "Segregation (Density Profile)." Remove and replace the material in any areas that have both severe thermal segregation and a failing result for Segregation (Density Profile) unless otherwise directed. The sublot in question may receive a production and placement bonus if applicable when the defective material is successfully removed and replaced.

      (3) Use of the Pave-IR System. In lieu of obtaining thermal profiles on each sublot using a thermal camera or an infrared thermometer, the Contractor

may use the Pave-IR system (paver mounted infrared bar) to obtain a continuous thermal profile in accordance with Tex-244-F. When electing to use the Pave-IR system, notify the Engineer prior to beginning placement operations and specify if using the Pave-IR system for specification compliance or for information only. When electing to use the Pave-IR system for information only, use a thermal camera or an infrared thermometer to obtain thermal profiles in accordance with Tex-244-F. When electing to use the Pave-IR system for information only, segregation density profiles are applicable.

When using the Pave-IR system for specification compliance, review the output results on a daily basis. Unless otherwise directed, provide the automated report described in Tex-244-F to the Engineer for review. Modify the paving process as necessary to eliminate any recurring (moderate or severe) thermal segregation identified by the Pave-IR system. The Engineer may suspend paving operations if the Contractor cannot successfully modify the paving process to eliminate recurring severe thermal segregation. Density profiles are not required and are not applicable when using the Pave-IR system for specification compliance. Upon completion of use of the Pave-IR system for specification compliance or as requested by the Engineer, provide the Engineer with electronic copies of all daily data files that can be used with the Pave-IR system software to generate temperature profile plots.

b. Windrow Operations. When hot mix is placed in windrows, operate windrow pickup equipment so that substantially all the mixture deposited on the roadbed is picked up and loaded into the paver.

c. Hauling Equipment. The Contractor may elect to use belly dumps, live bottom, or end dump trucks to haul and transfer mixture; however, with exception of paving miscellaneous areas, end dump trucks are only allowed when used in conjunction with an MTD with remixing capability or when a Pave-IR system is used for specification compliance unless otherwise allowed by the Engineer.

d. Screed Heaters. If the paver stops for more than 5 minutes, turn off screed heaters to prevent overheating of the mat. If the screed heater remains on for more than 5 minutes while the paver is stopped, the Engineer may evaluate the suspect area in accordance with Section 3268.4.I.3.c(4),"Recovered Asphalt Dynamic Shear Rheometer (DSR)."

H. Compaction. Uniformly compact the pavement to contain between 3.8% and 8.5% in-place air voids. When the in-place air voids exceed the range of 3.8% and 8.5%, take immediate corrective action to bring the operation within these tolerances. Areas defined in Section 3268.4.I.3.a(4), "Miscellaneous Areas," are not subject to in-place air void determination. In all other areas, the Engineer may obtain and test cores and may suspend operations or require removal and replacement if the in-place air voids are less than 2.7% or greater than 9.9%. The Engineer will allow paving to resume when the proposed corrective action is likely to yield between 3.8% and 8.5% in-place air voids.

Furnish the type, size, and number of rollers required for compaction as approved. Use a pneumatic-tire roller to seal the surface unless excessive pickup of fines occurs. Use additional rollers as required to remove any roller marks. Use only water or an approved release agent on rollers, tamps, and other compaction equipment unless otherwise directed.

On the first day of production, use the control strip method given in Tex-207-F, Part IV, to establish the rolling pattern that will produce the desired in-place air voids unless otherwise directed.

Use tamps to thoroughly compact the edges of the pavement along curbs, headers, and similar structures and in locations that will not allow thorough compaction with rollers. The Engineer may require rolling with a trench roller on widened areas, in trenches, and in other limited areas.

Complete all compaction operations before the pavement temperature drops below 160°F unless otherwise allowed. The Engineer may allow compaction with a light finish roller operated in static mode for pavement temperatures below 160°F.

Allow the compacted pavement to cool to 160°F or lower before opening to traffic unless otherwise directed. When directed, sprinkle the finished mat with water or limewater to expedite opening the roadway to traffic.

I. Acceptance Plan. Pay adjustments for the material will be in accordance with Article 3268.6, "Payment."

Sample and test the hot mix on a lot and sublot basis. If the production pay factor given in Section 3268.6.A, "Production Pay Adjustment Factors," for two consecutive lots or the placement pay factor given in Section 3268.6.B, "Placement Pay Adjustment Factors," for two consecutive lots is below 1.000, suspend production until test results or other information indicates to the satisfaction of the Engineer that the next material produced or placed will result in pay factors of at least 1.000.

1. Referee Testing. The Construction Division is the referee laboratory. The Contractor may request referee testing if a "remove and replace" condition is determined based on the Engineer's test results, or if the differences between Contractor and Engineer test results exceed the maximum allowable difference shown in Table 11 and the differences cannot be resolved. The Contractor may also request referee testing if the Engineer's test results require suspension of production and the Contractor's test results are within specification limits. Make the request within 5 working days after receiving test results and cores from the Engineer. Referee tests will be performed only on the sublot in question and only for the particular tests in question. Allow 10 working days from the time the samples are received at the referee laboratory for test results to be reported. The Department may require the Contractor to reimburse the Department for referee tests if more than three referee tests per project are required and the Engineer's test results are closer than the Contractor's test results to the referee test results.

The Construction Division will determine the laboratory-molded density based on the molded specific gravity and the maximum theoretical specific gravity of the

referee sample. The in-place air voids will be determined based on the bulk specific gravity of the cores, as determined by the referee laboratory and the Engineer's average maximum theoretical specific gravity for the lot. With the exception of "remove and replace" conditions, referee test results are final and will establish pay adjustment factors for the sublot in question. The Contractor may decline referee testing and accept the Engineer's test results when the placement pay adjustment factor for any sublot results in a "remove and replace" condition. Placement sublots subject to be removed and replaced will be further evaluated in accordance with Section 3268.6.B.2, "Placement Sublots Subject to Removal and Replacement."

2. Production Acceptance.

a. Production Lot. A production lot consists of four equal sublots. The default quantity for Lot 1 is 1,000 tons; however, when requested by the Contractor, the Engineer may increase the quantity for Lot 1 to no more than 4,000 tons. The Engineer will select subsequent lot sizes based on the anticipated daily production such that approximately three to four sublots are produced each day. The lot size will be between 1,000 tons and 4,000 tons. The Engineer may change the lot size before the Contractor begins any lot.

If the optimum asphalt content for JMF2 is more than 0.5% lower than the optimum asphalt content for JMF1, the Engineer may perform or require the Contractor to perform Tex-226-F on Lot 1 to confirm the indirect tensile strength does not exceed 200 psi. If the indirect tensile strength exceeds 200 psi, take corrective action to bring the mixture within specification compliance unless otherwise directed.

(1) Incomplete Production Lots. If a lot is begun but cannot be completed, such as on the last day of production or in other circumstances deemed appropriate, the Engineer may close the lot. Adjust the payment for the incomplete lot in accordance with Section 3268.6.A, "Production Pay Adjustment Factors." Close all lots within 5 working days unless otherwise allowed by the Engineer.

b. Production Sampling.

(1) Mixture Sampling. Obtain hot mix samples from trucks at the plant in accordance with Tex-222-F. The sampler will split each sample into three equal portions in accordance with Tex-200-F and label these portions as "Contractor," "Engineer," and "Referee." The Engineer will perform or witness the sample splitting and take immediate possession of the samples labeled "Engineer" and "Referee." The Engineer will maintain the custody of the samples labeled "Engineer" and "Referee" until the Department's testing is completed.

(a) Random Sample. At the beginning of the project, the Engineer will select random numbers for all production sublots. Determine sample locations in accordance with Tex-225-F. For each sublot, take one

sample at the location randomly selected. The Engineer will perform or witness the sampling of production sublots.

(b) Blind Sample. For one sublot per lot, the Engineer will obtain and test a "blind" sample in lieu of the random sample collected by the Contractor. The Contractor may test either the "blind" or the random sample; however, referee testing (if applicable) will be based on a comparison of results from the "blind" sample. The location of the Engineer's "blind" sample will not be disclosed to the Contractor. The Engineer's "blind" sample may be randomly selected in accordance with Tex-225-F for any sublot or selected at the discretion of the Engineer. The Engineer will use the Contractor's split sample for sublots not sampled by the Engineer.

(2) Informational Cantabro and Overlay Testing. During the first week of production, randomly select one sublot from Lot 2 or higher for Cantabro and Overlay testing. Obtain and provide the Engineer with approximately 150 lb. (70 kg) of mixture in sealed containers, boxes, or bags labeled with CSJ, mixture type, lot, and sublot number. The Engineer will ship the mixture to the Construction Division for Cantabro and Overlay testing. Results from these tests will not be used for specification compliance.

(3) Asphalt Binder Sampling. Obtain a 1 qt. sample of the asphalt binder for each lot of mixture produced. Obtain the sample at approximately the same time the mixture random sample is obtained. Sample from a port located immediately upstream from the mixing drum or pug mill in accordance with Tex-500-C, Part II. Label the can with the corresponding lot and sublot numbers and deliver the sample to the Engineer. The Engineer may also obtain independent samples. If obtaining an independent asphalt binder sample, the Engineer will split a sample of the asphalt binder with the Contractor. The Engineer will test at least one asphalt binder sample per project to verify compliance with Item 300, "Asphalts, Oils, and Emulsions."

c. Production Testing. The Contractor and Engineer must perform production tests in accordance with Table 14. The Contractor has the option to verify the Engineer's test results on split samples provided by the Engineer. Determine compliance with operational tolerances listed in Table 11 for all sublots.

If the Engineer's laboratory-molded density on any sublot is less than 95.0% or greater than 98.0%, take immediate corrective action to bring the mixture within these tolerances. The Engineer may suspend operations if the Contractor's corrective actions do not produce acceptable results. The Engineer will allow production to resume when the proposed corrective action is likely to yield acceptable results.

If the aggregate mineralogy is such that Tex-236-F does not yield reliable results, the Engineer may allow alternate methods for determining the asphalt content and aggregate gradation. Provide evidence that results from Tex-236-F

are not reliable before requesting permission to use an alternate method unless otherwise directed. If an alternate test method is allowed, use the applicable test procedure as directed.

Table 14
Production and Placement Testing Frequency

Description	Test Method	Minimum Contractor Testing Frequency	Minimum Engineer Testing Frequency[1]
Individual % retained for #8 sieve and larger	Tex-200-F or Tex-236-F	1 per sublot	1 per 12 sublots
Individual % retained for sieves smaller than #8 and larger than #200			
% passing the #200 sieve			
Laboratory-molded density	Tex-207-F	N/A	1 per sublot
Laboratory-molded bulk specific gravity			
In-place air voids			
VMA	Tex-204-F		
Segregation (density profile)[5]	Tex-207-F, Part V	1 per sublot	1 per project
Longitudinal joint density	Tex-207-F, Part VII		
Moisture content	Tex-212-F, Part II	When directed	
Theoretical maximum specific (Rice) gravity	Tex-227-F	N/A	1 per sublot
Asphalt content	Tex-236-F	1 per sublot	1 per lot
Hamburg Wheel test	Tex-242-F	N/A	1 per project
Recycled Asphalt Shingles (RAS)[2]	Tex-217-F, Part III	N/A	
Thermal profile[5]	Tex-244-F	1 per sublot	
Asphalt binder sampling and testing	Tex-500-C	1 per lot (sample only)	
Tack coat sampling and testing	Tex-500-C, Part III	N/A	
Boil test[3]	Tex-530-C	1 per lot	
Cantabro loss[4]	Tex-245-F	1 per project (sample only)	
Overlay test[4]	Tex-248-F		

1. For production defined in Section 3268.I.4, "Exempt Production," the Engineer will test at the frequency listed in the Department's *Guide Schedule of Sampling and Testing* and this specification.
2. Testing performed by the Construction Division or designated laboratory.
3. The Engineer may reduce or waive the sampling and testing requirements based on a satisfactory test history.
4. Testing performed by the Construction Division and for informational purposes only.
5. Not required when the Pave-IR system is used for specification compliance.

d. Operational Tolerances. Control the production process within the operational tolerances listed in Table 11. When production is suspended, the Engineer will allow production to resume when test results or other information indicates that the next mixture produced will be within the operational tolerances.

(1) Gradation. Suspend operation and take corrective action if any aggregate is retained on the maximum sieve size shown in Table 8. A sublot is defined as out of tolerance if either the Engineer's or the Contractor's test results are out of operational tolerance. Unless otherwise directed, suspend production when test results for gradation exceed the operational tolerances for three consecutive sublots on the same sieve or four consecutive sublots on any sieve. The consecutive sublots may be from more than one lot.

(2) Asphalt Content. A sublot is defined as out of operational tolerance if either the Engineer's or the Contractor's test results exceed the values listed in Table 11. No production or placement bonus will be paid for any sublot that is out of operational tolerance for asphalt content. Suspend production and shipment of the mixture if the Engineer's or the Contractor's asphalt content deviates from the current JMF by more than 0.5% for any sublot.

(3) Voids in Mineral Aggregates (VMA). The Engineer will determine the VMA for every sublot. For sublots when the Engineer does not determine asphalt content, the Engineer will use the asphalt content results from quality control testing performed by the Contractor to determine VMA.

Take immediate corrective action if the VMA value for any sublot is less than the minimum VMA requirement for production listed in Table 8. Suspend production and shipment of the mixture if the Engineer's VMA results on two consecutive sublots are below the minimum VMA requirement for production listed in Table 8. No production or placement bonus will be paid for any sublot that does not meet the minimum VMA requirement for production listed in Table 8 based on the Engineer's VMA determination.

Suspend production and shipment of the mixture if the Engineer's VMA result is more than 0.5% below the minimum VMA requirement for production listed in Table 8. In addition to suspending production, the Engineer may require removal and replacement or may allow the sublot to be left in place without payment.

(4) Hamburg Wheel Test. The Engineer may perform a Hamburg Wheel test at any time during production, including when the boil test indicates a change in quality from the materials submitted for JMF1. In addition to testing production samples, the Engineer may obtain cores and perform Hamburg Wheel tests on any areas of the roadway where rutting is observed. When the production or core samples fail the Hamburg Wheel test criteria in Table 10, suspend production until further Hamburg Wheel tests meet the specified values. Core samples, if taken, will be obtained from the center of the finished mat or other areas excluding the vehicle wheel paths. The Engineer may require up to the entire sublot of any mixture failing the Hamburg Wheel test to be removed and replaced at the Contractor's expense.

If the Department's or approved laboratory's Hamburg Wheel test results in a "remove and replace" condition, the Contractor may request that the Department confirm the results by retesting the failing material. The Construction Division will perform the Hamburg Wheel tests and determine the final disposition of the material in question based on the Department's test results.

e. Individual Loads of Hot Mix. The Engineer can reject individual truckloads of hot mix. When a load of hot mix is rejected for reasons other than temperature, contamination, or excessive uncoated particles, the Contractor may request that the rejected load be tested. Make this request within 4 hr. of rejection. The Engineer will sample and test the mixture. If test results are within the operational tolerances shown in Table 11, payment will be made for the load. If test results are not within operational tolerances, no payment will be made for the load and the Engineer may require removal.

3. Placement Acceptance.

a. Placement Lot. A placement lot consists of four placement sublots. A placement sublot consists of the area placed during a production sublot.

(1) Lot 1 Placement. Placement bonuses for Lot 1 will be in accordance with Section 3268.6.B, "Placement Pay Adjustment Factors;" however, no placement penalty will be assessed for any sublot placed in Lot 1 when the in-place air voids are greater than or equal to 2.7% and less than or equal to 9.9%. Remove and replace any sublot with in-place air voids less than 2.7% or greater than 9.9%.

(2) Incomplete Placement Lots. An incomplete placement lot consists of the area placed as described in Section 3268.4.I.2.a(1), "Incomplete Production Lots," excluding areas defined in Section 3268.4.I.3.a(4), "Miscellaneous Areas." Placement sampling is required if the random sample plan for production resulted in a sample being obtained from an incomplete production sublot.

(3) Shoulders, Ramps, Etc. Shoulders, ramps, intersections, acceleration lanes, deceleration lanes, and turn lanes are subject to in-place air void determination unless designated on the plans as not eligible for in-place air void determination. Intersections may be considered miscellaneous areas when determined by the Engineer.

(4) Miscellaneous Areas. Miscellaneous areas include areas that typically involve significant handwork or discontinuous paving operations, such as temporary detours, driveways, mailbox turnouts, crossovers, gores, spot level-up areas, and other similar areas. Temporary detours are subject to in-place air void determination when shown on the plans. Miscellaneous areas also include level-ups and thin overlays when the layer thickness specified on the plans is less than the minimum untrimmed core height eligible for testing shown in Table 12. The specified layer thickness is based on the rate of 110 lb./sq. yd. for each inch of pavement unless another rate is shown on the plans. Miscellaneous areas are not eligible for random placement sampling locations. Compact miscellaneous areas in accordance with Section 3268.4.H, "Compaction." Miscellaneous areas are not subject to in-place air void determination, thermal profiles testing, segregation (density profiles), or longitudinal joint density evaluations.

b. Placement Sampling. At the beginning of the project, the Engineer will select random numbers for all placement sublots. The Engineer will provide the Contractor with the placement random numbers immediately after the sublot is completed. Mark the roadway location at the completion of each sublot and record the station number. Determine one random sample location for each placement sublot in accordance with Tex-225-F. If the randomly generated sample location is within 2 ft. of a joint or pavement edge, adjust the location by no more than necessary to achieve a 2-ft. clearance.

Shoulders, ramps, intersections, acceleration lanes, deceleration lanes, and turn lanes are always eligible for selection as a random sample location; however, if a random sample location falls on one of these areas and the area is designated on the plans as not subject to in-place air void determination, cores will not be taken for the sublot and a 1.000 pay factor will be assigned to that sublot.

Provide the equipment and means to obtain and trim roadway cores on site. On site is defined as in close proximity to where the cores are taken. Obtain the cores within 1 working day of the time the placement sublot is completed unless otherwise approved. Obtain two 6-in. diameter cores side-by-side from within 1 ft. of the random location provided for the placement sublot. For Type D and Type F mixtures, 4-in. diameter cores are allowed. Mark the cores for identification, measure and record the untrimmed core height, and provide the information to the Engineer. The Engineer will witness the coring operation and measurement of the core thickness. Visually inspect each core and verify that the current paving layer is bonded to the underlying layer. If an adequate bond does not exist between the current and underlying layer, take corrective action to ensure that an adequate bond will be achieved during subsequent placement operations.

Immediately after obtaining the cores from the roadway, trim the cores in accordance with Tex-207-F if the core heights meet the minimum untrimmed values listed in Table 12. Trim the cores on site in the presence of the Engineer. Use a permanent marker or paint pen to record the lot and sublot numbers on each core as well as the designation as Core A or B. The Engineer may require additional information to be marked on the core and may choose to sign or initial the core. The Engineer will take custody of the cores immediately after they are trimmed and will retain custody of the cores until the Department's testing is completed. Prior to turning the trimmed cores over to the Engineer, the Contractor may elect to wrap the trimmed cores or secure them in a manner that will reduce the risk of possible damage occurring during transport by the Engineer. After testing, the Engineer will return the cores to the Contractor.

The Engineer may elect to have the cores transported back to the Department's laboratory at the HMA plant via the Contractor's haul truck or other designated vehicle. In such cases where the cores will be out of the Engineer's possession during transport, the Engineer will use the Construction Division's protocol to provide a secure means and process that protects the integrity of the cores during transport.

If the core height before trimming is less than the minimum untrimmed value shown in Table 12, decide whether to include the pair of cores in the air void determination for that sublot. If electing to have the cores included in air void determination, trim the cores as described above before delivering to the Engineer. If electing to not have the cores included in air void determination, deliver untrimmed cores to the Engineer and inform the Engineer of the decision to not have the cores included in air void determination. The placement pay factor for the sublot will be 1.000 if cores will not be included in air void determination.

In lieu of the Contractor trimming the cores on site immediately after coring, the Engineer and the Contractor may mutually agree to have the trimming operations performed at an alternate location such as a field laboratory or other similar location. In such cases, the Engineer will take possession of the cores immediately after they are obtained from the roadway and will retain custody of the cores until testing is completed. Either the Department or Contractor representative may perform trimming of the cores. The Engineer will witness all trimming operations in cases where the Contractor representative performs the trimming operation.

Immediately after obtaining the cores, dry the core holes and tack the sides and bottom. Fill the hole with the same type of mixture and properly compact the mixture. Repair core holes with other methods when approved.

c. Placement Testing. Perform placement tests in accordance with Table 14. After the Engineer returns the cores, the Contractor has the option to test the cores to verify the Engineer's test results for in-place air voids. The allowable differences between the Contractor's and Engineer's test results are listed in Table 11.

(1) In-Place Air Voids. The Engineer will measure in-place air voids in accordance with Tex-207-F and Tex-227-F. Before drying to a constant weight, cores may be pre-dried using a Corelok or similar vacuum device to remove excess moisture. The Engineer will average the values obtained for all sublots in the production lot to determine the theoretical maximum specific gravity. The Engineer will use the average air void content for in-place air voids.

The Engineer will use the vacuum method to seal the core if required by Tex-207-F. The Engineer will use the test results from the unsealed core to determine the placement pay adjustment factor if the sealed core yields a higher specific gravity than the unsealed core. After determining the in-place air void content, the Engineer will return the cores and provide test results to the Contractor.

(2) Segregation (Density Profile). Test for segregation using density profiles in accordance with Tex-207-F, Part V. Density profiles are not required and are not applicable when using the Pave-IR system for specification

compliance. Density profiles are not applicable in areas described in Section 3268.4.I.3.a(4), "Miscellaneous Areas."

Unless otherwise approved, perform a density profile every time the paver stops for more than 60 seconds, on areas that are identified by either the Contractor or the Engineer as having thermal segregation, and on any visibly segregated areas. If the paver does not stop for more than 60 seconds, and there are no visibly segregated areas or areas that are identified as having thermal segregation, perform a minimum of one profile per sublot.

Within 1 working day of the completion of each lot, provide the Engineer with the density profile of every sublot within the lot. Report the results of each density profile in accordance with Section 3268.4.B, "Reporting and Responsibilities."

The density profile is considered failing if it exceeds the tolerances in Table 15. No production or placement bonus will be paid for any sublot that contains a failing density profile. When the Pave-IR system is not used for specification compliance, the Engineer will measure the density profile at least once per project. The Engineer's density profile results will be used when available. The Engineer may require the Contractor to remove and replace the area in question if the area fails the density profile and has surface irregularities as defined in Section 3268.4.I.3.c(5), "Irregularities." The sublot in question may receive a production and placement bonus if applicable when the defective material is successfully removed and replaced.

Investigate density profile failures and take corrective actions during production and placement to eliminate the segregation. Suspend production if two consecutive density profiles fail unless otherwise approved. Resume production after the Engineer approves changes to production or placement methods.

Table 15
Segregation (Density Profile) Acceptance Criteria

Mixture Type	Maximum Allowable Density Range (Highest to Lowest)	Maximum Allowable Density Range (Average to Lowest)
Type A & Type B	8.0 pcf	5.0 pcf
Type C, Type D & Type F	6.0 pcf	3.0 pcf

(3) Longitudinal Joint Density.

(a) Informational Tests. While establishing the rolling pattern, perform joint density evaluations, and verify that the joint density is no more than 3.0 pcf below the density taken at or near the center of the mat. Adjust the rolling pattern, if needed, to achieve the desired joint density. Perform additional joint density evaluations at least once per sublot unless otherwise directed.

(b) Record Tests. For each sublot, perform a joint density evaluation at each pavement edge that is or will become a longitudinal joint. Joint density evaluations are not applicable in areas described in Section 3268.4.I.3.a(4), "Miscellaneous Areas." Determine the joint density in accordance with Tex-207-F, Part VII. Record the joint density information and submit results on Department forms to the Engineer. The evaluation is considered failing if the joint density is more than 3.0 pcf below the density taken at the core random sample location and the correlated joint density is less than 90.0%. The Engineer will make an independent joint density verification at least once per project and may make independent joint density verifications at the random sample locations. The Engineer's joint density test results will be used when available.

Within 1 working day of the completion of each lot, provide the Engineer with the joint density of every sublot within the lot. Report the results of each joint density in accordance with Section 3268.4.B, "Reporting and Responsibilities."

Investigate joint density failures and take corrective actions during production and placement to improve the joint density. Suspend production if the evaluations on two consecutive sublots fail unless otherwise approved. Resume production after the Engineer approves changes to production or placement methods.

(4) Recovered Asphalt Dynamic Shear Rheometer (DSR). When the Pave-IR system is not used for specification compliance, the Engineer may take production samples or cores from suspect areas of the project to determine recovered asphalt properties. Asphalt binders with an aging ratio greater than 3.5 do not meet the requirements for recovered asphalt properties and may be deemed defective when tested and evaluated by the Construction Division. The aging ratio is the DSR value of the extracted binder divided by the DSR value of the original unaged binder. Obtain DSR values in accordance with AASHTO T 315 at the specified high temperature performance grade of the asphalt. The Engineer may require removal and replacement of the defective material at the Contractor's expense. The asphalt binder will be recovered for testing from production samples or cores in accordance with Tex-211-F.

(5) Irregularities. Identify and correct irregularities including but not limited to segregation, rutting, raveling, flushing, fat spots, mat slippage, irregular color, irregular texture, roller marks, tears, gouges, streaks, uncoated aggregate particles, or broken aggregate particles. The Engineer may also identify irregularities, and in such cases, the Engineer will promptly notify the Contractor. If the Engineer determines that the irregularity will adversely affect pavement performance, the Engineer may require the Contractor to remove and replace (at the Contractor's expense) areas of the pavement that contain irregularities and areas where the mixture does not bond to the existing pavement.

If irregularities are detected, the Engineer may require the Contractor to immediately suspend operations or may allow the Contractor to continue operations for no more than 1 day while the Contractor is taking appropriate corrective action.

4. **Exempt Production.** When the anticipated daily production is less than 1,000 tons, the total production for the project is less than 5,000 tons, or when mutually agreed between the Engineer and the Contractor, the Engineer may deem the mixture as exempt production. Production may also be exempt when shown on the plans.

   For exempt production, the Contractor is relieved of all production and placement sampling and testing requirements, and the production and placement pay factors are 1.000. All other specification requirements apply, and the Engineer will perform acceptance tests for production and placement listed in Table 14 at the frequency listed in the Department's *Guide Schedule of Sampling and Testing*.

   For exempt production:

   - produce, haul, place, and compact the mixture in compliance with the specification and as directed by the Engineer;
   - control mixture production to yield a laboratory-molded density that is within ± 1.0% of the target laboratory-molded density as tested by the Engineer;
   - compact the mixture in accordance with Section 3268.4.H, "Compaction"; and
   - when the Contractor elects not to use the Pave-IR system for specification compliance, the Engineer may perform segregation (density profiles) and thermal profiles in accordance with the specification.

5. **Ride Quality.** Measure ride quality in accordance with Item 585, "Ride Quality for Pavement Surfaces," unless otherwise shown on the plans.

5. **Measurement.** Hot mix will be measured by the ton of composite hot mix, which includes asphalt, aggregate, and additives. Measure the weight on scales in accordance with Item 520, "Weighing and Measuring Equipment."

6. **Payment.** The work performed and materials furnished in accordance with this Item and measured as provided under Article 3268.5, "Measurement," will be paid for at the unit price bid for "Dense Graded Hot-Mix Asphalt" of the type, surface aggregate classification, and binder specified. These prices are full compensation for surface preparation; materials including tack coat; placement; equipment; labor; tools; and incidentals.

   Pay adjustments for bonuses and penalties will be applied as determined in this Item; however, a pay adjustment factor of 1.000 will be assigned for all placement sublots for "level ups" only when "level up" is listed as part of the item bid description code. A pay adjustment factor of 1.000 will be assigned to all production and placement sublots when "exempt" is listed as part of the item bid description code.

Applicable pay adjustment bonuses will only be paid for sublots when the Contractor supplies the Engineer with the required documentation for production and placement QC/QA, thermal profiles, segregation density profiles, and longitudinal joint density in accordance with Section 3268.4.B, "Reporting and Responsibilities." If the Contractor uses the Pave-IR system for specification compliance, documentation is not required for thermal profiles or segregation density profiles on individual sublots; however, the Pave-IR system automated reports described in Tex-244-F are required.

Trial batches will not be paid for unless they are included in pavement work approved by the Department.

Pay adjustment for ride quality will be determined in accordance with Item 585, "Ride Quality for Pavement Surfaces."

A. Production Pay Adjustment Factors. The production pay adjustment factor is based on the laboratory-molded density using the Engineer's test results. A pay adjustment factor will be determined from Table 16 for each sublot using the deviation from the target laboratory-molded density defined in Table 9. The production pay adjustment factor for completed lots will be the average of the pay adjustment factors for the four sublots sampled within that lot.

Table 16
Production Pay Adjustment Factors for Laboratory-Molded Density[1]

Absolute Deviation from Target Laboratory-Molded Density	Production Pay Adjustment Factor (Target Laboratory-Molded Density)
0.0	1.050
0.1	1.050
0.2	1.050
0.3	1.044
0.4	1.038
0.5	1.031
0.6	1.025
0.7	1.019
0.8	1.013
0.9	1.006
1.0	1.000
1.1	0.965
1.2	0.930
1.3	0.895
1.4	0.860
1.5	0.825
1.6	0.790
1.7	0.755
1.8	0.720
> 1.8	Remove and replace

1. If the Engineer's laboratory-molded density on any sublot is less than 95.0% or greater than 98.0%, take immediate corrective action to bring the mixture within these tolerances. The Engineer may suspend operations if the Contractor's corrective actions do not produce acceptable results. The Engineer will allow production to resume when the proposed corrective action is likely to yield acceptable results.

1. Payment for Incomplete Production Lots. Production pay adjustments for incomplete lots, described under Section 3268.4.I.2.a(1), "Incomplete Production Lots," will be calculated using the average production pay factors from all sublots

sampled. A production pay factor of 1.000 will be assigned to any lot when the random sampling plan did not result in collection of any samples.

2. **Production Sublots Subject to Removal and Replacement.** If after referee testing, the laboratory-molded density for any sublot results in a "remove and replace" condition as listed in Table 16, the Engineer may require removal and replacement, or may allow the sublot to be left in place without payment. The Engineer may also elect to accept the sublot in accordance with Item 5, "Control of the Work," Section 5.3.A, "Acceptance of Defective or Unauthorized Work." Replacement material meeting the requirements of this Item will be paid for in accordance with this Section.

B. Placement Pay Adjustment Factors. The placement pay adjustment factor is based on in-place air voids using the Engineer's test results. A pay adjustment factor will be determined from Table 17 for each sublot that requires in-place air void measurement. A placement pay adjustment factor of 1.000 will be assigned to the entire sublot when the random sample location falls in an area designated on the plans as not subject to in-place air void determination. A placement pay adjustment factor of 1.000 will be assigned to quantities placed in areas described in Section 3268.4.I.3.a(4), "Miscellaneous Areas." The placement pay adjustment factor for completed lots will be the average of the placement pay adjustment factors for up to four sublots within that lot.

Table 17
Placement Pay Adjustment Factors for In-place Air Voids

In-place Air Voids	Placement Pay Adjustment Factor	In-place Air Voids	Placement Pay Adjustment Factor
< 2.7	Remove and Replace	6.4	1.042
2.7	0.710	6.5	1.040
2.8	0.740	6.6	1.038
2.9	0.770	6.7	1.036
3.0	0.800	6.8	1.034
3.1	0.830	6.9	1.032
3.2	0.860	7.0	1.030
3.3	0.890	7.1	1.028
3.4	0.920	7.2	1.026
3.5	0.950	7.3	1.024
3.6	0.980	7.4	1.022
3.7	0.998	7.5	1.020
3.8	1.002	7.6	1.018
3.9	1.006	7.7	1.016
4.0	1.010	7.8	1.014
4.1	1.014	7.9	1.012
4.2	1.018	8.0	1.010
4.3	1.022	8.1	1.008
4.4	1.026	8.2	1.006
4.5	1.030	8.3	1.004
4.6	1.034	8.4	1.002
4.7	1.038	8.5	1.000
4.8	1.042	8.6	0.998
4.9	1.046	8.7	0.996
5.0	1.050	8.8	0.994
5.1	1.050	8.9	0.992
5.2	1.050	9.0	0.990
5.3	1.050	9.1	0.960
5.4	1.050	9.2	0.930
5.5	1.050	9.3	0.900
5.6	1.050	9.4	0.870
5.7	1.050	9.5	0.840
5.8	1.050	9.6	0.810
5.9	1.050	9.7	0.780
6.0	1.050	9.8	0.750
6.1	1.048	9.9	0.720
6.2	1.046	> 9.9	Remove and Replace
6.3	1.044		

1. **Payment for Incomplete Placement Lots.** Pay adjustments for incomplete placement lots described under Section 3268.4.I.3.a(2), "Incomplete Placement Lots," will be calculated using the average of the placement pay factors from all sublots sampled and sublots where the random location falls in an area designated on the plans as not eligible for in-place air void determination. A placement pay adjustment factor of 1.000 will be assigned to any lot when the random sampling plan did not result in collection of any samples.

2. **Placement Sublots Subject to Removal and Replacement.** If after referee testing, the placement pay adjustment factor for any sublot results in a "remove and replace" condition as listed in Table 17, the Engineer will choose the location of

two cores to be taken within 3 ft. of the original failing core location. The Contractor will obtain the cores in the presence of the Engineer. The Engineer will take immediate possession of the untrimmed cores and submit the untrimmed cores to the Construction Division, where they will be trimmed if necessary and tested for bulk specific gravity within 10 working days of receipt. The average bulk specific gravity of the cores will be divided by the Engineer's average maximum theoretical specific gravity for that lot to determine the new pay adjustment factor of the sublot in question. If the new pay adjustment factor is 0.700 or greater, the new pay adjustment factor will apply to that sublot. If the new pay adjustment factor is less than 0.700, no payment will be made for the sublot. Remove and replace the failing sublot, or the Engineer may allow the sublot to be left in place without payment. The Engineer may also elect to accept the sublot in accordance with Item 5, "Control of the Work," Section 5.3.A "Acceptance of Defective or Unauthorized Work." Replacement material meeting the requirements of this Item will be paid for in accordance with this Section.

C. Total Adjusted Pay Calculation. Total adjusted pay (TAP) will be based on the applicable pay adjustment factors for production and placement for each lot.

$TAP = (A+B)/2$

where:

A = Bid price × production lot quantity × average pay adjustment factor for the production lot

B = Bid price × placement lot quantity × average pay adjustment factor for the placement lot + (bid price × quantity placed in miscellaneous areas × 1.000)

Production lot quantity = Quantity actually placed - quantity left in place without payment

Placement lot quantity = Quantity actually placed - quantity left in place without payment - quantity placed in miscellaneous areas

SPECIAL SPECIFICATION
5284
Temporary Driveways

1. Description. Construct, maintain, and remove temporary driveways.

2. Materials.

A. Embankment. Use roadway excavation for embankment material or use material from other approved sources.

B. Temporary Drainage Pipe. Furnish pipe required for temporary drainage in accordance with the details shown on the plans or as directed. Pipe will become the property of the Contractor upon removal.

Temporary use of permanent pipe for use on the project is allowed if the sequence of work permits. If pipe used temporarily is damaged so that it is not acceptable in accordance with the applicable Items, it will not be acceptable for incorporation in the final project. The damaged pipe remains the property of the Contractor.

C. Base and Surfacing. Use recycled asphalt pavement (RAP) or other approved material.

3. Construction. Construct temporary driveways at the locations and to the lines, grades, and typical sections shown on the plans or as directed, in accordance with this Item. Maintain driveways in a safe and passable condition.

Remove temporary driveways after they are no longer needed to blend in with existing terrain. Removed materials will become the property of the Contractor unless otherwise shown on the plans or directed. Dispose of the materials off the right of way, unless otherwise directed, in accordance with federal, state, and local requirements. If allowed, the materials may be disposed of by spreading along the adjacent roadway slopes. If embankment or surfacing is to be reused within the roadway construction or stockpiled for futures use, salvage or stockpile in accordance with the pertinent Items.

4. Measurement. This Item will be measured by the square yard of completed temporary driveway.

5. Payment. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Temporary Driveways."

This price is full compensation for furnishing and placing materials required, including embankment and surfacing; excavation and hauling of excavated material; sprinkling and compacting; furnishing, installing, and removing drainages structures; removal of driveway; disposal of materials; and equipment, labor, tools, and incidentals.

SPECIAL SPECIFICATION
6007
Removing Traffic Signals

1. **Description**. Remove, store, and salvage traffic signals.

2. **Construction.** Traffic signals must remain in operation during construction until their removal as directed. The Contractor will not be responsible for maintenance of the signals during this period of operation.

   Remove existing electrical services, pedestal poles, strain poles, mast arm pole assemblies, luminaires, signal heads, controllers, cables, and other accessories. Remove materials so that damage does not occur. Remove and store items designated for reuse or salvage at locations shown on the plans or as directed.

   Remove abandoned concrete foundations to a point 2 ft. below final grade. Backfill hole with material equal in composition and density to the surrounding area. Replace surfacing material with similar material to an equivalent condition.

   Accept ownership of unsalvageable materials and dispose of in accordance with federal, state, and local regulations.

3. **Measurement.** This Item will be measured as each signalized intersection salvaged. A signalized intersection is a group of signals operated by a single controller.

4. **Payment.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Removing Traffic Signals." This price is full compensation for removing the various traffic signal components; removing the foundations; disposal of unsalvageable material; hauling; and equipment, labor, tools, and incidentals.

SPECIAL SPECIFICATION

6266

Video Imaging Vehicle Detection System

1. Description. Install a Video Imaging Vehicle Detection System (VIVDS) that monitors vehicles on a roadway via processing of video images and provides detector outputs to a traffic controller or similar device.

A VIVDS configuration for a single intersection will consist of 4 variable focal length cameras, VIVDS card rack processor system, and all associated equipment required to setup and operate in a field environment including a video monitor and/or laptop (if required), connectors and camera mounting hardware.

The system is composed of these principal items: the camera(s), the field communications link between the camera and the VIVDS processor unit, and the VIVDS processor unit along with a PC, video monitor or associated equipment required to setup the VIVDS and central control software to communicate to the VIVDS processor.

The VIVDS Card Rack Processor must be either NEMA TS 2 TYPE 1 or TYPE 2. TYPE 2 must have RS 485 SDLC.

2. Definitions.

A. VIVDS Processor Unit. The electronic unit that converts the video image provided by the cameras, generates vehicle detections for defined zones and collects vehicular data as specified.

B. VIVDS Processor System. One or more VIVDS processor modular units required to handle the number of camera inputs.

C. Central Control. A remotely located control center, which communicates with the VIVDS. The VIVDS operator at the central control has the ability to monitor the operation and modify detector placement and configuration parameters. The equipment that constitutes central control is comprised of a workstation microcomputer along with the associated peripherals as described in this special specification.

D. Field Setup Computer. A portable microcomputer used to set up and monitor the operation of the VIVDS processor unit. If required to interface with the VIVDS processor unit, the field setup computer with the associated peripherals described in this special specification and a video monitor, also described in this special specification, must be supplied as part of the VIVDS.

E. Field Communications Link. The communications connection between the camera and the VIVDS processor unit. The primary communications link media may be coaxial cable or fiber optic cable.

F. Remote Communications Link. The communications connection between the VIVDS processor unit and the central control.

G. Camera Assembly. The complete camera or optical device assembly used to collect the visual image. The camera assembly consists of a charged coupled device (CCD) camera, environmental enclosure, sun shield, temperature control mechanism, and all necessary mounting hardware.

H. Occlusion. The phenomenon when a vehicle passes through the detection zone but the view from the sensor is obstructed by another vehicle. This type of occlusion results in the vehicle not being detected by the sensor.

Or

When a vehicle in one lane passes through the detection zone of an adjacent lane. This type of occlusion can result in the same vehicle being counted in more than one lane.

I. Detection Zone. The detection zone is a line or area selected through the VIVDS processor unit that when occupied by a vehicle, sends a vehicle detection to the traffic controller or freeway management system.

J. Detection Accuracy. The measure of the basic operation of a detection system (shows detection when a vehicle is in the detection zone and shows no detection when there is not a vehicle in the detection zone).

K. Live Video. Video being viewed or processed at 30 frames per second.

L. Lux. The measure of light intensity at which a camera may operate. A unit of illumination equal to one lumen per square meter or to the illumination of a surface uniformly one meter distant from a point source of one candle.

M. Video Monitor. As a minimum must be a 9-in. black and white monitor with BNC connectors for video in and out.

3. Functional Capabilities.

The system software must be able to detect either approaching or departing vehicles in multiple traffic lanes. A minimum of 4 detector outputs per video processor module card and each card must have a minimum of 24 detection zones. Each zone and output must be user definable through interactive graphics by placing lines and/or boxes in an image on a video or VGA monitor. The user must be able to redefine previously defined detection zones.

The VIVDS must provide real time vehicle detection (within 112 milliseconds (ms) of vehicle arrival).

The VIVDS processor unit must be capable of simultaneously processing information from various video sources, including CCTV video image sensors and video tape players. The video sources may be, but are not required to be, synchronized or line-locked. The video must be processed at a rate of 30 times per second by the VIVDS processor unit.

The system must be able to detect the presence of vehicles in a minimum of 12 detection zones within the combined field of view of all cameras (a minimum of 12 detection zones per camera input to the VIVDS processor unit).

Detection zones must be provided that are sensitive to the direction of vehicle travel. The direction to be detected by each detection zone must be user programmable.

The VIVDS processor unit must compensate for minor camera movement (up to 2% of the field of view at 400 ft.) without falsely detecting vehicles. The camera movement must be measured on the unprocessed video input to the VIVDS processor unit.

The camera must operate while directly connected to VIVDS Processor Unit.

Once the detector configuration has been downloaded or saved into the VIVDS processor unit, the video detection system must operate with the monitoring equipment (monitor and/or laptop) disconnected or on-line.

When the monitoring equipment is directly connected to the VIVDS processor unit, it must be possible to view vehicle detections in real time as they occur on the field setup computer's color VGA display or the video monitor.

4. Vehicle Detection.

A. Detection Zone Placement. The video detection system must provide flexible detection zone placement anywhere within the combined field of view of the image sensors. Preferred presence detector configurations must be lines or boxes placed across lanes of traffic or lines placed in line with lanes of traffic. A single detector must be able to replace one or more conventional detector loops. Detection zones must be able to be fully overlapped. In addition, detection zones must have the capability of implementing "AND" and "OR" logical functions including presence, extension and delay timing. These logical functions may be excluded if provisions are made to bring each detector separately into the controller and the controller can provide these functions.

B. Detection Zone Programming. Placement of detection zones must be by means of a graphical interface using the video image of the roadway. The monitor must show images of the detection zones superimposed on the video image of traffic while the VIVDS processor is running.

The detection zones must be created by using the mouse or keypad to draw detection zones on the monitor. The detection zones must be capable of being sized, shaped and overlapped to provide optimal road coverage and detection. It must be possible to upload detector configurations to the VIVDS processor unit and to retrieve the detector configuration that is currently running in the VIVDS processor unit.

The mouse or keypad must be used to edit previously defined detector configurations so as to fine tune the detection zone placement size and shape. Once a detection configuration has been created, the system must provide a graphic display of the new configuration on its monitor. While this fine-tuning is being done, the detection must continue to operate from the detector configuration that is currently called.

When a vehicle occupies a detection zone, the detection zone on the live video must indicate the presence of a vehicle, thereby verifying proper operation of the detection system. With the absence of video, the card must have an LED that will indicate proper operation of the detection zones.

Detection zones must be provided that is sensitive to the direction of vehicle travel. The direction to be detected by each detection zone must be user programmable. The vehicle detection zone should not activate if a vehicle traveling any direction other than the one specified for detection occupies the detection zone. Cross-street and wrong way traffic should not cause a detection.

C. Design Field of View. The video detection system must reliably detect vehicle presence in the design field of view. The design field of view must be defined as the sensor view when the image sensor is mounted 24 ft. or higher above the roadway, when the camera is adjacent (within 15 ft.) to the edge of the nearest vehicle travel lane, and when the length of the detection area is not greater than 10 times the mounting height of the image sensor. Within this design field of view, the VIVDS processor unit must be capable of setting up a single detection zone for point detection (equivalent to the operation of a 6 ft. by 6 ft. inductive loop). A single camera, placed at the proper mounting height with the proper lens, must be able to monitor up to and including 5 traffic lanes simultaneously.

D. Detection Performance. Detection accuracy of the video detection system must be comparable to properly operating inductive loops. Detection accuracy must include the presence of any vehicle in the defined detection zone regardless of the lane, which the vehicle is occupying. Occlusion produced by vehicles in the same or adjacent lanes must not be considered a failure of the VIVDS processor unit, but a limitation of the camera placement. Detection accuracy (a minimum of 95%) must be enforced for the entire design field of view on a lane by lane and on a time period basis. When specified in the plans, furnish up to 24 continuous hours of recorded video of all installed intersection cameras within the 30 day test period for verification of proper camera placement, field of view, focus, detection zone placement, processor setup and operation. The video from each camera must show vehicle detections for all zones.

E. Equipment failure, either camera or VIVDS processor unit, must result in constant vehicle detection on affected detection zones.

5. VIVDS Processor Unit.

A. Cabinet Mounting- The VIVDS processor unit must be rack mountable.

B. Environmental Requirements - The VIVDS processor unit must be designed to operate reliably in the adverse environment found in the typical roadside traffic cabinet. It must meet the environmental requirements set forth by the latest NEMA (National Electrical Manufacturers Association) TS1 and TS2 standards as well as the environmental requirements for Type 170, Type 179 and 2070 controllers. Operating temperature must be from -30°F to +165°F at 0% to 95% relative humidity, non condensing.

C. Electrical - The VIVDS must have a modular electrical design.

The VIVDS must operate within a range of 89 to 135 VAC, 60 Hz single phase. Power to the VIVDS must be from the transient protected side of the AC power distribution system in the traffic control cabinet in which the VIVDS is installed.

Serial communications to the field setup computer must be through an RS 232, USB or Ethernet port. This port must be able to download the real time detection information needed to show detector actuations. A connector on the front of the VIVDS processor unit must be used for serial communications.

The unit must be equipped with RS 170 (monochrome) or RS170A (color) composite video inputs video inputs, so that signals from image sensors or other synchronous or asynchronous video sources can be processed in real time. BNC connectors on the front of the VIVDS processor unit or video patch panel must be used for all video inputs.

The unit must be equipped with a single RS 170 composite video output. This output must be capable of corresponding to any one of the video inputs, as selected remotely via the field setup computer or front panel switch. Multiple video outputs requiring external cable connections to create a combined single video output must not be acceptable. A BNC or RCA connector must be used for video output on the front of the processor unit. Any other video formats used must prior approval by TxDOT TRF Signal Operation Engineer.

Software upgrades and/or changes MUST be presented to and approved by TXDOT TRF-TM division, before being used. Failure to do so will be grounds for termination of contract and probation for responsible party(s).

The unit software and the supervisor software must include diagnostic software to allow testing the VIVDS functions. This must include the capability to set and clear individual detector outputs and display the status of inputs to enable setup and troubleshooting in the field.

6. Camera Assembly.

A. Camera. The video detection system must use medium resolution, monochrome image sensors as the video source for real time vehicle detection. The cameras must be approved for use with the VIVDS processor unit by the supplier of the VIVDS. As a minimum, each camera must provide the following capabilities:

1. Images must be produced with a Charge Coupled Device (CCD) sensing element with horizontal resolution of at least 480 lines for black and white or 470 lines for color and vertical resolution of at least 350 lines for black and white or color. Images must be output as a video signal conforming to RS170.

2. Useable video and resolvable features in the video image must be produced when those features have luminance levels as low as 0.1 lux for black and white, and as low as 1.0 lux for color, for night use.

3. Useable video and resolvable features in the video image must be produced when those features have luminance levels as high as 10,000 lux during the day.

4. The camera must include an electronic shutter or auto-iris control based upon average scene luminance and must be equipped with an electronic shutter or auto-iris lens with variable focal length and variable focus that can be adjusted without opening up the camera housing to suit the site geometry. The variable focal length must be adjustable from 6 mm to 34 mm.

B. Camera and Lens Assembly. The camera and lens assembly must be housed in an environmental enclosure that provides the following capabilities:

1. The enclosure must be waterproof and dust tight to the latest NEMA 4 specifications.

2. The enclosure must allow the camera to operate satisfactorily over an ambient temperature range from -30°F to +165°F while exposed to precipitation as well as direct sunlight.

3. The enclosure must allow the camera horizon to be rotated in the field during installation.

4. The enclosure must include a provision at the rear of the enclosure for connection of power and video signal cables fabricated at the factory. Input power to the environmental enclosure must be nominally 115 VAC 60 Hz.

5. A thermostatically controlled heater must be at the front of the enclosure to prevent the formation of ice and condensation, as well as to assure proper operation of the lens's iris mechanism. The heater must not interfere with the operation of the camera electronics, and it must not cause interference with the video signal.

6. The enclosure must be light colored or unfinished and must include a sun shield to minimize solar heating. The front edge of the sunshield must protrude beyond the front edge of the environmental enclosure and must include provision to divert water flow to the sides of the sunshield. The amount of overhang of the sun shield must be adjustable to block the view of the horizon to prevent direct sunlight from entering the lens. Any plastics used in the enclosure must include ultra violet inhibitors.

7. The total weight of the image sensor in the environmental enclosure with sunshield must be less than 10 lb.

8. When operating in the environmental enclosure with power and video signal cables connected, the image sensor must meet FCC class B requirements for electromagnetic interference emissions.

The video output of the cameras must be isolated from earth ground. All video connections for the cameras to the video interface panel must also be isolated from earth ground.

Use waterproof, quick disconnect connectors to the image sensor for both video and power.

A camera interface panel capable of being mounted to sidewalls of a controller cabinet must be provided for protection of the VIVDS processor unit, camera video and power inputs/outputs. The panel must consist of, as a minimum, 4 Edco CX06 coax protectors, a

Edco ACP-340 for the cameras and VIVDS processor unit power, a 10 amp breaker, a convenience outlet protected the ACP-340 and a terminal strip with a minimum of sixteen 8-32 binder head screws. The terminal strip must be protected by a piece of 1/8 in. Plexiglas.

When the connection between the image sensor and the VIVDS processor unit is coaxial cable, the coaxial cable used must be a low loss, 75 ohm, precision video cable suited for outdoor installation, such as Belden 8281 or TxDOT approved equal.

Camera mounting hardware must allow for vertical or horizontal mounting to the camera enclosure. Pelco AS-0166-4-62 or equivalent is acceptable.

7. Field Communication Link. The field communications link must be a one way communications connection from the camera to the equipment cabinet. The primary communications link media may be coaxial cable or fiber optic cable accompanied by a 3 conductor minimum 18 AWG, 24 VDC or 115 VAC camera power cable, or appropriate cable as approved.

The following requirements must govern for the various types of field communications link media described on the plans:

A. Coaxial Cable. In locations where the plans indicate coaxial cable is required as the primary communications link, this cable must be of the RG 59 type with a nominal impedance of 75 ohms. All cable must have a polyethylene dielectric with copper braid shield having a minimum of 98 percent shield coverage and not greater than 0.78 dB attenuation per 100 ft. at 10 MHz with a minimum 18 AWG external 3 conductor power cable or approved equivalent as directed by the Engineer.

B. Fiber Optic Cable. If specified by the plans, furnish fiber optic cable in accordance with the special specification for fiber optic cable.

C. Twisted Wire Pairs. Must be Belden 9556 or equivalent 18 AWG TWP control cable.

All connection cables must be continuous from the equipment cabinet to the camera. No splices of any type will be permitted.

Install lightning and transient surge suppression devices on the processor side of the field communications link to protect the peripheral devices. The suppression devices must be all solid state. Lightning protection is not required for fiber optic communication lines. The devices must present high impedance to, and must not interfere with, the communications lines during normal operation. The suppression devices must not allow the peak voltage on any line to exceed 300% of the normal operating peak voltage at any time. The response time of the devices must not exceed 5 nanoseconds.

8. VIVDS Set-Up System. The minimum VIVDS set-up system, as needed for detector setup and viewing of vehicle detections, must consist of a field setup computer and Windows based interface software (if required) or a video monitor with interface software built-in to the VIVDS processor unit. Live video (30 frames per second) must be available on the field setup computer to determine proper operation of detectors. The field set-up computer as a minimum, must have an NTSC video input port or equivalent.

If a field setup computer is required for system set-up, it must be supplied by the supplier of the VIVDS.

The field setup computer must include all necessary cabling and a Windows based program to interface with the VIVDS processor unit. This software must provide an easy to use graphical user interface and support all models/versions of the supplied VIVDS.

Live video with the detection overlaid is required for field verification of the system.

9. Temporary Use and Retesting.

A. Temporary Use. When shown on the plans, the VIVDS equipment must be used to provide vehicle detection on a temporary basis. When the permanent vehicle detection system and related equipment are installed and made operational, the VIVDS equipment must be carefully removed and delivered to the location shown on the plans.

B. State Retesting and Acceptance. Prior to acceptance, all VIVDS equipment may be retested by the State, even if the system was operating properly before removal. Repair or replace any equipment damaged during removal or transport and any equipment that does not meet the various test requirements.

10. Operation from Central Control. The central control must transmit and receive all information needed for detector setup, monitor the vehicle detection, view the vehicle traffic flow at a rate of 2 frames per second or greater for telephone, or 5 frames a second or greater for ISDN lines (as specified by the plans), and interrogate all required stored data. The remote communications link between the VIVDS processor unit and central control may be dial-up (telephone or ISDN lines) or dedicated twisted wire pair communications cable which may be accompanied with coaxial cable or fiber-optic cable, as shown on the plans. Communications with the central control must not interfere with the on-street detection of the VIVDS processor. Quality of the video at 2 frames per second rate must be such that the view with the traffic flow is clear and in focus.

11. Installation and Training. The supplier of the video detection system must supervise the installation and testing of the video and computer equipment. A factory certified representative from the supplier must be on site during installation.

In the event that the field setup computer is furnished by TxDOT, such installation and testing must be done at the time that training is conducted.

Provide up to 2 days of training to personnel of TxDOT in the operation, setup and maintenance of the video detection system. Provide instruction and materials for a maximum of 20 persons and conduct at a location selected by TxDOT. TxDOT will be responsible for any travel and room and board expenses for its own personnel.

Instruction personnel are required to be certified by the equipment manufacturer. The User's Guide is not an adequate substitute for practical, classroom training and formal certification by an approved agency.

Formal levels of factory authorized training are required for installers, contractors and system operators. All training must be certified by the manufacturer.

12. **Warranty, Maintenance and Support.** The video detection system must be warranted to be free of defects in material and workmanship for a period of 5 years from date of shipment from the supplier's facility. During the warranty period, the supplier must repair with new or refurbished materials, or replace at no charge, any product containing a warranty defect provided the product is returned FOB to the supplier's factory or authorized repair site. Return product repair or replaced under warranty by the supplier with transportation prepaid. This warranty does not apply to products damaged by accident, improperly operated, abused, serviced by unauthorized personnel or unauthorized modification.

    During the warranty period, technical support must be available from the supplier via telephone within 4 hours of the time a call is made by a user, and this support must be available from factory certified personnel or factory certified installers.

    Ongoing software support by the supplier must include updates of the VIVDS processor unit and supervisor software (if a field setup computer is required for set up). Provide these updates free of charge during the warranty period. The update of the VIVDS software to be NTCIP compliant must be included.

    The supplier must maintain a program for technical support and software updates following expiration of the warranty period. Make this program available to TxDOT in the form of a separate agreement for continuing support.

    The supplier must maintain an ongoing program of technical support for the wireless camera system. This technical support must be available via telephone or personnel sent to the installation site.

    The supplier must maintain an adequate inventory of parts to support maintenance and repair of the camera system.

13. **Measurement.** The VIVDS will be measured as each major system component furnished, installed, made fully operational, and tested in accordance with this special specification or as directed by the Engineer.

    The VIVDS communication cable will be measured by the linear foot of the appropriate media type furnished, installed, made fully operational, and tested in accordance with this specification, other referenced Special Specifications or as directed by the Engineer.

    When the VIVDS is used on a temporary basis, the VIVDS must be measured as each system furnished, installed, made fully operational, including reconfiguration and removal if required by the plans, and tested in accordance with this special specification or as directed by the Engineer.

    This is a plans quantity measurement Item. The quantity to be paid is the quantity shown in the proposal unless modified by Article 9.2, "Plans Quantity Measurement." Additional measurements or calculations will be made if adjustments of quantities are required.

    When recorded video is required by the plans it will be paid for by each camera recorded.

14. **Payment**. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "VIVDS Processor System", "VIVDS Camera Assembly", "VIVDS Central Control",

"VIVDS Set-up System", "VIVDS Temporary", "VIVDS Communication Cable (Coaxial)," "VIVDS Communication Cable (Fiber Optic)", "VIVDS Video Recording", and all accompanying software. These prices are full compensation for furnishing, placing, and testing all materials and equipment, and for all tools, labor, equipment, hardware, operational software package(s), supplies, support, personnel training, shop drawings, documentation, and incidentals. A 3-conductor power cable must be included with the communication cable.

These prices also include any and all interfaces required for the field and remote communications links along with any associated peripheral equipment, including cables; all associated mounting hardware and associated field equipment; required for a complete and fully functional visual image vehicle detection system component.

SPECIAL SPECIFICATION

6473

Multipolymer Pavement Markings (MPM)

1. Description. Provide MPM on pavement surfaces shown on the plans to meet the performance requirements of this Specification for:

- color,
- durability, and
- retroreflectivity.

2. Materials.

A. Multipolymer Pavement Marking Materials. Use materials that produce an adherent, retroreflective pavement marking system that meets all of the performance requirements of this Specification. Use materials that do not result in the generation of any hazardous materials/wastes, as defined in Article 1.58, "Hazardous Materials or Waste," during application or removal. If requested, provide a laboratory report from a commercial laboratory indicating material used does not result in the generation of any hazardous materials/wastes, as defined in Article 1.58, during application or removal.

Use a multipolymer resin material, which is:

- 2-component (a predominantly multipolymer pigmented resin component with a curing agent component);
- 100% solids, producing no toxic fumes when heated to application temperature;
- track-free in less than 40 min. with appropriate ambient temperature as recommended by the manufacturer;
- formulated and tested to perform as a pavement marking material with glass spheres applied to the surface; and
- on the Material Producer List for Pavement Markings (Multipolymer) maintained by CST/M&P for MPM. Inclusion onto the MPL requires documentation of acceptable performance from Department pavement marking field application that have been in place for at least 1 yr. Contact CST/M&P to initiate and document field trials of new materials for MPL consideration.

Before work begins, provide a laboratory report from an independent testing laboratory showing that the initial color of each material selected for use conforms to the color limits set forth in Table 1, measured by 45°/0° geometry CIE, D65 Illuminant, 2° standard observation angle in accordance with ASTM E 1347, E 1348, or E 1349.

B. Nonreflectorized Contrast or Shadow Markings. The marking material used for the contrast or shadow marking must conform to the same formulation, material, prequalification, and sampling requirements with the exception of the following items:

- color pigment used;
- documentation of acceptable performance from Department pavement marking field application that have been in place for at least 1 yr.; and
- glass spheres must be replaced with a black, color-fast, anti-skid material.

Before work begins, provide a laboratory report from an independent testing laboratory showing that the initial color of each material selected for use conforms to the color limits set forth in Table 1, measured by 45°/0° geometry CIE, D65 Illuminant, 2° standard observation angle in accordance with ASTM E 1347, E 1348, or E 1349.

3. Equipment. Provide equipment as required or directed according to the following:

A. Preparation and Application. Use equipment designed for the pavement preparation and application of the type of MPM material selected.

B. Colorimeter. Provide a colorimeter using 45°/0° geometry CIE, D65 Illuminant, 2° standard observation angle meeting the requirements of ASTM E 1347, E 1348, or E 1349.

C. Retroreflectometer. Unless otherwise shown on the plans, provide a portable or mobile retroreflectometer meeting the following requirements.

1. Portable Retroreflectometer. Provide a portable retroreflectometer that meets the requirements of ASTM E 1710.

2. Mobile Retroreflectometer. Provide a mobile retroreflectometer that:

- is approved by the Construction Division (CST) for project evaluation of retroreflectivity, which will include taking a set of readings on stripes designated by CST and comparing them with the readings of a portable retroreflectometer provided by CST that meets the specifications indicated in this Specification;
- is calibrated daily, before measuring retroreflectivity on any pavement stripe, with a portable retroreflectometer meeting the following requirements: ASTM E 1710, entrance angle of 88.76°, observation angle of 1.05°, and an accuracy of ±15%;
- requires no traffic control when retroreflectivity measurements are taken and is capable of taking continuous readings; and
- documents mobile retroreflectometer evaluations, showing average retroreflectivity values for each 0.25-mi. section, or the area of concern if it is less than 0.25 mi., with all deficient sections clearly marked.

4. Construction.

A. General. Prepare the pavement surface using controlled techniques that minimize pavement damage and hazards to the traveling public. Apply the MPM materials according to the manufacturer's recommendations using widths, colors, and shapes, and at locations as shown on the plans.

Obtain approval for the sequence of work and estimated daily production. Use traffic control as shown on the plans or as approved. Establish guides to mark the lateral location of pavement markings as shown on the plans or as directed, and have guide locations verified. Use material for guides that will not leave a permanent mark on the roadway. Apply markings in alignment with the guides and without deviating for the alignment more than 1 in. per 200 ft. of roadway or more than 2 in. maximum. Remove all applied markings that are not in alignment or sequence as stated in the plans or as stated in the specifications at the Contractor's expense and in accordance with Item 677, "Eliminating Existing Pavement Markings and Markers," except for measurement and payment.

B. Initial Performance Requirements. Meet the following initial performance requirements after installation. Perform an initial performance evaluation from 7 to 15 days after MPM are installed to verify that the MPM meet the performance requirements for retroreflectivity. Conduct initial retroreflectivity evaluations of placed pavement markings with either a portable or a mobile retroreflectometer, unless otherwise shown on the plans, according to Section 6.B, "Retroreflectivity." The Contractor is responsible for traffic control when conducting performance evaluations.

The Engineer will conduct a visual evaluation for color and durability and require testing only if MPM do not appear to meet the performance requirements.

For MPM not meeting performance requirements, repair or replace until re-evaluation shows the MPM meet the performance requirements.

1. Color. Provide MPM consisting of pigments blended to provide color conforming to standard highway colors as shown in Table 1.

Table 1
Color Requirements

Federal 595 Color		Chromaticity Coordinates								Brightness (Y)
		1		2		3		4		
		x	y	x	y	x	y	x	y	
White	17855	.290	.315	.310	.295	.350	.340	.330	.360	60 Min
Yellow	33538	.470	.455	.510	.489	.490	.432	.537	.462	30 Min
Black	-	-	-	-	-	-	-	-	-	5 Max

2. Retroreflectivity. Provide MPM meeting the minimum retroreflectivity values listed in Table 2.

Table 2
Minimum Retroreflectivity Requirements

Color	Retroreflectivity, $mcd/m^2/lx$, Min
White	250
Yellow	175

3. Durability. Provide MPM that do not lose more than 5% of the striping material in a 1,000-ft. section of continuous stripe or broken stripe (25 broken stripes). Pavement markings must remain in the proper alignment and location.

5. Performance Evaluations. Provide traffic control and conduct evaluations of color, retroreflectivity, and durability as required or directed.

A. Color. Measure the color using 45°/0° geometry CIE, D65 Illuminant, 2° standard observation angle in accordance with ASTM E 1347, E 1348, or E 1349.

B. Retroreflectivity. Unless otherwise shown on the plans, conduct retroreflectivity evaluations of pavement markings with either a portable or a mobile retroreflectometer. Make all measurements in the direction of traffic flow, except for broken centerline on 2-way roadways, where measurements will be made in both directions.

If using a portable retroreflectometer, take a minimum of 1 measurement every mile on each series of markings (i.e., edgeline, center skip line, each line of a double line, etc.), at approved locations. If more than 1 measurement is taken, average the measurements. For all markings measured in both directions, take a minimum of 1 measurement in each direction. If the measurement taken on a specific series of markings within each mile segment falls below the minimum retroreflectivity values, take a minimum of 5 more measurements within that mile segment for that series of marking. If the average of these 5 measurements falls below the minimum retroreflectivity requirements, that mile segment of the applied markings does not meet the performance requirement.

If using a mobile retroreflectometer, review the results to determine deficient sections and deficient areas of interest. These areas do not meet the performance requirements.

C. Durability. Measure the durability in accordance with ASTM D 913 for marking material loss and visual inspection for alignment and location. Conduct evaluations at approved locations.

6. Measurement. This Item will be measured by the foot. Each stripe will be measured separately.

This is a plans quantity measurement Item. The quantity to be paid is the quantity shown in the proposal unless modified by Article 9.2, “Plans Quantity Measurement.” Additional measurements or calculations will be made if adjustments of quantities are required.

7. Payment. The work performed and materials furnished in accordance with this Item and measured as provided under “Measurement” will be paid for at the unit price bid for “Multipolymer Pavement Markings (MPM)” of the type and color specified and the shape, width, and size specified as applicable, at the time of project acceptance. This price is full compensation for materials, application of MPM, equipment, labor, tools, and incidentals. Surface preparation, when shown on the plans, will be paid for under Item 678, “Pavement Surface Preparation for Markings.”

SPECIAL SPECIFICATION

6834

Portable Changeable Message Sign

1. Description. Furnish, operate, and maintain portable trailer mounted changeable message sign (PCMS) units.

2. Materials. Furnish new or used material in accordance with the requirements of this Item and the details shown on the plans. Provide a self-contained PCMS unit with the following:

- Sign controller
- Changeable Message Sign
- Trailer
- Power source

Paint the exterior surfaces of the power supply housing, supports, trailer, and sign with Federal Orange No. 22246 or Federal Yellow No. 13538 of Federal Standard 595b, except paint the sign face assembly flat black.

A. Minimum Luminance Requirements. All PCMS units shall meet the following luminance requirements measured at the character level in candela as is published in Report 4940-2, "Photometric Requirements for Portable Changeable Message Signs," conducted by the Texas Transportation Institute. Luminance will be tested in accordance with Tex-880.

- Minimum Daytime Character Luminance of 4000cd/m2 with a contrast ratio of 5.
- Minimum Nighttime Character Luminance of 30/cd/m2.

B. Sign Controller. Provide a controller with permanent storage of a minimum of 75 pre-programmed messages. Provide an external input device for random programming and storage of a minimum of 75 additional messages. Provide a controller capable of displaying up to 3 messages sequentially. Provide a controller with adjustable display rates. Enclose sign controller equipment in a lockable enclosure.

C. Changeable Message Sign. Provide a sign capable of being elevated to at least 7 ft. above the roadway surface from the bottom of the sign. Provide a sign capable of being rotated 360° and secured against movement in any position.

Provide a sign with 3 separate lines of text and 8 characters per line minimum. Provide a minimum 78 in. high x 126 in. wide sign housing. Provide a minimum 18 in. character height. Provide a 5 x 7 character pixel matrix. Provide a message visibility distance of 750 ft. Provide for manual and automatic dimming light sources.

The following are descriptions for 3 screen types of PCMS:

- **Character Modular Matrix.** This screen type comprises of character blocks.
- **Continuous Line Matrix.** This screen type uses proportionally spaced fonts for each line of text.
- **Full Matrix.** This screen type uses proportionally spaced fonts, varies the height of characters, and displays simple graphics on the entire sign.

D. Trailer. Provide a 2 wheel trailer with square top fenders, 4 leveling jacks, and trailer lights. Do not exceed an overall trailer width of 96 in. Shock mount the electronics and sign assembly.

E. Power Source. Provide a diesel generator, solar powered power source, or both. Provide a backup power source as necessary.

F. Cellular Telephone. When shown on the plans, provide a cellular telephone connection to communicate with the PCMS unit remotely.

3. Construction. Place or relocate PCMS units as shown on the plans or as directed. The plans will show the number of PCMS units needed, for how many days, and for which construction phases.

Maintain the PCMS units in good working condition. Repair damaged or malfunctioning PCMS units as soon as possible. PCMS units will remain the property of the Contractor.

4. Measurement. This Item will be measured by each PCMS or by the day used. All PCMS units shall be set up on a work area and operational before a calendar day can be considered measurable. When measurement by the day is specified, a day shall be measured for each PCMS set up and operational on the worksite.

5. Payment. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Portable Changeable Message Sign." This price is full compensation for PCMS units; set up; relocating; removing; replacement parts; batteries (when required); fuel, oil, and oil filters (when required); cellular telephone charges (when required); software; and equipment, materials, tools, labor, and incidentals.

SPECIAL SPECIFICATION

8094

Mobile Retroreflectivity Data Collection for Pavement Markings

1. Description. Furnish mobile retroreflectivity data collection (MRDC) for pavement markings on roadways as shown in the plans or as designated by the Engineer. Conduct MRDC on dry pavement only.

2. Equipment and Personnel.

A. Mobile Retroreflectometer. Provide a self-propelled, mobile retroreflectometer certified by the Texas Transportation Institute (TTI) Mobile Retroreflectometer Certification Program.

B. Portable Retroreflectometer. Provide a portable retroreflectometer that uses 30-meter geometry meeting the requirements described in ASTM E 1710. Maintain, service, and calibrate all portable retroreflectometers according to the manufacturer's instructions.

C. Operating Personnel for Mobile Retroreflectometer. Provide all personnel required to operate the mobile retroreflectometer and portable retroreflectometer. Ensure MRDC system operator has a current certification from the TTI Mobile Retroreflectometer Certification Program to conduct MRDC with the certified mobile retroreflectometer provided.

D. Additional Personnel. Provide any other personnel necessary to compile, evaluate, and submit MRDC.

E. Safety Equipment. Supply and operate all required safety equipment to perform this service.

3. MRDC Documentation. Document all MRDC by county and roadway or as directed by the Engineer. Submit all data to the Department no later than three working days after the day the data is collected. Submit all raw data collected in addition to all other data submitted. Provide data files in Microsoft Excel format or a format approved by the Engineer. Provide a high-quality DVD showing the markings as they are measured. The data file and video must contain the following information:

A. Preliminary Documentation Sample. Submit a sample data file, video, and map of MRDC data in the required format ten working days prior to beginning any work. The format must meet specification and be approved by the Engineer before any work may begin.

B. Initial Documentation Review and Approval. The Department will review documentation submitted for the first day of MRDC, and if it does not meet specification requirements, will not allow further MRDC until deficiencies are

corrected. The Department will inform the contractor no later than three working days after submittal if the first day of MRDC does not meet specification requirements. Time charges will continue unless otherwise directed by the Engineer.

C. Data File. Provide data files with the following:

- date;
- district number;
- county;
- route number with reference markers or other reference information provided by the Engineer to indicate the location of beginning and end data collection points on that roadway;
- cardinal direction;
- line type (single solid, single broken, double solid, etc.);
- line color;
- file name corresponding to video;
- data for each centerline listed separately;
- average reading taken for each 0.1 mi. interval or interval designated by the Engineer;
- accurate GPS coordinates (within 20 feet) for each interval;
- color-coding for each interval indicating passing or failing, unless otherwise directed by the Engineer (Passing and failing thresholds will be provided by the Engineer);
- graphical representation of the MRDC (y-axis showing retroreflectivity and x-axis showing intervals) corresponding with each data file;
- distance in miles driven while measuring the pavement markings;
- event codes (pre-approved by the Engineer) indicating problems with measurement;
- portable retroreflectometer field check average reading and corresponding mobile average reading for that interval when applicable; and
- upper validation threshold (may be included separately with the raw data but must be clearly identified with the data collected using that threshold).

D. Map in Electronic Format. Provide a map in an electronic format approved by the Engineer with each MRDC submission that includes the following information:

- date;
- district number;
- county;
- color-coded one mile intervals (or interval length designated by the Engineer) for passing and failing retroreflectivity values or retroreflectivity threshold values provided by the Engineer; and
- percentage of passing and failing intervals, if required by the Engineer.

E. Video. Provide a high-quality DVD with the following information:

- labeled with date and corresponding data file name;
- district number;
- county;
- route number with reference markers or other designated reference information to indicate the location of beginning and end collection points on that roadway; and
- retroreflectivity values presented on the same screen with the following information:
    - date;
    - location;
    - starting and ending mileage;
    - total miles;
    - retroreflectivity readings; and
    - upper validation thresholds (may be included separately with the raw data but must be clearly identified with the data collected using that threshold).

F. Field Comparison Checks with a Portable Retroreflectometer. Take a set of field comparison readings with the portable retroreflectometer at least once every four hours while conducting MRDC or at the frequency designated by the Engineer. Take a minimum of twenty readings, spread out over the interval measured. List the average portable retroreflectometer reading next to the mobile average reading for that interval with the reported MRDC data. Request approval from the Engineer to take field comparison readings on a separate roadway, when measuring a roadway where portable retroreflectometer readings are difficult to take. Take the off-location field comparison readings at no additional cost. Submit the portable retroreflectometer printout of all the readings taken for the field comparison check with the corresponding MRDC data submitted. The mobile average reading must be within +/-15% of the portable average reading. The Engineer may require new MRDC for some or all of the pavement markings measured in a four hour interval prior to a field comparison check not meeting the +/-15% range. Provide the new MRDC at no extra cost to the Department. The Engineer may take readings with a Department portable retroreflectometer to ensure accuracy at any time. The Department's Construction Division will take comparison readings and serve as the referee if there is a significant difference between the Engineer's portable readings and the Contractor's mobile and handheld readings. For best results, take field comparison readings on a fairly flat and straight roadway when possible.

G. Periodic Field Checks at Pre-Measured Locations. When requested by the Engineer, measure with the mobile unit and report to the Engineer immediately after measurement the average retroreflectivity values for a designated pre-measured test location. The Engineer will have taken measurements at the test location within ten days of the test. The test location will not include pavement markings less than thirty days old. If the

measured averages do not fall within +/-15 % of the pre-measured averages, further calibration and comparison measurements may be required before any further MRDC. Submit the results of the field check with the MRDC report for that day.

4. **Final Report.** Submit a final report in the format specified by the Engineer to the Department's Traffic Engineering representative within one calendar week after the service is complete. The final report must contain a list of all problems encountered (pre-approved event codes) and the locations where problems occurred during MRDC.

5. **Measurement.** When mobile retroreflectivity data collection for pavement markings is specified on the plans to be a pay item, measurement will be by the mile driven while measuring pavement markings.

6. **Payment.** Unless otherwise specified on the plans, the work performed, materials furnished, equipment, labor, tools, and incidentals will not be paid for directly, but will be considered subsidiary to bid items of the Contract. When mobile retroreflectivity data collection for pavement markings is specified on the plans to be a pay item, the work performed in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Mobile Retroreflectivity Data Collection." This price is full compensation for providing summaries of readings to the Engineer, equipment calibration and prequalification, equipment, labor, tools, and incidentals.

SPECIAL SPECIFICATION

8615

Radar Advance Detection Devices

1. **Description**. Furnish and install radar advance detection devices (RADD) as shown on the plans, and as detailed in this Special Specification.

2. **Materials.**

A. General Requirements.

All materials furnished, assembled, fabricated, or installed under this Item will be new, corrosion resistant, and in strict accordance with the details shown on the plans and in this Special Specification. The Radar Advanced Detection Device will be non-intrusive, easy to install, remotely accessible, and provide multiple connectivity options for easy integration into legacy systems.

The RADD will have a method for automatically calibrating the detection device; this method will be executed in the RADD's internal processor. This auto-calibration method will automatically determine detection thresholds.

B. **Sensor Performance**

The RADD will accurately and continuously detect Estimated Time of Arrival (ETA), speed, and range data for vehicles, or clusters of vehicles simultaneously moving within 100 ft. to 500 ft. from the sensor in the selected direction of travel. The RADD will be mounted in a forward-fire position, looking into either approaching or departing traffic for the selected direction of travel. The RADD will filter the ETA data, speed data, and range data based upon minimum and maximum constraints to produce alerts, customizable for safe and efficient dilemma zone protection, congestion management, and other operational goals.

The RADD will maintain accurate performance in all weather conditions, including rain, freezing rain, snow, wind, dust, fog, and changes in temperatures and light. The device will not rely on temperature compensation circuitry and will be capable of continuous operation over and ambient temperature range from -40° C to 75° C, and a relative humidity range from five percent to 95 percent (non-condensing). RADD operation will continue in rain or snow up to 10 cm per hour, and the device will not experience degraded performance when encased in 1/2 in. of ice.

Speed data will be accurate for individual vehicle measurement when there are no adjacent vehicles traveling in the same direction. Eighty-five percent of all measurements will be within 5 mph of truth when vehicles are not changing speed. Speed accuracy will be verified with radar gun, by video speed trap using the frame rate as a time reference, or equivalent method.

Range data will be accurate for individual vehicle measurement when there are no adjacent vehicles traveling in the same direction. Eighty-five percent of all measurements will be within ten feet of the distributed length of the vehicle when vehicles are not changing speed. Range accuracy will be verified with: LIDAR gun, by video using visual markers as a distance reference and frame rate as a time reference, or equivalent method.

ETA data will be accurate for individual vehicle measurements when there are no adjacent vehicles traveling in the same direction. ETA is the estimated time of arrival as calculated by dividing the vehicles range from the stop bar by the speed of the vehicle. ETA is calculated for purposes of safely and efficiently protecting vehicles within the decision dilemma zone, which is nominally defined to exist for motorists with an ETA between 2.5 and 5.5 seconds from the stop bar who are driving faster than 35 mph when the light turns yellow. Eighty-five percent of all measurements will be within one second of truth for all vehicles not changing speed within the decision dilemma zone. ETA accuracy will be verified with: LIDAR gun, or by video using visual markers as a distance reference and frame rate as a time reference.

3. **Construction** Two RADD units will not be mounted so they are pointed directly at each other unless separated by more than 700 ft. and a RADD will not be placed within 20 feet of another RADD unless each device is configured to operate on a different RF channel using the installation software.

   A. **Mounting Assembly** The RADD will be mounted directly onto a mounting assembly fastened to a pole, overhead mast-arm or other solid structure. The mounting assembly will provide the necessary degrees of rotation to ensure proper installation. It will be constructed of weather resistant materials and will be able to support a 20 lb load.

   B. **Cabling** The RADD will be supplied with a connector cable of the appropriate length for each installation site. The connector will meet the MIL-C-26482 specification; the backshell will be an environmentally sealed shell that offers excellent immersion capability, and designed to interface with the appropriate MIL-C-26482 connector; all conductors that interface with the connector will be encased in a single jacket, and the outer diameter of this jacket will be within the backshell's cable O.D. range to ensure proper sealing; the backshell will have a clamp bar style strain relief with enough strength to support the cable slack under extreme weather conditions. Recommended connectors are Cannon's KPT series, and recommended backshells are Glenair Series 37 cable sealing backshells. The MIL-C-26482 connector will provide contacts for all data and power connection.

      (1) If communication is conducted over the RS-485 bus, the communication cable will be Belden 9331 or an equivalent cable with the following specifications:

      - Shielded, twisted pairs with a drain wire
      - Nominal Capacitance Conductor to Conductor @ 1Khz <= 26pF/Ft
      - Nominal Conductor DC Resistance @ 20 Deg C <= 15 ohms/1000Ft
      - Single continuous run with no splices allowed
      - Terminated only on the two farthest ends of the cable
      - The operational baud rate and cable length shall not exceed the following limits:

Baud Rate*	Cable Length
115.2Kbps	300 feet
57.6Kbps	600 feet
38.4Kbps	800 feet
19.2Kbps	1000 feet
9.6Kbps	2000 feet

**Note: These represent maximum data rates. The data rate used should be the minimum data rate required for operation.*

(2**)** If communication is conducted over the RS-232 bus, the communication cable will be Belden 9331 or an equivalent cable with the following specifications:

- Shielded, twisted pairs with a drain wire
- Nominal Capacitance Conductor to Conductor @ 1Khz <= 26pF/Ft
- Nominal Conductor DC Resistance @ 20°C <= 15 ohms/1000 Ft
- Single continuous run with no splices allowed
- The RS-232 Driver must be able to source and sink +/- 7mA or more
- The operational baud rate and cable length shall not exceed the following limits:

Baud Rate*		Cable Length	
115.2	Kbps	40	feet
57.6	Kbps	60	feet
38.4	Kbps	100	feet
19.2	Kbps	140	feet
9.6	Kbps	200	feet

**Note: These represent maximum data rates. The data rate used should be the minimum data rate required for operation.*

(3) If 12VDC is being supplied for the RADD, the power cable will be Belden 9331 or an equivalent cable with the following specifications:

- Two shielded, twisted pairs with two drain wires connected in parallel
- Nominal Capacitance Conductor to Conductor @ 1Khz <= 26pF/Ft
- Nominal Conductor DC Resistance @ 20 Deg°C <= 15 ohms/1000 Ft
- The cable length shall not exceed 100 ft.

(4) If 24VDC is being supplied for the RADD, the power cable will be Belden 9331 or an equivalent cable with the following specifications:

- Two shielded, twisted pairs with two drain wires connected in parallel
- Nominal Capacitance Conductor to Conductor @ 1Khz <= 26pF/Ft
- Nominal Conductor DC Resistance @ 20 Deg°C <= 15 ohms/1000 Ft
- The cable length shall not exceed 600 ft.

(5) If a cable length of 600 ft. to 2000 ft. is required, the power cable will be an ANIXTER 2A-1002 or equivalent cable that meets the following requirements:

- 10 AWG Conductor Size/Gauge

- Two Conductor count
- Stranded Cable Type
- Bare Copper material
- 600 Volt range
- 90° Centigrade Temperature rating
- PVC/Nylon Insulation material
- PVC – Polyvinyl chloride jacketing material
- 40 Amps per conductor

Both communication and power conductors may be bundled together in the same cable as long as the above-mentioned conditions are met.

C. **Lightning Surge Protection.** Lightning surge protection that meets or exceeds the EN 61000-4-5 Class 4 specifications will be installed no farther than 40 ft. along the RADD cable from the RADD unit. To ensure the continued operation of the RADD in the presence of electrical surges, all connections to the RADD will be protected, including power, RS-232, RS-485 communication lines and ground.

D. **Power Supply.** The AC to DC power converter supplying the DC voltage for the RADD will be providing the following:

Power Rated	>15 W @25°C / >10 W@74°C minimum per RADD unit
Operating Temperature Range	From –34°C to +74°C
Operating Humidity Range	From 5% to 95% @25°C non-condensing
Input Voltage	From 85 V (AC) to 264 V (AC) or 120 V (DC) to 370 V (DC)
Input Frequency	From 47 Hz to 63 Hz
Output Voltage	24 VDC ±4%
Hold Up Time	>20 ms at 120 V (AC)
Withstand Voltage	Input to Output: 2 kV, Input to Ground: 1.5 kV
Safety Standards	UL 60950, EN60950
EMC Standards	EN55022 Class B and EN61000-3-2, 3
Brown-Out Protection	In brown-out conditions (i.e. <85VAC input) the output voltage will be less than 1 VDC

E. **Communication.** The RADD will provide two or more communication ports that can be accessed simultaneously using any RADD-supported protocol. This will enable multiple operators to collect data from the RADD at the same time without interrupting or interfering with each other. The RADD will provide RS-232 and RS-485 serial communication ports; each communication port will support all of the following baud rates: 9600, 19200, 38400, 57600 and 115200. Additionally, the RS-232 port will be full-duplex and will support true RTS/CTS hardware handshaking for interfacing to various communication devices.

F. **Power Requirements.** The RADD will consume less than 10 watts with a DC input between 12 VDC and 28 VDC. The equipment will be designed such that the failures of the equipment will not cause the failure of any other unit of equipment. Automatic recovery from power failure will be within 15 seconds after resumption of power.

G. **Windows® and PocketPC® -based Software.** The RADD will also include graphical user interface software that displays all configured zones and provides visual representation of all detected vehicle clusters. The detected range, speed, arrival time, and identification number will be viewable on the visual representation of all detected vehicle clusters. The graphical interface will operate on Windows 98, Windows 2000, Windows NT 4.0, Windows XP Pro and Windows PocketPCs equivalent to the Dell Axim X50v. The software will automatically select the correct baud rate.

The graphical user interface will also display all configured alerts and provide visual representation of their actuation. The operator will have the ability to configure alerts using minimum and maximum constraints on the detected ETA, speed, and range of vehicles.

The operator will have the ability to save the configuration information to a file, or reload the RADD configuration from a file, using the graphical user interface software. Using the installation software, the operator will be able to easily change the baud rate on the sensor by selecting baud rates from a drop-down list, as well as add response delays for the communication ports. Additionally, the operator will have the ability to switch between data pushing and data polling, and change the RADD's settings for Flow Control from none to RTS/CTS and vice versa.

The operator will be able to upload new firmware into the RADD's non-volatile memory over any supported communication channel.

H. **RF Design**. All microwave circuitry within the RADD will be designed utilizing active control that dynamically adjusts to compensate for temperature and age variations in component performance. This eliminates most opportunities for human error or age degradation in circuits that contribute to product performance. The circuitry will be void of any manual tuning elements that could lead to human error and degraded performance over time.

All transmit modulated signals will be generated by means of digital circuitry, such as a direct digital synthesizer, that is referenced to a frequency source that is at least 50 ppm stable over the specified temperature range, and ages less than six ppm per year. Any up-conversion of a digitally generated modulated signal will preserve the phase stability and frequency stability inherent in the digitally generated signal. These specifications ensure that during operation the RADD strictly conforms to FCC requirements and that the radar signal quality is maintained for precise algorithmic quality.

The RADD antennae will be designed on printed circuit boards, eliminating the need for RF connectors and cabling that result in decreased reliability. Printed circuit antennae are less prone to physical damage due to their extremely low mass.

The antennae parameters will meet the following criterion to ensure quality performance:

1) 3 dB Elevation Beam Width: > 65 degrees
2) 3 dB Azimuth Beam Width: < 15 degrees
3) Side Lobes: < -20 dB

I. **Enclosure.** The RADD will be enclosed in a Lexan polycarbonate, ultraviolet resistant material and will be classified as watertight according to the NEMA 250 Standard. The enclosure will be classified "f1" outdoor weatherability in accordance with UL 746C.

The RADD will be able to withstand a drop of up to 5 ft. without compromising its functional and structural integrity.

J. **Input File Cards.** The RADD manufacturer will provide an optional input file card compatible with 170, 2070, NEMA TS1 and NEMA TS2 input file racks. The input file card will translate per vehicle data packets or actuation packets from the RADD into corresponding contact closure outputs. Operators will be able to assign any contact closure output channel to any configured alert. These settings will be saved in non-volatile memory on the input file card for complete recovery in case of power failure.

The input file card will support Dual Loop (Speed Trap) emulation, as well as the following modes of operation:

- Actuation (true presence filtered by conditional alert constraints output in real time with 2.5 ms resolution)
- Pulse (a single 125 ms output pulse for each vehicle)
- Presence (an output pulse corresponding to the duration of each vehicle cluster in the detection zone with a resolution of 2.5 ms)
- Single Loop Speed (duration of the pulse corresponds directly to the speed of the vehicle, speed (mph) = 13.64/duration in seconds)

The input file card will receive data packets over an RS-485 bus at any of the following baud rates: 9600, 19200, 38400, 57600 and 115200. Also, the input file card will auto-baud and auto-detect a RADD over wired and wireless communication channels that have a maximum latency of 500 ms.

The input file card will comply with the NEMA TS2-1998 Traffic Controller Assemblies with NTCIP Requirements, Section 2.8 specification. Documentation and results of the NEMA TS2-1998 test will be provided.

The input file card will also provide failsafe operation, so that in the event of failure of communication from the sensor, a constant call will be placed on all contact closure channels.

Additionally, the input file card will comply with the EN 61000-4-5 Class 4 lightning surge protection test specification. Documentation and results of the EN 61000-4-5 Class 4 test will be provided.

K. **Manufacturing Requirements.** The RADD will be manufactured and assembled in the U.S.A. The internal electronics of the RADD will utilize automation for surface mount and wave solder assembly, and will comply with the requirements set forth in IPC-A-610C Class 3, Acceptability of Electronic Assemblies.

The RADD will undergo a rigorous sequence of operational testing to ensure product functionality and reliability. Testing will include:

- Functionality testing of all internal subassemblies
- Unit level burn-in testing of duration 48 hours or greater
- Final unit functionality testing prior to shipment

Test results and all associated data for the above testing will be provided, for each purchased RADD by serial number, upon request. Additionally, manufacturing quality data will be maintained for each purchased RADD by serial number and will also be made available upon request.

Externally, the RADD will be modular in design to facilitate easy replacement in the field. The total weight of the RADD will not exceed five lbs. All external parts will be made of corrosion resistant material, and all materials will be protected from fungus growth and moisture deterioration.

L. **FCC.** Each RADD will be Federal Communications Commission (FCC) certified under CFR 47, Part 15, section 15.245 as a field disturbance sensor, or section 15.249 as an intentional radiator. This certification will be displayed on an external label on each device according to the rules set out by the FCC.

The RADD will transmit in the 10.50 – 10.55 GHz or 24.00 – 24.25 GHZ frequency band and will meet the power transmission requirements specified under sections 15.245 and 15.249 of CFR 47.

The manufacturer will provide documentation proving compliance to all FCC specifications.

M. **NEMA 4X Testing.** The RADD enclosure will conform to test criteria set forth in the NEMA 250 Standard for Type 4X enclosures. Third party enclosure test results will be provided for each of the following Type 4X criteria:
- External Icing (NEMA 250 Clause 5.6)
- Hose-down (NEMA 250 Clause 5.7)
- 4X Corrosion Protection (NEMA 250 Clause 5.10)
- Gasket (NEMA 250 Clause 5.14)

N. **NEMA TS2-1998 Testing.** The RADD will comply with the applicable standards stated in the NEMA TS2-1998 Standard. Third party test results will be made available for each of the following tests:
- Shock pulses of 10g, 11 ms half sine wave
- Vibration of .5 Grms up to 30 Hz
- 300 V positive/negative pulses applied at 1 pulse per second at minimum and maximum DC supply voltage
- Cold temperature storage at -45° C for 24 hours
- High temperature storage at +85° C for 24 hours
- Low temp, low DC supply voltage at -34° C and 10.8 VDC

- Low temp, high DC supply voltage at -34° C and 26.5 VDC
- High temp, high DC supply voltage at 74° C and 26.5 VDC
- High temp, low DC supply voltage at 74° C and 10.8 VDC

O. **Support.** Installers and operators of the RADD will be fully trained in the installation, auto-configuration and use of the device.

The manufacturer will thoroughly train installers and operators to correctly perform the tasks required to ensure accurate RADD performance. The amount of training necessary for each project will be determined by the manufacturer and will be included, along with training costs, in the manufacturer's quote. In addition, technical support will be available to provide ongoing operator assistance.

1) Training. Training will consist of comprehensive classroom labs and on-hands, in-the-field installation and configuration training.

Classroom Lab Training will involve presentations outlining and defining the RADD, its functions and the procedures for proper operation. These presentations will be followed by hands-on labs in which trainees will practice using the equipment to calibrate and configure a virtual device. To facilitate the classroom presentation and hands-on labs, the vendor will provide the following items for the duration of training:

- Knowledgeable trainer or trainers thoroughly familiar with the RADD and its processes.
- Presentation materials, including visual aids, printed manuals and other handout materials for each student.
- Computer files, including video and raw data, to facilitate the virtual calibration and configuration of the RADD.
- Laptop computers with the necessary software, and all necessary cables, connectors, etc.
- All other equipment necessary to facilitate the virtual calibration and configuration of the RADD.

Field Training will provide each trainee with the hands-on opportunity to install and calibrate the RADD in the field. Training will be such that each trainee will mount and align the RADD correctly.

2) Technical Assistance. A manufacturer's technical representative will be available to assist with the physical installation, alignment and auto-calibration of each supplied RADD. Technical support will be provided thereafter to assist with troubleshooting, maintenance, or replacement of devices should such services be required

P. **Documentation.** The following documentation and specification test results will be supplied by the manufacturer at the time of the bid submittal. Attached documents will include the following:

- Auto-calibration documentation
- EN 61000-4-5 Class 4 Lightning Surge Protection test results
- FCC CFR 47 certification
- NEMA 250 Standard for Type 4X Enclosure third-party test data
- NEMA TS2-1998 Standard third-party test data

4. **Measurement.** This Item will be measured per each radar advanced detection device as installed, and connected. The RADD system will be warranted to be free from material and workmanship defects for a period of 2 year from the date of installation.

5. **Payment.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for under the unit bid price for "Radar Advance Detection Device". This is full price for furnishing, installing, and establishing a connection to each RADD. Any tools or incidentals needed to accomplish this will not be paid for separately, but will be considered subsidiary to this bid Item.

SPECIAL SPECIFICATION

8821

Radar Vehicle Sensing Device (RVSD)

1. Description. Furnish and install overhead radar vehicle sensing device (RVSD) system as shown in the plans, as detailed in the special specifications and as directed.

Ensure after the setup, there are no external tuning controls of any kind, which will require an operator.

2. Materials. Ensure the RVSD will automatically configure the maximum number of lanes shown on the plans by determining lane boundaries, concrete or metal barriers and detection thresholds. Ensure sensor will automatically configure the number of lanes in the presence of barriers, medians and work zones. Ensure sensor will automatically calibrate vehicle speed, detection levels, and sensitivity. Ensure the RVSD detects vehicle volume, speed and occupancy in all weather conditions without performance degradation. Ensure the RVSD is remote accessible; provides multiple connectivity options for integration into the existing system, and supports the communications protocols identified in Section 2.D "Communication".

Provide the RVSD that automatically tunes out stationary objects, such as traffic barriers and retaining walls, prior to completing the configuration. Provide documentation on the auto-configuration and auto-calibration processes.

Provide an RVSD that does not cause interference or alter the performance of any known equipment.

Furnish all new equipment and component parts in an operable condition at the time of delivery and installation.

Provide design to prevent reversed assembly or improper installation of connectors, fasteners, etc. Design each item of equipment to protect personnel from exposure to high voltage during equipment operation, adjustments, and maintenance.

Include licenses for all equipment, where required, for any software or hardware in the RVSD system.

Provide all RVSD from the same manufacturer.

Provide RVSD firmware that is upgradeable by external local or remote download.

A. Sensor Performance. Ensure the RVSD provides accurate, real-time volume, average speed and occupancy data. Ensure the RVSD provides user configurable settings for a collection interval from 20 sec. to 15 min. and polling intervals from 20 sec. to 1 hr. Ensure the detections are correctly categorized into a minimum of 3 user definable length-based classifications. Ensure vehicle detections occur at a range of 9 ft. to 200 ft. from the RVSD. Ensure the RVSD unit or accompanying field equipment provides a minimum of 3 hours of local storage for detection interval settings of 20 seconds to 15 minutes in local storage to reduce data loss during communications outages. Ensure the RVSD transfers locally stored data to the Traffic Management Center's Transportation Sensor System (TSS) when communication is restored.

Transportation Sensor System (TSS) Protocol Document (TSS-Protocol) is available through the "TSS Tools" link on the Department's website,
URL:

http://www.dot.state.tx.us/services/information_systems/engineering_software.htm

Ensure the RVSD operates in side-fire mode. When operating in side-fire mode, a single RVSD must simultaneously detect traffic in the maximum number of lanes as shown on the plans.

Ensure the RVSD maintains accurate performance in all weather conditions, including rain, freezing rain, snow, wind, dust, fog and changes in temperature and light. Ensure RVSD operation continues in rain or snow up to 4 in. per hour, and the device will not experience degraded performance when encased in 1/2 in. of ice.

Ensure volume data is accurate within 5% of actual for any direction of travel in nominal conditions. Ensure individual lane accuracy is within 10% of actual during nominal conditions. Nominal conditions exist when traffic is flowing at speeds greater than 10 miles per hour, with less than 10% truck traffic per lane and at least 30% of each vehicle visible above roadway barriers for true sensor detection.

Ensure average speed data is accurate within 5 MPH for any direction of traffic for all conditions involving more than 16 vehicles in an averaging interval. Ensure speed accuracy for individual lanes is within 10 MPH of actual for all traffic conditions and similar intervals. Provide true speed detection without the requirement to enter average vehicle lengths for the speed calculation.

Ensure speed data is accurate for individual vehicle measurements. Ensure 50% of all measurements are within one MPH of actual, and 85% is within 5 MPH.

Ensure occupancy data is accurate within 20% of the actual occupancy for any lane when occupancy is less than 30%. For example, if the actual occupancy in a lane is 20%, the measured occupancy must be between 16% and 24%.

Ensure classification data is accurately determined for 90% of detected vehicles.

Provide test data, using methods required in Section 3.F., demonstrating or proving performance.

B. Performance Maintenance. Provide RVSD that does not require cleaning or adjustment to maintain performance. Ensure it does not rely on battery backup to store configuration information. Ensure the RVSD, once calibrated, does not need recalibration to maintain performance over entire operational temperature range unless the roadway configuration changes. Provide remote connectivity to the RVSD to allow operators to change the unit's configuration, update the unit's firmware programming and recalibrate the unit automatically from a centralized facility.

C. Cabling. Supply the RVSD with a connector cable of the appropriate length for each installation site.

Ensure the connector meets the MIL-C-26482 specification. Provide an environmentally sealed shell backshell that offers excellent immersion capability, and is designed to interface with the appropriate MIL-C-26482 connector. Encase all conductors that interface with the connector in a single jacket and ensure the outer diameter of this jacket is within the backshell's cable O.D. range to ensure proper sealing. Ensure the backshell has a clampbar style strain relief with enough strength to support the cable slack under extreme weather conditions. Provide the MIL-C-26482 connectors that provide contacts for all data and power connection.

If communication is conducted over the RS-485 or RS-232 bus, the communication cable must be Belden 9331, or an equivalent cable with the following specifications:

- Shielded, twisted pairs with a drain wire
- Nominal Capacitance Conductor to Conductor @ 1Khz <= 26pF/Ft
- Nominal Conductor DC Resistance @ 68°F <= 15 ohms/1000Ft
- Single continuous run with no splices allowed
- Terminated only on the two farthest ends of the cable

D. Communication. Ensure that the RVSD provides communication options that include RS-232, RS-485 or TCP/IP. Provide a RVSD which has the ability to support a variety of baud rates from 9600 to 115200.

Ensure the RVSD provides built in RS-232, RS-485 and an internal serial communication port. Each communication port must support all of the following baud rates: 9600, 19200, 38400, 57600 and 115200. Additionally, the RS-232 port must be full-duplex and must support true RTS/CTS hardware handshaking for interfacing to various communication devices.

Data Packets. The RVSD must produce data packets containing, as a minimum:

- One or more detection zones
- Collection interval durations
- Sensor ID
- 32-bit time stamps indicating end of collection interval
- Total volume by detection zone
- Average speed in each detection zone during the collection interval. Speed value units must be selectable as either miles per hour or kilometers per hour
- Occupancy in each detection zone during the collection interval, reported in 0.1% increments
- A minimum of 3 vehicle classifications reported as number of vehicles of each classification identified in each detection zone during the collection interval

E. Operating System Software. Provide the RVSD to also include graphical user interface software that displays all configured lanes and provides visual representation of all detected vehicles. The graphical interface must operate on current Department core operating system software. The software must automatically select the correct baud rate and serial communication port from up to 15 serial communication ports. The software must also operate over a TCP/IP connection and support a dial-up modem connection.

When required to interface with Traffic Management Center software, the RVSD system software must meet Transportation Sensor Subsystem Protocol requirements as documented in latest version available on the Department's website.

The software must give the operator complete control over the configuration process.

The operator must have the ability to save the configuration information to a file or reload the RVSD configuration from a file using the graphical user interface software.

Using the installation software the operator must be able to:

- change the baud rate on the sensor by selecting baud rates from a drop-down list
- add response delays for the communication ports to allow for communication stabilization.
- switch between data pushing and data polling, and
- change the RVSD's settings for Flow Control from none to RTS/CTS and vice versa.

The operator must be able to upload new firmware into non-volatile memory of the RVSD over any supported communication channel including TCP/IP networks.

F. Software. Provide any and all programming and software required to support the RVSD system. Install the programming and software in the appropriate equipment at the time of acceptance testing. Complete and pass acceptance testing using a stable release of the programming and software provided.

Provide software update(s) free of charge during the warranty period.

G. Manufacturing Requirements. Ensure the assembly of the units adheres to industrial electronic assembly practices for handling and placement of components.

The RVSD must undergo a rigorous sequence of operational testing to ensure product functionality and reliability. Include the following tests:

- Functionality testing of all internal subassemblies
- Unit level burn-in testing of 24 hours duration or greater
- Final unit functionality testing prior to shipment

Provide test results and all associated data for the above testing, for each purchased RVSD by serial number. Additionally, maintain and make available manufacturing data for each purchased RVSD by serial number.

Externally, the RVSD must be modular in design to facilitate easy replacement in the field. Ensure the total weight of the RVSD does not exceed 5 lbs.

Ensure all external parts are protected against corrosion, fungus growth and moisture deterioration.

H. FCC. Ensure the RVSD has Federal Communications Commission (FCC) certification. Display the FCC-ID number on an external label. Ensure each RVSD is Federal Communications Commission (FCC) certified under CFR 47, Part 15, section 15.245 or 15.249 as a field disturbance sensor. Display this certification on an external label on each device according to the rules set out by the FCC.

Provide the RVSD system that is FCC certified under Part 15, Subpart C, Section 15.245 or 15.249 for low-power, unlicensed, continuous radio transmitter operation. Assure that the RVSD system will not cause harmful interference to radio communication in the area of installation. If the operation of the RVSD system causes harmful interference, correct the interference at the Contractor's expense.

Provide the RVSD that transmits in the 10.50 – 10.55 GHz or 24.00 – 24.25 GHZ frequency band and meets the power transmission and frequency requirements specified under sections 15.245 and 15.249 of CFR 47 across the operating temperature of the device and over time as the sensor ages.

Provide documentation proving compliance to all FCC specifications.

I. Support. Ensure installers and operators of the RVSD are fully trained in the installation, auto-configuration and use of the device.

The manufacturer must train installers and operators to correctly perform the tasks required to ensure accurate RVSD performance. The amount of training necessary for each project will be determined by the manufacturer (not less than 4 hours) and must be included, along with training costs, in the manufacturer's quote. In addition, provide technical support to provide ongoing operator assistance.

J. Power Requirements. Provide the RVSD that operates either at 12 VDC to 28 VDC or at 12 VAC to 24 VAC from a separate power supply to be provided as part of the bid item and ensure it does not draw more than 10 watts of power each.

Provide the separate power supply or transformer that operates from 115 VAC ±10%, 60 Hz ±3 Hz.

Provide equipment operations that are not affected by the transient voltages, surges and sags normally experienced on commercial power lines. Check the local power service to determine if any special design is needed for the equipment. The extra cost, if required, must be included in the bid of this item.

K. Wiring. Provide wiring that meets the requirements of the National Electric Code. Provide wires that are cut to proper length before assembly. Provide cable slacks to facilitate removal and replacement of assemblies, panels, and modules. Do not double-back wire to take up slack. Lace wires neatly into cable with nylon lacing or plastic straps. Secure cables with clamps. Provide service loops at connections.

L. Transient Suppression. Provide DC relays, solenoids and holding coils that have diodes or other protective devices across the coils for transient suppression.

M. Power Service Protection. Provide equipment that contains readily accessible, manually re-settable or replaceable circuit protection devices (such as circuit breakers or fuses) for equipment and power source protection.

Provide and size circuit breakers or fuses such that no wire, component, connector, PC board or assembly must be subjected to sustained current in excess of their respective design limits upon the failure of any single circuit element or wiring.

N. Fail Safe Provision. Provide equipment that is designed such that the failures of the equipment will not cause the failure of any other unit of equipment. Ensure automatic recovery from power failure will be within 15 sec. after resumption of power.

O. Mechanical Requirements. Enclose the RVSD in a Lexan polycarbonate, ultraviolet resistant material. The unit must be classified as watertight according to the NEMA 250 Standard.

Provide the RVSD that will withstand a drop of up to 3 ft. without compromising its functional and structural integrity.

Do not use silicone gels or any other material for enclosure sealing that will deteriorate under prolonged exposure to ultraviolet rays. Ensure the overall dimensions of the box, including fittings, do not exceed 13 in. x 9 in. x 9 in. Ensure the overall weight of the box, including fittings, does not exceed 15 lbs.

Coat all printed circuit boards with a clear-coat moisture and fungus resistant material (conformal coating).

Ensure external connection for telecommunications and power be made by means of a single military style multi-pin connector, keyed to preclude improper connection.

1. **Modular Design.** Provide equipment that is modular in design to allow major portions to be readily replaced in the field. Ensure modules of unlike functions are mechanically keyed to prevent insertion into the wrong socket or connector.

   Identify modules and assemblies clearly with name, model number, serial number and any other pertinent information required to facilitate equipment maintenance.

2. **Connectors and Harnesses**. Provide external connections made by means of connectors. Provide connectors that are keyed to preclude improper hookups. Color code and appropriately mark wires to and from the connectors.

   Provide connecting harnesses of appropriate length and terminated with matching connectors for interconnection with the communications system equipment.

   Provide pins and mating connectors that are plated to improve conductivity and resist corrosion. Cover connectors utilizing solder type connections by a piece of heat shrink tubing securely shrunk to insure that it protects the connection.

3. **Environmental Requirements**. Provide RVSD capable of continuous operation over a temperature range of –35°F to +165°F and a humidity range of 5% to 95% (non-condensing).

3. Construction.

A. General. Provide equipment designed and constructed with a minimum number of parts, subassemblies, circuits, cards, and modules to maximize standardization and commonality.

Design the equipment for ease of maintenance. Provide component parts that are readily accessible for inspection and maintenance. Provide test points that are for checking essential voltages and waveforms.

B. Mounting and Installation. Install the RVSD according to manufacturer's recommendations to achieve the specified accuracy and reliability.

Verify, with manufacturer assistance, the final RVSD placement if the RVSD is to be mounted near large planar surfaces (sound barrier, building, parked vehicles, etc.) that run parallel to the monitored roadway.

Include, at a minimum, radar detector unit, enclosures, connectors, cables, junction box, mounting equipment and hardware, controller interface boards and assemblies, local and remote software, firmware, power supply units and all other support, calibration, and test equipment for the RVSD system.

Furnish the RVSD with bracket or band designed to mount directly to a pole or overhead mast-arm or other structure. Ensure the mounting assembly has all stainless steel, or aluminum construction, and supports the load of the RVSD. Incorporate for the mounting assembly a mechanism that can be tilted in both axes, then locked into place, to provide the optimum area of coverage. Ensure the mounting bracket is designed and installed to prevent sensor re-positioning during 80 mph wind conditions.

Proper placement, mounting height and orientation of the RVSD systems must conform to the manufacturer's published requirements for the system provided. Install the RVSD units as shown on the plans. Analyze each proposed pole location to assure that the RVSD installation will comply with the manufacturer's published installation instructions. Advise the Engineer, before any trenching or pole installation has taken place, of any need to move the pole from the location indicated in the plans in order to achieve the specified detector performance. Confirm equipment placement with the manufacturer before installing any equipment.

Ensure alignment, configuration and any calibration of the RVSD takes less than 15 minutes per lane once mounting hardware and other installation hardware are in place. Install RVSD units such that each unit operates independently and that detectors do not interfere with other RVSD units or other equipment in the vicinity.

C. Electronic Components. Provide electronic components in accordance with Special Specification, "Electronic Components".

D. Mechanical Components. Provide external screws, nuts and locking washers that are stainless steel. Provide parts made of corrosion resistant material, such as plastic, stainless steel, anodized aluminum or brass. Protect materials from fungus growth and moisture deterioration. Separate dissimilar metals by an inert dielectric material.

E. Documentation Requirements. Provide documentation in accordance with Article 4, Special Specification, "Testing, Training, Documentation, Final Acceptance, and Warranty".

Provide documentation ensuring emissions from the RVSD equipment are not harmful to the public.

Provide additional test reports, for each of the following requirements:

1. NEMA 4X Testing. The RVSD enclosure must conform to test criteria set forth in the NEMA 250 Standard for Type 4X enclosures. Provide third party enclosure test results for each of the following specific Type 4X criteria:

- External Icing (NEMA 250 Clause 5.6)

- Hose-down (NEMA 250 Clause 5.7)
- 4X Corrosion Protection (NEMA 250 Clause 5.10)
- Gasket (NEMA 250 Clause 5.14)

2. NEMA TS2-1998 Testing. The RVSD must comply with the applicable standards stated in the NEMA TS2-1998 Standard. Provide third party test results for each of the following specific tests:

- Shock pulses of 10g, 11 ms half sine wave
- Vibration of .5 Grms up to 30 Hz
- 300 V positive/negative pulses applied at 1 pulse per second at minimum and maximum DC supply voltage
- Cold temperature storage at -49°F for 24 hours
- High temperature storage at +185°F for 24 hours
- Low temp, low DC supply voltage at -30°F and 10.8 VDC
- Low temp, high DC supply voltage at -30°F and 26.5 VDC
- High temp, high DC supply voltage at 165°F and 26.5 VDC
- High temp, low DC supply voltage at 165°F and 10.8 VDC

F. Testing. Perform testing in accordance with Article 2, Special Specification, "Testing, Training, Documentation, Final Acceptance, and Warranty." Test all RVSD to ensure that they comply with all FCC and Department specifications.

Ensure the RVSD meets functional performance requirements of Section 2.A (Sensor Performance) by the following methods:

Verify volume accuracy by performing a manual count on each lane of detection. When compared to the manual counts, the sensor counts must meet performance requirements as stated in Section 2.A.

Verify speed accuracy with laser speed gun provided by TxDOT, radar gun provided by contractor, or by video speed trap using the frame rate as a time reference. Vehicle speeds should be collected and averaged over a minimum of 10 vehicles. When compared to the average speeds collected via laser, the sensor speed data must meet performance requirements as stated in Section 2.A.

G. Experience Requirements. The contractor or subcontractor involved in the installation and testing of the RVSD must, as a minimum, meet the following experience requirements:

Two years continuous existence offering services in the installation of RVSD systems.

Two installed RVSDs where systems have been in continuously satisfactory operation for at least 1 year. Submit as proof, photographs or other supporting documents, and the names, addresses and telephone numbers of the operating personnel of the business or agency owning the system who can be contacted by the Department regarding the system.

Provide necessary documentation of contractor or subcontractor qualifications pursuant to contract award.

H. Technical Assistance. Ensure that a manufacturer's technical representative is available on site to assist the Contractor's technical personnel at each installation site and with RVSD equipment installation and communication system configuration.

Do not execute the initial powering up of the RVSD without the permission of the manufacturer's representative.

I. Training. Provide training in accordance with Article 3, Special Specification, "Testing, Training, Documentation, Final Acceptance and Warranty."

J. Warranty. Provide a warranty in accordance with Article 6, Special Specification, "Testing, Training, Documentation, Final Acceptance and Warranty."

4. Measurement. This Item will be measured as each unit complete in place.

5. Payment. The work performed and material furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Radar Vehicle Sensing Device." This price is full compensation for furnishing all equipment described under this Item with all cables, connectors, mounting assemblies, interface devices; all documentation and testing; all labor, materials, tools training, warranty, equipment, and incidentals.

SPECIAL SPECIFICATION
8835
Accessible Pedestrian Signal Units

1. Description. Furnish and install accessible pedestrian signal (APS) units.

2. Materials. Furnish materials in accordance with the following:

- Item 618, "Conduit"
- Item 624, "Ground Boxes"
- Item 682, "Vehicle and Pedestrian Signal Heads"
- Item 684, "Traffic Signal Cables."
- Item 688, "Pedestrian Detectors and Vehicle Loop Detectors."

Provide a 2-piece cast aluminum housing unit consisting of a base housing and a removable cover. Ensure the internal components provide a pushbutton with all the electrical and mechanical parts required for operation. Supply housing or an adapter (saddle) that conforms to the pole shape, fitting flush to ensure a rigid installation. Supply adapters of the same material and construction as the housing. Close unused openings with a weather-tight closure painted to match the housing. Provide a minimum 0.5 inch hole with an insulating bushing through the back of the housing.

Ensure the manufacturers name or trademark is located on the housing. The APS pushbutton shall be a solid state switch rated for at least 1 million operations.

Ensure APS complies with US Access Board's "Draft Guidelines for Accessible Public Rights of Way" (PROWAG) Section R306. In addition, ensure that the APS complies with and provides operation consistent with requirements of Sections 4E.09 through 4E.13 of the 2009 Edition of the Federal Highway Administration publication Manual on Uniform Traffic Control Devices.

Supply an APS (pushbutton station) that includes a pedestrian sign, a pushbutton, vibrotactile arrow and an audible speaker contained in one unit and with the following features:

- Vibrating tactile arrow with high visual contrast.
- Pushbutton locator tone with a duration of 0.15 seconds or less, repeating at 1-second intervals. The pushbutton locator tones must deactivate when the traffic control signal is operating in a flashing mode.

The locator tones must be intensity responsive to ambient sound and be audible (a maximum of 5 dBA louder than ambient sound) up to 6 to12 feet from the pushbutton or to the building line whichever is less.

- Speech walk message for the WALKING PERSON (symbolizing WALK) indication.
- Speech pushbutton information message.
- Unless plans require otherwise, provide each pushbutton station with a 9" X 15" sign. Use sheet aluminum with minimum thickness of 0.080 in. for information signs for push buttons.
- Audible tone walk indications – consisting of ticks repeating at 8 to 10 times per second at multiple frequencies with a dominant component at 880 Hz ± 20%. It must provide an audible walk indication during the walk interval only. The audible walk indication must be from the beginning of the associated pedestrian walk phase and must have the same duration as the pedestrian walk signal except it must be possible to limit the accessible walk indication to the first 7 seconds of the walk interval when the pedestrian signal rests in walk. When the accessible walk indication is limited during rest in walk a button press during the walk interval must recall the walk interval provided the crossing time remaining is greater than the pedestrian change interval.
- Automatic volume adjustment in response to ambient traffic sound level provided up to a maximum volume of 100 dBA. Tone or voice volume measured at 3 ft from the pushbutton station shall be 2 dB minimum and 5 dB maximum above ambient noise level and shall be responsive to ambient noise level changes.
- The pushbutton must be Americans with Disabilities Act compliant and activate both the walk interval and accessible pedestrian signal.
- Actuation indicator-tone and light.
- Extended button press which can be used to request a louder WALK signal and locator tone for subsequent clearance interval.
- Weather-resistant speaker protected by a vandal resistant screen.
- Capable of operating at, as a minimum, up to 1000 ft (AWG #12) cable run from signal cabinet
- Pushbutton station and Central control unit shall be rated for the following temperature range:
  Pushbutton station: -30°F to +155°F.
  Central Control Unit: -30°F to +165°F
- APS units shall be operationally compatible with TS1, TS2, 170 and 2070 controllers and cabinet assemblies, currently used by the Department and any other Texas government entities. In the case of conflicts between specifications, the latest Department specifications will control.

Unless specified otherwise in the plans, supply a central control unit (CCU) for the pushbutton stations that resides in the Traffic Signal Controller Cabinet. Provide a CCU capable of controlling up to 4 pedestrian phases and 12 Pushbutton stations. Ensure that all inputs and outputs on the CCU have Transient Voltage Protection.

If plans specify that the APS will require no additional space or wiring in the cabinet, provide one control unit per push button station capable of mounting in the pedestrian signal housing.

If a special device or software is required to configure the APS operation, provide a minimum of one device or copy of software per signal cabinet along with any required connectors, unless required otherwise by the plans.

Provide any wiring harnesses, connectors, interface cables, terminal blocks, etc. required for connecting the pushbutton station or CCU to the traffic signal controller assembly and making the Pushbutton stations operational.

3. Construction. Unless specified otherwise, wire the APS to the nearest splicing point or terminal strip using stranded No. 12 AWG XHHW wire with 600-volt insulation. Do not use terminal connections or splice wire leads except in the hand holes located in the signal pole shaft, in the signal pole base, or at locations approved by the Engineer. All allowed splices must be watertight. Attach wires to terminal posts with solderless terminals. Attach terminals to the wires with a ratchet-type compression crimping tool properly sized to the wire. Remove any burrs or rough edges on any holes drilled for wire entry to APS pushbuttons. Ensure pushbutton stations are mounted at the proper height and orientation. Provide a neat workmanship in the installation of any wiring harnesses, control units, wiring panels, push button stations. Follow manufacturer's recommendations regarding installation and weatherproofing.

4. Documentation Requirements. Each APS shall be provided with the following documentation:

- Complete and accurate installation wiring guide.
- Contact name, address, and telephone number for the representative, manufacturer, or distributor for warranty repair.
- If requested supply schematics for all electronics. One schematic diagram shall be provided for pushbutton stations, panels, central control units or control units, along with any necessary installation instructions.

5. Warranty The APS unit shall be warranted against any failure due to workmanship, material defects or intensity within the first 60 months of field operation. APS unit shall operate as required above after 60 months of continuous use over the temperature range of -30°F to +165°F in a traffic signal operation. The contractor shall provide a written manufacturer warranty against defects in materials and workmanship for APS unit for a period of 60 months after installation.
Replacement of APS units shall be provided within 5 days after receipt of failed module(s) at no cost to the Department, except the cost of shipping the failed modules.

6. Measurement. This Item will be measured by each APS pushbutton station installed.

7. Payment. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Accessible Pedestrian Signal Units" of the type specified. This price is full compensation for furnishing, installing, and testing the detectors, including mounting hardware, pushbutton stations, central control units, wiring harnesses, and configuration devices or software. The 2 conductor cable from the signal cabinet to the pushbutton station shall be paid for under Item 684, "Traffic Signal Cables".

The sign attached to the APS unit will not be measured or paid for directly but will be subsidiary to this Item.