

Control	0275-12-084, ETC.
Project	C 275-12-84, ETC.
Highway	IH 40
County	WHEELER

ADDENDUM ACKNOWLEDGMENT

Each bidder is required to acknowledge receipt of an addendum issued for a specific project. This page is provided for the purpose of acknowledging an addendum.

FAILURE TO ACKNOWLEDGE RECEIPT OF AN ADDENDUM WILL RESULT IN THE BID NOT BEING READ.

In order to properly acknowledge an addendum place a mark in the box next to the respective addendum.

- ADDENDUM NO. 1
- ADDENDUM NO. 2
- ADDENDUM NO. 3
- ADDENDUM NO. 4
- ADDENDUM NO. 5

In addition, the bidder by affixing their signature to the signature page of the proposal is acknowledging that they have taken the addendum(s) into consideration when preparing their bid and that the information contained in the addendum will be included in the contract, if awarded by the Commission or other designees.

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PROPOSAL TO THE TEXAS TRANSPORTATION COMMISSION

2024 SPECIFICATIONS

WORK CONSISTING OF FURNISH & INSTALL DYNAMIC MESSAGE SIGNS WHEELER COUNTY, TEXAS

The quantities in the proposal 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 67 working days and will be accepted when fully completed and finished to the satisfaction of the Executive Director or designee.

Provide a proposal 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 the Texas Transportation Commission in the following amount:

TEN THOUSAND (Dollars) (\$10,000)

A bid bond may be used as the required proposal guaranty. The bond form may be detached from the proposal for completion. The proposal 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 proposal and/or the plans that have been acknowledged by the bidder, become part of this proposal.

By signing the proposal the bidder certifies:

1. the only persons or parties interested in this proposal 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 proposal are true and accurate and the bidder intends the proposal to be taken as a genuine government record.

• **Signed:** **

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

Print Name:

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

Title:

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

Company:

(1) _____ (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

ANY CONTRACTORS INTENDING TO BID ON ANY WORK TO BE AWARDED BY THIS DEPARTMENT 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 PROPOSAL.

TEXAS DEPARTMENT OF TRANSPORTATION

BID BOND

KNOW ALL PERSONS BY THESE PRESENTS,

That we, (Contractor Name) _____

Hereinafter called the Principal, and (Surety Name) _____

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 the Texas Department of Transportation, hereinafter called the Oblige, in the sum of not less than two percent (2%) of the department's 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 cover of the proposal), 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:

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NOW, THEREFORE, if the Oblige shall award the Contract to the Principal and the Principal shall enter into the Contract in writing with the Oblige 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 Oblige, without recourse of the Principal and/or Surety, not as a penalty but as liquidated damages.

Signed this _____ Day of _____ 20_____

By: _____
(Contractor/Principal Name)

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

*By: _____
(Surety Name)

(Signature of Attorney-in-Fact)

Impressed
Surety Seal
Only

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

This form may be removed from the proposal.

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BIDDER'S CHECK RETURN

IMPORTANT

The space provided for the return address must be completed to facilitate the return of your bidder's check. Care must be taken to provide a legible, accurate, and complete return address, including zip code. A copy of this sheet should be used for each different return address.

NOTE

Successful bidders will receive their guaranty checks with the executed contract.

RETURN BIDDERS CHECK TO (PLEASE PRINT):

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IMPORTANT

PLEASE RETURN THIS SHEET IN ITS ENTIRETY

Please acknowledge receipt of this check(s) at your earliest convenience by signing below in longhand, in ink, and returning this acknowledgement in the enclosed self addressed envelope.

Check Received By: _____ Date: _____

Title: _____

For (Contractor's Name): _____

Project _____ County _____

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NOTICE TO THE BIDDER

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

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

\$ _____
Total Bid Amount

Control 0001-03-030
 Project STP 2000(938)HES
 Highway SH 20
 County EL PASO

ALT	ITEM	DESC	SP	Bid Item Description	Unit	Quantity	Bid Price	Amount	Seq
	I04	509	X	REMOV CONC (SDWLK)	MSY	266.400	\$10.000	\$2,664.00	1
Total Bid Amount							\$2,664.00		

Signed _____
 Title _____
 Date _____

Additional Signature for Joint Venture:

Signed _____
 Title _____
 Date _____

EXAMPLE OF BID PRICES SUBMITTED BY COMPUTER PRINTOUT

EXAMPLE

EXAMPLE

EXAMPLE

EXAMPLE

EXAMPLES

BID PRICES SUBMITTED BY HAND WRITTEN FORMAT

ALT	ITEM-CODE			UNIT BID PRICE <u>ONLY</u> WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC NO	S.P. NO.				
	190	026		RED OAK 1 1/2 - 1 3/4 GAL BB	EA	9.000	1

Unit price for each plant in place

	249	014		FLEX BASE(DEL)(DENSOT)(TY A GR4 CL2)	TON	56,787.00	14

Unit price for each ton of Flexible Base

	430	001	001	CL A CONC FOR EXT STR (CULV)	CY	45.000	27

Unit price for each cubic yard of Concrete

	610	007	001	RDWY ILL ASSEM(TY ST 50T-8-8)(.4 KW)S	EA	13.000	7

Unit price of each Roadway Illumination Assembly

EXAMPLE

EXAMPLE

EXAMPLE

EXAMPLE

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ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	416	7008		DRILL SHAFT (48 IN) DOLLARS and CENTS	LF	65.000	1
	432	7001		RIPRAP (CONC)(4 IN) DOLLARS and CENTS	CY	3.600	2
	432	7013		RIPRAP (MOW STRIP)(4 IN) DOLLARS and CENTS	CY	47.000	3
	500	7001		MOBILIZATION DOLLARS and CENTS	LS	1.000	4
	502	7001		BARRICADES, SIGNS AND TRAFFIC HAN- DLING DOLLARS and CENTS	MO	4.000	5
	505	7001		TMA (STATIONARY) DOLLARS and CENTS	DAY	50.000	6
	540	7002		MTL W-BEAM GD FEN (STEEL POST) DOLLARS and CENTS	LF	525.000	7
	540	7015		DOWNSTREAM ANCHOR TERMINAL SEC- TION DOLLARS and CENTS	EA	2.000	8
	544	7001		GUARDRAIL END TREATMENT (INSTALL) DOLLARS and CENTS	EA	6.000	9
	618	7030		CONDT (PVC) (SCH 40) (2") DOLLARS and CENTS	LF	516.000	10
	618	7031		CONDT (PVC) (SCH 40) (2") (BORE) DOLLARS and CENTS	LF	127.000	11

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	620	7009		ELEC CONDR (NO.6) BARE DOLLARS and CENTS	LF	643.000	12
	620	7010		ELEC CONDR (NO.6) INSULATED DOLLARS and CENTS	LF	1,286.000	13
	624	7002		GROUND BOX TY A (122311)W/APRON DOLLARS and CENTS	EA	6.000	14
	628	7156		ELC SRV TY D 120/240 060(NS)SS(N)SP(O) DOLLARS and CENTS	EA	2.000	15
	650	7028		INS OH SN SUP(30 FT BAL TEE) DOLLARS and CENTS	EA	2.000	16
	6004	7001		INSTALL DMS (POLE MTD CABINET) DOLLARS and CENTS	EA	2.000	17
	6018	7003		CCTV MOUNT (POLE) DOLLARS and CENTS	EA	2.000	18
	6033	7001		PORTABLE CHANGEABLE MESSAGE SIGN DOLLARS and CENTS	EA	2.000	19

CERTIFICATION OF INTEREST IN OTHER BID PROPOSALS FOR THIS WORK

By signing this proposal, 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

_____ NO

- B. If this proposal 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.

ENGINEER SEAL

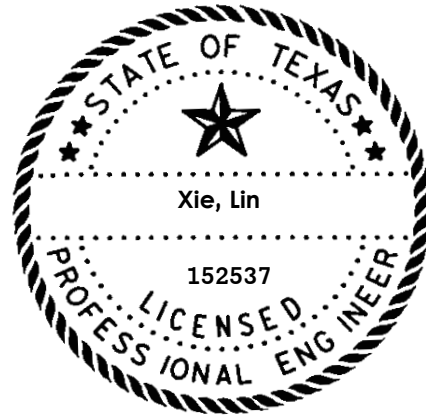
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Highway IH 40

County WHEELER

The enclosed Texas Department of Transportation Specifications, 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
Xie, Lin, P.E.
AUGUST 26, 2024

COUNTY: WHELLER

HIGHWAY: IH-40

GENERAL NOTES AND SUPPLEMENTAL INFORMATION

*RATES SHOWN IN THIS TABLE HAVE BEEN USED FOR PLAN QUANTITY CALCULATIONS AND MAY BE ADJUSTED BY THE ENGINEER DURING CONSTRUCTION FOR APPLICATION PURPOSES.

CONTRACTOR QUESTIONS ON THIS PROJECT ARE TO BE ADDRESSED TO THE FOLLOWING INDIVIDUAL(S):

LOUIS.MCDOW@TXDOT.GOV

QUESTIONS MAY BE SUBMITTED VIA THE LETTING PRE-BID Q&A WEB PAGE. THIS WEBPAGE CAN BE ACCESSED FROM THE NOTICE TO CONTRACTORS DASHBOARD LOCATED AT THE FOLLOWING ADDRESS:

<HTTPS://TABLEAU.TXDOT.GOV/VIEWS/PROJECTINFORMATIONDASHBOARD/NOTICETOCONTRACTORS>

ALL CONTRACTOR QUESTIONS WILL BE REVIEWED BY THE ENGINEER. ALL QUESTIONS AND ANY CORRESPONDING RESPONSES THAT ARE GENERATED WILL BE POSTED THROUGH THE SAME LETTING PRE-BID Q&A WEB PAGE.

THE LETTING PRE-BID Q&A WEB PAGE FOR EACH PROJECT CAN BE ACCESSED BY USING THE DASHBOARD TO NAVIGATE TO THE PROJECT YOU ARE INTERESTED IN BY SCROLLING OR FILTERING THE DASHBOARD USING THE CONTROLS ON THE LEFT. HOVER OVER THE BLUE HYPERLINK FOR THE PROJECT YOU WANT TO VIEW THE Q&A FOR AND CLICK ON THE LINK IN THE WINDOW THAT POPS UP.

THE FOLLOWING STANDARD DETAIL SHEETS HAVE BEEN MODIFIED:

COSS-OSB-SZ-21 (MOD)

ITEM 5 - CONTROL OF THE WORK

CONSTRUCTION SURVEYING ON THIS CONTRACT WILL BE IN ACCORDANCE WITH ARTICLE 5.9.3, "METHOD C". THE CONTRACTOR SHALL PLACE CONSTRUCTION STAKES NEAR THE RIGHT-OF-WAY LINE AT INTERVALS OF NO MORE THAN 200', OR AS DIRECTED, WITH STATIONING.

CORRECT ANY DEFICIENCIES IDENTIFIED DURING FINAL INSPECTION, INCLUDING REQUIRED PAPERWORK. SUBMIT ALL REQUIRED DOCUMENTATION WITHIN 14 DAYS OF FINAL ACCEPTANCE AS DIRECTED BY THE ENGINEER.

WHEN A PRECAST OR CAST-IN-PLACE CONCRETE ELEMENT IS INCLUDED IN THE PLANS, A PRECAST CONCRETE ALTERNATE MAY BE SUBMITTED IN ACCORDANCE WITH "STANDARD OPERATING PROCEDURE FOR ALTERNATE PRECAST PROPOSAL SUBMISSION" FOUND ONLINE AT THE FOLLOWING ADDRESS:

<HTTPS://FTP.TXDOT.GOV/PUB/TXDOT-INFO/BRG/DESIGN/ALTERNATE-PRECAST-PROPOSAL-SUBMISSION.PDF>

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AN ACCEPTANCE OR DENIAL OF AN ALTERNATE IS AT THE SOLE DISCRETION OF THE ENGINEER. IMPACTS TO THE PROJECT SCHEDULE AND ANY ADDITIONAL COSTS RESULTING FROM THE USE OF ALTERNATES ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

ITEM 7 - LEGAL RELATIONS AND RESPONSIBILITIES

PROVIDE INGRESS & EGRESS TO THE ADJACENT PROPERTIES IN AREAS UNDER CONSTRUCTION. PHASED CONSTRUCTION OF DRIVEWAYS AND STREETS SHALL BE REQUIRED TO PROVIDE UNINTERRUPTED ACCESS TO ADJACENT PROPERTIES. COORDINATE WORK WITH THE PROPERTY OWNERS BEFORE BEGINNING ANY CONSTRUCTION IN THE VICINITY OF THE DRIVE.

DO NOT INITIATE ACTIVITIES IN A PROJECT SPECIFIC LOCATION (PSL) ASSOCIATED WITH A U.S. ARMY CORPS OF ENGINEERS (USACE) PERMIT AREA THAT HAS NOT BEEN PREVIOUSLY EVALUATED BY THE USACE AS PART OF THE PERMIT REVIEW FOR THIS PROJECT. SUCH ACTIVITIES INCLUDE BUT ARE NOT LIMITED TO, HAUL ROADS, EQUIPMENT STAGING AREAS, BORROW AND DISPOSAL SITES. "ASSOCIATED", AS DEFINED HEREIN, INCLUDES MATERIALS DELIVERED TO OR FROM THE PSL. THE PERMIT AREA INCLUDES ALL WATERS OF THE U.S. OR ASSOCIATED WETLANDS AFFECTED BY PROJECT ACTIVITIES. SPECIAL RESTRICTIONS MAY BE REQUIRED FOR SUCH WORK. CONSULT WITH THE USACE REGARDING ACTIVITIES, INCLUDING PROJECT SPECIFIC LOCATIONS (PSLS) THAT HAVE NOT BEEN PREVIOUSLY EVALUATED BY THE USACE. PROVIDE THE DEPARTMENT WITH A COPY OF ALL CONSULTATION(S) OR APPROVAL(S) FROM THE USACE PRIOR TO INITIATING ACTIVITIES.

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 FOR THIS PROJECT. DOCUMENT ANY DETERMINATION(S) THAT PROJECT ACTIVITIES DO NOT AFFECT A USACE PERMIT AREA. MAINTAIN COPIES OF DETERMINATION(S) FOR REVIEW BY THE DEPARTMENT OR ANY REGULATORY AGENCY.

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.

DOCUMENT BOTH THE PROJECT SPECIFIC LOCATION (PSL) AND AUTHORIZATION. MAINTAIN COPIES FOR REVIEW BY THE DEPARTMENT 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:

- SUITABLE EXCAVATION OF REQUIRED MATERIAL IN THE AREAS SHOWN ON THE PLANS AND CROSS SECTIONS AS SPECIFIED IN ITEM 110 IS USED FOR

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PERMANENT OR TEMPORARY FILL (ITEM 132, EMBANKMENT) WITHIN A USACE PERMIT AREA;

- SUITABLE EMBANKMENT (ITEM 132) FROM WITHIN THE USACE PERMIT AREA IS USED AS FILL WITHIN A USACE EVALUATED AREA; AND,
- 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.

PROVIDE THE DEPARTMENT 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:

- ITEM 132, EMBANKMENT, USED FOR TEMPORARY OR PERMANENT FILL WITHIN A USACE PERMIT AREA; AND,
- UNSUITABLE EXCAVATION OR EXCESS EXCAVATION [“WASTE”] (ITEM 110, EXCAVATION) THAT IS DISPOSED OF OUTSIDE A USACE EVALUATED AREA.

THE DISTURBED AREA IN THIS PROJECT, ALL PROJECT LOCATIONS IN THE CONTRACT, AND THE CONTRACTOR’S PROJECT SPECIFIC LOCATIONS (PSLS), WITHIN ONE (1) MILE OF THE PROJECT LIMITS, FOR THE CONTRACT WILL FURTHER ESTABLISH THE AUTHORIZATION REQUIREMENTS FOR STORM WATER DISCHARGES. THE DEPARTMENT WILL OBTAIN AN AUTHORIZATION TO DISCHARGE STORM WATER FROM THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) FOR THE CONSTRUCTION ACTIVITIES SHOWN ON THE PLANS. THE CONTRACTOR IS TO OBTAIN REQUIRED AUTHORIZATION FROM THE TCEQ FOR CONTRACTOR PSLs FOR CONSTRUCTION SUPPORT ACTIVITIES ON OR OFF THE ROW. WHEN THE TOTAL AREA DISTURBED IN THE CONTRACT AND PSLs WITHIN ONE (1) MILE OF THE PROJECT LIMITS EXCEEDS FIVE (5) ACRES, PROVIDE A COPY OF THE CONTRACTOR’S NOI FOR PSLs ON THE ROW TO THE ENGINEER AND TO THE LOCAL GOVERNMENT THAT OPERATES A SEPARATE STORM SEWER SYSTEM.

MINIMIZE THE USE OF EQUIPMENT IN STREAMS AND RIPARIAN AREAS DURING CONSTRUCTION. WHEN POSSIBLE, EQUIPMENT ACCESS SHOULD BE FROM THE BANKS OR BRIDGE DECKS.

WHEN TEMPORARY STREAM CROSSINGS ARE UNAVOIDABLE, REMOVE STREAM CROSSINGS ONCE THEY ARE NO LONGER NEEDED AND STABILIZE BANKS AND SOILS AROUND THE CROSSING.

AVOID PLACING RIPRAP ACROSS STREAMS IF POSSIBLE. WHEN RIPRAP IS NECESSARY, THE PLACEMENT SHOULD NOT IMPEDE THE MOVEMENT OF AQUATIC AND TERRESTRIAL WILDLIFE UNDERNEATH THE BRIDGE.

CONTRACTORS SHOULD PLACE STAGING AREAS, STOCKPILES, AND OTHER PROJECT RELATED SITES IN PREVIOUSLY DISTURBED AREAS OUTSIDE OF THE RIPARIAN CORRIDOR BY AT LEAST 100 FEET WHEN EVER POSSIBLE.

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NO SIGNIFICANT TRAFFIC GENERATOR EVENTS IDENTIFIED.

ITEM 8 – PROSECUTION AND PROGRESS

WORKING DAYS WILL BE CHARGED IN ACCORDANCE WITH ARTICLE 8.3.1.4, STANDARD WORKWEEK.

PROVIDE A MINIMUM OF 2 WORKING DAYS ADVANCED NOTICE TO THE ENGINEER FOR WORK TO BE PERFORMED ON SATURDAYS AND/OR STATE HOLIDAYS. WORK ON SUNDAYS AND/OR NATIONAL HOLIDAYS WILL NOT BE PERMITTED.

WORK THAT RESTRICTS OR INTERFERES WITH TRAFFIC, TO INCLUDE MOBILE OPERATIONS OR SHORT-TERM LANE CLOSURES, WILL NOT BE ALLOWED ON THE FOLLOWING DATES DUE TO EXPECTED INCREASES IN HOLIDAY TRAFFIC:

- FRIDAY AND SATURDAY IMMEDIATELY PRECEDING EASTER SUNDAY
- FRIDAY AND SATURDAY IMMEDIATELY PRECEDING MEMORIAL DAY
- JULY 3RD AND JULY 5TH (INDEPENDENCE DAY HOLIDAY)
- FRIDAY AND SATURDAY IMMEDIATELY PRECEDING LABOR DAY
- WEDNESDAY IMMEDIATELY PRECEDING THANKSGIVING
- FRIDAY AND SATURDAY IMMEDIATELY AFTER THANKSGIVING
- DECEMBER 23RD, 24TH, 25TH, AND 26TH (CHRISTMAS HOLIDAY)
- DECEMBER 31ST (NEW YEARS EVE)

SUBMIT WRITTEN REQUESTS TO THE ENGINEER FOR CONSIDERATION OF TEMPORARY SUSPENSION OF WORK AND/OR WORKING DAY CHARGES DUE TO CONDITIONS NOT UNDER THE CONTROL OF THE CONTRACTOR. SUCH REQUESTS WILL BE EVALUATED BY THE ENGINEER ON A CASE-BY-CASE BASIS AND A WRITTEN RESPONSE WILL BE PROVIDED TO THE CONTRACTOR.

COORDINATE WITH THE ENGINEER TO DETERMINE THE APPROPRIATE PROJECT SCHEDULE TYPE IN ACCORDANCE WITH ARTICLE 5.5 PRIOR TO SUBMISSION OF THE BASELINE SCHEDULE.

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ITEM 421 – HYDRAULIC CEMENT CONCRETE

USE “CLASS A” CONCRETE FOR SIDEWALKS, DRIVEWAYS, CURB & GUTTER, AND TEXTURED CONCRETE.

THE CONTRACTOR WILL SAMPLE ALL CONCRETE AND TEST ACCORDING TO TEX-414-A OR TEX-416-A (IF AIR ENTRAINED CONCRETE IS SPECIFIED), TEX-415-A, TEX-422-A, AND TEX-447-A. CONTRACTOR PERSONNEL PERFORMING TESTING MUST BE ACI CERTIFIED. PERSONNEL PERFORMING THESE TESTS ARE SUBJECT TO DEPARTMENT APPROVAL. USE OF A COMMERCIAL LABORATORY IS PERMITTED.

THE CONTRACTOR WILL NOT BE REQUIRED TO SUPPLY COMPRESSION TESTING EQUIPMENT. TXDOT PERSONNEL WILL PERFORM THE COMPRESSION TESTING.

PROVIDE THE ENGINEER WITH ACI CERTIFICATES, CURRENT EQUIPMENT CALIBRATION RECORDS, AND THE EMAIL ADDRESSES OF TESTING PERSONNEL.

ITEM 502 - BARRICADES, SIGNS, AND TRAFFIC HANDLING

THE CONTRACTOR’S RESPONSIBLE PERSON FOR TCP COMPLIANCE SHALL BE AVAILABLE BY PHONE AND SHALL HAVE A RESPONSE TIME WITHIN 45 MINUTES.

WORK WILL NOT BE ALLOWED ON BOTH SIDES OF THE ROAD AT THE SAME TIME UNLESS OTHERWISE APPROVED BY THE ENGINEER.

ALL EQUIPMENT AND MATERIALS SHALL BE STORED OUTSIDE THE ROADWAY CLEAR ZONE.

EQUIP ALL WORK VEHICLES WITHIN 30 FEET OF THE TRAVELED WAY WITH A FUNCTIONING AMBER STROBE LIGHT OR ROTATING BEACON VISIBLE FROM ALL DIRECTIONS.

THE CONTRACTOR SHALL TAKE ACTION AT THE TIME OF RECEIPT OF THE BARRICADE INSPECTION IN ACORDANCE WITH THE DEFICIENCY PRIORITY. MAKE CORRECTIONS WITHIN 1 CALENDAR DAY FOR A PRIORITY 1 DEFICIENCY, OR WITHIN 7 CALENDAR DAYS FOR A PRIORITY 2 DEFICIENCY. THE ENGINEER MAY REQUIRE THE TEMPORARY SUSPENSION OF WORK WITHOUT SUSPENSION OF TIME CHARGES FOR FAILURE TO MAKE CORRECTIONS WITHIN THE APPROPRIATE TIME FRAMES.

THE CONTRACTOR FORCE ACCOUNT “SAFETY CONTINGENCY” THAT HAS BEEN ESTABLISHED FOR THIS PROJECT IS INTENDED TO BE UTILIZED FOR WORK ZONE ENHANCEMENTS AND TO IMPROVE THE EFFECTIVENESS OF THE TRAFFIC CONTROL PLAN. THESE ENHANCEMENTS WILL BE MUTUALLY AGREED UPON BY THE ENGINEER AND THE CONTRACTOR’S RESPONSIBLE PERSON IN WRITING. THE ENGINEER MAY CHOOSE TO USE EXISTING BID ITEMS IF IT DOES NOT SLOW THE IMPLEMENTATION OR ENHANCEMENT.

THE USE OF A PILOT CAR WILL BE REQUIRED FOR ONE-LANE, TWO-WAY TRAFFIC CONTROL. ONE-LANE, TWO-WAY TRAFFIC CONTROL WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO ITEM 502.

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ITEM 505 – TRUCK MOUNTED ATTENUATOR (TMA) AND TRAILER ATTENUATOR (TA)

THERE WILL BE NO ADDITIONAL SHADOW VEHICLES OR TMA REQUIRED IN ADDITION TO THE SHADOW VEHICLES WITH TRUCK MOUNTED ATTENUATOR (TMA) THAT ARE SPECIFIED AS BEING REQUIRED ON THE TRAFFIC CONTROL PLAN STANDARDS FOR THIS PROJECT.

REFERENCE THE TABLE BELOW FOR TMA REQUIRED PER TCP STANDARD OPERATION. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING IF ONE OR MORE OF THESE OPERATIONS WILL BE ONGOING AT THE SAME TIME TO DETERMINE THE TOTAL NUMBER OF TMA'S NEEDED FOR THE PROJECT.

BASIS OF ESTIMATE FOR STATIONARY TMA:				
TMA (STATIONARY)				
PHASE	STANDARD	REQUIRED	ADDITIONAL	TOTAL
DMS	TCP(2-1,2)-18, (5-1)-18, (6-1)-18	1	0	1

ITEM 506 – TEMPORARY EROSION, SEDIMENTATION, AND ENVIRONMENTAL CONTROLS

THE STORM WATER POLLUTION PREVENTION PLAN (SWP3) CONSISTS OF TEMPORARY EROSION CONTROL MEASURES NEEDED AND PROVIDED FOR UNDER THIS ITEM. THE DISTURBED AREA IS LESS THAN ONE ACRE AND USE OF EROSION CONTROL MEASURES IS NOT ANTICIPATED. IF PHYSICAL CONDITIONS ENCOUNTERED AT THE JOB SITE REQUIRE NECESSARY CONTROLS, BMP INSTALLATION, MAINTENANCE, AND REMOVAL WILL BE PAID AS EXTRA WORK ON A FORCE ACCOUNT BASIS PER ARTICLES 4.4 AND 9.7.

ITEM 6004 – INSTALL DMS (POLE MOUNTED CABINET)

THE DMS BOARDS HAVE BEEN PREVIOUSLY PROCURED BY TXDOT AND ARE LOCATED AT THE CHILDRESS DISTRICT OFFICE. CONTACT CORY TAYLOR AT 940-937-7176. THE FOLLOWING CCTV EQUIPMENT HAS ALSO BEEN PREVIOUSLY PROCURED BY TXDOT:

- 2 AXIS CAMERAS
- 2 60W INDUSTRIAL MIDSPANS
- 2 120W POWER SUPPLIES
- 2 POLE BRACKETS

THESE ITEMS ARE ALSO LOCATED AT THE DISTRICT OFFICE.

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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
----- TRANSPORTATION SEPTEMBER 1, 2024.
STANDARD SPECIFICATIONS ARE INCORPORATED
INTO THE CONTRACT BY REFERENCE.

ITEMS 1 TO 9 INCL., GENERAL REQUIREMENTS AND COVENANTS
ITEM 416 DRILLED SHAFT FOUNDATIONS <405><420><421><423><440><448>
ITEM 432 RIPRAP <247><420><421><431><440>
ITEM 500 MOBILIZATION
ITEM 502 BARRICADES, SIGNS, AND TRAFFIC HANDLING <503><505><510>
ITEM 505 TRUCK-MOUNTED ATTENUATOR (TMA) AND TRAILER ATTENUATOR (TA)
ITEM 540 METAL BEAM GUARD FENCE <421><441><445><529>
ITEM 544 GUARDRAIL END TREATMENTS
ITEM 618 CONDUIT <400><445><476>
ITEM 620 ELECTRICAL CONDUCTORS <610><628>
ITEM 624 GROUND BOXES <420><421><432><440><618><620>
ITEM 628 ELECTRICAL SERVICES <441><445><449><618><620><627><656>
ITEM 650 OVERHEAD SIGN SUPPORTS <416><420><421><441><442><445>
<449><618><636><654>

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

SPECIAL LABOR PROVISIONS FOR STATE PROJECTS (000---005)
WAGE RATES
SPECIAL PROVISION "NONDISCRIMINATION" (000---001)
SPECIAL PROVISION "IMPORTANT NOTICE TO CONTRACTORS" (000---015)
SPECIAL PROVISION "NOTICE OF CONTRACTOR PERFORMANCE EVALUATIONS"
(000---016)
SPECIAL PROVISION "CERTIFICATE OF INTERESTED PARTIES (FORM 1295)"
(000---017)
SPECIAL PROVISION "IMPORTANT NOTICE TO CONTRACTORS" (000---018)

SPECIAL PROVISION "SMALL BUSINESS ENTERPRISE IN STATEFUNDED PROJECTS"
(000---019)

SPECIAL SPECIFICATIONS:

ITEM 6004 DYNAMIC MESSAGE SIGN SYSTEM
ITEM 6018 DIGITAL CLOSED-CIRCUIT TELEVISION (CCTV) FIELD EQUIPMENT
ITEM 6033 PORTABLE CHANGEABLE MESSAGE SIGN

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 SPECIFI-
CATIONS FOR THIS PROJECT.

Control 0275-12-084, ETC.

Project C 275-12-84, ETC.

Highway IH 40

County WHEELER

SMALL BUSINESS ENTERPRISE REQUIREMENTS

The following goal for small business enterprises is established:

SBE
0.0%

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.

CONFLICT OF INTEREST CERTIFICATION

Pursuant to Texas Government Code Section 2261.252(b), the Department is prohibited from entering into contracts in which Department officers and employees have a financial interest.

By signing the Contract, the Contractor certifies that it is not prohibited from entering into a Contract with the Department as a result of a financial interest as defined under Texas Government Code Section 2261.252(b), and that it will exercise reasonable care and diligence to prevent any actions or conditions that could result in a conflict of interest with the Department.

The Contractor also certifies that none of the following individuals, nor any of their family members within the second degree of affinity or consanguinity, owns 1% or more interest or has a financial interest as defined under Texas Government Code Section 2261.252(b) in the Contractor:

- Any member of the Texas Transportation Commission; and
- The Department's Executive Director, General Counsel, Chief of Procurement and Field Support Operations, Director of Procurement, and Director of Contract Services.

Violation of this certification may result in action by the Department.

E-VERIFY CERTIFICATION

Pursuant to Texas Transportation Code §223.051, all TxDOT contracts for construction, maintenance, or improvement of a highway must include a provision requiring Contractors and subcontractors to use the U.S. Department of Homeland Security's E-Verify system to determine employment eligibility. By signing the contract, the Contractor certifies that prior to the award of the Contract:

- the Contractor has registered with and will, to the extent permitted by law, utilize the United States Department of Homeland Security's E-Verify system during the term of the Contract to determine the eligibility of all persons hired to perform duties within Texas during the term of the agreement; and
- the Contractor will require that all subcontractors also register with and, to the extent permitted by law, utilize the United States Department of Homeland Security's E-Verify system during the term of the subcontract to determine the eligibility of all persons hired to perform duties within Texas during the term of the agreement.

Violation of this requirement constitutes a material breach of the Contract, subjects a subcontractor to removal from the Contract, and subjects the Contractor or subcontractors to possible sanctions in accordance with Title 43, Texas Administrative Code, Chapter 10, Subchapter F, "Sanctions and Suspension for Ethical Violations by Entities Doing Business with the Department."

Certification Regarding Disclosure of Public Information

Pursuant to Subchapter J, Chapter 552, Texas Government Code, contractors executing a contract with a governmental body that results in the expenditure of at least \$1 million in public funds must:

- 1) preserve all contracting information* as provided by the records retention requirements applicable to Texas Department of Transportation (TxDOT) for the duration of the contract,
- 2) on request of TxDOT, promptly provide any contracting information related to the contract that is in the custody or possession of the entity, and
- 3) on completion of the contract, either:
 - A. provide, at no cost to TxDOT, all contracting information related to the contract that is in the custody or possession of the entity, or
 - B. preserve the contracting information related to the contract as provided by the records retention requirements applicable to TxDOT

The requirements of Subchapter J, Chapter 552, Government Code, may apply to this contract, and the contractor or vendor agrees that the contract can be terminated if the contractor or vendor knowingly or intentionally fails to comply with a requirement of that subchapter.

By entering into Contract, the Contractor agrees to:

- provide, or make available, to TxDOT and any authorized governmental investigating or auditing agency all records, including electronic and payment records related to the contract, for the same period provided by the records retention schedule applicable to TxDOT, and
- ensure that all subcontracts include a clause requiring the same.

* As defined in Government Code §552.003, “Contracting information” means the following information maintained by a governmental body or sent between a governmental body and a vendor, contractor, potential vendor, or potential contractor:

- 1) information in a voucher or contract relating to the receipt or expenditure of public funds by a governmental body;
- 2) solicitation or bid documents relating to a contract with a governmental body;
- 3) communications sent between a governmental body and a vendor, contractor, potential vendor, or potential contractor during the solicitation, evaluation, or negotiation of a contract;
- 4) documents, including bid tabulations, showing the criteria by which a governmental body evaluates each vendor, contractor, potential vendor, or potential contractor responding to a solicitation and, if applicable, an explanation of why the vendor or contractor was selected; and
- 5) communications and other information sent between a governmental body and a vendor or contractor related to the performance of a final contract with the governmental body or work performed on behalf of the governmental body.

CERTIFICATION TO NOT BOYCOTT ISRAEL

Pursuant to Texas Government Code §2271.002, the Department must include a provision requiring a written verification affirming that the Contractor does not boycott Israel, as defined in Government Code §808.001, and will not boycott Israel during the term of the contract. This provision applies to a contract that:

- 1) is with a Contractor that is not a sole proprietorship,
- 2) is with a Contractor with 10 or more full-time employees, and
- 3) has a value of \$100,000 or more.

By signing the contract, the Contractor certifies that it does not boycott Israel and will not boycott Israel during the term of this contract. "Boycott" means refusing to deal with, terminating business activities with, or otherwise taking any action that is intended to penalize, inflict economic harm on, or limit commercial relations specifically with Israel, or with a person or entity doing business in Israel or in an Israeli-controlled territory, but does not include an action made for ordinary business purposes.

Violation of this certification may result in action by the Department.

CERTIFICATION TO NOT BOYCOTT ENERGY COMPANIES

Pursuant to Texas Government Code §2274.002, the Department must include a provision requiring a written verification affirming that the Contractor does not boycott energy companies, as defined in Government Code §809.001, and will not boycott energy companies during the term of the contract. This provision applies to a contract that:

- 1) is with a Contractor that is not a sole proprietorship,
- 2) is with a Contractor with 10 or more full-time employees, and
- 3) has a value of \$100,000 or more.

By signing the contract, the Contractor certifies that it does not boycott energy companies and will not boycott energy companies during the term of this contract. "Boycott" means taking any action that is intended to penalize, inflict economic harm on, or limit commercial relations with a company because the company: (1) engages in the exploration, production, utilization, transportation, sale, or manufacturing of fossil fuel-based energy and does not commit or pledge to meet environmental standards beyond applicable federal and state law; or (2) does business with a company described by (1).

Violation of this certification may result in action by the Department.

CERTIFICATION TO NOT DISCRIMINATE AGAINST FIREARM ENTITIES OR FIREARM TRADE ASSOCIATIONS

Pursuant to Texas Government Code §2274.002, the Department must include a provision requiring a written verification affirming that the Contractor:

- 1) does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association, as defined in Government Code §2274.001, and
- 2) will not discriminate against a firearm entity or firearm trade association during the term of the contract.

This provision applies to a contract that:

- 1) is with a Contractor that is not a sole proprietorship,
- 2) is with a Contractor with 10 or more full-time employees, and
- 3) has a value of \$100,000 or more.

By signing the contract, the Contractor certifies that it does not discriminate against a firearm entity or firearm trade association as described and will not do so during the term of this contract. "Discriminate against a firearm entity or firearm trade association" means, with respect to the entity or association, to: (1) refuse to engage in the trade of any goods or services with the entity or association based solely on its status as a firearm entity or firearm trade association; (2) refrain from continuing an existing business relationship with the entity or association based solely on its status as a firearm entity or firearm trade association; or (3) terminate an existing business relationship with the entity or association based solely on its status as a firearm entity or firearm trade association. "Discriminate against a firearm entity or firearm trade association" does not include: (1) the established policies of a merchant, retail seller, or platform that restrict or prohibit the listing or selling of ammunition, firearms, or firearm accessories; (2) a company's refusal to engage in the trade of any goods or services, decision to refrain from continuing an existing business relationship, or decision to terminate an existing business relationship to comply with federal, state, or local law, policy, or regulations or a directive by a regulatory agency, or for any traditional business reason that is specific to the customer or potential customer and not based solely on an entity's or association's status as a firearm entity or firearm trade association.

Violation of this certification may result in action by the Department.

PROHIBITION ON CERTAIN TELECOMMUNICATIONS EQUIPMENT OR SERVICES

The Federal Register Notice issued the Final Rule and states that the amendment to 2 CFR 200.216 is effective on August 13, 2020. The new 2 CFR 200.471 regulation provides clarity that the telecommunications and video surveillance costs associated with 2 CFR 200.216 are unallowable for services and equipment from these specific providers. OMB's Federal Register Notice includes the new 2 CFR 200.216 and 2 CFR 200.471 regulations.

<https://www.federalregister.gov/documents/2020/08/13/2020-17468/guidance-for-grants-and-agreements>

Per the Federal Law referenced above, use of services, systems, or services or systems that contain components produced by any of the following manufacturers is strictly prohibited for use on this project. Therefore, for any telecommunications, CCTV, or video surveillance equipment, services or systems cannot be manufactured by, or have components manufactured by:

- Huawei Technologies Company,
- ZTE Corporation (any subsidiary and affiliate of such entities),
- Hytera Communications Corporation,
- Hangzhou Hikvision Digital Technology Company,
- Dahua Technology Company (any subsidiary and affiliate of such entities).

Violation of this prohibition will require replacement of the equipment at the contractor's expense.

Special Provision to Item 000

Special Labor Provisions for State Projects



1. GENERAL

This is a "Public Works" Project, as provided under Government Code, Chapter 2258, "Prevailing Wage Rates," and is subject to the provisions of the statute. No provisions in the Contract are intended to conflict with the provisions of the statute.

The Commission has ascertained and indicated in the Special Provisions the regular rate of per diem wages prevailing in each locality for each craft or type of worker. Apply the wage rates contained in the Specifications as minimum wage rates for the Contract.

2. MINIMUM WAGES, HOURS, AND CONDITIONS OF EMPLOYMENT

All workers necessary for the satisfactory completion of the work are within the purview of the Contract.

Whenever and wherever practical, give local citizens preference in the selection of labor.

Do not require any worker to lodge, board, or trade at a particular place, or with a particular person, as a condition of employment.

Do not charge or accept a fee of any from any person who obtains work on the project. Do not require any person who obtains work on the project to pay any fee to any other person or agency obtaining employment for the person on the project.

Do not charge for tools or equipment used in connection with the duties performed, except for loss or damage of property. Do not charge for necessary camp water.

Do not charge for any transportation furnished to any person employed on the project.

The provisions apply where work is performed by piece work and station work. The minimum wage paid will be exclusive of equipment rental on any shipment that the worker or subcontractor may furnish in connection with their work.

Take responsibility for carrying out the requirements of this Specification and ensure that each subcontractor working on the project complies with its provisions.

Any form of subterfuge, coercion, or deduction designated to evade, reduce, or discount the established minimum wage scales will be considered a violation of the Contract.

The Fair Labor Standards Act established one and one-half (1-1/2) pay for overtime in excess of 40 hr. worked in 1 week. Do not consider time consumed by the worker in going to and returning from the place of work as part of the hours of work. Do not require or permit any worker to work more than 40 hr. in 1 week, unless the worker receives compensation at a rate not less than 1-1/2 times the basic rate of pay for all hours worked in excess of 40 hr. in the workweek.

The general rates of per diem wages prevailing in this locality for each class and type of workers whose services are considered necessary to fulfill the Contract are indicated in the Special Provisions, and these rates govern as minimum wage rates on this Contract. A penalty of \$60 per calendar day or portion of a calendar day for each worker who is paid less than the stipulated general rates of per diem wages for any work done under the Contract will be deducted. The Department, upon receipt of a complaint by a worker,

will determine within 30 days whether good cause exists to believe that the Contractor or a subcontractor has violated wage rate requirements and notify the parties involved of the findings. Make every effort to resolve the alleged violation within 14 days after notification. The next alternative is submittal to binding arbitration in accordance with the provisions of the Texas General Arbitration Act (Article 224 et seq., "Revised Statutes").

Notwithstanding any other provision of the Contract, covenant and agree that the Contractor and its subcontractors will pay each of their employees and contract labor engaged in any way in work under the Contract, a wage not less than what is generally known as the "federal minimum wage" in accordance with 29 USC § 206 as that statute may be amended from time to time.

Pay any worker employed whose position is not listed in the Contract, a wage not less than the per diem wage rate established in the Contract for a worker whose duties are most nearly comparable.

3. RECORD AND INSPECTIONS

Keep copies of weekly payrolls for review. Require subcontractors to keep copies of weekly payrolls for review. Show the name, occupation, number of hours worked each day, and per diem wage paid each worker together with a complete record of all deductions made from such wages. Keep records for a period of 3 yr. from the date of completion of the Contract.

Where the piece-work method is used, indicate on the payroll for each person involved:

- quantity of piece work performed,
- price paid per piece-work unit, and
- total hours employed.

The Engineer may require the Contractor to file an affidavit for each payroll certifying that payroll is a true and accurate report of the full wages due and paid to each person employed.

Post or make available to employees the prevailing wage rates from the Contract. Require subcontractors to post or make available to employees the prevailing wage rates from the Contract.

The wage rates listed herein are those predetermined by the Secretary of Labor and State Statute and listed in the United States Department of Labor's (USDOL) General Decisions dated 01-05-2024 and are the minimum wages to be paid accordingly for each specified classification. To determine the applicable wage rate zone, a list entitled "TEXAS COUNTIES IDENTIFIED BY WAGE RATE ZONES" is provided in the contract. Any wage rate that is not listed herein and not in the USDOL's general decision, must be requested by the contractor through the completion of an Additional Classification and Wage Rate Request and be submitted for approval. IMPORTANT NOTICE FOR STATE PROJECTS: only the controlling wage rate zone applies to the contract. Effective 01-05-2024.

CLASS. #	CLASSIFICATION DESCRIPTION	ZONE TX02 *(TX20240002)	ZONE TX03 *(TX20240003)	ZONE TX04 *(TX20240004)	ZONE TX05 *(TX20240005)	ZONE TX06 *(TX20240006)	ZONE TX07 *(TX20240007)	ZONE TX08 *(TX20240008)	ZONE TX24 *(TX20240024)	ZONE TX25 *(TX20240025)	ZONE TX27 *(TX20240027)	ZONE TX28 *(TX20240028)	ZONE TX29 *(TX20240029)	ZONE TX30 *(TX20240030)	ZONE TX37 *(TX20240037)	ZONE TX38 *(TX20240038)	ZONE TX42 *(TX20240042)
1428	Agricultural Tractor Operator						\$12.69					\$12.35			\$11.75		
1300	Asphalt Distributor Operator	\$14.87	\$13.48	\$13.88	\$15.72	\$15.58	\$15.55	\$15.72	\$13.28	\$15.32	\$15.62	\$14.36	\$14.25	\$14.03	\$13.75	\$14.06	\$14.40
1303	Asphalt Paving Machine Operator	\$13.40	\$12.25	\$12.35	\$13.87	\$14.05	\$14.36	\$14.20	\$13.26	\$13.99	\$14.68	\$12.92	\$13.44	\$12.53	\$14.00	\$14.32	\$12.99
1106	Asphalt Raker	\$12.28	\$10.61	\$12.02	\$14.21	\$11.65	\$12.12	\$11.64	\$11.44	\$12.69	\$12.05	\$11.34	\$11.67	\$11.40	\$12.59	\$12.36	\$11.78
1112	Batching Plant Operator, Asphalt																
1115	Batching Plant Operator, Concrete																
1214	Blaster																
1615	Boom Truck Operator						\$18.36										
1444	Boring Machine Operator																
1305	Broom or Sweeper Operator	\$11.21	\$10.33	\$10.08	\$11.99		\$11.04	\$11.62		\$11.74	\$11.41	\$10.30		\$10.23	\$10.60	\$12.68	\$11.05
1144	Communications Cable Installer																
1124	Concrete Finisher, Paving and Structures	\$13.55	\$12.46	\$13.16	\$12.85	\$12.64	\$12.56	\$12.77	\$12.44	\$14.12	\$13.04	\$13.38	\$12.64	\$12.80	\$12.79	\$12.98	\$13.32
1318	Concrete Pavement Finishing Machine Operator				\$16.05		\$15.48			\$16.05		\$19.31				\$13.07	
1315	Concrete Paving, Curing, Float, Texturing Machine Operator											\$16.34				\$11.71	
1333	Concrete Saw Operator				\$14.67					\$14.48	\$17.33					\$13.99	
1399	Concrete/Gunite Pump Operator																
1344	Crane Operator, Hydraulic 80 tons or less				\$18.22		\$18.36			\$18.12	\$18.04	\$20.21			\$18.63	\$13.86	
1345	Crane Operator, Hydraulic Over 80 Tons																
1342	Crane Operator, Lattice Boom 80 Tons or Less	\$16.82	\$14.39	\$13.85	\$17.27		\$15.87			\$17.27		\$14.67			\$16.42	\$14.97	\$13.87
1343	Crane Operator, Lattice Boom Over 80 Tons				\$20.52		\$19.38			\$20.52		\$17.49			\$25.13	\$15.80	
1306	Crawler Tractor Operator	\$13.96	\$16.63	\$13.62	\$14.26		\$15.67			\$14.07	\$13.15	\$13.38			\$14.60	\$13.68	\$13.50
1351	Crusher or Screen Plant Operator																
1446	Directional Drilling Locator						\$11.67										
1445	Directional Drilling Operator				\$20.32		\$17.24										
1139	Electrician	\$20.96		\$19.87	\$19.80		\$26.35		\$20.27	\$19.80		\$20.92				\$27.11	\$19.87
1347	Excavator Operator, 50,000 pounds or less	\$13.46	\$12.56	\$13.67	\$17.19		\$12.88	\$14.38	\$13.49	\$17.19		\$13.88			\$14.09	\$12.71	\$14.42
1348	Excavator Operator, Over 50,000 pounds		\$15.23	\$13.52	\$17.04		\$17.71			\$16.99	\$18.80	\$16.22				\$14.53	\$13.52
1150	Flagger	\$9.30	\$9.10	\$8.50	\$10.28	\$8.81	\$9.45	\$8.70		\$10.06	\$9.71	\$9.03	\$8.81	\$9.08	\$9.90	\$10.33	\$8.10
1151	Form Builder/Setter, Structures	\$13.52	\$12.30	\$13.38	\$12.91	\$12.71	\$12.87	\$12.38	\$12.26	\$13.84	\$12.98	\$13.07	\$13.61	\$12.82	\$14.73	\$12.23	\$12.25
1160	Form Setter, Paving & Curb	\$12.36	\$12.16	\$13.93	\$11.83	\$10.71	\$12.94			\$13.16	\$12.54	\$11.33	\$10.69		\$13.33	\$12.34	\$13.93
1360	Foundation Drill Operator, Crawler Mounted				\$17.99					\$17.99						\$17.43	
1363	Foundation Drill Operator, Truck Mounted		\$16.86	\$22.05	\$21.51		\$16.93			\$21.07	\$20.20	\$20.76		\$17.54	\$21.39	\$15.89	\$22.05
1369	Front End Loader Operator, 3 CY or Less	\$12.28	\$13.49	\$13.40	\$13.85		\$13.04	\$13.15	\$13.29	\$13.69	\$12.64	\$12.89			\$13.51	\$13.32	\$12.17
1372	Front End Loader Operator, Over 3 CY	\$12.77	\$13.69	\$12.33	\$14.96		\$13.21	\$12.86	\$13.57	\$14.72	\$13.75	\$12.32			\$13.19	\$13.17	\$13.02
1329	Joint Sealer																
1172	Laborer, Common	\$10.30	\$9.86	\$10.08	\$10.51	\$10.71	\$10.50	\$10.24	\$10.58	\$10.72	\$10.45	\$10.30	\$10.25	\$10.03	\$10.54	\$11.02	\$10.15
1175	Laborer, Utility	\$11.80	\$11.53	\$12.70	\$12.17	\$11.81	\$12.27	\$12.11	\$11.33	\$12.32	\$11.80	\$11.53	\$11.23	\$11.50	\$11.95	\$11.73	\$12.37
1346	Loader/Backhoe Operator	\$14.18	\$12.77	\$12.97	\$15.68		\$14.12			\$15.18	\$13.58	\$12.87		\$13.21	\$14.13	\$14.29	\$12.90
1187	Mechanic	\$20.14	\$15.47	\$17.47	\$17.74	\$17.00	\$17.10			\$17.68	\$18.94	\$18.58	\$17.00	\$16.61	\$18.46	\$16.96	\$17.47

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1380	Milling Machine Operator Motor Grader Operator,	\$15.54	\$14.64	\$12.22	\$14.29		\$14.18			\$14.32	\$14.35	\$12.86			\$14.75	\$13.53	\$12.80
1390	Fine Grade	\$17.49	\$16.52	\$16.88	\$17.12	\$18.37	\$18.51	\$16.69	\$16.13	\$17.19	\$18.35	\$17.07	\$17.74	\$17.47	\$17.08	\$15.69	\$20.01
1393	Motor Grader Operator, Rough	\$16.15	\$14.62	\$15.83	\$16.20	\$17.07	\$14.63	\$18.50		\$16.02	\$16.44	\$15.12	\$16.85	\$14.47	\$17.39	\$14.23	\$15.53
1413	Off Road Hauler			\$10.08	\$12.26		\$11.88			\$12.25		\$12.23			\$13.00	\$14.60	
1196	Painter, Structures Pavement Marking Machine Operator					\$21.29	\$18.34						\$21.29			\$18.62	
1396		\$16.42		\$13.10	\$13.55		\$19.17	\$12.01		\$13.63	\$14.60	\$13.17		\$16.65	\$10.54	\$11.18	\$13.10
1443	Percussion or Rotary Drill Operator																
1202	Piledriver															\$14.95	
1205	Pipelayer		\$11.87	\$14.64	\$13.17	\$11.17	\$12.79		\$11.37	\$13.24	\$12.66	\$13.24	\$11.17	\$11.67		\$12.12	\$14.64
1384	Reclaimer/Pulverizer Operator	\$12.85			\$11.90		\$12.88			\$11.01		\$10.46					
1500	Reinforcing Steel Worker	\$13.50	\$14.07	\$17.53	\$16.17		\$14.00			\$16.18	\$12.74	\$15.83		\$17.10		\$15.15	\$17.72
1402	Roller Operator, Asphalt	\$10.95		\$11.96	\$13.29		\$12.78	\$11.61		\$13.08	\$12.36	\$11.68			\$11.71	\$11.95	\$11.50
1405	Roller Operator, Other	\$10.36		\$10.44	\$11.82		\$10.50	\$11.64		\$11.51	\$10.59	\$10.30		\$12.04	\$12.85	\$11.57	\$10.66
1411	Scraper Operator	\$10.61	\$11.07	\$10.85	\$12.88		\$12.27		\$11.12	\$12.96	\$11.88	\$12.43		\$11.22	\$13.95	\$13.47	\$10.89
1417	Self-Propelled Hammer Operator																
1194	Servicer	\$13.98	\$12.34	\$14.11	\$14.74		\$14.51	\$15.56	\$13.44	\$14.58	\$14.31	\$13.83		\$12.43	\$13.72	\$13.97	\$14.11
1513	Sign Erector Slurry Seal or Micro-Surfacing Machine Operator																
1708																	
1341	Small Slipform Machine Operator									\$15.96							
1515	Spreader Box Operator	\$12.60		\$13.12	\$14.71		\$14.04			\$14.73	\$13.84	\$13.68		\$13.45	\$11.83	\$13.58	\$14.05
1705	Structural Steel Welder															\$12.85	
1509	Structural Steel Worker						\$19.29									\$14.39	
1339	Subgrade Trimmer																
1143	Telecommunication Technician																
1145	Traffic Signal/Light Pole Worker Trenching Machine Operator,						\$16.00										
1440	Heavy						\$18.48										
1437	Trenching Machine Operator, Light																
1609	Truck Driver Lowboy-Float	\$14.46	\$13.63	\$13.41	\$15.00	\$15.93	\$15.66			\$16.24	\$16.39	\$14.30	\$16.62	\$15.63	\$14.28	\$16.03	\$13.41
1612	Truck Driver Transit-Mix				\$14.14					\$14.14							
1600	Truck Driver, Single Axle Truck Driver, Single or Tandem Axle Dump Truck	\$12.74	\$10.82	\$10.75	\$13.04	\$11.61	\$11.79	\$13.53	\$13.16	\$12.31	\$13.40	\$10.30	\$11.61		\$11.97	\$11.46	\$10.75
1606	Truck Driver, Tandem Axle Tractor with Semi Trailer	\$11.33	\$14.53	\$11.95	\$12.95		\$11.68		\$14.06	\$12.62	\$11.45	\$12.28		\$13.08	\$11.68	\$11.48	\$11.10
1607	Tunneling Machine Operator, Heavy	\$12.49	\$12.12	\$12.50	\$13.42		\$12.81	\$13.16		\$12.86	\$16.22	\$12.50			\$13.80	\$12.27	\$12.50
1441	Tunneling Machine Operator, Light																
1706	Welder		\$14.02		\$14.86		\$15.97		\$13.74	\$14.84					\$13.78		
1520	Work Zone Barricade Servicer	\$10.30	\$12.88	\$11.46	\$11.70	\$11.57	\$11.85	\$10.77		\$11.68	\$12.20	\$11.22	\$11.51	\$12.96	\$10.54	\$11.67	\$11.76

Notes:

*Represents the USDOL wage decision.

Any worker employed on this project shall be paid at the rate of one and one half (1-1/2) times the regular rate for every hour worked in excess of forty (40) hours per week.

For reference, the titles and descriptions for the classifications listed here are detailed further in the AGC of Texas' *Standard Job Classifications and Descriptions for Highway, Heavy, Utilities, and Industrial Construction in Texas* posted on the AGC's Web site for any contractor.

**TEXAS COUNTIES IDENTIFIED BY
WAGE RATE ZONES: 2, 3, 4, 5, 6, 7, 8, 24, 25, 27, 28, 29, 30, 37, 38, 42**

County Name	Zone	County Name	Zone	County Name	Zone	County Name	Zone
Anderson	28	Donley	37	Karnes	27	Reagan	37
Andrews	37	Duval	30	Kaufman	25	Real	37
Angelina	28	Eastland	37	Kendall	7	Red River	28
Aransas	29	Ector	2	Kenedy	30	Reeves	8
Archer	25	Edwards	8	Kent	37	Refugio	27
Armstrong	2	El Paso	24	Kerr	27	Roberts	37
Atascosa	7	Ellis	25	Kimble	37	Robertson	7
Austin	38	Erath	28	King	37	Rockwall	25
Bailey	37	Falls	28	Kinney	8	Runnels	37
Bandera	7	Fannin	28	Kleberg	27	Rusk	4
Bastrop	7	Fayette	27	Knox	37	Sabine	28
Baylor	37	Fisher	37	Lamar	28	San Augustine	28
Bee	27	Floyd	37	Lamb	37	San Jacinto	38
Bell	7	Foard	37	Lampasas	7	San Patricio	29
Bexar	7	Fort Bend	38	LaSalle	30	San Saba	37
Blanco	27	Franklin	28	Lavaca	27	Schleicher	37
Borden	37	Freestone	28	Lee	27	Scurry	37
Bosque	28	Frio	27	Leon	28	Shackelford	37
Bowie	4	Gaines	37	Liberty	38	Shelby	28
Brazoria	38	Galveston	38	Limestone	28	Sherman	37
Brazos	7	Garza	37	Lipscomb	37	Smith	4
Brewster	8	Gillespie	27	Live Oak	27	Somervell	28
Briscoe	37	Glasscock	37	Llano	27	Starr	30
Brooks	30	Goliad	29	Loving	37	Stephens	37
Brown	37	Gonzales	27	Lubbock	2	Sterling	37
Burleson	7	Gray	37	Lynn	37	Stonewall	37
Burnet	27	Grayson	25	Madison	28	Sutton	8
Caldwell	7	Gregg	4	Marion	28	Swisher	37
Calhoun	29	Grimes	28	Martin	37	Tarrant	25
Callahan	25	Guadalupe	7	Mason	27	Taylor	2
Cameron	3	Hale	37	Matagorda	27	Terrell	8
Camp	28	Hall	37	Maverick	30	Terry	37
Carson	2	Hamilton	28	McCulloch	37	Throckmorton	37
Cass	28	Hansford	37	McLennan	7	Titus	28
Castro	37	Hardeman	37	McMullen	30	Tom Green	2
Chambers	38	Hardin	38	Medina	7	Travis	7
Cherokee	28	Harris	38	Menard	37	Trinity	28
Childress	37	Harrison	42	Midland	2	Tyler	28
Clay	25	Hartley	37	Milam	28	Upshur	4
Cochran	37	Haskell	37	Mills	37	Upton	37
Coke	37	Hays	7	Mitchell	37	Uvalde	30
Coleman	37	Hemphill	37	Montague	37	Val Verde	8
Collin	25	Henderson	28	Montgomery	38	Van Zandt	28
Collingsworth	37	Hidalgo	3	Moore	37	Victoria	6
Colorado	27	Hill	28	Morris	28	Walker	28
Comal	7	Hockley	37	Motley	37	Waller	38
Comanche	37	Hood	28	Nacogdoches	28	Ward	37
Concho	37	Hopkins	28	Navarro	28	Washington	28
Cooke	37	Houston	28	Newton	28	Webb	3
Coryell	7	Howard	37	Nolan	37	Wharton	27
Cottle	37	Hudspeth	8	Nueces	29	Wheeler	37
Crane	37	Hunt	25	Ochiltree	37	Wichita	5
Crockett	8	Hutchinson	37	Oldham	37	Wilbarger	37
Crosby	2	Irion	2	Orange	38	Willacy	30
Culberson	8	Jack	28	Palo Pinto	28	Williamson	7
Dallam	37	Jackson	27	Panola	28	Wilson	7
Dallas	25	Jasper	28	Parker	25	Winkler	37
Dawson	37	Jeff Davis	8	Parmer	37	Wise	25
Deaf Smith	37	Jefferson	38	Pecos	8	Wood	28
Delta	25	Jim Hogg	30	Polk	28	Yoakum	37
Denton	25	Jim Wells	27	Potter	2	Young	37
DeWitt	27	Johnson	25	Presidio	8	Zapata	30
Dickens	37	Jones	25	Rains	28	Zavala	30
Dimmit	30			Randall	2		

Special Provision to Item 000

Nondiscrimination



1. 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.

The Texas Department of Transportation, as a recipient of federal financial assistance, and under Title VI and related statutes, ensures that no person will on the grounds of race, religion (where the primary objective of the financial assistance is to provide employment in accordance with 42 USC 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.

2. 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 Department.

3. NONDISCRIMINATION PROVISIONS

During the performance of this Contract, the Contractor agrees as follows.

- 3.1. **Compliance with Regulations.** The Contractor must comply with the Regulations pertinent to nondiscrimination in federally assisted programs of the United States Department of Transportation 49 CFR 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.
- 3.2. **Nondiscrimination.** The Contractor, regarding the work performed during the Contract, must 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 must 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.
- 3.3. **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, the Contractor must notify each potential subcontractor or supplier of the Contractor's obligations under this Contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.
- 3.4. **Information and Reports.** The Contractor must provide all information and reports required by the Regulations or directives issued pursuant thereto, and must permit access to its books, records, accounts, other sources of information, and facilities as may be determined by the Recipient or the Department 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 must so certify to the Recipient, or the Department as appropriate, and must set forth what efforts it has made to obtain the information.
- 3.5. **Sanctions for Noncompliance.** In the event of the Contractor's noncompliance with the nondiscrimination provisions of this Contract, the Recipient must impose such Contract sanctions as it or the Department may

determine to be appropriate, including, but not limited to actions defined in Article 7.1., "Ethics," or Article 5.1., "Authority of Engineer."

- 3.6. **Incorporation of Provisions.** The Contractor must include the provisions of Sections 3.1–3.6 in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations or directives issued pursuant thereto. The Contractor must take such action with respect to any subcontract or procurement as the Recipient or the Department may direct as a means of enforcing such provisions, including sanctions for noncompliance: 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 to Item 000

Important Notice to Contractors



1. GENERAL

The Contractor’s attention is directed to the fact that there are experience requirements associated with the Intelligent Transportation Systems (ITS) items contained on this project. The Contractor or its subcontractor must provide information to the Engineer that it meets these requirements with the initial submittals for the pertinent bid items and before installing or testing ITS items. Following are the ITS items and requirements that must be met if the item is on this project.

Should the Contractor have subcontractors that meet the following requirements, and should these subcontractors be unable to complete the ITS items contained within the project, the Contractor must resubmit qualification material of alternate subcontractors for approval before the applicable category of work can be continued.

1.1. **Category A. Pulling Fiber Optic Cable.** Contractor or subcontractor must meet the following experience requirements:

- three yr. continuous existence offering services in the installation of fiber optic cable through an outdoor conduit system and terminating in ground boxes, field cabinets or enclosures, or buildings; and
- three completed projects where the personnel pulled fiber optic cable, minimum 5 mi. in length, through an outdoor conduit system for each project. The completed fiber optic cable systems must have been in continuous satisfactory operation for at least 1 yr.

1.2. **Category B. Splicing and Testing of Fiber Optic Cable.** Contractor or subcontractor must meet the following experience requirements:

- three yr. continuous existence offering services in the fields of fusion splicing and testing of fiber optic cable installed through a conduit system and terminating in ground boxes, field cabinets or enclosures, or buildings. Experience must include the following:
 - termination of at least 48 fibers within a fiber distribution frame,
 - optical time-domain reflectometer (OTDR) testing and measurement of end-to-end attenuation of single-mode and multimode fibers,
 - system troubleshooting and maintenance,
 - training of personnel in system maintenance,
 - use of watertight splice enclosures, and
 - fusion splicing of fiber optic cable that meets the tolerable decibel (dB) losses shown in Table 1; and

**Table 1
Tolerable dB Losses**

Mode	dB Loss Range
Single mode	0.05–0.10
Multimode	0.20–0.30

- three completed projects where the personnel performed fiber optic cable splicing and terminations, system testing, system troubleshooting, and maintenance during the project and provided training in system maintenance. Each project must have consisted of a minimum 5-mi. length of fiber optic cable. The completed fiber optic cable systems must have been in continuous satisfactory operation for at least 1 yr.

- 1.3. **Category C. System Integration.** Contractor or subcontractor must meet the following experience requirements:
- three yr. providing system integration on wire line and wireless projects, including, but not limited to, programming of layer 2 Ethernet switches, integrating into existing systems, and coordination with traffic management centers; and
 - three completed projects requiring system integration and configuration of hardware, including, but not limited to Ethernet switches, video encoders and decoders, and radios.
- 1.4. **Category D. Dynamic Message Sign (DMS) Installation.** Contractor or subcontractor must meet the following experience requirements:
- three yr. continuous existence offering services in the installation of DMS signs;
 - three completed projects consisting of at least two signs in each project where the personnel installed, integrated, and tested DMS on outdoor, permanently mounted overhead structures and pertinent sign control equipment. The completed sign system installations must have been in continuous satisfactory operation for at least 1 yr.; and
 - one project (may be one of the three projects in the preceding bulleted item) in which the personnel worked in cooperation with technical representatives of the equipment supplier to perform the installation, integration, or acceptance testing of the work. The Contractor will not be required to furnish equipment on this project from the same supplier that was referenced in the qualification documentation.
- 1.5. **Category E. Closed-Circuit Television (CCTV) Equipment Installation.** Contractor or subcontractor must meet the following experience requirements:
- three yr. continuous existence offering services in the installation of CCTV camera systems;
 - three completed projects consisting of at least five cameras in each project where the personnel installed, tested, and integrated CCTV cameras on outdoor, permanently mounted structures and pertinent camera control and transmission equipment. The completed CCTV camera system installations must have been in continuous satisfactory operation for at least 1 yr.; and
 - one project (may be one of the three projects in the preceding bulleted item) in which the personnel worked in cooperation with technical representatives of the equipment supplier to perform installation, integration, or acceptance testing of the work. The Contractor will not be required to furnish equipment on this project from the same supplier that was referenced in the qualification documentation.
- 1.6. **Category F. Wireless Communications.** Contractor or subcontractor must meet the following experience requirements:
- three yr. continuous existence offering services in the installation of wireless communications. Experience must include the following:
 - conducting radio installation studies, including signal noise studies, spectrum analysis, antenna gain and radio power calculations, system attenuation, and measurement of standing wave ratios;
 - installation, troubleshooting, and repair of broadband radio systems, including equipment installation, configuration of radios, antenna calibration, and cabling; and
 - installation, troubleshooting, and repair of interconnected Ethernet networks (local area network and wide area network), including cabling, switch or router configuration, and network analysis;
 - three projects consisting of wireless communications installation, troubleshooting, and repair. Each project must include transmitting signals over at least 1-mi. distance and installation of at least three devices; and
 - one project (may be one of the three projects in the preceding bulleted item) in which the personnel worked in cooperation with technical representatives of the equipment supplier to perform installation, integration, or acceptance testing of the work. The Contractor will not be required to furnish equipment on this project from the same supplier that was referenced in the qualification documentation.

1.7. **Category G. Radar Detection Systems.** Contractor or subcontractor must meet the following experience requirements:

- three yr. continuous existence offering services in the installation of radar detection systems. Experience must include the following:
 - freeway and arterial management,
 - forward fire and side fire applications,
 - single-zone and dual beam detection, and
 - equipment setup, testing, and troubleshooting;
- three projects consisting of installation, configuration, and setup of radar detection systems; and
- one project (may be one of the three projects in the preceding bullet) in which the personnel worked in cooperation with technical representatives of the equipment supplier to perform installation, integration, or acceptance testing of the work. The Contractor will not be required to furnish equipment on this project from the same supplier that was referenced in the qualification documentation.

Special Provision 000

Important Notice to Contractors



1. GENERAL

In accordance with Texas Transportation Code §223.012, the Engineer will evaluate Contractor performance based on quality, safety, and timeliness of the project.

2. DEFINITIONS

- 2.1. **Project Recovery Plan (PRP).** A formal, enforceable plan developed by the Contractor, in consultation with the District, that documents the cause of noted quality, safety, and timeliness issues and specifies how the Contractor proposes to correct project-specific performance deficiencies.

In accordance with 43 TAC §9.23, the District will request a PRP if the Contractor's performance on a project is below the Department's acceptable standards and will monitor the Contractor's compliance with the established plan.

- 2.2. **Corrective Action Plan (CAP).** A formal, enforceable plan developed by the Contractor, and proposed for adoption by the Construction Division or Maintenance Division, that documents the cause of noted quality, safety, and timeliness issues and specifies how the Contractor proposes to correct statewide performance deficiencies.

3. CONTRACTOR EVALUATIONS

In accordance with 43 TAC §9.23, the Engineer will schedule evaluations at the following intervals, at minimum:

- interim evaluations at or within 30 days after the anniversary of the Notice to Proceed, for Contracts extending beyond 1 yr. and
- final evaluation, upon project closeout.

In case of a takeover agreement, neither the Surety nor its performing Contractor will be evaluated.

In addition to regularly scheduled evaluations, the Engineer may schedule an interim evaluation at any time to formally communicate issues with quality, safety, or timeliness. Upon request, work with the Engineer to develop a PRP to document expectations for correcting deficiencies.

Comply with the PRP as directed. Failure to comply with the PRP may result in additional remedial actions available to the Engineer under Item 5, "Control of the Work." Failure to meet a PRP to the Engineer's satisfaction may result in immediate referral to the Performance Review Committee for consideration of further action against the Contractor.

The Engineer will consider and document any events outside the Contractor's control that contributed to the failure to meet performance standards or comply with a PRP, including consideration of sufficient time.

Follow the escalation ladder if there is a disagreement regarding an evaluation or disposition of a PRP. The Contractor may submit additional documentation pertaining to the dispute. The District Engineer's decision on a Contractor's evaluation score and recommendation of action required in a PRP or follow-up for noncompliance is final.

4. DIVISION OVERSIGHT

Upon request of the Construction Division or Maintenance Division, develop and submit for Division approval a proposed CAP to document expectations for correcting deficiencies in the performance of projects statewide.

Comply with the CAP as directed. The CAP may be modified at any time up to completion or resolution after written approval of the premise of change from the Division. Failure to meet an adopted or revised adopted CAP to the Division's satisfaction within 120 days will result in immediate referral to the Performance Review Committee for consideration of further action against the Contractor.

The Division will consider and document any events outside the Contractor's control that contributed to the failure to meet performance standards or comply with a CAP, including consideration of sufficient time and associated costs as appropriate.

5. PERFORMANCE REVIEW COMMITTEE

The Performance Review Committee, in accordance with 43 TAC §9.24, will review at minimum all final evaluations, history of compliance with PRPs, any adopted CAPs including agreed modifications, any information about events outside a Contractor's control contributing to the Contractor's performance, and any documentation submitted by the Contractor and may recommend one or more of the following actions:

- take no action,
- reduce the Contractor's bidding capacity,
- prohibit the Contractor from bidding on one or more projects,
- immediately suspend the Contractor from bidding for a specified period of time, by reducing the Contractor's bidding capacity to zero, or
- prohibit the Contractor from being awarded a Contract on which they are the apparent low bidder.

The Deputy Executive Director will determine any further action against the Contractor.

6. APPEALS PROCESS

In accordance with 43 TAC §9.25, the Contractor may appeal remedial actions determined by the Deputy Executive Director.

Special Provision 000

Certificate of Interested Parties (Form 1295)



Submit Form 1295, "Certificate of Interested Parties," in the following instances:

- at Contract execution for Contracts awarded by the Commission,
- at Contract execution for Contracts awarded by the District Engineer or Chief Engineer with an award amount of \$1 million or more,
- at any time an existing Contract awarded by the District Engineer or Chief Engineer increases in value to \$1 million or more because of changes in the Contract,
- at any time there is an increase of \$1 million or more to an existing Contract (e.g., change orders, extensions, and renewals), and
- at any time there is a change to the information in Form 1295, when the form was filed for an existing Contract.

Form 1295 and instructions for completing and filing the form are available on the Texas Ethics Commission website.

Special Provision 000

Important Notice to Contractors



Table 1
Daily Contract Administration Liquidated Damages

For Dollar Amount of Original Contract		Dollar Amount of Daily Contract Administration Liquidated Damages per Working Day
From More Than	To and Including	
0	1,000,000	618
1,000,000	3,000,000	832
3,000,000	5,000,000	940
5,000,000	15,000,000	1,317
15,000,000	25,000,000	1,718
25,000,000	50,000,000	2,411
50,000,000	Over 50,000,000	4,265

In addition to the amount shown in Table 1, the liquidated damages will be increased by the amount shown in Item 8 of the General Notes for Road User Cost (RUC), when applicable.

Special Provision to Item 000

Small Business Enterprise in State-Funded Projects



1. DESCRIPTION

The purpose of this Special Provision is to implement the Department's policy of ensuring that SBEs have an opportunity to participate in the performance of Contracts. If the SBE goal is greater than zero, Section 2.1., "Article A—SBE Goal is Greater than Zero," will apply to this Contract; otherwise, Section 2.2., "Article B—No SBE Goal," will apply. The percentage goal for SBE participation in the work to be performed under this Contract will be in accordance with the proposal.

2. DEFINITIONS

A Small Business Enterprise (SBE) is a firm certified as such by the Department. Firms certified as Historically Underutilized Businesses (HUBs) by the Texas Comptroller of Public Accounts and as Disadvantaged Business Enterprises (DBEs) by the Texas Uniform Certification Program automatically qualify as SBEs.

2.1. Article A—SBE Goal is Greater than Zero.

2.1.1. Policy. The Department is committed to providing contracting opportunities for small businesses. Therefore, it is the Department's policy to develop and maintain a program to facilitate contracting opportunities for small businesses. Consequently, the requirements of the Department's SBE Program apply to this Contract as follows.

The Contractor will make a good faith effort to meet the SBE goal for this Contract.

The Contractor and any subcontractors will not discriminate on the basis of race, color, national origin, age, disability, or sex in the award and performance of this Contract. These nondiscrimination requirements must be incorporated into any subcontract and purchase order.

After a conditional award is made to the low Bidder, the Department will determine the adequacy of a Contractor's efforts to meet the Contract goal, in accordance with Section 2.1.2., "Contractor's Responsibilities." If the requirements in accordance with Section 2.1.2., "Contractor's Responsibilities," are met, the Contract will be forwarded to the Contractor for execution.

The Contractor's performance in meeting the SBE goal during the construction period of the Contract will be monitored by the Department.

2.1.2. Contractor's Responsibilities. These requirements must be satisfied by the Contractor. An SBE Contractor may satisfy the SBE requirements by performing at least 25% of the Contract work with their own organization in accordance with Item 8, "Prosecution and Progress."

The Contractor must complete an SBE Commitment Agreement Form for each SBE-certified firm the Contractor intends to use to satisfy the SBE goal. The SBE Commitment Agreement Form must be submitted to the Department's Civil Rights Division (CIV) in Austin, Texas, no later than 5 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.

A Contractor that cannot meet the Contract goal, in whole or in part, must document the good faith efforts taken to meet the SBE goal. The Department will consider as good faith efforts all documented explanations

that are submitted and that describe a Contractor's failure to meet an SBE goal or obtain SBE participation, including:

- advertising in general circulation, trade association, and minority- or women-focused media regarding subcontracting opportunities,
- dividing the Contract work into reasonable portions in conformance with standard industry practices,
- documenting reasons for rejection or meeting with the rejected SBE to discuss the rejection,
- providing qualified SBEs with adequate information pertinent to bonding, insurance, plans, Specifications, scope of work, and the requirements of the Contract,
- negotiating in good faith with qualified SBEs, not rejecting qualified SBEs that are also the lowest responsive Bidder; and
- using the services of available minorities and women; community organizations; Contractor groups; local, state, and federal business assistance offices; and other organizations that provide support services to SBEs.

The good faith effort documentation is due at the time and place in accordance with this Section. CIV will evaluate the Contractor's documentation. If it is determined that the Contractor has failed to meet the good faith effort requirements, the Contractor will be given an opportunity for reconsideration by the Department.

Should the Bidder to which the Contract is conditionally awarded refuse, neglect, or fail to meet the SBE goal or demonstrate to the Department's satisfaction sufficient efforts to obtain SBE participation, the proposal guaranty filed with the bid will become the property of the State, not as a penalty, but as liquidated damages.

The Contractor must not terminate an SBE subcontractor submitted on a commitment agreement for a Contract with an assigned goal without the prior written consent of the Department.

The Contractor must designate an SBE contact person who will administer the Contractor's SBE program and who will be responsible for submitting reports, maintaining records, and documenting good faith efforts to use SBEs.

The Contractor must inform the Department of the representative's name, title, and telephone number within 10 days of beginning work.

2.1.3. **Eligibility of SBEs.** The Department certifies the eligibility of SBEs.

Firms certified as SBEs are listed in the Department's online directory located at <https://txdot.txdotcms.com/>.

Only firms certified at the time of letting or at the time the commitments are submitted are eligible to be used in the information furnished by the Contractor in accordance with Section 2.1.2., "Contractor's Responsibilities."

Certified HUBs and DBEs are eligible as SBEs.

The Department's SBE Program is governed by 43 TAC, Chapter 9, Subchapter K, "Small Business Enterprise (SBE) Program."

2.1.4. **Determination of SBE Participation.** SBE participation will be counted toward meeting the SBE goal in this Contract in accordance with the following.

A Contractor will receive credit for all payments actually made to an SBE for work performed and costs incurred in accordance with the Contract, including all subcontracted work.

An SBE Contractor or subcontractor may not subcontract more than 75% of a Contract. The SBE must perform no less than 25% of the value of the Contract work with their own organization in accordance with Item 8.

An SBE may lease equipment consistent with standard industry practice. An SBE may lease equipment from the prime Contractor if a rental agreement, separate from the subcontract specifying the terms of the lease arrangement, is approved by the Department before the SBE starting the work in accordance with the following.

- If the equipment is of a specialized nature, the lease may include the operator. If the practice is generally acceptable with the industry, the operator may remain on the lessor's payroll. The operator of the equipment must be subject to the full control of the SBE, for a short term, and involve a specialized piece of heavy equipment readily available at the jobsite.
- For equipment that is not specialized, the SBE must provide the operator and be responsible for all payroll and labor compliance requirements.

- 2.1.5. **Records and Reports.** The Contractor must submit monthly reports of SBE payments (including payments to HUBs and DBEs) to the Area Engineer's Office after work begins. These reports will be due within 15 days after the end of a calendar month.

These reports will be required until all SBE subcontracting or supply activity is completed. The SBE Progress Report must be used for monthly reporting. Upon completion of the Contract and before receiving the final payment, the Contractor must submit the SBE Final Report to the Area Engineer's Office and a copy to the District Construction Office. These forms may be obtained from CIV and reproduced as necessary. The Department may verify the amounts being reported as paid to SBEs by randomly requesting copies of invoices and cancelled checks paid to SBEs. When the SBE goal requirement is not met, documentation supporting good faith efforts, in accordance with Section 2.1.2., "Contractor's Responsibilities," must be submitted with the SBE Final Report.

SBE subcontractors and suppliers should be identified on the monthly report by SBE certification number, name, and the amount of actual payment made to each during the monthly period. These reports are required regardless of whether SBE activity has occurred in the monthly reporting period.

All such records must be retained for 3 yr. following completion of the Contract work and be available at reasonable times and places for inspection by authorized representatives of the Department.

- 2.1.6. **Compliance of Contractor.** To ensure compliance with SBE requirements of this Contract, the Department will monitor the Contractor's efforts to involve SBEs during the performance of this Contract. This will be accomplished by a review of monthly reports submitted by the Contractor indicating their progress in achieving the SBE Contract goal and by compliance reviews conducted by the Department.

A Contractor's failure to comply with the requirements of this Special Provision will constitute a material breach of this Contract. In such a case, the Department reserves the right to employ remedies as the Department deems appropriate in the terms of the Contract.

- 2.2. **Article B—No SBE Goal.**

- 2.2.1. **Policy.** It is the Department's policy that SBEs will have an opportunity to participate in the performance of Contracts.

- 2.2.2. **Contractor's Responsibilities.** If there is no SBE goal, the Contractor must offer SBEs an opportunity to participate in the performance of Contracts and subcontracts. If an SBE is used, the requirements in accordance with Section 2.1.4., "Determination of SBE Participation," will apply.

- 2.2.3. **Prohibit Discrimination.** The Contractor and any subcontractor will not discriminate on the basis of race, color, national origin, religion, age, disability, or sex in the award and performance of Contracts. These nondiscrimination requirements must be incorporated into any subcontract and purchase order.

- 2.2.4. **Records and Reports.** The Contractor must submit annual reports pertinent to SBEs (including HUBs and DBEs) to the Area Engineer's Office by August 31 or at project completion, whichever comes first.

These reports will be required until all SBE subcontracting or supply activity is completed. The SBE Progress Report must be used for reporting. Upon completion of the Contract and before receiving the final payment, the Contractor must submit the SBE Final Report to the Area Engineer's Office and a copy to the District Construction Office. These forms may be obtained from CIV and reproduced as necessary. The Department may verify the amounts being reported as paid to SBEs by randomly requesting copies of invoices and cancelled checks paid to SBEs.

SBE subcontractors and suppliers should be identified on the report by SBE certification number, name, and the amount of actual payment made.

All such records must be retained for 3 yr. following completion of the Contract work and be available at reasonable times and places for inspection by authorized representatives of the Department.

Special Specification 6004

Dynamic Message Sign System



1. DESCRIPTION

Transport, install, and test Department-furnished Dynamic Message Signs (DMS), controller, and equipment cabinets.

2. MATERIALS

Provide all materials not supplied by the Department necessary for the DMS installation. All materials provided by the Contractor must be new. Include a task in the project schedule for delivery of Department-furnished materials and provide at least 30 days notice to the Department for pickup of Department-furnished materials. Unless otherwise shown on the plans, DMS must be stored by the Department for pickup at location shown on the plans.

Ensure that all materials and construction methods necessary to complete the installation conform to this Item, the plans, and the pertinent requirements of the following Items.

- Item 432, "Riprap"
- Item 441, "Steel Structures"
- Item 445, "Galvanizing"
- Item 449, "Anchor Bolts"
- Item 618, "Conduit"
- Item 620, "Electrical Conductors"
- Item 656, "Foundations for Traffic Control Devices"

3. CONSTRUCTION

- 3.1. **Installation.** Perform a site survey in advance of the proposed DMS location to determine the horizontal and vertical angles of the sign for optimum legibility, based on the manufacturer's recommendations.

Install DMS on overhead sign structures in accordance with this Item and the lines, grades, details, and dimensions as shown on the plans or as directed. Maintain safe construction practices. Ensure the mechanical execution of work complies with the NEC, Article 110.12. Equipment must be installed in a neat and workmanlike manner.

Adjustments or additions of sign attachment hardware, support brackets, and appurtenances, such as walkways and conduit, may be necessary for compatibility with specified sign positioning recommended by the manufacturer, as shown on the plans, or as directed.

Prevent damage to all sign components. Replace any portion of the sign assembly that is damaged or lost during transportation or installation. Do not use any materials furnished by the Department on any work that is not required by, and that does not constitute a part of, the Contract. Unused materials that were furnished by the Department must be returned undamaged to the location from which they were obtained upon completion of the work. Any unused or removed material deemed salvageable by the Engineer will remain the property of the Department and will be delivered to a designated site. Accept ownership and dispose of unsalvageable materials in accordance with federal, state, and local regulations.

Stockpile all materials designated for reuse or to be retained by the Department within the project limits or at a designated location as directed.

Equipment to be installed at each DMS field site shown on the plans may include, but not be limited to, the following.

- DMS, controller, and cabinet (provided by the Department)
- Cabling and connectors from power source to DMS connection point as specified by the DMS manufacturer (provided by the Contractor)
- Cabling and connectors from telecommunications source to DMS connection point as specified by the DMS manufacturer when required (provided by the Contractor)
- Communications as shown on the plans
- Power and communication cabling and connectors from controller to DMS, which must follow NEMA TS4, Section 4, "Controller to Sign Interface" (cables and termination provided by the Contractor)

Make all arrangements for connection to the power supply and telecommunications source, including any required permits. Supply and install any required materials not provided by the utility companies (power or communications service provider).

Construct the foundation for DMS controller cabinets, when required as shown on the plans, in accordance with Item 656, unless otherwise directed. Include a 6-ft. × 6-ft. × 5-in. (L × W × D) riprap maintenance pad with foundation, unless otherwise directed. Provide a 5/8-in. diameter × 8-ft. copper clad steel ground rod in the foundation of each DMS controller cabinet.

After the signs have been erected, wash the exterior of the entire sign using an approved biodegradable cleaning solution to remove all dirt, grease, oil smears, streaks, finger marks, and other foreign particles.

- 3.2. **Technical Assistance.** Ensure that a manufacturer's representative is available to assist the Contractor's technical personnel at each sign installation site. The manufacturer's representative must provide technical assistance in the following areas.

- Site survey for horizontal and vertical angles of sign's mounting orientation
- Sign-to-structure installation (final responsibility of the Contractor, in accordance with Section 3.3., "Working Drawings")
- Sign controller cabinet installation
- Sign-to-controller cabling
- Testing requirements in accordance with Section 3.4., "Testing"

Do not execute the initial powering up of the signs without the permission of the manufacturer's representative.

- 3.3. **Working Drawings.** Before fabrication, submit for approval five copies of the working drawings for attachment of each DMS. Show the details of any additional sign brackets, sign support connections, and methods of attachment of the signs to the sign support. Request a licensed professional engineer to sign, seal, and date the working drawings.

- 3.4. **Testing.** Testing of the sign system is to relieve the Contractor of system maintenance in accordance with Item 7, "Legal Relations and Responsibilities," after all testing is successfully completed.

After delivery of the DMS to the storage site, an approved demonstration test must be conducted before transporting the sign to the installation site. A manufacturer's representative must be available to assist with making all necessary connections and preparations for this testing.

After all signs have been installed, the Department and the DMS manufacturer must conduct approved continuity, stand-alone, and DMS system tests on the installed field equipment using central, remote, and laptop equipment. A final acceptance test must be conducted to demonstrate all control, monitor, and communication requirements for 90 days. The Engineer will furnish a letter acknowledging the final acceptance testing commencement date. The final acceptance test will be considered complete when system downtime due to mechanical, electrical, or other malfunctions to equipment furnished or installed

does not exceed 72 hr. and any individual points of failure identified during the test period have operated free of defects. Assume responsibility only for test failures directly related to the work in accordance with this Specification. Upon completion of successful final acceptance testing, permanently mark acceptance date and project identification information inside the controller cabinet. The Department will pay for electrical energy consumed by the system.

4. MEASUREMENT

This Item will be measured as each DMS system installed and tested.

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 "Installation of Dynamic Message Sign System" of cabinet mounting type specified (pole-mounted, foundation-mounted, or wall-mounted). This price is full compensation for transportation and installation of DMS; furnishing and installing any new mounting hardware and DMS controller cabinet foundation when required; storing the DMS when required; cleaning and testing the DMS; replacement or repair of damaged components; disposal of unsalvageable material; and all manipulations, labor, tools, working drawings, equipment, and incidentals.

New overhead sign supports or relocation of existing overhead sign supports will be paid for under Item 650, "Overhead Sign Supports." New drilled shaft foundations will be paid for under Item 416, "Drilled Shaft Foundations." Sign walkways will be paid for under Item 654, "Sign Walkways." All adjustments or additional materials for sign attachment hardware, support brackets, and appurtenances necessary for compatibility with specified sign positioning will not be paid for directly, but will be subsidiary to this Item.

Special Specification 6018

Digital Closed-Circuit Television (CCTV) Field Equipment



1. DESCRIPTION

Furnish, install, relocate, or remove closed-circuit television (CCTV) field equipment at locations shown on the plans, or as directed.

2. MATERIALS

2.1. **General Requirements.** Fabricate, provide, assemble, and install materials that are new, corrosion-resistant, and in strict accordance with the details shown on the plans and in the Specifications.

Provide CCTV field equipment that is compatible with software currently in operation to interface with the existing equipment and software located in the Department's Traffic Management Control (TMC) Centers across the state.

CCTV field equipment must include the following.

- Color video camera units
- Camera lenses, filters, control circuits, and accessories
- Camera housing
- Medium-duty pan and tilt units with click-and-drag position control
- Video and camera control and power cable connectors and assemblies
- Video, data, and power surge suppression
- Built-in ID generator

2.2. **Functional Requirements for Digital CCTV.** Provide color video cameras that produce digital video in standard definition or high definition that meet the following functional requirements.

2.2.1. **General.**

2.2.1.1. **Digital Signal Processing (DSP).**

- Digital zoom
- Auto and manual iris control
- Auto and manual exposure control with built-in frame buffer
- Auto and manual focus control
- Built-in ID generator, with white letters on black outline minimum or approved equivalent

2.2.1.2. **Image Pickup Device.** Progressive scan digital CCD or CMOS sensor, 1.2-megapixel (1,200,000 pixels) or better.

2.2.1.3. **Resolution.** Support the following resolutions.

- 720p (1,280-pixel × 720-pixel array)
- 1,080p (1,920-pixel × 1,080-pixel array)
- D1 (720-pixel × 480-pixel array)
- CIF (352-pixel × 240-pixel array)
- VGA (640-pixel × 480-pixel array) at minimum depending on video stream configuration

- 2.2.1.4. **Frame Rate.** Allow user-selectable frame rates at 30, 15, seven, four, two, and one frame per second.
- 2.2.1.5. **Data Rate.** Scalable from 64 Kbps to 8 Mbps.
- 2.2.1.6. **Video Stream Format.** Allow simultaneous encoding and transmission of at least two configurable digital video streams in conformance with Moving Picture Experts Group- (MPEG-) 4, Part 10 (H.264). Support configuration of the following at minimum.
- H.264
 - H.265
 - H.264 + H.264
- 2.2.1.7. **Video Stream.** Support uni-cast (one-to-one) and multi-cast (one-to-many).
- 2.2.1.8. **Aspect Ratio.** Support width-to-height aspect ratio of 16:9.
- 2.2.1.9. **Image Quality.** Ensure that video produced by the camera is true; accurate; distortion-free; and free of transfer smear, oversaturation, and any other image defect that negatively impacts image quality under all lighting and weather conditions in color and monochromatic modes.
- 2.2.1.10. **Wide Dynamic Range (WDR).** Operation with manual override option.
- 2.2.1.11. **Overexposure Protection.** Minimize glare and incur no permanent damage to the camera when pointed directly at strong light sources, including the sun, for brief periods.
- 2.2.1.12. **Geometric Distortion.** Zero.
- 2.2.1.13. **Signal-to-Noise Ratio (AGC Off).** Minimum 50 dB (weighted at 4.5 MHz).
- 2.2.1.14. **Electronic Shutter Speed.** Automatic shutter that is user selectable down to at least 1/10,000 sec.
- 2.2.1.15. **Electronic Image Stabilization.** User-selectable on or off electronic image stabilization at 5 Hz and 10 Hz minimum.
- 2.2.1.16. **Day (Color) and Night (Mono).** Auto and manual switchover and iris control with user-selectable modes for auto and manual control capabilities.
- 2.2.1.17. **Auto White Balance.** Color quality that is maintained by a continuous through-the-lens automatic white balance for color temperatures from 2,850 K to greater than 5,100 K with less than 10-IRE unit unbalance.
- 2.2.1.18. **Inverted Operation.** Automatic image inversion or “flip” when rotating through 0° or 180° vertical tilt positions when not an integrated unit.
- 2.2.1.19. **Mean Time Before Failure.** At least 43,800 hr. or 5 yr. without mechanical malfunction or failure. Act of God failures are exempt.
- 2.2.2. **Lens.** Provide an integral lens assembly for each camera with the following features.
- An f/1.6 or better glass multi-coated zoom lens with variable focal lengths with a minimum 30X zoom range
 - 12X auto and manual digital zoom minimum
 - Automatic and manual focus and iris control

Provide lenses with capabilities for remote control of the zoom, focus, and iris operations. Provide mechanical or electrical means to protect the motors from over-running in extreme positions. Lens and controller system must be capable of auto iris and remote manual iris operation. Lens must be capable of

auto and manual zoom and focus control. Use motorized iris as opposed to auto iris type for system control capability.

- 2.2.3. **Network Interface Requirements.** Provide CCTV field equipment that can integrate with the Department's Lonestar™ software and into the Department's TMC CCTV control sub-systems by NTCIP 1205 Version 1.08 or higher, Open Network Video Interface Forum (ONVIF), or approved equal. Support Coahu, Pelco D, or Pelco P protocols, or approved equal, for control.

Provide camera equipment with a local area network (LAN) connection that supports the requirements detailed in IEEE 802.3 for 10/100 Ethernet connections for half-duplex or full-duplex, and provide auto negotiation. Provide equipment with at least one Ethernet port that has a 10/100 Base-TX connection. Provide connectors that conform to EIA and TIA requirements.

Support, at minimum, RTP, RTSP, UDP/IP, TCP/IP, IPv4, HTTP, IGMPv2, DHCP, NTP, IEEE 802.1x, Ethernet 802.3u, SNMP, RADIUS Key, and Telnet.

Provide camera equipment that supports local and remote configuration and management. Configuration and management functions must include access to all user-programmed features, including, but not limited to, network configuration, video settings, device monitoring, control setting, and security functions. Configuration and management must be achieved by serial login, Telnet login, web-based interface, or manufacturer software. Provide manufacturer software with camera for local configuration, system maintenance, and management control.

- 2.3. **Cable Assembly.** Provide camera power and communication cable assembly equipped with cables used for video feed; camera control, including PTZ function; communications signaling; and power supply. Camera power and communication cable may be configured as a composite cable or series of isolated cables. The following cable functions may be required depending on the data and video communication interface requirements, as shown on the plans.

- 2.3.1. **Ethernet.** Provide a shielded twisted pair (STP) Category 6 (or equivalent) at minimum rated for outdoor use in conformance with TIA/EIA 568B. Cable must not exceed an attenuation of 30 dB per 300 ft. of cable at 100 MHz.

- 2.3.2. **Power.** Provide three-wire, insulated for 300 V minimum, 115-VAC or 24-VAC power cabling between the camera and the power supply. If 24-VAC power is required, provide needed power supply conversion equipment.

Power may be achieved using Power over Ethernet (PoE) by a power supply or mid-span PoE injector, that must be considered part of the camera unit, and must conform to IEEE 802.3af or IEEE 802.3at or latest revision.

Provide power and communication cable assembly the entire length of the camera support structure from the camera to the cabinet with an additional 25 ft. of slack in the cabinet. Determine the appropriate length required for each site. The cable assembly must be considered part of the camera unit.

Provide any necessary data, video, or power conversion hardware to successfully integrate the camera unit into the field equipment cabinet hardware components and onto the communications backbone.

- 2.4. **Video Encoding Interoperability.** Video encoding and decoding equipment may be used by software or hardware means. Ensure camera's encoded video is interoperable with hardware and software decoders from other manufacturers. Ensure the camera's encoded video can be decoded by at least two other manufacturer's software or hardware decoders that are in use by the Department. Contact the Department for decoders supported before procurement of camera unit.

- 2.5. **Camera Housing.** Provide camera housing assembly and hardware material that reflects sunlight.

Provide camera housing with a sunshield to reduce the solar heating of the camera. The total weight of the camera (including housing, sunshield, and all internal components) must not exceed 25 lb.

Construct viewing window so that unrestricted camera views can be obtained at all camera and lens positions.

Provide gaskets at cable entry point to the camera housing to prevent moisture or dust entry.

When shown on the plans or identified in the General Notes, provide heating or cooling functionality with temperature sensors to maintain internal temperatures within the manufacturer-required operating temperature range.

- 2.6. **Pan-Tilt Unit.** Furnish and install a medium-duty anodized aluminum weatherproof pan-tilt unit at each camera site, conforming to NEMA 4X and IP-66 rating or better, when not integral to the camera unit and housing. Provide mounting adapter and required attachment hardware to install the pan-tilt unit to the pole or mounting bracket. Identify the type of mounting bracket and bolt pattern on shop drawings.

Provide a unit capable of at least 180° vertical range of movement and horizontal movement of 360°, full, continuous-rotation movement.

Provide a unit that has a pan and tilt speed of 20° per second minimum and is user-adjustable through the full speed range. Unit must be capable of simultaneous pan-tilt movements with variable pan-tilt positioning control allowing variable speeds that are proportional through the zoom range.

Provide pan-tilt unit with drive accuracy and drive repeatability of less than 1° and an automatic pre-position speed of 120° per second minimum to a user-defined preset position that is user-adjustable.

Provide a pan-tilt unit, when not integral to the camera housing, that can maintain static position and does not move by more than 1° in any direction in speeds greater than 35 mph.

Ensure that the pan-tilt unit has seals and gaskets to protect the motors, gears, and cables and that the seals and gaskets are resistant to ozone, ultraviolet radiation, and other pollutants inherent to all local environmental conditions.

When shown on the plans or identified in the General Notes, provide pan-tilt unit with heater that conforms to NEMA 4X when not integral to the camera unit and housing.

- 2.7. **Preset Functions.** Provide a camera unit capable of storing at least 62 presets for pan, tilt, zoom, and focus settings.

Provide a camera unit capable of user-programmable tours with at least four tours of up to 32 presets per tour. Any tours may be programmed for panning tours.

Provide a camera unit capable of user-programmable sector zones with at least eight zones allowing right and left pan limitations.

Provide a camera unit capable of user-programmable privacy zones with at least eight zones and click-and-drag position control by software.

- 2.8. **Connectors.** Provide and install connectors that are compatible with the communications equipment interfaces identified in Section 2.2.3. Network Interface and Section 2.3. Cable Assembly. Supply all mating connectors. Provide all connector pins and mating connectors that are plated to achieve good electrical connection and resistance to corrosion.

- 2.9. **Source ID Generator.** Use a built-in ID generator to insert camera ID over each of the camera-generated videos.

Provide at least two lines of alphanumeric, case-specific text supporting at least 20 ASCII characters per line, with a minimum character height of 20 pixels, that is user-programmable for displaying any combination of ID information consisting of at least camera, preset, privacy mask, low-pressure warning, compass, and time and date.

Allow user-selectable location of text to be displayed on the video image at the extreme top or bottom. Text display on the side of the image display is prohibited.

Automatically display the programmed ID with its associated video signal that can be turned on or off by user command.

In the event of signal loss or video signal failure, ID generator must automatically pass through failure message to display over video.

Submit list of available text displays to the Department as part of the documentation requirements.

- 2.10. **Cabinet Installation.** Install video communication equipment in a pole-mounted equipment cabinet or in a ground-mounted equipment cabinet as shown on the plans. Meet the following criteria.
- Contains all the lightning protection devices for data and video.
 - Grounded to earth ground.
 - Provides connectors for all inputs and outputs for data and video and additional ports for testing video and communications. Use the external connectors for testing and for connections to communication devices.
- 2.11. **Surge Protection.** Provide surge protection for the camera meeting the following requirements.
- **Mounting Adapter.** Electrically bonded to mounting structure.
 - **Pan-Tilt Mechanism.** Electrically bonded to mounting adapter.
 - **Camera Housing.** Electrically bonded to pan-tilt mechanism.
 - **Power and Control Cable Surge Protector.** Integrated into cabinet surge protection system.
- 2.12. **Power Requirements.** Provide CCTV field equipment meeting all its specified requirements when the input power is 115 VAC $\pm 20\%$, 60 Hz ± 3 Hz. Maximum power required must not exceed 200 W, including optional equipment.
- Provide appropriate voltage conversion, power injectors, or other power supply hardware if the camera equipment or any camera-related ancillary devices require operating voltages other than 115 VAC $\pm 20\%$, such as 24 VAC or 12 VDC from solar power systems, or rely on PoE. Appropriate voltage converters or injectors must accept an input voltage of 115 VAC or 12 VDC from solar power systems as shown on the plans.
- 2.13. **Primary Input Power Interruption.** Provide CCTV field equipment that meets NEMA TS2, Section 2.1.4., "Power Interruption," for traffic control system or most current version.
- 2.14. **Power Service Transients.** Provide CCTV field equipment that meets NEMA TS2, Section 2.1.6., "Transients, Power Service" or most current version.
- 2.15. **Power Service Protection.** Provide equipment that contains readily accessible, manually resettable or replaceable circuit protection devices (such as circuit breakers or fuses) for equipment and power source protection. Provide circuit breakers or fuses sized appropriately such that no wire, component, connector, PC board, or assembly is subject to current loads more than their respective design limits upon failure of any single circuit element or wiring.
- 2.16. **Modular Design.** Provide CCTV field equipment hardware installed inside the cabinet that is modular in design and that can be either shelf-mountable or EIA 19-in. rack mountable. Clearly identify modules and

assemblies with name, model number, serial number, and any other pertinent information required to facilitate equipment maintenance.

- 2.17. **Connectors and Harnesses.** Make all external connections using connectors that are uniquely keyed to preclude improper hookups. Color-code and appropriately label with UV-resistant material all 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 corrosion-resistant plated pins and mating connectors to improve conductivity. All connectors using solder-type connections must have each soldered connection covered by a piece of heat-shrink tubing securely shrunk to protect the connection for short-circuiting.
- Provide a wiring diagram detailing wire function and connector pin-out.
- 2.18. **Environmental Design Requirements.** Provide equipment that conforms to NEMA TS2-2003 (R2008), International Electrotechnical Commission (IEC) 60529, and NEMA 250-2008 or most current version, for the following categories.
- 2.18.1. **Temperature.** Provide equipment that conforms to NEMA TS2, Section 2.1.5.1, or latest revision, and meets all the specified requirements during and after being subjected to any combination of the following conditions.
- Ambient temperature range of -30°F–165°F
 - Temperature shock not exceeding 30°F per hour
 - Relative humidity of 0%–100%
- Moisture condensation on all exterior surfaces caused by temperature changes
- Provisions for a heater and blower function are required to maintain internal temperatures within the manufacturer's operating temperatures for temperature ranges internal to the camera unit not conforming to NEMA TS2, Section 2.1.5.1.
- 2.18.2. **Vibration.** Provide equipment that conforms to NEMA TS2, Section 2.1.9. and Section 2.2.3., or most current version, and meets all the specified requirements during and after being subjected to a vibration of 5 Hz–30 Hz up to 0.5 g applied in each of three mutually perpendicular planes for 30 min.
- 2.18.3. **Shock.** Provide equipment that conforms to NEMA TS2, Section 2.1.10. and Section 2.2.4., or most current version, and does not yield permanent mechanical deformation or any damage that renders the unit inoperable when subjected to a shock of 10 g applied in each of three mutually perpendicular planes for 30 min.
- 2.18.4. **Environmental Contaminants.** Provide equipment that conforms to IEC 60529, Section 14.2.6, or most current version, for IP-66 or greater rating when providing a pressurized unit.
- Provide equipment that conforms to IEC 60529, Section 14.2.7., or most current version, for IP-67 or greater rating when providing a non-pressurized unit.
- 2.18.5. **External Icing.** Provide equipment that is tested to conform to NEMA 250-2003, Section 5.6 or latest revision.
- 2.18.6. **Corrosion.** Provide equipment that is tested to conform to NEMA 250-2003, Section 5.10. or latest revision, when located in Coastal Districts. Coastal Districts are Beaumont (BMT), Corpus Christi (CRP), Houston (HOU), Pharr (PHR), and Yoakum (YKM).
- 2.18.7. **Wind Rating.** Equipment must be operational in adverse weather conditions and able to withstand wind loads in accordance with Department's basic wind velocity zone map standard as shown on the plans without permanent damage to mechanical and electrical equipment.

3. CONSTRUCTION

- 3.1. **General.** Maximize standardization and consistency by using industry-standard techniques in equipment design and construction, with the minimum number of parts, subassemblies, circuits, cards, and modules. Design equipment for ease of maintenance.

Provide mounting bracket assemblies or apparatus to mount equipment on the following structures as detailed on the plans or in the ITS standards.

- ITS pole
- Overhead sign bridge or cantilever overhead sign structure
- Retaining wall
- Concrete column or parapet

Provide mounting bracket design with documentation submitted for approval before fabrication. Include all mounting plates, screws, bolts, nuts, washers, and ancillary hardware needed to fabricate the entire mounting bracket.

- 3.2. **Mechanical Components.** Provide stainless steel external screws, nuts, and locking washers. Self-tapping screws are not acceptable.

Provide parts that are made of corrosion-resistant material (e.g., plastic, stainless steel, anodized aluminum, or brass).

Protect all materials used in construction from fungus growth and deterioration due to sustained moisture.

Separate dissimilar metals by an inert dielectric material.

- 3.3. **Wiring.** Provide wiring that meets the NEC most current version. Provide wires that are cut to proper length before assembly. It is not acceptable to “double-back” wires to take up slack inside the cabinet. Lace wires neatly with nylon lacing or plastic straps. Organize cables inside the cabinet and secure cables with clamps. Provide service loops at connection points when connecting to hardware inside the cabinet. No splicing of cables or exposed wiring is allowed. Clearly label all wiring.

- 3.4. **Relocation of CCTV Field Equipment.** Perform the relocation in strict conformance with the requirements herein and as shown on the plans. Completion of the work must present a neat, workmanlike, and finished appearance. Maintain safe construction practices during relocation.

Inspect the existing CCTV field equipment with a representative from the Department, and document any evidence of damage before removal. Conduct a pre-removal test in accordance with the testing requirements contained in this Specification to document operational functionality. Remove and deliver to the Department existing CCTV field equipment that fails inspection.

Before removal of existing CCTV field equipment, disconnect and isolate the power cables from the electric power supply and disconnect all communication cabling from the equipment located inside the cabinet. Coil and store power and communication cabling inside the cabinet until it can be relocated. Remove existing CCTV field equipment as shown on the plans only when authorized.

Use care to prevent damage to any support structures. Any portion of CCTV field equipment or camera pole structure damaged or lost must be replaced by the Contractor at their expense. Contractor must document and report to the Department any existing damage to equipment before removal.

Make all arrangements for connection to the power supply and communication source, including any permits required for the work under the Contract. Provide wire for the power connection at least the minimum size indicated on the plans and insulated for 600 V. Meet the requirements of the NEC most current version.

- 3.5. **Removal of CCTV Field Equipment.** Disconnect and isolate any existing electrical power supply before removal of existing CCTV field equipment.
- Perform removal in strict conformance with this Specification and the lines, grades, details, and dimensions shown on the plans. Completion of the work must present a neat, workmanlike, and finished appearance.
- Any portion of the CCTV field equipment or cabinet internal components damaged or lost must be replaced by the Contractor (with items requiring approval) at no cost to the Department.
- All materials not designated for reuse or retention by the Department will become the property of the Contractor and be removed from the project site at the Contractor's expense. Deliver items to be retained by the Department to a location shown on the plans or in the General Notes. The Contractor is fully responsible for any removed equipment until released.
- 3.6. **Contractor Experience Requirements.** Contractor or designated subcontractor must meet the following experience requirements.
- 3.6.1. **Minimum Experience.** Three years of continuous existence offering services in the installation of CCTV camera systems.
- 3.6.2. **Completed Projects.** Three completed projects consisting of at least five cameras in each project where the personnel installed, tested, and integrated CCTV cameras on outdoor, one or more permanently mounted structures and related camera control and transmission equipment. The completed CCTV camera system installations must have been in continuous satisfactory operation for at least 1 yr.
- 3.6.3. **Equipment Experience.** Three projects (may be the three in Section 3.6.2., "Completed Projects") in which the personnel worked in cooperation with technical representatives of equipment suppliers to perform specific stages of work. The Contractor is not required to furnish equipment on this project from the supplier that furnished documentation demonstrating this experience.
- Submit the names, addresses, and telephone numbers of the references that can be contacted to verify the experience requirements.
- 3.7. **Documentation Requirements.** Provide at least two complete sets of operation and maintenance manuals in bound hard-copy format, as well as an electronic copy in Adobe PDF format on a CD/DVD or removable flash drive, that include the following.
- Complete and accurate wiring schematic diagrams.
 - Complete installation procedures.
 - Compliance matrix documenting conformance to this Specification.
 - Complete performance specifications (functional, electrical, mechanical, and environmental) on the unit
 - Complete parts list, including names of vendors for parts not identified by universal part number, such as JEDEC, RETMA, or EIA.
 - Pictorial of component layout on circuit board.
 - ID generator list of text display options.
 - Complete maintenance and troubleshooting procedures.
 - Complete stage-by-stage explanation of circuit theory and operation.
 - Testing procedures and blank test forms.
 - Recovery procedures for malfunction.
 - Instructions for gathering maintenance assistance from manufacturer.
 - Certification documentation verifying conformance with environmental and testing requirements contained in the Special Specification. Certifications may be provided by the manufacturer or independent laboratories.

Identify material that is copyrighted or proprietary in nature as part of the documentation submittal. The Department will comply with sensitive material, secure submittal documentation, and not distribute without written approval.

3.8. **Testing.**

3.8.1. **New Installations.** Unless otherwise shown on the plans, perform the following tests on the applicable equipment or systems.

3.8.1.1. **Test Procedures Documentation.** Provide five copies of the test procedures, including tests identified in Section 3.8.1.2. "Design Approval Test," Section 3.8.1.7. "Consequences of Test Failure," and blank data forms, to the Engineer for review and comment as part of material documentation requirements for each test required on this project. Include the sequence of the tests in the procedures. The Engineer will comment, approve, or reject test procedures within 30 days after Contractor submittal of test procedures. Contractor must resubmit if necessary rejected test procedures for final approval within 10 days. Review time is in calendar days. Conduct all tests in accordance with the approved test procedures.

Record test data on the data forms, as well as quantitative results. No bid item measurement or payment will be made until the Engineer has verified the test results meet the minimum requirements of the Specification. The data forms for all tests, except design approval tests, must be signed by an authorized representative of the Contractor.

Provide written notice within 48 hr. of discovery of any testing discrepancy identified during testing by the Contractor. Furnish data forms containing the acceptable range of expected results as well as the measured values.

3.8.1.2. **Design Approval Test.** Conduct a design approval test on one randomly selected unit from the prototype design manufacturing run. If only one design prototype is manufactured, perform this test on that unit. If supplying multiple types of equipment, provide and test a sample of each type.

Certification from an independent testing laboratory of a successfully completed design approval test is acceptable. Ensure that the testing by this laboratory is performed in accordance with this Specification. Failure of independent tests to comply with this Specification will be grounds for rejection of any certification.

Provide a copy of the certification to the District in which this Contract is executed. The data forms for the design approval tests must be signed by an authorized representative (company official) of the equipment manufacturer or by an authorized representative of an independent testing facility.

Notify the Engineer 10 working days before conducting this testing. The Department may witness all the tests. Perform the following tests.

3.8.1.2.1. **Power Service Transients.** Provide equipment that meets the performance requirements specified herein when subjected to the power service transients as specified in NEMA TS2, Section 2.2.7.2, "Transient Tests (Power Service)." of the NEMA TS2 standard, most current version.

3.8.1.2.2. **Temperature and Condensation.** Provide equipment that meets the performance requirements specified herein when subjected to the following conditions in the order specified below.

- Stabilize the equipment at -30°F and test as specified in NEMA TS2, Section 2.2.7.3, "Low-Temperature Low-Voltage Tests," and Section 2.2.7.4, "Low-Temperature High-Voltage Tests." of the NEMA TS2 standard, most current version
- Allow the equipment to warm up to room temperature in an atmosphere with relative humidity of at least 40%. Operate the equipment for 2 hr., while wet, without degradation or failure.
- Stabilize the equipment at 165°F and test as specified in NEMA TS2, Section 2.2.7.5, "High-Temperature High Voltage Tests," and Section 2.2.7.6, "High-Temperature Low-Voltage Tests." of the NEMA TS2 standard, most current version

- 3.8.1.2.3. **Relative Humidity.** Provide equipment that meets the performance requirements specified herein within 30 min. of being subjected to a temperature of 165°F and a relative humidity of 18% for 48 hr.
- 3.8.1.2.4. **Vibration.** Provide equipment that shows no degradation of mechanical structure, soldered components, or plug-in components and operates in accordance with the manufacturer's equipment specifications after being subjected to the vibration tests as described in NEMA TS2, Section 2.2.8, "Vibration Test" of the NEMA TS2 standard, most current version.
- 3.8.1.2.5. **Power Interruption.** Provide equipment that meets the performance requirements specified herein when subjected to nominal input voltage variations as specified in NEMA TS2, Section 2.2.10., "Power Interruption Test." of the NEMA TS2 standard, most current version.
- 3.8.1.3. **Demonstration Test.** Conduct a demonstration test on applicable equipment at an approved Contractor facility. The Contractor may submit procedures and results from previous contracts in the same District as this Contract provided the materials and equipment are identical and results are less than 5 yr. old. Notify the Engineer 10 working days before conducting this testing. The Department may witness all the tests. Perform the following tests.
- 3.8.1.3.1. **Examination of Product.** Examine each unit carefully and document that the materials, design, construction, markings, and workmanship comply with this Specification.
- 3.8.1.3.2. **Continuity Tests.** Check the wiring to determine conformance with the requirements of the appropriate paragraphs of this Specification.
- 3.8.1.3.3. **Operational Test.** Operate each unit for at least 15 min. to permit equipment temperature stabilization and an adequate number of performance characteristics to ensure compliance with this Specification.
- 3.8.1.4. **Field Acceptance (Stand-Alone) Test.** Conduct a field acceptance test for each unit after installation as required by the Engineer to demonstrate compliance with the functional requirements of this Specification. Exercise all stand-alone (non-network) functional operations. Notify the Engineer 5 working days before conducting this test. The field acceptance test may consist of the following.
- 3.8.1.4.1. **Physical Construction.** Document physical construction is completed in accordance with the plans and Specification.
- 3.8.1.4.2. **Electrical and Communication.** Document that all connectors for grounding, surge suppression, and electrical distribution are tightened correctly. Document all power supplies and circuits are operating under the proper voltages. Document all power and communications cables are terminated correctly, secured inside the cabinet, and fitted with appropriate connectors.
- 3.8.1.4.3. **Video Signal.** For analog signal format, conduct an impedance test, through a short 75-ohm coaxial cable connected to an oscilloscope waveform monitor, to ensure 75-ohm output impedance to conform to NTSC standards.
- Using a digital, hand-held, battery-operated meter, conduct a test and measure the following video signal characteristics, if applicable.
- 3.8.1.4.3.1. **Sync.** Document the amplitude of the video synchronizing pulse and check for correct video level, coaxial cable continuity, and correct termination at 40 IRE.
- 3.8.1.4.3.2. **Luminance.** Document the white level and correct brightness setting at 100 IRE.
- 3.8.1.4.3.3. **Composite.** Document the overall amplitude of the video signal is at 140 IRE or 1 V peak to peak.
- 3.8.1.4.3.4. **Color Burst.** Document color burst amplitude at 40 IRE.

- 3.8.1.4.3.5. **Ground Loop.** Document that no ground loop exists in the video picture. Ground loop voltages in a video signal cause bars to be present on the video picture.
- Document video image is present and free of oversaturation and any other image defect in color and monochrome modes.
- Document video support of uni-cast and multi-cast video transmission modes.
- Document the video signal from the camera is present and of consistent quality at all connection points between the camera, the cabinet, and any video conversion hardware.
- 3.8.1.4.4. **Communication.** For digital camera models, document network connection to the camera by ping or Telnet session from a remote PC.
- 3.8.1.4.5. **Pan-Tilt Mechanism.** Exercise pan, tilt, zoom, and focus on all directions, and execute at least three other unique programming commands, specified by the Department, to ensure that the communication link between the cabinet and the camera is functioning properly.
- 3.8.1.5. **System Integration Test.** Conduct a system integration test on the complete functional system. Demonstrate all control and monitor functions for each system component for 72 hr. Notify the Engineer 10 working days before conducting this testing. The Department may witness all the tests.
- Provide systems integration test procedures for proper adjustment and calibration of subsystem components. Proper adjustment and calibration involve documenting settings used to meet functional requirements while providing a margin for adjustment when future conditions change. Use the Department control software (when available) to perform subsystem testing. At minimum, use this software to verify commands and confirmations, as well as detector actuations and occupancy dwell time. The Contractor must be familiar with any existing Department equipment and software.
- The failure of any one component material or equipment item in a system integration test is justification for rejecting the entire subsystem. Each subsystem component must function as a complete integrated subsystem for a minimal continuous 72-hr. period during the system integration test.
- 3.8.1.6. **Final Acceptance Test.** Following completion of the demonstration test, stand-alone test, and system integration test for all subsystems, provide completed data forms containing all the data taken, including quantitative results for all tests, a set of as-built working drawings, and a written request to begin a data communication and final acceptance test. Provide as-built working drawings indicating the actual material, equipment, and construction of the various subsystem components, including established and calculated XY coordinates based on project control points, when shown on the plans. Perform field surveying and calculations under the supervision of and sealed by a licensed land surveyor.
- Within 10 calendar days of the request, execute a data communications test using a Department-supplied software program or Contractor-supplied software approved by the Department. The data communications test may be executed by the Engineer or the Contractor with prior approval. The purpose of this test is to verify that the communications plant will operate with application software provided by the State.
- Perform the data communications test for 72 hr. If a message error or component failure occurs anywhere in the network, resume the test once repairs are completed. All components of the communications network must operate as an integral system for the duration of the test.
- A message error is defined as the occurrence of a parity error, framing error, or data error in any component of the message. The error-free message rate is defined as the ratio of the number of messages in which no message error occurs to the number of messages transmitted. The error-free message rate must exceed 99.99% for acceptable transmission quality, for the system and each component of the network.

Provide all additional test results for review once a successful data communications test has been completed. If all the requirements of this Specification have been satisfied, Contract time must stop, and all subsystems must be placed into operation and operate as a complete system for 90 days.

Notify the Engineer of any defects suspected in integration or function of material or equipment. Investigate any suspected defects and correct if necessary. Provide a report of finding within 2 calendar days of notice of any suspected defects. Describe the nature of any defects reported and any corrective action taken in the report. The integrated subsystems must operate defect-free as a single complete system for at least 72 hr. during a 30-calendar day review period. If the number of defects or frequency of failures prevents any subsystems from operating as described above, the Engineer may reject the entire subsystems integration test results and resume Contract time. Provide any necessary corrections and resubmit subsystems integration test results and a request to begin a final acceptance test that may include as-built plans and a data communications test.

The CCTV field equipment under this Specification will not be accepted until the system, including all subsystems, has operated satisfactorily for 90 days and in full compliance with the plans and Specifications after approval of all submitted test results and reports.

- 3.8.1.7. **Consequences of Test Failure.** If a unit fails a test, submit a report describing the nature of the failure and the actions taken to remedy the situation before modification or replacement of the unit. If a unit requires modification, correct the fault, and then repeat the test until successfully completed. Correct minor discrepancies within 30 days of written notice. If a unit requires replacement, provide a new unit, and then repeat the test until successfully completed. Major discrepancies that will delay receipt and acceptance of the unit will be enough cause for rejection of the unit.

Failure to satisfy the requirements of any test is considered a defect, and the equipment is subject to rejection. The rejected equipment may be offered again for retest provided all noncompliance has been corrected.

If a failure pattern develops in similar units within the system, implement corrective measures, including modification or replacement of units, on all similar units within the system as directed. Perform the corrective measures without additional cost or extension of the Contract period.

- 3.8.1.7.1. **Consequences of Design Approval Test Failure.** If the equipment fails the design approval test, correct the fault within 30 days and then repeat the design approval test until successfully completed.
- 3.8.1.7.2. **Consequences of Demonstration Test Failure.** If the equipment fails the demonstration test, correct the fault within 30 days and then repeat the demonstration test until successfully completed.
- 3.8.1.7.3. **Consequences of Field Acceptance (Stand-Alone) Test Failure.** If the equipment fails the stand-alone test, correct the fault within 30 days and then repeat the stand-alone test until successfully completed.
- 3.8.1.7.4. **Consequence of System Integration Test Failure.** If the equipment fails the system integration test, correct the fault within 30 days and then repeat the system integration test until successfully completed.
- 3.8.1.7.5. **Consequences of Final Acceptance Test Failure.** If a defect within the system is detected during the final acceptance test, document and correct the source of failure. Once corrective measures are taken, monitor the point of failure until a 30-consecutive-day period free of defects is achieved.

If after completion of the initial test period the system downtime exceeds 72 hr. or individual points of failure have not operated for 30 consecutive days free of defects, extend the test period by an amount of time equal to the greater of the downtime more than 72 hr. or the number of days required to complete the performance requirement of the individual point of failure.

- 3.8.2. **Relocation and Removal.**

- 3.8.2.1. **Pre-Test.** Provide five copies of the test procedures, including tests of the basic functionality of the unit and blank data forms, to the Engineer for review and comment as part of material documentation requirements. Functionality tests may include, but are not limited to, physical inspection of the unit and cable assemblies, lens iris and zoom control, video signal, and pan-tilt mechanism. Include the sequence of the tests in the procedures along with acceptance thresholds. The Engineer will comment, approve, or reject test procedures within 30 days after Contractor submittal of test procedures. Contractor must resubmit if necessary rejected test procedures for final approval within 10 days. Review time is in calendar days. Conduct all tests in accordance with the approved test procedures.

Conduct basic functionality testing before removal of CCTV field equipment. Test all functional operations of the equipment in the presence of Contractor and Department representatives. Ensure that both representatives sign the test report indicating that the equipment has passed or failed each function. Once removed, the equipment will become the responsibility of the Contractor until accepted by the Department. Compare test data before removal and test data after installation. The performance test results after relocation must be equal to or better than the test results before removal. Repair or replace those components within the system that failed after relocation but passed before removal.

- 3.8.2.2. **Post-Test.** Testing of the CCTV field equipment is to relieve the Contractor of system maintenance. The Contractor will be relieved of the responsibility for maintenance of the system in accordance with Item 7, "Legal Relations and Responsibilities," after a successful test period. The Contractor is not required to pay for electrical energy consumed by the system.

After all existing CCTV field equipment has been installed, conduct approved continuity, stand-alone, and equipment system tests. Furnish test data forms containing the sequence of tests, including all the data taken as well as quantitative results for all tests. Submit the test data forms at least 30 days before the day the tests are to begin. Obtain approval of test procedures before submission of equipment for tests. Send at least one copy of the data forms to the Engineer.

Conduct an approved stand-alone test of the equipment installation at the field site. At minimum, exercise all stand-alone (non-network) functional operations of the field equipment with all the equipment installed per the plans as directed. Complete the approved data forms with test results and submit to the Engineer for review and either acceptance or rejection of equipment. Provide at least 30 working days' notice before all tests to permit the Engineer or their representative to observe each test.

The Department will conduct approved CCTV field equipment system tests on the field equipment with the central equipment. The tests must, at minimum, exercise all remote control functions and display the return status codes from the controller.

If any unit fails to pass a test, prepare and deliver a report to the Engineer. Describe in the report the nature of the failure and the corrective action needed. If the failure is the result of improper installation or damage during reinstallation, reinstall or replace the unit and repeat the test until the unit passes successfully, at no additional cost to the Department or extension of the Contract period.

- 3.9. **Warranty.** Warrant the equipment against defects or failure in design, materials, and workmanship for at least 3 yr. or in accordance with the manufacturer's standard warranty if that warranty period is greater. The start date of the manufacturer's standard warranty will begin after the equipment has successfully passed all tests contained in the final acceptance test plan. Any CCTV field equipment with less than 90% of its warranty remaining after the final acceptance test is completed will not be accepted by the Department. Guarantee that equipment furnished and installed for this project performs according to the manufacturer's published specifications. Assign, to the Department, all manufacturer's normal warranties or guarantees on all electronic, electrical, and mechanical equipment, materials, technical data, and products furnished for and installed on the project.

CCTV field equipment must be repaired or replaced at the Contractor's expense before completion of the final acceptance test plan in the event of a malfunction or failure. Furnish replacement parts for all equipment within 10 days of notification of failure by the Department.

- 3.10. **Training.** Conduct a training class on installation, operations, programming hardware settings, IP programming, port settings, testing, maintenance, troubleshooting, and repair of all equipment specified herein for at least 24 hr., unless otherwise directed, for up to 10 representatives designated by the Department. Submit to the Engineer for approval 10 copies of the training material at least 30 days before the training begins. Conduct training within the local area unless otherwise authorized. Consider operations using Department's Lonestar software when developing training modules.

4. MEASUREMENT

This Item will be measured by each CCTV field equipment unit and mounting apparatus furnished, installed, relocated, or removed, of the types specified as shown on the plans, or as directed.

5. PAYMENT

- 5.1. **Furnish and Install.** 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 "CCTV Field Equipment (Analog)," "CCTV Field Equipment (Digital)," and "CCTV Field Controller." This price is full compensation for making fully operational CCTV field equipment, including any voltage converters or injectors; cables and connectors as shown on the plans; and all documentation, testing, training, software, equipment, labor, materials, tools, and incidentals.
- The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" for CCTV field equipment mounting assemblies will be paid for at the unit price bid for "CCTV Mount (Pole)," "CCTV Mount (Post)," "CCTV Mount (Wall)," "CCTV Mount (Parapet)," "CCTV Mount (Pendant)," and "CCTV Mount (Mast)." This price is full compensation for furnishing and installing mounting bracket assemblies; mounting bracket hardware; and all equipment, labor, materials, tools, equipment, and incidentals necessary to mount CCTV field equipment to mounting structures as shown on the plans.
- 5.2. **Install Only.** 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 "CCTV Field Equipment (Analog) (Install Only)" and "CCTV Field Equipment (Digital) (Install Only)." This price is full compensation for making fully operational CCTV field equipment, including any voltage converters or injectors; furnishing and installing additional cables and connectors as shown on the plans; and all documentation, testing, training, software, equipment, labor, materials, tools, and incidentals.
- 5.3. **Relocate.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" for relocation of CCTV field equipment will be paid for at the unit price bid for "Relocate CCTV Field Equipment." This price is full compensation for relocating and making fully operational existing CCTV field equipment as shown on the plans; furnishing and installing additional cables or connectors as shown on the plans; testing, delivery, and storage of components designated for salvage or reuse; and all testing, training, software, equipment, labor, materials, tools, and incidentals.
- 5.4. **Remove.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" for removal of CCTV field equipment will be paid for at the unit price bid for "Remove CCTV Field Equipment." This price is full compensation for removing existing CCTV field equipment as shown on the plans; removal of cables and connectors; testing, delivery, and storage of components designated for salvage; and all testing training, software, equipment, labor, materials, tools, and incidentals.

Special Specification 6033

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 595C, except paint the sign face assembly flat black.

2.1. **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.

2.2. **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 18 in. character height. Provide a 5 × 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.

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.

2.3. **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.

2.4. **Power Source.** Provide a diesel generator, solar powered power source, or both. Provide a backup power source as necessary.

2.5. **Cellular Telephone.** When shown on the plans, provide a 4G LTE (long-term evolution) cellular telephone connection to communicate with the PCMS unit remotely. The PCMS unit needs to be TxDOT Advanced Traffic Management System (ATMS) compatible to be able to control and to post messages 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 must be set up on a work area and operational before a calendar day can be considered measurable. When measurement by the day is specified, measure for each PCMS set up and operational on the worksite for at least minimum 18 hr. in 24-hr. period to charge as a day.

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.