Control	**0047-05-057, ETC.**
Project	**F 2025(482), ETC.**
Highway	**SH 5, ETC.**
County	**COLLIN**

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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Control	**0047-05-057, ETC.**
Project	**F 2025(482), ETC.**
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PROPOSAL TO THE TEXAS TRANSPORTATION COMMISSION

2024 SPECIFICATIONS

WORK CONSISTING OF CONSTRUCT NEW ROADWAY LANES

COLLIN 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 1,092 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:

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

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 Obligee, 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:

Control	**0047-05-057, ETC.**
Project	**F 2025(482), ETC.**
Highway	**SH 5, ETC.**
County	**COLLIN**

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

Signed this _____ Day of _____ 20_____

By: _____

(Contractor/Principal Name)

_____

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

*By: _____

(Surety Name)

_____

(Signature of Attorney-in-Fact)

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

Impressed Surety Seal Only

This form may be removed from the proposal.

C U T H E R E

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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):

Control	**0047-05-057, ETC.**
Project	**F 2025(482), ETC.**
Highway	**SH 5, ETC.**
County	**COLLIN**

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
	104	509		REMOV CONC (SDWLK)	SY	266.400	$10.000	$2,664.00	1

EXAMPLE

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

EXAMPLES

BID PRICES SUBMITTED BY HAND WRITTEN FORMAT

ALT	ITEM-CODE			UNIT BID PRICE ONLY 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
				EXAMPLE: One hundred fifty DLRS and No CENTS			

Unit price for each plant in place

	249	014		FLEX BASE(DEL)(DENSCOT)(TY A GR4 CL2)	TON	56,787.00	14
				EXAMPLE: Seven DLRS and Fifty three CENTS			

Unit price for each ton of Flexible Base

	430	001	001	CL A CONC FOR EXT STR (CULV)	CY	45.000	27
				EXAMPLE: Three hundred five DLRS and No CENTS			

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
				EXAMPLE: Fourteen hundred sixteen DLRS and Thirty seven CENTS			

Unit price of each Roadway Illumination Assembly

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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.				
	100	7002		PREPARING ROW DOLLARS and CENTS	STA	168.000	1
	104	7001		REMOV CONC (PAV) DOLLARS and CENTS	SY	117,934.000	2
	104	7006		REMOV CONC (RIPRAP) DOLLARS and CENTS	SY	328.000	3
	104	7008		REMOV CONC (MEDIANS) DOLLARS and CENTS	SY	793.000	4
	104	7010		REMOV CONC (PAVERS) DOLLARS and CENTS	SY	894.000	5
	104	7011		REMOV CONC (DRIVEWAYS) DOLLARS and CENTS	SY	3,766.000	6
	104	7013		REMOV CONC (SIDEWALK, RAMP OR SUP) DOLLARS and CENTS	SY	3,708.000	7
	104	7018		REMOV CONC (CURB OR CURB & GUTTER) DOLLARS and CENTS	LF	19,590.000	8
	104	7036		REMOV CONC (RAIL) DOLLARS and CENTS	LF	1,980.000	9
	105	7002		RMV (2"-6") TRT/UNTRT BASE & ASPH PAV DOLLARS and CENTS	SY	1,760.000	10
	105	7007		RMV (7"-11") TRT/UNTRT BASE & ASPH PAV DOLLARS and CENTS	SY	87,408.000	11
	110	7001		EXCAV (ROADWAY) DOLLARS and CENTS	CY	143,808.000	12

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	132	7008		EMBANK (FNL)(DC)(TY C1) DOLLARS and CENTS	CY	186,639.000	13
	132	7010		EMBANK (FNL)(DC)(TY C2) DOLLARS and CENTS	CY	66,273.000	14
	161	7002		COMPOST MANUF TOPSOIL (4") DOLLARS and CENTS	SY	103,738.000	15
	162	7002		BLOCK SODDING DOLLARS and CENTS	SY	103,738.000	16
	164	7015		DRILL SEED (TEMP_WARM_COOL) DOLLARS and CENTS	SY	103,738.000	17
	168	7001		VEGETATIVE WATERING DOLLARS and CENTS	TGL	30,890.000	18
	170	7013		IRRIGATION SYSTEM (MISC) DOLLARS and CENTS	LS	1.000	19
	260	7005		LIME (COM OR QK)(SLURRY) DOLLARS and CENTS	TON	6,710.000	20
	260	7008		LIME TRT (EXIST MATL)(10") DOLLARS and CENTS	SY	68,966.000	21
	260	7022		LIME TRT(EXIST MATL)(13") DOLLARS and CENTS	SY	152,426.000	22
	276	7169		CEM TRT(PLNT MX)(CL L)(T D)(GR1-2)(8") DOLLARS and CENTS	SY	110,964.000	23
	344	7001		SP MIXES SP-B PG64-22 DOLLARS and CENTS	TON	27,229.000	24

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	344	7041		SP MIXES SP-D PG64-22 DOLLARS and CENTS	TON	7,636.000	25
	360	7007		CONC PVMT (CRCP) (13") DOLLARS and CENTS	SY	107,024.000	26
	360	7014		CONC PVMT (CRCP) (11.5") DOLLARS and CENTS	SY	112,889.000	27
	400	7006		CUT & RESTORING PAV DOLLARS and CENTS	SY	228.000	28
	400	7010		CEM STABIL BKFL DOLLARS and CENTS	CY	508.000	29
	402	7001		TRENCH EXCAVATION PROTECTION DOLLARS and CENTS	LF	15,418.000	30
	403	7001		TEMPORARY SPL SHORING DOLLARS and CENTS	SF	94,404.000	31
	410	7001		SOIL NAIL ANCHORS DOLLARS and CENTS	LF	17,890.000	32
	416	7002		DRILL SHAFT (18 IN) DOLLARS and CENTS	LF	370.000	33
	416	7004		DRILL SHAFT (24 IN) DOLLARS and CENTS	LF	120.000	34
	416	7006		DRILL SHAFT (36 IN) DOLLARS and CENTS	LF	4,857.000	35
	416	7007		DRILL SHAFT (42 IN) DOLLARS and CENTS	LF	6,124.000	36

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	4,477.000	37
	416	7019		DRILL SHAFT (108 IN) DOLLARS and CENTS	LF	205.000	38
	416	7028		DRILL SHAFT (SIGN MTS) (24 IN) DOLLARS and CENTS	LF	21.000	39
	416	7029		DRILL SHAFT (SIGN MTS) (30 IN) DOLLARS and CENTS	LF	56.000	40
	416	7030		DRILL SHAFT (SIGN MTS) (36 IN) DOLLARS and CENTS	LF	208.000	41
	416	7031		DRILL SHAFT (SIGN MTS) (42 IN) DOLLARS and CENTS	LF	72.000	42
	416	7033		DRILL SHAFT (SIGN MTS) (54 IN) DOLLARS and CENTS	LF	71.000	43
	416	7037		DRILL SHAFT (HIGH MAST POLE) (60 IN) DOLLARS and CENTS	LF	285.000	44
	416	7040		DRILL SHAFT (RDWY ILL POLE) (30 IN) DOLLARS and CENTS	LF	232.000	45
	416	7043		DRILL SHAFT (TRF SIG POLE) (30 IN) DOLLARS and CENTS	LF	33.000	46
	416	7044		DRILL SHAFT (TRF SIG POLE) (36 IN) DOLLARS and CENTS	LF	52.000	47
	416	7046		DRILL SHAFT (TRF SIG POLE) (48 IN) DOLLARS and CENTS	LF	110.000	48

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	419	7001		SOUND WALL DOLLARS and CENTS	SF	18,035.000	49
	420	7013		CL C CONC (ABUT)(HPC) DOLLARS and CENTS	CY	367.600	50
	420	7017		CL C CONC (ABUT)(HPC)(EXTEND) DOLLARS and CENTS	CY	50.000	51
	420	7023		CL C CONC (CAP)(HPC) DOLLARS and CENTS	CY	1,683.400	52
	420	7039		CL C CONC (COLUMN)(HPC) DOLLARS and CENTS	CY	1,603.600	53
	420	7052		CL C CONC (RAIL FOUNDATION) DOLLARS and CENTS	CY	215.000	54
	420	7074		CL F CONC (CAP)(HPC)(MASS) DOLLARS and CENTS	CY	249.400	55
	420	7106		CL F CONC (COLUMN)(HPC)(MASS) DOLLARS and CENTS	CY	152.700	56
	422	7002		REINF CONC SLAB (HPC) DOLLARS and CENTS	SF	289,077.000	57
	422	7004		REINF CONC SLAB (EXTEND SLAB)(HPC) DOLLARS and CENTS	SF	15,327.000	58
	422	7012		BRIDGE SIDEWALK DOLLARS and CENTS	SF	23,528.000	59
	422	7014		APPROACH SLAB (HPC) DOLLARS and CENTS	CY	629.400	60

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	422	7015		APPROACH SLAB (EXTEND) (HPC) DOLLARS and CENTS	CY	146.800	61
	423	7001		RETAINING WALL (MSE) DOLLARS and CENTS	SF	149,250.000	62
	423	7016		RETAINING WALL (CAST-IN-PLACE) DOLLARS and CENTS	SF	7,433.000	63
	423	7019		RETAINING WALL (DRILL SHAFT) (FASCIA) DOLLARS and CENTS	SF	11,517.000	64
	423	7023		RETAINING WALL (SOIL NAIL) (FASCIA) DOLLARS and CENTS	SF	10,689.000	65
	425	7002		PRESTR CONC GIRDER (TX34) DOLLARS and CENTS	LF	10,617.920	66
	425	7003		PRESTR CONC GIRDER (TX40) DOLLARS and CENTS	LF	17,486.830	67
	425	7004		PRESTR CONC GIRDER (TX46) DOLLARS and CENTS	LF	5,252.620	68
	425	7005		PRESTR CONC GIRDER (TX54) DOLLARS and CENTS	LF	4,232.440	69
	432	7001		RIPRAP (CONC)(4 IN) DOLLARS and CENTS	CY	1,323.740	70
	432	7007		RIPRAP (CONC) (CL B) (4 IN) DOLLARS and CENTS	CY	.680	71
	432	7012		RIPRAP (CONC)(FLUME) DOLLARS and CENTS	CY	217.000	72

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	432	7013		RIPRAP (MOW STRIP)(4 IN) DOLLARS and CENTS	CY	639.000	73
	432	7024		RIPRAP (STONE TY R)(DRY)(18 IN) DOLLARS and CENTS	CY	7,918.000	74
	432	7038		RIPRAP (STONE COMMON)(GROUT)(12 IN) DOLLARS and CENTS	CY	263.000	75
	432	7041		RIPRAP (STONE PROTECTION)(12 IN) DOLLARS and CENTS	CY	3.000	76
	432	7043		RIPRAP (STONE PROTECTION)(18 IN) DOLLARS and CENTS	CY	151.000	77
	434	7039		ELASTOMERIC BEARING (F9) DOLLARS and CENTS	EA	5.000	78
	434	7116		SLIDING ELASTOMERIC BEARING (ES 10) DOLLARS and CENTS	EA	10.000	79
	442	7001		STR STEEL (PLATE GIRDER) DOLLARS and CENTS	LB	1,584,000.00	80
	442	7007		STR STEEL (MISC NON-BRIDGE) DOLLARS and CENTS	LB	2,190.000	81
	450	7013		RAIL (TY T402)(HPC) DOLLARS and CENTS	LF	700.600	82
	450	7024		RAIL (TY SSTR) DOLLARS and CENTS	LF	33,257.000	83
	450	7025		RAIL (TY SSTR)(HPC) DOLLARS and CENTS	LF	6,610.500	84

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	450	7028		RAIL (TY T80SS) DOLLARS and CENTS	LF	964.000	85
	450	7036		RAIL (TY C402) DOLLARS and CENTS	LF	5,251.000	86
	450	7037		RAIL (TY C402)(HPC) DOLLARS and CENTS	LF	2,048.600	87
	450	7062		RAIL (HANDRAIL)(TY E) DOLLARS and CENTS	LF	568.000	88
	454	7004		SEALED EXPANSION JOINT (4 IN) (SEJ - M) DOLLARS and CENTS	LF	1,872.000	89
	454	7005		SEALED EXPANSION JOINT (5 IN) (SEJ - M) DOLLARS and CENTS	LF	75.000	90
	462	7012		CONC BOX CULV (6 FT X 4 FT) DOLLARS and CENTS	LF	419.000	91
	462	7013		CONC BOX CULV (6 FT X 5 FT) DOLLARS and CENTS	LF	521.000	92
	462	7021		CONC BOX CULV (8 FT X 4 FT) DOLLARS and CENTS	LF	315.000	93
	462	7035		CONC BOX CULV (10 FT X 7 FT) DOLLARS and CENTS	LF	639.000	94
	464	7003		RC PIPE (CL III)(18 IN) DOLLARS and CENTS	LF	116.000	95
	464	7005		RC PIPE (CL III)(24 IN) DOLLARS and CENTS	LF	12,098.000	96

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	464	7007		RC PIPE (CL III)(30 IN) DOLLARS and CENTS	LF	2,530.000	97
	464	7009		RC PIPE (CL III)(36 IN) DOLLARS and CENTS	LF	2,468.000	98
	464	7010		RC PIPE (CL III)(42 IN) DOLLARS and CENTS	LF	812.000	99
	464	7011		RC PIPE (CL III)(48 IN) DOLLARS and CENTS	LF	439.000	100
	464	7012		RC PIPE (CL III)(54 IN) DOLLARS and CENTS	LF	644.000	101
	464	7032		RC PIPE (CL V)(18 IN) DOLLARS and CENTS	LF	79.000	102
	465	7004		MANH (COMPL)(PRM)(72IN) DOLLARS and CENTS	EA	1.000	103
	465	7005		JCTBOX(COMPL)(PJB)(3FTX3FT) DOLLARS and CENTS	EA	4.000	104
	465	7009		JCTBOX(COMPL)(PJB)(5FTX5FT) DOLLARS and CENTS	EA	1.000	105
	465	7011		JCTBOX(COMPL)(PJB)(6FTX6FT) DOLLARS and CENTS	EA	2.000	106
	465	7016		INLET (COMPL)(PCO)(3FT)(BOTH) DOLLARS and CENTS	EA	3.000	107
	465	7029		INLET (COMPL)(PCU)(3FT)(NONE) DOLLARS and CENTS	EA	4.000	108

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	465	7030		INLET (COMPL)(PCU)(3FT)(LEFT) DOLLARS and CENTS	EA	11.000	109
	465	7031		INLET (COMPL)(PCU)(3FT)(RIGHT) DOLLARS and CENTS	EA	14.000	110
	465	7032		INLET (COMPL)(PCU)(3FT)(BOTH) DOLLARS and CENTS	EA	36.000	111
	465	7034		INLET (COMPL)(PCU)(4FT)(LEFT) DOLLARS and CENTS	EA	4.000	112
	465	7035		INLET (COMPL)(PCU)(4FT)(RIGHT) DOLLARS and CENTS	EA	2.000	113
	465	7036		INLET (COMPL)(PCU)(4FT)(BOTH) DOLLARS and CENTS	EA	4.000	114
	465	7037		INLET (COMPL)(PCU)(5FT)(NONE) DOLLARS and CENTS	EA	1.000	115
	465	7040		INLET (COMPL)(PCU)(5FT)(BOTH) DOLLARS and CENTS	EA	8.000	116
	465	7044		INLET (COMPL)(PCU)(6FT)(BOTH) DOLLARS and CENTS	EA	2.000	117
	465	7071		INLET (COMPL)(PSL)(RC)(4FTX4FT) DOLLARS and CENTS	EA	6.000	118
	465	7072		INLET (COMPL)(PSL)(RC)(3FTX5FT) DOLLARS and CENTS	EA	1.000	119
	465	7074		INLET (COMPL)(PSL)(RC)(5FTX5FT) DOLLARS and CENTS	EA	2.000	120

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	465	7076		INLET (COMPL)(PSL)(RC)(6FTX6FT) DOLLARS and CENTS	EA	1.000	121
	465	7077		INLET (COMPL)(PSL)(RC)(8FTX8FT) DOLLARS and CENTS	EA	4.000	122
	465	7126		INLET (COMPL)(PSL)(FG)(3FTX3FT-3FTX-3FT) DOLLARS and CENTS	EA	16.000	123
	465	7127		INLET (COMPL)(PSL)(FG)(4FTX4FT-3FTX-3FT) DOLLARS and CENTS	EA	1.000	124
	465	7128		INLET (COMPL)(PSL)(FG)(4FTX4FT-4FTX-4FT) DOLLARS and CENTS	EA	3.000	125
	465	7130		INLET (COMPL)(PSL)(FG)(3FTX5FT-3FTX-5FT) DOLLARS and CENTS	EA	1.000	126
	465	7146		INLET(COMPL)(PSL)(SFG)(3FTX3FT-3FTX-3FT) DOLLARS and CENTS	EA	1.000	127
	465	7147		INLET(COMPL)(PSL)(SFG)(4FTX4FT-4FTX-4FT) DOLLARS and CENTS	EA	1.000	128
	465	7148		INLET(COMPL)(PSL)(SFG)(3FTX5FT-3FTX-5FT) DOLLARS and CENTS	EA	16.000	129
	465	7160		INLET(COMPL)(PAZD)(FG)(4FTX4FT-4FTX-4FT) DOLLARS and CENTS	EA	2.000	130

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	465	7162		INLET(COMPL)(PAZD)(FG)(5FTX5FT-4FTX-4FT) DOLLARS and CENTS	EA	1.000	131
	465	7332		JCT BOX (COMPL)(SPL) DOLLARS and CENTS	EA	1.000	132
	465	7352		INLET (COMPL) (TY MSE2) DOLLARS and CENTS	EA	6.000	133
	466	7216		WINGWALL (PW-MSE) DOLLARS and CENTS	EA	3.000	134
	467	7137		SET (TY I)(S= 6 FT)(HW= 6 FT)(4:1)(C) DOLLARS and CENTS	EA	1.000	135
	467	7326		SET (TY II) (24 IN) (RCP) (4: 1) (C) DOLLARS and CENTS	EA	5.000	136
	467	7327		SET (TY II) (24 IN) (RCP) (6: 1) (C) DOLLARS and CENTS	EA	3.000	137
	467	7328		SET (TY II) (24 IN) (RCP) (6: 1) (P) DOLLARS and CENTS	EA	2.000	138
	467	7378		SET (TY II) (42 IN) (RCP) (4: 1) (C) DOLLARS and CENTS	EA	1.000	139
	467	7398		SET (TY II) (54 IN) (RCP) (4: 1) (C) DOLLARS and CENTS	EA	1.000	140
	467	7400		SET (TY II) (54 IN) (RCP) (6: 1) (P) DOLLARS and CENTS	EA	1.000	141
	467	7468		SET(TY II)(24 IN)(RCP)(4:1)(P) DOLLARS and CENTS	EA	2.000	142

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	471	7006		GRATE AND FRAME (BRIDGE DRAIN) DOLLARS and CENTS	EA	6.000	143
	476	7011		JACK BOR OR TUN PIPE(24 IN)(RC)(CL III) DOLLARS and CENTS	LF	145.000	144
	476	7012		JACK BOR OR TUN PIPE(30 IN)(RC)(CL III) DOLLARS and CENTS	LF	67.000	145
	476	7014		JACK BOR OR TUN PIPE(42 IN)(RC)(CL III) DOLLARS and CENTS	LF	84.000	146
	479	7001		ADJUSTING MANHOLES DOLLARS and CENTS	EA	2.000	147
	481	7027		PIPE (PVC) (SCH 80) (6 IN) DOLLARS and CENTS	LF	256.000	148
	496	7002		REMOV STR (INLET) DOLLARS and CENTS	EA	47.000	149
	496	7003		REMOV STR (MANHOLE) DOLLARS and CENTS	EA	12.000	150
	496	7004		REMOV STR (SET) DOLLARS and CENTS	EA	17.000	151
	496	7005		REMOV STR (WINGWALL) DOLLARS and CENTS	EA	8.000	152
	496	7006		REMOV STR (HEADWALL) DOLLARS and CENTS	EA	198.000	153
	496	7007		REMOV STR (PIPE) DOLLARS and CENTS	LF	6,857.000	154

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	496	7008		REMOV STR (BOX CULVERT) DOLLARS and CENTS	LF	1,079.000	155
	496	7010		REMOV STR (BRIDGE 100 - 499 FT LENGTH) DOLLARS and CENTS	EA	4.000	156
	496	7019		REMOV STR (RET WALL) DOLLARS and CENTS	LF	130.000	157
	500	7001		MOBILIZATION DOLLARS and CENTS	LS	1.000	158
	502	7001		BARRICADES, SIGNS AND TRAFFIC HAN-DLING DOLLARS and CENTS	MO	42.000	159
	503	7002		PORTABLE CHANGEABLE MESSAGE SIGN DOLLARS and CENTS	EA	8.000	160
	505	7001		TMA (STATIONARY) DOLLARS and CENTS	DAY	200.000	161
	505	7003		TMA (MOBILE OPERATION) DOLLARS and CENTS	DAY	500.000	162
	506	7002		ROCK FILTER DAMS (INSTALL) (TY 2) DOLLARS and CENTS	LF	132.000	163
	506	7003		ROCK FILTER DAMS (INSTALL) (TY 3) DOLLARS and CENTS	LF	512.000	164
	506	7011		ROCK FILTER DAMS (REMOVE) DOLLARS and CENTS	LF	644.000	165
	506	7020		CONSTRUCTION EXITS (INSTALL) (TY 1) DOLLARS and CENTS	SY	1,320.000	166

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	506	7024		CONSTRUCTION EXITS (REMOVE) DOLLARS and CENTS	SY	1,320.000	167
	506	7039		TEMP SEDMT CONT FENCE (INSTALL) DOLLARS and CENTS	LF	30,556.000	168
	506	7041		TEMP SEDMT CONT FENCE (REMOVE) DOLLARS and CENTS	LF	30,556.000	169
	506	7044		BIODEG EROSN CONT LOGS (INSTL) (12") DOLLARS and CENTS	LF	2,557.000	170
	506	7045		BIODEG EROSN CONT LOGS (INSTL) (18") DOLLARS and CENTS	LF	893.000	171
	506	7046		BIODEG EROSN CONT LOGS (REMOVE) DOLLARS and CENTS	LF	3,448.000	172
	508	7001		CONSTRUCTING DETOURS DOLLARS and CENTS	SY	23,245.900	173
	512	7001		PORT CTB (FUR & INST)(SGL SLOPE)(TY 1) DOLLARS and CENTS	LF	8,560.900	174
	512	7009		PORT CTB (FUR & INST)(LOW PROF)(TY 1) DOLLARS and CENTS	LF	2,560.000	175
	512	7010		PORT CTB (FUR & INST)(LOW PROF)(TY 2) DOLLARS and CENTS	LF	120.000	176
	512	7025		PORT CTB (MOVE)(SGL SLP)(TY 1) DOLLARS and CENTS	LF	16,800.000	177
	512	7033		PORT CTB (MOVE)(LOW PROF)(TY 1) DOLLARS and CENTS	LF	2,640.000	178

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	512	7034		PORT CTB (MOVE)(LOW PROF)(TY 2) DOLLARS and CENTS	LF	280.000	179
	512	7049		PORT CTB (REMOVE)(SGL SLP)(TY 1) DOLLARS and CENTS	LF	8,400.000	180
	512	7057		PORT CTB (REMOVE)(LOW PROF)(TY 1) DOLLARS and CENTS	LF	2,560.000	181
	512	7058		PORT CTB (REMOVE)(LOW PROF)(TY 2) DOLLARS and CENTS	LF	120.000	182
	512	7089		PCTB (FUR&INST)(F-SHAPE OR SNGL SLP)TY1 DOLLARS and CENTS	LF	780.000	183
	514	7001		PERM CTB (SGL SLOPE) (TY 1) (42) DOLLARS and CENTS	LF	953.000	184
	514	7002		PERM CTB (SGL SLOPE) (TY 3) (42) DOLLARS and CENTS	LF	111.000	185
	514	7018		PERM CTB(SGL SLOPE)(TY 1)(42)(HPC) DOLLARS and CENTS	LF	1,100.600	186
	514	7038		PERM CTB (TRAN SSCB TO SSTR) (MOD) DOLLARS and CENTS	LF	300.000	187
	514	7051		PERM CTB (TRAN T80SS TO SSTR)(MOD) DOLLARS and CENTS	LF	30.000	188
	527	7001		COLORED TEXTURED CONC (4") DOLLARS and CENTS	SY	546.000	189
	529	7007		CONC CURB (MONO) (TY II) DOLLARS and CENTS	LF	37,774.000	190

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	530	7006		DRIVEWAYS (CONC) DOLLARS and CENTS	SY	6,180.000	191
	531	7002		CONC SIDEWALKS (5") DOLLARS and CENTS	SY	17,894.000	192
	531	7005		CURB RAMPS (TY 1) DOLLARS and CENTS	EA	6.000	193
	531	7008		CURB RAMPS (TY 5) DOLLARS and CENTS	EA	7.000	194
	531	7009		CURB RAMPS (TY 6) DOLLARS and CENTS	EA	4.000	195
	531	7010		CURB RAMPS (TY 7) DOLLARS and CENTS	EA	21.000	196
	531	7011		CURB RAMPS (TY 10) DOLLARS and CENTS	EA	64.000	197
	531	7012		CURB RAMPS (TY 20) DOLLARS and CENTS	EA	2.000	198
	531	7013		CURB RAMPS (TY 21) DOLLARS and CENTS	EA	1.000	199
	531	7014		CURB RAMPS (TY 22) DOLLARS and CENTS	EA	1.000	200
	538	7001		RIGHT OF WAY MARKERS DOLLARS and CENTS	EA	51.000	201
	540	7002		MTL W-BEAM GD FEN (STEEL POST) DOLLARS and CENTS	LF	550.000	202

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	540	7005		MTL BEAM GD FEN TRANS (THRIE-BEAM) DOLLARS and CENTS	EA	9.000	203
	540	7015		DOWNSTREAM ANCHOR TERMINAL SEC-TION DOLLARS and CENTS	EA	1.000	204
	542	7001		REMOVE METAL BEAM GUARD FENCE DOLLARS and CENTS	LF	3,462.500	205
	542	7004		RM MTL BM GD FENCE TRANS (THRIE-BEAM) DOLLARS and CENTS	EA	5.000	206
	544	7001		GUARDRAIL END TREATMENT (INSTALL) DOLLARS and CENTS	EA	10.000	207
	544	7003		GUARDRAIL END TREATMENT (REMOVE) DOLLARS and CENTS	EA	17.000	208
	545	7002		CRASH CUSH ATTEN (MOVE & RESET) DOLLARS and CENTS	EA	21.000	209
	545	7004		CRASH CUSH ATTEN (REMOVE) DOLLARS and CENTS	EA	7.000	210
	545	7008		CRASH CUSH ATTEN (INSTL)(L)(W)(TL3) DOLLARS and CENTS	EA	5.000	211
	545	7014		CRASH CUSH ATTEN (INSTL)(S)(N)(TL3) DOLLARS and CENTS	EA	7.000	212
	556	7001		PIPE UNDERDRAINS (TY 1) (6") DOLLARS and CENTS	LF	12,524.000	213
	610	7004		RELOCATE RD IL ASM (TRANS-BASE) DOLLARS and CENTS	EA	4.000	214

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	610	7007		REMOVE RD IL ASM (SHOE-BASE) DOLLARS and CENTS	EA	1.000	215
	610	7009		REMOVE RD IL ASM (TRANS-BASE) DOLLARS and CENTS	EA	8.000	216
	610	7015		IN RD IL (U/P) (TY 1) (250W EQ) LED DOLLARS and CENTS	EA	20.000	217
	613	7007		HI MST IL POLE (175 FT)(80 MPH) DOLLARS and CENTS	EA	10.000	218
	614	7001		LED HI MST IL ASM (6 FIXT) (TY S) DOLLARS and CENTS	EA	1.000	219
	614	7009		LED HI MST IL ASM(6 FIXT) (TY A)SHLD DOLLARS and CENTS	EA	9.000	220
	618	7030		CONDT (PVC) (SCH 40) (2") DOLLARS and CENTS	LF	925.000	221
	618	7031		CONDT (PVC) (SCH 40) (2") (BORE) DOLLARS and CENTS	LF	1,085.000	222
	618	7036		CONDT (PVC) (SCH 40) (3") DOLLARS and CENTS	LF	490.000	223
	618	7040		CONDT (PVC) (SCH 40) (4") DOLLARS and CENTS	LF	635.000	224
	618	7041		CONDT (PVC) (SCH 40) (4") (BORE) DOLLARS and CENTS	LF	1,255.000	225
	618	7054		CONDT (PVC) (SCH 80) (2") DOLLARS and CENTS	LF	8,460.000	226

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	618	7055		CONDT (PVC) (SCH 80) (2") (BORE) DOLLARS and CENTS	LF	2,795.000	227
	618	7060		CONDT (PVC) (SCH 80) (3") DOLLARS and CENTS	LF	7,170.000	228
	618	7064		CONDT (PVC) (SCH 80) (4") DOLLARS and CENTS	LF	980.000	229
	618	7072		CONDT (RM) (1") DOLLARS and CENTS	LF	1,005.000	230
	620	7003		ELEC CONDR (NO.12) BARE DOLLARS and CENTS	LF	700.000	231
	620	7004		ELEC CONDR (NO.12) INSULATED DOLLARS and CENTS	LF	1,400.000	232
	620	7007		ELEC CONDR (NO.8) BARE DOLLARS and CENTS	LF	6,705.000	233
	620	7008		ELEC CONDR (NO.8) INSULATED DOLLARS and CENTS	LF	27,820.000	234
	620	7009		ELEC CONDR (NO.6) BARE DOLLARS and CENTS	LF	10,240.000	235
	620	7010		ELEC CONDR (NO.6) INSULATED DOLLARS and CENTS	LF	10,620.000	236
	620	7011		ELEC CONDR (NO.4) BARE DOLLARS and CENTS	LF	45.000	237
	620	7012		ELEC CONDR (NO.4) INSULATED DOLLARS and CENTS	LF	90.000	238

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	620	7015		ELEC CONDR (NO.2) BARE DOLLARS and CENTS	LF	45.000	239
	620	7016		ELEC CONDR (NO.2) INSULATED DOLLARS and CENTS	LF	90.000	240
	623	7004		ITS GND BOX(PCAST) TY 1 (243648)W/APRN DOLLARS and CENTS	EA	13.000	241
	623	7041		REMOVE ITS GROUND BOX DOLLARS and CENTS	EA	1.000	242
	624	7001		GROUND BOX TY A (122311) DOLLARS and CENTS	EA	9.000	243
	624	7002		GROUND BOX TY A (122311)W/APRON DOLLARS and CENTS	EA	31.000	244
	624	7005		GROUND BOX TY C (162911) DOLLARS and CENTS	EA	8.000	245
	624	7006		GROUND BOX TY C (162911)W/APRON DOLLARS and CENTS	EA	7.000	246
	624	7007		GROUND BOX TY D (162922) DOLLARS and CENTS	EA	4.000	247
	624	7008		GROUND BOX TY D (162922)W/APRON DOLLARS and CENTS	EA	6.000	248
	628	7045		ELC SRV TY A 240/480 060(NS)SS(E)GC(U) DOLLARS and CENTS	EA	3.000	249
	628	7147		ELC SRV TY D 120/240 060(NS)SS(E)PS(U) DOLLARS and CENTS	EA	2.000	250

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	636	7001		ALUMINUM SIGNS (TY A) DOLLARS and CENTS	SF	63.000	251
	636	7002		ALUMINUM SIGNS (TY G) DOLLARS and CENTS	SF	120.250	252
	636	7003		ALUMINUM SIGNS (TY O) DOLLARS and CENTS	SF	2,390.000	253
	644	7001		IN SM RD SN SUP&AM TY10BWG(1)SA(P) DOLLARS and CENTS	EA	46.000	254
	644	7004		IN SM RD SN SUP&AM TY10BWG(1)SA(T) DOLLARS and CENTS	EA	22.000	255
	644	7007		IN SM RD SN SUP&AM TY10BWG(1)SA(U) DOLLARS and CENTS	EA	1.000	256
	644	7009		IN SM RD SN SUP&AM TY10BWG(1)SB(P) DOLLARS and CENTS	EA	17.000	257
	644	7012		IN SM RD SN SUP&AM TY10BWG(1)SB(T) DOLLARS and CENTS	EA	16.000	258
	644	7028		IN SM RD SN SUP&AM TYS80(1)SA(T) DOLLARS and CENTS	EA	1.000	259
	644	7031		IN SM RD SN SUP&AM TYS80(1)SA(U) DOLLARS and CENTS	EA	11.000	260
	644	7032		IN SM RD SN SUP&AM TYS80(1)SA(U-1EXT) DOLLARS and CENTS	EA	1.000	261
	644	7034		IN SM RD SN SUP&AM TYS80(1)SA(U-BM) DOLLARS and CENTS	EA	2.000	262

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	644	7042		IN SM RD SN SUP&AM TYS80(1)SB(U) DOLLARS and CENTS	EA	6.000	263
	644	7045		IN SM RD SN SUP&AM TYS80(1)SB(U-BM) DOLLARS and CENTS	EA	2.000	264
	644	7061		IN BRIDGE MNT CLEARANCE SGN ASSM(TY N) DOLLARS and CENTS	EA	2.000	265
	644	7062		IN BRIDGE MNT CLEARANCE SGN ASSM(TY S) DOLLARS and CENTS	EA	4.000	266
	644	7073		REMOVE SM RD SN SUP&AM DOLLARS and CENTS	EA	113.000	267
	644	7083		IN SRSS & AM (RAIL)(130 MPH)(P MOUNT) DOLLARS and CENTS	EA	14.000	268
	644	7085		IN SRSS & AM (RAIL)(130 MPH)(T MOUNT) DOLLARS and CENTS	EA	10.000	269
	644	7086		IN SRSS & AM (RAIL)(130 MPH)(U MOUNT) DOLLARS and CENTS	EA	3.000	270
	644	7087		IN SRSS & AM (RAIL)(130 MPH)(U-BM MNT) DOLLARS and CENTS	EA	1.000	271
	647	7001		INSTALL LRSS (STRUCT STEEL) DOLLARS and CENTS	LB	1,161.600	272
	647	7003		REMOVE LRSA DOLLARS and CENTS	EA	9.000	273
	650	7045		INS OH SN SUP(40 FT CANT) DOLLARS and CENTS	EA	4.000	274

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	650	7079		INS OH SN SUP(70 FT BRDG) DOLLARS and CENTS	EA	2.000	275
	650	7124		INS OH SN SUP(115 FT BRDG) DOLLARS and CENTS	EA	1.000	276
	650	7164		INS OH SN SUP(155 FT BRDG) DOLLARS and CENTS	EA	1.000	277
	658	7012		INSTL DEL ASSM (D-SW)SZ 1(BRF)CTB DOLLARS and CENTS	EA	289.000	278
	658	7018		INSTL DEL ASSM (D-SW)SZ 1(BRF)GF2 DOLLARS and CENTS	EA	6.000	279
	658	7031		INSTL DEL ASSM (D-SY)SZ 1(BRF)CTB DOLLARS and CENTS	EA	237.000	280
	658	7032		INSTL DEL ASSM (D-SY)SZ 1(BRF)CTB (BI) DOLLARS and CENTS	EA	15.000	281
	658	7036		INSTL DEL ASSM (D-SY)SZ 1(BRF)GF2 DOLLARS and CENTS	EA	21.000	282
	662	7065		WK ZN PAV MRK REMOV (W)6"(BRK) DOLLARS and CENTS	LF	31,535.000	283
	662	7066		WK ZN PAV MRK REMOV (W)6"(DOT) DOLLARS and CENTS	LF	1,125.000	284
	662	7068		WK ZN PAV MRK REMOV (W)6"(SLD) DOLLARS and CENTS	LF	131,080.000	285
	662	7070		WK ZN PAV MRK REMOV (W)8"(DOT) DOLLARS and CENTS	LF	200.000	286

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	662	7072		WK ZN PAV MRK REMOV (W)8"(SLD) DOLLARS and CENTS	LF	23,855.000	287
	662	7075		WK ZN PAV MRK REMOV (W)12"(SLD) DOLLARS and CENTS	LF	210.000	288
	662	7077		WK ZN PAV MRK REMOV (W)24"(SLD) DOLLARS and CENTS	LF	2,303.000	289
	662	7099		WK ZN PAV MRK REMOV (Y)6"(DOT) DOLLARS and CENTS	LF	395.000	290
	662	7100		WK ZN PAV MRK REMOV (Y)6"(SLD) DOLLARS and CENTS	LF	145,880.000	291
	666	7009		REFL PAV MRK TY I (W)6"(DOT)(100MIL) DOLLARS and CENTS	LF	575.000	292
	666	7018		REFL PAV MRK TY I (W)8"(DOT)(100MIL) DOLLARS and CENTS	LF	870.000	293
	666	7024		REFL PAV MRK TY I (W)8"(SLD)(100MIL) DOLLARS and CENTS	LF	17,050.000	294
	666	7114		REFL PAV MRK TY I (Y)8"(SLD)(100MIL) DOLLARS and CENTS	LF	665.000	295
	666	7266		RE PROFILE PM TY I(W)6"(SLD)(100MIL) DOLLARS and CENTS	LF	10,755.000	296
	666	7270		RE PROFILE PM TY I(Y)6"(SLD)(100MIL) DOLLARS and CENTS	LF	10,160.000	297
	666	7347		PAVEMENT SLER 6" DOLLARS and CENTS	LF	110,279.000	298

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	666	7348		PAVEMENT SLER 8" DOLLARS and CENTS	LF	18,585.000	299
	666	7350		PAVEMENT SLER 12" DOLLARS and CENTS	LF	4,293.000	300
	666	7352		PAVEMENT SLER 24" DOLLARS and CENTS	LF	2,095.000	301
	666	7353		PAVEMENT SLER (ARROW) DOLLARS and CENTS	EA	55.000	302
	666	7354		PAVEMENT SLER (WORD) DOLLARS and CENTS	EA	53.000	303
	666	7355		PAVEMENT SLER (MED NOSE) DOLLARS and CENTS	EA	9.000	304
	666	7356		PAVEMENT SLER (DBL ARROW) DOLLARS and CENTS	EA	4.000	305
	666	7358		PAVEMENT SLER (UTURN ARROW) DOLLARS and CENTS	EA	4.000	306
	666	7359		PAVEMENT SLER (LN REDUCT ARROW) DOLLARS and CENTS	EA	3.000	307
	666	7360		PAVEMENT SLER (U-L ARROW) DOLLARS and CENTS	EA	2.000	308
	666	7365		PAVEMENT SLER (YLD TRI) DOLLARS and CENTS	EA	20.000	309
	666	7408		REFL PAV MRK TY I (W)6"(BRK)(100MIL) DOLLARS and CENTS	LF	12,320.000	310

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	666	7411		REFL PAV MRK TY I (W)6"(SLD)(100MIL) DOLLARS and CENTS	LF	36,750.000	311
	666	7423		REFL PAV MRK TY I (Y)6"(SLD)(100MIL) DOLLARS and CENTS	LF	34,650.000	312
	668	7012		PREFAB PM TY B (W)(6")(BRK)CONTRAST DOLLARS and CENTS	LF	5,069.000	313
	668	7086		PREFAB PM TY C (W)(12")(LNDP) DOLLARS and CENTS	LF	1,152.000	314
	668	7087		PREFAB PM TY C (W)(12")(SLD) DOLLARS and CENTS	LF	2,761.000	315
	668	7089		PREFAB PM TY C (W)(24")(SLD) DOLLARS and CENTS	LF	2,095.000	316
	668	7091		PREFAB PM TY C (W)(ARROW) DOLLARS and CENTS	EA	55.000	317
	668	7093		PREFAB PM TY C (W)(DBL ARROW) DOLLARS and CENTS	EA	4.000	318
	668	7096		PREFAB PM TY C (W)(UTURN ARROW) DOLLARS and CENTS	EA	4.000	319
	668	7098		PREFAB PM TY C (W)(U-LT ARROW) DOLLARS and CENTS	EA	2.000	320
	668	7100		PREFAB PM TY C (W)(LN REDUCT ARROW) DOLLARS and CENTS	EA	3.000	321
	668	7103		PREFAB PM TY C (W)(WORD) DOLLARS and CENTS	EA	53.000	322

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	668	7111		PREFAB PM TY C (W)(36")(YLD TRI) DOLLARS and CENTS	EA	20.000	323
	668	7125		PREFAB PM TY C (Y)(12")(SLD) DOLLARS and CENTS	LF	380.000	324
	668	7129		PREFAB PM TY C (Y)(MED NOSE) DOLLARS and CENTS	EA	9.000	325
	672	7004		REFL PAV MRKR TY II-A-A DOLLARS and CENTS	EA	35.000	326
	672	7006		REFL PAV MRKR TY II-C-R DOLLARS and CENTS	EA	2,363.000	327
	677	7001		ELIM EXT PM & MRKS (4") DOLLARS and CENTS	LF	19,173.000	328
	677	7004		ELIM EXT PM & MRKS (8") DOLLARS and CENTS	LF	3,275.000	329
	677	7008		ELIM EXT PM & MRKS (24") DOLLARS and CENTS	LF	316.000	330
	677	7009		ELIM EXT PM & MRKS (ARROW) DOLLARS and CENTS	EA	29.000	331
	678	7002		PAV SURF PREP FOR MRK (6") DOLLARS and CENTS	LF	110,279.000	332
	678	7004		PAV SURF PREP FOR MRK (8") DOLLARS and CENTS	LF	18,585.000	333
	678	7006		PAV SURF PREP FOR MRK (12") DOLLARS and CENTS	LF	4,293.000	334

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	678	7008		PAV SURF PREP FOR MRK (24") DOLLARS and CENTS	LF	2,095.000	335
	678	7009		PAV SURF PREP FOR MRK (ARROW) DOLLARS and CENTS	EA	58.000	336
	678	7010		PAV SURF PREP FOR MRK (DBL ARROW) DOLLARS and CENTS	EA	1.000	337
	678	7012		PAV SURF PREP FOR MRK (UTURN ARR) DOLLARS and CENTS	EA	4.000	338
	678	7013		PAV SURF PREP FOR MRK (U/LT ARROW) DOLLARS and CENTS	EA	2.000	339
	678	7016		PAV SURF PREP FOR MRK (WORD) DOLLARS and CENTS	EA	51.000	340
	678	7023		PAV SURF PREP FOR MRK (36")(YLD TRI) DOLLARS and CENTS	EA	20.000	341
	678	7024		PAV SURF PREP FOR MRK (MED NOSE) DOLLARS and CENTS	EA	9.000	342
	678	7033		PAV SURF PREP FOR MRK (RPM) DOLLARS and CENTS	EA	2,398.000	343
	680	7004		REMOVING TRAFFIC SIGNALS DOLLARS and CENTS	EA	3.000	344
	680	7005		INS HY TRF SIG (DPT SUP CNT & CAB)(ISO) DOLLARS and CENTS	EA	3.000	345
	681	7001		TEMP TRAF SIGNALS DOLLARS and CENTS	EA	4.000	346

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	682	7001		VEH SIG SEC (12")LED(GRN) DOLLARS and CENTS	EA	29.000	347
	682	7002		VEH SIG SEC (12")LED(GRN ARW) DOLLARS and CENTS	EA	22.000	348
	682	7003		VEH SIG SEC (12")LED(YEL) DOLLARS and CENTS	EA	33.000	349
	682	7004		VEH SIG SEC (12")LED(YEL ARW) DOLLARS and CENTS	EA	20.000	350
	682	7005		VEH SIG SEC (12")LED(RED) DOLLARS and CENTS	EA	33.000	351
	682	7006		VEH SIG SEC (12")LED(RED ARW) DOLLARS and CENTS	EA	28.000	352
	682	7018		PED SIG SEC (LED)(COUNTDOWN) DOLLARS and CENTS	EA	24.000	353
	682	7042		BACKPLATE W/REF BRDR(3 SEC)(VENT)ALUM DOLLARS and CENTS	EA	29.000	354
	682	7043		BACKPLATE W/REF BRDR(4 SEC)(VENT)ALUM DOLLARS and CENTS	EA	12.000	355
	682	7044		BACKPLATE W/REF BRDR(5 SEC)(VENT)ALUM DOLLARS and CENTS	EA	6.000	356
	684	7033		TRF SIG CBL (TY A)(14 AWG)(7 CONDR) DOLLARS and CENTS	LF	7,024.000	357

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	684	7046		TRF SIG CBL (TY A)(14 AWG)(20 CONDR) DOLLARS and CENTS	LF	3,530.000	358
	684	7079		TRF SIG CBL (TY C)(12 AWG)(2 CONDR) DOLLARS and CENTS	LF	7,465.000	359
	686	7033		INS TRF SIG PL AM(S)1 ARM(32') DOLLARS and CENTS	EA	1.000	360
	686	7035		INS TRF SIG PL AM(S)1 ARM(32')LUM DOLLARS and CENTS	EA	1.000	361
	686	7045		INS TRF SIG PL AM(S)1 ARM(44') DOLLARS and CENTS	EA	1.000	362
	686	7047		INS TRF SIG PL AM(S)1 ARM(44')LUM DOLLARS and CENTS	EA	2.000	363
	686	7051		INS TRF SIG PL AM(S)1 ARM(48')LUM DOLLARS and CENTS	EA	1.000	364
	686	7059		INS TRF SIG PL AM(S)1 ARM(55')LUM DOLLARS and CENTS	EA	1.000	365
	686	7063		INS TRF SIG PL AM(S)1 ARM(60')LUM DOLLARS and CENTS	EA	1.000	366
	686	7067		INS TRF SIG PL AM(S)1 ARM(65')LUM DOLLARS and CENTS	EA	3.000	367
	686	7091		INS TRF SIG PL AM(S)2 ARM(28-28')LUM DOLLARS and CENTS	EA	1.000	368
	687	7001		PED POLE ASSEMBLY DOLLARS and CENTS	EA	13.000	369

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	688	7003		PED DETECTOR CONTROLLER UNIT DOLLARS and CENTS	EA	3.000	370
	740	7005		ANTI-GRAFFITI COATING (PERMNENT-TY II) DOLLARS and CENTS	SF	136,623.000	371
	4003	7001		TIP TESTING(DRILL SHAFT) DOLLARS and CENTS	EA	5.000	372
	6008	7004		RVDS (PRESENCE DET)(INSTALL ONLY) DOLLARS and CENTS	EA	13.000	373
	6008	7005		RVDS (ADVANCE DET)(INSTALL ONLY) DOLLARS and CENTS	EA	13.000	374
	6022	7001		RDWY LIGHTING ASSY (30 FT)(TY 1) DOLLARS and CENTS	EA	5.000	375
	6022	7002		RDWY LIGHTING ASSY (30 FT)(TY 2) DOLLARS and CENTS	EA	18.000	376
	6050	7001		RELOCATE EXIST GND MT COMM CABINET DOLLARS and CENTS	EA	1.000	377
	6050	7003		INSTALL GND MT COMM CABINET FOUN-DATION DOLLARS and CENTS	EA	1.000	378
	6062	7001		CAMERA POLE STRUCT (PRECAST CONC)(50') DOLLARS and CENTS	EA	1.000	379

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.

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352 (See reverse for public burden disclosure.)

1. Type of Federal Action: a. contract b. grant c. cooperative agreement d. loan e. loan guarantee f. loan insurance	2. Status of Federal Action: a. bid/offer/application b. initial award c. post-award	3. Report Type: a. initial filing b. grant For material change only: year _____ quarter _____ date of last report _____

4. **Name and Address of Reporting Entity:** ? Prime ? Subawardee Tier _____, if known: **Congressional District**, if known:	5. **If Reporting Entity in No. 4 is Subawardee,** Enter Name and Address of Prime: **Congressional District**, if known:
6. **Federal Department/Agency:**	7. **Federal Program Name/Description:** CFDA Number, if applicable: _____
8. **Federal Action Number**, if known:	9. **Award Amount,** if known: $ _____
10. a. Name and Address of Lobbying Entity (if individual, last name, first name, MI):	b. Individuals Performing Services (including address if different from No. 10a) (last name, first name, MI):

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

11. Amount of Payment (check all that apply): $ _____ actual planned 12. Form of Payment (check all that apply) a. cash b. in-kind; specify: nature _____ value _____	13. Type of Payment (check all that apply): a. retainer b. one-time fee c. commission d. contingent fee e. deferred f. other; specify: _____

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

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

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

16. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.	Signature: _____ Print Name: _____ Title: _____ Telephone No: _____ Date: _____

FEDERAL USE ONLY	Authorized for Local Reproduction Standard Form - LLL

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Use the SF-LLL-A Continuation Sheet for additional information if the space on the form is inadequate. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.
2. Identify the status of the covered Federal action.
3. Identify the appropriate classification of this report. If this is a follow-up report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity or this covered Federal action.
4. Enter the full name, address, city, state and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.
5. If the organization filing the report in item 4 checks "Subawardee", then enter the full name, address, city, state and zip code of the prime Federal recipient. Include Congressional District, if known.
6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.
7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.
8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitation for Bid (IFB) number; grant announcement number, the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., "RFP-DE-90-001."
9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.
10. (a) Enter the full name, address, city, state and zip code of the lobbying entity engaged by the reporting entity identified in item 4 to influence the covered Federal action.
    (b) Enter the full names of the individual(s) performing services, and include full address if different from 10(a). Enter Last Name, First Name, and Middle Initial (MI).
11. Enter the amount of compensation paid or reasonably expected to be paid by the reporting entity (item 4) to the lobbying entity (item 10). Indicate whether the payment has been made (actual) or will be made (planned). Check all boxes that apply. If this is a material change report, enter the cumulative amount of payment made or planned to be made.
12. Check the appropriate box(es). Check all boxes that apply. If payment is made through an in-kind contribution, specify the nature and value of the in-kind payment.
13. Check the appropriate box(es). Check all boxes that apply. If other, specify nature.
14. Provide a specific and detailed description of the services that the lobbyist has performed, or will be expected to perform, and the date(s) of any services rendered. Include all preparatory and related activity, not just time spent in actual contact with Federal officials. Identify the Federal official(s) or employee(s) contacted or the officer(s), employee(s), or Member(s) of Congress that were contacted.
15. Check whether or not a SF-LLL-A Continuation Sheet(s) is attached.
16. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

DISCLOSURE OF LOBBYING ACTIVITIES

Approved by OMB

0348-0046

CONTINUATION SHEET

Reporting Entity: _____ Page _____ of _____

CONTRACTOR'S ASSURANCE

(Subcontracts-Federal Aid Projects)

By signing this proposal, the contractor is giving assurances that all subcontract agreements will incorporate the Standard Specification and Special Provisions to Section 9.9., Payment Provisions for Subcontractors, all subcontract agreements exceeding $2,000 will incorporate the applicable Wage Determination Decision, and all subcontract agreements will incorporate the following:

Special Provision	Certification of Nondiscrimination in Employment
Special Provision	Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246)
Special Provision	Standard Federal Equal Employment Opportunity
Construction	Construction Specifications (Executive Order 11246)
Form FHWA 1273	Required Contract Provisions Federal-aid Construction Contracts (Form FHWA 1273 must also be physically attached to subcontracts and all lower-tier subcontracts)
Special Provision	Nondiscrimination (Include provisions of Sections 3.1 – 3.6 in all subcontracts and agreements for materials)
Special Provision	Cargo Preference Act Requirements in Federal-Aid Contracts
Special Provision	Disadvantaged Business Enterprise in Federal-Aid Contracts

ENGINEER SEAL

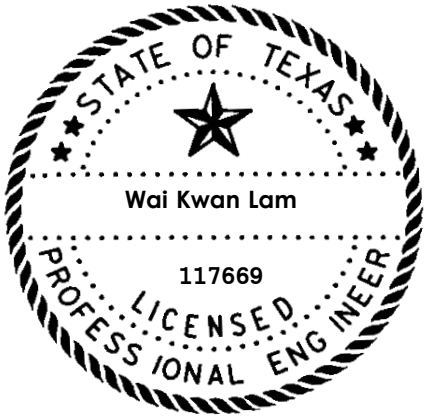
Control **0047-05-057, ETC.**

Project **F 2025(482), ETC.**

Highway **SH 5, ETC.**

County **COLLIN**

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

Wai Kwan Lam, P.E.

SEPTEMBER 17, 2024

General Notes: 2024 TxDOT Specification – Dallas District General Notes

SPECIFICATION DATA

Table 1: Soil Constants Requirements				
Item	Description	Plasticity Index		Note
		Max	Min	
132	EMBANK (FNL)(DC)(TY C1)	40	8	1
132	EMBANK(FNL)(DC)(TY C2)	25	8	2

Note 1: Material excavated from the project must meet the PI requirements when used in the top 10 feet of embankment that supports the pavement structure or other locations shown in the plans. Do not use shale and obtain approval to incorporate shaley clay produced by the construction project.

Note 2: Use as a non-select embankment backfill as defined under Item 423.2.4.1. Use as an embankment to backfill behind abutments to the extent of the approach slab or to backfill areas enclosed by an abutment and / or retaining walls or other locations as shown in the plans.

Table 2: Basis of Estimate for Permanent Construction					
Item	Description	Thickness	Rate		Quantity
162	Block Sod	N/A	See Specifications		103,738 SY
166 *	Fertilizer (12-6-6)	N/A	500	Lbs./Ac	21 Ton
168	Vegetative Watering	N/A	12	TGL/Ac/Day	15, 445 TGL
260	Commercial or Quick Lime (slurry)			6.0% by wt	6,710 Ton
344	SP MIXES SP-B PG64-22 SP-D PG64-22	See Plans	110	Lbs./SY/In	27,229 Ton 7,636 Ton

*For contractor's information only **Use Summer rate for calculation, adjust for actual field conditions/temperatures as necessary. See Vegetation Establishment Plan Sheet for estimated daily rates.
Note: (1) Base material weight based on 1.50 Ton/CY (dry- compacted) (2) Asphalt weight based on 110 Lbs./SY/In (3) Subgrade weight based on 1.5 Ton/CY (dry-compacted) (4) Item 310 and 314 Residual Asphalt 0.20 Gal/SY

Table 3: Basis of Estimate for Temporary Erosion Control Items

Item	Description	Rate		Quantity
164	Drill Seed (Temp_Warm_Cool)	See Specifications		103,738 SY
166*	Fertilizer (12-6-6)	500	Lb/Ac	21Ton
168	Vegetative Watering (Warm)**	12	TGLAc/Day	15,445 TGL

*For Contractor's Information Only.
**Use Summer rate for calculation, adjust for Actual Field Conditions/Temperatures as Necessary. See Vegetation Establishment Sheet for estimated daily rates.

Table 4: Basis of Estimate for Finish Colors (Items 427 & 446) [1]

Element	Color	Specification Number [2]
CTB	White	35630
Columns	White	35630
Bent caps	White	35630
Striated retaining wall surfaces	See plans	SEE PLANS
Retaining wall coping and other components except striated surfaces	See plans	SEE PLANS
Abutments (all parts)	White	35630
Prestressed concrete girders and structural steel	White	35630
Bottom of slab overhang & slab edge	White	35630
Concrete rail parts except outside lower 18"	White	35630
NTTA Structures[3]	Match Existing[3]	Match Existing[3]
Architectural elements	See plans	See plans

1. Unless otherwise noted, it is the intent of these plans that all exposed surfaces (concrete or steel) of bridges, retaining walls, concrete traffic railing and concrete traffic barrier be given a tinted coating as shown or as directed. Such coating shall meet the applicable provisions of Item 427 or Item 446.

2. SAE AMS-STD 595

3. NTTA Structures include all vertical structures (including but not limited to bridge elements, retaining walls, copings, concrete rails, and architectural elements) between the beginning of project to STA 1035+00. Contractor to coordinate with NTTA prior to ordering materials. For natural gray concrete, color pigments are not required. Contractor shall use Concrete Surface Finish under Item 427 as “Off-the-Form Finish” on all NTTA structure elements. Finish requirements are detailed under Item 427.3.5 and 427.4.3.4.

   For NTTA STYLE 1 Retaining Wall panels use the below form liners. Provide the following textures on corresponding Finish Areas described on NTTA Standard Drawing, RWD-203, “Retaining Wall Details – Precast Wall Panels.”

Panel Finish Area	Texture
WALL S39901	FLAT PANEL
WALL S39901A	FLAT PANEL
WALL S39902	FLAT PANEL
WALL S39903	FLAT PANEL
WALL S39904	FLAT PANEL
WALL S39907	FLAT PANEL

GENERAL

The construction, operation and maintenance of the proposed project will be consistent with the state implementation plan as prepared by the Texas Commission on Environmental Quality.

The disturbed area for this project, as shown on the plans is 30 acres. However, the Total Disturbed Area (TDA) will establish the required authorization for storm water discharges. The TDA of this project will be determined by the sum of the disturbed area in all project locations in the contract, and all disturbed area on all Project-Specific Locations (PSL) located in the project limits and/or within 1 mile of the project limits. The department will obtain an authorization to discharge storm water from the Texas Commission on Environmental Quality (TCEQ) for the construction site as shown on the plans, according to the TDA of the project. The contractor will obtain any required authorization from the TCEQ for the discharge of storm water from any PSL for construction support activities on or off of the project row according to the TDA of the project. When the TDA for the project exceeds 1 acre, provide a copy of the appropriate application of permit (NOI, or Construction Site Notice) to the engineer, for any PSL located in the project limits or within 1 mile of the project limits. Follow the directives and adhere to all requirements set forth in the TCEQ, Texas Pollution Discharge Elimination System, Construction General Permit (TPDES, CGP).

There is a high probability that an environmentally sensitive area could be encountered on the contractor designated Project-Specific Locations (PSL) for this project (haul roads, equipment staging areas, borrow pits, disposal sites, field offices, storage areas, parking areas, etc.). Item 7.6 “Project-Specific Locations”, provides a listing of regulatory agencies that may need to be contacted regarding this project.

Leave all right of way areas undisturbed until actual construction is to be performed in said areas.

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
or Contractor questions on this project are to be addressed to the following individual(s):

Jennifer Vorster Jennifer.Vorster@txdot.gov
Dereje Tesemma Dereje.Tesemma@txdot.gov

Contractor questions will be accepted through email, phone, and in person by the above individuals.

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.

County:Collin

Highway: SH 5 & Spur 399

Cross sections may be requested by posting a question to the above Letting Pre-Bid Q&A web page. This data is for non-construction purposes only and it is the responsibility of the prospective bidder to validate the enclosed data with appropriate plans, specifications and estimate for the project(s).

The following standard detail sheets have been modified*:*
ABG201 (1-3) 2023 (MOD)
BD-1 (MOD)
RW (MSE) DD (MOD)
RW-SFB (MOD)
RW-SF (MOD)
RW(TRF)MOD (for NTTA WALLS)
SGEB (MOD)
SGMD (MOD)
SGTS (MOD)

Item 5:
Underground utilities owned by the Texas Department of Transportation may be present within the Right-Of-Way on this project. For signal, illumination, surveillance, and communications & control maintained by TxDOT, call the TxDOT Traffic Signal Office (214-320-6682) for locates a minimum of 48 hours in advance of excavation. For irrigation systems, call TxDOT Landscape Office (214-320-6205) for locates a minimum of 48 hours in advance of excavation. If city or town owned irrigation facilities are present, call the appropriate department of the local city or town a minimum of 48 hours in advance of excavation. The Contractor is liable for all damages when utilities are damaged due to Contractor's negligence including, but not limited to, repair or replacement at the Contractor's expense.

Attention is directed to the possible presence of underground utilities owned by NTTA such as power supplies, illumination, water, sewer, irrigation, etc. within the right of way limits in this project. For all utility locates of NTTA utilities within the NTTA ROW, Contractor to submit a written request to the following email address: LineLocateRequest@ntta.org. Contractor required information to include: NTTA Roadway, station marker locations, Contactor name, Contractor contact person (phone number and email), cross street utilities requested (ex. electrical, irrigation and fiber optic) and date locate requested by. All requests must be made five (5) business days in advance of excavation. Business days do not include weekends or holidays. Inquiries regarding status of locates for fiber optic network can be made to the NTTA Information Technology Department at 214-461-2066. For all other status of locates and/or questions regarding process contact the NTTA Maintenance Department at 214-461-2080.

When any underground utilities owned by NTTA are damaged, provide a detailed memo to the Engineer stating the date and time of the incident; the location by approximate centerline station and offset; a brief description of the damage; the impact of the incident; whether or not the damage affects other projects; actions taken to resolve the problem; and the date and time the issue will be resolved. All damages must be repaired and replaced by the Contractor at its own expense.
When an electrical line owned by NTTA is damaged, immediately de-energize the damaged conductors if possible and make the area safe. As soon as possible contact the NTTA Maintenance Department at 214-461-2080 and give site specific location and a description of the

incident including the extent of damage. Proceed with the repair by installing, at no additional cost to the Authority, two or more Type D (162922) ground boxes with aprons, and splicing the conductor(s) in an approved acceptable manner to the Authority. Spliced conductors must include an additional 2 ft. of new conductor in each ground box. Do not backfill or cover any completed damage repairs prior to inspection by the NTTA's Electrical division.

For the project to be deemed complete, permanently stabilize all unpaved disturbed areas of the project with a vegetative cover at a minimum of 70% density for the control of erosion.

Place construction stakes/station markings at intervals of no more than 100 feet or as directed by the Engineer. Place stakes and markings so as not to interfere with normal construction operations.

Submit all shop drawings, working drawings, or other documents which require review sufficiently in advance of scheduled construction to allow no less than thirty (30) calendar days for review and response.

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 https://www.txdot.gov/inside-txdot/forms-publications/consultants-contractors/publications/bridge.html#design. 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 6:
This project has structures with surface coatings which contain hazardous constituents which are Wilson Creek Relief Bridge, Wilson Creek Bridge. Contractor is responsible for the health and safety of his employees and compliance with all OSHA standards and regulations.

Paint containing hazardous materials will be removed by the contractor, 10.1.2

Metal guardrails are segmented and can be unbolted and removed without torch cutting, therefore, lead base paint(LBP) on metal guardrails will not require abatement.

The Buy America Material Classification Sheet is located at the below link.
https://www.txdot.gov/business/resources/materials/buy-america-material-classification-sheet.html for clarification on material categorization.

Item 7:
Repair or replace any structures and utilities that might have been damaged by negligence or a failure to have utility locates performed.

Perform all electrical work in accordance with the National Electrical Code and Texas Department of Transportation Specifications.

Consult with appropriate electric company representatives according to their respective area to coordinate electrical services installations.

Coordination for all closures west of US 75 to be coordinated with NTTA.

Holiday restrictions – The Engineer may decide that no lane closures or construction operations shall be allowed during the restricted periods listed in the following holiday schedule. TxDOT has the right to lengthen, shorten, or otherwise modify these restricted periods as actual, or expected, traffic conditions may warrant. Working days will not be charged for these restricted periods. No additional compensation will be allowed for these closures (i.e., overhead, delays, stand-by, barricades or any other associated cost impacts).

- New Year's Eve and Day (5 am on December 31 thru 10:00 pm January 1)
- Easter Holiday weekend (5 am on Friday thru 10:00 pm Sunday)
- Memorial Day weekend (5 am on Friday thru 10:00pm Monday)
- Independence Day (5 am on July 3 thru 10:00 pm on July 5)
- Labor Day weekend (5 am on Friday thru 10:00 pm Monday)
- Thanksgiving Holiday (5 am on Wednesday thru 10:00 pm Sunday)
- Christmas Holiday (5 am on December 23 thru 10:00 pm December 26)

Lane and ramp closures during the following key dates and/or special events are prohibited and other dates as directed:

This is a list the dates and/or events lane and ramp closures will be prohibited:

1. Sunset Amphitheater event: No lane closure beginning two hours prior to event and ending 1 half-hour following event commencement with no full closures considered until two hours following event completion.

NTTA Lane Closures

Any planned closure on NTTA roadways, including travel lanes and shoulders, or other activities that might impact the traffic flow and safety of the traveling public, must be reported in advance to the NTTA Lane Closure Management Team for review and approval.

All closure requests must be submitted using the LoneStar Lane Closure Application (LCA) if the NTTA network login has been granted. For those without NTTA network access, the closure requests should be submitted using the NTTA Lane Closure Website (LCW) at www.ntxlcr.org. Accounts for both LCA and LCW will be granted with a request to the Lane Closure Management Team at laneclosure@ntta.org. The NTTA Lane Closure Request Form can be used when either account is not available or for closures that are outside of NTTA jurisdiction and require approval by other agencies. The Lane Closure Request Form can be obtained from the NTTA website or the Engineer.

All lane closure requests must meet the advance notification requirements as specified below:

1. Major Closures (10 business days prior to the requested date of closure)
    a. Complete roadway closures ,
    b. Multiple lanes or major ramp closures where either impact is estimated to be significant or traffic needs to be detoured outside of the corridor ,
    c. Starting a new construction project

d. Major switch in traffic or construction stage change
e. Work to be completed by a franchise utility.

2. Minor Closures (3 business days prior to the requested date of closure)
    a. Closures for routine maintenance activities not defined as major closures above
    b. Rolling lane closures (with intermittent stops up to 15 minutes)
    c. Shoulder closures
    d. Lane closures associated with an ongoing construction project that are not defined as major closures above

In case of Emergency Closures, the NTTA Safety Operations Center (214-224-2203) shall be notified immediately.

Item 8:
This Project will be a Six-Day Workweek in accordance with Article 8.3.1.2.

Nighttime work is allowed in accordance with Article 8.3.3.

Meet weekly with the engineer to notify him or her of planned work for the upcoming week.

Provide the engineer with a daily work schedule of planned work.

Critical Path Method (CPM) schedule in P6 format will be required for this project. Submit baseline schedule and obtain approval prior to beginning construction. The Estimate will be held if monthly schedule update is not submitted.

Table of Milestone

No.	Type	Daily Road Users Cost	Begins	Ends	Allowable Duration
1	Disincentive. Maximum disincentive value $1,000,000	$5,000	Time charges for the Milestone shall begin on the first day of closure of either direction on Stewart Rd. (Phase 2)	The Milestone ends once both lanes of Stewart Rd are open back up to traffic and has been approved by the Engineer.	75 working days
2	Disincentive. Maximum disincentive value $500,000	$5,000	Time charges for the Milestone shall begin on the first day Stewart Rd looses access to NB SH5. (Phase 3 Step 1)	The Milestone ends when Stewart Rd opens traffic to NB Frontage Rd access under ML bridges. Must be approved by the Engineer prior to opening.	30 working days

3	Disincentive. Maximum disincentive value $500,000	$15,000	Time charges for the Milestone shall begin when Spur 399 SBFR Exit Ramp to Medical Center Dr is closed for construction. (Phase 3 Step 1)	The Milestone ends when Spur 399 SBFR Exit Ramp and Spur 399 SBFR access to Medical Center Dr is open to traffic. Must be approved by the Engineer prior to opening.	180 working days

This project contains a compulsory delay per the item 8 special provisions for materials acquisition. Do not commence work until 6/1/2025.

Per the Item 8 special provisions, this project contains Lane Assessment Fees, see the table(s) under Item 502.

Item 100:
Remove the existing roadway small signs, delineators and object markers as shown on the plans, or as directed, during construction within the right of way. Small sign, delineator and object marker removals are subsidiary to this Item.

The limits of preparing right of way will be measured from Sta. 41+49.00 to Sta. 127+53.00 and Sta. 993+45.30 to Sta. 1075+13.00 along the centerline of construction. No other Prep ROW areas will be considered for payment.

Item 104:
In those areas where the pavement is not to be overlaid, provide a smooth surface after the curb removal. Planing or grinding is considered an acceptable method at these locations. Measurement and payment is in accordance with this item.

Sawing of concrete is not paid for directly, but is considered subsidiary to this item.

Items 105:
Saw existing asphalt along neat lines where portions are to be left in place temporarily or permanently. Sawing is not paid for directly, but is subsidiary to this item.
Take possession of recycled asphalt pavement from the project and recycle the material.

Properly dispose of unsalvageable material at your own expense.

Item 110:
Excavated shale is not an acceptable material for embankment.

Items 110 and 132:
Scarify and loosen the excavated areas, unpaved surface areas, except rock, to a depth of at least 8 inches and compact in accordance with the specifications.

Excavation and embankment for driveways, sleeper slabs, alleys and intersections will not be paid for directly, but will be considered subsidiary to these items.

Item 132:
Excavated material from the project site has not been determined to be suitable for embankment. The bidder assumes all risk for the use of excavated materials for embankment and is expected to meet all material requirements for embankment regardless of the source.

Perform Tex-106-E (Plasticity Index) by an approved laboratory on excavated soils from sources outside right of way when used in roadway embankment. Provide the test results at no expense to the department. The engineer will sample and test soils produced by the construction project for specification requirements or material sources specified in the plans.

Earth embankment Type C1, C2 are mainly composed of material other than shale. Furnish material that is free from vegetation or other objectionable material and that conforms to the requirements of Table 1 (Sheet A). If necessary, treat material with lime slurry in accordance with Item 260, “Lime Treatment (Road-Mixed)” in order to meet these requirements. Use Tex-121-E, figure 1, page 4 to calculate the amount of lime required. When lime treated subgrade is specified, 3000 PPM is the maximum allowed sulfate content in the top 3 feet when material comes from borrow source. Follow recommendations of 260.4.4 for mixing and mellowing. The engineer will test material placed or excavated to a depth of one foot below and laterally to one foot outside the proposed treatment limit. Lime treatment of this material will not be paid for directly, but will be considered subsidiary to this item.

Do not use shaley clays in embankment unless approved in writing.

Use embankment material Type C2 described in Table 1 “Soil Constants Requirements” for embankments behind bridge abutments to the extent of the bridge approach slabs, and other embankments enclosed by an abutment and / or retaining walls.

Item 160:
Sequence construction operations to salvage topsoil from one location and spread on areas ready to receive topsoil. Keep stockpiling of topsoil to a minimum.

Use fertile clay or loam from the project site not more than six inches below natural grade as topsoil.

Item 161:
Provide tickets representing quantity of compost delivered to site.

Item 170:
Contractor to coordinate irrigation relocation/repair with NTTA Landscape Manager prior to ordering part or beginning any construction on irrigation system. All materials, products and any appurtenances required for irrigation work must be approved by the NTTA Landscape Manager prior to commencement of work. All irrigation relocation/repair shall conform to all NTTA irrigation notes, standards and details. All irrigation relocation/repairs shall be inspected and

approved by NTTA Landscape Manager prior to acceptance of work. Contractor to contact NTTA Landscape Manager Michael Whaley, 2 weeks prior to commencement of irrigation relocation/repair work at 214.461.2080.

Contractor to replace 18 gauge wiring for both the flow meter and master valve to the controller. Splicing is not allowed except for individual zone wires. All components not included that are required to restore system up to NTTA requirements will be incidental to pay item.

Sleeves. Provide irrigation sleeves (encasement pipes) at locations shown on the plans and where irrigation piping and electrical conduits cross under roadway, other paved areas, sidewalks and riprap. Provide separate sleeves for electrical conduits for conductors/control wires and for irrigation piping. Sleeve material shall be HDPE DR-11.

Adjust locations of sleeves based on utilities and other field conditions and make necessary adjustments at no additional cost.

Where sleeve installation requires boring operation under existing paving, comply with the minimum depth and offset requirements shown on the irrigation details. Determine length of bore, including any length needed to accomplish the installation. Encasement pipe for irrigation sleeves is a plans quantity measurement item. Refer to TxDOT Standard Specifications Article 618.4, “Measurement”, and Article 9.2 “Plans Quantity Measurement.”
Ensure that the boring procedures utilized do not cause deflection (heaving or settling) of the paving structure above. Plan sleeve layout and bore path to avoid mechanically stabilized earth (MSE) wall straps and reinforced soil mass. Offset pits and holes used in the boring operation to allow no less than 7 ft. horizontal separation from the back of the MSE reinforced soil mass.

Furnish and install irrigation sleeve markers at both ends of each sleeve crossing installed as part of this work and at sleeves, previously installed, that are used for the irrigation system. Provide markers complying with current NTTA Landscape Department design. Utilize Crystal Cap™ markers as manufactured by ACP International, Duracast™ markers as manufactured by DAS Manufacturing, or approved equal. Install markers on hard surfaces using polyurethane based elastomeric adhesive and in accordance with marker manufacturer recommendations. Install sleeve markers after each completed bore (within 7 days).

The cost for locating and excavating existing sleeves that will be used for the irrigation system will be considered subsidiary to Item 170, “Irrigation System.”

Electrical. Electrical conduits, conductors and other equipment for connecting the electrical service center and the irrigation system are subsidiary to Item 170. Install conduits, conductors and ground boxes in accordance with Items 618, “Conduit,” 620, “Electrical Conductor” and 624, “Ground Boxes,” including the General Notes.

Seal all conduit ends with a permanently soft, non-toxic duct seal. Use a duct seal that does not adversely affect other plastic materials or corrode metals.

Use a colored cleaner-primer on all polyvinyl chloride (PVC) to PVC joints before application of PVC cement.

Provide underground electrical conduit bends and stub-ups that are PVC-coated galvanized rigid steel with a 40 mil PVC coating externally and a 2 mil urethane coating internally. The exterior and interior coatings shall be an integral part of the conduit manufacturing process. The PVC coating adhesion process shall be Edison Testing Labs (ETL) verified for corrosion protection. All PVC-galvanized rigid steel (GRS) conduit shall be restricted for use with threaded fittings only. All field-cut threaded sections shall be cleaned and coated with clear urethane coatings in accordance with the manufacturer's recommendations.

Conduit expansion joint fittings must provide for a minimum of 4 in. of total movement.

Grounding conductors that share the same conduit or ground box must be bonded together at every accessible point in accordance with the National Electrical Code (NEC).

Electrical conduits and conductors connecting the electrical service center and the irrigation system are subsidiary to Item 170.

Test controller functions by confirming communication and simulating conditions that confirm proper operation including flow sensing functions.

Item 247:
Construct uniform layer thickness of 12 inches, or less with the required density and moisture content. Minimum PI is equal to three (3) for all grades.

Item 260:
Furnish and distribute MS-2 smoothly and evenly at the rate of 0.20 gallons per square yard (spray rate) to cure lime, as directed.

Provide Commercial Lime Slurry or Quick Lime Slurry and apply lime by slurry placement method.

Item 320:
Use a self-propelled wheel mounted MTV capable of receiving mix from the haul trucks, separate from the paver. It shall have a minimum storage capacity of approximately 25 tons. It shall be equipped with a pivoting discharge conveyor and shall completely and thoroughly remix the material prior to placement. The effectiveness of the MTV's remixing ability is subject to the approval of the Engineer. In addition, the paver shall have a surge storage insert with a minimum capacity of 20 tons.

The use of windrow pick-up equipment is allowed except on the first course of roadway material placed over the subgrade.

Item 344:
Use aggregate that meets the Surface Aggregate Classification (SAC) requirement of Class B Mixtures used as concrete pavement underlayment is deemed as "Exempt Production".

Item 360:

Use of multiple piece tiebars will be required. Provide chairs for multiple piece tiebars, threaded connectors or other adequate devices, used in concrete paving, or tie them to the pavement reinforcing steel. If approved by the engineer for specific areas, in lieu of multiple piece tiebars, drill holes into the pavement and grout straight tiebars in place with epoxy. Use a non-impact, rotary core drill to prevent damage to the pavement unless otherwise directed. Clean the drill holes and then completely fill with epoxy before inserting the tiebar. Do not bend the tiebars or insert them into plastic concrete without the approval of the engineer.

Provide curbs monolithically constructed with the concrete pavement. If continuous monolithic curb has to be temporarily omitted for any reason, provide dowelled curbs in the proposed areas, as detailed in the plans, and apply an approved epoxy resin to the pavement to receive the curb as directed. This work and materials will not be paid for directly, but is considered subsidiary to this item.

If asphalt curing is used, cure the concrete pavement with MS-2.

Stockpile the concrete aggregates at the plant site.

Provide pavement widening joints, as detailed in the plans, at all locations where concrete pavement is placed adjacent to existing concrete pavement. Installation of these joints is not paid for directly, but is considered subsidiary to this item.

Payment for furnishing and installing the pre-molded expansion joint material between the retaining walls and concrete pavement is not paid for directly, but is considered subsidiary to this item.

Provide a curing machine equipped with rubber tires, or other acceptable arrangement, so that the machine will span the pavement and monolithic curb.

Curb transition is paid for as Type II curb.

The installation of curb openings is not paid for directly, but is considered subsidiary to this item.

Place construction, sawed and contraction joints in accordance with the pavement detail sheet and as directed. Joint locations, other than as shown on the plans, are subject to approval.

Pavement leave outs are required on this project as necessary to provide for traffic at driveways and side streets as shown in the plans or as directed. The cost of providing these leaveouts, including the construction of a suitable crossover connection at each site, is not paid for directly but is considered subsidiary to this item.

If a traveling form paver is used, provide one equipped with an electronically operated horizontal control device.

Use "mechanical steel placing equipment” at the discretion of the engineer.

Supply the Engineer with a list of certified personnel and copies of their current ACI certificates before beginning production and when personnel changes are made. Supply hard copies of calibration reports for testing equipment when required by the Engineer.

If more than 30% of an area in any 1000-Ft section of roadway requires grinding, action will be taken by the Contractor to make that 1000-Ft full width section uniform without changing ride quality, compromising quality of pavement and decreasing skid resistance. Approved blasting method or other method approved by the Engineer will be performed at the Contractor's expense.

Item 400:
Structural Excavation is not paid for directly but is considered subsidiary to pertinent Items unless otherwise shown on the plans.

When placing concrete storm drain pipe on slopes of greater than 10 percent, provide cement stabilized backfill to a depth shown on the plans.

Item 416:
Provide a minimum of one core per bent, regardless of placement method.

(Signing notes)
Extend drilled shaft foundations for overhead sign structures five feet into rock at locations where rock is encountered at a depth less than the drilled shaft lengths shown in the plans.

Drilled shafts used for sign mounts that are 12" or larger in diameter shall be formed from 2" below existing grade to the top of the foundation with sonotube or other approved methods. All portions of drilled shafts extending above grade shall be formed and have a smooth finish. Include cost for this work in the unit bid price for this item.

Base all drilled shaft foundations for overhead sign structures on the lengths shown on the plans or as approved in writing. Make calculations for measurement of foundations in accordance with Article 9.1 of the standard specifications. Measure increase or decreases in the quantities required by change in design as specified and the revised quantities will be the basis for payment.

Use concrete classified as "miscellaneous concrete" for ground mounted sign foundations, with the exception of large roadside signs and overhead sign structures.

Do not install PVC and/or rigid metal conduit in sign foundations for sign structures without sign lights.

Payment will be made only once for drilling the shaft regardless of the extra work caused by obstructions.

Drilled shafts shall be drilled and poured on the same day unless directed by the engineer.

Provide a formed smooth finish for all portions of drill shafts extending above proposed ground. Include cost for this work in the unit bid price for this item.

Concrete removal required for installation of drilled shafts will be subsidiary to Item 416.

Item 420:
Mass concrete is a plans quantity item.

Apply an ordinary surface finish to all concrete surfaces within 30 days after form removal.

Form columns to a point a minimum of one foot below the proposed future or existing bottom of channel elevation indicated on the bridge layouts by an acceptable method. This form work is not paid for directly, but is considered subsidiary to this item. Existing concrete shall be in a surface saturated dry (SSD) at the time new concrete is placed against it. Use of bonding agents in prohibited.

BENT NUMBERING:

For bridges with four or more spans, number every third bent (counting the abutments) on the up-station and down-station faces of the outside column(s) at approximately the mid height of the column. For structures with three columns or less per bent, place numbers on column A. Where there are four or more columns per bent, place numbers on both outside columns. Bent numbers shall be as shown on the bridge layout.

All materials, labor and incidentals associated with placing bent numbers are subsidiary to the various bid items.

For bridges with aesthetic treatments, the numbering will be incorporated into the aesthetics package.

NATIONAL BRIDGE INVENTORY NUMBERS:

Provide National Bridge Inventory (NBI) numbers on all bridge structures and bridge class culverts.

Where beam types allow access to the face of abutment backwall, place NBI numbers on the face of each abutment backwall using 3" block numbers. Locate NBI numbers between the outside beams at opposite corners of the bridge.

Where beam types do not allow access to the face of abutment backwall, place NBI numbers on the face of each abutment cap using 3" block numbers. Locate NBI numbers below the outside beams at opposite corners of the bridge.

Where a bridge begins, ends or contains a bent common to multiple structures, place NBI numbers on both faces near both ends of the common bent cap. The number placed at each of the four locations will correspond to the NBI number assigned to the bridge immediately above the number. Locate NBI numbers below the outside beam. Place using 3" Block Numbers.

For Bridge Class Culverts, place National Bridge Inventory numbers at the middle of the downstream headwall using 3" block letters.

For Bent Numbering and NBI Numbering, furnish materials that conform to the pertinent requirements of the following items:

- Stencil ink, black 11 oz., spray can (lead, CFC, and CFHC free). Black spray will be waterproof, weather resistance and dry instantly on all surfaces, without smearing, smudging or rippling and
- Die cut stencils or
- Brass stencil, 3 in., numbers and letters, adjustable interlocking stencil, set content 92 piece numbers and letters, legend height 3 in., symbol height 3 in. Stencils must be industrial grade and interlocking.

All materials, labor and incidentals associated with placing NBI numbers are subsidiary to the various bid items.

Medical Center Bridges (NTTA): Place Nation Bridge Inventory (NBI) numbers and bent numbers as specified on the NTTA standards NBIS (MOD).

Item 421:

Furnish mix designs to the Engineer in a format compatible to the latest version of the Department's Construction Management System (Site Manager). Mix Design templates will be provided by the Engineer.

Provide High Performance Concrete (HPC) of the class specified for the following bridge components: approach slabs, abutments, bents, columns, slabs, sidewalks and medians.

Provide High Performance Concrete (HPC) of the class specified for all railing and permanent concrete traffic barrier placed on bridges or approach slabs. HPC concrete is not required for portions of rail or concrete traffic barrier not located on a bridge.

Provide sulfate resistant concrete for box culverts and all drilled shafts.

Strength evaluation using maturity testing, Tex-426-A, may be used for all concrete elements except drilled shafts and mass concrete pours.

Provide a digital hydraulic compression testing Machine and accessories. The machine shall have a minimum testing range of 2500 pounds force to 250,000 pounds force with a hydraulic switching valve to allow for rapid advancing, hold, controlled advancing and rapid retracting. The machine shall have a load cell to measure compressive forces within the testing range and shall be calibrated and verified in accordance with ASTM latest version. The Machine can meet or exceed the following when approved by the Engineer:

ELE International ACCU-TEK250 Digital Compression Tester including accessories or Forney F-250EX Standard Compression Machine including accessories or TxDOT approved equal.

Supply the Engineer with a list of certified personnel and copies of their current ACI certificates before beginning production and when personnel changes are made. Supply hard copies of calibration reports for testing equipment when required by the Engineer.

Item 423:
For Mechanically Stabilized Earth (MSE) walls, provide a system from one of the following approved suppliers:

Name	Manufacturer	Phone
Jobe Wall System	Jobe Materials, L.P. 12123 Dyer Street El Paso, TX 79934	915-298-9900
Reinforced Earth Walls	The Reinforced Earth Company 1331 Airport Freeway, Suite 302 Euless, TX 76040-4150	817-283-5503
Strengthened Soil Walls	ROSCH Earth Technologies 18390 Wings Corporate Drive Chesterfield, MO 63005	636-519-7770
Structural Embankment MSE Walls	Structural Embankment, LLC P.O. Box 2200 Weatherford, TX 76086	817-599-5700
Tricon Retained Soil Walls	Tricon Precast, Ltd. 15055 Henry Road Houston, TX 77060	281-931-9832
Vist-A-Wall Precast MSE Walls (Grid-Strip, Wide Mesh)	Contech Engineered Solutions LLC 650 Justice Lane Mansfield, TX 76063	800-338-1122
VP Wall System	Valley Prestress Products, Inc. 1520 Calhoun Road P.O. Box 309 Eagle Lake, TX 77434	979-234-7899

All retaining walls will have a uniform texture and appearance.

Unless otherwise noted in the plans, the top of the leveling pad is located 2 feet below the proposed ground.

Pocket Drain spout shall be cast with wall, and not field cut. All materials will be incidental to item 423.

Square foot surface area of retaining wall is measured from the top of retaining wall to the top of the leveling pad. Footing adjustments made to accommodate the available optional retaining walls are not measured.

Unless otherwise shown on the plans, provide Type AS backfill as defined under this item for permanent MSE or concrete block (CB) walls not subject to inundation. Unless otherwise shown on the plans, provide type DS backfill as defined under this item for permanent MSE or CB walls subject to inundation.

Cement-Stabilized Backfill (CSB) is not permitted.

Unless otherwise noted on the plans, provide flowable backfill meeting the requirements of Item 401 between the back of panels and inlets or drainage pipes where the required compaction can not be achieved. Flowable backfill used for this purpose is subsidiary to this item.

Provide earth reinforcements with a minimum length of 8’ or longer as required by RW(MSE)-DD. Earth reinforcement length is measured perpendicular to the wall. Adjust skewed earth reinforcements as necessary of obtain required length.

Submit design calculations supporting the details necessary to incorporate coping, railing, inlets, drainage, electrical conduits and any additional necessary features.

The contractor has the option of constructing any of the types of retaining walls for which details and specifications are included in the plans. Footing adjustments made to accommodate the available optional retaining walls are not measured. Regardless of option or options chosen, use the same fascia pattern throughout the entire project, including cast in place full height retaining walls or retaining wall type abutments.

Submit detailed drawings depicting the patterns and matching of precast with cast-in-place for approval.

At contractor's expense, repair all damage to the precast units (such as chips) as required to match the fascia pattern.

Use Embankment Type C2 as non-select embankment backfill as defined under Item 423.2.4.1. For non-select embankment fill behind retaining walls provide and install fill in accordance with Item 132, Type C2.

For cut walls, the backfill between the select fill zone and the existing ground shall be either select material as required for the select fill zone or backfill meeting or exceeding the requirements of Item 132, type C2. Place material in accordance with Item 132, Type C2 requirements. If existing ground is laid back (i.e. not vertical), the lay back shall be done as a series of equal height benches so as to prevent the formation of a smooth surface at the material interface.

Avoid distinct vertical joints between select backfill and embankment (Non-Select) backfill as required by Section 423.3.4. This may be conveniently done by providing a zone of material

behind the strap zone (1' min width) in which alternating lifts of select and non-select materials are interlaced.

Items 423 and 427:

For cast in place walls, cast the top two feet smooth.

Retaining wall colors are shown elsewhere in the plans.

Item 425:
Vertical clearance is less than or equal to 20 feet, provide Bars C and CH for the full length of the girder per the IGD standard.

Repair "Safety Harness Pole Holes" in beams in accordance with Item 429 and the TXDOT Concrete Repair Manual prior to placement of the Bridge Slab. This work is considered subsidiary to the various bid items.

Item 427:
Finish concrete structures surface area I with an opaque sealer of the color(s) shown elsewhere in the plans in accordance Item 427.

Apply a 4-SF sample of each color on the project surfaces for approval. Adjust color as required by Engineer to compensate for surroundings and natural lighting conditions on the project site.

Ensure that surfaces are free of weak surface material, curing compounds and other surface contaminants prior to coating.

FORM LINER FINISHES: Place architectural concrete treatments as shown. Placement is subsidiary to this item.

Provide form liners that release without leaving pieces of liner material on the concrete and without pulling or breaking concrete from the textured surface. Provide form release agents as recommended by the manufacturer. Replace form liners as directed that have become damaged or worn. Replacement of form liners is considered incidental to the work and no additional compensation is provided.

No horizontal splices in the form liner are permitted. Vertical splices may occur only in valleys between fractured ribs.

Provide sample panels a minimum of ten days in advance of starting construction of the textured concrete surfaces. Construct sample panel(s) in accordance with Item 427.4.3.5 "Form Liner Finish" using each type of approved form liner. Sample panels must meet the requirements of the plans and specifications and be approved before any construction form

liners may be ordered, obtained or used. Provide panels having a textured portion at least 5'-0" by 5'-0" with a representative un-textured surrounding surface. If directed, construct and finish additional test panels until a satisfactory concrete surface texture is obtained.

The approved sample panel is the standard of comparison for the production concrete surface texture. If directed, build a new test panel to demonstrate acceptability of any proposed change in construction method.

Tool or replace areas requiring surface treatment that do not match their associated sample panels. Upon completion, tooled or replaced panels must match the associated sample panel. Tooling or replacement is at the contractor's expense.

For proper placement of the expansion joint behind the rail, omit surface finish from the top of RW (BTR)DAL or RW(BTR) rail to bottom of panel as directed.

Joint reveal details and location may vary slightly from what is shown to match the adjacent MSE walls as directed. No additional compensation will be allowed.

Item 440:

Provide reinforcing steel with epoxy coating meeting the requirements of item 440 for the following bridge components: approach slab, slab, sidewalk, median, concrete traffic barrier, and rail. Alternative materials will be considered as shown in the *TXDOT Bridge Design Manual-LRFD Chapter 3 Section 2.*

Epoxy coated reinforcing is not required for portions of rail or concrete traffic barrier not located on a bridge.

Reinforcing for abutments, bents and columns are not required to be epoxy coated.

R-bars (I-beams, U-beams, X-Beams and TX Girders), Z-bars (boxes), and H-bars (Slab beams) are not required to be epoxy coated**.**

For bridge widening, existing uncoated reinforcing in the slab exposed during slab removal shall receive an abrasive blast cleaning followed closely by an application of BASF Emaco P25, Sika Armatec 110 EpoCem or Euclid Duralprep A.C. Perform all work in accordance with manufacturer’s specifications. Cleaning and coating operations must be performed no more than 7 days prior to placement of the concrete. In the event more than 7 days is required between initial coating and slab placement, the contractor shall apply a second coat of the same material used initially to the bars approximately 1 day prior to placement of the concrete. This work is considered subsidiary to the various bid items.

All ties, chairs and other appurtenances used with epoxy coated reinforcing shall be epoxy coated or non-metallic.

Fiber Reinforced Concrete (FRC) can be used as a substitute for Non-Structural Class Reinforced Concrete in Mow-Strip and Rip Rap Items as approved. FRC may also be used for other Non-Structural Class Reinforced Concrete Items as approved.

Item 441:
Submit erection drawings for rolled-beam units.

Item 442:
Use temperature Zone 1 for CVN testing.

Item 446:
Paint all structural steel using protective “System II" paint in accordance with Item 446. Paint colors are shown elsewhere in the plans.

After all concrete placement has been completed, remove any concrete or other contaminate from the beam by hand cleaning methods so as not to damage the primer and then water blast / wash with a minimum of 2,500 psi pressure.

Item 449:

Use Thomas & Betts Kopr-Shield, MG Chemicals #846, MG Chemicals #8463, NYOGEL #756G, Pro-Shield #7308, Cho-Lube #4220, or other approved electrically conducting lubricant compound.

Item 464:
The concrete collars and the connections of pipes to existing or proposed concrete boxes or pipe will not be paid for directly but will be considered subsidiary to the various bid items.

At locations where storm drains dead-end, plug with a concrete plug of a thickness equal to 1 ½ inches per foot of diameter of pipe with a minimum thickness of 3 inches. The cost of the plugs shall be included in the unit price bid per foot of the various storm drain pipes.

Item 465:
All manholes, junction boxes and inlets will require inverts unless otherwise directed.

Item 471:
Tackweld all inlet grates and manhole covers to the frame with two 1-inch welds. Supply un-painted cast iron inlet grate and frame and/or cast iron manhole frame and cover.

Item 496:
Concrete pavement removed as a result of removing the inlets will not be paid for directly but will be considered as subsidiary to Item 496.

Inlet grates and manhole covers become the property of the contractor for disposal.

Item 502:
The Contractor Force Account “Safety Contingency” that has been established for this project is intended to be utilized for work zone enhancements, to improve the effectiveness of the Traffic Control Plan, that could not be foreseen in the project planning and design stage. These

enhancements will be mutually agreed upon by the Engineer and the Contractor's Responsible Person based on weekly or more frequent traffic management reviews on the project. The Engineer may choose to use existing bid items if it does not slow the implementation of enhancement.

Access will be provided to all business and residences at all times. Where turning radii are limited during phased construction at intersections, provide all weather surfaces such as RAP or base in turning movements to accommodate and to protect the traffic from edge drop-offs. Materials, labor, maintenance and removal for these temporary accesses and radii will not be paid for directly but will be considered subsidiary to the various bid items.

Provide written proposed lane closure information by 1:00 pm on the business day prior to the proposed closures. (NTTA lane closure is specific elsewhere) Do not close lanes when this requirement is not met.

When excavation is required next to a pavement lane carrying traffic and the widening is not completed by the end of the work day, backfill against the edge of the pavement with at least a 3:1 slope using an acceptable material to support vehicular traffic. Carefully remove and dispose of this material when work resumes. Backfilling pavement edges, and the materials required for the work will be subsidiary to this item.

Place barricades and signs in locations that do not obstruct the sight distance of drivers entering the highway from driveways or side streets.

Provide rectangular shape (CW12-2a) Temporary Clearance Signs on all bridges where the existing vertical clearance has changed. Install Signs to the satisfaction of the Engineer prior to opening to traffic. Plywood sign blanks will have minimum dimensions of 84" X 24". Work performed and materials are subsidiary to this item.

Do not operate or park any equipment/machinery closer than 30 feet from the traveled roadway after sunset unless authorized by the engineer.

When moving unlicensed equipment on or across any pavement or public highways, protect the pavement from all damage using an acceptable method.

As approved by the Engineer, provide uniformed off duty police officers that are licensed peace officers in the State of Texas during lane or ramp closures, night time work or other situations that indicate a need for additional traffic control to protect the traveling public or the construction workforce. Provide documentation such as payroll, log sheets with signatures and badge number, or invoices from the government entity providing the officers for reimbursement. Complete the weekly tracking form provided by the department and submit invoices that agree with the tracking form for payment at the end of each month approved services were provided. Reimbursement will not be made for coordination fees charged by any party.

Patrol vehicles must be clearly marked to correspond with the officer's agency and equipped with appropriate permanently affixed red and blue flashing lights to identify them as law enforcement. For patrol vehicles not owned by a law enforcement agency, markings will be

retroreflective and legible from 100 ft. from both sides and the rear of the vehicle. Red and Blue flashing lights will be high intensity and visible from all angles.

The Contractor may begin closing 1 Lane of the *NBML/SBML* at *8:30* PM. The Contractor must have *2 or more NBML/SBML* open by *5:30 AM*. Full closures are not allowed unless otherwise approved in writing by the Engineer.

The lane closure assessment fee is shown on the following table. The fee applies to the Contractor for closures that are outside the times specified above for each hour, regardless of the length of the lane closure or obstruction.

Lane Closure Assessment Fees

*No. of lanes Closed	**Cost Deduction/Hr
1	$ 15,000.00
2	$ 25,000.00
3	$ 35,000.00
4	$ 45,000.00
5+	$ 55,000.00

*Lanes include all Thru lanes including HOV/Managed Lanes

**Deducted costs will be prorated by rounding up to the nearest 15-minute increment

Traffic Control Plans with Lane Closures causing backups of 20 minutes or greater in duration will be modified by the Engineer up to and including removal of the lane closure and adjustment of lane closure times.

Work in other areas of the project is not restricted to this time frame.

Additional lanes may be closed, started earlier, or extended later with written permission of the Engineer.

All Lane Closures along SS 399 and SH 5 require a PCMB to advertise in accordance with the District's SOP. The PCMB message must be updated to state "Lanes/Road Closed Ahead" during the closures.

Road/Lane Closure signage will be used on both sides of the road per the TCP sheets unless the inside shoulder is less than 4' or otherwise approved.

County:Collin

Highway: SH 5 & Spur 399

Item 504:
Furnish one Concrete Laboratory (Type A) for this project.

Furnish one Field Office (Type E) for this project. Provide 1500 sf of gross floor area in rooms 8' high. Partition the floor area into at least 6 interconnected rooms, with at least 2 exterior doors and at least 1 window in each room.
Chain link fencing (6-ft. chain-link fence, a top-mounted 3-strand barbed wire, and separate 16-ft. entrance and exit gates to facilitate pull through maneuvers of the vehicles), area dimensioned as directed by the Engineer, will be provided around TxDOT field office/laboratory and parking areas separate from contractor areas. Keep Contractor and TxDOT parking separate. No Contractor vehicles, equipment, dumpsters, storage, etc. is allowed in TxDOT parking area.

Allow for space to accommodate a minimum of 12 pull through parking spaces.

All field office layouts must be approved by the Engineer prior to installation.

The Engineer reserves the right to modify the layout.

A 10 lb. ABC fire extinguisher with up-to-date inspection tag, working smoke detector, first aid kit and an eye wash station shall be installed in all facilities used by TxDOT personnel. They shall be mounted on a wall that is easily accessible and not blocked by any permanent furniture.

Inspect the fire extinguishers, smoke detectors, eye wash stations and first aid kits every month. Make necessary corrections or updates as needed or as directed within 7 calendar days.

Provide a broadband internet connection with a minimum speed of 50 Mbps download and 50 Mbps upload, unless otherwise approved.

Provide an all in one color printer/scanner/copier that will print, scan and copy 11"x17" and 8.5"X11" sheets with software that is compatible with TxDOT equipment. This is subsidiary to the various bid items.

Item 505:
The total number of truck mounted attenuators (TMAs) or trailer attenuators (TAs) required when utilizing the traffic control standards are shown in the tables below.

TCP 1 Series	Scenario		Required TMA/TA	
(1-1)-18 / (1-2)-18			1	
(1-3)-18	A	B	1	2
(1-4)-18 / (1-5)-18			1	

TCP 2 Series	Scenario		Required TMA/TA	
(2-1)-18 / (2-4)-18 / (2-5)-18 / (2-6)-18	All		1	
(2-3)-23	A	B	1	2

TCP 3 Series	Scenario			Required TMA/TA
(3-1)-13	All			2
(3-2)-13	All			3
(3-3)-14	A	B	D	2
	C			3
(3-4)-13	All			1, unless working inside a twltl, then 2.

TCP 5 Series	Scenario		Required TMA/TA
(5-1)-18	A	B	1

WZ (BTS) Series	Scenario	Required TMA/TA
(BTS-1)-13	Near Side Lane Closure	1

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 TMAs/TAs needed for the project. Additional TMAs/TAs used that are not specified in the plans in which the contractor expects compensation will require prior approval from the Engineer.

Stationary TMA's/TA's will be only paid for by the operations classified in theTCP sheets as short term, short term stationary, intermediate term stationary and long term stationary. Mobile TMA's/TA's will only be paid for by the operations classified in the TCP standards as mobile operations. TMA's/TA's used for installation/removal of traffic control for a work area will be subsidiary to the TMA/TA used to perform the work.

Item 506:

Take all practicable precautions to prevent debris from being discharged into the Waters of Texas or a designated wetland. Install Best Management Practices before demolition begins and maintain them during the demolition. Remove any debris or construction material that escapes containment devices and are discharged into the restricted areas, before the next rain event or within 24 hours of the discharge.

If temporary construction stream crossings are allowed under a Nationwide Permit, submit in writing for approval the type and location of each temporary stream crossing. Use temporary bridges, timber mats, or other structurally sound and non-eroding material for temporary stream crossings. A temporary culvert crossing will consist of storm sewer pipes and 4- to 8-inch

nominal size rock. Temporary stream crossings must not cause more than minimal changes to the hydraulic flow characteristics of the stream, increase flooding, or cause more than minimal degradation of water quality. Remove the temporary stream crossings in their entirety and return the affected areas to their pre-existing elevation. All work and materials use for temporary construction stream crossings will not be paid for directly but are subsidiary to pertinent Items.

Provide SW3P Signs. Obtain from the Engineer a copy of the project's completed TPDES Storm Water Program Construction Site Notice and Contractor Site Notice. Laminate the sheets and bond with adhesive to 36" X 36" plywood sign blanks. Ensure the sheets remain dry. Apply Type C Blue reflective sheeting as the background and add the text "SW3P" in 5" white lettering, centered at the top. Attach the signs to approved temporary mounts and locate at each of the project limits just inside the right of way line at a readable height or as directed by the Engineer. If the sign cannot be placed outside the clear zone, it must adhere to the TMUTCD. SW3P signs, maintenance, and reposting (for replacement or as needed to ensure readability) will be subsidiary to Item 502.

Concrete Washouts are required per the CGP. The Concrete Washout Area(s) structural controls must consist of temporary berms, temporary shallow pits, and/or temporary storage tanks to prevent contaminated runoff and must be lined as to prevent contamination of underlying soil. Ensure pits properly maintained including removal of concrete as not to allow over flow. The location(s) of washout area will be approved by the Engineer. When washout pits are no longer needed, they will be removed and area will be restored to original condition. This work, materials and labor will not be measured or paid for directly but will be subsidiary to Item 506, "Temporary Erosion, Sedimentation, and Environmental Controls.

Item 508:
The Engineer may choose inspect and to test materials utilized for temporary detours.

Item 512:
The contractor will furnish pre-cast single slope barrier for traffic control, and remove and retain possession of non-permanent barriers at the end of the project. Pre-cast Barriers must have drainage slots as detailed on the Concrete Barrier Standards. Submit for approval the type of barrier joint connection proposed for the project.

Item 514:
Provide High Performance Concrete (HPC) and epoxy coated reinforcing for all Permanent Concrete Traffic Barrier located on bridge approaches or bridge slabs.

Item 529:
Provide grooved joints at 10-foot intervals and ¾ inch expansion joint material for doweled curb at the same locations as on the existing pavement.

For Curb and Gutter sections, provide grooved joints at 10-foot intervals and ¾ inch expansion joint material at a maximum of 50-foot centers and at all radius points and inlets.

Curb and Gutter transitions will be paid for by the foot at the unit price for the corresponding curb or curb and gutter section.

Saw joints at the same location as on the existing pavement.

Item 530:
Provide Class “HES” concrete for concrete intersections and driveways listed or shown on the plans.

Item 531:
Joint sealant is required when shown in the plans. This work will not be paid for directly but will be considered subsidiary to this Item.

Item 536:
Use Class “B” concrete for concrete medians and directional islands.

Item 540:
Furnish one type of post throughout the project except as specifically noted in the plans.

Item 542:
Salvage metal beam guard fence removed from this project becomes the property of the contractor for disposal. The work involved in hauling this material will not be paid for directly, but will be considered subsidiary to this item.

Item 556:
The unit price bid per linear foot of "pipe underdrain" shall include the cost of making connections to storm sewer lines.

Place bell and spigot type pipe with an open joint of approximately ¾ inch.

In the event that Type 5 Underdrain Pipe is bid, make the connection as shown in the plans. The cost of making the connection will be considered subsidiary to this item.

The requirements for decantation of filter material are deleted for this project.

Item 585:
Use Surface Test Type A on all intersections and driveways.

Use Surface Test Type B pay adjustment schedule 2 on the travel lanes.
Use Surface Test Type B pay adjustment schedule 3 on the service roads.
Use Surface Test Type B on the ramps.

Item 610:
Make every effort to keep the existing NTTA lighting operational until the new high mast lighting is energized. Do not de-energize existing lighting before new lighting is operational without prior approval.

County:Collin

Highway: SH 5 & Spur 399

Use 480 volt electronic LED drivers for luminaires on this project.

Existing illumination circuits may be located within or adjacent to the project limits. Either verify with the Engineer or supply a video survey to the Engineer of all the lighting in and adjacent to the project limits before beginning work. Ensure that all assemblies operational at the beginning of construction are operational at the completion of the project. This work will be done at the contractor's expense.

Station 41+49.00 to Station 50+00.00 along Spur 399 (Centerline: S399) and Station 97+00.00 to Station 127+53.00 along SH 5 (Centerline: SH5) uses City of McKinney Standard illumination assembly. Refer to City of McKinney standard detail included in these plans (City of McKinney Roadway Illumination Pole Detail). DS30-750A290-40-FP or KW equivalent poles to be used. Coordination required with McKinny prior to ordering.

Item 613:
Ground sleeves are required for all high mast poles.

Notify the District Transportation Operations Office immediately after new High Mast Poles have been erected.

Item 614:
Aircraft obstruction lights are not required for this project.

Item 618:
The location of conduits and ground boxes are diagrammatic only and may be shifted to accommodate field conditions as directed.

Secure permission and approval from the proper authority prior to cutting into or removing any sidewalks or curbs for installation of this Item.

Place conduit under existing pavement by an approved boring method. Do not place boring pits closer than 2 feet from the edge of the pavement unless otherwise directed. Do not use water jetting. When conduits are bored, do not exceed 18 inches in the vertical and horizontal tolerances as measured from the intended target point.

Do not use a pneumatically driven device for punching holes beneath the pavement (commonly known as a "missile").

Furnish and install a flat, high tensile strength polyester fiber pull tape in conduit runs in excess of 50 feet or for future use and protected with standard weather-tight conduit caps, as approved. Acceptable products include Garvin # PT-1250-3K, ComStar PUL 1250P3K, Ideal Part No. 31-315 or equal as approved by the Engineer. This work will not be paid for directly, but is subsidiary to this Item.

Use a colored cleaner-primer on all PVC to PVC joints before application of PVC cement.

Seal all conduit ends with a permanently soft, non-toxic duct seal. Use a duct seal that does not adversely affect other plastic materials or corrode metals.

2" Schedule 80 PVC will be used at the power pole to supply electricity to underground services.

Item 620:

The equipment grounding conductor smaller than 4 AWG shall be identified by a continuous green colored jacket insulation or bare wire. Grounded conductors (Neutral) smaller than 4 AWG shall be identified by a continuous white colored jacket. Ungrounded conductors (Hot) in a 120/240v or 240/480v system shall be identified by each pole or leg. For 240-volt branch circuit fed from 120/240 source and 480-volt branch circuit fed from 240/480 source, ensure one leg is identified by a continuous black colored jacket and the other leg by a continuous red colored jacket.

For both transformer and shoe-base type illumination poles, provide double-pole breakaway fuse holder as shown on the Texas Department of Transportation (TxDOT) - Material and Test Division's (MTD) materials producers list. Category is "Roadway Illumination and Electrical Supplies." Fuse holder is shown on list under Items 610 & 620. Provide 10 amp time delay fuses.

Item 624:

Slack conductors required by Standard Sheet ED(3)-14 will be subsidiary to Item 624.

Concrete removal required for installation of ground boxes will be subsidiary to Item 624.

Item 627:

Use the timber pole heights, as shown on the plans and in the material summary, for bidding purposes only. Coordinate pole locations, and make field measurements before construction to ensure a vertical clearance of 17 to 19 feet from the highest point on the roadway surface to the span. Except for supplemental nearside signal heads, all signal heads must be installed at least 40' from the stop line. If field adjustments result in the nearest signal head being more than 180' from the stop line, install a supplemental nearside signal head as directed by the engineer. Determine the field measurements and elevations from the actual field location of the poles, considering all above and below ground utilities and existing roadway elevations.

Item 628:

Contact the appropriate utility company during the first three weeks of the project lead-time period to allow adequate time for any necessary utility adjustments, transformer installation, etc.

NTTA to be contacted regarding adjustments to their facilities.

Contractor shall submit an online request at ONCOR.com by following the steps below:
Select Construction and Development tab at top of screen.
Scroll down to Request New Service under New Construction Portals.
Select the Start Request icon under the Commercial and Industrial project type.
Select the One Single Building Facility tab and fill in all required information, including TxDOT, the project name, and CSJ in the Additional Comments box.

Submit the request. An ONCOR representative will respond to the request within a few days with a Work Order Number and the ONCOR designer contact information.

Granite concrete service pole embedment depth shall be 10’ and shall be a minimum of 25’ above grade.

Backfill Granite Concrete service poles with a Class A concrete in accordance with Item 421, "Hydraulic Cement Concrete", except consider the concrete subsidiary to Item 628 for payment purposes.

The Meter Base or Transocket shall be mounted facing the roadway and the service enclosure shall be mounted on the opposite side of the service pole or pedestal.

The Contractor shall obtain the street address of the new electrical service directly from the applicable City.

Label the service enclosures indicating service address as well as all required information as shown on the Electrical Detail (ED) standard sheets. Labeling shall be silk screening or other acceptable method. This work will not be paid for directly, but is subsidiary to this Item.

A Licensed Master Electrician shall oversee the installation of all electrical services.

Bill the electrical service power usage of the signals and lighting to the City of McKinney with one exception. The new service for the SS399/Stewart Rd signals shall be billed to TxDOT.

On the outside lower front of each electrical service meter base cover, install a 12 gauge minimum thickness stainless steel, aluminum or brass placard. The placard shall be engraved or stamped with the numeric portion of the street address and permanently affixed to the cover with exterior rated adhesive so as not to interfere with the operation of the latch. This work will not be paid for directly, but is subsidiary to this Item.

Item 636:

Leave the advance guide sign and/or the exit direction sign for an interchange in place at all times unless prior written approval is given. Replace signs removed by the Contractor before the end of the workday.

Manufacture all white legends using Clearview font on overhead and large ground-mounted guide signs. This includes destinations, cardinal directions, exit information and exit numbers. Use the font shown on the current standard sheets for all route markers (including interstate shields) and “Exit Only” panel information. Letter, arrow, and number heights shall all conform to the latest edition of the Standard Highway Sign Design Manual.

Provide two (2) sets of shop drawings for signs. The shop drawings shall conform to the details shown on the plans. The shop drawings shall show the details of the panels, wind beams, stiffeners, joint backing plates, splices, fasteners, brackets, and sign support connections. The shop drawings shall show letter types and sizes, interline spacing and message arrangements.

Attach sheeting applied to extruded aluminum panels to each individual extrusion.

All new and or replaced sign panels shall be mounted flush (0º) on all sign structures. Furnish and obtain approval of all shop drawings detailing the method to accomplish this installation. All material and labor required for this special installation is considered subsidiary to Item 636.

Ensure the minimum vertical clearance, as shown in the plans, at the highpoint of the roadway after the installation of all overhead signs. Mount new overhead signs with 46% of the sign height positioned below the centerline of the truss. If new signs are mounted on a truss with existing signs, all signs shall be bottom justified using the 46% of the tallest sign to determine placement.

Place new guide signs on existing overhead sign structures and bridge rail supports. Existing attachment hardware may be reused if position of sign meets the 46% mounting criteria and if the existing hardware is large enough to accommodate the new sign. Sign support brackets may be cut or removed as directed; however, do not extend or lengthen existing brackets. Furnish any additional sign attachment hardware, support brackets, etc. as required. Payment will not be made for the additional brackets but is considered subsidiary to this Item.

All additional small sign panels and plaques mounted to the top of signs shall be supported with wind beams 2.5 times the height of the sign and/or plaque.

Signs to be relocated during construction by the contractor will be paid under a separate pay item and in accordance with the Temporary Large Roadside Signs (TLRS) standard sheets in the plans.

Removal of concrete foundations including steel shall be at full length for small and large sign assemblies, unless otherwise shown on the plans.

Unless otherwise shown on the plans, furnish and install all regulatory sign panels and mounting hardware for attachment to traffic signal poles, pedestal poles, mast arms, and span wires. Mount with Astro-Sign Brac, Signfix aluminum channel, or equal as approved by the Engineer.

Items 644, 647, and 650:

Prior to taking elevations to determine lengths for fabrication of signposts and/or sign support towers, obtain verification of all proposed locations.

All sign mounts shall have a clamp base system for all small roadside sign assemblies.

A 3-inch strip of red reflective sheeting shall be placed on all Do Not Enter sign assemblies. This sheeting shall be placed directly below the Do Not Enter sign for the entire length of the signpost facing wrong way traffic. This work will be considered subsidiary to Item 644.

The post lengths shown on the Summary of Large Signs are approximations only. After the "X" dimensions are determined, submit actual post lengths to the Engineer for approval. Post lengths and size shall be approved by the Engineer before fabrication.

Torque the anchor bolts for only the Exit Gore signs to 60 foot-pounds.

Item 650:
All towers and trusses will be match marked, by the fabricator, for erection. Use the tower heights shown in the sign summaries and on the plans for bidding purposes only. Prior to fabrication, take finished grade elevations at the tower locations and determine their exact heights for fabrication in accordance with the details shown on the plans.

Item 656:
Before placing the concrete for the controller foundation, coordinate with the City of McKinney to ensure that the anchor bolt spacing will match the anchor bolts and cabinet supplied by the city.

Form a 3/4-inch chamfer on the top edge of each pedestal pole foundation.

Probe for utilities and underground structures prior to drilling foundations. Foundations shall be paid for once regardless of extra work caused by obstructions.

Item 662 and 672:
Black adhesive will be used on asphalt pavements and white adhesive will be used on concrete pavements.

Item 677:
A water blasting method approved by the Engineer will be the only method allowed for the removal of permanent and temporary pavement markings except on a sealcoat surface. A 2 foot wide sealcoat will be required on sealcoat surfaces to eliminate permanent and temporary pavement markings.

Item 680:
Requirements for this Item include the following work, all of which are subsidiary to this Item:

1. Notify the City of McKinney Traffic Signal Group at thuynh@mckinneytexas.org (972-547-2634) or ddunn@mckinneytexas.org (972-547-7428) one week before beginning any work involving traffic signals.
2. Provide submittal literature for all traffic signal equipment before installation.
3. Install the supplied traffic signal controller and cabinet.
4. Install the controller cabinet in an orientation as directed.
5. Connect all field wiring to the controller assembly. The City will assist in determining how the detection cables are to be connected, and will also program the controller for operation, hook up the malfunction management unit (MMU) or conflict monitor, detector units, and other equipment, and turn on the controller. Pick up the signal cabinet from the City of McKinney.
6. Furnish and install all sign panels for mounting on signal poles, mast arms, and span wires. Fabricate the sign panels in accordance with Item 636, and mount with Astro-Sign Brac, Signfix aluminum channel, or equal as approved by the Engineer.
   Install the sign panels supplied for mounting on signal poles, mast arms, and span wires. Furnish and install all other signs in accordance to Item 636. Furnish all mounting hardware

for all signs. Mount signs with Astro-Sign Brac, Signfix aluminum channel, or equal as approved by the Engineer.

7. Provide 250W Equivalent LED Fixtures with 120 - 277 volt electronic LED drivers as shown on the Material Producers List.
8. Remove the existing stop sign panels *(or assemblies)* after the traffic signals are in operation.
9. Install the emergency vehicle preemption equipment supplied by the City of McKinney.
10. Have a qualified technician on the project site to place the traffic signal in operation.
11. Use qualified personnel to respond to and diagnose all trouble calls during the thirty-day test period. Repair any malfunction to Contractor-supplied signal equipment. Provide to the Engineer a local telephone number, not subject to frequent changes and available on a 24-hour basis, for reporting trouble calls. Response time to reported calls must be less than 2 hours. Make appropriate repairs within 24 hours. Place a logbook in the controller cabinet and keep a record of each trouble call reported. Notify the Engineer of each trouble call. Do not clear the error log in the conflict monitor or MMU during the thirty-day test period without approval.
12. Prevent any damage to property owner's poles, fences, shrubs, mailboxes, etc. Protect all underground and overhead utilities and repair any damage. Provide access to all driveways during construction.
13. The concrete foundation for the controller as shown on standard TS-CF is diagrammatic and the dimensions will be adjusted in the field to fit existing conditions.
14. A 3 inch strip of red prismatic conformable sheeting shall be placed on all Do Not Enter sign assemblies. This sheeting shall be placed directly below the Do Not Enter sign for the entire length of the sign post facing wrong way traffic.
15. Salvage all existing traffic signals at SH 5 & Spur 399, SH 5 & Harry Mckillop Blvd, SH 5 & Eldorado Pkwy as shown on the plans. Salvage poles, cabinets, service poles and equipment, exposed conduit, and any other equipment as directed. This equipment remains the property of the City of McKinney. The material listed above is to be stockpiled as directed. Contact the City of McKinney at 972-547-2634 (Thuan Huynh) or 972-547-7428 (Douglas Dunn) 48 hours in advance of delivery. All other material removed in this project will become the property of the Contractor. Dispose of material off the right of way in accordance with federal, state, and local regulations. Maintain the operation of the existing traffic signal until directed to remove it.
16. Install Battery Backup Unit (BBU) supplied by the City of McKinney.
17. Install APS Units supplied by the City of McKinney.
18. Install PTZ Camera and cable supplied by the City of McKinney.
19. Install Enforcement Light and cable supplied by the City of McKinney.
20. Install the supplied street name sign panels for mounting on signal pole mast arms and span wires. Furnish all mounting hardware for the street name signs. Mount signs with Astro-Sign Brac, Signfix aluminum channel, or equal as approved by the Engineer.

Item 681:

Requirements for this Item include the following work, all of which are subsidiary to this Item:

1. Re-guy signal heads and re-strap the cable after making adjustments to head locations. Accomplish relocation of signal heads for a phase change during the same day.
2. Bottom tether cable for signal heads and signs will be required.
3. Provide submittal literature for all traffic signal equipment before installation.

4. Furnish and install a new controller (eight phase NEMA TS 2 Type 1) and cabinet (NEMA TS 2 Size 6, 16 position load bay), meeting the requirements of Departmental Materials Specifications DMS-11170. Provide detector panel toggle switches that additionally permit the user to disconnect the detector. Provide new MMU with Ethernet port. Provide a pole-mounted cabinet that has three brackets for pole mounting and install a 5' x 5' x 4" Class A concrete pad under the cabinet in accordance to Items 420 and 421.
5. Operate and maintain the temporary signal. Provide a telephone number to the District for trouble calls. Check the signal equipment at least monthly, and within 24 hours in response to complaints, and immediately repair or replace any malfunctioning Contractor-supplied equipment. Notify the Department immediately upon finding a problem with the signal timing. Provide a reliable technical support person and phone number for the manufacturer of the controller. Coordinate with TxDOT and City of McKinney for signal phasing and signal timing.
6. Relocate existing emergency vehicle preemption equipment to temporary signals.
7. Install pole-mounted BBU on the opposite side of the pole from the controller cabinet.
8. Install the Video Processor System so that it interfaces with the traffic controller unit (CU) via the detector rack. If the manufacturer does not have a product to interface via the detector rack, interface via SDLC.
9. If the camera locations shown in the plans do not allow for proper sight of the proposed detection zones, relocate the cameras as needed and as directed. This labor and material cost will not be paid separately, but is subsidiary to this item.
10. For temporary signals, the Contracor shall retain all removed VIVDS components furnished and installed as part of this project, unless otherwise shown on the plans.

Item 682:

Install signal head attachments so that the wiring to each signal head passes from the mast arm through the attachment hardware to the signal head. Do not leave cable or wiring exposed.

Provide signal head attachments that allow for adjustment about the horizontal and vertical axis.

Provide aluminum pedestrian and vehicle signal heads in the following color: Federal Yellow #13538 of Federal Standard 595. Provide non-painted aluminum tubing. Provide back plates, louvers, and the inside of visors with a flat black finish. Provide black aluminum vented back plates for all traffic signal heads.

Turn down signal heads or cover with burlap or other material, as approved, until traffic signal is placed in operation.

Mount signal heads level and plumb and aim as directed.

Item 684:

Provide stranded 14 AWG Type A signal cables for LED signal heads and stranded 12 AWG Type C cables for APS units.

Provide a separate multi-conductor signal cable (14 AWG) inside pedestal poles and signal poles from the terminal strip to each signal head as shown on the plans.

Identify each cable as shown on the plans (cable 1, etc.) with permanent marking labels (Panduit Type PLM standard single marker tie, Thomas&Betts Type 548M, or equal) at each ground box, pole base, and controller.

Item 686:
Provide 12 circuit Buchanan Type 112SN, Kulka Type 985-GP-12 CU, or equal terminal strips in the signal pole access compartment. Provide additional terminal strips of 8 circuits each when more than 12 circuits are required. The conductors for the line and load side of the terminal strip shall be identified with a plastic label with two straps per tag. The load side shall have each signal head and ped head identified on the tag.

Mark pole shafts and mast arms with the identification numbers from the plans to facilitate field-assembly. Identify pole shafts and mast arms by intersection for projects with multiple intersections.

Provide nuts on top and bottom (double nuts) of the base plate as shown on the plans.

Set anchor bolts for mast arm signal poles and strain poles so that two are in tension and two are in compression. Obtain approval of anchor bolt placement before placing concrete.

Provide vertical clearance of 17 to 19 feet from the roadway to the lowest point of the signal head or mast arm. Except for supplemental nearside signal heads, all signal heads must be installed at least 40’ from the stop line. If field adjustments result in the nearest signal head being more than 180’ from the stop line, install a supplemental nearside signal head as directed by the engineer. Determine the field measurements and elevations from the actual field location of the poles, considering all above and below ground utilities and existing roadway elevations.

Provide vibration dampers for mast arms 28 feet to 48 feet in length. Install as shown on MA-DPD.

Item 687:
Provide 12 circuit Buchanan Type 112SN, Kulka Type 985-GP-10 CU, or equal terminal strip in the pedestal pole base. The conductors for the line and load side of the terminal strip shall be identified with a plastic label with two straps per tag. The load side shall have each signal head and ped head identified on the tag.

Item 730:
At the discretion of the Engineer, mow non-paved areas within the project prior to placement of permanent vegetation. Mow up to three (4) cycles per growing season.

The list of material below is for the Contractor's information only.
It is the responsibility of the Contractor to verify
all items and quantities listed below.

LIST OF MATERIAL/LABOR
SUBSIDIARY TO ITEM 680

Spur 399 and Stewart Rd

DESCRIPTION	UNIT	QUANTITY
250W EQ LED Luminaire	EA	5
Install Controller Cabinet (City Provided)	EA	1
Concrete Controller Foundation	CY	1.3
Install Street Name Sign	EA	6
Traffic Signal Controller Base	EA	1
Install BBU (City Provided)	EA	1
Install APS Unit (City Provided)	EA	1
Install PTZ Camera (City Provided)	EA	2
Install Enforcement Light (City Provided)	EA	1

SH 5 and Harry McKillop Blvd

DESCRIPTION	UNIT	QUANTITY
250W EQ LED Luminaire	EA	3
Install Controller Cabinet (City Provided)	EA	1
Concrete Controller Foundation	CY	1.3
Install Street Name Sign	EA	3
Traffic Signal Controller Base	EA	1
Install BBU (City Provided)	EA	1
Install APS Unit (City Provided)	EA	1
Install PTZ Camera (City Provided)	EA	1
Install Enforcement Light (City Provided)	EA	1

SH 5 and Eldorado Pkwy

DESCRIPTION	UNIT	QUANTITY
250W EQ LED Luminaire	EA	4
Install Controller Cabinet (City Provided)	EA	1
Concrete Controller Foundation	CY	1.3
Install Street Name Sign	EA	4
Traffic Signal Controller Base	EA	1
Install BBU (City Provided)	EA	1
Install APS Unit (City Provided)	EA	1
Install PTZ Camera (City Provided)	EA	1
Install Enforcement Light (City Provided)	EA	1

LIST OF MATERIAL
FURNISHED BY THE CITY OF MCKINNEY

Spur 399 and Stewart Rd

DESCRIPTION	UNIT	QUANTITY
Intelight ATC Controller- INT-YCT-XN TS-2, TYPE 1*	EA	1
Controller Signal Cabinet (ATC Cabinet – OA – 16 CH)*	EA	1
Encom Radio- E-LITE-5.8 INT and Antenna (Single)*	EA	1
Battery Back Up Unit (BBU)*	EA	1
APS System*	EA	12
Wavetronix Presence and Advance Detection*	EA	12
Wavetronix Presence and Advance Detection Cable*	LF	4475
Opticom	EA	4
Opticom Cable	LF	1775
PTZ Camera	EA	2
PTZ Camera Cable	LF	685
Enforcement Light	EA	6
Enforcement Light Cable	LF	1685
Network Switch*	EA	1
Street Name Signs	EA	6

Note: * - To be reimbursed by TXDOT.

SH 5 and Harry McKillop Blvd

DESCRIPTION	UNIT	QUANTITY
Intelight ATC Controller- INT-YCT-XN TS-2, TYPE 1*	EA	1
Controller Signal Cabinet (ATC Cabinet – OA – 16 CH)*	EA	1
Encom Radio- E-LITE-5.8 INT and Antenna (Single)*	EA	1
Battery Back Up Unit (BBU)*	EA	1
APS System*	EA	4
Wavetronix Presence and Advance Detection*	EA	6
Wavetronix Presence and Advance Detection Cable*	LF	2040
Opticom	EA	3
Opticom Cable	LF	1105
PTZ Camera	EA	1
PTZ Camera Cable	LF	200
Enforcement Light	EA	3
Enforcement Light Cable	LF	1005
Network Switch*	EA	1
Street Name Signs	EA	3

Note: * - To be reimbursed by TXDOT.

SH 5 and Eldorado Pkwy

DESCRIPTION	UNIT	QUANTITY
Intelight ATC Controller- INT-YCT-XN TS-2, TYPE 1*	EA	1
Controller Signal Cabinet (ATC Cabinet – OA – 16 CH)*	EA	1
Encom Radio- E-LITE-5.8 INT and Antenna (Single)*	EA	1
Battery Back Up Unit (BBU)*	EA	1
APS System*	EA	8
Wavetronix Presence and Advance Detection*	EA	8
Wavetronix Presence and Advance Detection Cable*	LF	2425
Opticom	EA	4
Opticom Cable	LF	1270
PTZ Camera	EA	1
PTZ Camera Cable	LF	150
Enforcement Light	EA	4
Enforcement Light Cable	LF	1140
Network Switch*	EA	1
Street Name Signs	EA	4

Note: * - To be reimbursed by TXDOT.

CONTROL : 0047-05-057, ETC
PROJECT : F 2025(482), ETC
HIGHWAY : SH 5, ETC
COUNTY : COLLIN

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 100 PREPARING RIGHT OF WAY <103><752>
ITEM 104 REMOVING CONCRETE
ITEM 105 REMOVING TREATED AND UNTREATED BASE AND ASPHALT PAVEMENT
ITEM 110 EXCAVATION <132>
ITEM 132 EMBANKMENT <100><110><160><204><210><216><400>
ITEM 161 COMPOST <160>
ITEM 162 SODDING FOR EROSION CONTROL <164><166><168>
ITEM 164 SEEDING FOR EROSION CONTROL <162><166><168>
ITEM 168 VEGETATIVE WATERING
ITEM 170 IRRIGATION SYSTEM <193><402><403><618><620><622><624><628>
ITEM 260 LIME TREATMENT (ROAD-MIXED) <105><132><204><210><216><247><300><310><520>
ITEM 275 CEMENT TREATMENT (ROAD-MIXED)
ITEM 276 CEMENT TREATMENT (PLANT-MIXED) <204><210><216><247><300><310><520>
ITEM 310 PRIME COAT <300><316>
ITEM 344 SUPERPAVE MIXTURES <300><301><320><504><520><585>
ITEM 360 CONCRETE PAVEMENT <300><421><422><438><440><529><585>
ITEM 400 EXCAVATION AND BACKFILL FOR STRUCTURES <110><132><401><402><403><416><420><421><423>
ITEM 402 TRENCH EXCAVATION PROTECTION
ITEM 403 TEMPORARY SPECIAL SHORING <410><411>
ITEM 410 SOIL NAIL ANCHORS <421><431><440>
ITEM 416 DRILLED SHAFT FOUNDATIONS <405><420><421><423><440><448>
ITEM 419 CONCRETE SOUND (NOISE) WALLS <110><400><416><420><421><424><427><440><441><442><445><446><449>
ITEM 420 CONCRETE SUBSTRUCTURES <400><404><421><422><426><427><440><441><448>

ITEM 422 CONCRETE SUPERSTRUCTURES <420><421><424><440><448><454><780>
ITEM 423 RETAINING WALLS <110><132><216><400><416><420><421><424><440><445><458><556>
ITEM 425 PRECAST PRESTRESSED CONCRETE STRUCTURAL MEMBERS <409><420><421><424><426><427><434><440><442><445><448>
ITEM 432 RIPRAP <247><420><421><431><440>
ITEM 434 BRIDGE BEARINGS <420><441><442><445><446><449>
ITEM 442 METAL FOR STRUCTURES <441><445><446><447><448>
ITEM 450 RAILING <420><421><422><424><440><441><442><445><446><448><540>
ITEM 454 BRIDGE EXPANSION JOINTS <429><442><785>
ITEM 462 CONCRETE BOX CULVERTS AND DRAINS <400><402><403><420><421><422><440><464><467><476>
ITEM 464 REINFORCED CONCRETE PIPE <400><402><403><467><476>
ITEM 465 JUNCTION BOXES, MANHOLES, AND INLETS <400><420><421><440><471>
ITEM 466 HEADWALLS AND WINGWALLS <400><420><421><432><440><464>
ITEM 467 SAFETY END TREATMENT <400><420><421><432><440><442><445><460><464>
ITEM 471 FRAMES, GRATES, RINGS, AND COVERS <441><445><448><465>
ITEM 476 JACKING, BORING, OR TUNNELING PIPE OR BOX <402><403><462><464>
ITEM 479 ADJUSTING MANHOLES AND INLETS <400><421><465><471>
ITEM 481 PIPE FOR DRAINS <400>
ITEM 496 REMOVING STRUCTURES
ITEM 500 MOBILIZATION
ITEM 502 BARRICADES, SIGNS, AND TRAFFIC HANDLING <503><505><510>
ITEM 503 PORTABLE CHANGEABLE MESSAGE SIGN
ITEM 504 FIELD OFFICE AND LABORATORY
ITEM 505 TRUCK-MOUNTED ATTENUATOR (TMA) AND TRAILER ATTENUATOR (TA)
ITEM 506 TEMPORARY EROSION, SEDIMENTATION, AND ENVIRONMENTAL CONTROLS <161><432><556>
ITEM 508 CONSTRUCTING DETOURS
ITEM 512 PORTABLE TRAFFIC BARRIER <420><421><424><440><442><502>
ITEM 514 PERMANENT CONCRETE TRAFFIC BARRIER <400><416><420><421><424><440><442><448>
ITEM 527 COLORED TEXTURED CONCRETE <420><421><440>
ITEM 529 CONCRETE CURB, GUTTER, AND COMBINED CURB AND GUTTER <360><420><421><440>
ITEM 530 INTERSECTIONS, DRIVEWAYS, AND TURNOUTS <247><260><276><292><316><330><334><341><360><421><440>
ITEM 531 SIDEWALKS <104><360><420><421><440><530>
ITEM 538 RIGHT OF WAY MARKERS <420><421><440>
ITEM 540 METAL BEAM GUARD FENCE <421><441><445><529>
ITEM 542 REMOVING METAL BEAM GUARD FENCE
ITEM 544 GUARDRAIL END TREATMENTS
ITEM 545 CRASH CUSHION ATTENUATORS <502>
ITEM 556 PIPE UNDERDRAINS <402><421><432>
ITEM 610 ROADWAY ILLUMINATION POLE ASSEMBLIES <416><421><432><441><442><445><449><616><618><620><622><624><628>
ITEM 613 HIGH MAST ILLUMINATION POLES <416><421><432><441><442><445><449><614><618><624><638>
ITEM 614 HIGH MAST ILLUMINATION ASSEMBLIES <441><442><445><613>

<616><620><628>
ITEM 618 CONDUIT <400><445><476>
ITEM 620 ELECTRICAL CONDUCTORS <610><628>
ITEM 623 INTELLIGENT TRANSPORTATION SYSTEM (ITS) GROUND BOXES <400><420><421><432><440><471><618><619><620>
ITEM 624 GROUND BOXES <420><421><432><440><618><620>
ITEM 628 ELECTRICAL SERVICES <441><445><449><618><620><627><656>
ITEM 636 SIGNS
ITEM 644 SMALL ROADSIDE SIGN ASSEMBLIES <421><440><441><442><445><636><656>
ITEM 647 LARGE ROADSIDE SIGN SUPPORTS AND ASSEMBLIES <416><421><440><441><442><445><636>
ITEM 650 OVERHEAD SIGN SUPPORTS <416><420><421><441><442><445><449><618><636><654>
ITEM 658 DELINEATOR AND OBJECT MARKER ASSEMBLIES <445>
ITEM 662 WORK ZONE PAVEMENT MARKINGS <666><668><672><677>
ITEM 666 RETROREFLECTORIZED PAVEMENT MARKINGS <316><502><662><667><677><678>
ITEM 668 PREFABRICATED PAVEMENT MARKINGS AND RUMBLE STRIPS <678>
ITEM 672 RAISED PAVEMENT MARKERS <677><678>
ITEM 677 ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS <300><302><315><316>
ITEM 678 PAVEMENT SURFACE PREPARATION FOR MARKINGS <677>
ITEM 680 HIGHWAY TRAFFIC SIGNALS <416><450><531><610><618><620><621><624><625><628><636><656><682><684><686><687><688>
ITEM 681 TEMPORARY TRAFFIC SIGNALS <416><610><617><618><620><621><622><624><625><627><628><636><656><680><682><684><686><687><688><6006>
ITEM 682 VEHICLE AND PEDESTRIAN SIGNAL HEADS
ITEM 684 TRAFFIC SIGNAL CABLES <625><680><690>
ITEM 686 TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL) <416><421><441><442><445><449>
ITEM 687 PEDESTAL POLE ASSEMBLIES <445><449><656><682><688>
ITEM 688 PEDESTRIAN DETECTORS AND VEHICLE LOOP DETECTORS <618><624><682><684>
ITEM 740 GRAFFITI REMOVAL AND ANTI-GRAFFITI COATING <427><446>

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

REQUIRED CONTRACT PROVISIONS. ALL FEDERAL-AID PROJECTS (REV. 10-23) (FORM FHWA 1273)
WAGE RATES
SPECIAL PROVISION "NONDISCRIMINATION" (000---001)
SPECIAL PROVISION "CERTIFICATION OF NONDISCRIMINATION IN EMPLOYMENT" (000---002)
SPECIAL PROVISION "STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFIC" (000---003)
SPECIAL PROVISION "ONTHEJOB TRAINING PROGRAM" (000---004)
SPECIAL PROVISION "AMERICANS WITH DISABILITIES ACT CURB RAMP WORKSHOP " (000---006)

SPECIAL PROVISION "CARGO PREFERENCE ACT REQUIREMENTS IN FEDERAL AID CONTRA" (000---007)
SPECIAL PROVISION "NOTICE OF CONTRACTOR PERFORMANCE EVALUATIONS" (000---016)
SPECIAL PROVISION "CERTIFICATE OF INTERESTED PARTIES (FORM 1295)" (000---017)
SPECIAL PROVISION "NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYEMENT OPPORTUNITY (EXECUTIVE O RDER 11" (000---020)
SPECIAL PROVISION "DISADVANTAGED BUSINESS ENTERPRISE IN FEDERALAID" (000---022)
SPECIAL PROVISION "SCHEDULE OF LIQUIDATED DAMAGES" (000---031)
SPECIAL PROVISION "IMPORTANT NOTICE TO CONTRACTORS" (000---052)
SPECIAL PROVISION TO ITEM 6 (006---001)
SPECIAL PROVISIONS TO ITEM 8 (008---001)(008---003)(008---010)

SPECIAL SPECIFICATIONS:

ITEM 4003 THERMAL INTEGRITY PROFILER (TIP) TESTING OF DRILLED SHAFTS
ITEM 6006 VIDEO IMAGING VEHICLE DETECTION SYSTEM
ITEM 6008 RADAR VEHICLE DETECTION SYSTEM FOR SIGNALIZED INTERSECTION CONTROL
ITEM 6022 ROADWAY LIGHTING ASSEMBLY WITH LED FIXTURES <610><616> <620>
ITEM 6050 INTELLIGENT TRANSPORTATION SYSTEM (ITS) GROUND-MOUNTED CABINET
ITEM 6062 CCTV CAMERA POLE STRUCTURE

GENERAL: THE ABOVE-LISTED SPECIFICATION ITEMS ARE THOSE UNDER WHICH PAYMENT IS TO BE MADE. THESE, TOGETHER WITH SUCH OTHER PERTINENT ITEMS, IF ANY, AS MAY BE REFERRED TO IN THE ABOVE-LISTED SPECIFICATION ITEMS, AND INCLUDING THE SPECIAL PROVISIONS LISTED ABOVE, CONSTITUTE THE COMPLETE SPECIFICATIONS FOR THIS PROJECT.

Control **0047-05-057, ETC.**

Project **F 2025(482), ETC.**

Highway **SH 5, ETC.**

County **COLLIN**

DISADVANTAGED BUSINESS ENTERPRISE REQUIREMENTS

The following goal for disadvantaged business enterprises is established:

DBE
8.5%

Certification of DBE Goal Attainment

By signing the proposal, the Bidder certifies that the above DBE goal will be met by committing to DBE participation that meets or exceeds the goal or providing adequate documentation of good faith efforts (GFE) to achieve the goal.

The DBE participation or GFE must be submitted within five (5) calendar days after bid opening. If the fifth day falls on a weekend or a day when TxDOT offices are closed, the deadline moves to the next business day.

The Department may impose remedies as defined by state or local law if a bidder fails to submit required documentation, including forfeiting the bid proposal guaranty and exclusion from rebidding on the contract if it is re-advertised.

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),
- Hyatera 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.

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). 23 CFR 633.102(e).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider. 23 CFR 633.102(e).

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract). 23 CFR 633.102(b).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract. 23 CFR 633.102(d).

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR Part 230, Subpart A, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (*see* 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract. 23 CFR 230.409 (g)(4) & (5).

b. The contractor will accept as its operating policy the following statement:

> "It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, sexual orientation, gender identity, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action or are substantially involved in such action, will be made fully cognizant of and will implement the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action

within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs (i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance). In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 23 CFR 230.409. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established thereunder. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors, suppliers, and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurances Required:

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:
(1) Withholding monthly progress payments;
(2) Assessing sanctions;
(3) Liquidated damages; and/or
(4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women.

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of more than $10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, the contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location under the contractor's control where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of basic hourly wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act (40 U.S.C. 3141(2)(B)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided,* That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH–1321) must be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in 29 CFR part 1, a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

(ii) The classification is used in the area by the construction industry; and

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

c. *Conformance.* (1) The contracting officer must require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is used in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent by the contracting officer by email to *DBAconformance@dol.gov*. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(4) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer will, by email to *DBAconformance@dol.gov*, refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

d. *Fringe benefits not expressed as an hourly rate.* Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

e. *Unfunded plans.* If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided,* That the Secretary of Labor has found, upon the written request of the contractor, in accordance with the criteria set forth in § 5.28, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

3. Records and certified payrolls (29 CFR 5.5)

a. *Basic record requirements* (1) *Length of record retention.* All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) *Information required.* Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) *Additional records relating to fringe benefits.* Whenever the Secretary of Labor has found under paragraph 1.e. of this section that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act, the contractor must maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

(4) *Additional records relating to apprenticeship.* Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. *Certified payroll requirements* (1) *Frequency and method of submission.* The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) *Information required.* The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (*e.g.,* the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH–347 or in any other format desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division website at *https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/wh347/.pdf* or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

(3) *Statement of Compliance.* Each certified payroll submitted must be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

(ii) That each laborer or mechanic (including each helper and apprentice) working on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR part 3; and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

(4) *Use of Optional Form WH–347.* The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 will satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(3) of this section.

(5) *Signature.* The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification.* The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 3729.

(7) *Length of certified payroll retention.* The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents.* The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers.* The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements.* If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under 29 CFR part 6 any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures.* Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity (29 CFR 5.5)

a. *Apprentices* (1) *Rate of pay.* Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits.* Apprentices must be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio.* The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates.* Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity.* The use of apprentices and journeyworkers under this part must be in conformity with

the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

c. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. 23 CFR 230.111(e)(2). The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeyworkers shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility. a. By entering into this contract, the contractor certifies that neither it nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, 18 U.S.C. 1001.

11. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or 29 CFR part 1 or 3; or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or 29 CFR part 1 or 3.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), the following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchpersons and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. 29 CFR 5.5.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph 1. of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages and interest from the date of the underpayment. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or

mechanic, including watchpersons and guards, employed in violation of the clause set forth in paragraph 1. of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1. of this section.

* $31 as of January 15, 2023 (See 88 FR 88 FR 2210) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

3. Withholding for unpaid wages and liquidated damages

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract subject to the Contract Work Hours and Safety Standards Act that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section IV paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

4. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

5. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or

d. Informing any other person about their rights under CWHSSA or this part.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” in paragraph 1 of Section VI refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR Part 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of $150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.327.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.327.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 180.300.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/). 2 CFR 180.300, 180.320, and 180.325.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335;.

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property, 2 CFR 180.800;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

* * * * *

3. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily

excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

* * * * *

4. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(2) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(3) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

b. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000. 49 CFR Part 20, App. A.

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

XII. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.

2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, ‘on-board’ commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B)
This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

The wage rates listed herein are those predetermined by the Secretary of Labor and State Statue 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

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)
1380	Milling Machine Operator	$15.54	$14.64	$12.22	$14.29		$14.18			$14.32	$14.35	$12.86			$14.75	$13.53	$12.80
1390	Motor Grader Operator, 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					$21.29	$18.34						$21.29			$18.62	
1396	Pavement Marking Machine Operator	$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																
1708	Slurry Seal or Micro-Surfacing Machine Operator																
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						$16.00										
1440	Trenching Machine Operator, 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	$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, Single or Tandem Axle Dump Truck	$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	Truck Driver, Tandem Axle Tractor withSemi Trailer	$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, Heavy																
1442	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		

01/05/2024

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
Certification of Nondiscrimination in Employment

1. GENERAL

By signing this proposal, the Bidder certifies that it has participated in a previous Contract or subcontract subject to the equal opportunity clause, as required by Executive Order (EO) 10925, 11114, or 11246, or if it has not participated in a previous Contract of this type, or if it has had previous Contracts or subcontracts and has not filed, it will file with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity (EEO), all reports due under the applicable filing requirements.

Note—The above certification is required by the EEO Regulations of the Secretary of Labor [41 CFR 60-1.7(b)(1)], and must be submitted by Bidders and proposed subcontractors only in connection with Contracts and subcontracts that are subject to the equal opportunity clause. Contracts and subcontracts that are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally only Contracts or subcontracts of $10,000 or less are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by the EOs or their implementing regulations.

Proposed prime Contractors and subcontractors that have participated in a previous Contract or subcontract subject to the EO and have not filed the required reports should note that 41 CFR 60-1.7(b)(1) prevents the award of Contracts and subcontracts unless such Contractor submits a report covering the delinquent period or such other period specified by FHWA or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

Special Provision to Item 000

Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246)

1. GENERAL

1.1. As used in these Specifications:

- "Covered area" means the geographical area described in the solicitation from which this Contract resulted;
- "Director" means Director, Office of Federal Contract Compliance Programs (OFCCP), U.S. Department of Labor (DOL), or any person to whom the Director delegates authority;
- "Employer identification number" means the federal Social Security number used on the employer's quarterly federal tax return, U.S. Treasury Department Form 941; and
- "Minority" includes:
  - Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
  - Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race);
  - Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
  - American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

1.2. Whenever the Contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it will physically include in each subcontract of more than $10,000 the provisions of these Specifications and the Notice that contains the applicable goals for minority and female participation that are set forth in the solicitations from which this Contract resulted.

1.3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by DOL in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) will be in conformance with that Plan for those trades that have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or subcontractor participating in an approved Plan is individually required to comply with its obligations under the equal employment opportunity (EEO) clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

1.4. The Contractor will implement the specific affirmative action standards provided in Sections 1.7.1.– Section 1.7.16. of this Specification. The goals set forth in the solicitation from which this Contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction Contractors performing Contracts in geographical areas where they do not have a federal or federally assisted construction Contract will apply the minority and female goals established for the geographical area where the Contract is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any OFCCP office

or any federal procurement contracting officer. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.

1.5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women will excuse the Contractor's obligations under these Specifications, Executive Order (EO) 11246, or the regulations promulgated pursuant thereto.

1.6. For the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by DOL.

1.7. The Contractor will take specific affirmative actions to ensure EEO. The evaluation of the Contractor's compliance with these Specifications will be based on its effort to achieve maximum results from its actions. The Contractor will document these efforts fully and will implement affirmative action steps at least as extensive as the following.

1.7.1. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor will specifically ensure that all foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

1.7.2. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

1.7.3. Maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, recruitment source, or community organization, and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred to the Contractor by the union or, if referred, not employed by the Contractor, this will be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.

1.7.4. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement have not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

1.7.5. Develop on-the-job training opportunities or participate in training programs for the area that expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by DOL. The Contractor will provide notice of these programs to the sources compiled under Section 1.7.2.

1.7.6. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in publications such as the company newspaper and annual report; by specifically reviewing the policy with all management personnel and with all minority and female employees at least once annually; and by posting it on bulletin boards accessible to all employees at each location where construction work is performed.

1.7.7. Review, at least annually, the company's EEO policy and affirmative action obligations under these Specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions, including specific review of these items with onsite supervisory personnel such as

superintendents and general foremen, before the initiation of construction work at any jobsite. A written record must be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

1.7.8. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and subcontractors with whom the Contractor does or anticipates doing business.

1.7.9. Direct its recruitment efforts, both oral and written, to minority, female, and community organizations; to schools with minority and female students; and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than 1 mo. before the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor will send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

1.7.10. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after-school, summer, and vacation employment to minority and female youth both onsite and in other areas of a Contractor's workforce.

1.7.11. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR 60-3.

1.7.12. At least annually, conduct an inventory and evaluation at least of all minority and female personnel for promotional opportunities, and encourage these employees to seek or to prepare for such opportunities through appropriate training or other means.

1.7.13. Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment-related activities to ensure that the EEO policy and the Contractor's obligations under these Specifications are being carried out.

1.7.14. Ensure that all facilities and company activities are non-segregated, except that separate or single-user toilet and necessary changing facilities will be provided to assure privacy between the sexes.

1.7.15. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

1.7.16. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

1.8. Contractors are encouraged to participate in voluntary associations that assist in fulfilling one or more of their affirmative action obligations (Sections 1.7.1.–1.7.16. of this Specifications). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the Contractor is a member and participant may be asserted as fulfilling any one or more of its obligations under Sections 1.7.1–1.7.16. of this Specification, provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation that demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's, and failure of such a group to fulfill an obligation will not be a defense for the Contractor's noncompliance.

1.9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide EEO and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the EO if a particular group is employed in a substantially disparate manner (e.g., even though the Contractor

has achieved its goals for women generally, the Contractor may be in violation of the EO if a specific minority group of women is underused).

1.10. The Contractor must not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

1.11. The Contractor will not enter into any subcontract with any person or firm debarred from Government Contracts pursuant to EO 11246.

1.12. The Contractor will carry out such sanctions and penalties for violation of these Specifications and of the Equal Opportunity Clause, including suspension, termination, and cancellation of existing subcontracts as may be imposed or ordered pursuant to EO 11246, as amended, and its implementing regulations, by OFCCP. Any Contractor who fails to carry out such sanctions and penalties will be in violation of these Specifications and EO 11246, as amended.

1.13. The Contractor, in fulfilling its obligations under these Specifications, will implement specific affirmative action steps, at least as extensive as those standards prescribed in Section 1.7 of this Specification, to achieve maximum results from its efforts to ensure EEO. If the Contractor fails to comply with the requirements of the EO, the implementing regulations, or these Specifications, the Director will proceed in accordance with 41 CFR 60-4.8.

1.14. The Contractor will designate a responsible official to monitor all employment-related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government, and to keep records. Records must at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, Social Security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records must be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, Contractors will not be required to maintain separate records.

1.15. Nothing herein provided will be construed as a limitation on the application of other laws that establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

1.16. In addition to the reporting requirements set forth elsewhere in this Contract, the Contractor and the subcontractors holding subcontracts, not including material suppliers, of $10,000 or more, will submit for every month of July during which work is performed, employment data as contained under Form PR 1391 (Appendix C to 23 CFR 230), and in conformance with the included instructions.

Special Provision to Item 000
On-the-Job Training Program

1. DESCRIPTION

The primary objective of this Special Provision is the training and advancement of minorities, women, and economically disadvantaged persons toward journeyworker status. Accordingly, make every effort to enroll minority, women, and economically disadvantaged persons to the extent that such persons are available within a reasonable area of recruitment. This training commitment is not intended to, and will not be used to, discriminate against any applicant for training, whether he or she is a member of a minority group or not.

2. TRAINEE ASSIGNMENT

Training assignments are based on the past volume of State-let highway construction Contracts awarded with the Department. Contractors meeting the selection criteria will be notified of their training assignment at the beginning of the reporting year by the Department's Civil Rights Division.

3. PROGRAM REQUIREMENTS

Fulfill all the requirements of the On-the-Job Training Program, including the maintenance of records and submittal of periodic reports documenting program performance. Trainees will be paid at least 60% of the appropriate minimum journeyworker's rate specified in the Contract for the first half of the training period, 75% for the third quarter, and 90% for the last quarter, respectively.

4. REIMBURSEMENT

If requested, Contractors may be reimbursed $0.80 per training hour at no additional cost to the Department. Training may occur on this project, all other Department Contracts, or locally administered federal aid projects with concurrence of the local government entity. However, reimbursement for training is not available on projects to the extent that such projects do not contain federal funds.

5. COMPLIANCE

The Contractor will have fulfilled the contractual responsibilities by having provided acceptable training to the number of trainees specified in their goal assignment. Noncompliance may be cause for corrective and appropriate measures in accordance with Article 8.7., "Default of Contract," which may be used to comply with the sanctions for noncompliance pursuant to 23 CFR 230.

Special Provision to Item 000
Americans with Disabilities Act Curb Ramp Workshop

Before starting work, schedule and attend a mandatory preconstruction Americans with Disabilities Act curb ramp workshop. The workshop will be administered by the Department, will be 4 hr. or less, and will be held during normal working hours at an approved location near the project.

Supervisory personnel responsible for control of the work must attend the workshop.

The Department will provide workshop facilitators and facilities. No direct compensation will be made for fulfilling these requirements because this workshop will be subsidiary to the Items of the Contract.

Special Provision 000

Cargo Preference Act Requirements in Federal Aid Contracts

1. DESCRIPTION

All recipients of federal financial assistance are required to comply with the U.S. Department of Transportation's Cargo Preference Act requirements, 46 CFR 381, "Use of United States-Flag Vessels."

This requirement applies to material or equipment that is acquired specifically for a federal-aid highway project. It is not applicable to goods or materials that come into inventories independent of an FHWA-funded Contract.

When oceanic shipments are necessary for materials or equipment acquired for a specific federal-aid construction project, the Contractor agrees to:

- use privately owned United States-flag commercial vessels to ship at least 50% of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this Contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels;

- furnish a legible copy of a rated, onboard commercial ocean bill of lading in English for each shipment of cargo described in Paragraph (b)(1) of 46 CFR 381, Section 7, "Federal Grant, Guaranty, Loan and Advance of Funds Agreements," within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, to both the Engineer (through the prime Contractor in the case of subcontractor bills of lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590; and

- insert the substance of the provisions of this clause in all subcontracts issued pursuant to this Contract.

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. DEFINISIONS

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 to Item 000

Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246)

1. GENERAL

In addition to the affirmative action requirements of the Special Provision titled "Standard Federal Equal Employment Opportunity Construction Contract Specifications" as set forth elsewhere in this proposal, the Bidder's attention is directed to the specific requirements for use of minorities and females as set forth below.

2. GOALS

Goals for minority and female participation are hereby established in accordance with 41 CFR 60-4.

The goals for minority and female participation expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area are as follows:

Goals for Minority Participation in Each Trade (%)	Goals for Female Participation in Each Trade (%)
See Table 1	6.9

These goals are applicable to all the Contractor's construction work (whether it is federal or federally assisted or not) performed in the covered area. If the Contractor performs construction work in a geographical area located outside the covered area, it will apply the goals established for such geographical area where the work is actually performed. Regarding this second area, the Contractor also is subject to the goals for both its federally involved and non-federally involved construction. The Contractor's compliance with the Executive Order (EO) and the regulations in 41 CFR 60-4 will be based on its implementation of the Standard Federal Equal Employment Opportunity Construction Contract Specifications Special Provision and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the Contract, and in each trade, and the Contractor must make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority and female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals will be a violation of the Contract, the EO, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

The overall good performance of other Contractors and subcontractors toward a goal in an approved plan does not excuse any covered Contractor's or subcontractor's failure to make good faith efforts to achieve the goals contained in these provisions. Contractors or subcontractors participating in the plan must be able to demonstrate their participation and document their compliance with the provisions of this plan.

3. SUBCONTRACTING

The Contractor must provide written notification to the Department within 10 working days of award of any construction subcontract more than $10,000 at any tier for construction work under the Contract resulting from this solicitation pending concurrence of the Department in the award. The notification will list the names, address, and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and geographical area in which the Contract is to be performed.

4. COVERED AREA

As used in this Special Provision, and in the Contract resulting from this solicitation, the geographical area covered by these goals for female participation is the State of Texas. The geographical area covered by these goals for other minorities comprises the counties in the State of Texas as indicated in Table 1.

5. REPORTS

The Contractor is hereby notified that he may be subject to the Office of Federal Contract Compliance Programs (OFCCP) reporting and recordkeeping requirements as provided for under EO 11246 as amended. OFCCP will provide direct notice to the Contractor as to the specific reporting requirements that it will be expected to fulfill.

Table 1
Goals for Minority Participation

County	Participation, %	County	Participation, %
Anderson	22.5	Chambers	27.4
Andrews	18.9	Cherokee	22.5
Angelina	22.5	Childress	11.0
Aransas	44.2	Clay	12.4
Archer	11.0	Cochran	19.5
Armstrong	11.0	Coke	20.0
Atascosa	49.4	Coleman	10.9
Austin	27.4	Collin	18.2
Bailey	19.5	Collingsworth	11.0
Bandera	49.4	Colorado	27.4
Bastrop	24.2	Comal	47.8
Baylor	11.0	Comanche	10.9
Bee	44.2	Concho	20.0
Bell	16.4	Cooke	17.2
Bexar	47.8	Coryell	16.4
Blanco	24.2	Cottle	11.0
Borden	19.5	Crane	18.9
Bosque	18.6	Crockett	20.0
Bowie	19.7	Crosby	19.5
Brazoria	27.3	Culberson	49.0
Brazos	23.7	Dallam	11.0
Brewster	49.0	Dallas	18.2
Briscoe	11.0	Dawson	19.5
Brooks	44.2	Deaf Smith	11.0
Brown	10.9	Delta	17.2
Burleson	27.4	Denton	18.2
Burnet	24.2	DeWitt	27.4
Caldwell	24.2	Dickens	19.5
Calhoun	27.4	Dimmit	49.4
Callahan	11.6	Donley	11.0
Cameron	71.0	Duval	44.2
Camp	20.2	Eastland	10.9
Carson	11.0	Ector	15.1
Cass	20.2	Edwards	49.4
Castro	11.0	Ellis	18.2

County	Participation, %	County	Participation, %
El Paso	57.8	Kenedy	44.2
Erath	17.2	Kent	10.9
Falls	18.6	Kerr	49.4
Fannin	17.2	Kimble	20.0
Fayette	27.4	King	19.5
Fisher	10.9	Kinney	49.4
Floyd	19.5	Kleberg	44.2
Foard	11.0	Knox	10.9
Fort Bend	27.3	Lamar	20.2
Franklin	17.2	Lamb	19.5
Freestone	18.6	Lampasas	18.6
Frio	49.4	LaSalle	49.4
Gaines	19.5	Lavaca	27.4
Galveston	28.9	Lee	24.2
Garza	19.5	Leon	27.4
Gillespie	49.4	Liberty	27.3
Glasscock	18.9	Limestone	18.6
Goliad	27.4	Lipscomb	11.0
Gonzales	49.4	Live Oak	44.2
Gray	11.0	Llano	24.2
Grayson	9.4	Loving	18.9
Gregg	22.8	Lubbock	19.6
Grimes	27.4	Lynn	19.5
Guadalupe	47.8	Madison	27.4
Hale	19.5	Marion	22.5
Hall	11.0	Martin	18.9
Hamilton	18.6	Mason	20.0
Hansford	11.0	Matagorda	27.4
Hardeman	11.0	Maverick	49.4
Hardin	22.6	McCulloch	20.0
Harris	27.3	McLennan	20.7
Harrison	22.8	McMullen	49.4
Hartley	11.0	Medina	49.4
Haskell	10.9	Menard	20.0
Hays	24.1	Midland	19.1
Hemphill	11.0	Milam	18.6
Henderson	22.5	Mills	18.6
Hidalgo	72.8	Mitchell	10.9
Hill	18.6	Montague	17.2
Hockley	19.5	Montgomery	27.3
Hood	18.2	Moore	11.0
Hopkins	17.2	Morris	20.2
Houston	22.5	Motley	19.5
Howard	18.9	Nacogdoches	22.5
Hudspeth	49.0	Navarro	17.2
Hunt	17.2	Newton	22.6
Hutchinson	11.0	Nolan	10.9
Irion	20.0	Nueces	41.7
Jack	17.2	Ochiltree	11.0
Jackson	27.4	Oldham	11.0
Jasper	22.6	Orange	22.6
Jeff Davis	49.0	Palo Pinto	17.2
Jefferson	22.6	Panola	22.5
Jim Hogg	49.4	Parker	18.2
Jim Wells	44.2	Parmer	11.0
Johnson	18.2	Pecos	18.9
Jones	11.6	Polk	27.4
Karnes	49.4	Potter	9.3
Kaufman	18.2	Presidio	49.0
Kendall	49.4	Randall	9.3

County	Participation, %	County	Participation, %
Rains	17.2	Reagan	20.0
Real	49.4	Throckmorton	10.9
Red River	20.2	Titus	20.2
Reeves	18.9	Tom Green	19.2
Refugio	44.2	Travis	24.1
Roberts	11.0	Trinity	27.4
Robertson	27.4	Tyler	22.6
Rockwall	18.2	Upshur	22.5
Runnels	20.0	Upton	18.9
Rusk	22.5	Uvalde	49.4
Sabine	22.6	Val Verde	49.4
San Augustine	22.5	Van Zandt	17.2
San Jacinto	27.4	Victoria	27.4
San Patricio	41.7	Walker	27.4
San Saba	20.0	Waller	27.3
Schleicher	20.0	Ward	18.9
Scurry	10.9	Washington	27.4
Shackelford	10.9	Webb	87.3
Shelby	22.5	Wharton	27.4
Sherman	11.0	Wheeler	11.0
Smith	23.5	Wichita	12.4
Somervell	17.2	Wilbarger	11.0
Starr	72.9	Willacy	72.9
Stephens	10.9	Williamson	24.1
Sterling	20.0	Wilson	49.4
Stonewall	10.9	Winkler	18.9
Sutton	20.0	Wise	18.2
Swisher	11.0	Wood	22.5
Tarrant	18.2	Yoakum	19.5
Taylor	11.6	Young	11.0
Terrell	20.0	Zapata	49.4
Terry	19.5	Zavala	49.4

Special Provision to Item 000
Disadvantaged Business Enterprise in Federal-Aid Contracts

1. DESCRIPTION

The purpose of this Special Provision is to carry out the U.S. Department of Transportation's (DOT) policy of ensuring nondiscrimination in the award and administration of DOT-assisted Contracts and creating a level playing field on which firms owned and controlled by individuals who are determined to be socially and economically disadvantaged can compete fairly for DOT-assisted Contracts.

2. DISADVANTAGED BUSINESS ENTERPRISE IN FEDERAL-AID CONTRACTS

2.1. **Policy.** It is the policy of the DOT and the Texas Department of Transportation (Department) that DBEs, as defined in 49 CFR Part 26, Subpart A, and the Department's DBE Program, will have the opportunity to participate in the performance of Contracts financed in whole or in part with federal funds. The DBE requirements of 49 CFR Part 26, and the Department's DBE Program, apply to this Contract as follows.

The Contractor must solicit DBEs through reasonable and available means, as defined in 49 CFR Part 26, Appendix A, and the Department's DBE Program, or show a good faith effort to meet the DBE goal for this Contract.

The Contractor, subrecipient, or subcontractor will not discriminate on the basis of race, color, national origin, or sex in the performance of this Contract. Carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted Contracts. Failure to carry out these requirements is a material breach of this Contract, which may result in the termination of this Contract or such other remedy as the Department deems appropriate.

The requirements of this Special Provision must be physically included in any subcontract.

By signing the Contract proposal, the Bidder is certifying that the DBE goal as stated in the proposal will be met by obtaining commitments from eligible DBEs or that the Bidder will provide acceptable evidence of good faith effort to meet the commitment.

2.2. **Definitions.**

2.2.1. **Administrative Reconsideration.** A process by which the low bidder may request reconsideration when the Department determines the good faith effort (GFE) requirements have not been met.

2.2.2. **Commercially Useful Function (CUF).** A CUF occurs when a DBE has the responsibility for the execution of the work and carrying out such responsibilities by actually performing, managing, and supervising the work.

2.2.3. **Disadvantaged Business Enterprise (DBE).** A for-profit small business certified through the Texas Unified Certification Program in accordance with 49 CFR Part 26, that is at least 51% owned by one or more socially and economically disadvantaged individuals, or in the case of a publicly owned business, in which is at least 51% of the stock is owned by one or more socially and economically disadvantaged individuals, and whose management and daily business operations are controlled by one or more of the individuals who own it.

2.2.4. **DBE Joint Venture.** An association of a DBE firm and one or more other firms to carry out a single business enterprise for profit for which purpose they combine their property, capital, efforts, skills, and knowledge, and in which the DBE is responsible for a distinct, clearly defined portion of the work of the Contract and whose share in the capital contribution, control, management, risks, and profits of the joint venture are commensurate with its ownership interest.

2.2.5. **DOT.** The U.S. Department of Transportation, including the Office of the Secretary, the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), and the Federal Aviation Administration (FAA).

2.2.6. **Federal-Aid Contract.** Any Contract between the Department and a Contractor that is paid for in whole or in part with DOT financial assistance.

2.2.7. **Good Faith Effort.** All necessary and reasonable steps to achieve the contract goal which, by their scope, intensity, and appropriateness to the objective, could reasonably be expected to obtain enough DBE participation, even if not fully successful. Good faith efforts are evaluated before award and throughout performance of the Contract. For guidance on good faith efforts, see 49 CFR Part 26, Appendix A.

2.2.8. **North American Industry Classification System (NAICS).** A designation that best describes the primary business of a firm. The NAICS is described in the North American Industry Classification Manual—United States, which is available on the Internet at the U.S. Census Bureau website: http://www.census.gov/eos/www/naics/.

2.2.9. **Race-Conscious.** A measure or program that is focused specifically on assisting only DBEs, including women-owned businesses.

2.2.10. **Race-Neutral DBE Participation.** Any participation by a DBE through customary competitive procurement procedures.

2.2.11. **Texas Unified Certification Program (TUCP) Directory.** An online directory listing all DBEs currently certified by the TUCP. The Directory identifies DBE firms whose participation on a Contract may be counted toward achievement of the assigned DBE Contract goal.

2.3. **Contractor's Responsibilities.**

2.3.1. **DBE Liaison Officer**. Designate a DBE liaison officer who will administer the Contractor's DBE program and who will be responsible for maintenance of records of efforts and contacts made to subcontract with DBEs.

2.3.2. **Compliance Tracking System (CTS)**. This Contract is subject to electronic Contract compliance tracking. Contractors and DBEs are required to provide any noted and requested Contract compliance-related data electronically in the Department's tracking system. This includes commitments, payments, substitutions, and good faith efforts. Contractors and DBEs are responsible for responding by any noted response date or due date to any instructions or request for information, and to check the system on a regular basis. A Contractor is responsible for ensuring all DBEs have completed all requested items and that their contact information is accurate and up-to-date. The Department may require additional information related to the Contract to be provided electronically through the system at any time before, during, or after contract award. The system is web-based and can be accessed at the following Internet address: https://txdot.txdotcms.com/.

In its sole discretion, the Department may require that contract compliance tracking data be submitted by Contractors and DBEs in an alternative format prescribed by the Department.

2.3.3. **Apparent Low Bidder.** The apparent low bidder must submit DBE commitments to satisfy the DBE goal or submit good faith effort Form 2603 and supporting documentation demonstrating why the goal could not be achieved, in whole or part, no later than 5 calendar days after bid opening. The means of transmittal and the

risk of timely receipt of the information will be the bidder's responsibility and no extension of the 5-calendar-day timeframe will be allowed for any reason.

2.3.4. **DBE Contractor.** A DBE Contractor may receive credit toward the DBE goal for work performed by its own forces and work subcontracted to DBEs. If a DBE subcontracts to a non-DBE, that information must be reported monthly.

2.3.5. **DBE Committal.** Only those DBEs certified by the TUCP are eligible to be used for goal attainment. The Department maintains the TUCP DBE Directory. The Directory can be accessed at the following Internet address: https://txdot.txdotcms.com/FrontEnd/VendorSearchPublic.asp?TN=txdot&XID=2340.

A DBE must be certified on the day the commitment is considered and at time of subcontract execution. It is the Contractor's responsibility to ensure firms identified for participation are approved certified DBE firms.

The Bidder is responsible to ensure that all submittals are checked for accuracy. Any and all omissions, deletions, and/or errors that may affect the end result of the commitment package are the sole liabilities of the bidder.

Commitments in excess of the goal are considered race-neutral commitments.

2.3.6. **Good Faith Effort Requirements.** A Contractor who cannot meet the Contract goal, in whole or in part, must make adequate good faith efforts to obtain DBE participation as so stated and defined in 49 CFR Part 26, Appendix A.

2.3.6.1. **Administrative Reconsideration.** If the Department determines that the apparent low bidder has failed to satisfy the good faith efforts requirement, the Department will notify the Bidder of the failure and will give the Bidder an opportunity to provide written documentation or argument concerning the issue of whether it met the goal or made adequate good faith efforts to do so..

The Bidder must request an administrative reconsideration of that determination within 3 days of the date of receipt of the notice. The request must be submitted directly to the Texas Department of Transportation, Civil Rights Division, 125 East 11th Street, Austin, Texas 78701-2483.

If a request for administrative reconsideration is not filed within the period specified the determination made is final and further administrative appeal is barred.

If a reconsideration request is timely received, the reconsideration decision will be made by the Department's DBE liaison officer or, if the DBE liaison officer took part in the original determination, the Department's executive director will appoint a department employee to perform the administrative reconsideration. The employee will hold a senior leadership position and will report directly to the executive director.

The meeting or written documentation must be provided or held within 7 days of the date the request was submitted.

The Department will provide to the Bidder a written decision if the Bidder did or did not make adequate good faith efforts to meet the Contract goal. The reconsideration decision is final and is not administratively appealed to DOT.

2.3.7. **Determination of DBE Participation.** The work performed by the DBE must be reasonably construed to be included in the work area and NAICS work code identified by the Contractor in the approved commitment.

Participation by a DBE on a Contract will not be counted toward DBE goals until the amount of the participation has been paid to the DBE.

Payments made to a DBE that was not on the original commitment may be counted toward the Contract goal if that DBE was certified as a DBE before the execution of the subcontract and has performed a Commercially Useful Function.

The total amount paid to the DBE for work performed with its own forces is counted toward the DBE goal. When a DBE subcontracts part of the work of its Contract to another firm, the value of the subcontracted work may be counted toward DBE goals only if the subcontractor is itself a DBE.

DBE Goal credit for the DBE subcontractors leasing of equipment or purchasing of supplies from the Contractor or its affiliates is not allowed. Project materials or supplies acquired from an affiliate of the Contractor cannot directly or indirectly (second or lower tier subcontractor) be used for DBE goal credit.

If a DBE firm is declared ineligible due to DBE decertification after the execution of the DBE's subcontract, the DBE firm may complete the work and the DBE firm's participation will be counted toward the Contract goal. If the DBE firm is decertified before the DBE firm has signed a subcontract, the Contractor is obligated to replace the ineligible DBE firm or demonstrate that it has made good faith efforts to do so.

The Contractor may count 100% of its expenditure to a DBE manufacturer. According to 49 CFR 26.55(e)(1)(i), a DBE manufacturer is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the Contract and of the general character described by the specifications.

The Contractor may count only 60% of its expenditure to a DBE regular dealer. According to 49 CFR 26.55(e)(2)(i), a DBE regular dealer is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles, or equipment of the general character described by the specifications and required under the Contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. A firm may be a regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone, or asphalt without owning, operating, or maintaining a place of business if the firm both owns and operates distribution equipment for the products. Any supplementing of regular dealers' own distribution equipment must be by a long-term lease agreement and not on an ad hoc or contract-by-contract basis. A long-term lease with a third-party transportation company is not eligible for 60% goal credit.

With respect to materials or supplies purchased from a DBE that is neither a manufacturer nor a regular dealer, the Contractor may count the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a jobsite.

A Contractor may count toward its DBE goal a portion of the total value of the Contract amount paid to a DBE joint venture equal to the distinct, clearly defined portion of the work of the Contract performed by the DBE.

2.3.8. **Commercially Useful Function.** It is the Contractor's obligation to ensure that each DBE used on federal-assisted contracts performs a commercially useful function on the Contract.

The Department will monitor performance during the Contract to ensure each DBE is performing a CUF.

Under the terms established in 49 CFR 26.55, a DBE performs a CUF when it is responsible for execution of the work of the Contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved.

With respect to material and supplies used on the Contract, a DBE must be responsible for negotiating price, determining quality and quantity, ordering the material, installing the material, if applicable, and paying for the material itself.

With respect to trucking, the DBE trucking firm must own and operate at least one fully licensed, insured, and operational truck used on the Contract. The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the Contract. The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE that leases trucks equipped with drivers from a non-DBE is entitled to credit for the total value of transportation services provided by non-DBE leased trucks equipped with drivers not to exceed the value of transportation services on the Contract provided by DBE-owned trucks or leased trucks with DBE employee drivers. Additional participation by non-DBE owned trucks equipped with drivers receives credit only for the fee or commission it receives as a result of the lease arrangement.

A DBE does not perform a CUF when its role is limited to that of an extra participant in a transaction, Contract, or project through which funds are passed to obtain the appearance of DBE participation. The Department will evaluate similar transactions involving non-DBEs to determine whether a DBE is an extra participant.

If a DBE does not perform or exercise responsibility for at least 30% of the total cost of its Contract with its own work force, or the DBE subcontracts a greater portion of the work than would be expected on the basis of normal industry practice for the type of work involved, the Department will presume that the DBE is not performing a CUF.

If the Department determines that a DBE is not performing a CUF, no work performed by such DBE will count as eligible participation. The denial period of time may occur before or after a determination has been made by the Department.

In case of the denial of credit for non-performance of a CUF, the Contractor will be required to provide a substitute DBE to meet the Contract goal or provide an adequate good faith effort when applicable.

2.3.8.1. **Rebuttal of a Finding of No Commercially Useful Function.** Consistent with the provisions of 49 CFR 26.55(c)(4)&(5), before the Department makes a final finding that no CUF has been performed by a DBE, the Department will notify the DBE and provide the DBE the opportunity to provide rebuttal information.

CUF determinations are not subject to administrative appeal to DOT.

2.3.9. **Joint Check.** The use of joint checks between a Contractor and a DBE is allowed with Department approval. To obtain approval, the Contractor must submit a completed Form 2178, “DBE Joint Check Approval,” to the Department.

The Department will closely monitor the use of joint checks to ensure that such a practice does not erode the independence of the DBE nor inhibit the DBE’s ability to perform a CUF. When joint checks are used, DBE credit toward the Contract goal will be allowed only when the subcontractor is performing a CUF in accordance with 49 CFR 26.55(c)(1).

Long-term or open-ended joint checking arrangements may be a basis for further scrutiny and may result in the lack of participation towards the Contract goal requirement if DBE independence cannot be established.

Joint checks will not be allowed simply for the convenience of the Contractor.

If the proper procedures are not followed or the Department determines that the arrangements result in a lack of independence for the DBE involved, no credit for the DBE’s participation as it relates to the material cost will be used toward the Contract goal requirement, and the Contractor will need to make up the difference elsewhere on the project.

2.3.10. **DBE Termination and Substitution.** No DBE named in the commitment submitted under Section 2.3.5. will be terminated for convenience, in whole or part, without the Department’s approval. This includes, but is not

limited to, instances in which a Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm.

Unless consent is provided, the Contractor will not be entitled to any payment for work or material unless it is performed or supplied by the listed DBE.

The Contractor, before submitting its request to terminate, must first give written notice to the DBE of its intent to terminate and the reason for the termination. The Contractor will copy the Department on the Notice of Intent to terminate.

The DBE has 5 calendar days to respond to the Contractor's notice and will advise the Contractor and the Department of the reasons, if any, why it objects to the proposed termination of its subcontract and why the Department should not approve the prime Contractor's request for termination.

The Department may provide a shorter response time if required in a particular case as a matter of public necessity.

The Department will consider both the Contractor's request and DBE's stated position before approving the request. The Department may provide a written approval only if it agrees, for reasons stated in its concurrence document, that the Contractor has good cause to terminate the DBE. If the Department does not approve the request, the Contractor must continue to use the committed DBE firm in accordance with the Contract. For guidance on what good cause includes, see 49 CFR 26.53.

Good cause does not exist if the Contractor seeks to terminate, reduce, or substitute a DBE it relied upon to obtain the Contract so that the Contractor can self-perform the work for which the DBE firm was engaged.

When a DBE subcontractor is terminated, make good faith efforts to find, as a substitute for the original DBE, another DBE to perform, at least to the extent needed to meet the established Contract goal, the work that the original DBE was to have performed under the Contract.

Submit the completed Form 2228, "DBE Termination Substitution Request," within seven (7) days, which may be extended for an additional 7 days if necessary at the request of the Contractor. The Department will provide a written determination to the Contractor stating whether or not good faith efforts have been demonstrated. If the Department determines that good faith efforts were not demonstrated, the Contractor will have the opportunity to appeal the determination to the Civil Rights Division.

2.3.11. **Reports and Records.** By the 15th of each month and after work begins, report payments to meet the DBE goal and for DBE race-neutral participation on projects with or without goals. These payment reports will be required until all DBE subcontracting or material supply activity is completed. Negative payment reports are required when no activity has occurred in a monthly period.

Notify the Area Engineer if payment to any DBE subcontractor is withheld or reduced.

Before receiving final payment from the Department, the Contractor must indicate a final payment on the compliance tracking system. The final payment is a summary of all payments made to the DBEs on the project.

All records must be retained for a period of 3 years following completion of the Contract work, and must be available at reasonable times and places for inspection by authorized representatives of the Department or the DOT. Provide copies of subcontracts or agreements and other documentation upon request.

2.3.12. **Failure to Comply.** If the Department determines the Contractor has failed to demonstrate good faith efforts to meet the assigned goal, the Contractor will be given an opportunity for reconsideration 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 terminate the Contract; to deduct the amount of DBE goal not accomplished by DBEs from the money due or to become due the Contractor; or to secure a refund, not as a penalty but as liquidated damages, to the Department or such other remedy or remedies as the Department deems appropriate.

2.3.13. **Investigations.** The Department may conduct reviews or investigations of participants as necessary. All participants, including, but not limited to, DBEs and complainants using DBE Subcontractors to meet the Contract goal, are required to cooperate fully and promptly with compliance reviews, investigations, and other requests for information.

2.3.14. **Falsification and Misrepresentation.** If the Department determines that a Contractor or subcontractor was a knowing and willing participant in any intended or actual subcontracting arrangement contrived to artificially inflate DBE participation or any other business arrangement determined by the Department to be unallowable, or if the Contractor engages in repeated violations, falsification, or misrepresentation, the Department may:

- refuse to count any fraudulent or misrepresented DBE participation;
- withhold progress payments to the Contractor commensurate with the violation;
- reduce the Contractor's prequalification status;
- refer the matter to the Office of Inspector General of the US Department of Transportation for investigation; and/or
- seek any other available contractual remedy.

Special Provision 000
Schedule of 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	760
1,000,000	3,000,000	968
3,000,000	5,000,000	1107
5,000,000	15,000,000	1527
15,000,000	25,000,000	2095
25,000,000	50,000,000	3072
50,000,000	Over 50,000,000	5093

In addition to the amount shown in Table 1, the Liquidated Damages will be increased by the amount shown in Item 8 "Prosecution and Progress," of the General Notes for Road User Cost (RUC), when applicable.

Special Provision 000
Important Notice to Contractors

As of September 23, 2024, utilities within the project limits have not been cleared. The Department anticipates clearance by the dates listed below. Unless otherwise stated, clearance of these obstructions will be performed by their owners. Estimated clearance dates are not anticipated to interfere with the Contractor's operations. In the event the clearance dates are not met, requests for additional compensation or time will be made in accordance with the Standard Specifications.

The Contractor is invited to review the mapped information of obstructions on file with the Engineer.

UTILITY			
Utility Owner	**Approximate Location**	**Estimated Clearance Date**	**Effect on Construction**
Oncor	Bore at Sta. 71+25(+or-) Aerial lines parallel to ROW line NB side to Sta. 90+10(+or-) SB Side from Sta. 106+25(+or-) to Sta. 119+30(+or-) Aerial Crossing at Eldorado Pkwy.	January 2, 2025	No Effect
AT&T	Parallel line from SS399 Sta.1041.50 (+or-) SBML@ Sta.1441(+or -) to SBML Parallel from Sta.1441(+or -) Sta.1082(+or -), Bore from SH 5/NBML 50+00 (+or -) Sta.1069.50 (+or -) w/MH @ SH 5 Int. Eldorado Pkwy. reinforcement in SBML @Sta. 115.00 (+or -)	January 12, 2025	No Effect
Atmos	Crossing SH 5 Sta.48+90(+or-) Parallel from there to tie in at Crestwood Dr. Crossing at 82+75(+or-) Parallel from 107+00(+or-) to 119+00(+or-) Crossings at 113+10(+or-) and 117+25(+or-)	February 28, 2025	No Effect
MCI/Verizon	Cross@Sta.114+90 (+or-) Parallel line from 114+90 SBFR Direct Bore from 114+90 to 135+30 (+or -)	February 28, 2025	No Effect
Charter/Spectrum	Will relocate onto Oncor's poles parallel to ROW	February 28, 2025	No Effect
City or McKinney	SS: Parallel from Sta. 1025+00 to 1040+00 (+or-) crossing, SS crossing @ Sta 115+00(+or-), to E. side then parallel to Sta.123+00(+or-), Waterline: Parallel (+or-) WL crossing @ future Enterprise Blvd./SS399 Intersection Sta.1026 (+or-) Parallel line on E. side of SH5 50+00 and SS399 stationing (+or-) from Sta.1044 (+or-) to Sta. 65+60(+or-), W. side Parallel from SS399 Sta. 1044+00 (+or-) or SH5 Stationing 50+00 to SH5 Sta.123+00(+or-), Small WL segment W. side at Sta.119+25 (+or-)	February 28, 2025	No Effect

Special Provision to Item 6
Control of Materials

Item 6, "Control of Materials" of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Section 1.1. "Buy America," and Section 1.2., "Buy America Exceptions," are voided and replaced by the following.

1.1. **Buy America**. Comply with the latest provisions of Build America, Buy America Act (BABA Act) of the Bipartisan Infrastructure Law and applicable CFR, which restrict funds being made available from Federal financial assistance programs unless all the iron products, steel products, manufactured products, and construction materials used in the project are produced in the United States. Use iron or steel products, manufactured products, or construction materials produced in the United States for all permanently installed materials and products except when defined in Section 1.1.5., "Buy America Exceptions."

A material is solely classified based on its status at the time it is brought to the work site as either an iron or steel product, construction material, manufactured product, or Section 70917(c) material. Refer to the Buy America Material Classification Sheet found in the general notes or txdot.gov for additional clarification on material classification.

1.1.1. **Iron or Steel**. Iron or steel products means articles, materials, or supplies that consist of iron or steel or a combination of both. For iron or steel products, manufacturing includes any process that modifies the chemical content, physical shape or size, or final finish of a product. The manufacturing process begins with initial melting and mixing and continues through fabrication (e.g., cutting, drilling, welding, bending.) and coating (e.g., paint, galvanizing, epoxy).

For iron or steel products, submit a notarized original FORM D-9-USA-1 (Department Form 1818) with the proper attachments for verification of compliance.

1.1.2. **Section 70917(c) Materials**. Section 70917(c) materials mean cement and cementitious material; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives. Section 70917(c) materials do not require domestic sourcing or Buy America certification.

1.1.3. **Construction Materials**. Construction materials are classified as articles, materials, or supplies that consist of only one of the items listed in bullets below. Minor additions (as determined by the plans or the Engineer) to any of the items listed is still a construction material.

- non-ferrous metals,
- plastic and polymer-based products (including polyvinyl chloride, composite building materials, and polymers used in fiber optic cables),
- glass (including optic glass),
- fiber optic cable (including drop cable),
- optical fiber,
- lumber,
- engineered wood, or
- drywall.

For construction materials, submit a Construction Material Buy America Certification Form (Department Form 2806) for verification of compliance that all manufacturing processes, as required, occurred in the

United States. Each construction material has specific certification requirements stated below. Provide additional documentation as requested.

Details shown on the plans provide additional clarification on Buy America requirements.

For non-ferrous metals, certification requires all manufacturing processes, from initial smelting or melting through final shaping, coating, and assembly, occurred in the United States.

For plastic and polymer-based products (including polyvinyl chloride, composite building materials, and polymers used in fiber optic cables), certification requires all manufacturing processes, from initial combination of constituent plastic or polymer-based inputs, or, where applicable, constituent composite materials, until the item is in its final form, occurred in the United States.

For glass (including optic glass), certification requires all manufacturing processes, from initial batching and melting of raw materials through annealing, cooling, and cutting, occurred in the United States.

For fiber optic cable (including drop cable), certification requires all manufacturing processes, from the initial ribboning (if applicable), through buffering, fiber stranding and jacketing, occurred in the United States. All manufacturing processes also include the standards for glass and optical fiber, but not for non-ferrous metals, plastic and polymer-based products, or any others.

For optical fiber, certification requires all manufacturing processes, from the initial preform fabrication stage through the completion of the draw, occurred in the United States.

For lumber, certification requires all manufacturing processes, from initial debarking through treatment and planing, occurred in the United States.

For engineered wood, certification requires all manufacturing processes from the initial combination of constituent materials until the wood product is in its final form, occurred in the United States.

For drywall, certification requires all manufacturing processes, from initial blending of mined or synthetic gypsum plaster and additives through cutting and drying of sandwiched panels, occurred in the United States.

1.1.4. **Manufactured Products**. Materials classified as a manufactured product are currently waived from Buy America requirements by an FHWA general waiver and are not required to be domestically sourced. However, iron or steel products incorporated into manufactured products must meet iron and steel compliance requirements.

1.1.5. **Buy America Exceptions**. Use of iron, steel, construction materials, and manufactured products manufactured in the United States is required unless the material meets an exception below.

- A waiver exists exempting the material from Buy America compliance.
- The total value of the non-compliant products (other than iron or steel products) is no more than the lesser of $1,000,000 or 5% of Total Applicable Costs for the project. Total Applicable Cost means the actual cost of all materials requiring Buy America compliance including iron, steel, or other materials that are within the scope of existing waivers. Contractor must provide documentation showing under threshold in advance for Engineer's consideration.
- The total value of foreign iron and steel products, including delivery, does not exceed 0.1% of the total Contract cost or $2,500, whichever is greater. The Contractor must provide documentation showing under threshold in advance for the Engineer's consideration.
- Foreign steel may be allowed when the Contract contains an alternate item for a foreign source iron or steel product and the Contract is awarded based on the alternate item.

- The materials are temporarily installed or are supplies, tools, and equipment not incorporated into the project. Temporarily installed means the materials and products must be removed at the end of the project or may be removed at the Contractor's convenience with the Engineer's approval.

Special Provision to Item 8
Prosecution and Progress

Item 8, "Prosecution and Progress," of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Article 8.6., "Failure to Complete Work on Time," is supplemented by the following.

6.1. **Lane Closure Assessment Fees**. Monetary assessment, as shown on the plans, will be made against the Contractor for any lane closure or obstruction that overlaps into the peak-hour traffic for each time increment shown on the plans or portion thereof, per lane, regardless of the length of lane closure or obstruction.

6.1.1. **Definition of Terms**. For this Contract, the following definitions apply.

6.1.1.1. **Time Increment**. Any continuous defined increment of time or portion thereof for a period beginning at that point when lanes are closed or obstructed by the Contractor's operations.

6.1.1.2. **Assessment Fee**. The amount shown on the proposal for each defined time increment, representing the average cost of interference and inconvenience to the road user for each lane closed or obstructed during peak-hour traffic. The Engineer may allow a proportional fee assessment for closures that do not involve an entire defined time increment.

6.1.1.3. **Closure or Obstruction**. When the Contractor's operations result in a reduced lane width of the travel way or shoulder less than that shown on the plans.

6.1.1.4. **Peak-Hour Traffic Times**. Schedule of days and times described in the General Notes when lane closures or obstructions are not allowed.

6.1.2. **Fee Calculation and Collection**. The assessment fee will be deducted from the amount due to the Contractor on the monthly construction estimate, and thus retained by the Department. The Engineer will determine the time of overlap of lane closures or obstructions for calculating the assessment fee. The fee is based on road user costs and is assessed not as a penalty, but for added expense incurred by the traveling public.

Special Provision to Item 8
Prosecution and Progress

Item 8, "Prosecution and Progress," of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

This Item is supplemented by the following.

9. INCENTIVE USING ROAD-USER COST OR CONTRACT ADMINISTRATION LIQUIDATED DAMAGE VALUES AND DISINCENTIVE USING ROAD-USER COST

This Special Provision is for the application of incentives and disincentives as follows:

- incentives for early Contract completion using contract administration liquidated damage or early substantial completion of work ahead of time using daily road-user cost values as basis and
- disincentives for late substantial completion of work using daily road-user costs.

Incentive provisions based on contract administration liquidated damages will apply when shown on the plans. Incentive provisions based on road-user cost will apply when shown on the plans. Disincentive provisions based on road-user cost will apply when road-user cost incentive provisions are as shown on the plans. The disincentive provisions based on road-user cost will also apply when shown separately on the plans (without an associated road-user cost incentive).

Definitions are as follows.

- **Contract Completion**. The final acceptance date (day) unless performance, establishment, and maintenance periods occur. In the case of performance, establishment, and maintenance periods, completion will be considered when all work is complete and accepted, except for performance, establishment, and maintenance periods, with time computed to the suspension of time charges for the acceptance process.
- **Substantial Completion of Work**. The date (day) when all project work (or the work for a specified milestone or phase) requiring lane or shoulder closures or obstructions is completed, and traffic is following the lane arrangement as shown on the plans for the finished roadway (or the specified milestone or phase of work); all pavement construction and resurfacing are complete; and traffic control devices and pavement markings are in their final position (or as shown on the plans for the specified milestone of work). The Engineer may make an exception for permanent pavement markings provided the lack of markings does not cause a disruption to traffic flow or an unsafe condition for the traveling public, and work zone pavement markings are in place.

10. TIME ALLOWED FOR CONTRACT OR SUBSTANTIAL COMPLETION

Time allowed for Contract or substantial completion, including milestones, will be addressed by either or a combination of the following.

- **A + B**. When A + B bidding provisions are included in the Contract, the B working days bid will be considered as the time allowed for Contract or substantial completion as applicable.
- **Department-Established Time**. The plans will show either the number of working days or a specific date for the purposes of computing early Contract or early substantial completion incentives or disincentives.

11. TIME CHARGE ADJUSTMENTS

Time charge adjustments will be made in accordance with the schedule required to meet Article 8.1., "Prosecution of Work" and Article 8.5., "Project Schedules," the proposal, and the plans. For Contracts with milestone dates, time charges for the completion incentives and disincentives will not be adjusted for weather, weekends, holidays, or other unforeseeable events not under the control or responsibility of the Department. However, time charges for completion incentives or disincentives may be adjusted by the Engineer when:

- work under the control of the Department, such as extension of limits or changes in scope, changes the actual duration of completion;
- delays occur because of unadjusted utilities or unclear right of way when clearance is not the responsibility of the Contractor; or
- catastrophic events occur, such as a declared state of emergency or natural disaster, if the event directly affects the Contractor's prosecution.

11.1. **Incentives**. As shown on the plans and in accordance with the Contract, the Department will pay an incentive for early Contract completion or early substantial completion of work under the number of working days specified in the Contract. The maximum number of working days used in computing the credit will be 30 days for each milestone and Contract completion incentive unless otherwise specified in the Contract. The amount of the credit will be added to money due or to become due to the Contractor.

11.2. **Early Contract Completion Incentive**. The incentive will be based on the difference between the actual early Contract completion days and the Contract completion days in the Contract. The difference will then be multiplied by the daily contract administration liquidated damage value shown in the proposal.

11.3. **Early Substantial Completion of Work Incentive**. The incentive will be based on the differences between the actual early substantial completion of work and the Contract days allowed to substantially complete the work (or the specified milestone or phase of work). The difference will then be multiplied by the daily road-user cost values specified for substantial Contract completion (or road-user cost specified for the pertinent milestone or phase of work).

11.4. **Disincentives for Failure to Substantially Complete Work on Time**. As shown on the plans and in accordance with the Contract, failure to substantially complete the work (or specified milestone or phase of work) within the established number of working days will result in the assessment of disincentives using the daily road-user cost shown on the plans for each working day in excess of those allowed. The road-user cost disincentive deductions will be in addition to any Contract administration liquidated damages, in accordance with Article 8.6., "Failure to Complete Work on Time." The amount of the disincentive will be deducted from money due or to become due to the Contractor. The road-user cost disincentives will be assessed not as a penalty, but for added expense incurred by the traveling public.

Special Provision to Item 8
Prosecution and Progress

Item 8, "Prosecution and Progress" of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Article 8.1., "Prosecution of Work." The first sentence of the first paragraph is voided and replaced by the following.

Begin work on the date specified in the plans. Do not begin work before or after this period unless authorized in writing by the Engineer.

Special Specification 4003
Thermal Integrity Profiler (TIP) Testing of Drilled Shafts

1. DESCRIPTION

Perform the nondestructive testing (NDT) method termed "Thermal Integrity Profiler (TIP) testing" by obtaining records of the heat generated by curing cement (hydration energy) to assess the quality of drilled shafts. TIP measurements that are colder than normal indicate necks, inclusions, or poor-quality concrete, while warmer than normal measurements are indicative of bulges. Variations of temperatures between tubes reveal cage eccentricity. Furnish all materials, equipment, and labor necessary to conduct TIP testing on production-drilled shafts. The TIP testing must be in accordance with ASTM D7949, except as noted in this Specification.

2. EQUIPMENT

Supply all materials and equipment required to perform TIP tests. Equipment to perform the test must have the following minimum requirements.

2.1. **Probe or Wire Option**. A computer-based TIP data acquisition system for display of signals during data acquisition (probe only option) or to monitor temperature versus time after casting (wire only option).

2.2. **Probe Only Option**. Thermal probe with four infrared sensors equally spaced at 90° around the perimeter that read temperatures of the tube wall to within 1°F accuracy. The probes must be less than 1-1/4 in. in diameter and must freely descend through the full depth of properly installed access tubes in the drilled shafts; have one depth encoder sensor to determine probe depths; and be capable of collecting data at user-specified depth increments.

2.3. **Wire Only Option**. Ability to collect data at user-defined time intervals (typically 15–60 min.).

3. TESTING PROCEDURE

Conform to testing procedures in accordance with ASTM D7949.

4. TEST RESULT REPORTING

Submit a written report within 5 working days of completion of testing. The report must present results of TIP tests by including the following.

4.1. **Graphical Displays**. Provide graphical displays of all temperature measurements (probes or wires) versus depth.

4.2. **Significant Temperature Deviations**. Report indication of unusual temperatures, particularly significantly cooler local deviations of the average at any depth from the overall average over the entire length, in either probe or thermal wire measurements.

4.3. **Overall Average Temperature**. This temperature is proportional to the average radius computed from the actual total concrete volume installed (assuming a consistent concrete mix throughout). Radius at any point can then be determined from the temperature at that point compared to the overall average temperature.

4.4. **Temperature Variation**. Report variations in temperature between tubes (at each depth) that in turn correspond to variations in cage alignment. Where concrete volume is known, report the cage alignment or offset from center.

4.5. **Shaft-Specific Information**. Report shaft-specific construction information (e.g., elevations of the top of shaft, bottom of casing, and bottom of shaft) when available. These values must be noted on all pertinent graphical displays.

5. MEASUREMENT

This Item will be measured by each successful test that is approved. Quantities of TIP testing must be shown on the plans.

6. 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 each "Thermal Integrity Profiler (TIP) Testing of Drilled Shaft" of size and type specified. This price is full compensation for material, equipment, labor, work, tools, and incidentals.

Special Specification 6006
Video Imaging Vehicle Detection System

1. DESCRIPTION

Furnish, install, relocate, or remove video imaging vehicle detection system (VIVDS) at locations shown on the plans, or as directed. Use VIVDS listed on the Department's prequalified products list.

2. MATERIALS

2.1. **General**. Furnish, assemble, and install only new materials except as allowed for relocation of VIVDS equipment. Ensure all VIVDS within the project are from the same manufacturer.

VIVDS must analyze video images and produce vehicle detector outputs that can serve as inputs to a traffic signal controller. Provide VIVDS field equipment that is compatible with existing infrastructure and software located in the Department's Traffic Management Control Centers across the state as directed. VIVDS must meet Department TSS Protocol requirements when integration with Traffic Management Center software or systems is shown on the plans.

VIVDS equipment must include the following:

- camera and mounting hardware (fixed or variable focal length; infrared; or 360° "fish-eye"),
- VIVDS processor,
- cabinet control unit and associated devices required for system integration, and
- data, power, and communication cable, connectors, and assemblies.

The VIVDS must use one or more cameras and video processing equipment to accurately provide detector calls for the intersection, approach, or roadway segment where they are installed, and provide detection as shown on the plans. A single camera placed per manufacturer recommendations must be capable of monitoring and detecting five lanes of traffic simultaneously.

Ensure the system is designed and constructed with subassemblies, circuits, cards, and modules to maximize standardization and commonality.

Ensure field replaceable parts are accessible for inspection and maintenance. Provide test points for checking essential voltages and waveforms.

VIVDS devices must self-recover from power failure once power is restored.

2.2. **Configuration and Management**. Ensure that the VIVDS allows local and remote configuration and monitoring. The VIVDS must allow the user to fully configure the system and place detection zones using a mouse, monitor, and keyboard (or keypad) connected to the VIVDS. Provide each VIVDS with all associated equipment required to configure and operate the system in a field environment including a video monitor, mouse, keyboard (or keypad), software, and interface cables as applicable. The VIVDS must also support local configuration and monitoring using a laptop computer but must not require a computer for local configuration, monitoring, and operation.

Ensure that the system can display detection zones and detection activations overlaid on live video from VIVDS cameras.

Ensure that the VIVDS allows a user to edit previously defined configuration parameters, including size, placement, and sensitivity of detection zones.

Ensure that the VIVDS retains its programming in nonvolatile memory. Ensure that the detection system configuration settings can be saved to a computer and restored from a saved file locally and remotely. The system must allow stored configurations to be modified for fine-tuning and optimization. The VIVDS must continue to detect vehicles and operate normally while configuration and detection zone modifications are made.

Ensure the VIVDS does not require adjustment or recalibration to maintain performance once initial calibration and configuration is complete.

2.3. **Detection Zones**. The VIVDS must allow a user to configure detection zones using a graphical user interface (GUI) superimposed on a video image of the roadway. Ensure detection zones can be placed anywhere within a camera field of view. Ensure VIVDS detection zones can detect vehicle presence and collect traffic data, such as traffic counts.

Detection zones must appear as lines or polygons in the field of view. The system must allow a minimum of eight detection zones per field of view. VIVDS detection zones must be able to provide detection equivalent to a 6 ft. by 6 ft. loop. Ensure zones can be sized, shaped, and overlapped to accurately detect vehicles at the locations shown on the plans.

The system must allow zones to be configured with directionality, delay, extension, and logic functions including “AND” and “OR.” If each detection zone provides a unique output to the signal controller and the controller includes logical functions, then the VIVDS is not required to support logic functions.

Ensure zones displayed on a monitor provide a visual indication when vehicles are detected during configuration and operation.

2.4. **Detection**. VIVDS processor must compensate for minor camera movement. Movement up to 2% of field of view at 400 ft. must not produce a false detection.

Ensure VIVDS processor operates regardless of whether monitoring equipment is connected. If monitoring equipment is connected to the processor unit, vehicle detections are displayed real-time as they occur.

VIVDS must simultaneously detect vehicles in all lanes. VIVDS must be able to accurately detect approaching and departing vehicles in multiple lanes. VIVDS is configurable for which direction of travel to detect. Ensure vehicles traveling in any direction other than the configured direction of travel (e.g., cross-street and wrong-way traffic) do not activate a call to the controller.

Ensure a constant call is placed on outputs associated with zones or cameras that are in an error state or failed. Ensure a constant call is placed on assigned outputs whenever the system is unable to provide accurate detection.

2.5. **Accuracy**. Ensure VIVDS individual lane accuracy for vehicle presence detection is within 5% of actual.

2.6. **Camera**. Use color or thermal cameras that are provided as part of an engineered system by the VIVDS processor manufacturer or approved for use by the VIVDS processor manufacturer. Ensure that analog cameras provide NTSC composite video with a minimum resolution of at least 480 TVL.

Cameras must produce useable video suitable for detection in low light. Cameras with day and night modes must automatically and seamlessly transition between modes without producing vehicle detection errors such as false calls and missed calls. Nighttime monochrome operation must produce feature resolvable video with luminance as low as 0.1 lux. Nighttime color operation must produce feature resolvable video with luminance as low as 1.0 lux.

Cameras must produce resolvable features in the video with luminance as high as 10,000 lux.

Visual spectrum cameras must include automatic electronic shutter and iris control based on average scene luminance.

Variable focal length lenses must be adjustable from 6 mm to 34 mm.

Processed images produced by the VIVDS must use a standard encoding format such as H.264 or MJPEG unless otherwise shown on the plans.

2.6.1. **Thermal cameras**. Thermal imaging cameras must use a long-life, uncooled vanadium oxide microbolometer thermal detector with a spectral range of 7.5 to 13.5 µm.

Ensure analog video is compliant with National Television System Committee (NTSC) standard and has a minimum NTSC array format of 320 x 240 with a 76,800 pixel effective resolution.

2.6.2. **Camera enclosure**. Camera and lens assembly must be housed in an enclosure designed for outdoor use. The housing must be light in color to limit solar heating and prolong equipment life. Enclosure, including cable connections, must be waterproof and dust tight with a NEMA Type 4 rating.

Ensure enclosures for visual spectrum cameras include a sunshield. Sunshield must protrude beyond the front edge of the enclosure and divert water away from the camera's field of view. Ensure the sunshield overhang is adjustable. Any plastics used in the construction of the enclosure must include ultraviolet inhibitors.

Ensure the enclosure allows the camera horizon to be rotated in the field during installation. Ensure camera focus and zoom can be adjusted, if necessary, without entering the camera enclosure.

The camera enclosure must be provided with mounting bracket designed to mount directly to a pole, mast-arm, or other structure. Ensure the bracket allows the camera to be panned and tilted for alignment and then locked into place once properly positioned.

The camera enclosure with camera and lens installed must weigh 10 lb. or less.

Camera housing must include a means to prevent the formation of ice or condensation. If camera housing includes a heater, wiper, or other electronically controlled mechanism, such mechanism does not interfere with the camera operation or video signal.

2.7. **Video Processor**. Ensure the VIVDS includes a machine vision processor that provides video analysis, presence detection, and interfaces for inputs and outputs. VIVDS must provide data collection features, including storage and reporting of collected vehicle detection data, when shown on the plans.

VIVDS must be able to interface with the traffic controller unit (CU) via the detector rack, SDLC, or another detector interface described in NEMA TS2-2016, unless otherwise shown on the plans. Solid state detection outputs must meet the requirements of NEMA TS2-2016, 6.5.2.26.

Each VIVDS detector rack card must have a minimum of four detector outputs. The system must be able to provide a total of 24 detection outputs. Ensure each zone and output is user definable, and previously saved zones can be redefined.

The system must be capable of functioning as a detector BIU using an RS-485 SDLC connector. TS2 Type 1 VIVDS must include indicators that display detector output status for verification of calls.

Analog video inputs must use BNC connectors or be routed through existing loop inputs using connections designed for that purpose. Analog video outputs must use BNC or RCA connectors. Use of external cable connections to create a combined video output is not allowed.

Ensure processor includes provisions to view video image in the field and remotely.

VIVDS processors installed in the traffic controller cabinet must utilize digital video or accommodate asynchronous, synchronous, and line-locked analog video as part of a complete system engineered by the VIVDS manufacturer.

2.8. **Camera Interface Panel**. Supply the VIVDS with a camera interface panel as required by the manufacturer that provides a cabinet connection point between field wiring from VIVDS cameras and VIVDS equipment in the cabinet. The interface panel must be provided by the VIVDS manufacturer as part of a complete engineered system. The panel must include terminal facilities and surge suppression for all conductors used to connect VIVDS field equipment, including camera power and communications. Interface panels for analog cameras must include a 10-amp breaker or blade type fuses and a power terminal strip with a minimum of eight 8/32 binder head screws for camera power connections. The panel must also have, as a minimum, four coax protectors (EDCO CX06 or equivalent). Additional lightning and transient protection will be allowed. All components that reside on the panel must be Department approved. For cameras utilizing POE the interface panel must consist of surge protection meeting GR 1089 standards.

Ensure interface panel is capable of being mounted on the side walls of the controller cabinet. Video connections must be isolated from earth ground.

2.9. **Cabling**. Supply the VIVDS with connector cables of the appropriate length for each installation site. Connector cables must include all conductors necessary for power, video, and communication. All cabling used must meet the minimum recommended specifications of the VIVDS manufacturer.

Ensure the power and data cable connectors are IP 67 to protect against intrusion of solids and water. External connectors must be quick disconnect and keyed to prevent improper connections. All wiring must be color coded and marked appropriately. Ensure all conductors that interface with the connector are encased in a single jacket.

Fiber optic cable, if used, must meet the Department requirements as shown in the plans.

If coaxial cable is used, it must be low loss, 75 ohm, precision video cable suited for outdoor installation and approved by the VIVDS manufacturer.

RS-485 and RS-232 communication cable must meet the requirements of Special Specification 6005, “Networking Intelligent Transportation System (ITS) Communications Cable.”

2.10. **Communication**. Ensure that the VIVDS includes a minimum of one serial or Ethernet communications interface.

Ensure serial interfaces and connectors conform to Telecommunications Industry Association (TIA)-232 standards. Ensure that the serial ports support data rates up to 115200 bps; error detection utilizing parity bits (i.e., none, even, and odd); and stop bits (1 or 2).

Ensure that wired Ethernet interfaces provide a 10/100 Base TX connection. Verify that all unshielded twisted pair or shielded twisted pair network cables and connectors are in accordance with TIA-568.

Ensure wireless communications are secure and that wireless devices are Federal Communications Commission (FCC) certified. Ensure that the FCC identification number is displayed on an external label and that all detection system devices operate within their FCC frequency allocation.

Ensure the system can be configured and monitored via one or more communications interface. Ensure that all communication addresses are user programmable.

2.11. **Software**. Ensure the VIVDS manufacturer includes all software required to configure and monitor operation of VIVDS field equipment locally and remotely. VIVDS software must be a stable production release approved by the Department's Traffic Operations Division.

Ensure VIVDS computer software includes a GUI that displays all configured lanes and provides visual representation of all detected vehicles. Server software must be designed to run on the Windows Server operating system (Windows Server 2012 or newer). Client workstation software must be designed to run on Microsoft Windows 7 Professional and newer.

VIVDS software must allow the user to program, operate, exercise, diagnose, and read status of all VIVDS features and functions using a laptop computer.

VIVDS computer software must be able to communicate with VIVDS field devices using TCP/IP and serial connections. The software must provide for local and remote configuration and monitoring, including display of detection zone activations on live video and modification of existing detection zone layouts.

System software must provide the user complete control over the configuration process for VIVDS devices and allow the user to load new firmware into non-volatile memory of VIVDS field devices locally and over any supported communication channel including TCP/IP networks.

The system software must include the ability to retrieve and store data collected by VIVDS field devices.

Ensure all licenses required for operation and use of software are included at no additional cost.

Software updates must be provided at no additional cost during the warranty period.

2.12. **Mechanical**. VIVDS detector card rack units must be in accordance with dimensions specified in NEMA TS2-2016, 6.5.2.2.2.

Ensure that all parts are fabricated from corrosion resistant materials, such as plastic, stainless steel, aluminum, or brass.

Ensure that all screws, nuts, and locking washers are stainless steel. Do not use self-tapping screws.

Ensure equipment is clearly and permanently marked with manufacturer name or trademark and part number as well as date of manufacture or serial number.

Ensure VIVDS is modular in design for ease of field replacement and maintenance.

All printed circuit boards must have conformal coating to protect against moisture and fungus.

2.13. **Electrical**. Ensure equipment is designed to protect personnel from exposure to high voltage during installation, operation, and maintenance. Ensure all connections include the manufacturer recommend surge protective device (SPD). SPDs must not interfere with the performance of the VIVDS. VIVDS electrical design must be modular.

Ensure the VIVDS operates on nominal 120 V_{AC}. A power converter must be provided for devices that do not operate on nominal 120 V_{AC}. Camera sensors must operate between 12 V_{DC} and 28 V_{DC}.

2.14. **Environmental**. All VIVDS devices must operate properly during and after being subjected to the environmental testing procedures described in NEMA TS2, Section 2. VIVDS cameras must be able to

withstand the maximum wind load defined in the Department's basic wind velocity zone map standard without any damage or loosening from structure.

2.15. **Connectors and Harnesses**. External connections exposed to the outdoor environment must be made with weatherproof connectors. Connectors must be keyed to ensure correct alignment and mating.

Ensure all conductors are properly color coded and identified. Ensure that every conductive contact surface or pin is gold-plated or made of a noncorrosive, nonrusting, conductive metal.

RS-485 and RS-232 communication cables must:

- be shielded, twisted pair cable with a drain wire;
- have a nominal capacitance conductor to conductor @ 1Khz ≥ 26pF/ ft.;
- have nominal conductor DC resistance @ 68°F ≤ 15 ohms/1,000 ft.;
- be one continuous run with no splices; and
- be terminated only on the two farthest ends of the cable.

2.16. **Documentation**. Provide hardcopy operation and maintenance manuals, along with a copy of all product documentation on electronic media. Include the following documentation for all system devices and software:

- operator manuals,
- installation manuals with installation procedures,
- maintenance and troubleshooting procedures, and
- manufacturer's specifications (functional, electrical, mechanical, and environmental).

Provide certification from an independent laboratory demonstrating compliance with NEMA TS2 environmental requirements for temperature, humidity, transients, vibration, and shock.

Provide certification that VIVDS electronic equipment meets FCC Class B requirements for electromagnetic interference and emissions.

Ensure the VIVDS system manufacturer has a quality assurance program for manufacturing VIVDS as described in this specification. Manufacturer of the VIVDS must be ISO 9001 certified or provide a copy of the company quality manual for review.

The VIVDS must pass testing to ensure functionality and reliability before delivery. Test results and supporting documentation, including serial number tested, must be submitted for each VIVDS. If requested, manufacturing data per serial number must be provided for each VIVDS.

2.17. **Warranty**. Warrant the equipment against defects or failure in design, materials, and workmanship for a minimum of 5 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 VIVDS 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 per 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.

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

During the warranty period, technical support must be available via telephone within 4 hr. of the time a call is made by a user, and this support must be available from factory certified personnel.

2.18. **Training**. Conduct a training class for a minimum of 8 hr., unless otherwise directed, for up to 10 representatives designated by the Department on installation, configuration, operation, testing, maintenance, troubleshooting, and repair. Submit a training session agenda, a complete set of training material, the names and qualifications of proposed instructors, and proposed training location for approval at least 30 days before the training. Conduct training within the local area unless otherwise directed. Provide one copy of course material for each attendee. Ensure that training includes:

- "hands-on" operation of system software and equipment;
- explanation of all system commands, their function and usage; and
- system "troubleshooting," operation, and maintenance.

3. CONSTRUCTION

3.1. **System Installation**. Install VIVDS devices and configure detection zones and settings as shown on the plans, in accordance with the manufacturer's recommendations, and as directed. Provide configuration file backups, including detector placement, names, communication settings, and output assignments. Completion of the work must present a neat, workmanlike, and finished appearance.

VIVDS installer must be certified by VIVDS manufacturer in proper installation setup and procedures. VIVDS integrator must be certified by the manufacturer for training end users in the maintenance, configuration, and operation of VIVDS.

Ensure VIVDS detector rack cards are properly installed and seated in the controller cabinet detector rack and use the card edge connector to obtain power and provide outputs. Rewiring the backplane or any other cabinet panel for the system is not permitted except for power and grounding for camera interface panels, wiring from the video camera sensor to the loop detector panel for the video signal inputs, as applicable, and wiring to obtain power for the VIVDS cameras.

Mount and aim cameras in a manner that eliminates as much environmentally generated glare as possible.

All wiring must be cut to proper length before assembly. Provide cable service loops. All cable slack must be neatly laced and placed in the bottom of the cabinet. Ensure cables are secured with clamps. Ensure cables between the controller cabinet and VIVDS cameras are continuous with no splices.

Provisions must be made for installation and configuration of software on Department computers.

3.2. **Temporary Use**. When shown on the plans, the VIVDS equipment must be used to provide vehicle detection on a temporary basis. When the permanent vehicle detection system and related equipment are installed and made operational, the VIVDS equipment must be carefully removed and delivered to the location shown on the plans.

3.3. **Mechanical Components**. Ensure that all fasteners, including bolts, nuts, and washers with a diameter less than 5/8 in. are Type 316 or 304 stainless steel and meet the requirements of ASTM F593 and ASTM F594 for corrosion resistance. Ensure that all bolts and nuts 5/8 in. and over in diameter are galvanized and meet the requirements of ASTM A307. Separate dissimilar metals with an inert dielectric material.

3.4. **Wiring**. All wiring and electrical work supplying the equipment must meet the requirements of the most current version of the National Electrical Code (NEC). Supply and install all wiring necessary to interconnect VIVDS cameras to the controller cabinet and incidentals necessary to complete the work. If additional cables are required, the Contractor must furnish and install them at no additional cost to the Department. Provide conductors at least the minimum size indicated on the plans and insulated for 600 V.

Cables must be cut to proper length before assembly. Provide cable slack for ease of removal and replacement. All cable slack must be neatly laced with lacing or straps in the bottom of the cabinet. Ensure cables are secured with clamps and include service loops.

3.5. **Electrical Service**. The Contractor is responsible for checking the local electrical service to determine if a modification is needed for the equipment.

3.6. **Grounding**. Ensure all VIVDS devices and supports are grounded in conformance with the NEC and manufacturer recommendations.

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

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

Before removal of existing VIVDS 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 such time that it can be relocated. Remove existing VIVDS field equipment as shown on the plans only when authorized.

Use care to prevent damage to any support structures. Any equipment or structure damaged or lost must be replaced by the Contractor (with items approved) at no cost to the Department.

Make all arrangements for connection to power and communications including any permits required for the work to be done under the Contract. Provide conductors 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.

3.8. **Removal of VIVDS Field Equipment**. Perform the removal in strict conformance with the requirements herein and as shown on the plans. Completion of the work will present a neat, workmanlike, and finished appearance. Maintain safe construction practices during removal.

Disconnect and isolate any existing electrical power supply before removal of existing field equipment.

Use care to prevent damage to any support structures. Any equipment or structure damaged or lost must be replaced by the Contractor (with items approved) 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 General Notes. The Contractor is fully responsible for any removed equipment until released.

3.9. **Contractor Experience Requirements**. Contractor or designated subcontractor must meet the following experience requirements:

3.9.1. **Minimum Experience**. Three years of continuous existence offering services in the installation of VIVDS.

3.9.2. **Completed Projects**. Three completed projects where personnel installed, tested, and integrated VIVDS field equipment. The completed installations must have been in continuous satisfactory operation for a minimum of 1 yr.

3.9.3. **Equipment Experience**. One project (may be 1 of the 3 projects in the preceding paragraph) 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 who was referenced in the qualification documentation.

Submit the names, addresses, and telephone numbers of the references that can be contacted to verify the experience requirements given above.

4. TESTING

Ensure that the following tests are performed on equipment and systems unless otherwise shown on the plans. The Department may witness all the tests.

4.1. **Test Procedures Documentation**. Provide an electronic copy of the test procedures and blank data forms 60 days before testing for each test required on this project. Include the sequence of the tests in the procedures. The Engineer must approve test procedures before submission of equipment for tests. Conduct all tests in conformance with the approved test procedures.

Record test data on the data forms as well as quantitative results. Ensure the data forms are signed by an authorized representative (company official) of the equipment manufacturer.

4.2. **Design Approval Test**. Ensure that the VIVDS has successfully completed a design approval test that confirms compliance with the environmental requirements of this Specification.

Provide a certification and test report from an independent testing laboratory as evidence of a successfully completed design approval test. Ensure that the testing by this laboratory is performed in conformance with the requirements of this Specification.

4.3. **Demonstration Test**. Conduct a demonstration test on applicable equipment at an approved Contractor facility. Notify the Engineer 10 working days before conducting this testing. Perform the following tests:

4.3.1. **Examination of Product**. Examine each unit carefully to verify that the materials, design, construction, markings, and workmanship comply with the requirements of this Specification.

4.3.2. **Continuity Tests**. Check the wiring to determine conformance with the requirements this Specification.

4.3.3. **Operational Test**. Operate each unit for at least 15 min. to permit equipment temperature stabilization and observation of a sufficient number of performance characteristics to ensure compliance with this Specification.

4.4. **Stand-Alone Test**. Conduct a stand-alone test for each unit after installation. The test must exercise all stand-alone (non-network) functional operations. Notify the Engineer 5 working days before conducting this test.

4.4.1. **Performance Test**. Ensure the VIVDS meets functional performance requirements of Section 2.55. using the following methods:

Verify presence detection accuracy at installed field sites by comparing sample data collected from the detection system with ground truth data collected by human observation. Collect samples and ground truth data for each detection zone for a minimum of 5 min. during a peak period and 5 min. during an off-peak period. Ensure the sample period for each zone includes a minimum of three vehicles. Perform tests in the presence of the Engineer.

Recorded video of all cameras showing vehicle detections during a 24-hr. period at each intersection must be provided within 30 days upon request. This video must allow verification of proper camera placement, field of view, focus, detection zone placement, and operation.

4.5. **System Integration Test**. Conduct a system integration test on the complete functional system. Demonstrate all control and monitor functions for each system component and operate the system for 72 hr. Supply two copies of the system operations manual before the system integration test. Notify the Engineer

10 working days before conducting this testing. The Department may witness all the tests. Conduct a system integration test on the complete functional system. Demonstrate all control and monitor functions for each system component for 72 hr. Supply two copies of the system operations manual before the system integration test. Notify the Engineer 10 working days before conducting this testing.

4.6. **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 to the Engineer. If a unit requires replacement, provide a new unit and then repeat the test until successfully completed. Major discrepancies that will substantially delay receipt and acceptance of the unit will be enough cause for rejection of the unit.

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

4.7. **Final Acceptance Test**. Conduct a final acceptance test on the complete functional system. Demonstrate all control, monitor, and communication requirements and operate the system for 90 days. The Engineer will furnish a letter of approval stating the first day of the final acceptance test. The completion of the final acceptance test occurs 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.

4.8. **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 consecutive 30-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.

4.9. **Relocation and Removal**.

4.9.1. **Pre-Test**. Tests may include, but are not limited to, physical inspection of the unit and cable assemblies. Include the sequence of the tests in the procedures along with acceptance thresholds. Contractor to resubmit, if necessary, rejected test procedures for final approval within 10 days. Review time is calendar days. Conduct all tests in conformance with the approved test procedures.

Conduct basic functionality testing before removal of VIVDS field equipment. Test all functional operations of the equipment in the presence of representatives of the Contractor and the Department. Ensure that both representatives sign the test report indicating that the equipment has passed or failed each function. Once removed, the equipment becomes 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.

4.9.2. **Post-Test**. Testing of the VIVDS field equipment is for relieving the Contractor of maintenance of the system. 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 will not be required to pay for electrical energy consumed by the system.

After all existing VIVDS field equipment has been installed, conduct approved continuity, stand alone, and performance 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 to the Engineer at least 30 days before the

day the tests are to begin. Obtain Engineer's 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 sites. At a minimum, exercise all stand-alone (non-network) functional operations of the field equipment installed per the plans as directed. Complete the approved data forms with test results and turn over to the Engineer for review and either acceptance or rejection of equipment. Give at least 30 working days' notice before all tests to permit the Engineer or his representative to observe each test.

The Department will conduct approved VIVDS field equipment system tests on the field equipment with the central equipment. The tests will, as a minimum, exercise remote control functions and confirm communication with field equipment.

If any unit fails to pass a test, prepare a report and deliver it to the Engineer. Describe 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.

5. MEASUREMENT

The VIVDS will be measured as each major system component furnished, installed, relocated, made fully operational, and tested or removed in accordance with this Special Specification or as directed.

The VIVDS communication cable will be measured by the foot of the appropriate media type furnished, installed, made fully operational, and tested in accordance with this Specification, other referenced Special Specifications, or as directed.

When the VIVDS is used on a temporary basis, the VIVDS will be measured as each system furnished, installed, made fully operational, including reconfiguration and removal if required by the plans, and tested in accordance with this Special Specification or as directed.

This is a plans quantity measurement Item. The quantity to be paid is the quantity shown in the proposal unless modified by Article 9.2., "Plans Quantity Measurement." Additional measurements or calculations will be made if adjustments of quantities are required.

When recorded, video is required. It will be paid for by each camera recorded.

6. PAYMENT

6.1. **Furnish and Install**. The work performed, materials, and all accompanying software furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "VIVDS Processor System," "VIVDS Camera Assembly" of the various types, "VIVDS Central Control Software," "VIVDS Temporary," "VIVDS Cabling," and "VIVDS Video Recording." These prices are full compensation for furnishing, configuring, placing, and testing all materials and equipment, and for all tools, labor, equipment, hardware, operational software packages, supplies, support, personnel training, shop drawings, documentation, and incidentals.

These prices include all interfaces required for the field and remote communications links along with any associated peripheral equipment, including cables; all associated mounting hardware and associated field equipment; and incidentals required for a complete and fully functional video imaging vehicle detection system.

6.2. **Install Only**. The work performed and materials furnished in accordance with this Item will be paid for at the unit bid price for "VIVDS Processor System (Install Only)," "VIVDS Camera Assembly (Install Only)," "VIVDS Temporary (Install Only)," and "VIVDS Cabling (Install Only)." This price is full compensation for installing,

configuring, integrating, and testing the completed installation, including VIVDS equipment, voltage converters or injectors, cables, connectors, associated equipment, and mounting hardware; and for all labor, tools, equipment, documentation, testing, training, software, and incidentals necessary to complete the work.

6.3. **Relocate**. The work performed and materials furnished in accordance with this Item will be paid for at the unit bid price for "VIVDS Processor System (Relocate)," "VIVDS Camera Assembly (Relocate)," "VIVDS Temporary (Relocate)," and "VIVDS Cabling (Relocate)." This price is full compensation for relocating and making fully operational existing equipment; furnishing and installing additional cables or connectors; testing, delivery, and storage of components designated for salvage or reuse; and all labor, tools, equipment, and incidentals necessary to complete the work.

6.4. **Remove**. The work performed and materials furnished in accordance with this Item will be paid for at the unit bid price for "VIVDS Processor System (Remove)," "VIVDS Camera Assembly (Remove)," "VIVDS Temporary (Remove)," and "VIVDS Cabling (Remove)." This price is full compensation for removing existing equipment as shown on the plans; testing, delivery, and storage of components designated for salvage; and all labor, materials, tools, equipment, and incidentals necessary to complete the work.

Special Specification 6008

Radar Vehicle Detection System for Signalized Intersection Control

1. DESCRIPTION

Furnish, install, relocate, or remove radar vehicle detection systems (RVDS) of the specified devices at signalized intersections to provide the required zones of detection as shown on the plans, or as directed.

2. MATERIALS

2.1. **General**. Except as allowed for relocation of RVDS equipment, ensure all equipment and component parts are new in accordance with Division Specification TO-8000, "Radar Vehicle Detection System," Section 1.0–Section 6.0, and in an operable condition at time of delivery and installation.

The Traffic Safety Division, Traffic Management Section, (TRF-TM) updates TxDOT Material producer list (MPL) of all RVDSs conforming to this Specification. New materials appearing on the MPL require no further sampling and testing before use unless deemed necessary by the Engineer or TRF-TM. Provide prequalified RVDSs from the TxDOT MPL.

Ensure all RVDSs serving the same detection purpose within the project are from the same manufacturer. RVDS devices are classified by their functional requirements. The functional requirements are for radar presence detection devices (RPDDs) and radar advance detection devices (RADDs). The RVDS system classifications are RVDS (RPDD Only), RVDS (RADD Only), and RVDS (RPDD and RADD).

Provide each RVDS sensor with a mounting bracket designed to mount directly to a pole, mast arm, or other structure. Ensure bracket is designed such that the sensor can be tilted vertically and horizontally for alignment and then locked into place after proper alignment is achieved. All hardware must be designed to support the load of the RVDS sensor and mounting bracket.

2.2. **Configuration**. Ensure the RVDS provides vehicle detection as required on the plans, or as directed.

Ensure the RVDS does not require tuning or recalibration to maintain performance once initial calibration and configuration are complete. RVDS must not require cleaning or adjustment to maintain performance.

RVDS must self-recover from power failure once power is restored.

2.3. **Cabling**. Provide appropriate length of all cables necessary to make the RVDS fully operational at each installation site.

2.4. **Software**. Ensure the RVDS manufacturer includes all software required to configure and monitor operation of RVDS field equipment locally and remotely. RVDS software must be a stable production release.

Software must allow the user to configure, operate, exercise, diagnose, and read status of all RVDS features and functions using a laptop computer.

Software must include the ability to save a local copy of RVDS field device configurations and load saved configurations to RVDS field devices.

Ensure all licenses required for operation and use of software are included at no additional cost.

Software updates must be provided at no additional cost during the warranty period.

2.5. **Electrical**. All conductors supplying the equipment must meet NEC requirements.

Ensure equipment is designed to protect personnel from exposure to high voltage during installation, operation, and maintenance.

2.6. **Mechanical**. Ensure that all parts are fabricated from corrosion-resistant materials, such as plastic, stainless steel, aluminum, or brass.

Ensure that all screws, nuts, and locking washers are corrosion-resistant. Do not use self-tapping screws.

Ensure equipment is clearly and permanently marked with manufacturer name or trademark, part number, date of manufacture, and serial number.

Ensure RVDS is modular in design for ease of field replacement and maintenance. Provide a sensor that will minimize weight and wind loading when mounted on a traffic signal pole or mast arm.

All printed circuit boards must have conformal coating.

2.7. **Environmental**. RVDS sensor must be able to withstand the maximum wind load based on the Department's basic wind velocity zone map standard without any damage or loosening from structure.

The RVDS enclosure must conform to criteria set forth in NEMA 250 for Type 4X enclosures.

The RVDS must meet all NEMA TS2 environmental requirements for temperature, humidity, transients, vibration, and shock.

2.8. **Connectors and Harnesses**. Ensure all conductors are properly color-coded and identified.

Ensure cable connector design prohibits improper connections. Cable connector pins are plated to improve conductivity and resist corrosion.

Connections for data and power must be made to the RVDS sensor using waterproof, quick-disconnect connectors. Pigtails from the sensor to a waterproof junction box (NEMA 4) or an approved waterproof connector must be allowed for splicing. The pigtails must not be shorter than 3 ft. unless otherwise shown on the plans.

3. CONSTRUCTION

3.1. **System Installation**. Install RVDS system devices according to the manufacturer's recommendations to provide properly functioning detection as required. This must include the installation of sensors on signal poles or mast arms, controller interface modules, power and surge protection panels, cabling and all associated equipment, software, serial and Ethernet communication ports, and connectors and hardware required to set up and operate. Ensure that the supplier of the RVDS provides competent onsite support representative during installation to supervise installation and testing of the RVDS. Ensure the radar sensor locations are optimal for system operation and operate as required. Maintain safe construction practices during equipment installation.

Ensure installation and configuration of software on Department computers are included with the RVDS.

Take care to prevent damage to any support structures. Any equipment or structure damaged or lost must be replaced by the Contractor (with items approved) at no cost to the Department.

3.2. **Mechanical Components**. Ensure that all fasteners, including bolts, nuts, and washers with a diameter less than 5/8 in. are Type 316 or Type 304 stainless steel and meet ASTM F593 and ASTM F594 for corrosion

resistance. Ensure that all bolts and nuts 5/8 in. and more in diameter are galvanized and meet ASTM A307. Separate dissimilar metals with an inert dielectric material.

3.3. **Wiring**. Install all wiring and electrical work supplying power to the equipment in a neat, skillful manner. Supply and install all wiring necessary to interconnect RVDS sensors to the traffic signal cabinet to complete the work. Furnish and install any additional required wiring at no additional cost to the Department.

Wiring must be cut to proper length before installation. Provide cable slack for ease of removal and replacement. All cable slack must be neatly laced with lacing or straps in the bottom of the cabinet. Ensure cables are secured with clamps.

3.4. **Grounding**. Ensure all RVDS components, cabinets, and supports are grounded in accordance with the NEC and manufacturer recommendations.

3.5. **Relocation of RVDS 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, skillful, and finished appearance. Maintain safe construction practices during relocation.

Inspect the existing RVDS 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 equipment that fails inspection to the Department.

Before removal of existing RVDS 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 relocation. Remove existing RVDS field equipment as shown on the plans only when authorized.

Take care to prevent damage to any support structures. Any equipment or structure damaged or lost must be replaced by the Contractor (with items approved) at no cost to the Department.

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 NEC.

3.6. **Removal of RVDS Field Equipment**. Perform the removal in strict conformance with the requirements herein and as shown on the plans. Completion of the work must present a neat, skillful, and finished appearance. Maintain safe construction practices during removal.

Disconnect and isolate any existing electrical supply before removal of existing field equipment.

Take care to prevent damage to any support structures. Any equipment or structure damaged or lost must be replaced by the Contractor (with items approved) 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 General Notes. The Contractor is fully responsible for any removed equipment until released.

3.7. **Documentation**. Provide electronic copies of operation and maintenance manuals, along with a copy of all product documentation on electronic media. Include the following documentation.

- Complete and accurate schematic diagrams
- Complete installation procedures
- Manufacturer's specifications (functional, electrical, mechanical, and environmental)
- Complete maintenance and troubleshooting procedures

- Explanation of product operation
- Warranty as specified in Section 3.8., "Warranty"

The RVDS must pass testing to ensure functionality and reliability before delivery. This includes functional tests for internal subassemblies, a 24-hr. minimum unit level burn-in test, and a unit functionality test. Provide test results and supporting documentation, including serial number tested, for each RVDS. If requested, manufacturing data per serial number must be provided for each RVDS.

Unless deemed unnecessary by the Engineer or TRF-TM, provide certification from an independent laboratory demonstrating compliance with NEMA TS2 environmental requirements for temperature, humidity, transients, vibration, and shock.

Unless deemed unnecessary by the Engineer or TRF-TM, provide third-party enclosure test results demonstrating the sensor enclosure meets Type 4X criteria.

Unless deemed unnecessary by the Engineer or TRF-TM, provide evidence of RVDS manufacturer's quality assurance program, including proof of RVDS manufacturer ISO 9001 certification or other quality management system programs for manufacturing RVDS.

3.8. **Warranty**. Ensure that the detection system has a manufacturer's warranty covering defects for at least 5 yr. from the date of final acceptance. In addition to the terms required by TO-8000, Article 8, ensure the warranty includes providing replacements, within 10 calendar days of notification, for defective parts and equipment during the warranty period at no cost to the Department.

3.9. **Training and Support**. Provide manufacturer-approved end user training to the Department and their representatives. Training must include instruction in system configuration, operation, and maintenance. Provide training for at least 10 Department-designated representatives up to 8 hr., including class and field training.

Ensure that the detection system manufacturer will provide product support for at least 5 yr. from the date of final acceptance.

4. TESTING

Perform the following tests on equipment and systems unless otherwise shown on the plans. The Department may witness all the tests.

4.1. **Stand-Alone Test**. Conduct a stand-alone test for each unit after installation. The test must exercise all stand-alone (non-network) functional operations and verify that RVDS is placing detector contact closure to assigned detector channels in the traffic signal controller assembly. Notify the Engineer 5 working days before conducting this test.

4.2. **Consequences of Test Failure**. If a unit fails a test, provide a new unit, and then repeat the test until successfully completed.

4.3. **Final Acceptance Test**. Conduct a final acceptance test on the complete functional system. Demonstrate all control, monitoring, and communication requirements and operate the system for 30 days. The Engineer will furnish a letter of approval stating the first day of the final acceptance test.

4.4. **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 consecutive 30-day period free of defects is achieved.

4.5. **Relocation**.

4.5.1. **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 not be limited to, physical inspection of the unit and cable assemblies. Include the sequence of the tests in the procedures along with acceptance thresholds. The Engineer will comment on and approve or reject test procedures within 30 days after Contractor submittal of test procedures. Rejected test procedures must be resubmitted 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 RVDS field equipment. Test all functional operations of the equipment in the presence of representatives of the Contractor and the Department. 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 prior to removal and after installation. The performance test results after relocation must be equal to or better than the test results before removal. Repair or replace the failing components within the systemso that the system can pass the performance test after relocation.

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

After all existing RVDS field equipment has been installed, conduct approved continuity, stand-alone, and performance 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 to the Engineer 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 sites. 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 them to the Engineer for review and either acceptance or rejection of equipment. Give at least 30 working days’ notice before all tests to allow the Engineer or their representative to observe each test.

The Department must conduct approved RVDS 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 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.

5. MEASUREMENT

New RVDSs furnished and installed by the Contractor will be measured by each approach to the signalized intersection.

RVDSs furnished by the Department for Contractor installation only will be measured by each approach to the signalized intersection.

Existing RVDSs to be relocated or removed will be measured by each sensor relocated or removed.

6. PAYMENT

6.1. **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 bid price for "RVDS (Presence Detection Only)," "RVDS (Advance Detection Only)," and "RVDS (Presence and Advance Detection)."

This price is full compensation for furnishing, installing, configuring, integrating, and testing the completed installation, including RVDS equipment, voltage converters or injectors, cables, connectors, associated equipment, and mounting hardware. This price also fully compensates for all labor, tools, equipment, any required equipment modifications for electrical service, documentation, testing, training, software, warranty, and incidentals necessary to complete the work.

6.2. **Install Only**. The work performed and materials furnished in accordance with this Item will be paid for at the unit bid price for "RVDS (Presence Detection Only) (Install Only)," "RVDS (Advance Detection Only) (Install Only)," and "RVDS (Presence and Advance Detection) (Install Only)."

This price is full compensation for making fully operational an RVDS furnished by the Department; for installing, configuring, integrating, and testing the completed installation, including RVDS equipment, voltage converters or injectors, cables, connectors, associated equipment, and mounting hardware; and for all labor, tools, equipment, any required equipment modifications for electrical service, documentation, testing, training, software, and incidentals necessary to complete the work.

6.3. **Relocate**. The work performed and materials furnished in accordance with this Item will be paid for at the unit bid price for "Relocate RVDS." This price is full compensation for relocating and making fully operational existing RVDS field equipment; for furnishing and installing additional cables or connectors; for testing, delivery, and storage of components designated for salvage or reuse; and for all testing, training, software, equipment, any required equipment modifications for electrical service, labor, materials, tools, and incidentals necessary to complete the work.

6.4. **Remove**. The work performed and materials furnished in accordance with this Item will be paid for at the unit bid price for "Remove RVDS." This price is full compensation for removing existing RVDS equipment; for removal of cables and connectors; for testing, delivery, and storage of components designated for salvage; and for all testing, training, software, equipment, labor, materials, tools, and incidentals necessary to complete the work.

6.5. **Communication Cable**. All communication cables necessary to make the RVDS fully operational will be subsidiary to this Item.

Special Specification 6022
Roadway Lighting Assembly with LED Fixtures

1. DESCRIPTION

This Special Specification governs for furnishing and installing the various types of roadway lighting assemblies as shown on the plans. The term "roadway lighting assembly" as used herein constitutes the complete assembly of poles, parts, fixtures, equipment, and miscellaneous components, erected as shown on the plans and in accordance with these Specifications, forming a complete and independent lighting unit.

2. GENERAL

All materials furnished by the Contractor must be new and UL-listed, and be in conformance with NEMA, NEC, AASHTO, and the electrical detail standard sheet requirements.

The Contractor must be in accordance with the "Electronic Shop Drawing Submittal Guidelines for Non-Standard Roadway Lighting Assemblies." These submittals must be approved before the Contractor begins work.

Furnish light-emitting diode (LED) light fixtures from new materials in accordance with DMS-11011, "LED Roadway Luminaires."

Provide prequalified light fixtures from the Department's MPL. When required, notify the Department in writing of selected materials from the MPL intended for use on each project.

All materials and construction methods must be in accordance with the details shown on the plans, the requirements of this Specification, and the pertinent requirements of the following Items:

- Item 610, "Roadway Illumination Assemblies"
- Item 616, "Performance Testing of Lighting Systems"
- Item 620, "Electrical Conductors."

3. MATERIALS

3.1. **Luminaire**. The LED luminaire fixtures must be 250W High Pressure Sodium (HPS) equivalent units in accordance with DMS-11011 and operate at 480V. Finish must be electrostatically applied thermoset polyester powder coat color Traffic Black (RAL 9017) or as approved.

3.2. **Bracket Arm**. The assembly must contain either one (Type 1) or two (Type 2) bracket arms. The bracket arms must be 6 ft. long, have a 2-3/8 in. outside diameter (OD), and have a 21-in. unsweep as shown on the plans. Finish color and finish type must match those specified for light pole**.**

3.3. **Lighting Poles**. The lighting assembly poles must have mounting heights as specified. Poles must be a round, tapered, 11-gauge steel shaft with hand hole. Poles must include a breakaway coupling system that includes four couplings with pertinent hardware and a two-piece aluminum skirt with attachment hardware and grounding lug. The aluminum skirt finish must match color and type of finish specified for the light pole. The breakaway coupling system must be in conformance with AASHTO standards and must be approved by FHWA for breakaway characteristics at impact speeds for 20–60 mph. Finish color must be Traffic Black (RAL 9017) or as approved. Chemically treat all surfaces before painting, and use the process recommended by the manufacturer. Paint all nuts and bolts to match the pole using a painting method and materials recommended by the manufacturer and to the satisfaction of the Engineer. Submit shop drawings and wind

load calculations, including fixtures, breakaway connectors, and anchor bolts into the calculations sealed by a Texas licensed professional engineer.

4. INSTALLATION

Fabricate and install lighting assemblies in accordance with this Specification and the details and dimensions shown on the plans or approved in writing.

Locate lighting assemblies as shown on the plans, except that the Engineer may shift the assembly locations when necessary to secure a more desirable location or to avoid conflicts with utilities. Unless otherwise shown on the plans, do all staking, and the Engineer will verify and approve all lighting assembly locations.

Use established industry and utility safety practices to erect the poles and luminaires located near any overhead or underground utilities. Consult with the appropriate utility company before beginning such work. Consider the careful erection and aligning of the lighting assemblies an essential feature of the installation of roadway lighting assemblies.

Make paint and coating repairs in conformance with the manufacturer's recommendations to the satisfaction of the Engineer.

Use breakaway connectors. Ground in accordance with the NEC.

5. MEASUREMENT

This Item will be measured as each roadway lighting assembly.

6. 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 "Roadway Lighting Assembly (Ty 1)" or "Roadway Lighting Assembly (Ty 2)" with mounting heights as specified. This price is full compensation for furnishing, installing, and testing all luminaires, poles, conductors, and connections in poles, and for all labor, tools, equipment, and incidentals necessary to complete the work.

Foundations for roadway illumination assemblies will be paid for under Item 416, "Drilled Shaft Foundations."

Special Specification 6050
Intelligent Transportation System (ITS) Ground-Mounted Cabinet

1. DESCRIPTION

Furnish, fabricate, deliver, install, and test intelligent transportation system (ITS) ground-mounted cabinets, install Department-furnished ITS ground-mounted cabinets, relocate existing ITS ground-mounted cabinets, or remove existing ITS ground-mounted cabinets of the various types and sizes at locations shown on the plans, or as directed.

1.1. **ITS Ground-Mounted Cabinet Application**. Provide ITS ground-mounted cabinet to house ITS field equipment as shown on the plans, or as directed. ITS equipment applications inside the cabinet may include, but are not limited to:

- radar vehicle sensing device,
- wireless Ethernet radio,
- closed-circuit television (CCTV) field equipment,
- Bluetooth reader,
- automatic vehicle identification,
- loop detection equipment,
- dynamic message sign (DMS) equipment,
- DMS controller,
- lane control signal controller units,
- drop or insert multiplexor or demultiplexor,
- data fiber optic transceivers,
- modular fiber distribution housing,
- subrate data multiplexor distribution panel,
- ramp meter control panel,
- fiber optic video transmitter,
- fiber optic splice trays,
- CCTV color video compression system,
- Solar power assembly,
- environmental sensor station,
- highway advisory radio,
- terminal servers,
- surge arrestors,
- hardened Ethernet switches, and
- codecs.

Provide each cabinet complete with internal components, back and side panels, terminal strips, harnesses, and connectors. Provide mounting hardware necessary to provide for installation of equipment as described in this Specification. Typically, an ITS ground-mounted cabinet may contain, but is not limited to, the following.

- 19-in. Electronic Industries Alliance (EIA) racks
- Adjustable shelves
- Fan and thermostat assemblies
- Cabinet lights

- Power distribution panel (as required on the plans or as directed)
- Right or left side panel (as required on the plans or as directed)
- Surge protection
- Terminal strips
- Interconnect harnesses with connectors
- Laptop shelf and slide-out drawer with telescoping drawer guides “door open” connection to back panel
- ITS equipment hardware (as listed in Section 2.1., “Electrical Requirements,” of this Specification)
- All necessary installation and mounting hardware

Ensure cabinets are identical in size, shape, and quality for each type as provisioned in the plans or as directed. Equip and configure the cabinet setup as defined in this Specification and as detailed in the ITS ground-mounted cabinet standards.

Submit details of the cabinet design and equipment layout for each cabinet to the Engineer for review and approval before fabrication.

Ensure the equipment, design, and construction use industry standard techniques with a minimum number of different parts, subassemblies, circuits, cards, and modules to maximize standardization and commonality.

Design equipment for ease of maintenance. Component parts must be readily accessible for inspection and maintenance. Tools and test instruments required for maintenance must be simple handheld tools, basic meters, and oscilloscopes.

2. MATERIALS

Provide new materials that comply with the details shown on the plans, the requirements of this Specification, and the pertinent requirements of the following Items.

- Item 421, “Hydraulic Cement Concrete”
- Item 440, “Reinforcement for Concrete”
- Item 449, “Anchor Bolts”
- Item 618, “Conduit”
- Item 620, “Electrical Conductors”
- Item 656, “Foundations for Traffic Control Devices”
- Item 740, “Graffiti Removal and Anti-Graffiti Coating”

2.1. **Electrical Requirements**.

2.1.1. **Primary Input Power Interruption**. Use material that meets the requirements in Section 2.1.4., “Power Interruption,” of NEMA TS 2 for traffic control system, or most current version.

2.1.2. **Power Service Transients**. Use material that meets the requirements in Section 2.1.6., “Transients,” of NEMA TS 2 for traffic control system, or most current version.

2.1.3. **Power Service Protection**. Ensure that equipment 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 such that no wire, component, connector, PC board, or assembly is subjected to sustained current in excess of its respective design limits upon failure of any single circuit element or wiring.

2.1.4. **Power Distribution Panel**. Provide cabinets with a 120-VAC ±5-VAC power distribution panel. Provide the following components on the panel.

2.1.4.1. **Duplex Receptacles**. Provide two 120-VAC NEMA Type 5-15R duplex receptacles, or as shown on the plans, protected by a circuit breaker. Permanently label duplex receptacles “For Internal ITS Equipment

Only." Install duplex receptacles in an isolated location and provide a clear 1/8-in. thick removable cover made from transparent thermoplastic material to cover the duplex receptacles. Ensure this cover is installed as not to interfere with the functional operation within the cabinet and allows enough space to plug in AC adapters and any necessary equipment. Submit alternative cover material for approval as part of the documentation submittal requirement.

2.1.4.2. **Ground Fault Circuit Interrupter (GFCI) Duplex Receptacles**. Provide at least one 120-VAC NEMA Type 5-15R GFCI duplex receptacle, or as shown on the plans, protected by a circuit breaker. This GFCI duplex receptacle is intended for maintenance personnel and is not to be used to serve equipment inside the cabinet. Permanently label GFCI duplex receptacles "For Personnel Use." Install GFCI duplex receptacles in a readily accessible location.

Provide a 120-VAC, rack-mountable outlet strip with six NEMA Type 5-15R receptacles with surge suppression. Plug outlet strip into GFCI duplex receptacle and label for personnel use.

2.1.4.3. **Circuit Breakers**. Determine the ampere rating, quantity, and configuration for main, accessory, spare, and equipment circuit breakers to support ITS equipment loads as shown on the plans. Provide UL-489 listed circuit breakers capable of operating in accordance with Section 2, "Environmental Standards and Test Procedures," of NEMA TS 2-2003, or most current version. Provide circuit breakers with an interrupt capacity of 5,000 A and insulation resistance of 100 megohms at 500 VDC. Provide minimum ampere rating for the following circuit types.

2.1.4.3.1. **Main Breaker**. Size the main circuit breaker such that the load of all branch circuits is less than the main circuit breaker ampere rating in conformance with the most current version of the NEC.

2.1.4.3.2. **Accessory Breaker**. Minimum 15 A. Size accessory circuit breaker to protect lighting, door switches, fans, and GFCI duplex receptacle in conformance with the most current version of the NEC.

2.1.4.3.3. **Equipment Breakers**. Minimum 15 A. Size equipment breaker to protect ITS equipment and duplex receptacles in conformance with the most current version of the NEC.

2.1.4.3.4. **Spare Equipment Breaker**. Minimum 20 A. Provide one spare equipment breaker for future use.

Furnish breakers, which are in addition to any auxiliary fuses, with the electronic equipment to protect component parts. Provide three-terminal lightning arrestor to protect the load side of circuit breakers. Connect the arrestor into the circuit with Size 8 AWG or larger stranded copper conductors. Connect arrestor to the line filter as recommended by the manufacturer.

2.1.4.4. **Power Line Surge Protection**. Provide and install power line surge protection devices that meet the requirements of NEMA TS 1, Section 2.1.6, "Transients, Power Service."

2.1.4.5. **Power Cable Input Junction Terminals**. Provide power distribution blocks suitable for use as a power feed and junction points for two- and three-wire circuits. Accommodate up to No. 4 AWG conductors on the line side of each circuit. Provide appropriate size lugs at the junction terminals for conductors larger than a No. 4 AWG when shown on the plans.

Electrically isolate the AC neutral and equipment ground wiring from the line wiring by an insulation resistance of at least 10 megohms when measured at the AC neutral. Color code the AC neutral and equipment grounding wiring white and green, respectively, in conformance with the most current version of the NEC.

Use the back panel to distribute and properly interconnect cabinet wiring related to the specific complement of equipment called out on the plans. Each item of equipment, including any furnished by the Department, must have the cable harness properly terminated at terminal boards on the back panel. Ensure all functions available at the equipment connector are carried in the connector cable harness to the terminal blocks from the power distribution panel mounted on the left side panel of the cabinet.

2.1.5. **Right Side Panel**. When shown on the plans, for a required ITS application, provide fully wired loop input distribution panel to be mounted on the lower right inside wall when facing the front inside of the door opening of the cabinet. Provide a detailed layout for approval. Provide a panel with the following.

2.1.5.1. **Power Distribution**. If any 115-VAC power is needed on the right side panel, it must be obtained from the power distribution terminal board located on the left side panel, which must be fed from the equipment circuit breaker located on the left side panel.

2.1.5.2. **Loop Surge Protection**. Mount surge protection for incoming loop pairs on the right side panel.

2.1.6. **Back Panel**. When shown on the plans, for a required ITS application, provide cabinet with a fully wired equipment panel to be mounted on the lower rear inside wall of the cabinet. Provide a detailed layout for approval. Panel must include detector terminal boards to accommodate equipment shown on the plans or as directed.

2.1.7. **Alternative Power Option**. When shown on the plans, accommodate renewable electrical power source for the design load specified in accordance with “ITS Solar Power System” Specification. Renewable electrical power source may, or may not, be integrated with public utility electrical services, as shown on the plans or as directed. Accommodate solar system components, including batteries and solar charge controller.

2.1.8. **Wiring**. Ensure cabinet wiring identified by the use of insulated pre-printed sleeving slipped over the wire before attachment of the lug or making the connection. Supply enough text on wire markers in plain words or abbreviations with enough level of detail so that a translating sheet will not be required to identify the type and size of wire.

Cut wires to the proper length before assembly. Ensure no wires are doubled back to take up slack. Ensure harnesses to connectors are covered with braided cable sleeves. Secure cables with nylon cable clamps.

Provide service loops to facilitate removal and replacement of assemblies, panels, and modules. Use insulated parts and wire rated for at least 600 V. Color code harnesses and wiring.

Route and bundle wiring containing line voltage AC separately, or shield from low voltage; i.e., control circuits. Cover conductors and live terminals or parts, which could be hazardous to maintenance personnel, with suitable insulating material.

Provide AC internal cabinet wiring identified in conformance with the most current version of the NEC. Provide white insulated conductors for AC common. Provide green insulated conductors for equipment ground. Provide any color different from the foregoing on other conductors in conformance with the most current version of the NEC. For equipment that requires grounding, provide ground conductors and do not use conduit for grounding. Provide No. 22 AWG or larger stranded conductors for internal cabinet wiring. Provide conductors that are UL-listed Thermoplastic High Heat-resistant Nylon-coated in conformance with the most current version of the NEC. Ensure the insulation has at least a thickness of 10 mm. Ensure wiring containing line voltage is at least Size No. 14 AWG. No strands of any conductor may be trimmed to “fit” the wiring into the breaker or terminal block.

2.1.9. **Terminal Strips**. Provide terminal strips located on the back panel that are accessible to the extent that it is not necessary to remove the electronic equipment from the cabinet to make an inspection or connection.

Ensure terminal blocks are two-position, multiple-pole barrier type.

Provide shorting bars in each of the positions provided, along with an integral marking strip.

Arrange terminal blocks such that they will not upset the entrance, training, and connection of incoming field conductors.

Identify terminals with legends permanently affixed and attached to the terminal blocks.

Ensure not more than three conductors are brought to any one terminal screw.

Ensure no electrically energized components or connectors extend beyond the protection afforded by the barriers.

Locate terminal blocks below the shelves.

Ensure terminals used for field connections are secure conductors by means of a No. 10-32 nickel- or cadmium-plated brass binder head screw.

Ensure terminals used for inter-wiring connections, but not for field connections, are secure conductors by means of a No. 5-32 nickel-plated brass binder head screw.

Terminate connections to and from the electronic equipment to an inter-wiring type block. These blocks will act as intermediate connection points for electronic equipment input and output.

Provide termination panels that are used to distribute and properly interconnect cabinet wiring related to the specific complement of equipment as shown on the plans. Provide properly terminated cable harnesses for each item, including any furnished by the Department. Provide functions available at the equipment terminals that are carried in the connector cable harness.

2.1.10. **Cabinet Internal Grounding**. The cabinet internal ground must consist of at least one ground bus-bar permanently affixed to the cabinet and connected to the grounding electrode.

Use bare stranded No. 4 AWG copper wire between bus-bars and between the bus-bar and grounding electrode.

Ensure each copper ground bus-bar has at least 14 connection points, each capable of securing bare conductor ranging in size from No. 4 AWG–No. 14 AWG.

Return AC neutral and equipment ground wiring to these bus-bars.

2.1.11. **Door Switch**. Provide a door switch meeting the following requirements.

- Momentary, pin-type door switch
- Installed in the cabinet or on the door
- Connected to a terminal so that the equipment installed in the cabinet can confirm input is connected to logic ground when the cabinet door is open
- Engage cabinet light when the door is opened

Provide two momentary, pin-type door switches for each door provided with the cabinet. Wire one switch to turn on the cabinet lights when the door is open, and off when the door is closed. Wire the other in parallel to a terminal block to detect a cabinet intrusion condition.

2.2. **Mechanical Requirements**.

2.2.1. **Size and Construction**. Provide ITS ground-mounted cabinets meeting the configuration types detailed in the ITS ground-mounted cabinet standards, as shown in Table 1.

Table 1
Minimum Cabinet Dimensions

Type	Depth (in.)	Width (in.)	Height (in.)
4	30	24	66
5	26	44	54
6	26	44	66

Determine the suitability of the listed cabinet configuration types for the equipment at each field location identified on the plans or as directed.

2.2.2. **Ventilation**. Provide the cabinet with vent openings to allow cooling of electronic components.

Locate louvered air intake vent openings on the lower portion of the cabinet doors and cover fully inside with a commercially available disposable three-layer graded-pleated type filter with a minimum size of 16 in. (high) × 16 in. (wide) and a thickness of 1 in. For Type 5 cabinet, provide two filters for each door. Securely mount so that any air entering the cabinet must pass through the filter. Ensure the cabinet opening for intake of air is large enough to accommodate filter size. Screen the exhaust to prevent entry of insects. Provide the screen openings no larger than 0.0125 sq. in.

Vent and cool the cabinet by thermostatically controlled electric fans. Provide adjustable thermostat with an adjustment range of 70°F–110°F. Provide a press-to-test switch to test the operation of the fan.

Provide at least four commercially available fans with a capacity of at least 110 cu. ft. per minute each. Provide the total free air opening of the vent large enough to prevent excessive back pressure on the fan.

2.2.3. **Lighting**. Provide at least 15-W fluorescent light fixtures above each door inside the cabinet, each with clear shatterproof lens. NEMA TS-2 rated light-emitting diode fixtures are acceptable instead of fluorescent light fixtures. Determine the appropriate number of fixtures to achieve at least 1,000 lumens to illuminate the equipment. Position the fixtures to provide illumination to the face of the equipment in the cabinet and not into a technician's eyes.

2.2.4. **Exterior Finish**. Provide cabinets with a smooth aluminum finish and the exterior in its unpainted natural color.

When shown on the plans or as directed, provide cabinets with an anti-graffiti coating in accordance with Item 740.

2.2.5. **Serial Number**. Provide the cabinets with a serial number unique to the manufacturer, preceded by an assigned two-letter manufacturer's code. Provide at least a 0.2-in. letter height. Stamp the entire identification code and number on a metal plate riveted to the cabinet, stamp directly on the interior cabinet wall, or engrave on a metalized mylar plate that is epoxied to the cabinet on the upper righthand cabinet side wall.

2.2.6. **Modular Design**. Provide cabinets that have a modular design and allow ITS equipment to be installed in a variety of mounting configurations as detailed on the plans or as directed.

Provide Type 4 cabinets with one EIA 19-in. rack cage, sized appropriately based on cabinet type inside height dimension. Provide a rack with at least one 1RU (rack unit) horizontal power strip. Provide two Unistrut or DIN rail channels on each sidewall of the cabinet for mounting power panel and auxiliary ITS equipment.

Provide Type 5 and Type 6 cabinets with two side-by-side EIA 19-in. racks, sized appropriately based on cabinet type inside height dimension. Provide a rack with at least one 1RU horizontal power strip. Provide two Unistrut or DIN rail channels on each sidewall of the cabinet for mounting power panel and auxiliary ITS equipment.

2.2.7. **Shelves**. Provide adjustable shelves in each cabinet as required to support the equipment as specified on the plans. Ensure shelf adjustment is at 1RU intervals in the vertical position. Provide shelves that can be mounted to an EIA 19-in. rack cage or Unistrut channel as detailed in the standards.

Provide shelves that are removable and capable of supporting the electronic equipment. Provide at least 2 in. between the back and front edge of the shelf to back inside wall and door of the cabinet, respectively, to allow room for the equipment cables and connectors.

Provide each cabinet type with at least one slide-out drawer with telescoping drawer guides to allow full extension from the rack frame. Provide at least 1.75-in. (high) × 16-in. (wide) × 14-in. (deep) drawer with a hinged lid to allow access to storage space.

2.3. **Surge Protective Devices (SPDs)**. Provide SPDs to protect electronics from lightning, transient voltage surges, and induced current. Install SPDs on power, data, video, and any other conductive circuit.

2.3.1. **120-V or 120/240-V SPD at Service and ITS Cabinet Power Distribution Panel**. Install an SPD at the closest termination or disconnection point where the supply circuit enters the cabinet. Locate the SPD on the load side of the cabinet power distribution panel breakers and ahead of any electronic devices. Keep leads as short as possible with conductor bends formed to the maximum possible radius. Connect the SPD ground lead directly to the ground bus. Use of wire nuts is prohibited. Install in conformance with manufacturer's recommendations.

Provide UL-listed Type 1 or Type 2 SPD labeled "UL1449 Third Edition," posted at UL.com, under Certifications UL Category Code VZCA, with a 20-kA I-nominal rating. Provide SPD rated as NEMA 4. SPD with integral electromagnetic interference/radio frequency interference line filtering may be required if shown on the plans.

Do not exceed 700 V on the voltage protection rating (VPR) on any mode (L-N, L-G, and N-G).

Do not exceed 150 V on the maximum continuous operating voltage (MCOV).

Equal or exceed 40 kA the SPD surge current rating per mode (L-N, L-G, and N-G).

Equal or exceed 50 kA or the available short circuit current, whichever is higher, for the SPD short circuit current rating (SCCR).

Provide SPD with directly connected metal oxide varistors (MOVs) exceeding 32 mm in diameter with thermal safety disconnectors. Gas tube and spark gap SPDs are not permitted. Ensure each MOV's operational status can be monitored via visual indicator, including N-G mode.

Provide SPD with one set of normally open (NO), normally closed (NC) Form C contacts for remote monitoring.

Ensure the SPD used for AC power does not dissipate any energy and does not provide any series impedance during standby operation. Return the unit to its non-shunting mode after the passage of any surge, and do not allow the shunting of AC power.

2.3.2. **Parallel SPD for 120-V Equipment**. Install an SPD inside the cabinet on the power distribution to the equipment. Keep leads as short as possible with conductor bends formed to the maximum possible radius. Connect the SPD ground lead directly to the ground bus. Use of wire nuts is prohibited. Install in conformance with manufacturer's recommendations.

Provide UL-listed Type 1 or Type 2 SPD labeled "UL1449 Third Edition," posted at UL.com, under Certifications UL Category Code VZCA, with a 20-kA I-nominal rating. Provide SPD rated as NEMA 4.

Do not exceed 700 V on the VPR on any mode (L-N and N-G).

Do not exceed 150 V on the MCOV.

Equal or exceed 40 kA the SPD surge current rating per mode (L-N and N-G).

Equal or exceed 50 kA or the available short circuit current, whichever is higher, for the SPD SCCR.

Provide SPD with directly connected MOVs exceeding 32 mm in diameter with thermal safety disconnectors. Gas tube and spark gap SPDs are not permitted. Ensure each MOV's operational status can be monitored via visual indicator, including N-G mode.

Provide SPD with one set of NO, NC Form C contacts for remote monitoring.

2.3.3. **Low-Voltage Power, Control, Data and Signal Systems SPD.** Install a specialized SPD on conductive circuits, including, but not limited to, data communication cables, coaxial video cables, and low-voltage power cables. Ensure that these devices comply with the functional requirements shown in Table 2 for available modes (i.e., power L-N, N-G; data and signal center pin-to-shield, L-L, L-G; and shield-G where appropriate).

Table 2
SPD Minimum Requirements

Circuit Description	MCOV	Frequency/ Bandwidth/ Data Rate	Surge Capacity	Maximum Let-Through Voltage
12 VDC	15 V–20 V	–	5 kA per mode (8 µs × 20 µs)	<150 Vpk
24 VAC	30 V–55 V	–	5 kA per mode (8 µs × 20 µs)	<175 Vpk
48 VDC	60 V–85 V	–	5 kA per mode (8 µs × 20 µs)	<200 Vpk
Coaxial composite video	4 V–8 V	Up to 1.5 GHz	10 kA per mode (8 µs × 20 µs)	<100 Vpk
RS422/RS485	8 V–15 V	Up to 10 Mbps	10 kA per mode (8 µs × 20 µs)	<30 Vpk
T1	13 V–30 V	Up to 10 Mbps	10 kA per mode (8 µs × 20 µs)	<30 Vpk
Ethernet data	7 V–12 V	Up to 100 Mbps	3 kA per mode (10 µs × 1,000 µs)	<30 Vpk

2.4. **Environmental Design Requirements**. Provide cabinets that meet the functional requirements of this Specification during and after subjection to any combination of the following requirements.

- Ambient temperature range of -30°F–165°F
- Temperature shock at most 30°F per hour, during which the relative humidity does not exceed 95%
- Relative humidity range at most 95% over the temperature range of 40°F–110°F
- Operates with moisture condensation on surfaces caused by temperature changes

2.5. **Vibration**. Material used must show no degradation of mechanical structure, soldered components, plug-in components, or satisfactory operation in conformance with the manufacturer's equipment specifications after being subjected to the vibration test as described in NEMA TS 2, Section 2.2.8, "Vibration Test," or the most current version.

3. FABRICATION

3.1. **Ground-Mounted Cabinet**. Continuously weld exterior seams for cabinet and doors. Fill edges to a radius of 0.03125 in. minimum. Smooth exterior welds.

Welding on aluminum cabinets must be by the gas metal arc (metal inert gas) or gas tungsten arc (tungsten inert gas) process using bare aluminum welding electrodes. Ensure electrodes are in accordance with the requirements of AWS A 5.10 for ER5356 aluminum alloy bare welding electrodes.

Procedures, welding machines, and welding machine operators for welding on aluminum must be qualified and be in accordance with the requirements of AWS B 3.0, "Welding Procedures and Performance Qualification," and with the practices recommended in AWS C 5.6.

Construct cabinets of welded sheet aluminum with a thickness of at least 0.125 in. meeting NEMA 3R standards. Do not allow wood, wood fiber product, or flammable products in the cabinet. Seal cabinet structure to prevent the entry of rain, dust, and dirt.

Provide a sunshield on the exterior top of the cabinet to reflect solar rays and mitigate temperature buildup inside the cabinet. Construct sunshield of 0.125-in. thick aluminum and provide at least 1.25-in. clearance above the top of cabinet secured in four locations.

Attach aluminum lifting eyes or ears to the top of the cabinet to permit lifting the cabinet using a sling. Lifting eyes may be permanently fabricated to the cabinet frame as long as they do not interfere with the construction and operation of the sunshield. Manufacturer may provide removable lifting eyes that can be removed after installation. Seal any penetrations to the cabinet exterior or sunshield after removal of lifting eyes.

Ensure cabinets are in accordance with the requirements of ASTM B209 for 5052-H32 aluminum sheet.

3.1.1. **Door**. Provide sturdy and torsionally rigid cabinet doors that overlap and substantially cover the full area of the front of the cabinet. Attach cabinet doors using at least three heavy-duty hinges or full-length hinge. Provide stainless steel hinge pins.

Fabricate the doors and hinges to withstand a 100-lb. per vertical foot force applied to the outer edge of the door when open without permanent deformation or impairment of the door or cabinet body when the load is removed.

Fit the cabinet doors with No. 2 Corbin lock and aluminum or chrome-plated handle with at least a 3/8-in. drive pin and a three-point latch. Design the lock and latch so that the handle cannot be released until the lock is released. Provide a padlock of the type directed. Provide a locking ring for a padlock. Provide two keys for the door and two keys for the padlock with each cabinet. Locate the lock clear of the arc of the handle. Keys must be removable in the locked position only. Mount locks with two stainless steel machine screws. Provide cabinet doors with a catch mechanism to hold the door open at three positions: 90°, 120°, and 160°.

Fabricate the door and door stop mechanism to withstand a simulated wind load of 5 lb. per square foot applied to inside and outside surfaces without failure, permanent deformation, or compromising of door position.

Provide cabinets without auxiliary police doors.

Provide a gasket to act as a permanent and weather-resistant seal at the cabinet door facing. The gasket material must be of a non-absorbent material and maintain its resiliency after long-term exposure to the outdoor environment.

Provide a gasket with a minimum thickness of 0.25 in. Locate the gasket in a channel provided for this purpose either on the cabinet or on the door. An L-bracket is acceptable instead of this channel if the gasket is fitted snugly against the bracket to ensure a uniformly dust and weather-resistant seal around the entire door facing.

3.1.2. **Mechanical Components**. Ensure external screws, nuts, and locking washers are stainless steel. Do not use self-tapping screws unless specifically approved.

Ensure all parts are made of corrosion-resistant material, such as plastic, stainless steel, aluminum, or brass.

Ensure all materials used in construction are resistant to fungus growth and moisture deterioration.

Separate dissimilar metals by an inert dielectric material.

4. CONSTRUCTION

4.1. **General**. For ITS cabinets installed on a slope, ensure the cabinet primary door faces and opens to the high side of the slope, and provide safety railing in conformance with the ITS ground-mounted cabinet standards. Safety railing will be supplemental to this Specification. Stake cabinet foundation forms and underground conduit entering the foundation before installation, and secure Department approval before pouring foundation. It is understood that cabinet location may vary from the plans to accommodate field conditions.

Construct the cabinet foundation in accordance with Item 656, unless otherwise specified.

Concrete maintenance pads have been integrated into the foundation design found in the ITS ground-mounted cabinet standards to accommodate door configuration options.

4.2. **Mounting Hardware**. Furnish anchor bolts to mount the cabinet to the foundation. Manufacturer will determine the appropriate size anchor bolts by cabinet type and foundation size. Provide appropriate mounting plates and any other necessary hardware to mount the cabinet on a foundation.

4.3. **Installation**. Ground the cabinet as depicted in the ITS grounding standards. For retrofit scenarios, measure resistance to ground before installing cabinet in accordance with IEEE 81. Provide additional grounding rods and install additional grounding conductors as detailed in the ITS grounding standards to achieve less than 5 ohms resistance. Additional ground rods and grounding conductors will be supplemental to this Specification.

Immediately before mounting the cabinet on the foundation, apply a bead of silicone caulk to seal the cabinet base to the foundation.

Seal any space between conduit entering the cabinet and the foundation with silicone caulk or approved sealant compound.

Install conduits as shown on the plans or as directed and in accordance with Item 618. Place wiring in a neat and orderly manner grouped with nylon tie-downs.

After wiring is installed, seal the conduits terminated in the cabinet foundation with a duct seal or other similar approved sealant inside the ends of the conduit in the cabinet to prevent moisture, insects, and critters from entering the conduits.

4.3.1. **Connection of Lead-In Cable**. Connect the detector lead-in cables, when shown on the plans or as directed, to the detector terminal blocks in the following manner.

Dress each cable into position in conformance with the approved lead-in cable position on the panel (bundle cables together and broken out by their position on the terminal boards).

Place cable as close to the terminal points as possible and left floating.

Ground the cable shield after testing and in conformance with the detector manufacturers' specifications.

4.3.2. **Connection of Miscellaneous Cables**. Terminate connection of signal wires, sign control wires, and any other wires required to complete connections for an operational system on terminal blocks.

Design the equipment for ease of maintenance. Component parts must be readily accessible for inspection and maintenance. The only tools and test instruments required for maintenance by maintenance personnel must be simple handheld tools, basic meters, and oscilloscopes.

Mount cabinet plumb in all directions.

4.4. **Removal and Replacement of Curbs and Walks**. The Contractor must secure approval before cutting into or removing sidewalks or curbs not shown on the plans to be removed or replaced.

Restore any curbs or sidewalks after work is completed, which have been removed, to equivalent original condition and to the satisfaction of the Engineer.

All completed surfaces that are adjacent to the cabinet foundation must be level and free of trip hazards. Any difference in level of adjacent structures must be addressed in the field and approved by the Department.

4.5. **Relocation**. Before removal of the existing cabinet, disconnect and isolate the power cables from the electric power supply and disconnect cables (power and communication) from the equipment.

Inspect the existing cabinet, with a representative from the Department, and document any evidence of structural damage before removal. Remove and deliver to the Department existing cabinets that fail structural inspection to an address to be supplied by the Department.

Remove the existing cabinet in a manner acceptable. Use a method that does not cause undue overstress or damage to the structure or appurtenances attached.

Remove the existing concrete foundation to a depth of at least 2 ft. below finish grade with steel cut off. Backfill the excavation with material equal in composition and density to the surrounding area. Replace any surfacing, such as asphalt pavement, concrete riprap, or brick pavers, with like material to equivalent condition as approved.

Supply new anchor bolts required for the installation of the cabinet. Match bolt dimensions and lengths previously used or as shown on the plans or as directed.

4.6. **Removal**. Present the work in a neat, professional finished appearance. Maintain safe construction and operation practices. Use established industry and utility safety practices when removing cabinets near overhead or underground facilities. Consult with the appropriate utility company before beginning work.

Inspect the cabinet, with a representative from the Department, and remove any ITS equipment, associated mounting hardware, and cabling inside the cabinet before commencing work.

Before removal of the existing cabinet, disconnect and isolate the power cables from the electric power supply and disconnect cables (power and communication) from the equipment. Remove and coil existing cabling to the nearest ITS ground box or as identified on the plans.

Carefully remove the cabinet and avoid damage or injury, respectively, to surrounding objects or individuals. Deliver the cabinet to an address supplied by the Department.

Remove the existing foundation to a depth of 2 ft. below grade with steel cut off. Backfill the excavation with material equal in composition and density to the surrounding area. Replace any surfacing, such as asphalt pavement, concrete riprap, or brick pavers, with like material to equivalent condition as approved.

4.7. **Testing**.

4.7.1. **Installation**. Unless otherwise shown on the plans, perform the following tests on cabinets supplied through this Specification.

4.7.1.1. **Test Procedures Documentation**. Provide five copies of the test procedures, including tests identified in NEMA, Section 4.9.2.–Section 4.9.4. inclusive, and blank data forms to the Engineer for review and comment at least 45 days before testing for each test required on this project. Include the sequence of the tests in the procedures. The Engineer will comment on, approve, or reject test procedures within 30 days after

Contractor submittal of equipment for tests. Contractor must resubmit if necessary rejected test procedures for final approval within 10 days before testing. Review time is in calendar days. Conduct tests in conformance with the approved test procedures. The Department may witness tests.

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

Provide written notice to the Engineer within 48 hr. of discovery of any testing discrepancy found in testing by the Contractor. Furnish data forms containing the acceptable range of expected results and measured values.

4.7.1.2. **Design Approval Test**. Conduct a design approval test on 10% of the total number of cabinets supplied as part of the project, with at least one of each type of cabinet used on the project.

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 the requirements of this Specification. Failure of independent tests to comply with the requirements of this Specification is grounds for rejection of any certification.

Provide a copy of the certification to the Engineer. 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 the tests. Perform the following tests.

4.7.1.2.1. **Power Service Transients**. Provide equipment that meets the performance requirements, specified herein, when subjected to the power service transients as specified in NEMA TS 2, Section 2.2.7.2, “Transient Tests (Power Service),” or most current version.

4.7.1.2.2. **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 TS 2, Section 2.2.7.3, “Low-Temperature Low-Voltage Tests,” and Section 2.2.7.4, “Low-Temperature High-Voltage Tests,” or 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 TS 2, Section 2.2.7.5, “High-Temperature High Voltage Tests,” and Section 2.2.7.6, “High-Temperature Low-Voltage Tests,” or most current version.

4.7.1.2.3. **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.

4.7.1.2.4. **Vibration**. Provide equipment that shows no degradation of mechanical structure, soldered components, or plug-in components and will operate in conformance with the manufacturer’s equipment specifications after being subjected to the vibration tests as described in NEMA TS 2, Section 2.2.8, “Vibration Test,” or most current version.

4.7.1.2.5. **Power Interruption**. Provide equipment that meets the performance requirements, specified herein, when subjected to nominal input voltage variations as specified in NEMA TS 2, Section 2.2.10, “Power Interruption Test,” or most current version.

4.7.1.3. **Stand-Alone Tests**. Conduct a stand-alone test for each cabinet after installation. Exercise stand-alone (non-network) functional operations consisting of the following, at minimum.

- 19-in. EIA rack
- Adjustable shelves
- Locking mechanism
- Fan and thermostat
- Cabinet light
- Back panel
- Circuit breakers
- Surge protection
- Grounding system
- Terminal strips
- Interconnect harnesses with connectors
- Weatherproofing
- "Door open" connection to back panel

Notify the Engineer 5 working days before conducting this test. The Engineer may witness all the tests.

4.7.1.4. **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 to the Engineer. If a unit requires replacement, provide a new unit and then repeat the test until successfully completed. Major discrepancies that will substantially delay receipt and acceptance of the unit are 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, to similar units within the system as directed. Perform the corrective measures within 30 calendar days without additional cost or extension of the Contract period.

4.7.1.4.1. **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.

4.7.1.4.2. **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.

4.7.1.4.3. **Consequences of Stand-Alone Test Failure**. If the equipment fails the stand-alone test, correct the fault and then repeat the stand-alone test until successfully completed.

4.7.2. **Relocation**.

4.7.2.1. **Pre-Test**. Conduct performance testing before removal of ITS ground-mounted cabinets. Test functional operations of the equipment and document functional operations in the presence of representatives of the Contractor and the Department.

- Locking mechanism
- Fan and thermostat
- Cabinet light
- Back panel
- Circuit breakers
- Surge protection system

- Grounding system
- "Door open" connection to back panel

Ensure that both representatives sign the test report indicating that the equipment has passed or failed each function. Once removed, the equipment becomes the responsibility of the Contractor until accepted by the Department. Compare test data before removal and test data after installation.

4.7.2.2. **Post-Test**. Testing of the ITS ground-mounted cabinet is for the purpose of relieving the Contractor of maintenance of the system. The Contractor is 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 existing ITS equipment has been installed, perform the same functional operation test described under NEMA, Section 4.9.2.1. Furnish test data forms containing the sequence of tests, including the data taken and quantitative results for all tests. Submit the test data forms to the Engineer 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 two copies of the data forms to the Engineer.

The performance test results after relocation must be equal to or better than the test results before removal. Contractor is responsible for repair or replacement of those components within the system that failed after relocation but that passed before removal.

The Department will conduct approved ITS equipment system tests on the field equipment hardware with the central equipment. The tests will exercise remote control functions and display the return status codes from the controller.

If any unit fails to pass a test, prepare a report and deliver it 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.

4.8. **Documentation**. Submit documentation for this Specification consisting of the following.

4.8.1. **Ground-Mounted Cabinet**. Shop drawings should clearly detail the following for ITS ground-mounted cabinets when required as shown on the plans.

- Dimensions
- Shelves
- Door
- Gasket
- Door lock
- Materials list
- Exterior finish
- Ventilation
- Terminal strips
- Harnesses
- Filter
- Power distribution panel
- Surge suppression
- Back panel
- Outlets
- Circuit breakers
- Power cable terminals
- Wiring diagrams
- Cabinet grounding
- Environmental parameters
- Connectors

Submit shop drawings, signed, sealed, and dated by a licensed professional engineer in Texas, showing the fabrication, interior configuration, electrical distribution, and cabinet mounting details for each cabinet in accordance with Item 5, "Control of the Work."

Provide at least two complete sets of operation and maintenance manuals in hard copy format in addition to a CD/DVD or removable flash drive that include the following.

- Complete and accurate schematic diagrams
- Complete installation procedures
- 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, Radio-Electronics-Television Manufacturers Association, or EIA
- Pictorial of component layout on circuit board
- Complete maintenance and troubleshooting procedures
- Complete stage-by-stage explanation of circuit theory and operation
- Recovery procedures for malfunction
- Instructions for gathering maintenance assistance from manufacturer

Identify material that is copyrighted or proprietary in nature as part of the documentation submittal. The Department will take proper provisions to secure such material and not distribute without written approval.

Provide the Department with certification documentation verifying conformance with environmental and testing requirements contained in the Special Specification. Certifications may be provided by the manufacturer or through independent labs.

4.9. **Warranty**. The start date of the manufacturer's standard warranty will begin when the stand-alone test plan has been approved. Any equipment with less than 95% of its warranty remaining at the beginning of the stand-alone test will not be accepted by the Department. Guarantee that equipment furnished and installed for this project performs according to the manufacturer's published specifications. Warrant the equipment against defects or failure in design, materials, and workmanship for at least 5 yr. or in conformance with the manufacturer's standard warranty if warranty period is greater. Assign, to the Department, manufacturer's normal warranties or guarantees on electronic, electrical, and mechanical equipment; materials; technical data; and products furnished for and installed on the project. Repair or replace, at the manufacturer's option, defective equipment during the warranty period at no cost to the Department.

Repair or replace equipment at the Contractor's expense before beginning testing in the event of a malfunction or failure. Furnish replacement parts for equipment within 30 days of notification of failure by the Department.

5. MEASUREMENT

This Item will be measured by each unit furnished, installed, relocated, or removed as shown on the plans or as directed, excluding new conduit.

6. PAYMENT

6.1. **Furnish and Install**. The work performed and materials furnished in conformance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "ITS Ground Mount Cabinet" of the type and configuration specified. This price is full compensation for furnishing, fabricating, and installing ITS ground-mounted cabinets as shown on the plans; for forming and setting the cabinet foundation; for furnishing and placing anchor bolts, nuts, and washers; for furnishing and placing electrical conduit in the foundation; for appropriately grounding the cabinet; and for equipment, materials, labor, tools, and incidentals necessary to provide an ITS ground-mounted cabinet, complete in place, and ready for the installation of ITS equipment.

New conduit will be paid for under Item 618 or Item 619, "Intelligent Transportation System (ITS) Multi-Duct Conduit."

6.2. **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 "ITS Ground Mount Cabinet (Install Only)" of the type and configuration specified. This price is full compensation for installing ITS ground-mounted cabinets furnished by the Department as shown on the plans; for forming and setting the cabinet foundation; for furnishing and placing anchor bolts, nuts, and washers; for furnishing and placing electrical conduit in the foundation; for appropriately grounding the cabinet; and for equipment, materials, labor, tools, and incidentals necessary to install an ITS ground-mounted cabinet, complete in place, and ready for the installation of ITS equipment.

New conduit will be paid for under Item 618 or Item 619.

6.3. **Relocate**. 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 "ITS Ground Mount Cabinet (Relocate)" of the type and configuration specified. This price is full compensation for removing existing ground-mounted cabinets as shown on the plans; for removing existing foundations; for backfilling and surface placement; for hauling and installing ITS ground-mounted cabinets; for furnishing and placing anchor bolts, nuts, and washers; for appropriately grounding the cabinet; and for equipment, materials, labor, tools, and incidentals necessary to relocate an existing ITS ground-mounted cabinet, complete in place, and ready for the installation of ITS equipment.

New conduit will be paid for under Item 618 or Item 619.

6.4. **Remove**. The work performed and materials furnished in accordance with this Item and measured as provided for "Measurement" will be paid for at the unit price bid for "ITS Ground Mount Cabinet (Remove)" of the type and configuration specified. This price is full compensation for removing existing ITS ground-mounted cabinets as shown on the plans; for removing existing foundations; for backfilling and surface placement; for loading and hauling; and for equipment, materials, labor, tools, and incidentals necessary to complete the removal of existing ITS ground-mounted cabinets.

Special Specification 6062
CCTV Camera Pole Structure

1. DESCRIPTION

Design, fabricate, deliver, and install closed-circuit television (CCTV) camera pole structures as shown on North Texas Tollway Authority (NTTA) standard drawings.

2. MATERIALS

Provide new materials that comply with the details shown on the plans, the requirements of this Specification, and the pertinent requirements of the following Items.

- Item 421, "Hydraulic Cement Concrete"
- Item 425, "Precast Prestressed Concrete Structural Members"
- Item 440, "Reinforcement for Concrete"
- Item 441, "Steel Structures"
- Item 442, "Metal for Structures"
- Item 445, "Galvanizing"
- Item 449, "Anchor Bolts"
- Item 618, "Conduit"
- Item 620, "Electrical Conductors"

2.1. **Ground-Mounted Steel Poles**. Furnish CCTV camera steel poles and anchor bolts as shown on NTTA Standard Drawing ITS-004 or ITS-005. Steel for CCTV pole must be in accordance with ASTM A588 and fabricated in accordance with ASTM A595.

2.2. **Ground-Mounted Precast Prestressed Concrete Poles**. Furnish CCTV camera precast concrete poles as shown on NTTA Standard Drawing ITS-006.

The prestressed concrete pole must be in accordance with Item 425.

2.3. **Structure-Mounted Poles**. Furnish CCTV camera steel poles as shown on NTTA Standard Drawing ITS-008 and in conformance with the details shown on the plans. Poles are normally retrofitted to existing sign structures or dynamic message sign (DMS) structures.

3. CONSTRUCTION

Perform work in conformance with the details shown on the plans and in accordance with the requirements of this Specification.

Use established industry and utility safety practices when installing poles located near overhead or underground utilities. Consult with the appropriate utility company before beginning work.

3.1. **Shop Drawings**. Submit shop drawings electronically in accordance with Article 5.2., "Plans and Working Drawings." Provide shop drawings that have been signed, sealed, and dated by a licensed professional engineer registered in the State of Texas.

3.2. **Survey**. Stake each CCTV camera pole structure as shown on the plans. The Engineer may shift the pole's location, if necessary, to secure a more desirable location or to avoid conflict with utilities.

3.3. **Foundation**. Construct drilled shaft foundations as shown on the plans and in accordance with Item 416, "Drilled Shaft Foundations." Install conduits, ground wire, and ground rod as shown on the plans. When required by plans, install anchor bolts and coat anchor bolt threads in accordance with Item 449.

3.4. **Pole Installation**. Erect structures after foundation concrete has attained its design strength as required on the plans and in accordance with Item 421. Tighten anchor bolts in accordance with Item 449.

Poles must be set plumb to the line and grade shown on the plans. Installations out of plumb more than 1/8 in. per 10-ft. height will be rejected and corrected at no additional cost.

Construct riprap around the foundation as shown on the plans and in accordance with Item 432, "Riprap."

4. MEASUREMENT

This Item will be measured as each installed.

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 "Camera Pole Structure" or "Structure Mount Camera Pole" of the type and height specified. This price is full compensation for designing, furnishing, fabricating, and erecting the camera pole structure; for furnishing and placing anchor bolts, nuts, and washers; for furnishing and placing electrical conduit in the foundation; for mounting the camera pole to existing structure; for shop drawings; and for all other details and incidentals necessary to provide a camera pole structure in accordance with the Specifications, plans, and approved shop drawings.

Foundations will be paid for under Item 416. Riprap around the foundation will be subsidiary to this Item.

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