NOTIFICATION OF ADDENDUM

ADDENDUM NO. 1

DATED 10/28/2016

Control	**0219-02-013**
Project	**STP 2017(094)**
Highway	**FM 1016**
County	**HIDALGO**

Ladies/Gentlemen:

Attached please find an addendum on the above captioned project. Included in the attachment is an adendum notification which details the changes and the respective proposal pages which were added and/ or changed.

Except for new bid insert pages, it is unnecessary to return any of the pages attached.

Bid insert pages must be returned with the bid proposal submitted to the Department, unless your firm is submitting a bid using a computer print out. The computer print out must be changed to reflect the new bid item information.

Contractors and material suppliers, etc. who have previously been furnished informational proposals are not being furnished a copy of the addendum. If you have a subcontractor on the above project, please advise them of this addendum. Acknowledgment of this addendum is not requested if your company has been issued a proposal stamped “This Proposal Issued for Informational Purposes.”

You are required to acknowledge receipt of this addendum on the Addendum Acknowledgement form contained in your bid proposal by placing a mark in the box next to the respective addendum.

Failure to Acknowledge receipt of this addendum in your bid proposal will result in your bid not being read.

04/99

SUBJECT: PLANS AND PROPOSAL ADDENDUMS

PROJECT: STP 2017(094) CONTROL: 0219-02-013
COUNTY: HIDALGO
LETTING: 11/04/2016
REFERENCE NO: 1027

PROPOSAL ADDENDUMS

_ PROPOSAL COVER
X BID INSERTS (SH. NO.: 8)
X GENERAL NOTES (SH. NO.: F,G,H,I,J)
_ SPEC LIST (SH. NO.:)
_ SPECIAL PROVISIONS:
ADDED:

DELETED:

_ SPECIAL SPECIFICATIONS:
ADDED:

DELETED:

X OTHER: PLAN SHEETS AND OTHER CHANGES

DESCRIPTION OF ABOVE CHANGES
(INCLUDING PLANS SHEET CHANGES)

***** PROPOSAL *****

***** BID INSERTS *****
ALL BID INSERTS PROPOSAL SHEETS AND E&Q PLAN SHEET 58 IS REPLACED AS PART OF THIS ADDENDUM

REVISED QUANTITIES FOR ITEMS: 636-6001, 644-6027, 644-6076

***** GENERAL NOTES *****

GENERAL NOTES SHEET F - REVISED NOTES TO ITEM 400

GENERAL NOTES SHEETS F THRU J - GENERAL NOTES REALIGNED DUE TO REVISED NOTES TO ITEM 400

***** PLAN SHEETS *****

DESCRIPTION OF ABOVE CHANGES (CONTINUED)
(INCLUDING PLANS SHEET CHANGES)

SHEET 2; INDEX OF SHEETS - ADDED SHEET NUMBER 171A

SHEET 2; INDEX OF SHEETS - OMITTED SHEET NUMBERS 200 AND 201

SHEET 38; SUMMARY TABLES OF ESTIMATED QUANTITIES - REVISED QUANTITIES

SHEETS 50 THRU 52; GENERAL NOTES PAGES F THRU J - GENERAL NOTES REALIGNED DUE TO REVISED NOTES FOR ITEM 400

SHEET 58; ESTIMATE & QUANTITY SHEET - REVISED QUANTITIES

SHEETS 131 AND 132; JOINT DETAILS - REVISED NOTE 4 TO REMOVE REFERENCE TO CPCD-14 CONCRETE PAVEMENT DETAILS CONTRACTION DESIGN

SHEET 171A; SLED-14 STANDARD - ADDED SHEET

SHEETS 200 AND 201; CPCD-14 STANDARD - REMOVED AND OMITTED

SHEET 272; SUMMARY OF SMALL SIGNS (REMOVE OR RELOCATE) - REVISED TOTALS QUANTITY FOR MIDDLE CHART TABLE

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	104	6009		REMOVING CONC (RIPRAP) DOLLARS and CENTS	SY	58.000	1
	104	6017		REMOVING CONC (DRIVEWAYS) DOLLARS and CENTS	SY	1,599.000	2
	104	6022		REMOVING CONC (CURB AND GUTTER) DOLLARS and CENTS	LF	2,593.000	3
	105	6020		REMOVING STAB BASE & ASPH PAV (12") DOLLARS and CENTS	SY	1,473.000	4
	105	6022		REMOVING STAB BASE AND ASPH PAV (13") DOLLARS and CENTS	SY	25,050.000	5
	105	6108		RMV STAB BASE & ASPH PV (17") DOLLARS and CENTS	SY	17,866.000	6
	105	6110		REMOVE STAB BASE & ASPH (11.5") DOLLARS and CENTS	CY	19,020.000	7
	110	6001		EXCAVATION (ROADWAY) DOLLARS and CENTS	CY	10,888.000	8
	132	6006	002	EMBANKMENT (FINAL)(DENS CONT)(TY C) DOLLARS and CENTS	CY	820.600	9
	160	6005		FURNISHING AND PLACING TOPSOIL DOLLARS and CENTS	CY	215.000	10
	164	6036		DRILL SEEDING (PERM) (RURAL) (CLAY) DOLLARS and CENTS	AC	6.440	11
	164	6042		DRILL SEEDING (TEMP) (WARM) DOLLARS and CENTS	AC	6.440	12

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	168	6001		VEGETATIVE WATERING DOLLARS and CENTS	MG	1,500.000	13
	204	6003		SPRINKLING (DUST CONTROL) DOLLARS and CENTS	MG	1,733.600	14
	216	6001		PROOF ROLLING DOLLARS and CENTS	HR	17.000	15
	247	6060		FL BS (CMP IN PLC)(TY E GR 4)(FNAL POS) DOLLARS and CENTS	CY	7,676.000	16
	251	6055		RWRK BS MTL(TY B)(6")(DEN CNT)(ORG POS) DOLLARS and CENTS	CY	2,210.000	17
	260	6011		LIME TRT (EXST MATL) (12") DOLLARS and CENTS	SY	60,480.000	18
	260	6016		LIME (HYD, COM, OR QK(SLURRY)) DOLLARS and CENTS	TON	2,268.000	19
	275	6001		CEMENT DOLLARS and CENTS	TON	734.800	20
	275	6025		CEM TRT (MX EXST MTL & NW BS)(DC)(6") DOLLARS and CENTS	SY	59,316.600	21
	310	6009		PRIME COAT (MC-30) DOLLARS and CENTS	GAL	11,863.000	22
	341	6039		D-GR HMA TY-D SAC-B PG64-22 DOLLARS and CENTS	TON	8,065.000	23
	360	6003		CONC PVMT (CONT REINF - CRCP) (9") DOLLARS and CENTS	SY	63,307.000	24

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	360	6044		CONC PVMT (CONT REINF)(FAST TRK)(12") DOLLARS and CENTS	SY	1,473.300	25
	400	6005	001	CEM STABIL BKFL DOLLARS and CENTS	CY	247.080	26
	400	6010	001	STRUCT EXCAV (SPECIAL) DOLLARS and CENTS	CY	71.850	27
	402	6001		TRENCH EXCAVATION PROTECTION DOLLARS and CENTS	LF	556.000	28
	416	6030		DRILL SHAFT (TRF SIG POLE) (24 IN) DOLLARS and CENTS	LF	30.000	29
	416	6032		DRILL SHAFT (TRF SIG POLE) (36 IN) DOLLARS and CENTS	LF	165.000	30
	432	6001		RIPRAP (CONC)(4 IN) DOLLARS and CENTS	CY	3.000	31
	432	6045		RIPRAP (MOW STRIP)(4 IN) DOLLARS and CENTS	CY	22.000	32
	464	6017		RC PIPE (CL IV)(18 IN) DOLLARS and CENTS	LF	324.000	33
	464	6018		RC PIPE (CL IV)(24 IN) DOLLARS and CENTS	LF	208.000	34
	464	6038		RC PIPE (CL III)(18 IN)(SPL) DOLLARS and CENTS	LF	94.000	35
	464	6039		RC PIPE (CL III)(24 IN)(SPL) DOLLARS and CENTS	LF	278.000	36

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	464	6041		RC PIPE (CL III)(36 IN)(SPL) DOLLARS and CENTS	LF	92.000	37
	466	6003		HEADWALL (CH - FW - 0) (DIA= 18 IN) DOLLARS and CENTS	EA	1.000	38
	466	6009		HEADWALL (CH - FW - 0) (DIA= 36 IN) DOLLARS and CENTS	EA	1.000	39
	467	6356		SET (TY II) (18 IN) (RCP) (3: 1) (C) DOLLARS and CENTS	EA	1.000	40
	467	6358		SET (TY II) (18 IN) (RCP) (4: 1) (C) DOLLARS and CENTS	EA	1.000	41
	467	6362		SET (TY II) (18 IN) (RCP) (6: 1) (C) DOLLARS and CENTS	EA	15.000	42
	467	6388		SET (TY II) (24 IN) (RCP) (3: 1) (C) DOLLARS and CENTS	EA	5.000	43
	467	6394		SET (TY II) (24 IN) (RCP) (6: 1) (C) DOLLARS and CENTS	EA	7.000	44
	467	6448		SET (TY II) (36 IN) (RCP) (3: 1) (C) DOLLARS and CENTS	EA	1.000	45
	496	6004		REMOV STR (SET) DOLLARS and CENTS	EA	28.000	46
	496	6006		REMOV STR (HEADWALL) DOLLARS and CENTS	EA	2.000	47
	496	6007		REMOV STR (PIPE) DOLLARS and CENTS	LF	1,137.000	48

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	500	6001		MOBILIZATION DOLLARS and CENTS	LS	1.000	49
	502	6001		BARRICADES, SIGNS AND TRAFFIC HANDLING DOLLARS and CENTS	MO	19.000	50
	506	6004	003	ROCK FILTER DAMS (INSTALL) (TY 4) DOLLARS and CENTS	LF	320.000	51
	506	6011	003	ROCK FILTER DAMS (REMOVE) DOLLARS and CENTS	LF	320.000	52
	506	6021	003	CONSTRUCTION EXITS (INSTALL) (TY 2) DOLLARS and CENTS	SY	2,886.000	53
	506	6024	003	CONSTRUCTION EXITS (REMOVE) DOLLARS and CENTS	SY	2,886.000	54
	506	6038	003	TEMP SEDMT CONT FENCE (INSTALL) DOLLARS and CENTS	LF	50.000	55
	506	6039	003	TEMP SEDMT CONT FENCE (REMOVE) DOLLARS and CENTS	LF	50.000	56
	506	6041	003	BIODEG EROSN CONT LOGS (INSTL) (12") DOLLARS and CENTS	LF	2,559.000	57
	506	6043	003	BIODEG EROSN CONT LOGS (REMOVE) DOLLARS and CENTS	LF	2,559.000	58
	508	6001		CONSTRUCTING DETOURS DOLLARS and CENTS	SY	365.000	59
	512	6002		PORT CTB (FUR & INST)(SGL SLOPE)(TY 2) DOLLARS and CENTS	LF	3,570.000	60

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	512	6026		PORT CTB (MOVE)(SGL SLP)(TY 2) DOLLARS and CENTS	LF	9,350.000	61
	512	6050		PORT CTB (REMOVE)(SGL SLP)(TY 2) DOLLARS and CENTS	LF	3,570.000	62
	528	6005		LANDSCAPE PAVERS (FURN) DOLLARS and CENTS	SY	100.000	63
	528	6006		REMOVE AND RELAY PAVERS DOLLARS and CENTS	SY	832.000	64
	529	6005		CONC CURB (MONO) (TY II) DOLLARS and CENTS	LF	861.000	65
	529	6008		CONC CURB & GUTTER (TY II) DOLLARS and CENTS	LF	1,732.000	66
	530	6004		DRIVEWAYS (CONC) DOLLARS and CENTS	SY	1,599.000	67
	530	6005		DRIVEWAYS (ACP) DOLLARS and CENTS	SY	833.000	68
	531	6001		CONC SIDEWALKS (4") DOLLARS and CENTS	SY	41.000	69
	531	6015		CURB RAMPS (TY 20) DOLLARS and CENTS	EA	4.000	70
	531	6016		CURB RAMPS (TY 21) DOLLARS and CENTS	EA	2.000	71
	540	6001		MTL W-BEAM GD FEN (TIM POST) DOLLARS and CENTS	LF	1,800.000	72

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	542	6001		REMOVE METAL BEAM GUARD FENCE DOLLARS and CENTS	LF	2,030.000	73
	544	6001		GUARDRAIL END TREATMENT (INSTALL) DOLLARS and CENTS	EA	8.000	74
	544	6003		GUARDRAIL END TREATMENT (REMOVE) DOLLARS and CENTS	EA	6.000	75
	545	6001		CRASH CUSH ATTEN (INSTL) DOLLARS and CENTS	EA	5.000	76
	545	6003		CRASH CUSH ATTEN (MOVE & RESET) DOLLARS and CENTS	EA	32.000	77
	545	6005		CRASH CUSH ATTEN (REMOVE) DOLLARS and CENTS	EA	5.000	78
	560	6007		MAILBOX INSTALL-S (WC-POST) TY 3 DOLLARS and CENTS	EA	3.000	79
	618	6016		CONDT (PVC) (SCH 40) (1") DOLLARS and CENTS	LF	761.000	80
	618	6023		CONDT (PVC) (SCH 40) (2") DOLLARS and CENTS	LF	2,859.000	81
	618	6024		CONDT (PVC) (SCH 40) (2") (BORE) DOLLARS and CENTS	LF	80.000	82
	618	6033		CONDT (PVC) (SCH 40) (4") DOLLARS and CENTS	LF	1,885.000	83
	620	6007		ELEC CONDR (NO.8) BARE DOLLARS and CENTS	LF	920.000	84

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	620	6009		ELEC CONDR (NO.6) BARE DOLLARS and CENTS	LF	400.000	85
	620	6010		ELEC CONDR (NO.6) INSULATED DOLLARS and CENTS	LF	800.000	86
	621	6005		TRAY CABLE (4 CONDR) (12 AWG) DOLLARS and CENTS	LF	610.000	87
	624	6002		GROUND BOX TY A (122311)W/APRON DOLLARS and CENTS	EA	32.000	88
	625	6003		ZINC-COAT STL WIRE STRAND (3/8") DOLLARS and CENTS	LF	1,280.000	89
	628	6301		ELC SRV TY T 120/240 000(NS)GS(L)TS(O) DOLLARS and CENTS	EA	1.000	90
	636	6001		ALUMINUM SIGNS (TY A) DOLLARS and CENTS	SF	364.260	91
	644	6027		IN SM RD SN SUP&AM TYS80(1)SA(P) DOLLARS and CENTS	EA	36.000	92
	644	6033		IN SM RD SN SUP&AM TYS80(1)SA(U) DOLLARS and CENTS	EA	5.000	93
	644	6070		RELOCATE SM RD SN SUP&AM TY S80 DOLLARS and CENTS	EA	6.000	94
	644	6076		REMOVE SM RD SN SUP&AM DOLLARS and CENTS	EA	42.000	95
	658	6049		INSTL OM ASSM (OM-2Z)(FLX)GND(BI) DOLLARS and CENTS	EA	9.000	96

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	662	6060		WK ZN PAV MRK REMOV (W)4"(BRK) DOLLARS and CENTS	LF	3,001.000	97
	662	6063		WK ZN PAV MRK REMOV (W)4"(SLD) DOLLARS and CENTS	LF	38,153.000	98
	662	6071		WK ZN PAV MRK REMOV (W)8"(SLD) DOLLARS and CENTS	LF	5,222.000	99
	662	6073		WK ZN PAV MRK REMOV (W)12"(SLD) DOLLARS and CENTS	LF	467.000	100
	662	6075		WK ZN PAV MRK REMOV (W)24"(SLD) DOLLARS and CENTS	LF	882.000	101
	662	6095		WK ZN PAV MRK REMOV (Y)4"(SLD) DOLLARS and CENTS	LF	46,769.000	102
	662	6109		WK ZN PAV MRK SHT TERM (TAB)TY W DOLLARS and CENTS	EA	2,000.000	103
	662	6110		WK ZN PAV MRK SHT TERM (TAB)TY Y DOLLARS and CENTS	EA	3,530.000	104
	666	6006	002	REFL PAV MRK TY I (W)4"(DOT)(100MIL) DOLLARS and CENTS	LF	36.000	105
	666	6036	002	REFL PAV MRK TY I (W)8"(SLD)(100MIL) DOLLARS and CENTS	LF	3,480.000	106
	666	6042	002	REFL PAV MRK TY I (W)12"(SLD)(100MIL) DOLLARS and CENTS	LF	2,380.000	107
	666	6048	002	REFL PAV MRK TY I (W)24"(SLD)(100MIL) DOLLARS and CENTS	LF	420.000	108

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	666	6141	002	REFL PAV MRK TY I (Y)12"(SLD)(100MIL) DOLLARS and CENTS	LF	2,250.000	109
	666	6159	002	RE PV MRK TY I(BLACK)4"(SHADOW)(100MIL) DOLLARS and CENTS	LF	3,040.000	110
	666	6300	002	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL) DOLLARS and CENTS	LF	4,690.000	111
	666	6303	002	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL) DOLLARS and CENTS	LF	18,580.000	112
	666	6312	002	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL) DOLLARS and CENTS	LF	3,640.000	113
	666	6315	002	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL) DOLLARS and CENTS	LF	20,300.000	114
	668	6077		PREFAB PAV MRK TY C (W) (ARROW) DOLLARS and CENTS	EA	18.000	115
	668	6078		PREFAB PAV MRK TY C (W) (DBL ARROW) DOLLARS and CENTS	EA	2.000	116
	668	6085		PREFAB PAV MRK TY C (W) (WORD) DOLLARS and CENTS	EA	18.000	117
	672	6007		REFL PAV MRKR TY I-C DOLLARS and CENTS	EA	200.000	118
	672	6009		REFL PAV MRKR TY II-A-A DOLLARS and CENTS	EA	675.000	119
	672	6010		REFL PAV MRKR TY II-C-R DOLLARS and CENTS	EA	100.000	120

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	680	6002		INSTALL HWY TRF SIG (ISOLATED) DOLLARS and CENTS	EA	2.000	121
	681	6001		TEMP TRAF SIGNALS DOLLARS and CENTS	EA	2.000	122
	682	6001		VEH SIG SEC (12")LED(GRN) DOLLARS and CENTS	EA	22.000	123
	682	6002		VEH SIG SEC (12")LED(GRN ARW) DOLLARS and CENTS	EA	3.000	124
	682	6003		VEH SIG SEC (12")LED(YEL) DOLLARS and CENTS	EA	22.000	125
	682	6004		VEH SIG SEC (12")LED(YEL ARW) DOLLARS and CENTS	EA	3.000	126
	682	6005		VEH SIG SEC (12")LED(RED) DOLLARS and CENTS	EA	22.000	127
	682	6018		PED SIG SEC (LED)(COUNTDOWN) DOLLARS and CENTS	EA	14.000	128
	682	6023		BACK PLATE (12")(3 SEC) DOLLARS and CENTS	EA	19.000	129
	682	6025		BACK PLATE (12")(5 SEC) DOLLARS and CENTS	EA	3.000	130
	684	6007		TRF SIG CBL (TY A)(12 AWG)(2 CONDR) DOLLARS and CENTS	LF	3,475.000	131
	684	6010		TRF SIG CBL (TY A)(12 AWG)(5 CONDR) DOLLARS and CENTS	LF	5,520.000	132

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	684	6012		TRF SIG CBL (TY A)(12 AWG)(7 CONDR) DOLLARS and CENTS	LF	2,615.000	133
	684	6080		TRF SIG CBL (TY C)(14 AWG)(2 CONDR) DOLLARS and CENTS	LF	6,409.000	134
	686	6045		INS TRF SIG PL AM(S)1 ARM(44') DOLLARS and CENTS	EA	6.000	135
	687	6001		PED POLE ASSEMBLY DOLLARS and CENTS	EA	5.000	136
	688	6001		PED DETECT PUSH BUTTON (APS) DOLLARS and CENTS	EA	14.000	137
	688	6004		VEH LP DETECT (SAWCUT) DOLLARS and CENTS	LF	3,450.000	138
	752	6008	001	TREE REMOVAL (24" - 30" DIA) DOLLARS and CENTS	EA	15.000	139
	4024	6003		RC LOW HEAD PRSSR PIPE (CL III)(24") DOLLARS and CENTS	LF	112.000	140
	6001	6001		PORTABLE CHANGEABLE MESSAGE SIGN DOLLARS and CENTS	DAY	120.000	141

County: Hidalgo **Control:** 0219-02-013

Highway: FM 1016

GENERAL NOTES:

For all pits or quarries, comply with the "Texas Aggregate Quarry and Pit Safety Act."

Provide on a weekly basis a list of equipment, including idle equipment, utilized on the project that week.

The 1-800 call services for utility locations do not include TxDOT facilities. Contact the Pharr District Signal Section (956-702-6225) for coordination regarding TxDOT underground lines.

ITEM 8: Prosecution and Progress

Working days will be computed and charged in accordance with Article 8.3.1.4. Standard Workweek.

Prepare progress schedules using the Critical Path Method (CPM).

ITEM 132: Embankment

Embankment (DENS CONT) shall be Type C with a max. PI of 40. Material used as embankment material in the top two feet below the bottom of Flexible Base shall meet the following requirements based on preliminary tests and such other tests found necessary by the Engineer.

1. The material shall be such as to produce a well-bonded embankment and shall have a minimum PI of 8 and a maximum PI of 30.

It is the Contractor's responsibility to advise the Engineer of the location of the source sufficiently in advance to avoid delay.

ITEM 160: Topsoil

Use topsoil as needed and directed by the project engineer for select problem areas. Unless otherwise approved by the project engineer, use topsoil from approved sources outside the right of way as per standard specifications. Existing topsoil is to be salvaged and retained for re-use on the project as topsoil.

ITEM 164: Seeding for Erosion Control

During drill seeding operations, application methods shall be in accordance with the method shown in the Standard Specification Book.

SS-1 Tacking Agent shall be a ratio of 2:1, two (Emulsion) to one (water) and applied at a rate of 0.05 gallons per square yard. The SS-1 Tacking Agent required for Drill Seed operations, will not be paid for directly, but will be subsidiary to Item 164 "Drill Seeding." Watering shall not be used with the Drill Seed Method.

Cool Season or Warm Season Grasses shall be included as part of Item 164 (See Table 3 and/or Table 4 in the Standard Specification Manual for dates and seed type).

Seed mixture shall be as specified under Item 164.

ITEM 166: Fertilizer

Fertilizer rate is based on a rate of 100 Lbs. of Nitrogen per acre. The Nitrogen-Phosphorous-Potassium (NPK) ratio shall include a minimum of 5 percent phosphorous and 5 percent Potassium. Fertilizer shall be homogenized.

ITEM 247: Flexible Base

Flexible Base Type E will be composed of caliche (argillaceous Limestone, calcareous or calcareous clay particles) and may contain stone, conglomerate, gravel, sand or granular materials when these materials are in situ with the caliche.

Flexible Base (TY E GR 4) or (TY D GR 4) crushed concrete shall conform to the following requirements:

Retained on Sq. Sieve	Percent Retained
2"	0
½"	20-60
No. 4	40-75
No. 40	70-90
Max. PI:	15
Max. Wet Ball PI:	15
Wet Ball Mill Max Amount:	50
Min. Comp. Strength PSI:	150 at 15 PSI lateral pressure
Triaxial Test	Tex-117-E

The Wet Ball Test (Tex-116-E) shall be run and the Plasticity Index of the material passing the No. 40 sieve shall be determined (Wet Ball PI).

The percent of density as determined by Compaction Ratio (Tex-113-E) for the new Flexible Base shall be a minimum of 98%.

The Contractor's attention is called to the fact that certain existing and/or proposed structures may be within the limits of the Flexible Base. It shall be the Contractor's responsibility to perform construction operations without damage to these structures.

For water added under Item 247, the sulfate content will not exceed 3000-ppm and the chloride content will not exceed 3000-ppm.

ITEM 260: Lime Treatment (Road Mixed)

The Contractor's attention is called to the fact that certain existing and/or proposed structures are within the limits of the lime-treated Subgrade. Unless otherwise directed by the Engineer, these structures shall be installed before the final rolling of this Subgrade. It shall be the Contractor's responsibility to perform the proper lime treating operation without damage to these structures.

The slurry method of applying lime will be required, except when the lime is to be added to naturally wet materials as directed by the Engineer.

For this project, the Engineer will direct a random number of lime trucks to be check weighed.

The lime shall be added to the Flexible Base and/or salvage base at a central mixing site or mixing plant away from the construction area. The Engineer shall approve the site or plant location and method of mixing.

The percent of density as determined by Tex-121-E for the new and salvage Flexible Base shall be a minimum of 98% for all courses.

Proof roll all constructed lime treated subgrade and bases courses in accordance with Item 216, “Proof Rolling.” Correct soft spots as directed. Correction of soft spots in the subgrade or base courses will be at the Contractor’s expense.

ITEM 275: Cement Treatment (Road-Mixed)

Proof roll all constructed cement treated subgrade and bases courses in accordance with Item 216,

"Proof Rolling." Correct soft spots as directed. Correction of soft spots in the subgrade or base courses will be at the Contractor's expense.

ITEM 300: Asphalts, Oils, and Emulsions

Temporary ramps/detours and driveways may use performance grade binder 64-22.

ITEM 301: Asphalt Antistripping Agents

Hydrated Lime shall be added as an Antistripping additive between the rates of 1 % minimum and 2.0% maximum by weight for item 341. If the Hamburg wheel test cannot be met within these limits, Liquid Antistripping agents as approved by the Engineer may be used in conjunction with lime for item 341.

ITEM 310: Prime Coat

The Contractor shall exercise diligence in the application of asphalt by the use of flagging and rolling procedures to keep from spraying or splattering the traveling public with asphaltic material.

All existing Flexible Base, which may become exposed by the milling operation, shall be primed at the rate of 0.2 Gal/SY.

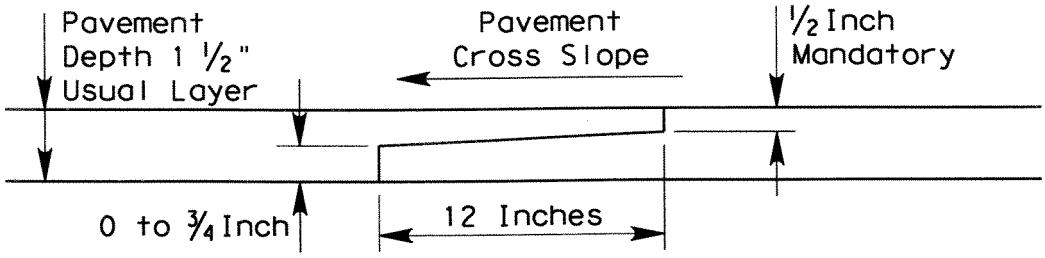
Do not apply subsequent courses over the initial prime coat any earlier than the day after the prime coat was applied, unless otherwise authorized or directed by the Engineer.

ITEM 341: Dense-Graded Hot-Mix Asphalt

The contractor shall exercise diligence in the application of "Tack Coat" by the use of flagging and rolling procedures to keep from spraying or splattering the traveling public with asphaltic material.

Level-up will be placed before the surface course. An asphaltic concrete spreading and finishing machine and/or motor graders; when approved by the Engineer may be used to place the ACP level-up.

All unconfined longitudinal joints shall be constructed with a joint maker providing a maximum ½-inch vertical edge and a minimum 6:1 edge taper or as approved by the Engineer.



NOTCHED WEDGE JOINT

The engineer may allow for variances to the dimensions shown.

The Hamburg wheel Test requirement for PG 64 binder will be 5,000 passes @ 0.5 inch rut depth.

Target Lab Molded Density for this project shall be 97%.

Public and private driveways need to have a smooth vertical transition between the edge of pavement and the existing driveways. The contractor is to add a vertical taper if needed which will be subsidiary to Item 341.

The use of RAP and RAS will not be allowed as part of the mix design for the final riding surface.

Use a release agent from the Department's MPL to clean and to coat the inside of truck beds for hauling equipment. Hauling equipment shall be cleaned prior to hauling material to job site. Submit a copy of the bill of lading to the Engineer as part of the QCP. Ensure the pavement is free from any spillage of hydraulic oil or diesel from construction equipment. The Department may reject trucks that contain any foreign material and suspend production if the pavement is contaminated by any pollutants mentioned above.

SAC B aggregate must have material properties that require 5 or less on the magnesium sulfate soundness test and 15 or less on the Micro-Deval test.

ITEM 354: Planing and Texturing Pavement

Contractor is to place seal coat or ACP layer(s) as indicated on plans within 14-calendar days of planing/milling operation unless otherwise directed by the engineer.

All planing/milling operation drop offs greater than 1-inch need to have a 3:1 slope taper unless otherwise directed by the engineer. The cost of the 3:1 slope taper is subsidiary to item 354.

For full width planing/milling locations, contractor is to place seal coat or ACP layer(s) as indicated on the plans within 2-calendar days of the planing/milling operation unless otherwise directed by the engineer. Contractor will not be allowed to move onto the next planing/milling location or seal coat/ACP overlay location until the exposed area is covered as per above. Contractor cannot get paid for the planing/milling operation until exposed area is covered as per above.

ITEM 400: Excavation and Backfill for Structures

If the Contractor elects to cut pavement (existing/detour) for structural work beyond that required by the construction phasing shown in the plans and approved by the Engineer, it shall be restored at his expense and backfilled to its original condition or better in accordance with Item 400.

Unless shown otherwise in the plans, use a 1-ft depth for Item 400 Structural Excavation (Special) for gravel bedding needed below drainage structures with unstable material.

Structural Excavation Special (Gravel):

Use durable natural stone when tested in accordance with Tex-411-A, has weight loss of no more than 18% after 5 cycles of magnesium sulfate solution. Provide gravel conforming to an aggregate Grade No. 1 as shown on Table 4 of Article 421.2.

ITEM 416: Drilled Shaft Foundations

Payment for furnishing and installing anchor bolts mounted in drill shafts will be included in the unit price bid for the various diameter drill shafts.

The Contractor shall coordinate with the utility companies to verify utility locations before drilling foundations.

The Contractor shall form, or provide a smooth finish, the portions of drilled shaft that project above the ground line. Place a ¾ inch chamfer on the top edge of each pole foundation. This work will not be paid for directly, but will be considered subsidiary to this bid item.

All drilled shaft foundations will be based on the lengths shown on the plans or those established in writing. Adequate calculations for measurements of foundations have been made in accordance with Article 9.1. of the Standard Specifications. Increases or decreases in the quantities required by change in design will be measured as specified and the revised quantities will be the basis for payment.

In the presence of excess ground water and/or unstable conditions in sub-grade soils prevents excavation to the line and depths indicated on the plans for "Drilled Shaft Foundation", other proposed methods of foundation installation such as casing, etc. shall be submitted for review and approved by the Engineer.

ITEM 421: Hydraulic Cement Concrete

Provide equipment at the batch plant for determining the free moisture and/or absorption of aggregates in accordance with applicable TXDOT Test.

Provide the following items for concrete batch inspection in accordance with specifications outlined in DMS-10101, "Computer Equipment":

(1) One Desktop Microcomputer or One Laptop Microcomputer
(2) One Integrated Printer/Scanner/Copier/Fax Unit
(3) Contractor-Furnished Software
(4) Hardware

Submit to the Engineer for approval the project locations for all Portland Cement concrete washout areas prior to starting any concrete work.

Use membrane curing, Type 2, for concrete curb, gutter and combined curb and gutter, concrete medians, directional islands and sidewalks.

ITEM 432: Riprap

Provide Class "A" concrete minimum for riprap aprons placed around all box culvert and pipe safety end treatments. Provide ¼-inch thick dummy joints at least every 15-ft for riprap aprons placed around box and pipe culverts.

Do not use fiber reinforced concrete RIPRAP on side slopes equal to or steeper than 6:1 unless approved by the engineer.

ITEM 464: Reinforced Concrete Pipe

Use tongue and groove pipe where the RCP extends into the lime treated subgrade. The 4-foot depth restriction for heavy equipment passage over pipe structures is voided. The Contractor will be responsible for any construction damage to these facilities.

Do not use mortar joints.

All reinforced concrete pipe shall include rubber gaskets unless shown otherwise on the plans or directed by the engineer.

ITEM 467: Safety End Treatment

All Type II SET's shall have riprap, Class "A" minimum, aprons as shown on the plans. The contractor may submit an alternate precast SET design for approval by the Engineer.

ITEM 502: Barricades, Signs, and Traffic Handling

Shadow vehicles equipped with Truck-Mounted Attenuators are required.

Replace/relocate all regulatory signs removed due to construction operations with the same sign on fixed support(s) immediately upon its removal. First obtain project Engineer approval before removing any regulatory roadway sign. Required flaggers are to be available to direct traffic during sign intermediate down time.

Relocate any Directional Sign Assemblies removed during construction operations immediately upon their removal.

These signs shall be relocated to a location in accordance with the Latest Version of the "Texas Manual on Uniform Traffic Control Devices". In no case will a sign be removed without a replacement sign and support(s) being readily available and a location established. Removal and relocation of these signs required for traffic control will not be paid for directly, but shall be considered subsidiary to Item 502.

From the beginning to the end of the project, all traffic control devices need to be in acceptable condition as per the Texas Quality Guidelines for Work Zone Traffic Control Devices.

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 "Safety Contingency" is not intended to be used in lieu of bid items established by the contract.

ITEM 504: Field Office and Laboratory

Furnish (1) Field Office (Type C).

The Contractor will furnish a Type D Structure (Asphalt Mix Laboratory) modified by the following.

Laboratory room:

The other room of this building will be used as a laboratory and will include access to a bathroom facility from the interior. The laboratory and bathroom facility will have the walls, ceiling and floor insulated such that the air temperature can be maintained at 76 degrees Fahrenheit at all times.

Furnish for the Department's use in the asphalt laboratory one (1) desktop computer.

ITEM 506: Temporary Erosion, Sedimentation, and Environmental Controls

Due to the nature of this project, it is unlikely a significant amount of soil will be disturbed. However, if erosion control logs are needed; it shall be placed as directed by the Engineer.

The Contractor Force Account “Erosion Control Maintenance” that has been established for this project is intended to be utilized for work zone Best Management Practice (BMP) maintenance, to improve the effectiveness of the Environmental Controls that may need maintenance attention and/or require replacement while the project is still under the construction stage. These procedures will be mutually agreed upon by the Engineer and the Contractor’s Responsible Person based on weekly or more frequent BMP management reviews on the project. The “Erosion Control Maintenance” is not intended to be used in lieu of bid items established by the contract.

ITEM 508: Constructing Detours

Flexible Base, prime coat, and Asphaltic Concrete Pavement used for detours shall meet the requirements of Items 247, 310 and 341 respectively, except for measurement and payment.

ITEM 512: Portable Traffic Barrier

Maintain the concrete median barrier in first class condition and, when no longer needed for traffic control, return the concrete median barriers to the TxDOT office in Pharr, Texas. Any concrete median barrier damaged beyond reasonable repair shall be replaced at the Contractor's expense.

During the various construction phases, provide drainage slots in every temporary concrete traffic barrier used for traffic control in order to handle temporary drainage. Provide any additional drainage measures needed as directed by the Engineer.

ITEM 529: Concrete Curb, Gutter, and Combined Curb and Gutter

Before final acceptance of the project, remove discoloration caused by tire marks, mud, asphalt, paint or other similar material by any method satisfactory to the Engineer to achieve a uniform color and texture of the finished surface exposed to view.

ITEM 530: Intersections, Driveways, and Turnouts

Prime coat shall meet the requirements of Item 310.

Daily testing requirements for Hot Mix Asphaltic Concrete Pavements for drives, commercial entrances and/or turnouts may be waived by the Engineer.

Public and private driveways need to have a smooth vertical transition tie-in between the proposed driveway and the existing driveway. The contractor is to add a vertical taper if needed which will be subsidiary to Item 530.

ITEM 540: Metal Beam Guard Fence

The optional terminal anchor post with the terminal connector will be required as shown on the Metal Beam Guard Fence Standard.

Galvanize the rail elements supplied for this project using a Type II Zinc Coating.

ITEM 542: Removing Metal Beam Guard Fence

Dispose all metal beam guard fence materials unless shown otherwise in the plans.

ITEM 544: Guardrail End Treatments

Label “end treatment type” on backside of unit at time of installation.

ITEM 585: Ride Quality for Pavement Surfaces

Use Surface Test Type "B" for service roads and ramps.

Quality control results shall be submitted to TxDOT the next working day after each day's paving.

Pavement areas with public turnout intersections that carry major traffic volumes will not be subjected to inertial profiler testing. These areas shall be evaluated using the 10-ft. straightedge.

Diamond grinding shall be used to remove localized roughness.

Use Surface Test Type B pay adjustment schedule __2__ to evaluate ride quality of the travel lanes in accordance with Item 585, "Ride Quality for Pavement Surfaces." This includes ramps and service road travel lanes.

ITEM 618: Conduit

All conduit ends in pole bases, controllers and ground boxes shall be plugged with 4 to 6 inches of polyurethane sealant or its equivalent after cables are in place.

Conduit shall be placed in a straight line not to exceed 2.0 feet in any direction. The depth of the conduit shall be 2.0 feet except when crossing a roadway where the depth shall not be more than 3.0 feet nor less than 1.0 foot below the bottom of the base material in the roadway when placed by the jacking or boring method. Any evidence of damage to the roadway during the jacking or boring operation shall be sufficient grounds to stop the method being used.

Conduit runs under paved roadways or driveways shall be jacked or bored and then pushed across. At these locations, galvanized rigid metal may be used. All other runs shall be made by trenching. Existing pavement which will be removed, reconstructed or overlaid with new pavement may be trenched across.

Trenches for conduit runs shall be a minimum 2 feet deep and 4 inches wide. The conduit shall be placed on a 2-inch sand cushion and then backfilled with a minimum of 6 inches sand fill. The remainder of the trench shall be backfilled with flexible base, soil or two-sack concrete as required by location of conduit on the project or as directed. The top 3 inches shall match the existing surface material.

All conduit elbows and rigid extensions required to be installed on PVC conduit systems will not be paid for separately, but will be considered subsidiary to the various bid items.

Use materials from prequalified material producers list as shown on the Texas Department of Transportation (TxDOT) - Construction Division's (CST) materials producers list. Category is "Roadway Illumination and Electrical Supplies."

ITEM 620: Electrical Conductors

Do not use non-certified persons to perform electrical work. See Item 7.18. "Electrical requirements and special provision to Item 7 for additional details."

Use Bussman HEBW, Littelfuse LEB, Ferraz-Shawmut FEB, or equal on ungrounded conductors.

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

ITEM 621: Tray Cable

Connect luminaires on traffic signal poles using a 4 conductor tray cable with conductor colors of red, black and green #12 AWG (XHHW). The white (neutral) conductor will not be needed and will be capped.

ITEM 628: Electrical Service

Arrange for and cooperate with the utility company to provide electrical power for the service(s) shown and as required by the plans. A meter will be required on all electrical services.

ITEMS 636: Signs

Complete sign blanks and panels shall be handled and stored at the job site in such a manner that corners, edges and faces are not damaged. Finished sign blanks shall be stored in either a weather-proof warehouse or outside and off the ground in a vertical position. All paper, cardboard and chemically treated separators and packaging shall be removed prior to outside storage.

ITEM 644: Small Roadside Sign Assemblies

All signs shall be installed as shown in the plans and in accordance with the current edition of the "Texas Manual on Uniform Traffic Control Devices" and the “Sign Crew Field Book” (SCFB).

All signs shall be erected according to the locations shown on the signing layout sheets except that a sign may be shifted in order to secure a more desirable location. All sign locations will be staked as shown in the plans and as approved. It is the intent of the plans to erect all roadside traffic signs with the sign edge a minimum of 6 feet from the edge of the shoulder, or if none, 12 feet from the edge of the travel lane. In curb and gutter sections the sign edge shall be a minimum of 2 feet from the face of the curb.

For this project, aluminum type sign blanks as provided for under Item 636 will be required for all proposed signing installed under Item 644. Aluminum sign blanks less than 7.5 square feet shall be 0.08 inch thick, sign blanks 7.5 to 15 square feet shall be 0.100 inch thick and sign blanks greater than 15 square feet shall be 0.125 inch thick.

All excess excavation shall be spread uniformly inside the right of way as directed and shall be included in the price of these Items.

Sign types which design details are not shown on the plans shall conform with the latest edition of the Department's "Standard Highway Sign Design for Texas" Manual.

Signs shown to be removed shall include the complete sign installation and separate the sign post at the concrete foundation. The concrete foundation shall be disposed in accordance with this Bid Item. Except for concrete foundations, all removed sign panels, sign posts, and hardware shall remain then property of the Department. All removed sign installations shall be completely disassembled. All salvageable sections of sign panels shall be recycled by TxDOT. The removed sign material will be required to be hauled to the maintenance yard closest to the project. No signs shall be removed without prior approval.

Existing signs shown to be removed and relocated within this project shall first be identified in the field before they are removed and relocated to their new installation position as determined in the plans. The complete sign assembly shall be removed and the sign with post shall be separated at the concrete foundation. The concrete foundation shall be disposed off in accordance with this bid Item. No sign shall be removed without prior approval.

All excess excavation shall be spread uniformly inside the Right of Way as directed and shall be included in the price of this item.

ITEM 656: Foundations for Traffic Control Devices

The dimensions shown on the plans for location of signal pole foundations, conduit and other items may be varied to meet existing conditions as approved.

The work area shall be cleaned up and all loose material resulting from the contract operations shall be removed from the work area each day before work is suspended.

No traffic signal pole shall be placed on the foundations prior to seven (7) days following placement of concrete.

ITEM 658, Delineator and Object Marker Assemblies

Delineator assemblies shall be installed 8 feet from the edge of the shoulder unless restricted by some obstruction, in which case, the delineator assembly shall be placed between 2 and 8 feet from the edge of the shoulder.

Bi-directional object markers shall be in accordance with the D&OM standard sheets. The contractor is directed to the standards when instructed where and how to install the object markers.

ITEMS 662 and 666: Work Zone Pavement Markings and Retroreflectorized Pavement Markings

All permanent pavement markings and work zone pavement markings for this project under these Items shall be 0.100 inches (100 mil) thick thermoplastic.

Any permanent pavement markings or non-removal work zone pavement markings lacking reflectivity in accordance with test method Tex 828-B, or that fail to meet minimum retro reflectivity requirements for longitudinal pavement markings when required, will not be paid as per district policy. The roadway will be re-striped at no additional compensation.

Pavement surface preparation for markings and markers will not be paid for directly, but shall be considered subsidiary to Item 666.

Prior to any striping operations, an on-site coordination meeting between all the parties involved will be required to review striping details and requirements to ensure quality work.

The beads used on this project shall meet the requirements of Departmental Materials Specification DMS-8290, Glass Traffic Beads Texas Type II & III. Use a 50% Type II/ 50% Type III mix utilizing a double drop system with Type III beads dropped first.

For expressway projects, provide channelizing devices at the ramp connections when temporary pavement marking tabs are placed. These channelizing devices will be subsidiary to item 502.

ITEM 677: Eliminating Existing Pavement Markings and Markers

Asphalt and aggregate types and grades shall be as approved in writing when a surface treatment is used to eliminate existing pavement markings.

ITEM 680: Highway Traffic Signals

The installation of highway traffic signals shall consist of the following principal Items:

1. Furnishing and installing 8-phase full traffic actuated controllers, base mounted cabinets, conflict monitors, load switches and loop amplifiers.
2. Furnishing and installing either steel mast arm poles, or steel strain poles and span wire and pedestal poles (as shown on plans), electrical service, luminaires, signal heads, signal cables, pedestrian heads and pedestrian push buttons with signs that meet the "Americans with Disabilities Act" Standards, loop detectors, ground boxes, conduit runs and controller concrete foundations.
3. Removal and disposal of existing signal material specified in the plans.
4. All other Items not listed above which are needed to provide for complete traffic signal installations and for proper signal operation as called for in the plans and specifications shall be furnished and installed.

Any deviation of location for proposed signal work shall be as approved.

Signal controller

The signal installations shall be wired in accordance with the phase diagrams in the plans. The proposed base mounted cabinet shall contain 8-phase conflict monitor which display the "R-Y-G" and "Walk" phases. In addition to detecting phasing conflicts, the conflict monitor shall also be able to detect multiple signal head indications within every phase. The conflict monitor shall continue to operate in the event of a power supply failure in the timer and shall be able to retain in memory the time and date of the failure detection. Time changes shall be programmable in the field without replacing components or use of external devices. The full-actuated controller shall meet N.E.M.A. Specifications.

A controller manufacturer's technician shall be required to load initial timing programs into the controllers as called for in the plans. Once the traffic signals are turned on, the same technician shall monitor the signal operation and traffic movement and shall adjust settings for best signal operation. The technician shall provide the State with a certification that the timing plan and coordination has been established according to the plans. This certification shall include a record showing all settings and functions programmed into the timer and any related units.

The controller must be delivered with two sets of wiring diagrams and operating manuals enclosed in a weatherproof bag.

All wiring not covered by the plans and specifications shall be in accordance with the latest edition of the National Electrical Code.

Existing utilities

The exact location of existing underground utilities shall be verified with the utility companies prior to construction to avoid conflict with or damage to these utilities.

Coordination with the utility companies will be required to make any adjustments, due to utility conflicts, as defined in the specifications or deemed necessary.

Uniformity in Equipment

1. All traffic signal heads furnished shall be by the same manufacturer.
2. All signal fittings and pipe brackets shall be of an approved metallic material and of the same design and manufacturer.
3. All traffic signal poles furnished shall be by the same manufacturer.
4. All loop detector amplifiers furnished shall be by the same manufacturer.

Handling of Traffic

Roads and streets shall be kept open to traffic at all times. The setting of loop detectors shall be arranged so as to close only one lane of a roadway at a time. The installation of signal heads, poles and conduit shall also be arranged so as to permit the continuous movement of traffic in both directions at all times.

All construction operations shall be conducted to provide the least possible interference to traffic as shown on the plans, as provided for in the specifications and/or as directed. All signing, barricading and handling of traffic shall conform to the current edition of the "Texas Manual on Uniform Traffic Control Devices".

Sequence of work

1. The existing traffic signal installations shall remain in operation at all times during construction of the proposed traffic signal installations or modifications.
2. The complete removal of the specified existing traffic signals or specified items will be required when the proposed traffic signal installations are in place and operational.
3. All labor, tools, and materials used to remove the specified existing traffic signal material shall not be paid for directly, but be considered subsidiary to the various items of work.
4. Final inspection shall be conducted in conjunction with the district signal shop.

ITEM 682: Vehicle and Pedestrian Signal Heads

All signal heads shall be covered with burlap from the time of installation until the signal is placed in operation. All signal heads shall be of polycarbonate material and yellow in color. Signal heads shall have standard detachable visors. LED's shall be furnished for all traffic signal heads.

Signal heads shall be positioned carefully to provide the best view of signal indications to motorists. All signal heads shall be installed to a neat overall appearance.

Nominal height for signal heads above pavement surface shall be 18 feet 6 inches, plus/minus 3 inches.

Pedestrian signal heads shall be positioned carefully to provide the best view to pedestrians.

ITEM 684: Traffic Signal Cables

All signal cable shall be #12 AWG; 2/c loop. Lead-In shall be #14 AWG shielded and loop wires in pavement.

ITEM 686: Traffic Signal Pole Assemblies (Steel)

The locations for the proposed traffic signal poles are approximate. The exact locations will be determined in the field in coordination with the District Signal Shop.

Erection and/or removal of poles and luminaries located near any overhead electrical power lines shall be accomplished using established industry and utility safety practices. The appropriate utility company shall be consulted with prior to beginning such work.

ITEM 688: Pedestrian Detectors and Vehicle Loop Detectors

The contractor shall install loop vehicle detectors in accordance with the Intersection layouts in the plans or as directed. Each loop detector Lead-In cable shall be tagged inside the controller cabinet with its loop number. The loop amplifiers shall indicate the loop and phase of control or direction of control. Loop wires in street shall be #14 AWG. Pedestrian detectors shall meet the minimum requirements called for by the "Americans with Disabilities Act".

Loop detector lead-in cable shall be continuous from ground box to the controller.

Splices for loop wire will be permitted only at ground boxes or pole base with approved weatherproof splice kits.

A minimum length of 2.0 feet for each cable shall be left in each ground box.

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