

NOTIFICATION OF ADDENDUM

ADDENDUM NO. 1

DATED 7/02/2013

Control	2105-01-046
Project	C 2105-1-46
Highway	FM 2234
County	FORT BEND

Ladies/Gentlemen:

Attached please find an addendum on the above captioned project. Included in the attachment is an addendum 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.

SUBJECT: PLANS AND PROPOSAL ADDENDUMS

PROJECT: C 2105-1-46

CONTROL: 2105-01-046

COUNTY: FORT BEND

LETTING: 07/10/2013

REFERENCE NO: 0702

PROPOSAL ADDENDUMS

_ PROPOSAL COVER

X BID INSERTS (SH. NO.: 17-19)

X GENERAL NOTES (SH. NO.: 0 (PLAN SHEET 11G))

X SPEC LIST (SH. NO.: 4-4)

_ SPECIAL PROVISIONS:

ADDED:

DELETED:

X SPECIAL SPECIFICATIONS:

ADDED: 2133

DELETED: 2088

X OTHER: PLAN SHEET 11G,12C,24.

DESCRIPTION OF ABOVE CHANGES

(INCLUDING PLANS SHEET CHANGES)

BID INSERTS:

SHEET 17-19: REVISED ITEM NUMBER 2088 TO 2133.

PLAN SHEETS:

GN SHT 11G: REVISED ITEM 305 TO SAY THAT RAP WILL BE PROPERTY OF DEPARTMENT.

E&Q SHEET 12C: REVISED ITEM 2088 TO 2133.

SHEET 24: REVISED ITEM 2088 TO 2133 IN SUMMARY OF QUANTITIES.

SPECIFICATION LIST:

SHEET 4-4: REVISED ITEM 2088 TO 2133.

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	100	2001	002	PREPARING ROW DOLLARS and CENTS	AC	23.950	1
	104	2001		REMOVING CONC (PAV) DOLLARS and CENTS	SY	1,723.000	2
	104	2011		REMOVING CONC (MEDIANS) DOLLARS and CENTS	SY	83.000	3
	104	2015		REMOVING CONC (SIDEWALKS) DOLLARS and CENTS	SY	1,670.000	4
	104	2017		REMOVING CONC (DRIVEWAYS) DOLLARS and CENTS	SY	280.000	5
	104	2021		REMOVING CONC (CURB) DOLLARS and CENTS	LF	1,339.000	6
	105	2005		REMOVING STAB BASE AND ASPH PAV (3") DOLLARS and CENTS	SY	317.000	7
	105	2014		REMOVING STAB BASE & ASPH PAV (7"-12") DOLLARS and CENTS	SY	35,304.000	8
	105	2045		REMOVING STAB BASE AND ASPH PAV (2"- 8") DOLLARS and CENTS	SY	2,538.000	9
	110	2001		EXCAVATION (ROADWAY) DOLLARS and CENTS	CY	13,471.000	10

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	ITEM NO	DESC CODE	S.P. NO.				
	132	2006		EMBANKMENT (FINAL)(DENS CONT)(TY C) DOLLARS and CENTS	CY	24,118.000	11
	162	2002		BLOCK SODDING DOLLARS and CENTS	SY	41,815.000	12
	162	2003		STRAW OR HAY MULCH DOLLARS and CENTS	SY	13,940.000	13
	164	2009	002	BROADCAST SEED (TEMP) (WARM) DOLLARS and CENTS	SY	13,940.000	14
	166	2001	001	FERTILIZER DOLLARS and CENTS	AC	11.520	15
	168	2001		VEGETATIVE WATERING DOLLARS and CENTS	MG	1,382.400	16
	260	2006	003	LIME TRT (EXST MATL) (6") DOLLARS and CENTS	SY	52,424.000	17
	260	2012	003	LIME(HYD,COM OR QK)(SLRY)OR QK(DRY) DOLLARS and CENTS	TON	849.000	18
	276	2224		CEM TRT(PLNT MX) (CL N)(TY E)(GR 4)(6") DOLLARS and CENTS	SY	52,424.000	19
	292	2007		ASPHALT STAB BASE (GR 2)(PG 64) DOLLARS and CENTS	TON	3,676.000	20
	305	2045		SALV, HAUL, & STKPL RCL APH PAV (8") DOLLARS and CENTS	SY	33,843.000	21

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	ITEM NO	DESC CODE	S.P. NO.				
	360	2002	003	CONC PVMT (CONT REINF-CRCP)(9") DOLLARS and CENTS	SY	40,014.000	22
	400	2005	004	CEM STABIL BKFL DOLLARS and CENTS	CY	3,952.000	23
	402	2001		TRENCH EXCAVATION PROTECTION DOLLARS and CENTS	LF	5,528.000	24
	416	2003	001	DRILL SHAFT (30 IN) DOLLARS and CENTS	LF	1,712.000	25
	416	2032	001	DRILL SHAFT (TRF SIG POLE) (36 IN) DOLLARS and CENTS	LF	101.500	26
	416	2034	001	DRILL SHAFT (TRF SIG POLE) (48 IN) DOLLARS and CENTS	LF	132.000	27
	432	2001		RIPRAP (CONC)(4 IN) DOLLARS and CENTS	CY	358.000	28
	432	2041		RIPRAP (STONE COMMON)(DRY)(18 IN) DOLLARS and CENTS	CY	57.000	29
	432	2066		RIPRAP (CONC)(CL B) DOLLARS and CENTS	CY	55.000	30
	432	2084		RIPRAP (CONC) (CL B) (4") DOLLARS and CENTS	CY	85.700	31
	462	2001	015	CONC BOX CULV (3 FT X 2 FT) DOLLARS and CENTS	LF	90.000	32

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	ITEM NO	DESC CODE	S.P. NO.				
	462	2003	015	CONC BOX CULV (4 FT X 2 FT) and DOLLARS CENTS	LF	698.000	33
	462	2004	015	CONC BOX CULV (4 FT X 3 FT) and DOLLARS CENTS	LF	10.000	34
	462	2007	015	CONC BOX CULV (5 FT X 3 FT) and DOLLARS CENTS	LF	2,198.000	35
	462	2010	015	CONC BOX CULV (6 FT X 3 FT) and DOLLARS CENTS	LF	176.000	36
	464	2003	006	RC PIPE (CL III)(18 IN) and DOLLARS CENTS	LF	624.000	37
	464	2005	006	RC PIPE (CL III)(24 IN) and DOLLARS CENTS	LF	878.000	38
	464	2007	006	RC PIPE (CL III)(30 IN) and DOLLARS CENTS	LF	696.000	39
	464	2009	006	RC PIPE (CL III)(36 IN) and DOLLARS CENTS	LF	1,079.000	40
	465	2001	001	INLET (COMPL)(TY C) and DOLLARS CENTS	EA	11.000	41
	465	2005	001	MANH (COMPL)(TY M) and DOLLARS CENTS	EA	4.000	42
	465	2010	001	INLET (COMPL)(TY AAD) and DOLLARS CENTS	EA	1.000	43

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	ITEM NO	DESC CODE	S.P. NO.				
	465	2012	001	INLET (COMPL)(TY A) and DOLLARS CENTS	EA	1.000	44
	465	2098	001	INLET (COMPL)(TY C1) and DOLLARS CENTS	EA	7.000	45
	465	2111	001	INLET (COMPL)(TY C)(MOD) and DOLLARS CENTS	EA	15.000	46
	466	2047		WINGWALL (PW)(HW=3 FT) and DOLLARS CENTS	EA	1.000	47
	466	2049		WINGWALL (PW)(HW=5 FT) and DOLLARS CENTS	EA	1.000	48
	467	2023		SET (TY I)(S= 3 FT)(HW= 3 FT)(3:1)(C) and DOLLARS CENTS	EA	1.000	49
	467	2030		SET (TY I)(S= 4 FT)(HW= 3 FT)(3:1)(C) and DOLLARS CENTS	EA	1.000	50
	467	2031		SET (TY I)(S= 4 FT)(HW= 4 FT)(3:1)(C) and DOLLARS CENTS	EA	1.000	51
	467	2048		SET (TY I)(S= 6 FT)(HW= 4 FT)(3:1)(C) and DOLLARS CENTS	EA	2.000	52
	467	2177		SET (TY I)(S= 4 FT)(HW= 3 FT)(6:1)(P) and DOLLARS CENTS	EA	1.000	53
	467	2286		SET (TY II)(18 IN)(RCP)(6:1)(P) and DOLLARS CENTS	EA	22.000	54

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	ITEM NO	DESC CODE	S.P. NO.				
	467	2288		SET (TY II)(24 IN)(RCP)(6:1)(P) and DOLLARS CENTS	EA	8.000	55
	467	2290		SET (TY II)(30 IN)(RCP)(6:1)(P) and DOLLARS CENTS	EA	4.000	56
	467	2358		SET (TY II)(18 IN)(RCP)(3:1)(P) and DOLLARS CENTS	EA	4.000	57
	479	2002		ADJ INLETS and DOLLARS CENTS	EA	2.000	58
	496	2001		REMOV STR (BOX CULVERT) and DOLLARS CENTS	EA	193.000	59
	496	2004		REMOV STR (SET) and DOLLARS CENTS	EA	47.000	60
	496	2005		REMOV STR (WINGWALL) and DOLLARS CENTS	EA	8.000	61
	496	2006		REMOV STR (HEADWALL) and DOLLARS CENTS	EA	4.000	62
	496	2007		REMOV STR (PIPE) and DOLLARS CENTS	LF	2,487.000	63
	500	2001	011	MOBILIZATION and DOLLARS CENTS	LS	1.000	64

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	ITEM NO	DESC CODE	S.P. NO.				
	502	2001	033	BARRICADES, SIGNS AND TRAFFIC HAN- DLING DOLLARS and CENTS	MO	11.000	65
	508	2005		CONSTRUCTING DETOURS (EBSS) DOLLARS and CENTS	SY	16,561.000	66
	512	2017	002	PORT CTB (DES SOURCE)(LOW PROF)(TY 1) DOLLARS and CENTS	LF	6,580.000	67
	512	2018	002	PORT CTB (DES SOURCE)(LOW PROF)(TY 2) DOLLARS and CENTS	LF	260.000	68
	512	2026	002	PORT CTB (MOVE)(LOW PROF)(TY 1) DOLLARS and CENTS	LF	4,480.000	69
	512	2027	002	PORT CTB (MOVE)(LOW PROF)(TY 2) DOLLARS and CENTS	LF	680.000	70
	512	2035	002	PORT CTB (STKPL)(LOW PROF)(TY 1) DOLLARS and CENTS	LF	6,580.000	71
	512	2036	002	PORT CTB (STKPL)(LOW PROF)(TY 2) DOLLARS and CENTS	LF	260.000	72
	529	2006		CONC CURB (MONO) (TY II) DOLLARS and CENTS	LF	26,753.000	73
	530	2010	006	DRIVEWAYS (CONC) DOLLARS and CENTS	SY	1,143.000	74

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	ITEM NO	DESC CODE	S.P. NO.				
	531	2005		CURB RAMPS (TY 1) and DOLLARS CENTS	EA	2.000	75
	531	2010		CURB RAMPS (TY 7) and DOLLARS CENTS	EA	24.000	76
	531	2015		CONC SIDEWALKS (4") and DOLLARS CENTS	SY	1,467.000	77
	531	2017		CURB RAMPS (TY 21) and DOLLARS CENTS	EA	1.000	78
	542	2001		REMOVING METAL BEAM GUARD FENCE and DOLLARS CENTS	LF	215.000	79
	542	2002		REMOVING TERMINAL ANCHOR SECTION and DOLLARS CENTS	EA	1.000	80
	618	2032		CONDT (PVC) (SCHD 80) (1 1/4") and DOLLARS CENTS	LF	32.000	81
	618	2034		CONDT (PVC) (SCHD 80) (2") and DOLLARS CENTS	LF	1,188.000	82
	618	2035		CONDT (PVC) (SCHD 80) (2") (BORE) and DOLLARS CENTS	LF	1,122.000	83
	618	2038		CONDT (PVC) (SCHD 80) (3") and DOLLARS CENTS	LF	210.000	84
	618	2039		CONDT (PVC) (SCHD 80) (3") (BORE) and DOLLARS CENTS	LF	473.000	85

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	ITEM NO	DESC CODE	S.P. NO.				
	618	2040		CONDT (PVC) (SCHD 80) (4") and DOLLARS CENTS	LF	59.000	86
	618	2041		CONDT (PVC) (SCHD 80) (4") (BORE) and DOLLARS CENTS	LF	82.000	87
	620	2007	001	ELEC CONDR (NO. 4) BARE and DOLLARS CENTS	LF	32.000	88
	620	2008	001	ELEC CONDR (NO. 4) INSULATED and DOLLARS CENTS	LF	154.000	89
	620	2009	001	ELEC CONDR (NO. 6) BARE and DOLLARS CENTS	LF	2,822.000	90
	624	2014	014	GROUND BOX TY D (162922) W/APRON and DOLLARS CENTS	EA	14.000	91
	628	2101	003	ELC SRV TY D 120/240 070 (NS)SS(E)SP(U) and DOLLARS CENTS	EA	3.000	92
	628	2158	003	REMOVE ELECTRICAL SERVICES and DOLLARS CENTS	EA	3.000	93
	644	2001		IN SM RD SN SUP&AM TY10BWG(1)SA(P) and DOLLARS CENTS	EA	34.000	94
	644	2004		IN SM RD SN SUP&AM TY10BWG(1)SA(T) and DOLLARS CENTS	EA	12.000	95
	644	2026		IN SM RD SN SUP&AM TYS80(1)SA(T-2EXT) and DOLLARS CENTS	EA	8.000	96

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	ITEM NO	DESC CODE	S.P. NO.				
	644	2030		IN SM RD SN SUP&AM TYS80(1)SA(U-BM) DOLLARS and CENTS	EA	1.000	97
	644	2058		RELOCATE SM RD SN SUP & AM TY S80 DOLLARS and CENTS	EA	3.000	98
	644	2060		REMOVE SM RD SN SUP & AM DOLLARS and CENTS	EA	33.000	99
	662	2054		WK ZN PAV MRK REMOV (REFL) TY II-A-A DOLLARS and CENTS	EA	638.000	100
	662	2056		WK ZN PAV MRK REMOV (REFL) TY II-C-R DOLLARS and CENTS	EA	139.000	101
	662	2065		WK ZN PAV MRK REMOV (W) 4" (DOT) DOLLARS and CENTS	LF	2,745.000	102
	662	2067		WK ZN PAV MRK REMOV (W) 4" (SLD) DOLLARS and CENTS	LF	25,949.000	103
	662	2075		WK ZN PAV MRK REMOV (W) 8" (SLD) DOLLARS and CENTS	LF	1,740.000	104
	662	2079		WK ZN PAV MRK REMOV (W) 24" (SLD) DOLLARS and CENTS	LF	778.000	105
	662	2084		WK ZN PAV MRK REMOV (W) (ARROW) DOLLARS and CENTS	EA	27.000	106
	662	2094		WK ZN PAV MRK REMOV (W) (WORD) DOLLARS and CENTS	EA	16.000	107

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	ITEM NO	DESC CODE	S.P. NO.				
	662	2099		WK ZN PAV MRK REMOV (Y) 4" (SLD) DOLLARS and CENTS	LF	42,041.000	108
	666	2138		REFL PAV MRK TY I (Y) (ISLAND)(100MIL) DOLLARS and CENTS	SF	184.000	109
	666	2141		REFL PAV MRK TY I (Y)(MED NOSE)(100MIL) DOLLARS and CENTS	EA	6.000	110
	666	2183		REF PAV MRK TY II (Y) 12" (SLD) DOLLARS and CENTS	LF	13,262.000	111
	668	2106		PREFAB PAV MRK TY C (W) (ARROW) DOLLARS and CENTS	EA	29.000	112
	668	2107		PREFAB PAV MRK TY C (W) (DBL ARROW) DOLLARS and CENTS	EA	4.000	113
	668	2116		PREFAB PAV MRK TY C (W) (WORD) DOLLARS and CENTS	EA	29.000	114
	672	2012	034	REFL PAV MRKR TY I-C DOLLARS and CENTS	EA	383.000	115
	672	2017	034	REFL PAV MRKR TY II-C-R DOLLARS and CENTS	EA	323.000	116
	677	2001		ELIM EXT PAV MRK & MRKS (4") DOLLARS and CENTS	LF	4,200.000	117
	677	2003		ELIM EXT PAV MRK & MRKS (8") DOLLARS and CENTS	LF	1,000.000	118

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	ITEM NO	DESC CODE	S.P. NO.				
	677	2005		ELIM EXT PAV MRK & MRKS (12") DOLLARS and CENTS	LF	630.000	119
	677	2007		ELIM EXT PAV MRK & MRKS (24") DOLLARS and CENTS	LF	891.000	120
	677	2008		ELIM EXT PAV MRK & MRKS (ARROW) DOLLARS and CENTS	EA	4.000	121
	677	2018		ELIM EXT PAV MRK & MRKS (WORD) DOLLARS and CENTS	EA	4.000	122
	678	2001		PAV SURF PREP FOR MRK (4") DOLLARS and CENTS	LF	47,295.000	123
	678	2002		PAV SURF PREP FOR MRK (6") DOLLARS and CENTS	LF	9,334.000	124
	678	2003		PAV SURF PREP FOR MRK (8") DOLLARS and CENTS	LF	5,490.000	125
	678	2004		PAV SURF PREP FOR MRK (12") DOLLARS and CENTS	LF	13,942.000	126
	678	2006		PAV SURF PREP FOR MRK (24") DOLLARS and CENTS	LF	2,818.000	127
	678	2007		PAV SURF PREP FOR MRK (ARROW) DOLLARS and CENTS	EA	56.000	128
	678	2008		PAV SURF PREP FOR MRK (DBL ARROW) DOLLARS and CENTS	EA	4.000	129

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	ITEM NO	DESC CODE	S.P. NO.				
	678	2012		PAV SURF PREP FOR MRK (MED NOSE) DOLLARS and CENTS	EA	6.000	130
	678	2018		PAV SURF PREP FOR MRK (WORD) DOLLARS and CENTS	EA	48.000	131
	678	2022		PAV SURF PREP FOR MRK (BLAST CLN)(6") DOLLARS and CENTS	LF	9,334.000	132
	678	2023		PAV SURF PREP FOR MRK (BLAST CLN)(12") DOLLARS and CENTS	LF	13,942.000	133
	678	2024		PAV SURF PREP FOR MRK (BLAST CLN)(24") DOLLARS and CENTS	LF	2,040.000	134
	678	2027		PAV SURF PREP FOR MRK (BLAST CLN)(8") DOLLARS and CENTS	LF	3,750.000	135
	678	2028		PAV SURF PREP FOR MRK (BLST CLN)(ARRWS) DOLLARS and CENTS	EA	29.000	136
	678	2029		PAV SURF PREP FOR MRK (BLST CLN)(WORDS) DOLLARS and CENTS	EA	29.000	137
	678	2031		PAV SURF PREP MRKS (BLAST CLN)(DBLARW) DOLLARS and CENTS	EA	4.000	138
	680	2003		INSTALL HWY TRF SIG (SYSTEM) DOLLARS and CENTS	EA	3.000	139

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	ITEM NO	DESC CODE	S.P. NO.				
	681	2001	002	TEMP TRAF SIGNALS DOLLARS and CENTS	EA	3.000	140
	682	2001	003	BACK PLATE (12 IN) (3 SEC) DOLLARS and CENTS	EA	24.000	141
	682	2002	003	BACK PLATE (12 IN) (4 SEC) DOLLARS and CENTS	EA	9.000	142
	682	2022	003	VEH SIG SEC (12 IN) LED (GRN ARW) DOLLARS and CENTS	EA	9.000	143
	682	2023	003	VEH SIG SEC (12 IN) LED (GRN) DOLLARS and CENTS	EA	24.000	144
	682	2024	003	VEH SIG SEC (12 IN) LED (YEL ARW) DOLLARS and CENTS	EA	14.000	145
	682	2025	003	VEH SIG SEC (12 IN) LED (YEL) DOLLARS and CENTS	EA	24.000	146
	682	2026	003	VEH SIG SEC (12 IN) LED (RED ARW) DOLLARS and CENTS	EA	13.000	147
	682	2027	003	VEH SIG SEC (12 IN) LED (RED) DOLLARS and CENTS	EA	24.000	148
	682	2066	003	PED SIG SEC (12 IN) LED (COUNTDOWN) DOLLARS and CENTS	EA	24.000	149
	684	2007		TRF SIG CBL (TY A) (12 AWG) (2 CONDR) DOLLARS and CENTS	LF	2,689.000	150

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	ITEM NO	DESC CODE	S.P. NO.				
	684	2009		TRF SIG CBL (TY A) (12 AWG) (4 CONDR) DOLLARS and CENTS	LF	2,712.000	151
	684	2012		TRF SIG CBL (TY A) (12 AWG) (7 CONDR) DOLLARS and CENTS	LF	3,215.000	152
	684	2028		TRF SIG CBL (TY A) (14 AWG) (2 CONDR) DOLLARS and CENTS	LF	1,188.000	153
	684	2030		TRF SIG CBL (TY A) (14 AWG) (4 CONDR) DOLLARS and CENTS	LF	1,200.000	154
	684	2033		TRF SIG CBL (TY A) (14 AWG) (7 CONDR) DOLLARS and CENTS	LF	1,212.000	155
	686	2039		INS TRF SIG PL AM(S) 1 ARM (40') DOLLARS and CENTS	EA	1.000	156
	686	2043		INS TRF SIG PL AM(S) 1 ARM (44') DOLLARS and CENTS	EA	2.000	157
	686	2051		INS TRF SIG PL AM(S) 1 ARM (50') DOLLARS and CENTS	EA	1.000	158
	686	2311		INS TRF SG PL AM(S)1 ARM(44')(POW COAT) DOLLARS and CENTS	EA	3.000	159
	686	2312		INS TRF SG PL AM(S)1 ARM(50')(POW COAT) DOLLARS and CENTS	EA	2.000	160
	686	2313		INS TRF SG PL AM(S)1 ARM(55')(POW COAT) DOLLARS and CENTS	EA	1.000	161

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	ITEM NO	DESC CODE	S.P. NO.				
	686	2314		INS TRF SG PL AM(S)1 ARM(65')(POW COAT) DOLLARS and CENTS	EA	2.000	162
	687	2001	004	PED POLE ASSEMBLY DOLLARS and CENTS	EA	18.000	163
	730	2113	009	FULL-WIDTH MOWING DOLLARS and CENTS	CYC	3.000	164
	734	2002	002	LITTER REMOVAL DOLLARS and CENTS	CYC	3.000	165
	735	2132		DEBRIS REMOVAL (STREET) DOLLARS and CENTS	CYC	3.000	166
	738	2224		CLEANING/SWEEPING (STREET) DOLLARS and CENTS	CYC	9.000	167
	740	2005	001	ANTI-GRAFFITI COATING (PERMANENT) DOLLARS and CENTS	SF	15,570.000	168
	1122	2001	001	ROCK FILTER DAMS (INSTALL) (TY 1) DOLLARS and CENTS	LF	2,150.000	169
	1122	2009	001	ROCK FILTER DAMS (REMOVE) DOLLARS and CENTS	LF	2,150.000	170
	1122	2047	001	BIOGRD EROSN CONT LOGS (8" DIA) INSTALL DOLLARS and CENTS	LF	558.000	171

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	ITEM NO	DESC CODE	S.P. NO.				
	2133	2001		INSTALL TEARDROP LED LUMINAIRES DOLLARS and CENTS	EA	8.000	172
	3061	2001		FAST TRK CONC (CNT RNF HY STL)(12") DOLLARS and CENTS	SY	6,811.000	173
	3267	2047		D-GR HMA(SQ) TY-C SAC-A PG70-22 DOLLARS and CENTS	TON	114.000	174
	3267	2048		D-GR HMA(SQ) TY-C SAC-B PG70-22 DOLLARS and CENTS	TON	497.500	175
	3267	2050		D-GR HMA(SQ) TY-C PG70-22 DOLLARS and CENTS	TON	146.500	176
	4036	2007		SOUND WALL (HORIZ SCHEME)(8 FT) DOLLARS and CENTS	LF	1,730.000	177
	5050	2002		CTB CONNECT HDWARE DOLLARS and CENTS	EA	280.000	178
	6007	2001		REMOVING TRAFFIC SIGNALS DOLLARS and CENTS	EA	3.000	179
	6266	2001	017	VIVDS PROCESSOR SYSTEM DOLLARS and CENTS	EA	3.000	180
	6266	2002	017	VIVDS CAMERA ASSEMBLY DOLLARS and CENTS	EA	16.000	181
	6266	2003	017	VIVDS SET-UP SYSTEM DOLLARS and CENTS	EA	3.000	182

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	6266	2005	017	VIVDS COMMUNICATION CABLE (COAXIAL) DOLLARS and CENTS	LF	3,369.000	183
	6266	2007	017	VIVDS TEMPORARY DOLLARS and CENTS	EA	3.000	184
	6473	2004	001	MULTIPOLYMER PAV MRK (W)(6")(SLD) DOLLARS and CENTS	LF	2,690.000	185
	6473	2005	001	MULTIPOLYMER PAV MRK (W)(6")(BRK) DOLLARS and CENTS	LF	3,250.000	186
	6473	2006	001	MULTIPOLYMER PAV MRK (W)(6")(DOT) DOLLARS and CENTS	LF	70.000	187
	6473	2007	001	MULTIPOLYMER PAV MRK (W)(8")(SLD) DOLLARS and CENTS	LF	3,750.000	188
	6473	2009	001	MULTIPOLYMER PAV MRK (W)(12")(SLD) DOLLARS and CENTS	LF	680.000	189
	6473	2014	001	MULTIPOLYMER PAV MRK (Y)(6")(SLD) DOLLARS and CENTS	LF	64.000	190
	6473	2020	001	MULTIPOLYMER PAV MRK (BLK)(6")(BRK) DOLLARS and CENTS	LF	3,260.000	191
	6473	2021	001	MULTIPOLYMER PAV MRK (W)(24")(SLD) DOLLARS and CENTS	LF	2,040.000	192
	8317	2001		BBU SYSTEM (EXTERNAL BATT CABINET) DOLLARS and CENTS	EA	3.000	193

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	8490	2001		ETHERNET CABLE CAT 5 DOLLARS and CENTS	LF	773.000	194
	8835	2001		ACCESSIBLE PEDESTRIAN SIGNAL UNITS DOLLARS and CENTS	EA	24.000	195
	8861	2001		CTMS RELOCATION (CCTV) DOLLARS and CENTS	EA	1.000	196
	8934	2001		WIRELESS ETHERNET RADIO (RELOCATE) DOLLARS and CENTS	EA	6.000	197
	8935	2001		FIELD ETHERNET SWITCH (RELOCATE) DOLLARS and CENTS	EA	4.000	198

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Highway: FM 2234, FM 3345 to Fort Bend Toll Road

General Notes:

General:

If fixed features require, the governing slopes shown may vary between the limits shown and to the extent determined by the Engineer.

Superelevate the curves to match the existing surface.

Notify the Engineer immediately if discrepancies are discovered in the horizontal control or the benchmark data.

References to manufacturer's trade name or catalog numbers are for the purpose of identification only. Similar materials from other manufacturers are permitted if they are of equal quality, comply with the specifications for this project, and are approved, except for roadway illumination, electrical, and traffic signal items.

The cost for materials, labor, and incidentals to provide for traffic across the roadway and for ingress and egress to private property in accordance with Section 7.7 of the standard specifications is subsidiary to the various bid items. Restore access roadways to their original condition upon completing construction.

Grade street intersections and median openings for surface drainage.

If a foundation is to be placed where a riprap surface or an asphalt concrete surface presently exists, use caution in breaking out the existing surface for placement. Break out no greater area than is required to place the foundation. After placing the foundation, wrap the periphery with 0.5 in. pre-molded mastic expansion joint. Then replace the remaining portion of the broken out surface with Class A or Class C concrete or cold mix asphalt concrete to the exact slope, pattern, and thickness of the existing riprap or asphalt. Payment for breaking out the existing surface, wrapping the foundation, and replacing the surface is subsidiary to the various bid items.

The lengths of the posts for ground mounted signs and the tower legs for the overhead sign supports are approximate. Verify the lengths before ordering these materials to meet the existing field conditions and to conform to the minimum sign mounting heights shown in the plans.

Furnish aluminum Type A signs instead of plywood signs for signs shown on the Summary of Small Signs sheet.

Clearly mark or highlight on the shop drawings, the items being furnished for this project. Submit required shop drawings in accordance with the shop drawing distribution list shown in the note for Item 5 for review and distribution.

Right of way parcels or utility adjustments shown to be unclear on the plans but not listed on the special provisions will have no effect on construction.

County: Fort Bend**Control:** 2105-01-046**Highway:** FM 2234, FM 3345 to Fort Bend Toll Road

Request additional soil information for this project at the Area Engineer's office.

Unless otherwise shown on the plans or otherwise directed, commence work after sunrise and ensure construction equipment is off the road by sunset.

Procure permits and licenses, which are to be issued by the City, County, or Municipal Utility District.

General: Roadway Illumination and Electrical

For roadway illumination and electrical items, use materials from pre-qualified producers as shown on the Construction Division (CST) of the Department's material producers list. Check the latest link on the TxDOT website for this list. The category/item is "Roadway Illumination and Electrical Supplies." No substitutions will be allowed for materials found on this list.

The Area Engineer will arrange with the Contractor, an inspection of the completed electrical systems for the highway lighting systems before final acceptance for compliance with plans and specifications. The inspection will be made with personnel from the electrical section of the Department's District Transportation Operations Office. The city's electrical division personnel will also inspect lighting systems within the city limits. Portions of the work found to be deficient during this inspection will not be accepted.

General: Traffic Signals

For traffic signal items, use materials from pre-qualified producers as shown on the General Services Division (GSD) of the Department's material producers list. Check the latest links on the TxDOT website for this list, including (but not limited to): http://www.txdot.gov/txdot_library/consultants_contractors/publications/purchasing_specifications.htm under "Supplemental Specifications and Attachments." No substitutions will be allowed for materials found on this list.

General: Site Management

Mark stations every 100 ft. and maintain the markings for the project duration. Remove the station markings at the completion of the project. This work is subsidiary to the various bid items.

Do not mix or store materials, or store or repair equipment, on top of concrete pavement or bridge decks unless authorized by the Engineer. Permission will be granted to store materials on surfaces if no damage or discoloration will result.

Personal vehicles of employees are not permitted to park within the right of way, including sections closed to public traffic. Employees may park on the right of way at the Contractor's office, equipment, and materials storage yard sites.

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Assume ownership of debris and dispose of at an approved location. Do not dispose of debris on private property unless approved in writing by the District Engineer.

Control the dust caused by construction operations. For sweeping the base material in preparation for laying asphalt and for sweeping the finished concrete pavement, use one of the following types of sweepers or equal:

Tricycle Type
Wayne Series 900
Elgin White Wing
Elgin Pelican

Truck Type - 4 Wheel
M-B Cruiser II
Wayne Model 945
Mobile TE-3
Mobile TE-4
Murphy 4042

General: Traffic Control and Construction

Schedule construction operations such that preparing individual items of work follows in close sequence to constructing storm drains in order to provide as little inconvenience as practical to the businesses and residents along the project.

Schedule work so that the base placement operations follow the subgrade work as closely as practical to reduce the hazard to the traveling public and to prevent undue delay caused by wet weather.

If relocating mailboxes, place them with the post firmly in the ground at nearby locations. Upon completing the project, the Engineer will locate the final mailbox placement. Perform this work in accordance with the requirements of the Item, "Mailbox Assemblies", except for measurement and payment. This work is subsidiary to the various bid items.

If fences cross construction easements shown on the plans and work is required beyond the fences, remove and replace the fences as directed. This work and the materials are subsidiary to the various bid items.

When design details are not shown on the plans, provide signs and arrows conforming to the latest "Standard Highway Sign Designs for Texas" manual.

General: Utilities

Consider the locations of underground utilities depicted in the plans as approximate and employ responsible care to avoid damaging utility facilities. Depending upon scope and magnitude of planned construction activities, advanced field confirmation by the utility owner or operator may be prudent. Where possible, protect and preserve permanent signs, markers, and designations of underground facilities.

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If the Contractor damages or cause damage (breaks, leaks, nicks, dents, gouges, etc.) to the utility, contact the utility facility owner or operator immediately.

At least 48 hours before starting work, make arrangements for locating existing Department-owned above ground and underground fiber optic, communications, power, illumination, and traffic signal cabling and conduit. Do this by calling the Department's Houston District Traffic Signal Operations Office at 713-802-5662 to schedule marking of underground lines on the ground. Use caution if working in these areas to avoid damaging or interfering with existing facilities.

Notify the Engineer at least 48 hours before constructing junction boxes at storm drain and utility intersections.

Install or remove poles and luminaires located near overhead or underground electrical lines using established industry and utility safety practices. Consult the appropriate utility company before beginning such work.

If overhead or underground power lines need to be de-energized, contact the electrical service provider to perform this work. Costs associated with de-energizing the power lines or other protective measures required are at no expense to the Department.

If working near power lines, comply with the appropriate sections of Texas State Law and Federal Regulations relating to the type of work involved.

Perform electrical work in conformance with the National Electrical Code (NEC) and Department standard sheets.

Before beginning any underground work, notify the City of Houston's Chief Inspector, Public Works and Engineering, at (713) 859-3371 to establish the locations of any existing electrical systems for lighting facilities within the limits of this project.

The existing waterlines and fire hydrants located in the City of Missouri City are owned by Fort Bend County Municipal Utility District 26 (MUD 26). Some of these waterlines and fire hydrants were identified as conflicting with the proposed roadway improvements, and MUD 26 should have it relocated in preparation for the proposed improvements. If not relocated by the beginning of the project, Contractor to contact (in writing) Mr. Wayne B. Saliger, P.E. R.P.L.S. of Saliger Engineering Corporation on relocating their facilities, and allow two weeks for MUD 26 to start the relocation process. Mr. Wayne Saliger may be reached at 3338 CR 239, Gonzales, Texas 78629, Tel.: (830) 263-1510, e-mail: wsaliger@swbell.net.

Item 5: Control of the Work

Before contract letting, electronically generated earthwork cross-section data will be furnished free of charge to the prospective bidders on a compact high-density disk, in an ASCII print format. This will be available through the Association of General Contractors bulletin board service or through the Area Engineer’s office. If the earthwork data is not available electronically, reproducible earthwork cross sections are available at the Area Engineer’s office for borrowing by copying service companies for the purpose of making copies for the prospective bidders, at the prospective bidder’s expense. The earthwork cross-section data provided above is for non-construction purposes only and it is the responsibility of the prospective bidder to validate the enclosed data with the appropriate plans, specifications, and estimates for the projects.

Submit shop drawings electronically for the fabrication of items as documented in Table 1 below. Information and requirements for electronic submittals can be viewed in the “Guide to Electronic Shop Drawing Submittal” which can be accessed through the following web link, ftp://ftp.dot.state.tx.us/pub/txdot-info/library/pubs/bus/bridge/e_submit_guide.pdf. References to 11 in. x 17 in. sheets in individual specifications for structural items imply electronic CAD sheets.

Table 1
2004 Construction Specification Required Shop/Working Drawing Submittals

Spec Item No.'s	Product	Submittal Required	Approval Required (Y/N)	Contractor/Fabricator P.E. Seal Required	Reviewing Party
7.8	Construction Load Analyses	Y	Y	Y	B
400	Excavation and Backfill for Structures (cofferdams)	Y	N	Y	A
403	Temporary Special Shoring	Y	N	Y	B
420	Formwork/Falsework	Y	N	Y	A
423	Retaining Walls, (calcs req'd.)	Y	Y	Y	C
425	Optional Design Calculations (Prstrs Bms)	Y	Y	Y	B
425	Prestr Concr Sheet Piling	Y	Y	N	B
425	Prestr Concr Beams	Y	Y	N	B
425	Prestr Concr Bent	Y	Y	N	B
426	Post Tension Details	Y	Y	N	B
434	Elastomeric Bearing Pads (All)	Y	Y	N	B
441	Bridge Protective Assembly	Y	Y	N	B
441	Misc Steel (various steel assemblies)	Y	Y	N	B
441	Steel Pedestals (bridge raising)	Y	Y	N	B
441	Steel Bearings	Y	Y	N	B
441	Steel Bent	Y	Y	N	B
441	Steel Diaphragms	Y	Y	N	B
441	Steel Finger Joint	Y	Y	N	B
441	Steel Plate Girder	Y	Y	N	B
441	Steel Tub-Girders	Y	Y	N	B
441	Erection Plans	Y	N	Y	A
449	Sign-Structure Anchor Bolts	Y	Y	N	T
450	Railing	Y	Y	N	A

462	Concrete Box Culvert	Y	Y	N	C
462	Concrete Box Culvert (Alternate Designs Only, calcs reqd.)	Y	Y	Y	B
464	Reinforced Concrete Pipe (Jack and Bore only; ONLY when requested)	Y	Y	Y	A
465	Pre-cast Junction Boxes, Grates, and Inlets	Y	Y	N	A
465	Pre-cast Junction Boxes, Grates, and Inlets (Alternate Designs Only, calcs req'd.)	Y	Y	Y	B
466	Pre-cast Headwalls and Wingwalls	Y	Y	N	A
467	Pre-cast Safety End Treatments	Y	Y	N	A
495	Raising Existing Structure (calcs reqd.)	Y	Y	Y	B
610	Roadway Illumination Supports (Non-Standard only, calcs reqd.)	Y	Y	Y	T
613	High Mast Illumination Poles (Non-standard only, calcs reqd.)	Y	Y	Y	T
627	Treated Timber Poles	Y	Y	N	T
644	Special Non-Standard Supports (Bridge Mounts, Barrier Mounts, Etc.)	Y	Y	Y	T
647	Large Roadside Sign Supports	Y	Y	Y	T
650	Cantilever Sign Structure Supports - Alternate Design Calcs.	Y	Y	Y	T
650	Sign Structures	Y	Y	N	T
652	Highway Sign Lighting Fixtures	Y	Y	N	T
654	Sign Walkways	Y	Y	N	T
680	Installation of Highway Traffic Signals	Y	Y	N	T
682	Vehicle and Pedestrian Signal Heads	Y	Y	N	T
684	Traffic Signal Cables	Y	Y	N	T
685	Roadside Flashing Beacon Assemblies	Y	Y	N	T
686	Traffic Signal Pole Assemblies (Steel) (Non-Standard only)	Y	Y	Y	T
687	Pedestal Pole Assemblies	Y	Y	N	T
688	Detectors	Y	Y	N	A
784	Repairing Steel Bridge Members	Y	Y	Y	B
SS	Prestr Concr Crown Span	Y	Y	N	B
SS	Sound Barrier Walls	Y	Y	N	B
SS	Camera Poles	Y	Y	Y	TMS
SS	Pedestrian Bridge (Calcs req'd.)	Y	Y	Y	B
SS	Screw-In Type Anchor Foundations	Y	Y	N	T
SS	Fiber Optic/Communication Cable	Y	Y	N	TMS
SS	Spread Spectrum Radios for Signals	Y	Y	N	T
SS	VIVDS System for Signals	Y	Y	N	T
SS	CTMS Equipment	Y	Y	N	TMS

Key to Reviewing Party

A - Area Office	
Area Office	Email Address
Fort Bend Area Office	HOU-FBAShpDrwgs@txdot.gov
B - Bridge Engineer	
Bridge Design (TxDOT)	HOU-BrgShpDrwgs@txdot.gov
C - Construction Office	
Construction	HOU-ConstrShpDrwgs@txdot.gov
Laboratory	HOU-LabShpDrwgs@txdot.gov
T - Traffic Engineer	
Traffic Operations	HOU-TrfShpDrwgs@txdot.gov
TMS – Traffic Management System	

Item 7: Legal Relations and Responsibilities

Do not initiate activities in a Project Specific Location (PSL), associated with a U.S. Army Corps of Engineers (USACE) permit area, that have not been previously evaluated by the USACE as part of the permit review of this project. Such activities include those pertaining to, but are not limited to, haul roads, equipment staging areas, borrow and disposal sites. Associated defined here means materials are delivered to or from the PSL. The permit area includes the waters of the U.S. or associated wetlands affected by activities associated with this project. Special restrictions may be required for such work. Assume responsibility for consultations with the USACE regarding activities, including PSLs that have not been previously evaluated by the USACE. Provide the Department with a copy of consultations or approvals from the USACE before initiating activities.

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

Document and coordinate with the USACE, if required, before hauling any excavation from or hauling any embankment to a USACE permit area by either 1 or 2 below:

1. Restricted Use of Materials for the Previously Evaluated Permit Areas.

Document both the Project Specific Locations (PSL) and their authorization. Maintain copies for review by the Department or any regulatory agency. When an

area within the project limits has been evaluated by the USACE as part of the permit process for this project:

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

2. Contractor Materials from Areas Other than Previously Evaluated Areas.

Provide the Department with a copy of USACE coordination or approvals before initiating any activities for an area within the project limits that has not been evaluated by the USACE or for any off right of way locations used for the following, but not limited to, haul roads, equipment staging areas, borrow and disposal sites:

- a. The Item, "Embankment" used for temporary or permanent fill within a USACE permit area.
- b. Unsuitable excavation or excess excavation, "Waste" (under the Item, "Excavation"), that is disposed of outside a USACE evaluated area.

The total area disturbed for this project is 23.95 acres. The disturbed area in this project, the project locations in the Contract, and Contractor project specific locations (PSLs) within 1 mile of the project limits for the Contract, will further establish the authorization requirements for storm water discharges. The Department will obtain an authorization to discharge storm water from the Texas Commission on Environmental Quality (TCEQ) for the construction activities shown on the plans. The Contractor is to obtain required authorization from the TCEQ for Contractor PSLs for construction support activities on or off the ROW. When the total area disturbed in the Contract and PSLs within 1 mile of the project limits exceeds 5 acres, provide a copy of the Contractor NOI for PSLs on the ROW to the Engineer (to the appropriate MS4 operator when on an off-state system route) and to the local government that operates a separate storm drain system.

This project does not require a U.S. Army Corps of Engineers (USACE) Section 404 Permit before letting, but if a permit is needed during construction, assume responsibility for preparing the permit application. Submit the permit application to the Department's District Environmental Section for approval. Once the permit application is approved, the Department will submit it to the USACE. Assume responsibility for the requested revisions, in coordination with the Department's District Environmental Section.

Maintain the roadway slope stability. Maintaining slope stability is subsidiary to the various bid items.

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The nesting / breeding season for migratory birds is March 1 through August 30.

Conduct any tree removal outside of the migratory bird nesting season. If this is not possible due to scheduling, then exercise caution to remove only those trees with no active nests. Do not destroy nests on structures or in trees within the project limits during the nesting / breeding season.

Take measures to prevent the building of nests on any structures or trees within the project limits throughout the duration of the construction if work / removal will be performed during the nesting / breeding season. This can be accomplished by application of bird repellent gel, netting by hand every 3 to 4 days, or any other non-threatening method approved by the Houston District Environmental Section. Obtain this approval well in advance of the planned use. Contact the Houston District Environmental Section at 713-802-5244. The cost of this work is subsidiary to the various bid items.

Item 8: Prosecution and Progress

Create, maintain, and submit for approval, a Critical Path Method (CPM) project schedule using computer software that is fully compatible with version 3.1 of Primavera Systems, Inc. or Primavera Project Planner (P3).

The Department will supply bidders, upon written request, one electronic copy of the time determination schedule. The time determination schedule provided is for informational use only and is not intended for bidding or construction purposes.

The Department will not adjust the number of days for the project and milestones, if any, due to differences in opinion regarding any assumptions made in the preparation of the schedule or for errors, omissions, or discrepancies found in the time determination schedule.

Working days will be computed and charged based on a Five-Day workweek in accordance with Section 8.3.A.1

Provide a virus-free computer disk or diskette containing the Primavera construction schedule.

The Lane Closure Assessment Fee is \$500.00. This fee applies to the Contractor for closures or obstructions that overlap into restricted hour traffic for each hour or portion thereof, per lane, regardless of the length of lane closure or obstruction. For Restricted Hours subject to Lane Assessment Fee refer to the Item, "Barricades, Signs, and Traffic Handling."

Item 100: Preparing Right of Way

Clean existing ditches under fill sections of undesirable materials including grass, muck, and trash. Perform this work in accordance with the Construction section of the Item, "Preparing Right of Way." This work is subsidiary to this bid Item.

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The Item, "Preparing Right of Way" will be measured for payment only in those designated areas shown on the plans. Preparing right of way necessary to perform construction that is outside designated areas is subsidiary to this bid Item.

Remove abandoned utilities that are in conflict with the new utilities, at no expense to the Department.

Reestablish and maintain right of way stakes after completing the right of way preparation activities and until the new utilities are in place.

Remove and assume ownership of the existing ground mounted signs within the limits of roadway construction unless otherwise noted or directed. This work is subsidiary to the Item, "Preparing Right of Way."

Item 105: Removing Stabilized Base and Asphalt Pavement

Obtain a secured site for the stockpile of the treated material to be salvaged from this project. Haul and stockpile the unused material as directed. This work is subsidiary to this bid Item.

Store the treated material salvaged from this project at the project sites designated by the Engineer.

Haul Reclaimable Asphalt Pavement to Fort Bend County Fairgrounds located at 4310 SH 36 South, Rosenberg, Texas 77471. Contractor to notify the Fort Bend maintenance office 72 hours prior to the delivery at 281 238-7950.

Item 105: Removing Stabilized Base and Asphalt Pavement**Item 305: Salvaging, Hauling, and Stockpiling Reclaimable Asphalt Pavement**

ACP over limestone/oyster shell base

Removing the Asphalt Concrete Pavement (ACP) material is paid under the Item, "Salvaging, Hauling, and Stockpiling Reclaimable Asphalt Pavement."

Removing the limestone or oyster shell base is paid under the Item, "Removing Stabilized Base and Asphalt Pavement."

Remove the ACP separately from the limestone or oyster shell base. Make the removed depth is as uniform as possible during each removal pass if the pavement depth being removed is composed of different asphalt layers. Unless otherwise approved, stockpile the RAP of differing types of quality separately by its intended use such as for the asphalt treatment, cement treatment, lime treatment, or asphalt concrete pavement. Break, crush, or mill the stockpiled materials so that 100 percent pass the 2-in. sieve.

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Item 110: Excavation

If manipulating the excavated material requires moving the same material more than once to accomplish the desired results, the excavation is measured and paid for only once regardless of the manipulation required.

Transition the ditch grades and channel bottom widths at structure locations. Use only approved channel excavation in the embankment.

The total excavation quantity shown on the plans includes the quantity for excavating to 2 ft. behind the back of the proposed curb.

Item 132: Embankment

If salvaged base is used for the embankment material, break it into small pieces to achieve the required density and to facilitate placing in the embankment. Obtain approval of the material before placing in the embankment.

Furnish Type C material with a maximum Liquid Limit (LL) of 65, a minimum Plasticity Index (PI) of 5, and composed of suitable earth material such as loam, clay, or other materials that form a suitable embankment.

The embankment material used on the project which has a Liquid Limit exceeding 45 will be tested for Liquid Limits at the rate of one test per 20,000 cu. yd. or per total quantity less than 20,000 cu. yd., unless otherwise directed. Only use material that passes the above tests.

Provide a finished grade with the top 4 in. capable of sustaining vegetation. Use fertile soil that is easily cultivated, free from objectionable material and highly resistant to erosion.

Item 162: Sodding for Erosion Control

Item 166: Fertilizer

Item 168: Vegetative Watering

Refer to the "Fertilizer, Seed, Sod, Straw, Compost, and Water" standard sheet for material specifications, application rates, and for watering requirements.

Item 204: Sprinkling

Perform subsidiary sprinkling as required under various other items in accordance with the Item, "Sprinkling."

Sprinkling for dust control is subsidiary to the various bid items.

County: Fort Bend**Control:** 2105-01-046**Highway:** FM 2234, FM 3345 to Fort Bend Toll Road**Item 210: Rolling**

Use a medium pneumatic roller meeting the requirements of Item 210 as directed. This work is subsidiary to the various bid items. On every asphalt shot, use a minimum of 3 pneumatic rollers or as directed. Use approved rolling patterns. Successive asphalt shots will not be allowed until acceptable rolling has been accomplished on the preceding asphalt shot.

Item 260: Lime Treatment (Road-Mixed)

For slurry placing, before discharging through the distributors, sufficiently agitate or mix the lime and water to place the lime in suspension and to obtain a uniform mixture.

The Engineer will observe the lime treatment that the Contractor elects to open to construction traffic immediately after compaction. If the construction traffic damages the subgrade, route the traffic off the damaged section in accordance with the standard specification. If the construction traffic does not damage the subgrade, cure the subgrade until other courses of material cover it. Apply these courses within 14 days with a maximum curing period of 7 days.

Place the hydrated and the commercial lime as a water suspension or slurry according to the slurry placing method shown in Section 260.4.C.2, "Slurry Placement."

Use the type of lime at particular locations as directed.

Place the quicklime dry or as a slurry.

For the dry quicklime, a spreader box is not required if the lime material is evenly distributed.

In limited areas, the Contractor may construct the lime slurry subgrade under a sequence of work in which the application, mixing, and compaction are completed in the same working day, if approved by the Engineer.

Provide documentation from certified public scales showing gross, tare, and net weights. Provide producer's delivery tickets also showing gross, tare, and net weights. Completely empty the lime trailers at the project site. The Engineer may direct the Contractor to reweigh any shipment of lime on certified scales. The cost of this operation is subsidiary to the Item, "Lime Treatment (Road-Mixed)."

The percentage of lime shown on the plans is estimated on the basis of engineering tests. If soil tests made during construction indicate properties different than those originally anticipated, the Engineer may vary the percentage of the lime to provide soil characteristics similar to those of the preliminary tests.

Mix the lime with the new base material in an approved pugmill type stationary mixer.

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Item 276: Cement Treatment (Plant-Mixed)

Before placing the new base, wet and coat the vertical construction joints between the new base and the previously placed base with dry cement.

If the total thickness of the cement treatment is greater than 8 in., compact it in multiple lifts in accordance with Section 276.4.C, "Compaction." Place the courses in the same working day unless otherwise approved.

If using a 100 percent crushed stone aggregate for the proposed base or other aggregate, it must contain 4.5 percent cement based on the dry weight of the aggregate. There is no minimum compressive strength requirement for this Item.

The requirement for core drilling to determine the thickness of cement treatment is waived if using less than 500 sq. yd. at one location.

For widening the existing pavement, the Engineer may waive the requirements for preparing the subgrade by scarifying and compacting if the as-cut subgrade can be maintained to the density of the natural ground and to a uniform consistency when placing the base course. Keep the subgrade wet.

Compact in accordance with the standard specifications and complete the finishing operations within a period of 5 hours after adding the cement to the base material.

Cure the final course of cement treatment using an asphalt distributor that distributes the approved curing material and water mixture material at a rate of 0.25 gallons per square-yard evenly and smoothly or as recommended by the manufacturer at the recommended dilution rate, under a pressure necessary for proper distribution. Provide a curing material meeting the requirements of the Item, "Asphalts, Oils, and Emulsions" for curing the cement treatment. Use the following materials for curing the courses of cement treatment:

Curing Material	Application
Water	All courses, except final course
PCE	Final course

Continue curing until placing another course or opening the finished section to traffic.

Spread the material so that the layers of base are uniform in depth and in loose density before compacting.

Type E material consists of Type A material, crushed concrete (except under flexible pavement), or Reclaimed Asphalt Pavement (RAP) meeting the requirements of the Item, "Flexible Base." If approved, the 50 percent maximum RAP limitation may be waived.

Unless otherwise directed, place the next pavement layer within 7 working days of placing the base.

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If using crushed stone for the Type E material under this Item, ensure it meets the requirements for the Item, "Flexible Base," Type A, Grade 1. Texas Test Method TEX-117-E is not required for this Item.

If using Recycled Type E cement treatment under proposed flexible pavement, produce it using the existing base salvaged from within this project or from other approved Department projects and salvaged asphalt concrete pavement. Do not use crushed concrete under flexible pavement.

If using Recycled Type E cement treatment under proposed concrete pavement, produce it using the existing base salvaged from within this project or from other approved Department projects, salvaged asphalt concrete pavement, or crushed concrete. If using crushed concrete as an aggregate, meet the requirements of Grade 3.

If using salvaged existing base and asphalt concrete pavement as described above, size it so that all the material, except the existing individual aggregate, passes the 2-in. sieve and is of a gradation that allows satisfactory compaction. Provide salvaged material that does not contain deleterious material such as clay or organic material. Provide material passing the No. 40 sieve, defined as soil binder, with a maximum Plasticity Index of 10 and a maximum Liquid Limit of 35 when tested in accordance with test method TEX-106-E.

Meet the following additional requirements if the base and ACP are salvaged from other Department projects:

1. Obtain written approval before using the material.
2. Salvage and stockpile by approved methods.
3. Stockpile the material for exclusive use by the Department.

Item 292: Asphalt Treatment (Plant-Mixed)

Unless otherwise shown on the plans, RAP generated by this project will become the property of the Contractor for use in the current construction project or in future projects.

If using the iron ore topsoil as the primary aggregate, meaning 80 percent or more by weight of the total mixture, the requirements for the water susceptibility test are waived.

Mixtures containing the iron ore topsoil are exempted from test methods TEX-217-F (Part I, separation of deleterious material and Part II, decantation test for coarse aggregate) and TEX-203-F (Sand Equivalent Test).

Assume responsibility for proportioning the materials entering the asphalt mixture, regardless of the type of plant used.

Furnish the mix designs for approval.

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Compact the courses to a minimum density of 95 percent of the maximum density as determined using test method TEX-126-E.

Meet the following grading requirements:

Sieve Size	Percent Passing Grade 4 (Bondbreaker)
1-3/4 in.	-
1 in.	-
1/2 in.	100
No. 4	30 - 70
No. 40	15 - 45

Physical requirements are as follows:

- Maximum Plasticity Index (PI) = 8
- Maximum Liquid Limit (LL) = 35
- Maximum Wet Ball Mill = 50 (crushed stone)
- Maximum LA Abrasion = 50 (iron ore)

If blending the materials, perform the Wet Ball Mill test for the composite aggregate.

Form bituminous mix incorporating 3.5 to 7 percent asphaltic binder by dry weight.

For nominal aggregate size less than 0.5 in., design the mix in accordance with test method TEX-204-F. The minimum stability in accordance with TEX-208-F is 30 percent with a laboratory molded density of 96 percent plus or minus 1.5 percent.

If the layer thickness after placing is 1.25 in. or less, the bondbreaker is exempt from the in-place density control described in Section 292.4.E, "Compaction."

Item 305: Salvaging, Hauling, and Stockpiling Reclaimable Asphalt Pavement

Unless otherwise shown on the plans, RAP generated by this project will become the property of the Department for use in the current construction project or in future projects.

Keep the removed depth as uniform as possible during each removal pass if the pavement depth being removed is composed of different asphalt layers. Stockpile the RAP of differing types of quality separately by its intended use such as for asphalt treatment, cement treatment, lime treatment, or asphalt concrete pavement (level up). Break, crush, or mill the stockpiled materials so that 100 percent passes the 2-in. sieve.

Verify the depth of asphalt pavement to be removed before beginning the removal.

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Stockpile the material at Fort Bend County Fairgrounds located at 4310 SH 36 South, Rosenberg, Texas 77471. Contractor to notify Fort Bend maintenance office 72 hours prior to delivery at 281 238-7950.

Item 360: Concrete Pavement

Where the pavement curb is left off for a later tie, provide the dowels or the tie bars as indicated on the paving detail sheets. The dowel bars and tie bars are subsidiary to the various bid items.

Repair portions of the concrete pavement surfaces that are damaged while in a plastic state before that area receives permanent pavement markings and opens to traffic. Perform repairs that are structurally equivalent to and cosmetically uniform with the adjacent undamaged areas. Do not repair by grouting onto the surface.

On pavement widening, hand finishing in place of the longitudinal float will be permitted.

Where existing pavement is widened with new pavement, place the new pavement a minimum of 2 ft. wide.

Equip the batching plants to proportion by weight, aggregates and bulk cement, using approved proportioning devices and approved automatic scales.

For mono curb, the curb height transitions will be paid at the contract unit price of the larger curb height in the transition. The 2.5-in. laydown curbs for driveways will be paid at the unit price bid for the Item, "Mono Curb (6 in.)."

High-early strength cement may be used for city street intersection construction.

Do not use limestone dust of fracture as fine aggregate.

If the concrete design requires greater than 5.5 sacks of cementitious material per cubic yard, obtain written approval. If placing concrete pavement mixes from April 1 to October 31, inclusive, use a minimum of 25 percent by weight of Class F Fly Ash.

Perform saw cutting as shown on the plans in accordance with Section 360.4.J, "Sawing Joints." This saw cutting is subsidiary to this bid Item.

Use coarse aggregate to produce concrete with a Coefficient of Thermal Expansion (CTE) of less than 5.0×10^{-6} in/in/°F. Before construction, submit test specimens to the TxDOT Construction Division for aggregate acceptance. Provide samples or test specimens as directed. The TxDOT Construction Division will perform the testing. Test results are final. Testing is required for naturally occurring aggregates.

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Items 360, 420, and 421: All Concrete Items

For the Department's concrete cylinder split samples, transport the test cylinders to the Houston District Laboratory located at 7600 Washington Avenue in Houston, or to the appropriate Area Laboratory, when applicable. Transporting the test cylinders is subsidiary to the various bid items.

Item 400: Excavation and Backfill for Structures

Plugging existing pipe culverts is subsidiary to the various bid items.

Item 416: Drilled Shaft Foundations

Include the cost for furnishing and installing anchor bolts mounted in the drilled shafts in the unit bid price for the various diameter drilled shafts.

The Department may test using ultrasonic methods the anchor bolts for overhead sign supports, light standards, and traffic signal poles after they are installed. Replace faulty anchor bolts as directed. Do not weld the anchor bolts.

Item 432: Riprap

If stone riprap is shown on the plans, use common stone riprap in accordance with Section 432.2.C.3, placed dry in accordance with Section 432.3.B.3. Do not grout. Crushed concrete may also be used.

Item 462: Concrete Box Culverts and Storm Drains

Item 464: Reinforced Concrete Pipe

Concrete collars are subsidiary to the various bid items except for those specified on the plans for stage construction, which are paid for under the Item, "Concrete Structures" as "C I C Conc (Collar)."

Rubber gaskets are required for concrete pipe joints except for connections of safety end treatments, driveway culverts, and joints between the existing pipes and extensions.

Open, install, and backfill each section, or a portion of a section, in the same day at locations requiring pipe culverts under existing roadways.

Place the pipe drains across existing roadways half at a time to allow passage of traffic. No trenches may remain open overnight.

Known locations of existing stubouts are shown on the plans, but these stubouts may be in a different position or condition. Delays, inconveniences, or additional work required will not be a basis for additional compensation.

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Provide leave-outs or holes in the proposed storm drain structures and pipes for drainage during interim construction. This work is subsidiary to the various bid items.

The flowline elevations of side road structures are based on the proposed ditches. Field-verify these elevations and adjust them as necessary to meet the field conditions. Before placing these structures, prepare and submit for approval, the data (revised elevation, alignment, length, etc.) for the adjusted structures.

If groundwater is encountered while installing the storm drain system, install a suitable dewatering system to facilitate construction of the storm drains. The costs for materials and labor required to install and maintain this system are subsidiary to the Item, "Reinforced Concrete Pipe."

Item 465: Manholes and Inlets

If required on the plans, build manholes and inlets to stage 1 construction, cover with temporary pavement, and complete in a later phase of construction. This temporary covering and pavement are subsidiary to the various bid items.

If building manholes or inlets in graded areas, first construct them to an elevation at least 4 in. above the top of the highest entering pipe and cover with a wooden cover. Complete the construction of such manholes or inlets to the finished elevation when completing the grading work for such manholes or inlets. Adjust the final elevation, if required, since this elevation is approximate.

Construct manholes and inlets in paved areas to an elevation so their temporary wooden covers are flush with the surface of the base material.

Do not leave excavations or trenches open overnight.

Items 496: Removing Structures

Do not permit debris resulting from the construction activities to enter a natural or manmade waterway such as drainage channels, rivers, streams, bays, etc. Remove debris which falls into such waterways. This work is subsidiary to the Item, "Removing Structures."

Item 502: Barricades, Signs, and Traffic Handling

Use a traffic control plan for handling traffic through the various phases of construction. Follow the phasing sequence unless otherwise agreed upon by the Area Engineer and the Project Manager. Ensure this plan conforms to the latest "Texas Manual on Uniform Traffic Control Devices" and the latest Barricade and Construction (BC) Standard Sheets. The latest versions of Work Zone Standard Sheets WZ (BTS-1) and WZ (BTS-2) are the traffic control plan for the signal installations.

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Submit changes signed and sealed by a Registered Professional Engineer licensed in Texas to the traffic control plan to the Area Engineer. Provide a layout showing the construction phasing, signs, striping, and signalizations for changes to the original traffic control plan.

Furnish and maintain the barricades and warning signs, including the necessary temporary and portable traffic control devices, during the various phases of construction. Place and construct these barricades and warning signs in accordance with the latest "Texas Manual on Uniform Traffic Control Devices" for typical construction layouts.

Cover work zone signs when work related to the signs is not in progress, or when any hazard related to the signs no longer exists.

Keep the delineation devices, signs, and pavement markings clean. This work is subsidiary to the Item, "Barricades, Signs, and Traffic Handling."

If a section is not complete before the end of the workday, pull back the base material to the existing pavement edge on a 6H: 1V slope. Edge drop-offs during the hours of darkness are not permitted.

Before detouring traffic onto the mainlane shoulders, remove dirt, debris, vegetation, and other deleterious material from the surface of the shoulders. Appropriately sign the detour in an approved manner. This work is subsidiary to the various bid items.

Cover or remove the permanent signs and construction signs that are incorrect or that do not apply to the current situation for a particular phase.

Do not mount signs on drums or barricades, except those listed in the latest Barricades and Construction standard sheets.

Use traffic cones for daytime work only. Replace the cones with plastic drums during nighttime hours.

Place positive barriers to protect drop-off conditions greater than 2 ft. within the clear zone that remain overnight.

Use shadow vehicles with Truck Mounted Attenuators (TMA) for lane and shoulder closures.

Do not reduce the existing number of lanes open to traffic except as shown on the following time schedule:

One Lane Closure

Day	Daytime Closure Hours	Nighttime Closure Hours	Restricted Hours Subject to Lane Assessment Fee
Monday	9:00 AM - 3:00 PM	N/A	5:00 AM - 9:00 AM 3:00 PM - 9:00 PM
Tuesday	9:00 AM - 3:00 PM	N/A	5:00 AM - 9:00 AM 3:00 PM - 9:00 PM
Wednesday	9:00 AM - 3:00 PM	N/A	5:00 AM - 9:00 AM 3:00 PM - 9:00 PM
Thursday	9:00 AM - 3:00 PM	N/A	5:00 AM - 9:00 AM 3:00 PM - 9:00 PM
Friday	9:00 AM - 3:00 PM	N/A	5:00 AM - 9:00 AM 3:00 PM - 9:00 PM
Saturday	N/A	N/A	N/A
Sunday	N/A	N/A	N/A

The above times are approved for the traffic control conditions listed. The Area Engineer may approve other closure times if traffic counts warrant. The Area Engineer may reduce the above times for special events.

Law enforcement assistance will be required for this project and is expected to be required for major traffic control changes and lane closures. Coordinate with local law enforcement and arrange for law enforcement as directed or agreed by the Engineer. Before payment will be made, complete the “Daily Report on Law Enforcement Force Account Work” (Form 318), provided by the Department and submit daily invoices that agree with this form for any day during the month in which approved services were provided.

Provide full-time, off-duty, uniformed, certified peace officers, as part of traffic control operations. The peace officers must be able to show proof of certification by the Texas Commission on Law Enforcement Officers Standards. The cost of the officers is paid for on a force account basis.

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.

Item 504: Field Office and Laboratory

Furnish a Type D structure for the asphalt mix control laboratory for the Engineer’s exclusive use. In addition to the requirements of this Item, “Field Office and Laboratory,” ensure this

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structure has a minimum height of 8 ft. Also ensure it has a minimum of 400 sq. ft. of gross floor area suitable for permanently located asphalt plants or 200 sq. ft. for temporarily located asphalt plants serving one project. Partition the floor area into a minimum of 2 interconnected rooms, and provide each room with an exterior door and a minimum of 2 windows. Construct the floor of sufficient strength to support the testing equipment and with an impervious covering.

Adequately air condition the Type D structure and furnish it with a minimum of one desk, 3 chairs, one file cabinet, a telephone, and one built-in equipment-storage cabinet suitable for storing nuclear equipment. Ensure the cabinet is a minimum of 3 ft. wide by 2 ft. deep by 3 ft. high and has a secure lock. Provide the structure with a 240-volt electrical service entrance. Use a licensed electrician to determine the service size and service entrance conductors. Provide a minimum service of four 120-volt circuits with 20 amp breakers, and a maximum of 2 grounded convenience outlets per circuit and a minimum of two 220-volt ovens with vents to the outside. Provide a structure with a minimum of 2 convenience outlets per wall and a utility sink with an adequate, clean potable water supply for testing. Do not use space heaters to heat the structure. Use support blocks for the portable structures, tie them down, and securely attach them to the ground.

If an asphalt mix plant is located at the project site, provide a Type D structure with the dimensions of a Type C structure, at the project site to perform the asphalt mix quality control tests.

If a commercial source is used for the asphalt mix, provide a Type D structure with the dimensions of a Type C structure, at the commercial source site to perform the asphalt mix quality control tests.

Equip each lab with a fire extinguisher and first aid kit. Also equip the labs with an eye wash station. Provide equipment that meets the minimum OSHA requirements. At a minimum, furnish 20 lb. fire extinguishers that are rated for Type A, B, and C fires.

Furnish one Type E structure for the field office. Ensure the windows for the structure have burglar bars.

Provide a Type E field office meeting the requirements of a Type C structure. Provide this as a single structure with a minimum of 500 sq. ft. of floor space and 3 rooms. Provide the structure with the following facilities (The cost of providing these items is subsidiary to this bid Item.):

1. Three desks with 3 swivel chairs, two 5-drawer file cabinets and 3 straight back chairs.
2. Telephone service and equipment consisting of a minimum of one telephone with one extension. Include the call-waiting feature in the service.
3. Potable water with an electric water cooler, a cup dispenser, and cups.
4. Adequate heating, air conditioning, lighting, and a sufficient number of electrical outlets.

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5. A commercially available toilet or equivalent facility for the field office and each laboratory.
6. A suitable printer/copier/fax machine for the field office in accordance with Department Material Specification DMS-10101, "Computer Equipment."

Provide a fenced enclosure approximately 100 ft. by 200 ft. Provide an appropriate parking area covered with a suitable base material and with a minimum of 2 security lights, one on each end of the lot. Cost of the work and materials to provide the enclosure are subsidiary to the various bid items.

Piped in water to the Engineer's building will not be required, but furnish water for curing concrete test specimens.

The above requirements are subsidiary to the various bid items.

Assume ownership of temporary chain link security fences.

Equip each field office with a fire extinguisher and first aid kit. At a minimum, furnish 20 lb. fire extinguishers that are rated for Type A, B, and C fires.

Item 512: Portable Concrete Traffic Barrier

Transport Low Profile Concrete Traffic Barriers (CTB) used for traffic handling from the Department stockpile located on the north side of IH 610 at Long Drive.

After completing the project, return Low Profile Concrete Traffic Barriers (CTB) and hardware used for traffic handling, to the Department stockpile located on the north side of IH 610 at Long Drive.

Item 529: Concrete Curb, Gutter, and Combined Curb and Gutter**Item 530: Intersections, Driveways, and Turnouts****Item 531: Sidewalks**

An air-entraining admixture is not required.

For concrete curbs, use Grade 7 aggregate conforming to Section 421.2 of the Item, "Hydraulic Cement Concrete."

For driveways and turnouts, coarse aggregate Grade No. 3 through No. 8 conforming to the gradation requirements specified in the Item, "Hydraulic Cement Concrete" will be permitted.

For reinforcing steel in sidewalks and pedestrian ramps, use No. 4 bars at a maximum 18 in. spacing center-to-center in both directions.

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Item 542: Removing Metal Beam Guard Fence

Remove and assume ownership of unsalvageable metal beam guard fence rail elements and posts.

Replace removed wood posts which are unusable because of damage by the Contractor, at no expense to the Department.

Item 585: Ride Quality for Pavement Surfaces

To eliminate the need for corrective action due to excessive deviations in the final surface layers, exercise caution to ensure satisfactory profile results in the intermediate paving layers (mixture).

Milling will not be allowed as a corrective action for excessive deviations in the final surface layer of hot-mix asphalt.

For concrete curb and gutter sections, use Surface Test Type B and Pay Adjustment Schedule 2 except for the outside lane. Use Surface Test Type B and Pay Adjustment Schedule 3 for the outside lane.

For all other roads (cross streets and intersections), use Surface Test Type A.

Item 618: Conduit

Item 620: Electrical Conductors

Item 628: Electrical Services

If the specifications for electrical items require UL-listed products, this means UL-listed or CSA-listed.

Item 618: Conduit

When backfilling bore pits, ensure that the conduit is not damaged during installation or due to settling backfill material. Compact select backfill in 3 equal lifts to the bottom of the conduit; or if using sand, place it 2 in. above the conduit. Ensure backfill density is equal to that of the existing soil. Prevent material from entering the conduit.

Construct bore pits a minimum of 5 ft. from the edge of the base or pavement. Close the bore pit holes overnight.

Unless shown on the plans, install underground conduit a minimum of 24 in. deep. Install the conduit in accordance with the latest National Electrical Code (NEC) and applicable Department standard sheets. Place conduit under driveways or roadways a minimum of 24 in. below the pavement surface.

If using casing to place bored conduit, the casing is subsidiary to the conduit.

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If placing the conduit under existing pavement to reach the service poles, bore the conduit in place and extend it a minimum distance of 5 ft. beyond the edge of shoulder or the back of curb.

Use materials from pre-qualified producers as shown on the Department's Construction Division (CST) material producers list. Check the latest links on the TxDOT website for the list. The category is "Roadway Illumination and Electrical Supplies." The polymer concrete barrier box is subsidiary to Item 618, "Conduit."

Item 620: Electrical Conductors

Test each wire of each cable or conductor after installation. Incomplete circuits or damage to the wire or the cable are cause for immediate rejection of the entire cable being tested. Remove and replace the entire cable at no expense to the Department. Also test the replacement cable after installation.

When pulling cables or conductors through the conduit, do not exceed the manufacturer's recommended pulling tensions. Lubricate the cables or conductors with a lubricant recommended by the cable manufacturer.

For both transformer and shoe-base type illumination poles, provide double-pole breakaway fuse holders as shown on the Department's Construction Division (CST) material producers list. Check the latest link on the Department website for this list. The category is "Roadway Illumination and Electrical Supplies." The fuse holder is shown on the list under Items 610 and 620. Provide 10 Amp time delay fuses.

Ensure that circuits test clear of faults, grounds, and open circuits.

Split bolt connectors are allowed only for splices on the grounding conductors.

Item 624: Ground Boxes

The ground box locations are approximate. Alternate ground box locations may be used as directed, to avoid placing in sidewalks or driveways.

Ground metal ground box covers. Bond the ground box cover and ground conductors to a ground rod located in the ground box and to the system ground.

Ground the existing metal ground box covers as shown on the latest standard sheet ED (3), III, B, 4 through 6.

During construction and until project completion, provide personnel and equipment necessary to remove ground box lids for inspection. Provide this assistance within 24 hours of notification.

Construct concrete aprons in accordance with the latest standard sheet ED (3). Make the depth of the concrete apron the same as the depth of the ground box, except for Type 1 and Type 2

ground boxes. For Type 1 or Type 2 ground boxes, construct the concrete apron in accordance with details shown on the “Ground Box Details Installations” standard.

Item 628: Electrical Services

Verify and coordinate the electrical service location with the engineering section of the appropriate utility district or company.

Identify the electrical service pole with an address number assigned by the Utility Service Provider. Provide 2-in. numerals visible from the highway. Provide numbers cut out aluminum figures nailed to wood poles or painted figures on steel poles or service cabinets.

Item 644: Small Roadside Sign Supports and Assemblies

Sign locations shown on the plans are approximate. Before placing them, obtain approval of and then stake the exact locations for these signs.

Use the Texas Universal Triangular Slip Base with the concrete foundation for small ground mounted signs, unless otherwise shown in the plans.

Remove existing street name signs from existing stop signs and re-install them above the new stop signs. Removing and re-installing existing street name signs is subsidiary to the Item, “Small Roadside Sign Supports and Assemblies.”

When design details are not shown on the plans, provide signs and arrows conforming to the latest “Standard Highway Sign Designs for Texas” manual.

Use Type E Super High Specific Intensity (Fluorescent Prismatic) yellow green reflective sheeting background to fabricate school signs (S1-1, S3-1, S4-3, S5-1, W16-2, SW16-9p, and SW16-7pL(R)).

Assume ownership of the removed existing signs.

Locations of the relocated signs are approximate. Before placing them, obtain approval of and then stake the exact locations for these signs.

Replace existing signs that become damaged during relocation at no expense to the Department.

Item 662: Work Zone Pavement Markings

At the end of each day’s work, mark roadways that remain open to traffic during construction operations with standard pavement markings, in accordance with the latest “Texas Manual on Uniform Traffic Control Devices.”

Using raised markers for removable work zone pavement markings on final concrete surfaces is optional.

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Do not use raised pavement markers as optional work zone pavement markings on final asphalt surfaces.

For transition lane lines and detour lane lines, use raised pavement markers as shown for solid lines on the latest Barricade and Construction standard sheet for "Work Zone Pavement Marking Details."

Item 662: Work Zone Pavement Markings**Item 666: Reflectorized Pavement Markings****Item 668: Prefabricated Pavement Markings****Item 6473: Multipolymer Pavement Markings (MPM)**

Use Type III glass beads for thermoplastic and multipolymer pavement markings.

Use a 0.100 in. (100 mil) thickness for thermoplastic pavement markings, measured to the top of the thermoplastic, not including the exposed glass beads.

Use a 0.022 in. (22 mil) thickness for multipolymer pavement markings, measured to the top of the multipolymer, not including the exposed glass beads.

For roadways with asphalt surfaces to be striped with work zone or permanent thermoplastic markings, the Contractor has the option to apply paint and beads markings for a maximum 30-day period until placing the thermoplastic markings, or until starting the succeeding phase of work on the striped area. Maintain the paint and beads markings, at no expense to the Department, until placing the thermoplastic markings or starting the succeeding phase of work on the striped area. The work zone markings, whether paint and beads or thermoplastic, are paid under the Item, "Work Zone Pavement Markings" and the markings are paid for only once for the given phase of construction.

If using paint and bead markings as described above, purchase the traffic paint from the open market.

If the Type II markings become dirty and require cleaning by washing, brushing, compressed air, or other approved methods before applying the Type I thermoplastic markings, this additional cleaning is subsidiary to the Item, "Reflectorized Pavement Markings."

Establish the alignment and layout for work zone striping and permanent striping.

Stripe roadways before opening them to traffic.

Place pavement markings under these items in accordance with details shown on the plans, the latest "Texas Manual on Uniform Traffic Control Devices," or as directed.

When design details are not shown on the plans, provide pavement markings for arrows, words, and symbols conforming to the latest "Standard Highway Sign Designs for Texas" manual.

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Place the pedestrian crosswalk pavement markings only after the pedestrian signals and push buttons are installed and operating.

Item 672: Raised Pavement Markers

If other operations are complete on the project and if the curing time period is not yet elapsed, the contract time will be suspended until the curing is done.

Before placing the raised pavement markers on concrete pavement, blast clean the surface using an abrasive-blasting medium. This work is subsidiary to the Item, "Raised Pavement Markers."

Provide epoxy adhesive that is machine-mixed or nozzle-mixed and dispensed. Equip the machine or nozzle with a mechanism to ensure positive mix measurement control.

Item 677: Eliminating Existing Pavement Markings and Markers

Remove existing pavement markings on concrete or asphalt surfaces by flail milling or as directed.

Item 678: Pavement Surface Preparation for Markings

Do not blast clean asphalt concrete pavement. Clean asphalt concrete pavement as required under the applicable specifications or as directed.

On new concrete pavement or on existing concrete pavement when placing a new stripe on a new location, remove the curing compounds and contamination from the pavement surface by flail milling or as directed. In addition, air-blast the surface with compressed air just before placing the new stripe.

On existing concrete pavement when placing a new stripe on an existing location, after removing the existing stripe under the Item, "Eliminating Existing Pavement Markings and Markers," air-blast the surface with compressed air just before placing the new stripe.

Perform air blasting with a compressor that is capable of generating air at a minimum of 100 psi using 5/16 in. or larger hosing for the air blast (equipment should have sufficient capacity to remove contaminants but not damage the pavement surface). Do not clean concrete pavement by grinding.

Item 680: Installation of Highway Traffic Signals

Clearly mark or highlight on the shop drawings the items being furnished for this project.

Furnish labor, tools, equipment, and materials as shown on the plans and specifications for a complete and operating signal installation.

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Furnish the type of controller cabinet specified on the plans. Refer to the table shown in the Departmental Material Specifications (DMS-11170, Fully Actuated, Solid-State Traffic Signal Controller Assembly), Section 11170.6.K, Type 4 cabinet, page 25 of 39, regarding the size of the cabinet, back panel configuration, and the size of the load bay. Use the following website to view this specification: <http://www.txdot.gov/business/resources/dms.html>

Complete traffic signal construction work, including correcting discrepancies shown on the Department inspector's "Traffic Signal Installation Inspection Report" before the beginning of the test period.

Provide a full-time qualified traffic signal technician responsible for installing, maintaining, or replacing traffic signal devices.

Staking in the field is subject to approval.

Make adjustments in project construction, if needed, due to conflicts with underground utilities.

Do not aim the luminaire arms mounted on traffic signal poles into the intersection. Aim each arm perpendicular to the centerline of the roadway it is intended to cover, to develop the proper illumination pattern for the intersection.

Allow the electrical work to be inspected by the City(s). Complying with the provisions and requirements of the City electrical ordinance is not required. Such inspection does not make the City a party to this contract.

Provide continuous conductors without splices from signal controller to signal heads. Route the conductors for luminaires to the service enclosure. Splices or attachments to the terminal block in the access compartment of the mast arm pole are not permitted except for the luminaire cable.

Abrasions to the conductor insulation caused while pulling cable for the traffic signal system are cause for immediate rejection. Remove and replace the entire damaged cable at no expense to the Department.

When pulling cables or conductors through conduit, do not exceed the manufacturer's recommended pulling tensions. Lubricate the cables or conductors with a lubricant as recommended by the cable manufacturer.

Bond the controller housing, signal poles, conduit, and spans to a minimum No. 6 AWG stranded copper conductor. An equipment grounding conductor is required in every conduit to form a continuous grounding system. Effectively connect the grounding system to ground rods or concrete encased grounding electrodes as indicated in the plans.

Wrap signal heads with dark plastic or suitable material to conceal the signal faces from the time of installation until placing into operation. Do not use burlap.

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Furnish signal heads from the same manufacturer.

Use High Specific Intensity reflective sheeting for signs mounted under or adjacent to the signal heads.

Furnish solid conductors for traffic signal cable at Quail Park Drive intersection in Missouri City.

The Contractor may use ready mix concrete.

Apply membrane curing on concrete work in accordance with Section 420.4.J.3, "Membrane Curing."

The standard 4.5-in. galvanized pipe type poles, except the breakaway type, are subject only to the Engineer's inspection for their acceptance. Mill test reports or documentation will not be required.

Provide each temporary construction signalized intersection along the project with a GPS clock device. Furnish all materials. Supply the controller with GPS clocks, phase sequence, detector units, detector card rack, and power supply, to the Department's signal shop, 6810 Katy Road, Houston, Texas, forty five (45) days in advance for inspection, set up, and testing. Contact Mr. Ugonna Ughanze, P.E., in writing, at least fifteen (15) days prior to picking up the materials.

Address: Texas Department of Transportation
P.O.Box 1386
Houston, Texas 77251-1386
Tel. No. (713) 802-5661

Upon completion of the permanent signal installation when the temporary construction signals are no longer needed, remove the GPS clocks and deliver them to the Department's signal shop, 6810 Katy Road, Houston, Texas. Contact Mr. Ugonna Ughanze, P.E., at (713) 802-5861 to make arrangements for the GPS clocks to be delivered. Carefully remove the materials so that they will not be marred or damaged. Replace materials that are scarred, battered or broken by the Contractor at no expense to the Department.

Item 682: Vehicle and Pedestrian Signal Heads

Install two set screws on vehicle signal head mounting hardware fittings.

Furnish black housings for vehicle and pedestrian signals. Furnish black vehicle signal head back plates.

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Furnish black housings for vehicle and pedestrian signals. Ensure the door and visor match the mast arm and pedestrian pole color. Furnish black vehicle signal head back plates.

Item 686: Traffic Signal Pole Assemblies (Steel)

For a steel mast arm or steel strain pole assembly, hold the anchor bolts and conduits rigidly in place with a welded steel template.

Leave a minimum of one full diameter thread exposed on each anchor bolt securing a signal pole.

Use a Texas Cone Penetrometer reading of 10. The drilled shaft length is from the surface elevation to the bottom of the drilled shaft. Provide an additional length of the pole foundation from the surface level to the roadway level, if required for unusual locations. Provide the drilled shaft depth regardless of the length of the pole foundation. The pole foundation depth from the surface level to the roadway level is a maximum of 4 ft., or as approved.

Locate mast arm pole assemblies a minimum of 4 ft. from the roadway curb or pavement edge.

After the traffic signal pole assembly is plumb and the nuts are tight, tack-weld each anchor bolt nut in two places to its washer. Tack-weld each washer to the base plate in two places. Do not weld components to the bolt. Perform tack-welding in accordance with the Item, "Steel Structures." After tack-welding, repair galvanizing damage on bolts, nuts, and washers in accordance with Section 445.3.D, "Repairs."

The Department may test the anchor bolts using ultrasonic methods for traffic signal poles after they are installed. Replace faulty anchor bolts as directed. Do not weld the anchor bolts.

Furnish black powder coated traffic signal poles for Missouri City signals. Apply powder coated finish over the galvanized surface. Prepare galvanized surfaces for powder coating in accordance with the powder coating manufacturer's recommendations. Do not water-quench or chromate-quench galvanized surfaces to be powder coated. After preparing galvanized surfaces, powder coat with a minimum of 2.0 mils dry film thickness (DFT) of urethane powder or triglycidyl isocyanurate (TGIC) polyester powder. Provide powder coat adhesion meeting the 5A or 5B classifications of ASTM D3359. Ensure powder coating is uniform in appearance and free of scratches.

Item 687: Pedestal Pole Assemblies

Furnish black powder coated traffic signal poles for Missouri City signals. Apply powder coated finish over the galvanized surface. Prepare galvanized surfaces for powder coating in accordance with the powder coating manufacturer's recommendations. Do not water-quench or chromate-quench galvanized surfaces to be powder coated. After preparing galvanized surfaces, powder coat with a minimum of 2.0 mils dry film thickness (DFT) of urethane powder or triglycidyl isocyanurate (TGIC) polyester powder. Provide powder coat adhesion meeting the

5A or 5B classifications of ASTM D3359. Ensure powder coating is uniform in appearance and free of scratches.

Furnish and install screw-in anchor foundations in accordance with Special Specification Item, "Screw-In Anchor Type Foundations." The work performed and materials furnished in accordance with this Item are subsidiary to the Item, "Pedestal Pole Assemblies."

Item 730: Roadside Mowing

Item 734: Litter Removal

Item 735: Debris Removal

Item 738: Cleaning and Sweeping Highways

Mow areas of existing vegetation, collect and dispose of litter, and sweep the roadway within the project limits according to the following chart for the duration of the project or as directed. This work is paid for under their respective bid items.

Roadside Mowing	Litter Removal	Debris Removal	Cleaning and Sweeping Highways
3 cycles	3 cycles	3 cycles	9 cycles

Item 1122: Temporary Erosion, Sedimentation and Environmental Controls

A Storm Water Pollution Prevention Plan (SW3P) is required. Since the disturbed area is more than 5 acres, a "Notice of Intent" (NOI) is also required.

Use appropriate measures to prevent, minimize, and control the spill of hazardous materials in the construction staging area. Remove and dispose of materials in compliance with State and Federal laws.

Before starting construction, review with the Engineer the SW3P used for temporary erosion control as outlined on the plans. Before construction, place the temporary erosion and sedimentation control features as shown on the SW3P.

Schedule the seeding or sodding work as soon as possible. The project schedule provides for a vegetation management plan.

After completing earthwork operations, restore and reseed the disturbed areas in accordance with the Department's specifications for permanent or temporary erosion control.

Implement temporary and permanent erosion control measures to comply with the National Pollution Discharge Elimination System (NPDES) general permit under the Clean Water Act.

Before starting grading operations and during the project duration, place the temporary or permanent erosion control measures to prevent sediment from leaving the right of way.

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Item 3061: Fast Track Concrete Pavement

Complete the entire Fast Track Concrete construction process, from the time the Fast Track Work Area is closed to traffic, to the time the Fast Track Work Area is opened to traffic. The Fast Track operation includes, but is not limited to, traffic control, existing pavement and subgrade removal, preparation of subgrade, placement of steel, placement of Fast Track concrete pavement, cure time, striping, etc.

Item 3267: Dense-Graded Hot Mix Asphalt (Small Quantity)

Dilution of tack coat is not allowed.

Do not use Surface Aggregate Classification (SAC) C for this project.

For determining the Asphalt Content, only ignition ovens will be allowed.

Item 6266: Video Imaging Vehicle Detection System

Furnish the cable to operate the Video Imaging Vehicle Detection System (VIVDS) in accordance with the manufacturer’s recommendations or purchase it from the same manufacturer as the VIVDS equipment.

Supply VIVDS equipment that can process up to a maximum of 6 camera inputs per intersection. Additional equipment to accommodate up to 6 camera inputs is subsidiary to the various bid items. No extra compensation will be allowed for additional equipment needed to make the VIVDS equipment fully operational under this Item.

Supply a video monitor as described in this Special Specification Item.

Detector zone video taping for this project will not be required.

At Quail Park Drive, supply 2 video channel VIVDS processor cards equipped with a NEMA TS1 detector interface and a 332 cabinet detector interface for a minimum of 4 detector outputs that are compatible with the City of Houston COH 2070 traffic signal controller.

Special Specification 6266 Video Imaging Vehicle Detection System Requirements

Specification Items	Description	Not Required	Required	State Supplied
1	VIVDS Configuration		X	
	Cameras, Connectors and Mounting Hardware		X	
	VIVDS Processor Unit		X	
	Field Setup Computer (1 Required) (Laptop)	X		
	Field Setup Video Monitor (1 EA. Controller)		X	
	Field Communications Link		X	
3	Functional Capabilities			

	System Software		X	
4	Vehicle Detection			
	Detection Zone Video Taping	X		
5	VIVDS Processor Unit			
	Provide both TS1 and TS2 Interfaces		X	
	12 Volt/5 Amp Power Supply		X	
6	Camera Assembly			
	Camera Interface Panel		X	
7	Field Communications Link			
	Lightning and Transient Surge Suppression Devices		X	
9	Temporary Use and Retesting		X	
10	Operation from Central Control	X		
	Telephone Interconnect	X		
	ISDN Interconnect	X		
11	Installation and Training		X	

Other items not specifically listed in this table are required. When shown in the plans, remove and deliver temporary VIVDS equipment to the Department’s Signal Shop, 6810 Old Katy Rd., Houston, Texas, or as directed.

Item 8835: Accessible Pedestrian Signal Units

At intersections where a minimum of 10 ft spacing between adjacent accessible pedestrian signal units is not possible, provide each accessible pedestrian pushbutton with the following features: a pushbutton locator tone, a tactile arrow, a speech walk message for the walking person indication and a speech pushbutton information message.

Provide pedestrian push buttons a minimum of 2 in. diameter in the smallest dimension.

Install a rubber grommet or bushing between the push button assembly and the signal pole to protect the conductors.

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Basis of Estimate

Item	Description	Limit and Rate	Unit
260	Lime Treatment (Road-Mixed) For materials used as subgrade * <ul style="list-style-type: none">• Lime(HYD, COM, or QK)(SLRY) or QK(DRY)	6 % by weight based on 100 Lb. / Cu. Ft. subgrade	SY TON
292	Asphalt Treatment (Plant-Mixed) <ul style="list-style-type: none">• Asphalt• Aggregate	110 Lb. / Sq. Yd.-In. 5 % by weight 95 % by weight	TON
3267	Dense-Graded Hot Mix Asphalt (Small Quantity) <ul style="list-style-type: none">• Asphalt• Aggregate	110 Lb. / Sq. Yd.-In. 6 % by weight 94 % by weight	TON

* If used in existing roadway base, rate will be determined on a case by case basis.

CONTROL : 2105-01-046
PROJECT : C 2105-1-46
HIGHWAY : FM 2234
COUNTY : FORT BEND

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 JUNE 1, 2004.
STANDARD SPECIFICATIONS ARE INCORPORATED
INTO THE CONTRACT BY REFERENCE.

ITEMS 1 TO 9 INCL., GENERAL REQUIREMENTS AND COVENANTS
ITEM 100 PREPARING RIGHT OF WAY (103)
ITEM 104 REMOVING CONCRETE
ITEM 105 REMOVING STABILIZED BASE AND ASPHALT PAVEMENT
ITEM 110 EXCAVATION (132)
ITEM 132 EMBANKMENT (100)(204)(210)(216)(400)
ITEM 162 SODDING FOR EROSION CONTROL (166)(168)
ITEM 164 SEEDING FOR EROSION CONTROL (162)(166)(168)
ITEM 166 FERTILIZER
ITEM 168 VEGETATIVE WATERING
ITEM 260 LIME TREATMENT (ROAD-MIXED) (105)(132)(204)(210)(300)
(310)(520)
ITEM 276 CEMENT TREATMENT (PLANT-MIXED) (204)(210)(216)(247)(300)
(310)(520)
ITEM 292 ASPHALT TREATMENT (PLANT-MIXED) (300)(301)(320)(520)(585)
ITEM 305 SALVAGING, HAULING, AND STOCKPILING RECLAIMABLE ASPHALT
PAVEMENT
ITEM 360 CONCRETE PAVEMENT (300)(420)(421)(438)(440)(529)(585)
ITEM 400 EXCAVATION AND BACKFILL FOR STRUCTURES (132)(401)(420)
(421)
ITEM 402 TRENCH EXCAVATION PROTECTION
ITEM 416 DRILLED SHAFT FOUNDATIONS (420)(421)(440)(448)
ITEM 432 RIPRAP (247)(420)(421)(427)(431)(440)
ITEM 462 CONCRETE BOX CULVERTS AND STORM DRAINS (400)(420)(421)
(424)(440)(464)(476)
ITEM 464 REINFORCED CONCRETE PIPE (400)(476)
ITEM 465 MANHOLES AND INLETS (400)(420)(421)(440)(471)
ITEM 466 HEADWALLS AND WINGWALLS (400)(420)(421)(430)(440)(464)
ITEM 467 SAFETY END TREATMENT (400)(420)(421)(430)(432)(440)(445)
(460)(464)

ITEM 479 ADJUSTING MANHOLES AND INLETS (400)(421)(465)
 ITEM 496 REMOVING STRUCTURES (430)
 ITEM 500 MOBILIZATION
 ITEM 502 BARRICADES, SIGNS, AND TRAFFIC HANDLING
 ITEM 504 FIELD OFFICE AND LABORATORY
 ITEM 508 CONSTRUCTING DETOURS
 ITEM 512 PORTABLE CONCRETE TRAFFIC BARRIER (420)(421)(424)(440)
 (442)
 ITEM 529 CONCRETE CURB, GUTTER, AND COMBINED CURB AND GUTTER (360)
 (420)(421)(440)
 ITEM 530 INTERSECTIONS, DRIVEWAYS, AND TURNOUTS (247)(260)(263)
 (275)(276)(292)(316)(330)(334)(340)(360)(421)(440)
 ITEM 531 SIDEWALKS (104)(360)(420)(421)(440)(530)
 ITEM 542 REMOVING METAL BEAM GUARD FENCE
 ITEM 618 CONDUIT (400)(445)(476)(622)
 ITEM 620 ELECTRICAL CONDUCTORS
 ITEM 624 GROUND BOXES (420)(421)(432)(440)(618)(620)
 ITEM 628 ELECTRICAL SERVICES (441)(445)(449)(618)(620)(627)(656)
 ITEM 644 SMALL ROADSIDE SIGN SUPPORTS AND ASSEMBLIES (421)(440)
 (441)(442)(445)(634)(636)(643)(656)
 ITEM 662 WORK ZONE PAVEMENT MARKINGS (666)(668)(672)(677)
 ITEM 666 REFLECTORIZED PAVEMENT MARKINGS (316)(318)(662)(677)(678)
 ITEM 668 PREFABRICATED PAVEMENT MARKINGS
 ITEM 672 RAISED PAVEMENT MARKERS (677)(678)
 ITEM 677 ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS (300)
 (302)(316)
 ITEM 678 PAVEMENT SURFACE PREPARATION FOR MARKINGS (677)
 ITEM 680 INSTALLATION OF HIGHWAY TRAFFIC SIGNALS (610)(625)(627)
 (634)(636)(656)(6477)(6478)
 ITEM 681 TEMPORARY TRAFFIC SIGNALS (628)(680)
 ITEM 682 VEHICLE AND PEDESTRIAN SIGNAL HEADS
 ITEM 684 TRAFFIC SIGNAL CABLES
 ITEM 686 TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL) (416)(421)(441)
 (442)(445)(449)
 ITEM 687 PEDESTAL POLE ASSEMBLIES (445)(449)(656)(4003)
 ITEM 730 ROADSIDE MOWING
 ITEM 734 LITTER REMOVAL
 ITEM 735 DEBRIS REMOVAL
 ITEM 738 CLEANING AND SWEEPING HIGHWAYS
 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.

SPECIAL LABOR PROVISIONS FOR STATE PROJECTS (000---007)
 WAGE RATES

SPECIAL PROVISION "PARTNERING" (000--2329)

SPECIAL PROVISION "SMALL BUSINESS ENTERPRISE IN STATE FUNDED
 PROJECTS" (000--2301)

SPECIAL PROVISION "IMPORTANT NOTICE TO CONTRACTORS" (000--2695)

SPECIAL PROVISION "SCHEDULE OF LIQUIDATED DAMAGES" (000--2332)

SPECIAL PROVISION "DEPARTMENT DIVISION MAILING AND PHYSICAL ADDRESS"
 (000---011)
 SPECIAL PROVISION "IMPORTANT NOTICE TO CONTRACTORS" (000--2711)
 SPECIAL PROVISION "NONDISCRIMINATION" (000--2607)
 SPECIAL PROVISION TO ITEM 1 (001---015)
 SPECIAL PROVISION TO ITEM 2 (002---017)
 SPECIAL PROVISION TO ITEM 3 (003---033)
 SPECIAL PROVISION TO ITEM 4 (004---017)
 SPECIAL PROVISION TO ITEM 5 (005---004)
 SPECIAL PROVISIONS TO ITEM 6 (006---030)(006---047)
 SPECIAL PROVISION TO ITEM 7 (007---918)
 SPECIAL PROVISIONS TO ITEM 8 (008---006)(008---013)(008---119)
 SPECIAL PROVISIONS TO ITEM 9 (009---009)(009---015)
 SPECIAL PROVISION TO ITEM 100 (100---002)
 SPECIAL PROVISION TO ITEM 161 (161---006)
 SPECIAL PROVISION TO ITEM 164 (164---002)
 SPECIAL PROVISION TO ITEM 166 (166---001)
 SPECIAL PROVISION TO ITEM 247 (247---033)
 SPECIAL PROVISION TO ITEM 260 (260---003)
 SPECIAL PROVISION TO ITEM 275 (275---003)
 SPECIAL PROVISION TO ITEM 300 (300---039)
 SPECIAL PROVISION TO ITEM 302 (302---010)
 SPECIAL PROVISION TO ITEM 316 (316---016)
 SPECIAL PROVISION TO ITEM 318 (318---010)
 SPECIAL PROVISION TO ITEM 330 (330---001)
 SPECIAL PROVISION TO ITEM 340 (340---003)
 SPECIAL PROVISION TO ITEM 360 (360---003)
 SPECIAL PROVISION TO ITEM 400 (400---004)
 SPECIAL PROVISION TO ITEM 416 (416---001)
 SPECIAL PROVISION TO ITEM 420 (420---002)
 SPECIAL PROVISION TO ITEM 421 (421---035)
 SPECIAL PROVISION TO ITEM 424 (424---003)
 SPECIAL PROVISION TO ITEM 425 (425---001)
 SPECIAL PROVISION TO ITEM 429 (429---008)
 SPECIAL PROVISION TO ITEM 431 (431---001)
 SPECIAL PROVISION TO ITEM 440 (440---006)
 SPECIAL PROVISION TO ITEM 441 (441---008)
 SPECIAL PROVISION TO ITEM 442 (442---016)
 SPECIAL PROVISION TO ITEM 447 (447---002)
 SPECIAL PROVISION TO ITEM 448 (448---002)
 SPECIAL PROVISION TO ITEM 462 (462---015)
 SPECIAL PROVISION TO ITEM 464 (464---006)
 SPECIAL PROVISION TO ITEM 465 (465---001)
 SPECIAL PROVISION TO ITEM 476 (476---003)
 SPECIAL PROVISION TO ITEM 500 (500---011)
 SPECIAL PROVISION TO ITEM 502 (502---033)
 SPECIAL PROVISION TO ITEM 512 (512---002)
 SPECIAL PROVISION TO ITEM 530 (530---006)
 SPECIAL PROVISION TO ITEM 610 (610---015)
 SPECIAL PROVISION TO ITEM 620 (620---001)
 SPECIAL PROVISION TO ITEM 624 (624---014)
 SPECIAL PROVISION TO ITEM 628 (628---003)
 SPECIAL PROVISION TO ITEM 636 (636---014)
 SPECIAL PROVISION TO ITEM 643 (643---001)

SPECIAL PROVISION TO ITEM 672 (672---034)
 SPECIAL PROVISION TO ITEM 681 (681---002)
 SPECIAL PROVISION TO ITEM 682 (682---003)
 SPECIAL PROVISION TO ITEM 687 (687---004)
 SPECIAL PROVISION TO ITEM 730 (730---009)
 SPECIAL PROVISION TO ITEM 734 (734---002)
 SPECIAL PROVISION TO ITEM 740 (740---001)
 SPECIAL PROVISION TO SPECIAL SPECIFICATION ITEM 1122 (1122--001)
 SPECIAL PROVISION TO SPECIAL SPECIFICATION ITEM 6266 (6266--017)
 SPECIAL PROVISION TO SPECIAL SPECIFICATION ITEM 6473 (6473--001)
 SPECIAL PROVISION TO SPECIAL SPECIFICATION ITEM 6478 (6478--001)

SPECIAL SPECIFICATIONS:

ITEM 1122 TEMPORARY EROSION, SEDIMENTATION, AND ENVIRONMENTAL
 CONTROLS (161)(432)(556)
 ITEM 2133 TEARDROP LED LUMINAIRE
 ITEM 3061 FAST TRACK CONCRETE PAVEMENT (110)(132)(150)(360)(420)
 (421)
 ITEM 3267 DENSE-GRADED HOT-MIX ASPHALT (SMALL QUANTITY) (300)(301)
 (320)(520)(585)
 ITEM 4003 SCREW-IN TYPE ANCHOR FOUNDATIONS (441)(442)(445)
 ITEM 4036 SOUND WALLS (420)(421)(424)(425)(426)(427)(429)(440)(441)
 (442)(445)(446)(447)(448)(449)
 ITEM 5050 PORTABLE CONCRETE TRAFFIC BARRIER CONNECTION HARDWARE
 (442)
 ITEM 6007 REMOVING TRAFFIC SIGNALS
 ITEM 6266 VIDEO IMAGING VEHICLE DETECTION SYSTEM
 ITEM 6473 MULTIPOLYMER PAVEMENT MARKING S (MPM) (677)(678)(8094)
 ITEM 6477 MODEL 2070 CONTROLLER UNIT
 ITEM 6478 INTELLIGENT TRANSPORTATION SYSTEM (ITS) CONTROLLER
 CABINET ASSEMBLY
 ITEM 8094 MOBILE RETROREFLECTIVITY DATA COLLECTION FOR PAVEMENT
 MARKINGS
 ITEM 8317 BATTERY BACK-UP SYSTEM FOR SIGNAL CABINETS (420)(620)
 ITEM 8490 ETHERNET CABLE AND CONNECTORS
 ITEM 8835 ACCESSIBLE PEDESTRIAN SIGNAL UNITS (618)(624)(682)(684)
 (688)
 ITEM 8861 RELOCATION OF COMPUTERIZED TRANSPORTATION MANAGEMENT
 SYSTEM EQUIPMENT
 ITEM 8934 RELOCATE ETHERNET RADIO
 ITEM 8935 RELOCATE FIELD HARDENED ETHERNET SWITCH

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

SPECIAL SPECIFICATION

2133

Teardrop LED Luminaire

1. **Description.** Furnish, fabricate, and install light-emitting diode (LED) luminaires with teardrop shaped refractors and reflectors.
2. **Materials.** Provide new materials that comply with the details shown on the plans, the requirements of this Item, and the pertinent requirements of the following Items:
 - Item 441, “Steel Structures”
 - Item 442, “Metal for Structures”
 - Item 445, “Galvanizing”
 - Item 446, “Cleaning and Painting Steel”
 - Item 616, “Performance Testing of Lighting Systems”
 - Item 620, “Electrical Conductors”

Provide 6 sets of submittals for the complete luminaires and photometric files in .ies format to the Engineer at the project address. Obtain the Engineer’s approval on the submittals before purchasing materials and beginning work.

Provide LED roadway luminaires with a IES Type III light distribution pattern.

- A. General Requirements.** Provide UL listed LED luminaires conforming to UL1598 and suitable for use in wet locations. Ensure that the optical compartment meets IEC Standard IP66. Place permanent labels inside of luminaires indicating date of manufacture, IP rating, and UL listing.

Provide luminaires rated for a minimum operational life of 80,000 hours, with an operating temperature rated between -40 degrees C and 40 degrees C.

- B. Housing.** Fabricate luminaire housing, lens frame, and door from 96% copper-free, die-cast aluminum. Provide luminaire with a gasketed 1.5 in. NPT hub for pendant mounting. Provide housing style as shown on the plans.

Equip luminaires with a three-prong photocell receptacle with shorting cap installed.

Paint luminaires to match the color of the pole, as directed. Use a thermoset powder-coat paint system. Ensure that paint exceeds 1000-hr. salt-spray test in accordance with ASTM B117. Ensure a nominal paint thickness of 2.5 mil.

Fabricate hardware, brackets, nuts, bolts, washers, ballast tray, and parts from stainless steel or aluminum of adequate thickness, as approved.

Ensure weight of the luminaire is less than 70 lb and the effective projected area is less than 2.4 sq. ft.

- C. Optics.** Provide a thermal resistant borosilicate prismatic glass teardrop shaped refractor along with specular interior reflector to provide an IES asymmetric cutoff distribution.
- D. Mounting Arm.** Provide a cast aluminum mounting arm suitable for mounting the luminaire. Equip the mounting arm with a self-leveling swivel pendant which allows a minimum adjustment of $\pm 5^\circ$ from level. Provide a mounting arm of the style shown on the plans.
- E. Electronic Driver and LED Modules.** Provide luminaires with replaceable LED driver modules that will operate at 120V and 240V line voltages or 240V and 480V line voltages as shown in plans.

Provide luminaires with Surge Protection Devices (SPD), in addition to the driver's internal protection, to withstand repetitive noise transients from utility line switching, nearby lightning strikes, and other interference. Provide SPD that will protect the luminaire from common mode transient peak voltages up to 10 kV (minimum) and transient peak currents up to 5 kA (minimum). Provide SPD that conform to UL 1449 or UL 1283, and have been tested per the latest version of IEEE/ANSI C62.41 for Category C (standard).

Provide a two-position barrier-type terminal block secured to the housing. Provide lugs with captive screws for wire sizes up to 6AWG. Identify each terminal position.

Do not place fuses in pole-mounted luminaires. Provide wall- or underpass-mounted luminaires with internal 10-amp, time-delay fuses and fuse holders.

Provide luminaires with LED modules that can be replaced or repaired without replacing the whole luminaire.

Provide LED modules which will not result in the loss of the entire luminaire due to catastrophic loss or failure of an individual LED.

Provide LED modules with a color temperature between 3500K-5000K.

Provide sufficient thermal management of the heat generated by the luminaires to ensure a minimum operable life of 80,000 hours with an average operating time of 12 hours per night. Provide a passive thermal management system. Fans or other mechanical cooling systems will not be allowed. Luminaires will be considered to be at end of life when the total light output of the luminaire is below 70% of the initial output.

Design luminaires so that the maximum junction temperature of the LEDs at maximum ambient temperature will not be exceeded, and will not exceed 105 degrees C.

Maximum input wattage for each fixture shall not exceed 150W for 250W HPS equivalent applications and 110W for 150W HPS equivalent applications.

- F. Performance Requirements.** For each type of luminaire specified by this specification, submit a photometric file in .ies format of the luminaire generated from tests of actual luminaires in an independent test lab. Document that the luminaire was tested according to IES LM-79. Provide photometric data for luminaires at the specified color temperature and operating at 25 degrees C ambient temperature. The Department will verify the performance of the luminaire in a computer simulation.

1) **150 Watt HPS (High Pressure Sodium) Equivalent.** The simulation will be modeled with a luminaire mounted in a level position 20.0 ft. above the midpoint of either long side of the surface of a rectangular 110.0 ft. by 30.0 ft. grid, with grid points 5 ft. apart. Ensure the following parameters will be met by the photometric file using a light loss factor (LLF) of 1.0:

- IESNA cutoff or better
- Minimum illuminance of 0.20 foot-candle at all points on the grid
- Average illuminance greater than 0.80 foot-candle over the entire grid

2) **250 Watt HPS Equivalent.** The simulation will be modeled with a luminaire mounted in a level position 40.0 ft. above the midpoint of either long side of the surface of a rectangular 190.0 ft. by 45.0 ft. grid, with grid points 5 ft. apart. Ensure the following parameters will be met by the photometric file using a LLF of 1.0:

- IESNA cutoff or better
- Minimum illuminance of 0.20 foot-candle at all points on the grid
- Average illuminance greater than 0.40 foot-candle over the entire grid

G. Warranty. The manufacturer will replace failed luminaires, when non-operable due to defect in material or workmanship, within five years of installation with a luminaire that meets the specifications, delivered to the project location. Photocells are subject to the warranties of their respective manufacturers.

3. **Construction.** Perform work in accordance with the details shown on the plans and the requirements of this Item.

Sample and test luminaires in accordance with Tex-1110-T for compliance with this specification. Provide luminaires early enough in the project to allow luminaires to be shipped to an independent test lab, tested, and returned to verify luminaire performance and compliance with specifications.

Use established industry and utility safety practices when installing luminaires located near overhead or underground utilities. Consult with the appropriate utility company before beginning work.

Prevent scarring or marring of poles, mast arms, and luminaires. Replace damaged components. Repair damaged painted areas of roadway illumination assemblies according to the manufacturer's recommendations.

Install and align each roadway illumination assembly as shown on the plans. The Department may shift a luminaire's location, if necessary, to secure a more desirable location or to avoid conflict with utilities.

Material deemed salvageable will become the property of the Department. Store salvageable material at designated locations, as directed. Accept ownership of unsalvageable materials and dispose of them in accordance with federal, state and local regulations.

A. Installation Teardrop LED Luminaire. Fabricate and install Teardrop LED Luminaire components in accordance with the details, dimensions, and requirements shown on the plans. Test the installed LED luminaires in accordance with Item 616, "Performance Testing of Lighting Systems."

4. Measurement. This Item will be measured as each Teardrop LED Luminaire 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 "Install Teardrop LED Luminaires" of the types specified.

This price is full compensation for furnishing, installing, replacing and testing luminaires; drivers, LED modules, internal transformer, internal conductors, arm brackets and connections; system performance testing; and equipment, labor, tools, and incidentals.

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