

NOTIFICATION OF ADDENDUM

ADDENDUM NO. 2

DATED 4/28/2011

Control	0500-03-462, ETC.
Project	C 500-3-462, ETC.
Highway	IH 45
County	HARRIS

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 500-3-462

CONTROL: 0500-03-462

COUNTY: HARRIS

LETTING: 05/04/2011

REFERENCE NO: 0428

PROPOSAL ADDENDUMS

- _ PROPOSAL COVER
- X BID INSERTS (SH. NO.: 5, 16, 17, AND 18 OF 31)
- X GENERAL NOTES (SH. NO.: EE, FF, AND JJ)

- _ SPEC LIST (SH. NO.:)
- _ SPECIAL PROVISIONS:)
- ADDED:)

DELETED:

- _ SPECIAL SPECIFICATIONS:
- ADDED:

DELETED:

X OTHER: SEE CHANGES BELOW

DESCRIPTION OF ABOVE CHANGES
(INCLUDING PLANS SHEET CHANGES)

PROPOSAL:

BID INSERTS -

REVISED QUANTITIES FOR ITEMS 416-2003, 618-2034, 618-2035, 620-2009, 620-2010, AND 624-2014; ADDED ITEMS 610-2024, 610-2060, 618-2048, 620-2015, 620-2016, AND 628-2022.

PLANS:

PLAN SHEET 55O (GENERAL NOTES) -
ON SPEC DATA SHEETS EE AND FF, REVISED NOTES TO ITEM 585, CLARIFYING THE SURFACE TEST TYPE AND PAY ADJUSTMENT SCHEDULE.

PLAN SHEET 55P (GENERAL NOTES) -
ON SPEC DATA SHEETS GG, AND HH, SHIFTING OF TEXT FROM PAGE TO PAGE DUE TO REVISIONS TO ITEM 585.

PLAN SHEET 55Q (GENERAL NOTES) -
ON SPEC DATA SHEET II, SHIFTING OF TEXT FROM PAGE TO PAGE; ON SPEC DATA DESCRIPTION OF ABOVE CHANGES (CONTINUED)
(INCLUDING PLANS SHEET CHANGES)

SHEET JJ, ADDED NOTE TO ITEM 618; SHIFTING OF TEXT FROM PAGE TO PAGE.

PLAN SHEETS 55R THRU 55X (GENERAL NOTES) -
ON SPEC DATA SHEETS KK THRU WW, SHIFTING OF TEXT FROM PAGE TO PAGE.

PLAN SHEET 56 (ESTIMATE & QUANTITY SHEET) -
REVISED QUANTITY TO ITEM 416-2003.

PLAN SHEET 56C (ESTIMATE & QUANTITY SHEET) -
REVISED QUANTITY TO ITEMS 618-2034, 618-2035, 620-2009, 620-2010, AND
624-2014; ADDED ITEMS 610-2024, 610-2060, 618-2048, 620-2015, 620-2016,
AND 628-2022; SHIFTING OF TEXT FROM PAGE TO PAGE DUE TO ADDITIONAL ITEMS.

PLAN SHEETS 56D THRU 56F (ESTIMATE & QUANTITY SHEET) -
SHIFTING OF TEXT FROM PAGE TO PAGE DUE TO ADDITONAL ITEMS.

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	100	2002	002	PREPARING ROW DOLLARS and CENTS	STA	147.030	1
	104	2001		REMOVING CONC (PAV) DOLLARS and CENTS	SY	264,601.000	2
	104	2009		REMOVING CONC (RIPRAP) DOLLARS and CENTS	SY	17,465.000	3
	104	2021		REMOVING CONC (CURB) DOLLARS and CENTS	LF	15,558.000	4
	104	2023		REMOVING CONC (CTB) DOLLARS and CENTS	LF	19,329.000	5
	104	2036		REMOVING CONC (SIDEWALK OR RAMP) DOLLARS and CENTS	SY	1,024.000	6
	104	2037		REMOVE CONC (RAIL) DOLLARS and CENTS	LF	2,160.000	7
	105	2014		REMOVING STAB BASE & ASPH PAV (7"-12") DOLLARS and CENTS	SY	105,198.000	8
	105	2083		REMOVE STAB BASE & ASPH PAV (0"-11.25") DOLLARS and CENTS	SY	464,773.000	9
	105	2090		RMV STAB BS & ASPH PAV(11.5"-22") DOLLARS and CENTS	SY	28,955.000	10
	110	2001		EXCAVATION (ROADWAY) DOLLARS and CENTS	CY	174,367.000	11

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	ITEM NO	DESC CODE	S.P. NO.				
	110	2002		EXCAVATION (CHANNEL) DOLLARS and CENTS	CY	78,054.000	12
	132	2006	005	EMBANKMENT (FINAL)(DENS CONT)(TY C) DOLLARS and CENTS	CY	387,025.000	13
	132	2036	005	EMBANK(FINAL)(DC)(TY E)(CSBE) DOLLARS and CENTS	CY	53,245.000	14
	132	2038	005	EMB(FINAL)(DC)(TYE)(CSBE)(EMB FND IMPR) DOLLARS and CENTS	CY	14,717.000	15
	150	2002		BLADING DOLLARS and CENTS	HR	50.000	16
	161	2009	006	EROSION CONTROL COMPOST DOLLARS and CENTS	CY	1,339.000	17
	161	2012	006	GENERAL USE COMPOST DOLLARS and CENTS	CY	670.000	18
	161	2017	006	COMPOST MANUF TOPSOIL (BIP) (4") DOLLARS and CENTS	SY	39,510.000	19
	162	2002		BLOCK SODDING DOLLARS and CENTS	SY	130,009.000	20
	162	2003		STRAW OR HAY MULCH DOLLARS and CENTS	SY	125,315.000	21

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	164	2009	002	BROADCAST SEED (TEMP) (WARM) DOLLARS and CENTS	SY	42,904.000	22
	164	2051	002	DRILL SEED (TEMP)(WARM OR COOL) DOLLARS and CENTS	SY	42,904.000	23
	164	2052	002	BROADCAST SEED (PERM)(SPECIAL MIX) DOLLARS and CENTS	SY	39,510.000	24
	166	2001	001	FERTILIZER DOLLARS and CENTS	AC	52.750	25
	168	2001		VEGETATIVE WATERING DOLLARS and CENTS	MG	6,330.400	26
	180	2001		WILDFLOWER SEEDING DOLLARS and CENTS	AC	2.490	27
	192	2064	013	PLANT BED PREP (TYPE II) DOLLARS and CENTS	SY	12,052.000	28
	260	2006	002	LIME TRT (EXST MATL) (6") DOLLARS and CENTS	SY	498,717.000	29
	260	2012	002	LIME(HYD,COM OR QK)(SLRY)OR QK(DRY) DOLLARS and CENTS	TON	6,732.700	30
	276	2224		CEM TRT(PLNT MX) (CL N)(TY E)(GR 4)(6") DOLLARS and CENTS	SY	499,553.000	31
	292	2007		ASPHALT STAB BASE (GR 2)(PG 64) DOLLARS and CENTS	TON	75,404.400	32

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	ITEM NO	DESC CODE	S.P. NO.				
	292	2017		ASPHALT STAB BASE (GR 4)(PG 64) DOLLARS and CENTS	TON	27,890.100	33
	341	2120	024	D-GR HMA(QCQA) TY-D SAC-B PG70-22 DOLLARS and CENTS	TON	16,470.000	34
	341	2122	024	D-GR HMA(QCQA) TY-D PG70-22 DOLLARS and CENTS	TON	2,756.400	35
	360	2002	003	CONC PVMT (CONT REINF-CRCP)(9") DOLLARS and CENTS	SY	140,711.000	36
	360	2004	003	CONC PVMT (CONT REINF-CRCP)(11") DOLLARS and CENTS	SY	7,097.000	37
	360	2007	003	CONC PVMT (CONT REINF-CRCP)(14") DOLLARS and CENTS	SY	340,214.000	38
	368	2001	001	WIDE FLANGE PAVEMENT TERMINALS DOLLARS and CENTS	LF	905.680	39
	400	2001		STRUCT EXCAV DOLLARS and CENTS	CY	18,493.000	40
	400	2005		CEM STABIL BKFL DOLLARS and CENTS	CY	42,453.170	41
	400	2006		CUT & RESTORING PAV DOLLARS and CENTS	SY	322.000	42
	400	2016		CEMENT STAB BACKFILL (INLET OR MH) DOLLARS and CENTS	CY	5,892.320	43

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	ITEM NO	DESC CODE	S.P. NO.				
	402	2001		TRENCH EXCAVATION PROTECTION DOLLARS and CENTS	LF	45,723.000	44
	403	2001		TEMPORARY SPL SHORING DOLLARS and CENTS	SF	26,384.000	45
	409	2002		PRESTR CONC PIL (18 IN SQ) DOLLARS and CENTS	LF	1,146.000	46
	416	2003	001	DRILL SHAFT (30 IN) DOLLARS and CENTS	LF	1,160.000	47
	416	2004	001	DRILL SHAFT (36 IN) DOLLARS and CENTS	LF	6,101.000	48
	416	2005	001	DRILL SHAFT (42 IN) DOLLARS and CENTS	LF	2,590.000	49
	416	2006	001	DRILL SHAFT (48 IN) DOLLARS and CENTS	LF	47.000	50
	416	2007	001	DRILL SHAFT (54 IN) DOLLARS and CENTS	LF	2,074.000	51
	416	2015	001	DRILL SHAFT (NON-REINFORCED)(12 IN) DOLLARS and CENTS	LF	49.000	52
	416	2018	001	DRILL SHAFT (SIGN MTS)(24 IN) DOLLARS and CENTS	LF	14.000	53
	416	2021	001	DRILL SHAFT (SIGN MTS)(42 IN) DOLLARS and CENTS	LF	50.000	54

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	ITEM NO	DESC CODE	S.P. NO.				
	416	2023	001	DRILL SHAFT (SIGN MTS)(54 IN) DOLLARS and CENTS	LF	160.000	55
	416	2032	001	DRILL SHAFT (TRF SIG POLE) (36 IN) DOLLARS and CENTS	LF	120.000	56
	416	2068	001	DRILL SHAFT (SIGN MTS)(60 IN) DOLLARS and CENTS	LF	552.000	57
	420	2003	002	CL C CONC (ABUT) DOLLARS and CENTS	CY	478.600	58
	420	2005	002	CL C CONC (FOOTING) DOLLARS and CENTS	CY	425.200	59
	420	2010	002	CL C CONC (SIGN COLUMN) DOLLARS and CENTS	CY	347.710	60
	420	2019	002	CL C CONC (CAP) DOLLARS and CENTS	CY	121.700	61
	420	2029	002	CL S CONC (SLAB) DOLLARS and CENTS	CY	24.900	62
	420	2031	002	CL S CONC (SHEAR KEY) DOLLARS and CENTS	CY	7.400	63
	420	2050	002	CL F CONC (CAP) DOLLARS and CENTS	CY	1,165.800	64
	420	2051	002	CL C CONC (COLUMN) DOLLARS and CENTS	CY	500.700	65

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	ITEM NO	DESC CODE	S.P. NO.				
	420	2117	002	CL C CONC (SIGN FOOTING) DOLLARS and CENTS	CY	153.600	66
	422	2001		REINF CONC SLAB DOLLARS and CENTS	SF	164,082.000	67
	423	2005		RETAINING WALL (TEMP WALL) DOLLARS and CENTS	SF	47,307.000	68
	423	2018		RETAINING WALL (MSE)(WAVE SCHEME) DOLLARS and CENTS	SF	156,697.000	69
	425	2006	001	PRESTR CONC BOX BEAM (4B20) DOLLARS and CENTS	LF	109.920	70
	425	2007	001	PRESTR CONC BOX BEAM (5B20) DOLLARS and CENTS	LF	164.880	71
	425	2067	001	PRESTR CONC GIRDER (TX46) DOLLARS and CENTS	LF	11,851.740	72
	425	2068	001	PRESTR CONC GIRDER (TX54) DOLLARS and CENTS	LF	9,166.480	73
	428	2001	001	CONC SURF TREAT (CLASS I) DOLLARS and CENTS	SY	17,744.000	74
	432	2001		RIPRAP (CONC)(4 IN) DOLLARS and CENTS	CY	68.700	75
	432	2002		RIPRAP (CONC)(5 IN) DOLLARS and CENTS	CY	1,345.470	76

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	ITEM NO	DESC CODE	S.P. NO.				
	432	2039		RIPRAP (MOW STRIP)(4 IN) and DOLLARS CENTS	CY	469.000	77
	432	2066		RIPRAP (CONC)(CL B) and DOLLARS CENTS	CY	71.130	78
	432	2084		RIPRAP (CONC) (CL B) (4") and DOLLARS CENTS	CY	3,006.000	79
	442	2047	016	STRUCTURAL STEEL(MISCELLANEOUS BRIDGE) and DOLLARS CENTS	LB	1,776.000	80
	450	2007	001	RAIL (TY T501) and DOLLARS CENTS	LF	4,348.000	81
	450	2008	001	RAIL (TY T502) and DOLLARS CENTS	LF	6,341.000	82
	450	2013	001	RAIL (TY SSTR) and DOLLARS CENTS	LF	19,885.000	83
	450	2109	001	RAIL (TY SSTR) W/DRAIN SLOTS and DOLLARS CENTS	LF	11,801.000	84
	454	2001		SEALED EXPANSION JOINT (4 IN)(SEJ-A) and DOLLARS CENTS	LF	44.000	85
	454	2002		SEALED EXPANSION JOINT (4 IN)(SEJ-P) and DOLLARS CENTS	LF	912.000	86

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	ITEM NO	DESC CODE	S.P. NO.				
	460	2004		CMP (GAL STL 24 IN) and DOLLARS CENTS	LF	757.000	87
	462	2002		CONC BOX CULV (3 FT X 3 FT) and DOLLARS CENTS	LF	6,174.000	88
	462	2003		CONC BOX CULV (4 FT X 2 FT) and DOLLARS CENTS	LF	1,499.000	89
	462	2004		CONC BOX CULV (4 FT X 3 FT) and DOLLARS CENTS	LF	9,648.000	90
	462	2007		CONC BOX CULV (5 FT X 3 FT) and DOLLARS CENTS	LF	14,728.000	91
	462	2010		CONC BOX CULV (6 FT X 3 FT) and DOLLARS CENTS	LF	7,281.000	92
	462	2014		CONC BOX CULV (7 FT X 3 FT) and DOLLARS CENTS	LF	40.000	93
	462	2019		CONC BOX CULV (8 FT X 4 FT) and DOLLARS CENTS	LF	3,776.000	94
	462	2029		CONC BOX CULV (10 FT X 5 FT) and DOLLARS CENTS	LF	728.000	95
	464	2005	003	RC PIPE (CL III)(24 IN) and DOLLARS CENTS	LF	16,753.000	96
	464	2009	003	RC PIPE (CL III)(36 IN) and DOLLARS CENTS	LF	390.000	97

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	ITEM NO	DESC CODE	S.P. NO.				
	465	2010	001	INLET (COMPL)(TY AAD) DOLLARS and CENTS	EA	62.000	98
	465	2011	001	INLET (COMPL)(TY AD) DOLLARS and CENTS	EA	63.000	99
	465	2012	001	INLET (COMPL)(TY A) DOLLARS and CENTS	EA	16.000	100
	465	2015	001	INLET (COMPL)(TY AD)(STAGE II) DOLLARS and CENTS	EA	10.000	101
	465	2098	001	INLET (COMPL)(TY C1) DOLLARS and CENTS	EA	79.000	102
	465	2099	001	INLET (COMPL)(TY C1)(STAGE II) DOLLARS and CENTS	EA	62.000	103
	465	2119	001	INLET (COMPL)(TY AZ) DOLLARS and CENTS	EA	49.000	104
	465	2120	001	INLET (COMPL)(TY AZR) DOLLARS and CENTS	EA	45.000	105
	465	2167	001	MANHOLE (STAGE II)(TY A) DOLLARS and CENTS	EA	6.000	106
	465	2180	001	INLET (COMPL)(TY AZR) 2 GRATES DOLLARS and CENTS	EA	24.000	107
	465	2229	001	INLET EXT (TY C1) DOLLARS and CENTS	EA	67.000	108

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	ITEM NO	DESC CODE	S.P. NO.				
	465	2255	001	INLET (COMP)(TY AZ2G) and DOLLARS CENTS	EA	72.000	109
	466	2020		WINGWALL (FW-0)(HW=4 FT) and DOLLARS CENTS	EA	5.000	110
	466	2052		WINGWALL (PW)(HW=8 FT) and DOLLARS CENTS	EA	1.000	111
	466	2053		WINGWALL (PW)(HW=9 FT) and DOLLARS CENTS	EA	2.000	112
	467	2224		SET (TY II)(24 IN)(RCP)(4:1)(C) and DOLLARS CENTS	EA	22.000	113
	496	2002		REMOV STR (INLET) and DOLLARS CENTS	EA	16.000	114
	496	2005		REMOV STR (WINGWALL) and DOLLARS CENTS	EA	4.000	115
	496	2007		REMOV STR (PIPE) and DOLLARS CENTS	LF	27,902.000	116
	496	2008		REMOV STR (BOX CULVERT) and DOLLARS CENTS	LF	3,980.000	117
	496	2010		REMOV STR (BRIDGE 100-499 FT LENGTH) and DOLLARS CENTS	EA	2.000	118
	500	2001	005	MOBILIZATION and DOLLARS CENTS	LS	1.000	119

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	ITEM NO	DESC CODE	S.P. NO.				
	502	2001	033	BARRICADES, SIGNS AND TRAFFIC HAN- DLING DOLLARS CENTS and	MO	48.000	120
	506	2001	010	ROCK FILTER DAMS (INSTALL) (TY 1) DOLLARS CENTS and	LF	60.000	121
	506	2016	010	CONSTRUCTION EXITS (INSTALL) (TY 1) DOLLARS CENTS and	SY	520.000	122
	506	2019	010	CONSTRUCTION EXITS (REMOVE) DOLLARS CENTS and	SY	520.000	123
	512	2008	002	PORT CTB (FUR & INST)(LOW PROF)(TY 1) DOLLARS CENTS and	LF	220.000	124
	512	2009	002	PORT CTB (FUR & INST)(LOW PROF)(TY 2) DOLLARS CENTS and	LF	20.000	125
	512	2017	002	PORT CTB (DES SOURCE)(LOW PROF)(TY 1) DOLLARS CENTS and	LF	36,160.000	126
	512	2018	002	PORT CTB (DES SOURCE)(LOW PROF)(TY 2) DOLLARS CENTS and	LF	500.000	127
	512	2026	002	PORT CTB (MOVE)(LOW PROF)(TY 1) DOLLARS CENTS and	LF	61,371.000	128
	512	2027	002	PORT CTB (MOVE)(LOW PROF)(TY 2) DOLLARS CENTS and	LF	780.000	129

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	ITEM NO	DESC CODE	S.P. NO.				
	512	2035	002	PORT CTB (STKPL)(LOW PROF)(TY 1) DOLLARS and CENTS	LF	29,680.000	130
	512	2036	002	PORT CTB (STKPL)(LOW PROF)(TY 2) DOLLARS and CENTS	LF	320.000	131
	512	2068	002	PORT CTB(DES SOURCE)(SAFETY SH)(TY P&P) DOLLARS and CENTS	LF	68,310.000	132
	512	2090	002	PCTB (MOVE)(SAFETY SH)(TY2 OR P&P) DOLLARS and CENTS	LF	96,500.000	133
	512	2091	002	PCTB (STKPL)(SAFETY SH)(TY2 OR P&P) DOLLARS and CENTS	LF	12,140.000	134
	512	2096	002	PORT CTB (REMOVE)(SAFETY SH)(TY P&P) DOLLARS and CENTS	LF	62,640.000	135
	514	2004	002	PERM CONC TRF BARR (SGL SLP)(TY 1)(42") DOLLARS and CENTS	LF	1,360.000	136
	514	2014	002	PERM CONC TRF BARR(SGL SLP)(TY 2)(36") DOLLARS and CENTS	LF	27,592.000	137
	514	2051	002	PERM CONC TRF BARRIER (SPL) (TY 3) DOLLARS and CENTS	LF	300.000	138
	514	2054	002	PERM CONC TRAF BAR(TYP&P)(ANCHORED) DOLLARS and CENTS	LF	11,479.000	139

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	ITEM NO	DESC CODE	S.P. NO.				
	514	2056	002	PERM TRAF BAR TRANS(SSCB TO PCTB) DOLLARS and CENTS	LF	120.000	140
	528	2004		LANDSCAPE PAVERS DOLLARS and CENTS	SY	11,774.000	141
	529	2006		CONC CURB (MONO) (TY II) DOLLARS and CENTS	LF	53,224.000	142
	529	2007		CONC CURB (DOWEL) DOLLARS and CENTS	LF	14,961.000	143
	529	2070		CONCRETE CURB (TYPE U-TURN)(SPECIAL) DOLLARS and CENTS	LF	1,526.000	144
	529	2071		CONC CURB (SLOTTED) DOLLARS and CENTS	LF	3,079.000	145
	529	2086		CONC CURB(DOWEL)(SLOTTED) DOLLARS and CENTS	LF	539.000	146
	530	2010		DRIVEWAYS (CONC) DOLLARS and CENTS	SY	187.000	147
	531	2005		CURB RAMPS (TY 1) DOLLARS and CENTS	EA	8.000	148
	531	2011		CURB RAMPS (TY 8) DOLLARS and CENTS	EA	8.000	149

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	ITEM NO	DESC CODE	S.P. NO.				
	533	2007	014	SHOULDER TEXTURING (MILLED)(CON- CRETE) DOLLARS CENTS and	LF	5,200.000	150
	540	2005	023	TERMINAL ANCHOR SECTION DOLLARS CENTS and	EA	2.000	151
	540	2017	023	MTL W-BEAM GD FEN (ROUND TIMBER POST) DOLLARS CENTS and	LF	250.000	152
	542	2001		REMOVING METAL BEAM GUARD FENCE DOLLARS CENTS and	LF	9,618.000	153
	544	2006		GDRAIL END TRT(INST)(WOOD POST)(TY III) DOLLARS CENTS and	EA	2.000	154
	545	2001		CRASH CUSH ATTEN (INSTL) DOLLARS CENTS and	EA	15.000	155
	545	2022		CRASH CUSH ATTEN (INSTL)(REACT)(N) DOLLARS CENTS and	EA	2.000	156
	545	2058		CRASH CUSH ATTEN (INSTL) (N) DOLLARS CENTS and	EA	5.000	157
	545	2059		CRASH CUSH ATTEN (MOVE & RESET) (N) DOLLARS CENTS and	EA	19.000	158
	545	2060		CRASH CUSH ATTEN (REMOVE) (N) DOLLARS CENTS and	EA	5.000	159

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	ITEM NO	DESC CODE	S.P. NO.				
	545	2061		CRASH CUSH ATTEN (INSTL) (W) DOLLARS and CENTS	EA	5.000	160
	545	2069		CRASH CUSHION ATTEN (MOVE & RESET)(W) DOLLARS and CENTS	EA	13.000	161
	545	2070		CRASH CUSHION ATTEN (REMOVE)(W) DOLLARS and CENTS	EA	6.000	162
	610	2024	010	INS RD IL AM (TY SA) 40T-10 (.25 KW)S DOLLARS and CENTS	EA	14.000	163
	610	2060	010	INS RD IL AM (U/P) (TY 1) (.15KW)S DOLLARS and CENTS	EA	6.000	164
	618	2022		CONDT (PVC) (SCHD 40) (3") DOLLARS and CENTS	LF	51,400.000	165
	618	2034		CONDT (PVC) (SCHD 80) (2") DOLLARS and CENTS	LF	10,732.000	166
	618	2035		CONDT (PVC) (SCHD 80) (2") (BORE) DOLLARS and CENTS	LF	2,670.000	167
	618	2038		CONDT (PVC) (SCHD 80) (3") DOLLARS and CENTS	LF	2,640.000	168
	618	2039		CONDT (PVC) (SCHD 80) (3") (BORE) DOLLARS and CENTS	LF	9,640.000	169

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	618	2040		CONDT (PVC) (SCHD 80) (4") and DOLLARS CENTS	LF	80.000	170
	618	2048		CONDT (RM) (1 1/4") and DOLLARS CENTS	LF	426.000	171
	618	2052		CONDT (RM) (2") and DOLLARS CENTS	LF	20.000	172
	618	2056		CONDT (RM) (3") and DOLLARS CENTS	LF	440.000	173
	620	2003	001	ELEC CONDR (NO. 2) BARE and DOLLARS CENTS	LF	1,045.000	174
	620	2004	001	ELEC CONDR (NO. 2) INSULATED and DOLLARS CENTS	LF	3,135.000	175
	620	2007	001	ELEC CONDR (NO. 4) BARE and DOLLARS CENTS	LF	530.000	176
	620	2008	001	ELEC CONDR (NO. 4) INSULATED and DOLLARS CENTS	LF	1,250.000	177
	620	2009	001	ELEC CONDR (NO. 6) BARE and DOLLARS CENTS	LF	13,057.000	178
	620	2010	001	ELEC CONDR (NO. 6) INSULATED and DOLLARS CENTS	LF	19,770.000	179
	620	2011	001	ELEC CONDR (NO. 8) BARE and DOLLARS CENTS	LF	420.000	180

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	620	2012	001	ELEC CONDR (NO. 8) INSULATED DOLLARS and CENTS	LF	840.000	181
	620	2013	001	ELEC CONDR (NO.10) BARE DOLLARS and CENTS	LF	520.000	182
	620	2015	001	ELEC CONDR (NO.12) BARE DOLLARS and CENTS	LF	426.000	183
	620	2016	001	ELEC CONDR (NO.12) INSULATED DOLLARS and CENTS	LF	852.000	184
	621	2004		TRAY CABLE (4 CONDR) (12 AWG) DOLLARS and CENTS	LF	3,600.000	185
	621	2006		TRAY CABLE (4 CONDR) (10 AWG) DOLLARS and CENTS	LF	445.000	186
	624	2001	014	GROUND BOX TY 1 (122422) DOLLARS and CENTS	EA	3.000	187
	624	2003	014	GROUND BOX TY 2 (243636) DOLLARS and CENTS	EA	1.000	188
	624	2004	014	GROUND BOX TY 2 (243636) W/APRON DOLLARS and CENTS	EA	84.000	189
	624	2013	014	GROUND BOX TY D (162922) DOLLARS and CENTS	EA	12.000	190
	624	2014	014	GROUND BOX TY D (162922) W/APRON DOLLARS and CENTS	EA	34.000	191

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	628	2022	001	ELC SRV TY A 240/480 060 (SS)SS(E)GC(U) DOLLARS and CENTS	EA	1.000	192
	628	2100	001	ELC SRV TY D 120/240 070 (NS)SS(E)SP(O) DOLLARS and CENTS	EA	2.000	193
	628	2125	001	ELC SRV TY D 120/240 100 (NS)SS(N)SP(O) DOLLARS and CENTS	EA	6.000	194
	636	2001	014	ALUMINUM SIGNS (TY A) DOLLARS and CENTS	SF	56.000	195
	636	2002	014	ALUMINUM SIGNS (TY G) DOLLARS and CENTS	SF	391.000	196
	636	2003	014	ALUMINUM SIGNS (TY O) DOLLARS and CENTS	SF	6,864.000	197
	636	2007	014	REPLACE EXISTING ALUMINUM SIGNS (TY A) DOLLARS and CENTS	SF	35.000	198
	644	2001		INS SM RD SN SUP&AM TY 10BWG(1) SA(P) DOLLARS and CENTS	EA	28.000	199
	644	2004		INS SM RD SN SUP&AM TY 10BWG(1) SA(T) DOLLARS and CENTS	EA	93.000	200
	644	2006		INS SM RD SN SUP&AM TY 10BWG(1) SA(U) DOLLARS and CENTS	EA	12.000	201

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	644	2027		INS SM RD SN SUP&AM TY S80(1) SA(U) DOLLARS and CENTS	EA	2.000	202
	644	2056		RELOCATE SM RD SN SUP & AM TY 10BWG DOLLARS and CENTS	EA	1.000	203
	647	2001		INSTALL LRSS (STRUCT STEEL) DOLLARS and CENTS	LB	4,328.600	204
	647	2002		RELOCATE LRSA DOLLARS and CENTS	EA	3.000	205
	647	2003		REMOVE LRSA DOLLARS and CENTS	EA	2.000	206
	650	2036		INS OH SN SUP(35 FT CANT)(SPAN ONLY) DOLLARS and CENTS	EA	1.000	207
	650	2173		REMOVE OVERHD SIGN SUP DOLLARS and CENTS	EA	8.000	208
	650	2176		INS OH SN SUP (215 FT BRDG) DOLLARS and CENTS	EA	1.000	209
	650	2197		INS OH SN SUP (240 FT BRDG)(SPAN ONLY) DOLLARS and CENTS	EA	3.000	210
	658	2277		INSTL DEL ASSM (D-SY)SZ (TYC)CTB DOLLARS and CENTS	EA	105.000	211
	662	2001		WK ZN PAV MRK NON-REMOV (W) 4" (BRK) DOLLARS and CENTS	LF	5,290.000	212

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	662	2004		WK ZN PAV MRK NON-REMOV (W) 4" (SLD) DOLLARS and CENTS	LF	14,645.000	213
	662	2019		WK ZN PAV MRK NON-REMOV (W) (ENTR GORE) DOLLARS and CENTS	EA	1.000	214
	662	2020		WK ZN PAV MRK NON-REMOV (W) (EXIT GORE) DOLLARS and CENTS	EA	1.000	215
	662	2032		WK ZN PAV MRK NON-REMOV (Y) 4" (SLD) DOLLARS and CENTS	LF	14,319.000	216
	662	2064		WK ZN PAV MRK REMOV (W) 4" (BRK) DOLLARS and CENTS	LF	69,022.000	217
	662	2065		WK ZN PAV MRK REMOV (W) 4" (DOT) DOLLARS and CENTS	LF	1,209.000	218
	662	2066		WK ZN PAV MRK REMOV (W) 4" (LNDP) DOLLARS and CENTS	LF	5,152.000	219
	662	2067		WK ZN PAV MRK REMOV (W) 4" (SLD) DOLLARS and CENTS	LF	216,817.000	220
	662	2079		WK ZN PAV MRK REMOV (W) 24" (SLD) DOLLARS and CENTS	LF	2,448.000	221
	662	2084		WK ZN PAV MRK REMOV (W) (ARROW) DOLLARS and CENTS	EA	35.000	222

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	662	2085		WK ZN PAV MRK REMOV (W) (DBL ARROW) DOLLARS and CENTS	EA	5.000	223
	662	2086		WK ZN PAV MRK REMOV (W) (ENTR GORE) DOLLARS and CENTS	EA	19.000	224
	662	2087		WK ZN PAV MRK REMOV (W) (EXIT GORE) DOLLARS and CENTS	EA	21.000	225
	662	2092		WK ZN PAV MRK REMOV (W) (TPL ARROW) DOLLARS and CENTS	EA	2.000	226
	662	2094		WK ZN PAV MRK REMOV (W) (WORD) DOLLARS and CENTS	EA	35.000	227
	662	2099		WK ZN PAV MRK REMOV (Y) 4" (SLD) DOLLARS and CENTS	LF	209,272.000	228
	666	2183	014	REF PAV MRK TY II (Y) 12" (SLD) DOLLARS and CENTS	LF	5,925.000	229
	668	2106		PREFAB PAV MRK TY C (W) (ARROW) DOLLARS and CENTS	EA	84.000	230
	668	2107		PREFAB PAV MRK TY C (W) (DBL ARROW) DOLLARS and CENTS	EA	20.000	231
	668	2113		PREFAB PAV MRK TY C (W) (SYMBOL) DOLLARS and CENTS	EA	58.000	232
	668	2115		PREFAB PAV MRK TY C (W) (UTURN ARROW) DOLLARS and CENTS	EA	8.000	233

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	668	2116		PREFAB PAV MRK TY C (W) (WORD) DOLLARS and CENTS	EA	102.000	234
	668	2136		PREFAB PAV MRK (TY C)(MULTI)(SHIELD) DOLLARS and CENTS	EA	24.000	235
	672	2012	034	REFL PAV MRKR TY I-C DOLLARS and CENTS	EA	15.000	236
	672	2015	034	REFL PAV MRKR TY II-A-A DOLLARS and CENTS	EA	210.000	237
	672	2017	034	REFL PAV MRKR TY II-C-R DOLLARS and CENTS	EA	6,405.000	238
	677	2001		ELIM EXT PAV MRK & MRKS (4") DOLLARS and CENTS	LF	105,808.000	239
	677	2002		ELIM EXT PAV MRK & MRKS (6") DOLLARS and CENTS	LF	60,130.000	240
	677	2003		ELIM EXT PAV MRK & MRKS (8") DOLLARS and CENTS	LF	6,615.000	241
	677	2005		ELIM EXT PAV MRK & MRKS (12") DOLLARS and CENTS	LF	11,605.000	242
	677	2007		ELIM EXT PAV MRK & MRKS (24") DOLLARS and CENTS	LF	226.000	243
	677	2008		ELIM EXT PAV MRK & MRKS (ARROW) DOLLARS and CENTS	EA	20.000	244

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	677	2010		ELIM EXT PAV MRK & MRKS (ENTR GORE) DOLLARS and CENTS	EA	6.000	245
	677	2011		ELIM EXT PAV MRK & MRKS (EXIT GORE) DOLLARS and CENTS	EA	6.000	246
	677	2015		ELIM EXT PAV MRK & MRKS (SYMBOL) DOLLARS and CENTS	EA	20.000	247
	677	2018		ELIM EXT PAV MRK & MRKS (WORD) DOLLARS and CENTS	EA	18.000	248
	677	2035		ELIM EXT PAV MRK & MRKS (SHEILD) DOLLARS and CENTS	EA	8.000	249
	678	2001		PAV SURF PREP FOR MRK (4") DOLLARS and CENTS	LF	501,650.000	250
	678	2002		PAV SURF PREP FOR MRK (6") DOLLARS and CENTS	LF	265,490.000	251
	678	2003		PAV SURF PREP FOR MRK (8") DOLLARS and CENTS	LF	36,795.000	252
	678	2004		PAV SURF PREP FOR MRK (12") DOLLARS and CENTS	LF	18,880.000	253
	678	2006		PAV SURF PREP FOR MRK (24") DOLLARS and CENTS	LF	3,293.000	254
	678	2007		PAV SURF PREP FOR MRK (ARROW) DOLLARS and CENTS	EA	119.000	255

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	678	2008		PAV SURF PREP FOR MRK (DBL ARROW) DOLLARS and CENTS	EA	25.000	256
	678	2009		PAV SURF PREP FOR MRK (ENTR GORE) DOLLARS and CENTS	EA	19.000	257
	678	2010		PAV SURF PREP FOR MRK (EXIT GORE) DOLLARS and CENTS	EA	23.000	258
	678	2015		PAV SURF PREP FOR MRK (SYMBOL) DOLLARS and CENTS	EA	58.000	259
	678	2016		PAV SURF PREP FOR MRK (UTURN ARR) DOLLARS and CENTS	EA	8.000	260
	678	2017		PAV SURF PREP FOR MRK (TPL ARROW) DOLLARS and CENTS	EA	2.000	261
	678	2018		PAV SURF PREP FOR MRK (WORD) DOLLARS and CENTS	EA	137.000	262
	678	2025		PAV SURF PREP FOR MRKS (SHIELD) DOLLARS and CENTS	EA	24.000	263
	680	2002	001	INSTALL HWY TRF SIG (ISOLATED) DOLLARS and CENTS	EA	1.000	264
	680	2003	001	INSTALL HWY TRF SIG (SYSTEM) DOLLARS and CENTS	EA	1.000	265
	681	2001		TEMP TRAF SIGNALS DOLLARS and CENTS	EA	6.000	266

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	682	2001	001	BACK PLATE (12 IN) (3 SEC) and DOLLARS CENTS	EA	40.000	267
	682	2002	001	BACK PLATE (12 IN) (4 SEC) and DOLLARS CENTS	EA	4.000	268
	682	2021	001	VEH SIG SEC (12 IN) LED (HOUSING ONLY) and DOLLARS CENTS	EA	136.000	269
	682	2022	001	VEH SIG SEC (12 IN) LED (GRN ARW) and DOLLARS CENTS	EA	4.000	270
	682	2023	001	VEH SIG SEC (12 IN) LED (GRN) and DOLLARS CENTS	EA	40.000	271
	682	2024	001	VEH SIG SEC (12 IN) LED (YEL ARW) and DOLLARS CENTS	EA	4.000	272
	682	2025	001	VEH SIG SEC (12 IN) LED (YEL) and DOLLARS CENTS	EA	40.000	273
	682	2026	001	VEH SIG SEC (12 IN) LED (RED ARW) and DOLLARS CENTS	EA	8.000	274
	682	2027	001	VEH SIG SEC (12 IN) LED (RED) and DOLLARS CENTS	EA	40.000	275
	682	2043	001	PED SIG SEC (12")(2 IND)(HOUSING ONLY) and DOLLARS CENTS	EA	32.000	276
	684	2028		TRF SIG CBL (TY A) (14 AWG) (2 CONDR) and DOLLARS CENTS	LF	6,580.000	277

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	684	2030		TRF SIG CBL (TY A) (14 AWG) (4 CONDR) DOLLARS and CENTS	LF	6,740.000	278
	684	2033		TRF SIG CBL (TY A) (14 AWG) (7 CONDR) DOLLARS and CENTS	LF	6,280.000	279
	686	2045		INS TRF SIG PL AM(S) 1 ARM (44') LUM DOLLARS and CENTS	EA	4.000	280
	686	2145		INS TRF SIG PL AM(S) 2 ARM (40-36')LUM DOLLARS and CENTS	EA	4.000	281
	687	2001	004	PED POLE ASSEMBLY DOLLARS and CENTS	EA	20.000	282
	688	2001		PED DETECT (2 INCH PUSH BTN) DOLLARS and CENTS	EA	28.000	283
	730	2113	009	FULL-WIDTH MOWING DOLLARS and CENTS	CYC	11.000	284
	734	2002	002	LITTER REMOVAL DOLLARS and CENTS	CYC	11.000	285
	738	2003		CLEANING/SWEEPING (OUTSIDE MAIN LANE) DOLLARS and CENTS	CYC	42.000	286
	738	2005		CLEANING/SWEEPING (FRONTAGE ROAD) DOLLARS and CENTS	CYC	42.000	287

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	738	2007		CLEANING/SWEEPING (ENTRANCE/EXIT RAMP) DOLLARS and CENTS	CYC	42.000	288
	1009	2002		LANDSCAPE SOIL AMENDMENT (TYPE I) DOLLARS and CENTS	SY	12,052.000	289
	1009	2003		LANDSCAPE SOIL AMENDMENT (TYPE II) DOLLARS and CENTS	SY	12,052.000	290
	3061	2001		FAST TRK CONC (CNT RNF HY STL)(12") DOLLARS and CENTS	SY	40,840.000	291
	3061	2009		FAST TRK CONC (CONC RNF HY STL)(10IN) DOLLARS and CENTS	SY	200.000	292
	4036	2013		SOUND WALL (WAVE SCHEME)(10 FT) DOLLARS and CENTS	LF	665.000	293
	5049	2001		BIODGRD EROSION CONTROL LOGS (8" DIA) DOLLARS and CENTS	LF	4,250.000	294
	5049	2002		BIODGRD EROSION CONTROL LOGS (18" DIA) DOLLARS and CENTS	LF	25,402.000	295
	5050	2001		CONC TRAF BAR CONNECT HDWDR (PORT) DOLLARS and CENTS	EA	2,876.000	296
	6007	2001		REMOVING TRAFFIC SIGNALS DOLLARS and CENTS	EA	3.000	297

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	6010	2029		COMM CABLE (UNDRGRND)(22 AWG)(25 PAIR) DOLLARS and CENTS	LF	3,175.000	298
	6010	2031		COMM CABLE (22 AWG)(6 PAIR) DOLLARS and CENTS	LF	21,715.000	299
	6014	2010		FIBER OPTIC CBL (SNGLE-MODE)(6 FIBER) DOLLARS and CENTS	LF	3,985.000	300
	6014	2013		FIBER OPTIC CBL (SNGLE-MODE)(36 FIBER) DOLLARS and CENTS	LF	30,000.000	301
	6014	2017		FIBER OPTIC CBL (SNGLE-MODE)(144 FIBER) DOLLARS and CENTS	LF	31,370.000	302
	6016	2018		EQUIPMENT CABINET (TY 3) (GROUND) DOLLARS and CENTS	EA	2.000	303
	6016	2020		EQUIPMENT CABINET (TY P) (GROUND) DOLLARS and CENTS	EA	1.000	304
	6266	2001	017	VIVDS PROCESSOR SYSTEM DOLLARS and CENTS	EA	4.000	305
	6266	2002	017	VIVDS CAMERA ASSEMBLY DOLLARS and CENTS	EA	16.000	306
	6266	2003	017	VIVDS SET-UP SYSTEM DOLLARS and CENTS	EA	2.000	307

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	4,740.000	308
	6266	2007	017	VIVDS TEMPORARY DOLLARS and CENTS	EA	4.000	309
	6278	2001		FIBER OPTIC RS-232 DATA MODEM (S/M) DOLLARS and CENTS	EA	8.000	310
	6473	2004	001	MULTIPOLYMER PAV MRK (W)(6")(SLD) DOLLARS and CENTS	LF	124,620.000	311
	6473	2005	001	MULTIPOLYMER PAV MRK (W)(6")(BRK) DOLLARS and CENTS	LF	68,400.000	312
	6473	2006	001	MULTIPOLYMER PAV MRK (W)(6")(DOT) DOLLARS and CENTS	LF	340.000	313
	6473	2007	001	MULTIPOLYMER PAV MRK (W)(8")(SLD) DOLLARS and CENTS	LF	33,715.000	314
	6473	2009	001	MULTIPOLYMER PAV MRK (W)(12")(SLD) DOLLARS and CENTS	LF	14,800.000	315
	6473	2010	001	MULTIPOLYMER PAV MRK (W)(12")(LNDP) DOLLARS and CENTS	LF	3,130.000	316
	6473	2014	001	MULTIPOLYMER PAV MRK (Y)(6")(SLD) DOLLARS and CENTS	LF	72,145.000	317
	6473	2017	001	MULTIPOLYMER PAV MRK (Y)(8")(SLD) DOLLARS and CENTS	LF	3,085.000	318

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	6473	2018	001	MULTIPOLYMER PAV MRK (Y)(12")(SLD) DOLLARS and CENTS	LF	980.000	319
	6473	2020	001	MULTIPOLYMER PAV MRK (BLK)(6")(BRK) DOLLARS and CENTS	LF	68,400.000	320
	6473	2021	001	MULTIPOLYMER PAV MRK (W)(24")(SLD) DOLLARS and CENTS	LF	845.000	321
	6623	2001		MULTI-DUCT CONDUIT (PVC) DOLLARS and CENTS	LF	56,490.000	322
	6623	2002		MULTI-DUCT CONDUIT (PVC)(BORED) DOLLARS and CENTS	LF	5,315.000	323
	6834	2002		PORTABLE CHANGEABLE MESSAGE SIGN DOLLARS and CENTS	EA	4.000	324
	8048	2001		RADAR VEHICLE SENSING DEVISE DOLLARS and CENTS	EA	4.000	325
	8260	2001		LED COUNTDOWN PEDESTRIAN MODULE DOLLARS and CENTS	EA	32.000	326
	8368	2003		CONDUIT (PREPARE) DOLLARS and CENTS	LF	24,670.000	327
	8721	2001		CTMS RELOCATION (DMS) DOLLARS and CENTS	EA	2.000	328
	8721	2002		CTMS RELOCATION (ELEC CONDR) DOLLARS and CENTS	LF	1,920.000	329

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	8721	2003		CTMS RELOCATION (CCTV) DOLLARS and CENTS	EA	3.000	330
	8721	2004		CTMS RELOCATION (HUB BUILDING) DOLLARS and CENTS	EA	2.000	331
	8721	2005		CTMS RELOCATION (COMM CABLE) DOLLARS and CENTS	LF	13,320.000	332
	8721	2006		CTMS RELOCATION (FIBER OPTIC CABLE) DOLLARS and CENTS	LF	2,515.000	333
	8722	2001		DATA FIBER OPTIC TRANSCEIV (SINGLEM- ODE) DOLLARS and CENTS	EA	10.000	334

Project Number:

Sheet

County: HARRIS

Control: 0500-03 -462, ETC.

Highway: IH 45 S

GENERAL NOTES:

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.

The following standard detail sheets are modified:

Modified Standards

Concrete Traffic Barrier Cast-in-place (Type 3) at fixed objects

Reference to manufacturer's trade name or catalog numbers are for the purpose of identification only and the Contractor will be permitted to furnish like materials of other manufacturers provided they are of equal quality and comply with specifications for this project and are approved by the Engineer.

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.

The location of CTMS equipment shown in the plans is approximate and is subject to change at time of installation. Prior to installing drill shafts, building foundations or cabinet foundations, contact the Engineer for field verification and approval of the exact location of each installation.

Project Number:

Sheet

County: HARRIS

Control: 0500-03 -462, ETC.

Highway: IH 45 S

Field verify each location for construction access and utility clearance prior to staking. Stake each foundation prior to the Engineer's field verification. Provide a minimum of 2 weeks notice for Engineer to perform field verification.

Provide each cabinet and building installed or relocated on this project with complete documentation for all conductors contained within the cabinet/building. Completely detail the routing, termination point(s), and color code of each conductor in this documentation. Also identify the origin, destination and function of the signal for each conductor of each cable.

Construct all cabinet foundations in accordance with the details shown in the plans.

Remove and salvage all equipment shown in the plans to a location specified by the Engineer. Replace any material damage at no cost to the Department. Removal of all equipment to be salvaged to the location specified by the Engineer will not be paid for directly but considered incidental to the various bid 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.

Stencil the National Bridge Inventory (NBI) number on each existing bridge shown on these plans. The NBI number is shown above the title block for each bridge layout.

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: HARRIS

Control: 0500-03 -462, ETC.

Highway: IH 45 S

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.

The existing bridges located at (See Table Below) have been tested for Asbestos Containing Materials (ACM) and found to contain 1% or less ACM. No mitigation was required.

Listed are the Polarized Light Microscopy Bulk (PLMB) Asbestos analysis results:

POLARIZED LIGHT MICROSCOPY BULK (PLMB) ASBESTOS ANALYSIS

Structure ID/Location	Sample Description	PLMB Result
CSJ: 0500-03-462 Structure: 102-0500-03-370	Black and Gray Texture-2351-01-TX Black and Gray Texture-2351-02-TX Black and Gray Texture-2351-03-TX	3% Chrysotile 3% Chrysotile 4% Chrysotile
CSJ: 0500-03-565 Structure: 102-0500-03-143	No suspect materials sampled	No ACM was found
CSJ: 0500-03-565 Structure: 102-0500-03-339	No suspect materials sampled	No ACM was found

Initially PLMB tested for asbestos with less than 1 %; no further action will be required. For asbestos between 1 to 5%, a follow up inspection utilizing the Polarized Light Microscopy Point Count (PLMPC) analysis was performed with the following test result:

POLARIZED LIGHT MICROSCOPY POINT COUNT (PLMPC) ASBESTOS ANALYSIS

Structure ID/Location	Sample Description	PLMB Result
CSJ: 0500-03-462 Structure: 102-0500-03-370	Black and Gray Texture	2% Chrysotile

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. Use the following website to view this list:

http://www.dot.state.tx.us/txdot_library/publications/producer_list.htm. The category/item is Roadway Illumination and Electrical Supplies. No substitutions will be allowed for materials found on this list.

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

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The Contractor may make the electrical grounding connections and permissible splices using the thermal fusion process, Cadweld, Thermaweld or approved equal, instead of bolted connections and splices.

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.

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. Use the following websites to view this list: http://www.dot.state.tx.us/txdot_library/publications/producer_list.htm and 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.

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

Truck Type - 4 Wheel
M-B Cruiser II
Wayne Model 945

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Tricycle Type
Elgin Pelican

Truck Type - 4 Wheel
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.

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 notifying Mr. Dan Maupin or Ms. Mona Kozman of the Department's Houston District Traffic Signal Operations Office by telephone at (713) 802-5181 or (713) 802-5895, by fax at (713) 802-5349, or by E-mail at Mona.Kozman@txdot.gov or Dan.Maupin@txdot.gov to schedule marking of underground lines

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on the ground. Use caution if working in these areas to avoid damaging or interfering with existing facilities.

Be aware that an operational Computerized Transportation Management System (CTMS) exists within the limits of this project and that the system must remain operational throughout construction. Repair any damage to this system within 8 hours of occurrence at no cost to the Department. In the event of system damage, notify the TxDOT CTMS Maintenance Office (Mr. Ugonna Ughanze at 713-881-3282) within one hour of occurrence. Failure of the Contractor to repair damage to the main fiber optic cable and CCTV cable trunk lines, which convey all corridor information to TranStar, will result in the Contractor being billed for the full cost of emergency repairs.

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.

Before excavating near existing utilities, contact the utility companies or the utility coordinating committee for exact locations to prevent damage or interference with present facilities.

This action does not relieve the Contractor of the responsibilities under the terms of the contract on the plans and specifications. Repair damage caused by the Contractor's operations at no expense to the Department and restore the facilities to service in a timely manner.

Repair any damage to existing water mains or sanitary sewer lines at no cost to the city. Verify all existing water mains and sanitary sewer lines and contact the City Utilities Operations Department 48 hours prior to excavating near water mains or sanitary sewer lines. Coordinate any adjustments necessary to the water mains or sanitary sewer lines with the city.

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.

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
423	Soil Nailed Walls, (calcs req'd.)				
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

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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 req'd.)	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 req'd.)	Y	Y	Y	B
610	Roadway Illumination Supports (Non-standard)	Y	Y	Y	T
613	High Mast Illumination Poles (Non-standard only, calcs req'd.)	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)	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 (Also SS 6611, 6941, etc)	Y	Y	Y	T
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	T
SS	Spread Spectrum Radios for Signals	Y	Y	N	T
SS	VIVDS System for Signals	Y	Y	N	T

Key to Reviewing Party

A - Area Office	
South / East Area Office	HOU-SEHAShpDrwgs@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	
Computerized Traffic Management Systems (CTMS)	HOU-CTMSShpDrwgs@txdot.gov	

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 209 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.

Place erosion control measures around the perimeter of impacted wetlands as shown in the above mentioned U.S. Army Corps of Engineers Nationwide permits. During staging and construction operations, equipment is not allowed in the Waters of the United States.

Do not place temporary fill in areas determined to be wetlands. This prohibition includes constructing staging areas, temporary fills or other actions that would result in placing fill in wetlands within the right of way, which are not addressed in the plans. The Engineer will coordinate with the Houston District Environmental Section to determine if wetlands are present on this project before placing temporary fill. If wetlands exist, obtain the appropriate permits from the U.S. Army Corps of Engineers.

Do not store any material in Waters of the United States inside the right of way without written approval.

Before construction operations begin, provide a drawing of the location of proposed temporary access roads, haul roads, or temporary fill used during construction operations to ensure that they are not within Jurisdictional Waters of the United States.

If the Contractor elects to use an area not permitted and determined to be within Jurisdictional Waters of the United States during the prosecution of the work, the Contractor will hold the

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Department harmless for delays caused by procuring the necessary permits from the United States Army Corps of Engineers.

This project requires (*formal consultation or permits*) with environmental resource agencies. There is a high probability of encountering environmentally sensitive areas on Contractor designated project specific locations (PSLs) for this project (haul roads, equipment staging areas, borrow pits, disposal sites, field offices, storage areas, parking areas, etc.). This Item provides listings of regulatory agencies the Contractor may need to contact for this project. Maintain the roadway slope stability. Maintaining slope stability is subsidiary to the various bid items.

Item 8: Prosecution and Progress

The Contractor will receive a credit in the amount of \$ 16,000.00 per day for substantially completing Milestone 1 in less than the number of days stipulated on the proposal cover. The maximum number of days for computing the incentive credit is 30 days. The maximum amount of incentive is \$ 480,000.00.

The Contractor will be charged a disincentive/penalty for not completing the work within the allowed number of days. The disincentive/penalty will be \$ 16,000.00 per day until the work for Milestone 1 is completed.

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 Other working day charges in accordance with article 8.3.A.6.

This is a 7-day work week definition. Working days will be charged Monday through Sunday, excluding national holidays and three "floating" non-work days per month, regardless of weather conditions or material availability. Work on national holidays will not be permitted without written permission of the Engineer. If work is performed on any of those holidays or the floating non-working days listed above requiring an Inspector to be present, and weather conditions permit the performance of the work for 7 hr. between 7:00 a.m. and 6:00 p.m., a working day will be charged. The "floating" non-work days will be mutually agreed by the Contractor and the Engineer at the beginning of each calendar month.

The maximum number of days the time charges on this contract may be suspended due to Right of Way and utility adjustment delays is 180 days. The Engineer and the Contractor may mutually agree, in writing, to increase or decrease this maximum number of days.

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The Lane Closure Assessment Fee is \$ 2,000. This fee applies to the Contractor for closures or obstructions that overlap into restricted hour traffic for each hour or portion thereof, per main 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."

Milestone 1

This is for the closure of FM 1959. Time charges for Milestone 1 begin within one working day following the completion and acceptance by the Engineer of roadway construction traffic control plans Phase 1 Step 2.

Milestone 1 ends when, in the opinion of the Engineer, the construction of FM 1959 and north and south bound frontage roads at the intersection of IH 45 and FM 1959 are complete in order to switch traffic as shown in the Traffic Control Plan.

Milestone 1 includes the work necessary to complete the traffic switch as described above and shall be completed within the number of day specified in the milestone table.

The tabulation below specifies the maximum allowable time for the project milestone:

M.S. No.	Milestone	Daily Road User Cost	Type of Milestone	Begins	Ends	No. of Working Days
1	Construction of Phase I (FM1959 road closure)	\$16,000.00	Fixed	Beginning of Phase I Step 2A	Ending of Phase I Step 3A	108

The tabulation below indicates the credit given for completion of work ahead of time:

Milestone Number	Daily Road User Cost	Maximum Number of Days	Maximum Total Amount/Milestone
1	\$16,000.00	30	480,000.00

The incentive credit will be calculated using the original contract days. Additional days added to the contract by time extensions or time suspensions are not used to calculate the incentive credit.

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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.

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.

Item 104: Removing Concrete

Removing concrete curb is paid as a separate bid item if the existing pavement on which it rests is not removed at the same time.

Item 105: Removing Stabilized Base and Asphalt Pavement

Removing curb on cement-stabilized base or on cement treatment being removed at the same time is subsidiary to this bid Item.

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.

Item 104: Removing Concrete

Item 105: Removing Stabilized Base and Asphalt Pavement

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

Case 4 - ACP over concrete pavement over base

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

Removing the concrete pavement material is paid under the Item, "Removing Concrete."

Removing the base material is paid under the Item, "Removing Stabilized Base and Asphalt Pavement."

Remove the ACP separately from the asphalt treatment/asphalt stabilized base. Make the removed depth as uniform as possible during each removal pass if the pavement depth being

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removed is composed of different asphalt layers. Unless otherwise approved, stockpile Reclaimable Asphalt Pavement (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.

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 161: Compost

Item 162: Sodding for Erosion Control

Item 164: Seeding 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.

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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.

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.

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.

Before using the RAP from other sources, use the RAP salvaged from within the project limits to the maximum extent possible to produce cement treatment, lime treatment, asphalt treatment, or asphalt concrete pavement, unless otherwise shown on the plans or otherwise directed.

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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 20 percent maximum RAP limitation may be waived.

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

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)

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).

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

Furnish the mix designs for approval.

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 the asphalt material from 3.5 to 7 percent of the mixture by weight.

For nominal aggregate size less than 0.5 in., design the mix in accordance with test method TEX 204-F. The minimum stability 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 341: Dense-Graded Hot Mix Asphalt (QCQA)

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.

Item 341: Dense-Graded Hot Mix Asphalt (QCQA)

Taper the asphalt concrete pavement at the beginning and ending points.

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Use a maximum 6H:1V slope for the asphalt concrete pavement edge.

Where the 6H:1V ACP edge taper extends over onto the unsurfaced shoulders, blade off the loose existing shoulder material to provide a solid base for the outside taper edge. After placing the ACP overlay, blade this material back against the edge taper. This work is subsidiary to the various bid items.

The stockpile will be the point of sampling of coarse aggregate for test method TEX-217-F (Part II, decantation).

Place the asphalt concrete pavement in courses as shown on the typical sections.

Do not use petroleum-based solvents in the beds of hot mix asphalt delivery vehicles.

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 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.

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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 frontage road and 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.

The pay limits for concrete pavements with traffic rails extends to the outside edge or back of the traffic rail.

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.

The approach pavement is paid for under the Item, "Concrete Pavement."

Item 400: Excavation and Backfill for Structures

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

If Recycled Cement Treatment (Type D) is included in the plans, the following additional requirements apply:

1. Use only approved sand, crushed concrete, or salvaged base free from deleterious matter, as aggregate for cement-stabilized backfill.
2. Provide crushed concrete or salvaged base backfill material in accordance with the Item, "Cement Treatment (Plant-Mixed)(Type D)" (base or crushed concrete), except the recycled Type D material must not contain Reclaimed Asphalt Pavement (RAP).
3. For backfill material below the spring line of pipes, use cement-stabilized sand rather than Recycled Type D backfill material.
4. For the cement-stabilized sand backfill, use a minimum of 7 percent of hydraulic cement based on the dry weight of backfill material. The cement content for the crushed

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concrete and salvaged base is specified in the Item, "Cement Treatment (Plant-Mixed) (Type D)."

5. Place and compact the stabilized backfill material using a gradation that provides a dense mass without segregating and is impervious to passing of water.

For the cement stabilized backfill, use a minimum of 7 percent Portland cement based on the dry weight of the combined aggregate and cement.

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 420: Concrete Structures

Unless otherwise noted, use Class C concrete with an ordinary surface finish for signal, lighting, or sign structure foundations.

Mass concrete is a plans quantity item.

Item 421: Hydraulic Cement Concrete

Entrained air is required in all slip formed concrete (bridge rail, concrete traffic barrier, pavement, etc.), but is not required for other structural concrete. Adjust the dosage of air entraining agent for low air content as directed or allowed by the Engineer. If entrained air is provided where not required, only the upper limits of the Special Provision will be enforced.

Item 423: Retaining Walls

Place concrete riprap mow strips for retaining walls as shown on the plans and in accordance with the Item, "Riprap." Use Class B concrete reinforced with No. 4 bars spaced at 18 in. centers each direction and placed 2 in. below the surface. This work is paid for under the Item, "Riprap."

Provide and maintain positive drainage away from the earth wall system, including the leveling pad, for the contract duration.

The following Mechanically Stabilized Earth (MSE) wall systems are approved:

Reinforced Earth Walls
The Reinforced Earth Company

Retained Earth Walls
Foster Geotechnical

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1331 Airport Freeway, Suite 302
Eules, Texas 76010-4150
(817) 283-5503

Reinforced Soil Embankment Walls
Texas Welded Wire, Inc.
645 West Hurst Boulevard
Hurst, Texas 76053
(817) 282-4560

Strengthened Earth Walls
Hanson Concrete Products
3500 Maple Avenue
Dallas, Texas 75219
(214) 525-5877

VP Wall System
Valley Prestress Products, Inc.
P.O. Box 1367
Mission, Texas 78573
(956) 584-5701

Stabilized Earth Wall
T&B Structural Systems, Inc.
6800 Manhattan Blvd.
Fort Worth, Texas 76120
(888) 280-9858 (Toll Free)

901 North Highway 77
Hillsboro, Texas 76645
(254) 580-9100

Tricon Retained Soil Walls
Tricon Precast, Ltd.
15055 Henry Road
Houston, Texas 77060
(281) 931-9832

Strengthened Soil Walls
Shaw Technologies, Inc.
P.O. Box 271448
Flower Mound, Texas 75027
(817) 490-1924

Tensar Retaining Wall System
Tensar Earth Technologies, Inc.
5883 Glenridge Drive, Suite 200
Atlanta, Georgia 30328
(888) 828-5126

Structural Embankment Systems
Robertson Engineering, Inc.
327 North Denton Street, Suite 100
Weatherford, Texas 76088
(817) 596-7500

Item 427: Surface Finishes for Concrete

Provide a Surface Area I finish for structures. Use concrete paint for the surface finish.

Item 428: Concrete Surface Treatment

Provide a Class I surface treatment to the following elements: The upper surfaces of the bridge slab (including direct traffic culverts), bridge sidewalks and medians, and the inside face of curbs.

Item 432: Riprap

Item 442: Metal for Structures

Use temperature zone 1 for Charpy V-Notch (CVN) testing.

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Prestressed concrete panels will not be allowed on steel structures.

Item 449: Anchor Bolts

Pipe joint compound, as used in this Item, is an electrically conducting protective thread lubricant compound to be used on the foundation anchor bolts for high mast illuminations poles (Crouse-Hinds TL-2, Oz/Gedney Stl, or Thomas & Betts Kopr-Shield).

Item 450: Railing

Add a 3/4-in. longitudinal chamfer to the SSTR railing. Provide a continuous chamfer typically located 6 in. above the final grade. The cost of this is subsidiary to the Item, "Railing."

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 "CI 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.

If performing the work under the Item, "Jacking, Boring, or Tunneling Pipe or Box," use tongue and groove pipe instead of rubber gaskets at these locations.

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.

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

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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 structure removal or 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.

Submit changes 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.

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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."

Erect temporary signs when exit ramps are closed or moved to new locations during construction.

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.

Coordinate and schedule the work with the appropriate Metro representative if requiring access to the High Occupancy Vehicle lanes.

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.

Replace the overhead signs, informational signs, and exit signs to be removed, with temporary signs providing the correct information to the traveling public. Size the replacement signs and include them in the traffic control plan.

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

One Lane Closure (Main lane / Frontage Road)

Day	Daytime Closure Hours	Nighttime Closure Hours	Restricted Hours Subject to Lane Assessment Fee
Monday	N/A	9:00PM-5:00AM	5:00AM-9:00PM
Tuesday	N/A	9:00PM-5:00AM	5:00AM-9:00PM

Day	Daytime Closure Hours	Nighttime Closure Hours	Restricted Hours Subject to Lane Assessment Fee
Wednesday	N/A	9:00PM-5:00AM	5:00AM-9:00PM
Thursday	N/A	9:00PM-5:00AM	5:00AM-9:00PM
Friday	N/A	9:00PM-8:00AM	5:00AM-9:00PM
Saturday	N/A	10:00PM-8:00AM	8:00AM-10:00PM
Sunday	N/A	9:00PM-5:00AM	8:00AM-9:00PM

Ramp Closure

Day	Daytime Closure Hours	Nighttime Closure Hours	Restricted Hours Subject to Lane Assessment Fee
Monday	N/A	9:00PM-5:00AM	5:00AM-9:00PM
Tuesday	N/A	9:00PM-5:00AM	5:00AM-9:00PM
Wednesday	N/A	9:00PM-5:00AM	5:00AM-9:00PM
Thursday	N/A	9:00PM-5:00AM	5:00AM-9:00PM
Friday	N/A	9:00PM-8:00AM	5:00AM-9:00PM
Saturday	N/A	10:00PM-8:00AM	8:00AM-10:00PM
Sunday	N/A	9:00PM-5:00AM	8:00AM-9:00PM

Intersection Closure

Day	Daytime Closure Hours	Nighttime Closure Hours	Restricted Hours Subject to Lane Assessment Fee
Monday	N/A	9:00PM-5:00AM	5:00AM -9:00PM
Tuesday	N/A	9:00PM-5:00AM	5:00AM -9:00PM
Wednesday	N/A	9:00PM-5:00AM	5:00AM-9:00PM
Thursday	N/A	9:00PM-5:00AM	5:00AM-9:00PM
Friday	N/A	9:00PM-8:00AM	5:00AM-9:00PM
Saturday	N/A	10:00PM-8:00AM	8:00AM-10:00PM
Sunday	N/A	9:00PM-5:00AM	8:00AM-9:00PM

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.

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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.

Provide 4 portable changeable message signs as shown on the Traffic Control Plan and the Special Specification Item, "Portable Changeable Message Signs."

Use Uneven Lane Signs (CW 8-11) during resurfacing operations for elevation differences between adjacent lanes of greater than 1 in.

During construction, remove, cover, adjust, or replace overhead sign panels to correspond with each current traffic control phase. The desirable size of letters for freeways is 10 in., the minimum is 8 in. This work is subsidiary to Item 502.

Item 504: Field Office and Laboratory

Furnish one Type A structure for the laboratory. Ensure the windows for the structure have burglar bars.

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 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.

Determine the asphalt content by the ignition method and meet the requirements of Section 504.2.B.4.b, "Asphalt Content by Ignition Method" except provide a NEMA 6-50R (204/240 volt, 50 A) outlet within 2.25 ft. of the ignition oven location.

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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.
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.

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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 506: Temporary Erosion, Sedimentation and Environmental Control

The use of hay bales is not permitted as Storm Water Pollution Prevention Plan (SW3P) measures.

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.

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.

Transport Safety Shape Concrete Traffic Barriers used for traffic handling from the Department stockpile located on the south side of IH 610 at Cedar Crest Blvd. (located across IH 610 from 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.

After completing the project, return Safety Shape Barrier will become the property of the contractor.

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After completing the project, any associated Safety Shape CTB connecting hardware will become the property of the contractor.

Item 514: Permanent Concrete Traffic Barrier

Add a 3/4-in. longitudinal chamfer to the Single Slope Concrete Barrier (SSCB) railing. Provide a continuous chamfer typically located 6 in. above the final grade. The cost of this is subsidiary to the Item, "Permanent Concrete Traffic Barrier."

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.

Item 540: Metal Beam Guard Fence

Painting the timber posts is not required.

Use timber posts for galvanized steel metal beam guard fence, except for anchorage at turned down ends. Turn down free ends of galvanized steel metal beam guard fence unless otherwise shown on the plans.

Furnish and install wood blocks between the rail elements and the timber posts as detailed on the plans. These block-outs are subsidiary to this bid Item.

The quantity of the metal beam guard fence is subject to change.

Provide a mow strip as shown on the plans, at metal beam guard fence locations, including any guardrail end treatments. This work is subsidiary to this bid Item.

Item 542: Removing Metal Beam Guard Fence

Remove and assume ownership of unsalvageable metal beam guard fence rail elements and posts. Transport and store any functional, salvageable rail elements, including steel posts, which are not reused in this project, to the Department stockpile located at 702, FM1959, Houston, TX 77034.

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

Item 545: Crash Cushion Attenuators

After completing the project, return remaining unused crash cushion attenuators units to the Area Office Maintenance yard or as directed, at no cost to the Department.

Item 556: Pipe Underdrains

Do not use crushed blast furnace slag.

Lay the underdrain pipe on a slope to insure proper drainage.

Tie the under drain pipe into the inlets as shown on the plans.

If filter material is processed gravel, use the following material requirements:

Square Sieve	Percent Retained
1/2 in.	0
No. 4	10 - 35
No. 40	55 - 85

If filter material is approved concrete sand, use the following material requirements:

Square Sieve	Percent Retained
5/8 in.	0
No. 4	0 - 40
No. 40	40 - 90
No. 100	90 - 100

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 Continuously Reinforced Concrete Pavement (CRCP) mainlanes and direct connectors, use Surface Test Type B and Pay Adjustment Schedule 2. For ramps use Surface Test Type A.

For temporary asphalt on mainlanes and frontage roads, use Surface Test Type B and Pay Adjustment Schedule 2. For temporary asphalt ramps use Surface Test Type A and Pay Adjustment Schedule 2.

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On asphalt transition on the mainlanes, frontage roads and ramps on the South end of the project to remain, use surface Test Type B and Pay Adjustment Schedule 1.

For concrete or asphalt curb and gutter sections or frontage roads, 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 Jointed Reinforced Concrete Pavement (JRCP), use Surface Test Type A.

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

Item 610: Roadway Illumination Assemblies

The cost of providing the electrical conductor in the pole foundation or in the pole base to make connections is subsidiary to the roadway illumination assembly. The quantity for payment is the surface distance between locations.

Fabricate steel roadway illumination poles in accordance with TxDOT Standard RIP-07 (Roadway Illumination Poles – 2007). Poles manufactured according to RIP-07 require no shop drawings. Alternate designs to RIP-07 or the use of aluminum to fabricate poles will require the submission of shop drawings electronically.

Instructions for submitting shop drawings electronically are available on the internet at the Department's home page (<http://www.txdot.gov>), Business with TxDOT, Bridge Information, Shop Drawings. The file is titled: Guide to Electronic Shop Drawing Submittal. The direct link is: ftp://ftp.dot.state.tx.us/pub/txdot-info/library/pubs/bus/bridge/e_submit_guide.pdf.

Item 610: Roadway Illumination Assemblies

The cost of providing the electrical conductor in the pole foundation or in the pole base to make connections is subsidiary to the roadway illumination assembly. The quantity for payment is the surface distance between locations.

Fabricate steel roadway illumination poles in accordance with TxDOT Standard RIP-07 (Roadway Illumination Poles – 2007). Poles manufactured according to RIP-07 require no shop drawings. Alternate designs to RIP-07 or the use of aluminum to fabricate poles will require the submission of shop drawings electronically.

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Item 613: High Mast Illumination Poles

Place the metal beam guard fence before placing the high mast foundation.

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Before erecting the high mast poles, notify the Engineer a minimum of 3 working days in advance for scheduling the inspection of each assembled high mast pole and high mast assembly.

Place high mast illumination poles in locations so that the light mounting and support assembly can be lowered and maintained from ground level without interfering with bridges or retaining walls. Notify the Engineer of any such conflicts.

Provide anchor bolts for high mast illumination poles in accordance with the Item, "Anchor Bolts."

Item 614: High Mast Illumination Assemblies

Erect and place in operation high mast illumination poles before removing existing illumination facilities.

The high mast power cable must meet the latest edition of TxDOT Standard sheets, "High Mast Illumination Details" (HMID) and Department Material Specification (DMS) 11021, "High Mast Assembly Kits."

Fabricate high mast ring assemblies in accordance with shop drawings approved by the department. Submit shop drawings for each project, or use pre-approved standard shop drawings.

For project specific shop drawings, electronically submit the drawings of the complete assembly in accordance with the Item, "Steel Structures" and in accordance with the shop drawing distribution list shown in the note under Item 5 for review and distribution.

To be eligible to use pre-approved standard shop drawings, the shop drawing must be submitted and approved by the Department before using it on the project. Deviation from the pre-approved standard shop drawing will require resubmission of the shop drawings. The Engineer may approve, in writing, the use of updated standard drawings in cases where the standard drawings have been updated and the updated version has been approved by the Department.

For pre-approval and updates to previously approved standard shop drawings, electronically submit shop drawings of the complete assembly in accordance with the Item, "Steel Structures" as documented in the Department's "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.

Copies of the standard shop drawings are on file with traffic operations division, bridge division, and the materials section of construction division. Additional shop drawings for high mast illumination assemblies built in accordance with these drawings are not required. Pre-approved shop drawing manufacturers and assembly model numbers can be found at the following web site: http://www.dot.state.tx.us/txdot_library/publications/producer_list.htm. The category/item

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is Roadway Illumination and Electrical Supplies. No substitutions will be allowed for materials found on this list.

Provide Cord Connectors for Electrical Power Cable, which are UL-listed, watertight, 480 V, 30 Amp, 2P3W pin, and sleeve devices. Ensure the plug is IEC Type 330P7W and the connector is IEC Type 330C7W.

Provide pre-qualified High-Pressure Sodium (HPS) lamps from the Material Producer List (MPL) of the wattages shown on the plans, shipped and secured within the fixture. No alternatives are allowed. Provide HPS lamps that have an average rated lamp life of 30,000 hours. Ensure that the lamps fully extinguish at the end of the usable lamp life and remain extinguished without cycling. Do not provide lamps that burn at a reduced output at their end of life. Meet the Federal Toxic Characteristic Leachate Procedure (TCLP).

Item 616: Performance Testing of Lighting Systems

The illumination plans provide for a complete illumination system installed, connected, tested, and ready for operation.

After satisfactory completion of tests, place the new lighting fixtures in operation. Final acceptance will be made after the fixtures operate satisfactorily for a minimum period of 14 days. The 14-day test period is included in the allowed working days.

Assume responsibility for the new lighting fixtures during the test period. Make adjustments or repairs as required and repair defects or damage at no expense to the Department.

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 five feet from the edge of the base or pavement. Close the bore pit holes overnight. Consider payment for bored conduit as the width of the roadway plus five (5) feet on each side of roadway.

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

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standard sheets. Place conduit under driveways or roadways a minimum of 24 in. below the pavement surface.

If using casing to place bored conduit, consider the casing incidental to the conduit.

If it is necessary to place conduit under existing pavement in order to reach equipment, bore conduit in place and extend a minimum distance of five feet beyond the edge of shoulder or back of curb.

Pull conductors in the PVC conduit only with a nonmetallic pull rope.

Remove conductor and conduit to be abandoned to 1 ft. below the ground level. This work is subsidiary to the various bid items.

Use materials from the pre-qualified producers list as shown on the Department's Construction Division (CST) material producers list. This list is available online at the following website: http://www.dot.state.tx.us/txdot_library/publications/producer_list.htm. The category is "Roadway Illumination and Electrical Supplies." The polymer concrete barrier box is subsidiary to Item 618, "Conduit."

Make all underground conduit bends of forty-five (45) degrees or greater in PVC conduit systems, including bends into ground boxes, with rigid metal conduit. Where the rigid metal conduit is exposed at any point and where rigid metal conduit extends into ground boxes, bond the metal conduit to the grounding conductor with grounding type bushings or by other UL-listed grounding connectors approved by the Engineer.

Locate all underground utilities within the limits of the project. Provide all equipment necessary for locating the utilities, locate and mark the utilities prior to doing any earthwork in the area. This work is incidental to the various bid items. Repair any damages done to any existing underground utilities at no cost to the Department.

Ensure the interconnection of new equipment to the existing system does not interfere with the operation of the remaining system components. Ensure the system remains completely operational between the hours of 6:00 a.m. Monday and 12:00 a.m. (midnight) Saturday.

The Contractor will not be allowed to interrupt system operation without coordinating with the Department's operations personnel at Houston Transtar (Mr. Carlton Allen) at (713) 881-3285. Notify the Department Operations personnel at Houston TranStar a minimum of two weeks prior to any system downtime.

Houston Transtar personnel will provide and install trailers equipped with dynamic message signs, CCTV cameras and other CTMS equipment within the construction area for use during

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construction. This equipment will be operated by Houston Transtar personnel. Take all necessary precautions to prevent damage to these trailers during construction. The presence of these trailers does not relieve the contractor of the responsibility for dynamic message signs or other signage required elsewhere in the contract documents.

Perform work to be done on cables during weekends only.

Provide Liquid-Tight Flexible Metal (LTFM) conduit if the plans refer to flexible metal conduit. Do not use flexible metal conduit.

Unless otherwise noted on the plans, place conduit runs behind curbs at all locations where curbs exist.

Use schedule 80 PVC conduit to house conductor runs under paved riprap, roadway, or driveways, unless otherwise shown on the plans.

All exposed conduit must be Rigid Metal Conduit (RMC).

Prior to backfilling conduit trenches, place a detectable underground metalized Mylar marking tape above the conduit and concrete encasement. Imprint the marking tape with "TXDOT CONDUIT AND FIBER OPTIC CABLE SYSTEM CALL (713) 802-5909 or (713) 802-5286 BEFORE PROCEEDING" every 18 inches. Ensure the marking tape extends continuously into the ground box at each end of all conduit runs. Consider the supplying and installation of the marking tapes incidental to the various bid items.

All conduit elbows and rigid metal extensions required when installing PVC conduit systems, are subsidiary to the various bid items.

Install a continuous bare or green insulated copper wire No. 8 AWG or larger in every conduit throughout the electrical system in accordance with the Electrical Detail Standard Sheets, and the latest edition of the National Electrical Code.

Where PVC, duct cable, and HDPE conduit 1 and larger is allowed and installed as per TxDOT standards, provide a PVC elbow in place of the galvanized rigid metal elbow required by the Electrical Detail standards. Ensure the PVC elbow is of the same schedule rating as the conduit to which it is connected. Ensure only a flat, high tensile strength polyester fiber pull tape is used for pulling conductors through the PVC conduit system.

Item 620: Electrical Conductors

Test all circuits to ensure they are clear of faults, grounds and open circuits.

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Test each wire of each cable or conductor after installation by the Contractor. Any incomplete circuit or any damage to any wire or any cable will be cause for immediate rejection of the entire cable being tested. Remove and replace the entire cable at no cost to the Department, and 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. This list is available online at the following website:

http://www.dot.state.tx.us/txdot_library/publications/producer_list.htm. 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.

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

For electrical licensing and electrical certification requirements for this project, see Item 7 of the Standard Specifications and any applicable special provisions to Item 7.

Color code all insulated power conductors in accordance with the National Electrical Code. Use white insulated wire for the neutral conductor. Do not use white insulated wire for any other conductor. Use bare or green insulated wire for the grounding conductor. Do not use green insulated wire for any other conductor.

Colored tape marking must not be used on conductors size 6 AWG or smaller.

Bond together all grounding conductors that share the same conduit, junction box, ground box or structure at every accessible point in accordance with the current National Electrical Code.

Item 624: Ground Boxes

The ground box locations are approximate. Alternate ground box locations may be used as directed. 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.

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If within the limits of this project an existing ground box with a metal cover is utilized, ensure metal cover is properly grounded. Perform this work in accordance with the latest standard sheet ED(3), B. Construction Methods - #4 and #6. See ED(3), B. Construction Methods - #5 for possible requirements of grounding existing metal ground box covers not involved in the scope of this project.

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

Furnish a UL-listed meter can for all electrical service poles. Furnish a size and style of meter can in accordance with the requirements of the local electrical service provider. Consider this work incidental to the Item, "Electrical Services."

Provide service enclosures which are lockable and equip each enclosure with a Master # 2195 padlock. Supply each enclosure with two keys.

Equip all CTMS service pole load centers with a 100 amp (minimum) main circuit breaker and equip each service pole with a minimum of twelve single pole circuit breakers.

Provide a concrete drill shaft foundation with a minimum outside diameter of 15 inches for mounting of each service pole. Include the cost of the foundation in the cost for the service pole.

Utilize threaded hubs for all conduit entries into service enclosures.

Ground service poles in accordance with the National Electrical Code. Include the cost of such grounding in the unit price for this item.

Verify and coordinate service pole locations with the Engineering section of the appropriate utility company.

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

Item 636: Aluminum Signs

Include aluminum route markers, exit only panels, routing signs, and other special panels attached to guide signs in the unit bid price for the parent guide sign material.

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The locations of sign panels on overhead structures are approximate. Verify in the field before installing.

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

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.

Provide and install the materials for speed limit signs. For speed limit signs that are indicated with "XX," the Area Engineer will request a speed study through the Director of Transportation Operations to determine the legal speeds to be posted. This request will be made as soon as possible after the roadway opens to traffic. After the speed limit to be posted is determined, this information will be provided to the Contractor by the Area Engineer.

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 647: Large Roadside Sign Supports and Assemblies

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.

Assume ownership of the removed existing signs.

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Item 650: Overhead Sign Supports

Stencil the structure numbers on the new structures for permanent identification.

If sign panels mounted on an overhead sign support face the same direction of traffic, keep the bottoms of the sign panels in the same horizontal plane, unless otherwise shown in the plans.

There is no additional reimbursement for blocking or shims for fits of alignment.

Mill test reports are not required for the walkway, grating, miscellaneous secondary structural items, or hardware.

Use the existing panel supports if removing existing guide signs and if placing new panels of different sizes at the same location. Extend the supports, if needed. If the supports extend over the top of the panel, cut off the supports at the top of the panel or the top of the truss, whichever is higher.

Before fabricating, field check the sign structure elevations, details, and dimensions shown on the plans.

If sign lighting and walkways are not used, trim the sign support brackets flush with the bottoms of the signs.

Assume ownership of removed existing overhead sign supports and other removed materials.

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.

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)

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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.

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.

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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.

Furnish the type of controller cabinet specified on the plans. Refer to the table shown in the Departmental Material Specifications, Section 19 (DMS-11170, Fully Actuated, Solid-State Traffic Signal Controller Assembly), Page 7-142, 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/contractors_consultants/material_specifications/dms.htm or www.txdot.gov/business under Contractors and Consultants, Materials Information, then Department Material Specifications.

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.

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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 Department and the City for compliance with the plans and specifications. 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 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.

Furnish signal heads from the same manufacturer.

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

Furnish and attach compression type connectors. Install the connectors with a compression mechanical release hand-crimping tool to each individual conductor before making connections to the terminal strips.

Furnish solid conductors for traffic signal cable.

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.

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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.

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 all 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. Tack-weld in accordance with Item 441, "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 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 688: Pedestrian Detectors and Vehicle Loop Detectors

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.

Item 730: Roadside Mowing

Item 734: Litter Removal

Item 738: Cleaning and Sweeping Highways

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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	Cleaning and Sweeping Highways
<i>11 cycles</i>	<i>11 cycles</i>	<i>42 cycles</i>

Item 6010: Communication Cable

Do not place gopher-resistant cable in the conduit.

Jelly-fill each end of the communications cable that is exposed to elements during storage or after installing.

Ensure each communication cable run is continuous without splices from controller to controller.

Assume responsibility for the signal carrying capability and performance of the cable. Install each wire with a lightning protection device unless otherwise noted. Ground the cable in accordance with the manufacturer’s recommendation.

Item 6014: Fiber Optic Cable

Fiber optic cables exist between the IH 45 Gulf Satellite Control Center and Houston TranStar for the transmission of data and video to Houston TranStar. Portions of these fiber optic cables are currently in use. Prior to starting any work involving the existing fiber optic cable, completely identify and document the fiber strands currently in use and take all precautions necessary to prevent damage or interruption to these fiber strands. Perform all necessary splices on the existing fiber optic cable and provide all necessary fiber optic jumpers to make the connections required between this project and the IH 45 Gulf Satellite Control Center.

Furnish all equipment, material and labor necessary for identification and protection of the utilized fibers.

Furnish all material and services necessary for connection of new equipment to the existing fiber optic cable.

This project involves the installation of temporary single mode fiber optic cable and the establishment of a communications network via this cable for use during roadway construction. Convert the portions of the existing T-1 communications network and video networks currently operating on both single mode fiber optic cable and multimode fiber optic cable within the limits of the project to operate using the temporary single mode fiber optic cable prior to roadway construction operations.

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After completion of roadway construction operations, install the permanent fiber optic cable as shown on the plans and reestablish the communications network utilizing the permanent fiber optic cable.

Remove and salvage the temporary fiber optic cable after the permanent communications network is fully operational and has been completely tested.

Provide the fiber optic cable system complete with incidental work, material, and services not expressly called for in the specifications, or not shown on the plans, but which may be necessary for a complete and properly functioning system. Consider this as part of this bid item.

Fully test the temporary and permanent fiber optic cable installations in accordance with the testing requirements of the specification.

All fiber optic cable testing done on this project must be done bi-directionally.

Fully splice the temporary fiber optic cable at all locations.

Repair any damage to the existing fiber optic cable or patch panels during the connection of new equipment at no expense to the Department.

Document all changes in the fiber optic cable utilization and provide detailed fiber optic cable utilization diagrams to the Engineer upon completion of all changes.

Utilize fiber optic splice enclosures designed and fully equipped to accommodate 144 strand fiber optic cables, splices and connectors unless shown otherwise in the plans.

Use a fiber optic fan out kit for terminating fiber optic cable in all CCTV, DMS and traffic signal controller cabinets.

Provide each permanent trunkline fiber optic cable installed on this project with an additional 50 linear feet of cable in each communications hub building. Install this cable in a manner such that it is protected from damage and is accessible for maintenance use. Cable lengths in excess of 50 linear feet installed in communication hub buildings will not be paid for.

Item 6016: ITS Field Equipment Cabinet

Furnish and install cabinets for temporary installation of equipment as shown on the plans and for splicing of the temporary fiber optic cable.

Power distribution panels, radio interference suppression and other electrical appurtenances are not required in the Type 3 cabinets temporarily installed at FM 1959 and at FM 2351 strictly for splicing of cables.

Remove and salvage the temporary cabinets and completely remove the associated cabinet foundations after the removal of the temporary fiber optic cable.

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 laptop computer and a video monitor as described in this Special Specification Item.

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

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

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	

All other items not specifically listed in this table are required. When shown in the plans, remove and deliver all temporary VIVDS equipment to the Department’s Signal Shop at 6810 Katy Road, Houston, Texas, or as directed by the Departments’ Engineer.

Item XXXX: Relocation of CTMS Equipment

This project involves the removal and relocation of several items of CTMS equipment, some of which must be removed and stored by the Contractor at a location off of the project area until such time as the construction has progressed to allow the equipment to be reinstalled along the roadway without damage. The storage includes, but is not limited to, items such as: dynamic message signs, support structures and controller cabinets, CCTV cameras, cabinets and support poles, communications hub buildings and associated hub electronic equipment. Assume responsibility for this equipment after removal from the existing locations and until installed, made fully operational and tested at the proposed locations shown in the plans. Replace any equipment damaged or lost during the relocation and storage at no cost to the State. Storage of this equipment shall be considered as part of this bid item.

Upon completion of the CCTV relocation, test the communications link installed between the communications hub building and the CCTV field equipment locations. Perform the test at all CCTV locations on the project.

Use a test signal generator and video monitor to demonstrate a NTSC compliant video signal from the ability of the video signal link to transmit CCTV cabinet to the communications hub building. After completion of testing with the signal generator, connect the CCTV camera to the link and use a video monitor at the communications hub building to verify the presence of an NTSC compliant video signal. No degradation of the video signal must be discernible using the video monitor.

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For the data communications link, perform a bit error rate test (BERT). Perform the test using a protocol analyzer which will qualify the link with a minimum bit error rate of 10e-9. After successful completion of the BERT, connect a laptop computer containing TxDOT-supplied CCTV control software on the link and used to control the CCTV movement and control functions from the communications hub building utilizing the data link. Demonstrate the ability to control all CCTV functions outlined in the specifications.

Supply all test equipment, cabling and connectors necessary for performing the tests by the Contractor.

Item XXXX: Radar Vehicle Sensing Device

Provide all necessary terminals and make all necessary connections to ensure a completely operational communications circuit between the Radar Vehicle Sensing Device and the cabinet/hub building to which it is being connected.

Provide all necessary cards and other ancillary items associated with the T-1 communication equipment to ensure a completely operational serial data connection from the Radar Vehicle Sensing Device to Houston TranStar. Consider this work incidental to the various bid items.

Ensure the Radar Vehicle Sensing Device is mounted and installed according to manufacturer’s recommendation to achieve the specified accuracy and reliability.

Basis of Estimate

Item	Description	Limit and Rate	Unit
260	Lime Treatment (Road-Mixed) For materials used as subgrade ** • Lime(HYD, COM, or QK)(SLRY) or QK(DRY)	6 % by weight based on 100 Lb. / Cu. Ft. subgrade	TON
292	Asphalt Treatment (Plant-Mixed) • Asphalt • Aggregate	110 Lb. / Sq. Yd.-In. 5 % by weight 95 % by weight	TON
340	Dense-Graded Hot Mix Asphalt (Method) • Asphalt • Aggregate	110 Lb. / Sq. Yd.-In. 6 % by weight 94 % by weight	TON
341	Dense-Graded Hot Mix Asphalt (QC/QA) • Asphalt • Aggregate	110 Lb. / Sq. Yd.-In. 6 % by weight 94 % by weight	TON

* For Contractor’s information only (non-pay item).