NOTIFICATION OF ADDENDUM

ADDENDUM NO. 1

DATED 9/03/2009

Control	**0135-04-028**
Project	**C 135-4-28**
Highway	**US 380**
County	**COLLIN**

Ladies/Gentlemen:

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

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

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

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

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

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

04/99

SUBJECT: PLANS AND PROPOSAL ADDENDUMS

PROJECT: C 135-4-28 CONTROL: 0135-04-028

COUNTY: COLLIN

LETTING: 09/10/2009

REFERENCE NO: 0902

PROPOSAL ADDENDUMS

_ PROPOSAL COVER

X BID INSERTS (SH. NO.: SHEETS 1-21 THRU 21-21)

X GENERAL NOTES (SH. NO.: SHEETS F THRU J)

X SPEC LIST (SH. NO.: SHEETS 1-4 THRU 4-4)

_ SPECIAL PROVISIONS:

ADDED:

DELETED:

X SPECIAL SPECIFICATIONS:

ADDED: 3178

DELETED:

X OTHER: PLAN SHEETS

DESCRIPTION OF ABOVE CHANGES
(INCLUDING PLANS SHEET CHANGES)

BID INSERTS: SHEET 1-21: ADDED ITEM 105-2019 WITH A QUANTITY OF 110,844 SY.
REVISED ITEM 110-2001 QUANTITY TO 279,788 CY.
REVISED ITEM 132-2025 QUANTITY TO 79,246 CY

SHEET 2-21: REVISED ITEM 260-2003 QUANTITY TO 16,342 TON
REVISED ITEM 260-2006 QUANTITY TO 5380 SY
REVISED ITEM 260-2065 QUANTITY TO 170,590 SY
ADDED ITEM 305-2009 WITH A QUANTITY OF 110,844 SY.
ADDED ITEM 305-2018 AS BASE BID ALTERNATE 1 WITH A QUANTITY OF 40,649 SY
DELETED ITEM 305-2026.

SHEET 3-21: ADDED ITEM 340-2034 AS BASE BID ALTERNATE 1 WITH A QUANTITY OF 4471 TON.
REVISED ITEM 360-2004 QUANTITY TO 159,976 SY.

SHEET 13-21: REVISED ITEM 618-2035 QUANTITY TO 284 LF.
REVISED ITEM 618-2041 QUANTITY TO 79 LF.

SHEET 21-21: ADDED ITEM 3178-2001 AS ALTERNATE 1A WITH A QUANTITY OF 40,649 SY.
ADDED ITEM 3178-2002 AS ALTERNATE 1A WITH A

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

QUANTITY OF 14,227 GAL.
SHEET 1-21 THRU 21-21: INFORMATION SHIFTED DUE TO ABOVE CHANGES.

GENERAL NOTES: SHEET F: ADDED NOTES FOR ITEMS 105 AND 305, AND ITEM 105.
SHEETS F THRU J: INFORMATION SHIFTED DUE TO ABOVE CHANGES

SPECIFICATIONS LIST: SHEET 1-4: ADDED STANDARD SPECIFICATION ITEM 105
SHEET 4-4: ADDED SPECIAL SPECIFICATION ITEM 3178.
SHEETS 1-4 THRU 4-4: INFORMATION SHIFTED DUE TO ABOVE CHANGES.

PLAN SHEETS: REPLACED SHEETS 2,27B-27D,28,28A-28D,29,31,33,38,39,41,65, 67-76,80,83,84,88,91,94-100,251.
ADDED SHEETS 66A AND 193A.

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	199.870	1
	104	2009		REMOVING CONC (RIPRAP) DOLLARS and CENTS	SY	110.000	2
	104	2011		REMOVING CONC (MEDIANS) DOLLARS and CENTS	SY	197.000	3
	104	2017		REMOVING CONC (DRIVEWAYS) DOLLARS and CENTS	SY	1,237.000	4
	105	2019		REMOVING STAB BASE & ASPH PAV(14") DOLLARS and CENTS	SY	110,844.000	5
	110	2001		EXCAVATION (ROADWAY) DOLLARS and CENTS	CY	279,788.000	6
	110	2002		EXCAVATION (CHANNEL) DOLLARS and CENTS	CY	20.000	7
	132	2025	001	EMBANKMENT (FINAL) (DENS CONT) (TY C1) DOLLARS and CENTS	CY	79,246.000	8
	132	2026	001	EMBANKMENT (FINAL) (DENS CONT) (TY C2) DOLLARS and CENTS	CY	4,012.000	9
	162	2002		BLOCK SODDING DOLLARS and CENTS	SY	2,009.000	10

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	164	2035	002	DRILL SEEDING (PERM) (RURAL) (CLAY) DOLLARS and CENTS	SY	313,300.000	11
	164	2041	002	DRILL SEEDING (TEMP) (WARM) DOLLARS and CENTS	SY	95,869.000	12
	164	2043	002	DRILL SEEDING (TEMP) (COOL) DOLLARS and CENTS	SY	60,781.000	13
	168	2001		VEGETATIVE WATERING DOLLARS and CENTS	MG	15,038.400	14
	169	2001	002	SOIL RETENTION BLANKETS (CL 1) (TY A) DOLLARS and CENTS	SY	156,650.000	15
	260	2003	001	LIME (COMMERCIAL LIME SLURRY) DOLLARS and CENTS	TON	16,342.000	16
	260	2006	001	LIME TRT (EXST MATL) (6") DOLLARS and CENTS	SY	5,380.000	17
	260	2009	001	LIME TRT (EXST MATL)(10") DOLLARS and CENTS	SY	337.000	18
	260	2065	001	LIME TRT (EXST MATL) (33") DOLLARS and CENTS	SY	170,590.000	19
	305	2003		SALV, HAUL & STKPL RCL APH PV (2 TO 4") DOLLARS and CENTS	SY	9,689.000	20
	305	2009		SALV, HAUL & STKPL RCL APH PV (4 TO 8") DOLLARS and CENTS	SY	110,844.000	21

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	ITEM NO	DESC CODE	S.P. NO.				
1	305	2018		SALV,HAUL & STKPL RCL APH PV (2") DOLLARS and CENTS	SY	40,649.000	22
	340	2011	003	D-GR HMA(METH) TY-B PG64-22 DOLLARS and CENTS	TON	39,142.000	23
1	340	2034	003	D-GR HMA(METH) TY-C PG64-22 DOLLARS and CENTS	TON	4,471.000	24
	340	2048	003	D-GR HMA(METH) TY-C SAC-B PG70-22 DOLLARS and CENTS	TON	1,420.000	25
	360	2004	003	CONC PVMT (CONT REINF-CRCP)(11") DOLLARS and CENTS	SY	159,976.000	26
	360	2048	003	CONC PVMT (CONT REINF-CRCP)(HES)(10") DOLLARS and CENTS	SY	5,336.000	27
	400	2005	004	CEM STABIL BKFL DOLLARS and CENTS	CY	770.200	28
	400	2006	004	CUT & RESTORING PAV DOLLARS and CENTS	SY	16.000	29
	402	2001		TRENCH EXCAVATION PROTECTION DOLLARS and CENTS	LF	8,695.000	30
	403	2001		TEMPORARY SPL SHORING DOLLARS and CENTS	SF	9,484.000	31
	416	2001	001	DRILL SHAFT (18 IN) DOLLARS and CENTS	LF	180.000	32

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	ITEM NO	DESC CODE	S.P. NO.				
	416	2004	001	DRILL SHAFT (36 IN) DOLLARS and CENTS	LF	855.000	33
	416	2029	001	DRILL SHAFT (RDWY ILL POLE) (30 IN) DOLLARS and CENTS	LF	208.000	34
	416	2032	001	DRILL SHAFT (TRF SIG POLE) (36 IN) DOLLARS and CENTS	LF	52.000	35
	420	2003	002	CL C CONC (ABUT) DOLLARS and CENTS	CY	163.000	36
	420	2004	002	CL C CONC (BENT) DOLLARS and CENTS	CY	176.300	37
	420	2033	002	CL S CONC (APPR SLAB) DOLLARS and CENTS	CY	306.400	38
	420	2049	002	CL S CONC (BRIDGE MEDIAN) DOLLARS and CENTS	CY	20.400	39
	422	2001		REINF CONC SLAB DOLLARS and CENTS	SF	25,745.000	40
	425	2004	001	PRESTR CONC BEAM (TY IV) DOLLARS and CENTS	LF	3,311.710	41
	428	2001	001	CONC SURF TREAT (CLASS I) DOLLARS and CENTS	SY	2,842.000	42
	430	2030		CL C CONC FOR EXT STR (CULV)(10’X 9’) DOLLARS and CENTS	LF	15.000	43

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	ITEM NO	DESC CODE	S.P. NO.				
	432	2001		RIPRAP (CONC)(4 IN) DOLLARS and CENTS	CY	305.000	44
	432	2002		RIPRAP (CONC)(5 IN) DOLLARS and CENTS	CY	165.000	45
	432	2019		RIPRAP (STONE PROTECTION)(12 IN) DOLLARS and CENTS	CY	2,045.000	46
	432	2066		RIPRAP (CONC)(CL B) DOLLARS and CENTS	CY	9.100	47
	442	2005	005	STR STL (MISCELLANEOUS) DOLLARS and CENTS	LB	444.000	48
	450	2006		RAIL (TY T411) DOLLARS and CENTS	LF	650.000	49
	454	2001		SEALED EXPANSION JOINT (4 IN)(SEJ-A) DOLLARS and CENTS	LF	264.000	50
	462	2003		CONC BOX CULV (4 FT X 2 FT) DOLLARS and CENTS	LF	630.000	51
	462	2005		CONC BOX CULV (4 FT X 4 FT) DOLLARS and CENTS	LF	145.000	52
	462	2015		CONC BOX CULV (7 FT X 4 FT) DOLLARS and CENTS	LF	100.000	53
	462	2017		CONC BOX CULV (7 FT X 6 FT) DOLLARS and CENTS	LF	330.000	54

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	ITEM NO	DESC CODE	S.P. NO.				
	462	2019		CONC BOX CULV (8 FT X 4 FT) DOLLARS and CENTS	LF	182.000	55
	462	2020		CONC BOX CULV (8 FT X 5 FT) DOLLARS and CENTS	LF	783.000	56
	462	2034		CONC BOX CULV (10 FT X 10 FT) DOLLARS and CENTS	LF	221.000	57
	464	2003		RC PIPE (CL III)(18 IN) DOLLARS and CENTS	LF	7,860.000	58
	464	2005		RC PIPE (CL III)(24 IN) DOLLARS and CENTS	LF	385.000	59
	464	2007		RC PIPE (CL III)(30 IN) DOLLARS and CENTS	LF	922.000	60
	464	2009		RC PIPE (CL III)(36 IN) DOLLARS and CENTS	LF	684.000	61
	465	2106	001	INLET EXT (TYII) DOLLARS and CENTS	EA	4.000	62
	465	2107	001	INLET (COMP)(CURB&GRATE)(TYII) DOLLARS and CENTS	EA	2.000	63
	465	2193	001	MANH (COMPL)(TY 2) DOLLARS and CENTS	EA	5.000	64
	465	2195	001	INLET (COMPL)(CURB)(TY 1) DOLLARS and CENTS	EA	63.000	65

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	ITEM NO	DESC CODE	S.P. NO.				
	465	2221	001	INLET EXT (TY I) DOLLARS and CENTS	EA	99.000	66
	465	2507	001	INLET (COMPL)(DROP)(TY C)(1-GRATE) DOLLARS and CENTS	EA	5.000	67
	465	2508	001	INLET (COMPL)(DROP)(TY C)(2-GRATE) DOLLARS and CENTS	EA	1.000	68
	466	2011		WINGWALL (SW-0)(HW=9 FT) DOLLARS and CENTS	EA	1.000	69
	466	2048		WINGWALL (PW)(HW=4 FT) DOLLARS and CENTS	EA	2.000	70
	466	2049		WINGWALL (PW)(HW=5 FT) DOLLARS and CENTS	EA	1.000	71
	466	2050		WINGWALL (PW)(HW=6 FT) DOLLARS and CENTS	EA	4.000	72
	466	2051		WINGWALL (PW)(HW=7 FT) DOLLARS and CENTS	EA	1.000	73
	466	2054		WINGWALL (PW)(HW=10 FT) DOLLARS and CENTS	EA	2.000	74
	466	2055		WINGWALL (PW)(HW=11 FT) DOLLARS and CENTS	EA	1.000	75
	466	2056		WINGWALL (PW)(HW=12 FT) DOLLARS and CENTS	EA	2.000	76

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	467	2030		SET (TY I)(S= 4 FT)(HW= 3 FT)(3:1)(C) DOLLARS and CENTS	EA	1.000	77
	467	2031		SET (TY I)(S= 4 FT)(HW= 4 FT)(3:1)(C) DOLLARS and CENTS	EA	8.000	78
	467	2067		SET (TY I)(S= 8 FT)(HW= 6 FT)(3:1)(C) DOLLARS and CENTS	EA	3.000	79
	467	2209		SET (TY II)(18 IN)(RCP)(3:1)(C) DOLLARS and CENTS	EA	1.000	80
	467	2222		SET (TY II)(18 IN)(RCP)(4:1)(C) DOLLARS and CENTS	EA	1.000	81
	467	2224		SET (TY II)(24 IN)(RCP)(4:1)(C) DOLLARS and CENTS	EA	1.000	82
	467	2227		SET (TY II)(36 IN)(RCP)(4:1)(C) DOLLARS and CENTS	EA	1.000	83
	467	2286		SET (TY II)(18 IN)(RCP)(6:1)(P) DOLLARS and CENTS	EA	38.000	84
	467	2288		SET (TY II)(24 IN)(RCP)(6:1)(P) DOLLARS and CENTS	EA	2.000	85
	467	2290		SET (TY II)(30 IN)(RCP)(6:1)(P) DOLLARS and CENTS	EA	4.000	86
	496	2002		REMOV STR (INLET) DOLLARS and CENTS	EA	2.000	87

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	ITEM NO	DESC CODE	S.P. NO.				
	496	2005		REMOV STR (WINGWALL) DOLLARS and CENTS	EA	1.000	88
	496	2008		REMOV STR (BOX CULVERT) DOLLARS and CENTS	LF	592.000	89
	496	2010		REMOV STR (BRIDGE 100-499 FT LENGTH) DOLLARS and CENTS	EA	1.000	90
	496	2016		REMOV STR (PIPE) DOLLARS and CENTS	EA	55.000	91
	500	2001	005	MOBILIZATION DOLLARS and CENTS	LS	1.000	92
	502	2001	033	BARRICADES, SIGNS AND TRAFFIC HAN-DLING DOLLARS and CENTS	MO	18.000	93
	506	2001	011	ROCK FILTER DAMS (INSTALL) (TY 1) DOLLARS and CENTS	LF	240.000	94
	506	2002	011	ROCK FILTER DAMS (INSTALL) (TY 2) DOLLARS and CENTS	LF	1,275.000	95
	506	2003	011	ROCK FILTER DAMS (INSTALL) (TY 3) DOLLARS and CENTS	LF	140.000	96
	506	2009	011	ROCK FILTER DAMS (REMOVE) DOLLARS and CENTS	LF	1,655.000	97

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	506	2016	011	CONSTRUCTION EXITS (INSTALL) (TY 1) DOLLARS and CENTS	SY	1,092.000	98
	506	2019	011	CONSTRUCTION EXITS (REMOVE) DOLLARS and CENTS	SY	1,092.000	99
	506	2024	011	BACKHOE WORK (EROSION & SEDM CONT) DOLLARS and CENTS	HR	40.000	100
	506	2034	011	TEMPORARY SEDIMENT CONTROL FENCE DOLLARS and CENTS	LF	46,868.000	101
	508	2002		CONSTRUCTING DETOURS DOLLARS and CENTS	SY	12,855.000	102
	512	2008	002	PORT CTB (FUR & INST)(LOW PROF)(TY 1) DOLLARS and CENTS	LF	60.000	103
	512	2026	002	PORT CTB (MOVE)(LOW PROF)(TY 1) DOLLARS and CENTS	LF	40.000	104
	512	2044	002	PORT CTB (REMOVE)(LOW PROF)(TY 1) DOLLARS and CENTS	LF	60.000	105
	512	2048	002	PORT CTB (FUR & INST)(F-SHAPE)(TY 1) DOLLARS and CENTS	LF	4,980.000	106
	512	2050	002	PORT CTB (MOVE)(F-SHAPE)(TY 1) DOLLARS and CENTS	LF	4,620.000	107
	512	2052	002	PORT CTB (REMOVE)(F-SHAPE)(TY 1) DOLLARS and CENTS	LF	4,980.000	108

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	ITEM NO	DESC CODE	S.P. NO.				
	529	2005		CONC CURB (MONO) (TY I) DOLLARS and CENTS	LF	24,348.000	109
	529	2006		CONC CURB (MONO) (TY II) DOLLARS and CENTS	LF	168.000	110
	530	2010		DRIVEWAYS (CONC) DOLLARS and CENTS	SY	7,812.000	111
	536	2002		CONC MEDIAN DOLLARS and CENTS	SY	2,016.000	112
	540	2001		MTL W-BEAM GD FEN (TIM POST) DOLLARS and CENTS	LF	4,391.000	113
	540	2005		TERMINAL ANCHOR SECTION DOLLARS and CENTS	EA	7.000	114
	540	2011		MTL BEAM GD FEN TRANS (THRIE-BEAM) DOLLARS and CENTS	EA	4.000	115
	540	2012		MTL BEAM GD FEN TRANS (TL2) DOLLARS and CENTS	EA	2.000	116
	540	2014		MTL W-BEAM GD FEN (LOW FILL CULVERT) DOLLARS and CENTS	LF	35.000	117
	542	2001		REMOVING METAL BEAM GUARD FENCE DOLLARS and CENTS	LF	5,619.000	118
	542	2002		REMOVING TERMINAL ANCHOR SECTION DOLLARS and CENTS	EA	2.000	119

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	ITEM NO	DESC CODE	S.P. NO.				
	544	2001		GUARDRAIL END TREATMENT (INSTALL) DOLLARS and CENTS	EA	17.000	120
	544	2003		GUARDRAIL END TREATMENT (REMOVE) DOLLARS and CENTS	EA	6.000	121
	545	2049		CRASH CUSH ATTEN (INSTL)(WORK ZONE) DOLLARS and CENTS	EA	29.000	122
	545	2050		CRASH CUSH ATTEN(MOV&RESET)(WORK ZONE) DOLLARS and CENTS	EA	20.000	123
	545	2051		CRASH CUSH ATTEN (REMOVE)(WORK ZONE) DOLLARS and CENTS	EA	29.000	124
	560	2015	001	MAILBOX INSTALL-S(TWW-POST)TY 4 FND-TB DOLLARS and CENTS	EA	40.000	125
	560	2016	001	MAILBOX INSTALL-D(TWW-POST)TY2 FND-TB DOLLARS and CENTS	EA	15.000	126
	560	2017	001	MAILBOX INSTALL-M(TWW-POST)TY2 FND-TB DOLLARS and CENTS	EA	5.000	127
	610	2025	006	INS RD IL AM (TY SA) 40T-8 (.25 KW)S DOLLARS and CENTS	EA	26.000	128

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	ITEM NO	DESC CODE	S.P. NO.				
	610	2059	006	INS RD IL AM (U/P) (TY IF) (.15KW) DOLLARS and CENTS	EA	6.000	129
	618	2018		CONDT (PVC) (SCHD 40) (2") DOLLARS and CENTS	LF	4,519.000	130
	618	2022		CONDT (PVC) (SCHD 40) (3") DOLLARS and CENTS	LF	219.000	131
	618	2023		CONDT (PVC) (SCHD 40) (3") (BORE) DOLLARS and CENTS	LF	84.000	132
	618	2024		CONDT (PVC) (SCHD 40) (4") DOLLARS and CENTS	LF	101.000	133
	618	2035		CONDT (PVC) (SCHD 80) (2") (BORE) DOLLARS and CENTS	LF	284.000	134
	618	2041		CONDT (PVC) (SCHD 80) (4") (BORE) DOLLARS and CENTS	LF	79.000	135
	618	2044		CONDT (RM) (3/4") DOLLARS and CENTS	LF	254.000	136
	620	2009	001	ELEC CONDR (NO. 6) BARE DOLLARS and CENTS	LF	33.000	137
	620	2010	001	ELEC CONDR (NO. 6) INSULATED DOLLARS and CENTS	LF	66.000	138
	620	2011	001	ELEC CONDR (NO. 8) BARE DOLLARS and CENTS	LF	5,344.000	139

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	ITEM NO	DESC CODE	S.P. NO.				
	620	2012	001	ELEC CONDR (NO. 8) INSULATED DOLLARS and CENTS	LF	11,810.000	140
	620	2015	001	ELEC CONDR (NO.12) BARE DOLLARS and CENTS	LF	403.000	141
	620	2016	001	ELEC CONDR (NO.12) INSULATED DOLLARS and CENTS	LF	966.000	142
	624	2008		GROUND BOX TY A (122311) W/APRON DOLLARS and CENTS	EA	11.000	143
	624	2011		GROUND BOX TY C (162911) DOLLARS and CENTS	EA	3.000	144
	628	2017		ELC SRV TY A 240/480 060 (NS)SS(E)SP(O) DOLLARS and CENTS	EA	2.000	145
	636	2001	014	ALUMINUM SIGNS (TY A) DOLLARS and CENTS	SF	28.000	146
	644	2001		INS SM RD SN SUP&AM TY 10BWG(1) SA(P) DOLLARS and CENTS	EA	90.000	147
	644	2004		INS SM RD SN SUP&AM TY 10BWG(1) SA(T) DOLLARS and CENTS	EA	5.000	148
	644	2006		INS SM RD SN SUP&AM TY 10BWG(1) SA(U) DOLLARS and CENTS	EA	1.000	149
	644	2022		INS SM RD SN SUP&AM TY S80(1) SA(P) DOLLARS and CENTS	EA	1.000	150

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	ITEM NO	DESC CODE	S.P. NO.				
	644	2027		INS SM RD SN SUP&AM TY S80(1) SA(U) DOLLARS and CENTS	EA	6.000	151
	644	2028		INS SM RD SN SUP&AM TY S80(1)SA(U-1EXT) DOLLARS and CENTS	EA	2.000	152
	644	2031		INS SM RD SN SUP&AM TY S80(1) SA(U-WC) DOLLARS and CENTS	EA	7.000	153
	644	2056		RELOCATE SM RD SN SUP & AM TY 10BWG DOLLARS and CENTS	EA	1.000	154
	658	2240		INSTL DEL ASSM (D-SW)SZ 1(FLX)GF2 DOLLARS and CENTS	EA	53.000	155
	658	2258		INSTL DEL ASSM (D-SW)SZ (TYC)CTB DOLLARS and CENTS	EA	12.000	156
	658	2295		INSTL DEL ASSM (D-DW)SZ 1(FLX)GF2 DOLLARS and CENTS	EA	10.000	157
	658	2319		INSTL OM ASSM (OM-2Z)(RCR)WP DOLLARS and CENTS	EA	19.000	158
	658	2320		INSTL OM ASSM (OM-3L)(TWT)WS DOLLARS and CENTS	EA	1.000	159
	658	2324		INSTL OM ASSM (OM-3R)(TWT)WS DOLLARS and CENTS	EA	5.000	160
	662	2004		WK ZN PAV MRK NON-REMOV (W) 4" (SLD) DOLLARS and CENTS	LF	32,066.000	161

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	ITEM NO	DESC CODE	S.P. NO.				
	662	2016		WK ZN PAV MRK NON-REMOV (W) 24" (SLD) DOLLARS and CENTS	LF	86.000	162
	662	2032		WK ZN PAV MRK NON-REMOV (Y) 4" (SLD) DOLLARS and CENTS	LF	41,098.000	163
	662	2067		WK ZN PAV MRK REMOV (W) 4" (SLD) DOLLARS and CENTS	LF	42,394.000	164
	662	2075		WK ZN PAV MRK REMOV (W) 8" (SLD) DOLLARS and CENTS	LF	150.000	165
	662	2099		WK ZN PAV MRK REMOV (Y) 4" (SLD) DOLLARS and CENTS	LF	51,025.000	166
	666	2036		REFL PAV MRK TY I (W) 8" (SLD)(100MIL) DOLLARS and CENTS	LF	1,686.000	167
	666	2042		REFL PAV MRK TY I (W) 12"(SLD)(100MIL) DOLLARS and CENTS	LF	369.000	168
	666	2048		REFL PAV MRK TY I (W) 24"(SLD)(100MIL) DOLLARS and CENTS	LF	306.000	169
	666	2054		REFL PAV MRK TY I (W) (ARROW) (100MIL) DOLLARS and CENTS	EA	49.000	170
	666	2096		REFL PAV MRK TY I (W) (WORD) (100MIL) DOLLARS and CENTS	EA	13.000	171
	666	2126		REFL PAV MRK TY I (Y) 12"(SLD)(100MIL) DOLLARS and CENTS	LF	1,166.000	172

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	666	2153		REF PAV MRK TY II (W) 8" (SLD) DOLLARS and CENTS	LF	1,686.000	173
	666	2155		REF PAV MRK TY II (W) 12" (SLD) DOLLARS and CENTS	LF	369.000	174
	666	2157		REF PAV MRK TY II (W) 24" (SLD) DOLLARS and CENTS	LF	294.000	175
	666	2160		REF PAV MRK TY II (W) (ARROW) DOLLARS and CENTS	EA	49.000	176
	666	2173		REF PAV MRK TY II (W) (WORD) DOLLARS and CENTS	EA	13.000	177
	666	2183		REF PAV MRK TY II (Y) 12" (SLD) DOLLARS and CENTS	LF	650.000	178
	672	2012	034	REFL PAV MRKR TY I-C DOLLARS and CENTS	EA	433.000	179
	672	2015	034	REFL PAV MRKR TY II-A-A DOLLARS and CENTS	EA	1,058.000	180
	672	2017	034	REFL PAV MRKR TY II-C-R DOLLARS and CENTS	EA	66.000	181
	677	2001		ELIM EXT PAV MRK & MRKS (4") DOLLARS and CENTS	LF	60,090.000	182
	678	2001		PAV SURF PREP FOR MRK (4") DOLLARS and CENTS	LF	89,079.000	183

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	678	2003		PAV SURF PREP FOR MRK (8") DOLLARS and CENTS	LF	1,686.000	184
	678	2004		PAV SURF PREP FOR MRK (12") DOLLARS and CENTS	LF	1,019.000	185
	678	2006		PAV SURF PREP FOR MRK (24") DOLLARS and CENTS	LF	294.000	186
	678	2007		PAV SURF PREP FOR MRK (ARROW) DOLLARS and CENTS	EA	49.000	187
	678	2018		PAV SURF PREP FOR MRK (WORD) DOLLARS and CENTS	EA	13.000	188
	680	2002		INSTALL HWY TRF SIG (ISOLATED) DOLLARS and CENTS	EA	1.000	189
	681	2001		TEMP TRAF SIGNALS DOLLARS and CENTS	EA	1.000	190
	682	2001	001	BACK PLATE (12 IN) (3 SEC) DOLLARS and CENTS	EA	6.000	191
	682	2003	001	BACK PLATE (12 IN) (5 SEC) DOLLARS and CENTS	EA	2.000	192
	682	2022	001	VEH SIG SEC (12 IN) LED (GRN ARW) DOLLARS and CENTS	EA	2.000	193
	682	2023	001	VEH SIG SEC (12 IN) LED (GRN) DOLLARS and CENTS	EA	8.000	194

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	682	2024	001	VEH SIG SEC (12 IN) LED (YEL ARW) DOLLARS and CENTS	EA	2.000	195
	682	2025	001	VEH SIG SEC (12 IN) LED (YEL) DOLLARS and CENTS	EA	8.000	196
	682	2027	001	VEH SIG SEC (12 IN) LED (RED) DOLLARS and CENTS	EA	8.000	197
	684	2031		TRF SIG CBL (TY A) (14 AWG) (5 CONDR) DOLLARS and CENTS	LF	284.000	198
	684	2033		TRF SIG CBL (TY A) (14 AWG) (7 CONDR) DOLLARS and CENTS	LF	124.000	199
	684	2042		TRF SIG CBL (TY A) (14 AWG) (16 CONDR) DOLLARS and CENTS	LF	729.000	200
	686	2041		INS TRF SIG PL AM(S) 1 ARM (40’) LUM DOLLARS and CENTS	EA	2.000	201
	686	2047		INS TRF SIG PL AM(S) 1 ARM (48’) DOLLARS and CENTS	EA	2.000	202
	5049	2002		BIODGRD EROSION CONTROL LOGS (18" DIA) DOLLARS and CENTS	LF	2,090.000	203
	6006	2002		COAXIAL CABLE DOLLARS and CENTS	LF	116.000	204

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	6007	2001		REMOVING TRAFFIC SIGNALS DOLLARS and CENTS	EA	1.000	205
	6266	2001		VIVDS PROCESSOR SYSTEM DOLLARS and CENTS	EA	1.000	206
	6266	2002		VIVDS CAMERA ASSEMBLY DOLLARS and CENTS	EA	4.000	207
	6266	2003		VIVDS SET-UP SYSTEM DOLLARS and CENTS	EA	1.000	208
	6266	2004		VIVDS CENTRAL CONTROL DOLLARS and CENTS	EA	1.000	209
	6266	2005		VIVDS COMMUNICATION CABLE (COAXIAL) DOLLARS and CENTS	LF	1,327.000	210
	6834	2002		PORTABLE CHANGEABLE MESSAGE SIGN DOLLARS and CENTS	EA	4.000	211
	8223	2001		RADAR ADVANCE DETECTION DEVICE DOLLARS and CENTS	EA	2.000	212
	8251	2003		RE PM W/RET REQ TY I(W)4"(BRK)(100MIL) DOLLARS and CENTS	LF	8,534.000	213
	8251	2006		RE PM W/RET REQ TY I(W)4"(SLD)(100MIL) DOLLARS and CENTS	LF	42,506.000	214
	8251	2015		RE PM W/RET REQ TY I(Y)4"(BRK)(100MIL) DOLLARS and CENTS	LF	5,410.000	215

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	8251	2018		RE PM W/RET REQ TY I(Y)4"(SLD)(100MIL) DOLLARS and CENTS	LF	43,584.000	216
	8251	2025		RE PM W/RET REQ TY II (W) 4" (BRK) DOLLARS and CENTS	LF	8,504.000	217
	8251	2026		RE PM W/RET REQ TY II (W) 4" (SLD) DOLLARS and CENTS	LF	38,136.000	218
	8251	2029		RE PM W/RET REQ TY II (Y) 4" (BRK) DOLLARS and CENTS	LF	5,410.000	219
	8251	2030		RE PM W/RET REQ TY II (Y) 4" (SLD) DOLLARS and CENTS	LF	37,029.000	220
				ALTERNATE NO. 1A DOLLARS and CENTS			
	3178	2001		HOT IN PLC RECYL OF ASPH CNC (SURF) 2" DOLLARS and CENTS	SY	40,649.000	221
	3178	2002		HOT IN PLC RECYL OF ACP(RECYL AGNT) DOLLARS and CENTS	GAL	14,227.000	222

General Notes:

SW3P RESPONSIBILITIES

TxDOT Area of Responsibility

Responsible for the area defined by the limits of the subject project, except for those areas utilized and operated by the contractor. These areas include, though are not limited to, areas used for field offices, equipment and/or material storage, and concrete or asphalt plants.

TxDOT Operational Responsibility

Responsible for seeking coverage under the TPDES Construction General Permit (CGP) and operating the project within the requirements of the CGP for discharging storm water from the subject project and to notify MS4 permit holders of the intent to discharge storm water.

File a Notice of Termination with TCEQ upon completion of the project when the exposed areas have been stabilized with a vegetative cover of at least 70%.

Contractor Area of Responsibility

Responsible for all areas under their direct operational control which includes, though not limited to, areas used for field offices, equipment and/or material storage, and concrete or asphalt plants. These areas may be located on or off the subject project's R.O.W.

Contractor Operational Responsibility

Responsible for seeking coverage under the TPDES Construction General Permit (CGP) and adhering to all requirements of the permit for discharging storm water from the areas under their operational control. Perform regular inspections, prepare a written report of deficiencies, and repair deficiencies within the time frame set forth by the permit. File a Notice of Termination with TCEQ upon completion of the project when the exposed areas have been stabilized with a vegetative cover of at least 70%.

Responsible under contractual obligations to TxDOT to install, clean, repair, replace or remove sediment and erosion control devices as indicated on TxDOT's Inspection Reports, or as required by daily construction practices, within the time frame set forth by the permit.

Specification Data

Table 1: Soil Constants Requirements

Item	Description	Plasticity Index		Note
		Max	Min	
132	Embk(DC) (Type C1)	40	8	1
132	Embk(DC) (Type C2)	25	10	2

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

Note 2: Use as a non-select embankment backfill as defined under Item 423.2.C.1. Use as an embankment to backfill behind abutments to the extent of the approach slab or to backfill areas enclosed by an abutment and retaining walls or other locations as shown in the plans.

Note 3: The top four inches of embankment must be fertile soil, easily cultivated, free from objectionable material, have relatively high erosion resistance, and be readily able to support the growth of planting, seeding, or block sodding.

Table 2: Basis of Estimate for Permanent Construction

Item	Description	Thickness	Rate		Quantity	
162	Block Sod	N/A	See Specs		2,009	Sy
164	Drill Seeding	N/A	See Specs		313,300	Sy
166*	Fertilizer (16-20-0)	N/A	400	Lbs/Ac	12.94	Ton
168	Vegetative Watering @ 8 Wks	N/A	4	Gal/Sy/Wk	15,038	Mg
260	Commercial Lime Slurry	33 in	7%	by weight	16,393	Ton
340	Hot Mix Asphalt (Ty B) & (Ty C)	Varies	110	Lbs/Sy/In	47,491	Ton
* For contractor's information only						
Note: (1) Asphalt weight based on 110 Lbs/Sy/In (2) Subgrade weight based on 1.5 Ton/Cy (dry- compacted)						

Table 3: Basis of Estimate for Temporary Erosion Control Items				
Item	Description	Rate	Quantity	
164	Drill Seed (Temp)(Warm & Cool)	See Specs	156,650	Sy
168	Vegetative Watering @ 8 Wks	Combined with Table 2		

Table 4: Hamburg Wheel Test Requirements			
High-Temperature Binder Grade	Test Method	Laboratory Mixture Design or Trial Batch	Production and Placement Test[1]
		Minimum # of Passes @ 0.5" Rut Depth, Tested @122°F	Minimum # of Passes @ 0.5" Rut Depth, Tested @122°F
PG 64-22 or lower	Tex-242-F	7,000	7,000

1. The Engineer may accept if no more than 1of the 5 most recent Hamburg Wheel tests is below the specified number of passes and the failing test is no more than 2000 passes below the specified number of passes.

General:

Access will be provided to all business and residences at all times. Materials, labor and maintenance for these temporary accesses will not be paid for directly but will be considered subsidiary to the various bid items.

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

The disturbed area for this project, as shown on the plans is 62 acres. However, **the Total Disturbed Area** (TDA) will establish the required authorization for storm water discharges. The TDA of this project will be determined by the sum of the disturbed area in all project locations in the contract, and all disturbed area on all Project-Specific Locations (PSL) located in the project limits and/or within 1 mile of the project limits. The department will obtain an authorization to discharge storm water from the Texas Commission on Environmental Quality (TCEQ) for the construction site as shown on the plans, according to the TDA of the project. The contractor will obtain any required authorization from the TCEQ for the discharge of storm water from any PSL for

construction support activities on or off of the project row according to the TDA of the project. When the TDA for the project exceeds 1 acre, provide a copy of the appropriate application of permit (NOI, or Construction Site Notice) to the engineer, for any PSL located in the project limits or within 1 mile of the project limits. Follow the directives and adhere to all requirements set forth in the TCEQ, Texas Pollution Discharge Elimination System, Construction General Permit (TPDES, CGP).

This project required permits with environmental resources agencies. There is a high probability that an environmentally sensitive area could be encountered on the contractor designated Project-Specific Locations (PSL) for this project (haul roads, equipment staging areas, borrow pits, disposal sites, field offices, storage areas, parking areas, etc.). Item 7.19.F, “Project-Specific Locations”, will provide a listing of regulatory agencies that may need to be contacted regarding this project.

Prior to contract letting, bidders may obtain a free computer diskette or electronic files (from the engineer’s office) that contains the earthwork information. If copies of the actual cross-sections, in addition to or instead of the diskette, are requested, they will be available at the engineer’s office for borrowing by copying companies for the purpose of making copies for the bidder at the bidders expense. This data is for non-construction purposes only and it is the responsibility of the prospective bidder to validate the enclosed data with appropriate plans, specifications and estimate for the project(s).

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

Use established industry and utility safety practices to erect poles, luminaries, signs or structures near any overhead or underground utility. Consult with the appropriate utility company prior to beginning such work.

Underground utilities owned by the Texas Department of Transportation may be present within the Right-Of-Way on this project. For signal, illumination, surveillance, and communication & control, call 1-800-DIG-TESS (1-800-344-8377), TxDOT Traffic Signal Office (214-320-6682), and TxDOT Freeway Management Office (214-320-4439) for locates a minimum of 48 hours in advance of excavation. For irrigation systems, call TxDOT Maintenance Landscape Office (214-320-6205) for locates a minimum of 48 hours in advance of excavation. If city or town owned irrigation facilities are present, call the appropriate department of the local city or town a minimum of 48 hours in advance of excavation.

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

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

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

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

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

Submit pre-letting questions by e-mail or fax as follows:
e-mail: jhudsp1@dot.state.tx.us and gkhanka@dot.state.tx.us
fax: (972) 542-5820.
The answers will be submitted in the same format in which they are received. A file containing these questions and answers will be available for review at the area engineer's office located at 2205 S. SH 5, McKinney, TX 75069.

Material On Hand (MOH) will not be used in calculating partial payments for Mobilization.

Provide the Engineer with a copy of all DBE subcontractor agreements prior to commencing work.

The following standard detail sheets have been modified*:*

CCCG-01(MOD)
SMD(SLIP-1)-02(DAL)

Item 8:

This Project will be a Standard Workweek in accordance with Article 8.3.A.4.

Nighttime work is allowed in accordance with Article 8.3.C.1.

Item 100:

Remove and replace the existing roadway signs as shown on the plans, or as directed, during construction within the right of way.

The limits of preparing right of way will be measured along US 380 from Sta. 224+00.00 to Sta. 391+68.24 and along SH 78 from Sta. 21+72.50 to Sta. 53+90.67 along the centerline of construction.

Item 104:

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

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

Items 104 and 496:

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

Removal of all concrete and structures of the types specified in the plans will be paid for under the pertinent bid item. The removal of other types of obstructions encountered will be paid for under Item 100, if applicable.

Items 105 and 305:

Saw existing asphalt along neat lines where portions are to be left in place temporarily or permanently. Sawing is not paid for directly, but is subsidiary to this item.

Item 105:

This item is payment for the removal of the non-asphaltic base material only. Removal of existing asphaltic material will be paid for under item 305.

Take possession of reclaimed base material and properly dispose of the material at your own expense.

Stockpile materials in uniform piles up to 15 feet in height unless otherwise instructed. Furnish adequate equipment at the stockpile to keep and leave the materials in a neat and orderly manner.

Items 110 and 132:

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

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

Use an approved laboratory to perform tests for sulfate and plasticity index and provide results on sources outside the right of way at no additional expense to the department. Test soil for sulfate levels in accordance with Tex-145-E. Contact the engineer for a list of approved laboratories. Notify the engineer 72 hours before sampling and testing material. Perform split-sample verification testing with the engineer when directed. The engineer will sample and test material produced by the construction project for specification requirements or material sources specified in the plans.

When lime treatment is allowed to reduce Plasticity Index, apply lime slurry in accordance with Item 260, “Lime Treatment (Road-Mixed).” Furnish material containing sulfate at or below the threshold of 5000 parts per million (ppm). For material with sulfate levels greater than 3000 ppm, allow the mixture to mellow for at least three days, or as directed. The engineer will test material placed or excavated to a depth of one foot

below and laterally to one foot outside the proposed treatment limit. Notify the engineer 48 hours before lime treatment of the material.

Shale is not an acceptable material for embankment. Do not use shaley clays in embankment unless approved in writing.

Items 110, 132 and 164:

Perform vertical tracking on slopes to temporarily stabilize soil. Provide equipment with a track undercarriage capable of producing a linear soil impression measuring at least 12 inches in length by 2 to 4 inches in width by ½ to 2 inches in depth. Do not exceed 12 inches between track cleats. Install continuous linear track impressions where the minimum 12 inches in length impressions is perpendicular to the direction of water flow. This will not be paid for directly but considered subsidiary to this item.

Item 132:

Earth embankment Type C1 and C2, are mainly composed of material other than shale. Furnish material that is free from vegetation or other objectionable material and that conforms to the requirements of Table 1 (Sheet B). If necessary, add lime slurry in accordance with Item 260, "Lime Treatment (Road-Mixed)" in order to meet these requirements. Use Tex-121-E, figure 1, page 5 to calculate the amount of lime required. Furnish material containing sulfate at or below the threshold of 5000 parts per million (ppm). For material with sulfate levels greater than 3000 ppm, allow the mixture to mellow for at least three days, or as directed. Test soil for sulfate levels in accordance with Tex-145-E. Use an approved laboratory to perform tests for sulfate and plasticity index and provide results on sources outside the right of way to the department. Contact the engineer for a list of approved laboratories. Notify the engineer 48 hours before sampling and testing material. Perform split-sample verification testing with the engineer when directed. The engineer will sample and test material produced by the construction project for specification requirements or material sources specified in the plans. The engineer will test material placed or excavated to a depth of one foot below and laterally to one foot outside the proposed treatment limit. Lime treatment and testing of this material will not be paid for directly, but will be considered subsidiary to this item.

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

Item 164:

Use the following application rate for permanent seeding, as directed:

- Green Sprangletop 15 Lbs/Ac
- Hulled – Common Bermuda 50 Lbs/Ac
- Buffalograss 25 Lbs/Ac

Use the following application rate for temporary seeding, as directed:

- Foxtail Millet 75 Lbs/Ac (Warm Season)
- Red Winter Wheat 30 Lbs/Ac (Cool Season)

Limits of seeding are for estimate purposes only and are subject to field measurement.

Item 169:

Hydraulically apply Flexterra FGM or CocoFlex ET-FGM, or install North American Green SC150 or Landlok CS2 for erosion control on the specified slopes or areas in the construction plan or as directed by the Engineer

Use of CL 1 (Ty C) product is approved for slopes 1:3 or flatter for this project.
Water for application, seeding, labor, equipment, tools, supplies, materials, fertilizer and incidentals will not be paid for directly but will be subsidiary to this Item.
Apply as required per manufacturer's recommendations.
Use Tables under Item 164 to determine type of seeds to be used.

Quantity of soil retention blankets is for estimate purposes only and is subject to field measurement.

Item 260:

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

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

Item 301:

Provide liquid antistripping agents unless otherwise directed. Provide manufacturer's instruction for liquid antistripping agent.

Add the minimum percentage determined by the manufacturer and try subsequent trials at 0.25% increments, unless otherwise instructed by the manufacture.

Items 305 and 354:

Separate the asphalt pavement from the base material. Stockpile the asphalt pavement at TxDOT's Collin County Maintenance yard located at 2205 S. SH 5, McKinney, TX 75069. Place the asphalt pavement material in a stockpile that meets the dimensions and requirements designated by the engineer.
Stockpile materials in uniform piles up to 15 feet in height unless otherwise instructed. Furnish adequate equipment at the stockpile to keep and leave the materials in a neat and orderly manner.

Properly dispose of unsalvageable material at your own expense.

Slope longitudinal faces greater than 1 ¼"To a minimum of 1:1 slope at the end of the work period if traffic is able to traverse the joint. Slope transverse tapers to a minimum of 36:1 at the end of the workday. Remove the taper prior to continuing the milling.

For open shoulder sections, plane the asphalt so the flow of water is not impeded at the shoulder edge or across the surface. Added planing up to three feet in width outside the lines and grades of the plans, necessary to provide proper drainage, will be subsidiary to the bid item.

Item 310:

Do not use MC-30 on base courses placed between April 16 and September 15.

Item 320:

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

Item 340:

Use aggregate that meets the Surface Aggregate Classification (SAC) requirement of Class B.

Provide the engineer the opportunity to witness all mixture design tests. The engineer may require a retest if not given the opportunity to witness.

Dilution of tack is not allowed.

Provide PG binder 64-22 in Type B mixture.

Provide PG binder 70-22 in Type C mixture.

Hamburg Wheel test requirements for mixes with PG 64-22 shall meet Table 4. The use of RAP is permitted to meet these requirements.

Item 360:

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

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

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

Stockpile the concrete aggregates at the plant site.

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

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

Curb transition is paid for as Type I curb.

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

Place construction, sawed and contraction joints in accordance with the pavement detail sheet and as directed. Joint locations, other than as shown on the plans, are subject to approval. Pavement leaveouts are required on this project as necessary to provide for traffic at driveways and side streets as shown in the plans or as directed. The cost of providing these leaveouts, including the construction of a suitable crossover connection at each site, is not paid for directly but is considered subsidiary to this item.

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

Provide tiebars in longitudinal joints but do not place them within 15 inches of transverse joints.

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

Provide Class HES concrete. Design Class HES to meet the requirements of Class P and a minimum average flexural strength of 400 psi or minimum average compressive strength of 2600 psi in 24 hr.

Item 360 and 421.

Contractor personnel performing job-control testing on concrete must be ACI- Certified. Provide a copy of certification paper to the Engineer upon arrival and before testing at job site. Furnish hard copies of calibration reports for testing equipment when non-TxDOT approved equipment is used to test concrete.

Item 400:

Structural Excavation is not paid for directly but is considered subsidiary to pertinent Items.

When placing concrete storm drain pipe on slopes of greater than 10 percent, provide cement stabilized backfill to a depth shown on the plans. The aggregate shall conform to the requirements of Article 421.2.E.2.

Items 416 and 420:

Form columns to a point a minimum of one foot below the proposed future or existing bottom of channel elevation indicated on the bridge layouts by an acceptable method. This form work is not paid for directly, but is considered subsidiary to this item.

Item 416:

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

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

Item 420:

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

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

Provide block numbers with a height of 6". Place numbers using appropriate die cut stencils and black paint.

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

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

NATIONAL BRIDGE INVENTORY NUMBERS:
Provide National Bridge Inventory (NBI) numbers on all bridge structures and bridge class culverts.

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

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

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

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

For all conditions, use appropriate die cut stencils and black paint for placement. All materials, labor and incidentals associated with placing NBI numbers are subsidiary to the various bid items.

Items 420, 422, 430 and 440:

Provide bridge slab reinforcing steel with epoxy coating complying with Item 440 requirements.

R-bars (I and U-beams), Z-bars (boxes), H-bars (Slab beams), and C-bars (DT beams) are not required to be epoxy coated**.**

Item 421:

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

Provide sulfate resistant concrete for box culverts and drill shafts. High performance concrete meets the requirement for sulfate resistant concrete when Class C fly ash and Type I cement is not used in the mix design.

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

Maturity meters may be used for temperature gradient determination in mass concrete pours.

Provide a digital hydraulic compression testing Machine and accessories. The machine shall have a minimum testing range of 2500 pounds force to 250,000 pounds force with a hydraulic switching valve to allow for rapid advancing, hold, controlled advancing and rapid retracting. The machine shall have a load cell to measure compressive forces

within the testing range and shall be calibrated and verified in accordance with ASTM latest version. The Machine can meet or exceed the following when approved by the Engineer:

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

Item 427:

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

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

Items 427 and 446:

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

Use Federal Standard 595b colors with individual elements receiving the colors shown in the following table:

Element	Color	Specification Number
CTB	Light beige	23717
Columns	Light beige	23717
Bent caps	Light beige	23717
Abutment walls	Dark beige	20450
Abutment backwall	Dark beige	20450
Abutment cap	Dark beige	20450
Girders	Dark beige	20450
Bottom of slab overhang	Dark beige	20450
Slab edge	Dark beige	20450
Concrete rail parts	Light beige	23717
Metal rail parts	Green	34108
Architectural elements	See plans	See plans

Item 428:

Provide a Class I surface treatment.

Do not treat the inside face of concrete rails.

Item 440 and 450:

Provide epoxy coated reinforcing steel that embeds into the bridge slab.

Item 442:

Use temperature Zone 1 for CVN testing.

Item 446:

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

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

Item 449:

Use Crouse Hinds TL-2, OZ/Gedney Stl, Thomas & Betts Kopr-Shield or other approved electrically conducting lubricant compound.

Item 464:

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

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

Item 471:

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

Item 496:

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

Items 496 and 506:

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

Item 502:

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

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

Erect a Type III barricade immediately in front of or at each end of all stockpiles that are less than 30 feet from the edge of any traveled lane. Place one Type 2 Object Marker (OM-2Y) alongside the stockpile for every 100 feet of stockpile length.

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

Provide rectangular shape (CW12-2P) Temporary Clearance Signs on all bridges where the existing vertical clearance has changed. Install Signs to the satisfaction of the Engineer prior to opening to traffic. Plywood sign blanks will have minimum dimensions of 84" X 12". Work performed and materials are subsidiary to this item.

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

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

Traffic Control Plans with Lane Closures causing backups of 20 minutes or greater in duration will be modified by the Engineer.

Limit lane closures along US 380 and SH 78 to the hours between 9:00 am and 3:30 pm. Work in other areas of the project is not restricted to this time frame.

Item 504:

Furnish one Field Office and Laboratory (Type B) for this project.

Provide one local phone line to the field office. Supply one phone jack and one telephone per each room in the field office. The cost of the phone installation and various monthly phone service charges will be the contractor's responsibility.

Parking shall be provided for 6 vehicles, chain link fencing will be provided around the field office and parking areas.

Provide an all in one printer/scanner/fax/copier with software that is compatible with TxDOT equipment, cost not in excess of $300. This is subsidiary to the bid item.

Item 506:

If temporary construction stream crossings are allowed under a Nationwide Permit, submit in writing for approval the type and location of each temporary stream crossing. Use temporary bridges, timber mats, or other structurally sound and non-eroding material for temporary stream crossings. A temporary culvert crossing will consist of storm sewer pipes and 4- to 8-inch nominal size rock. Temporary stream crossings must not cause more than minimal changes to the hydraulic flow characteristics of the stream, increase flooding, or cause more than minimal degradation of water quality. Remove the temporary stream crossings in their entirety and return the affected areas to their pre-existing elevation. All work and materials use for temporary construction stream crossings will not be paid for directly but are subsidiary to pertinent Items.

SW3P Maintenance Reports are made every seven calendar days. Make corrections as soon as possible before the next anticipated rain event or within seven calendar days after being able to enter the site to work for each BMP. A BMP site being "Too Wet to Work" is the only acceptable reason for not accomplishing the corrections with the seven calendar day time limit and should be thoroughly documented on Form 2118. If maintenance corrections are not made within this time frame then all work will cease, time charges will continue until SW3P is brought into compliance and is documented on Form 2118 after TxDOT review.

This in no way releases the contractor of liability for noncompliance.

Remove silt when an erosion control device is 50% filled with silt. This Item is paid for under Earthwork for Erosion Control and is measured in number of hours. Quantity of Earthwork for Erosion Control is for estimate purposes only and is subject to field measurement.

Item 508:

Testing of materials used in the construction of a temporary detour may be waived when approved by the Engineer.

Item 512:

Furnish pre-cast F Shape Barrier with drainage slots as detailed on the Concrete Safety Barrier Standards. Submit for approval the type of barrier joint connection proposed for the project. Retain possession of the barrier at the end of the project.

Item 529:

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

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

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

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

Item 530:

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

1) CR 607 STA 0+44.60 TO STA 2+12.49
2) CR 611 STA 0+43.87 TO STA 1+79.33
3) CR 557
4) CR 560
5) CADDO PARK DRIVEWAY

Item 536:

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

Item 540:

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

Item 542:

Remove or cut off existing anchor bolts and fill holes with grout in bridge slabs as directed.

Item 585:

Use Surface Test Type A on all intersections and driveways.

Use Surface Test Type B pay adjustment schedule 2 on the travel lanes.

Item 618:

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

Furnish and install a non-metallic pull rope in conduit runs in excess of 50 feet.

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

Structurally mount junction boxes as shown on the plans. When used for traffic signal installations, use boxes 12"x12"x8", or as approved.

Place conduit under existing pavement by an approved boring method. Do not place boring pits closer than 2 feet from the edge of the pavement unless otherwise directed. Do not use water jetting. When boring is used for under pavement conduit installations, the maximum allowable over-cut is 1" in diameter. When conduits are bored, do not exceed 18 inches in the vertical and horizontal tolerances as measured from the intended target point.

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

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

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

Furnish and install non-metallic pull ropes in conduit installed for future use and cap using standard weather-tight conduit caps, as approved. This work will not be paid for directly, but is subsidiary to this Item.

Item 624:

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

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

Item 644:

Install all small sign assemblies with the “Triangular Slipbase System” as shown on the Dallas District standard sheet SMD(SLIP-1)-02(DAL).

Item 656:

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

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

Item 666 & 6110:

Furnish a double-drop of Type II and Type III drop-on glass beads that meet the requirements of Departmental Materials Specifications DMS-8290.

Item 672:

Black adhesive will be used on asphalt pavements. White adhesive will be used on concrete pavements.

Item 677:

Grinding of pavements is not allowed to eliminate pavement markings.

Placement of paint or thermo is not allowed to eliminate pavement markings.

Item 680:

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

1. Furnish and install all sign panels for mounting on Mast Arms. Fabricate the sign panels in accordance with Item 636, and mount with Astro-Sign Brac, Signfix aluminum channel, or equal as approved by the Engineer.
2. Provide submittal literature for all traffic signal equipment before installation.
3. Have a qualified technician on the project site to place the traffic signal in operation.
4. Use qualified personnel to respond to and diagnose all trouble calls during the thirty-day test period. Repair any malfunction to state-supplied signal equipment. Provide to the Engineer a local telephone number, not subject to frequent changes and available on a 24-hour basis, for reporting trouble calls. Response time to reported calls must be less than 2 hours. Make appropriate repairs within 24 hours. Place a logbook in the controller cabinet and keep a record of each trouble call reported. Notify the Engineer of each trouble call. Do not clear the error log in the conflict monitor during the thirty-day test period without approval.
5. Prevent any damage to property owner's poles, fences, shrubs, mailboxes, etc. Protect all underground and overhead utilities and repair any damage. Provide access to all driveways during construction.
6. Install a new eight-phase NEMA controller, meeting the requirements of Departmental Materials Specifications DMS-11170, in a base-mounted cabinet. Install the supplied traffic signal controller and cabinet.
7. Pick up the state supplied cabinet, controller, and accessories from the District Signal Shop, 4777 E Hwy 80, Mesquite. Notify the District Signal Shop two working days before pick up at (214)320-6682.
8. Connect all field wiring to the controller assembly. Have a qualified technician on the project site to place the traffic signals in operation.
9. Notify the District Signal Maintenance Office at (214)320-6682 and Construction Office at (214)320-6694 one week before beginning any work involving traffic signals.

Item 681:

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

1. Re-guy signal heads and re-strap the cable after making adjustments to head locations. Accomplish relocation of signal heads for a phase change during the same day.
2. Adjust signal head locations and VIVD detection zones as directed by Engineer, during all construction phases.
3. Have a qualified technician on the project site to place the traffic signal in operation.

4. Use qualified personnel to respond to and diagnose all trouble calls during the thirty-day test period. Repair any malfunction to Contractor-supplied signal equipment. Provide to the Engineer a local telephone number, not subject to frequent changes and available on a 24-hour basis, for reporting trouble calls. Response time to reported calls must be less than 2 hours. Make appropriate repairs within 24 hours. Place a logbook in the controller cabinet and keep a record of each trouble call reported. Notify the Engineer of each trouble call. Do not clear the error log in the conflict monitor during the thirty-day test period without approval.
5. The existing 3 section signal heads shall be salvaged. This equipment remains the property of Texas Department of Transportation, and is to be stockpiled at the TxDOT Signal Shop located at 4777 East Hwy 80 Mesquite Texas 75150.
6. Operation and maintenance of the temporary signal includes repair of Contractor-supplied equipment, providing of telephone number to the District for trouble calls, adjustment of timing, and the generation and implementation of traffic signal timing during all phases of the project. Make traffic turning movement volume counts on weekdays between 6 AM and 9 AM, between 11 AM and 1 PM, and between 4 PM and 7 PM and on Saturday and Sunday between 10 AM and 4 PM to generate the signal timing. Signal may be required to operate fixed-time. Use the timing plan generation software known as “Synchro” to generate the timing cycle lengths and splits. Prepare the timing plan under the supervision of a registered Traffic Engineer, and submit for approval. Load the approved timing plan into the controller and fine-tune the timing with field observations. Make timing adjustments for capacity and roadway alignment changes.

Item 682:

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

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

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

Mount signal heads level and plumb and aimed as directed.

Item 684:

Provide stranded 14 AWG Type A signal cables.

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

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

Item 686:

Provide 12 circuit Buchanan Type 112SN, Kulka Type 985-GP-12 CU, or equal terminal strips in the signal pole access compartment. Provide additional terminal strips of 8 circuits each when more than 12 circuits are required.

Mark pole shafts with the identification numbers from the plans to facilitate field-assembly.

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

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

Use the traffic signal pole heights lengths shown on the plans and in the material summary for bidding purposes only. Make field measurements to determine the actual pole height required. Provide vertical clearance of 17 to 19 feet from the roadway to the lowest point of the signal head. Place signal heads 40 feet minimum and 180 feet maximum from the stop line. If the nearest signal is more than 180 feet from the stop line, place a supplemental near-side signal head. Determine the field measurements and elevations from the actual field location of the poles, considering all above and below ground utilities and existing roadway elevations.

Provide vibration dampers for mast arms 28 feet long and lounger. Use dampers 18” x48” for arms up to 48 feet long, and 16”x66” for longer mast arms. Install using Astro-sign Brac, Signfix aluminum channel, or equal, at a maximum of 3 feet from the end of the mast arm.

Item 730:

Mow non-paved areas within the project prior to placement of permanent vegetation. Mow up to eight (8) cycles per growing season.

Item 6006:

Install the coaxial cable so that it is not exposed to the outdoor environment.

Item 6007:

Completely remove timber poles not set in concrete without cutting off the pole. Timber poles set in concrete are considered unsalvageable.

Salvage the existing traffic signals at US 380 & CTY RD 607/611, etc. as shown on the plans. Salvage VIVDS, cabinet, signal heads, along with any other equipment as directed. This equipment remains the property of the Texas Department of Transportation, and is to be stockpiled at the TxDOT Signal Shop located at 4777 East Hwy 80 Mesquite Texas 75150. Maintain the operation of the existing traffic signal until directed to remove it.

Item 6266:

Install the VIVDS detection zones as directed. Have qualified personnel on site at the time of the signal turn-on to assist with the installation of detection zones.

If the camera locations shown in the plans do not allow for proper sight of the proposed detection zones, relocate the cameras as needed and as directed. This labor and material cost will not be paid separately, but is subsidiary to this item.

Provide a Video Processor System (VPS) that can provide up to thirty-two (32) detector outputs to the controller from up to eight (8) camera/video processor units (C/VPU). Route the detector outputs through the detector panel and the detector test switches. For each C/VPU, provide a field of view with a minimum of thirty-two (32) virtual detection zones for vehicle detection.
(Note: Use one processor system per intersection)

Wire the outputs as follows:

Card1		Card2	
Output	Detector	Output	Detector
1	1-1	17	3-1
2	6-1	18	8-1
3	6-2	19	8-2
4	6-3	20	8-3
5	6-4	21	8-4
6	Spare	22	Spare
7	SD1	23	SD5
8	SD2	24	SD6
9	5-1	25	7-1
10	2-1	26	4-1
11	2-2	27	4-2
12	2-3	28	4-3
13	2-4	29	4-4
14	Spare	30	Spare
15	SD3	31	SD7

16	SD4	32	SD8

*SD: System Detector

Provide four **(4)** cameras for this project, including one **(1)** spare camera.

Central control will be located at the District Signal Shop. The District will provide a workstation computer (IBM 300PL), telephone line and modem at the central location. Provide all software and other necessary equipment. Transmit video to the central computer. Codec or other equipment to enhance the video performance is not required.

Provide a set-up system. Load required set-up software onto all of the District Signal Shop's notebook computers and provide all necessary licensing. The Contractor does not provide computers as part of the set-up system.

Provide phase red and green load switch outputs from up to eight (8) phases of a NEMA TS2 Type 2 controller as inputs to the VPU for use with internal detector extend/delay timing functions. Ensure the C/VPU is able to condition the detector outputs and detection zones based on the state of the associated phase number and color.

Supply a package that will operate with Windows 98 and NT and provide the functionality defined in both sections 7.0 and 9.0 in both a direct connect and remote communications mode. Ensure the software resident in the C/VPU and the personal computer is capable of transmitting and receiving all information needed for zone set up, monitoring vehicle detection by viewing flashing detection zone overlays, and uploading/downloading and interrogating all stored data within the C/VPU. Ensure remote communications with the C/VPU is possible with the addition of external communication devices (modem, Codec, etc.) using the RS-232 and video output ports on the front of the VPU.

Ensure the C/VPU operational software is stored internally in flash memory and capable of being updated without the removal and replacement of memory devices.

Provide a camera interface panel mounted to the wall of the cabinet for protecting the camera video and power inputs/outputs. The panel shall contain as a minimum; an EDCO ACP-340 for the camera and VIVDS Processor unit power, with an on/off switch, a convenience outlet protected by the ACP-340, a 10-amp circuit breaker, and a terminal strip with a minimum of six (6) 8-32 binder head screws. The AC connections shall be protected using a piece of 1/8-inch plexi-glass.

Install the VIVDS detection zones as directed. Have qualified personnel on site at the time of the signal turn-on to assist with the installation of detection zones.

If the camera locations shown in the plans do not allow for proper sight of the proposed detection zones, relocate the cameras as needed and as directed. This labor and material cost will not be paid separately, but is subsidiary to this item.

The Video Processor Unit (VPU) may reside inside the camera housing. Use video output from the C/VPU in color or black/white with active detection zones overlaid on full motion video.

Provide Field Communications Link required by the manufacturer of the video detection system. These cables will be paid for as the type shown in the plans regardless of actual type of cable.

CONTROL : 0135-04-028
PROJECT : C 135-4-28
HIGHWAY : US 380
COUNTY : COLLIN

TEXAS DEPARTMENT OF TRANSPORTATION

GOVERNING SPECIFICATIONS AND SPECIAL PROVISIONS

ALL SPECIFICATIONS AND SPECIAL PROVISIONS APPLICABLE TO THIS PROJECT ARE IDENTIFIED AS FOLLOWS:

STANDARD SPECIFICATIONS: ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION JUNE 1, 2004. STANDARD SPECIFICATIONS ARE INCORPORATED INTO THE CONTRACT BY REFERENCE.

ITEMS 1 TO 9 INCL., GENERAL REQUIREMENTS AND COVENANTS
ITEM 100 PREPARING RIGHT OF WAY (103)
ITEM 104 REMOVING CONCRETE
ITEM 105 REMOVING STABILIZED BASE AND ASPHALT PAVEMENT
ITEM 110 EXCAVATION (132)
ITEM 132 EMBANKMENT (100)(204)(210)(216)(400)
ITEM 162 SODDING FOR EROSION CONTROL (166)(168)
ITEM 164 SEEDING FOR EROSION CONTROL (162)(166)(168)
ITEM 168 VEGETATIVE WATERING
ITEM 169 SOIL RETENTION BLANKETS
ITEM 260 LIME TREATMENT (ROAD-MIXED) (105)(132)(204)(210)(216)(247)(300)(310)(520)
ITEM 305 SALVAGING, HAULING, AND STOCKPILING RECLAIMABLE ASPHALT PAVEMENT
ITEM 340 DENSE-GRADED HOT-MIX ASPHALT (METHOD) (210)(300)(301)(320)(520)(585)
ITEM 360 CONCRETE PAVEMENT (300)(420)(421)(438)(440)(529)(585)
ITEM 400 EXCAVATION AND BACKFILL FOR STRUCTURES (132)(401)(420)(421)
ITEM 402 TRENCH EXCAVATION PROTECTION
ITEM 403 TEMPORARY SPECIAL SHORING (423)
ITEM 416 DRILLED SHAFT FOUNDATIONS (420)(421)(440)(448)
ITEM 420 CONCRETE STRUCTURES (400)(421)(427)(438)(440)(448)
ITEM 422 REINFORCED CONCRETE SLAB (420)(421)(424)(426)(440)
ITEM 425 PRECAST PRESTRESSED CONCRETE STRUCTURAL MEMBERS (420)(421)(424)(426)(427)(434)(440)(442)
ITEM 428 CONCRETE SURFACE TREATMENT (427)
ITEM 430 EXTENDING CONCRETE STRUCTURES (420)(421)(440)
ITEM 432 RIPRAP (420)(421)(427)(431)(440)
ITEM 442 METAL FOR STRUCTURES (441)(445)(447)(448)(449)

ITEM 450 RAILING (420)(421)(440)(445)(446)(448)(540)
ITEM 454 BRIDGE EXPANSION JOINTS (442)
ITEM 462 CONCRETE BOX CULVERTS AND STORM DRAINS (400)(420)(421)(424)(440)(464)
ITEM 464 REINFORCED CONCRETE PIPE (400)
ITEM 465 MANHOLES AND INLETS (400)(420)(421)(440)(471)
ITEM 466 HEADWALLS AND WINGWALLS (400)(420)(421)(440)(464)
ITEM 467 SAFETY END TREATMENT (400)(420)(421)(430)(432)(445)(460)(464)
ITEM 496 REMOVING STRUCTURES
ITEM 500 MOBILIZATION
ITEM 502 BARRICADES, SIGNS, AND TRAFFIC HANDLING
ITEM 504 FIELD OFFICE AND LABORATORY
ITEM 506 TEMPORARY EROSION, SEDIMENTATION, AND ENVIRONMENTAL CONTROLS
ITEM 508 CONSTRUCTING DETOURS (340)
ITEM 512 PORTABLE CONCRETE TRAFFIC BARRIER (420)(421)(424)(440)(442)
ITEM 529 CONCRETE CURB, GUTTER, AND COMBINED CURB AND GUTTER (360)(420)(421)(440)
ITEM 530 INTERSECTIONS, DRIVEWAYS, AND TURNOUTS (247)(260)(263)(275)(276)(292)(316)(330)(334)(340)(360)(421)(440)
ITEM 536 CONCRETE MEDIANS AND DIRECTIONAL ISLANDS (420)(421)(427)(440)(529)
ITEM 540 METAL BEAM GUARD FENCE (421)(445)(529)(542)(544)
ITEM 542 REMOVING METAL BEAM GUARD FENCE
ITEM 544 GUARDRAIL END TREATMENTS
ITEM 545 CRASH CUSHION ATTENUATORS (421)
ITEM 560 MAILBOX ASSEMBLIES
ITEM 610 ROADWAY ILLUMINATION ASSEMBLIES (421)(441)(442)(445)(446)(449)(616)(620)
ITEM 618 CONDUIT (400)(445)(476)(622)
ITEM 620 ELECTRICAL CONDUCTORS
ITEM 624 GROUND BOXES (421)(440)
ITEM 628 ELECTRICAL SERVICES (441)(445)(449)(618)(620)(627)(656)
ITEM 636 ALUMINUM SIGNS (643)
ITEM 644 SMALL ROADSIDE SIGN SUPPORTS AND ASSEMBLIES (421)(440)(441)(442)(445)(634)(636)(643)(656)
ITEM 658 DELINEATOR AND OBJECT MARKER ASSEMBLIES (445)
ITEM 662 WORK ZONE PAVEMENT MARKINGS (666)(668)(672)(677)
ITEM 666 REFLECTORIZED PAVEMENT MARKINGS (316)(318)(662)(677)(678)
ITEM 672 RAISED PAVEMENT MARKERS (677)(678)
ITEM 677 ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS (300)(302)(316)
ITEM 678 PAVEMENT SURFACE PREPARATION FOR MARKINGS (677)
ITEM 680 INSTALLATION OF HIGHWAY TRAFFIC SIGNALS (610)(625)(627)(634)(636)(656)(6006)(6266)
ITEM 681 TEMPORARY TRAFFIC SIGNALS (628)(680)
ITEM 682 VEHICLE AND PEDESTRIAN SIGNAL HEADS
ITEM 684 TRAFFIC SIGNAL CABLES
ITEM 686 TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL)

SPECIAL PROVISIONS: SPECIAL PROVISIONS WILL GOVERN AND TAKE

---------- PRECEDENCE OVER THE SPECIFICATIONS ENUMERATED HEREON WHEREVER IN CONFLICT THEREWITH.

SPECIAL LABOR PROVISIONS FOR STATE PROJECTS (000---007)
WAGE RATES
SPECIAL PROVISION "PARTNERING" (000---002)
SPECIAL PROVISION "SMALL BUSINESS ENTERPRISE IN STATE FUNDED CONSTRUCTION" (000---010)
SPECIAL PROVISION "IMPORTANT NOTICE TO CONTRACTORS" (000--1626)
SPECIAL PROVISION "SCHEDULE OFLIQUIDATED DAMAGES" (000--1493)
SPECIAL PROVISION "DEPARTMENT DIVISION MAILING AND PHYSICAL ADDRESS" (000---011)
SPECIAL PROVISION TO ITEM 1 (001---011)
SPECIAL PROVISION TO ITEM 2 (002---017)
SPECIAL PROVISION TO ITEM 4 (004---013)
SPECIAL PROVISION TO ITEM 5 (005---004)
SPECIAL PROVISION TO ITEM 6 (006---030)
SPECIAL PROVISIONS TO ITEM 7 (007---213)(007---445)
SPECIAL PROVISIONS TO ITEM 9 (009---012)(009---015)
SPECIAL PROVISION TO ITEM 100 (100---002)
SPECIAL PROVISION TO ITEM 132 (132---001)
SPECIAL PROVISION TO ITEM 164 (164---002)
SPECIAL PROVISION TO ITEM 166 (166---001)
SPECIAL PROVISION TO ITEM 169 (169---002)
SPECIAL PROVISION TO ITEM 247 (247---033)
SPECIAL PROVISION TO ITEM 260 (260---001)
SPECIAL PROVISION TO ITEM 340 (340---003)
SPECIAL PROVISION TO ITEM 360 (360---003)
SPECIAL PROVISION TO ITEM 400 (400---004)
SPECIAL PROVISION TO ITEM 416 (416---001)
SPECIAL PROVISION TO ITEM 420 (420---002)
SPECIAL PROVISION TO ITEM 421 (421---034)
SPECIAL PROVISION TO ITEM 424 (424---002)
SPECIAL PROVISION TO ITEM 425 (425---001)
SPECIAL PROVISION TO ITEM 428 (428---001)
SPECIAL PROVISION TO ITEM 431 (431---001)
SPECIAL PROVISION TO ITEM 434 (434---003)
SPECIAL PROVISION TO ITEM 440 (440---002)
SPECIAL PROVISION TO ITEM 441 (441---005)
SPECIAL PROVISION TO ITEM 442 (442---005)
SPECIAL PROVISION TO ITEM 447 (447---002)
SPECIAL PROVISION TO ITEM 465 (465---001)
SPECIAL PROVISION TO ITEM 500 (500---005)
SPECIAL PROVISION TO ITEM 502 (502---033)
SPECIAL PROVISION TO ITEM 506 (506---011)
SPECIAL PROVISION TO ITEM 512 (512---002)
SPECIAL PROVISION TO ITEM 560 (560---001)
SPECIAL PROVISION TO ITEM 610 (610---006)
SPECIAL PROVISION TO ITEM 620 (620---001)
SPECIAL PROVISION TO ITEM 625 (625---001)
SPECIAL PROVISION TO ITEM 636 (636---014)
SPECIAL PROVISION TO ITEM 643 (643---001)
SPECIAL PROVISION TO ITEM 672 (672---034)

SPECIAL PROVISION TO ITEM 682 (682---001)

SPECIAL SPECIFICATIONS:

ITEM 3178 HOT IN-PLACE RECYCLING OF ASPHALT CONCRETE SURFACES (HIR)
ITEM 5049 BIODEGRADEABLE EROSION CONTROL LOGS
ITEM 6006 SPREAD SPECTRUM RADIOS FOR TRAFFIC SIGNALS
ITEM 6007 REMOVING TRAFFIC SIGNALS
ITEM 6266 VIDEO IMAGING VEHICLE DETECTION SYSTEM
ITEM 6834 PORTABLE CHANGEABLE MESSAGE SIGN
ITEM 8094 MOBILE RETROREFLECTIVITY DATA COLLECTION FOR PAVEMENT MARKINGS
ITEM 8223 RADAR ADVANCE DETECTION DEVICES
ITEM 8251 REFLECTORIZED PAVEMENT MARKINGS WITH RETROREFLECTIVE REQUIREMENTS (8094)

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

SPECIAL SPECIFICATION

3178

Hot In-Place Recycling of Asphalt Concrete Surfaces (HIR)

1. Description. Use the hot in-place process to recycle the existing pavement in one of the following sub-categories described below.

Recycling. Recycling is the process in which the existing asphalt pavement is heated, softened and then milled. A recycling agent is added and the material is thoroughly mixed and placed with a standard paving screed.

Remixing. Remixing is similar to recycling with the addition of virgin aggregate or new hot mix asphalt added to the recycled material. The materials are then thoroughly mixed and placed with a standard paving screed.

Repaving. Repaving combines either recycling or remixing with an overlay of new hot-mix asphalt placed immediately after the recycled mixture. The new hot mix asphalt layer is placed directly on the recycled layer, and both are compacted simultaneously.

The Department will provide in the plans all typical sections and any grade change requirements; the depth and width of recycling required; core information from the existing roadway to include pavement layers, lift thicknesses; the AC content and penetration value of the existing asphalt to be recycled plus any other data collected from the pavement evaluation.

2. Materials.

A. Recycling Agent. Furnish a recycling agent in accordance with Section 4.A, "Mixture Design," and meeting the requirements of Section 300.2.F, "Recycling Agent."

B. Hot Mix Asphalt. If the process requires additional hot-mix asphalt, furnish new hot-mix asphalt that meet the requirements of Section 4.A. Use materials meeting the requirements of Article 340.2, "Materials," to produce the new hot-mix asphalt.

C. Aggregate. If the process requires additional aggregate, furnish aggregates to meet the requirements shown in Section 4.A, "Mixture Design." Use aggregates meeting the requirements of Article 340.2, "Materials."

3. Equipment.

A. Processing Equipment. Provide equipment that is capable of a continuous single pass, multi-step operation, including heating; milling; introducing recycling agent, virgin materials, and/or hot mix asphalt (if determined necessary;) mixing the reclaimed material; redistributing the recycled material; placing the mix and leveling it with an asphalt paver or paving screed; and compacting the mixture, that meets the following requirements.

1. **Pavement Pre-Heaters.** Supply pavement pre-heaters capable of uniformly heating the existing pavement to a temperature high enough to remove excess moisture and allow dislodging of the material to the specified depth, while minimizing the fracturing of aggregate particles. Equip heaters with an enclosed or shielded hood to prevent damage to adjacent property or vegetation. Ensure that the heaters overlap the completed adjacent lane by a minimum of 6 in. to create a hot bond at the longitudinal joint.

2. **Pavement Milling Heads.** Provide milling heads for pavement recycling capable of uniformly loosening the entire pavement lane width to the depth specified in the plans. Accomplish the recycling by using milling heads that have a grade control system for each head. Ensure that the tooth spacing of the milling heads is sufficient to allow material to pass without excessive retention. Utilize equipment that is capable of raising and lowering the milling heads in order to recycle the material around manholes and other obstacles.

   Equip the milling heads such that they are capable of gathering the heated and loosened asphalt concrete pavement. Operate the milling heads in such a manner to minimize aggregate degradation. Utilize milling heads that are capable of creating a windrow of the milled material ahead of the mixing chamber or subsequent milling units.

3. **Recycling Agent Application System**. Provide a system for adding and uniformly applying a recycling agent at the specified rate with the hot, loosened material. Control the system to within 5.0% of the target application rate. Equip the recycling agent system with positive on/off capabilities to prevent any dripping. Add the recycling agent during or after milling has taken place to provide uniform application of the recycling agent and adequate mixing with the recycled material during the mixing cycle.

4. **Mixing Unit.** Provide equipment with an on-board mixing chamber that is capable of thoroughly mixing the heated, reworked material with new materials. Enclose and configure the mixing chamber such that no milled material escapes or bypasses the mixer chamber. Ensure that the rotation of the mixer apparatus does not cause segregation during the mixing process.

5. **Paving Unit.** Furnish a paver or paver screed meeting the requirements Section 320.2.C.1, “Equipment.”

B. Rollers. Provide rollers meeting the requirements of Article 210.2, “Equipment.”

C. Broom. Furnish rotary self-propelled power brooms. The broom should have positive control on the downward pressure applied to the surface.

D. Mobile Testing Laboratory. Unless otherwise shown on the plans, furnish a mobile testing laboratory meeting the requirements of Tex-237-F and a Level 1A certified laboratory technician qualified under the Department’s approved program. If fresh hot mix asphalt is added, perform the tests necessary to control plant production.

4. **Construction.** Rehabilitate existing asphalt concrete pavement to meet the typical sections shown on the plans and the lines and grades established by the Engineer. The existing pavement should be heated and milled to the required depth of treatment as shown on the plans.

   A. **Mixture Design.** Provide a mix design and job mix formula that meets the criteria of Table 1. Specimens will be compacted using the Superpave Gyratory Compactor in accordance with Tex-241-F at 50 gyrations. The target number of gyrations may be adjusted if allowed by the Engineer. Submit the completed mix design to the Engineer for approval prior to the start of the project. Perform additional mix designs based on road variability, as directed by the Engineer.

      1. **Sampling.** Obtain cores at intervals throughout the project to determine the existing condition of the roadway and account for variability within the project limits. Obtain an adequate quantity of material to perform the mixture design. Evaluate cores and note any evidence of material (rubber seal, fabric underseal, etc.) that could be detrimental to the process. A minimum of 2 in. of the existing pavement structure must remain in place following milling. Note any base or uncoated material that falls within the layer to be recycled. Notify the Engineer of any of these conditions before proceeding with the mix design.

      2. **Job-Mix Formula Approval.** The job-mix formula (JMF) is the combined aggregate gradation and target asphalt recycling agent percentage established from the laboratory mixture design used for hot in-place production.

      3. **Hot Mix Asphalt.** If the process requires new hot-mix asphalt, use materials meeting the requirements of Section 340.4.A, “Mixture Design,” to produce the new hot-mix asphalt. Document in the JMF the percentage of new hot-mix used in the laboratory mix design submitted to the Engineer.

      4. **Aggregates.** If necessary, use aggregates meeting the requirements in Table 1 of Article 340.2, “Materials.”

      5. **Other Additives.** If necessary, use additives to meet the requirements in Table 1. In the case that an additive is used, describe the type and allowable usage percentage in the submitted design recommendation.

Table 1
Laboratory Mix Design Requirements

Mixture Property	Test Method	Min	Max
Target laboratory molded density, %	Tex-207-F	96.0	
Theoretical Maximum Spec. (Rice) Gravity[1]	Tex-227-F	NA	
Tensile strength, lbs./in.[2]	Tex-226-F	75	
Hamburg Wheel-tracking Test , 50ºC, 10,000 cycles, mm	Tex-242-F		12.5
Overlay Test	Tex-248-F	Report Only	
Boil Test[2]	Tex-530-C	-	
Combined Asphalt Property	**Test Method**	**Min**	**Max**
Penetration, 77ºF, 100 g, 5 sec.	T49	40	80

1. Used to determine lab molded density.

2. Used to establish baseline for comparison to production results.

B. Pavement Heating. Heat the existing pavement without charring the existing asphalt and without producing undesirable pollutants. The temperature of the material immediately behind the heater should maintain a minimum of 200ºF. Uniformly heat the pavement surface across its full lane width such that cold milling of the pavement surface does not occur.

C. Pavement Milling. Mill the existing pavement to the required depth and width as indicated on the plans. Do not disturb the underlying material in the existing roadway when recycling. Remove grass and other vegetation from the edge of the existing pavement to prevent contamination of the recycled bituminous material during this operation.

Utilize the milling heads to remove a minimum of 3 in. laterally of the completed adjacent pass and make a square vertical cut in the heated material such that a hot bonded longitudinal joint is achieved. Ensure that all material across the full lane-width is processed between consecutive lane passes to assure that any wedges (slivers) of unprocessed materials are not left untouched by the milling heads and covered by the recycled material, unless otherwise approved by the Engineer.

Ensure that the temperature of the milled surface directly behind the milling heads is greater than 160ºF so that cold milling does not occur. All loosened asphalt material must be cleaned away by the milling heads, and a milling tooth pattern must be clearly visible after milling.

Remove all material around manholes and utility structures prior to paving the recycled mixture to allow for the plan depth of the pavement around these structures.

Cold mill and sweep clean any areas that cannot be heated and milled by the recycling equipment. Properly tack and pave these areas of cold milling in advance of the recycling process.

D. Addition of Recycling Agent. Incorporate the asphalt recycling agent into the hot recycled bituminous material at the rate determined by the approved mix design(s).

Sampling and testing during mixture production may result in varying quantities of recycling agent at different portions of the project in order to meet the requirements in Table 1. Change the recycling agent content only with approval of the Engineer.

E. Placement of Recycled Material. Spread the material using a paver and screed attached to the mixing/milling unit or a traditional paver in a separate and continuous operation meeting the requirements of Section 320.2.C.1, "Equipment." Spread the recycled material to the lines and grades established by the Engineer. Ensure the temperature of the recycled material behind paver is greater than 200ºF.

F. Compaction. Compact the recycled mix using rollers meeting the requirements of Section 3.B, "Rollers." Establish rolling patterns to achieve the target air voids in accordance with Tex-207-F. Only operate rollers in vibratory mode when doing so does not damage the pavement. Compact the recycled mix to in-place air voids between 4% and 9%, unless otherwise shown on the plans. Follow the selected rolling pattern unless changes occur in the recycled mix or placement conditions, at which time establish a new rolling pattern. Adjust or cease compaction when cracking or displacement occurs. Ensure that pavement is fully compacted before allowing rollers to park on the pavement.

G. Traffic. After the completion of compaction of the recycled material, permit no traffic, including that of the contractor, on the completed recycled material until the material has cooled to 160°F or less. After opening to traffic, maintain the surface of the recycled pavement in a condition suitable for the safe movement of traffic. Remove all loose particles that may develop on the pavement surface by power brooming.

H. Irregularities. Immediately take corrective action if surface irregularities, including but not limited to segregation, rutting, raveling, flushing, fat spots, mat slippage, color, texture, roller marks, tears, gouges, streaks, or uncoated aggregate particles, are detected. The Engineer may allow placement to continue for at most 1 day of production while taking appropriate action. If the problem still exists after that day, suspend paving until the problem is corrected to the satisfaction of the Engineer.

At the expense of the Contractor and to the satisfaction of the Engineer, repair any areas with surface irregularities as identified above prior to the placement of any hot mix asphalt surface course or other applicable surface treatment.

I. Curing. A surface treatment may be allowed as the final riding surface when shown on the plans. If hot-mix asphalt concrete or another applicable surface treatment is placed as a surface course, allow the hot in-place recycled bituminous material to cure for a minimum of 7 days, or as directed by the Engineer.

J. Weather Limitations. Unless otherwise approved, perform hot in-place recycling operations when the existing pavement surface temperature is 60°F or higher and when weather conditions and moisture conditions of the roadway surface are suitable, in the opinion of the Engineer.

5. Quality Control. Perform the quality control tests listed in Table 2. If operational tolerances in Table 2 are exceeded, adjust processes or cease production when directed by the Engineer. The Engineer may perform independent tests to confirm contractor compliance and may require testing differences or failing results to be resolved before resuming production. The Engineer will determine resolution for failures which may include requiring removal and replacement of failing material with new asphalt concrete pavement mixture.

Table 2
Operational Tolerance & Minimum Testing Frequency

Description	Test Method	Allowable Difference from JMF Target	Minimum Testing Frequency
Asphalt Content, %	Tex-236-F	± 0.5	1 per day
Theoretical Maximum Spec. (Rice) Gravity	Tex-227-F	N/A	1 per day
Laboratory-Molded Density, %	Tex-207-F	± 1.0	1 per day
Hamburg Wheel-tracking Test , 50ºC, 10,000 cycles, mm	Tex-242-F	N/A[1]	1 per week
Boil Test	Tex-530-C	N/A[2]	1 per day
Air Voids (4% to 9%)	Tex-207-F	N/A[3]	1 per day

1. Hamburg values must not exceed 12.5 mm in 10,000 passes, unless otherwise directed.
2. Compare with sample from mix design to determine amount of stripping.
3. In-Place Air voids should be between 4% and 9%.

A. Mixture Testing. Sample the recycled mixture for testing in accordance with Tex-222-F. For Hamburg Wheel-tracking test, sample prior to compaction.

B. Asphalt Recycling Agent. Meet the requirements of Item 300, "Asphalt, Oils, and Emulsions," Table 12, "Recycling Agent and Emulsified Recycling Agent." Unless otherwise directed, obtain a sample from each transport in accordance with Tex-500-C prior to unloading into the contractor's storage units. Deliver the samples to the Engineer for testing. The Engineer will test at least one sample per project for specification compliance.

C. Total Asphalt Binder Content. Make asphalt recycling content changes based upon mix design recommendations for varying roadway conditions in order to meet the requirements in Table 2.

D. New Hot Mix Asphalt. Control the quantity of new hot-mix asphalt added to the recycled mix from haul tickets to within 5.0% of the target JMF.

E. Depth of Recycled Material. Maintain the required nominal depth on both outside vertical faces and in the center of the recycled area. Manually measure and report to the Engineer recorded depths each 1/4 mile, measured from the bottom of the mill pass to the top of the surface placed.

F. In-Place Air Voids. The Engineer will select and provide the Contractor random numbers for all placement tests. Unless otherwise shown on the plans, obtain two roadway specimens at each random location determined in accordance with Tex-225-F for in-place air void determination. The Engineer will measure air voids in accordance with Tex-207-F and Tex-227-F. Before drying to a constant weight, cores may be pre-dried using a Corelok or similar vacuum device to remove excess moisture. The Engineer will use the average air void content of the two cores to calculate the in-place air voids at the selected location.

G. Ride Quality. Use Surface Test Type A to evaluate ride quality in accordance with Item 585, "Ride Quality for Pavement Surfaces," unless otherwise shown on the plans.

6. Measurement. Hot in-place recycling of asphalt concrete surface will be measured by the square yard. The dimensions for determining the surface areas are established by the depths and widths shown on the plans and the lengths measured at placement.

Recycling agent will be measured at the applied temperature by the gallon from strap depths measured from the calibrated strap stick for each load or other automated means approved by the Engineer.

New hot-mix asphalt concrete will be measured by the ton of composite mix, which includes asphalt, aggregate, and additives. Measure the new hot-mix on scales in accordance with Item 520, "Weighing and Measuring Equipment."

7. Payment. Hot in-place recycling of asphalt concrete surfaces will be paid for at the unit price bid for "Hot In-Place Recycling of Asphalt Concrete (Surface)" of the depth specified.

Asphalt recycling agent will be paid for separately at the unit price bid for "Hot In-Place Recycling of Asphalt Concrete (Recycling Agent)."

New hot-mix asphalt concrete will be paid for at the unit price bid for "Hot In-Place Recycling of Asphalt Concrete (Mix)."

This price is full compensation for the removal and processing of the existing pavement; for preparing, hauling, and placing materials; for all freight involved; for all manipulations, including rolling and brooming; and for all labor, tools, equipment, and incidentals necessary to complete the work. This price also includes any surface treatment that is allowed in the plans but not required to complete the above work.