Fort Bend County Tabulation
Bid 16-035
FM 1093 Westpark Extension Phase I

Approved 1/5/2016: Webber, LLC $63,811,753.94
(award contingent upon approval by TxDOT and receipt of bond proceeds)
Funding: FBC Texas Senior Lien Toll Road Revenue Bonds, Series 2016

Company	Bid Price
Webber, LLC The Woodlands TX	$63,811,753.94
Balfour Beatty Infrastructure, Inc. Austin TX	$67,208,547.67
Odebrecht Construction, Inc. Houston TX	$67,582,179.23
Williams Brothers Construction Co., Inc. Houston TX	$82,706,991.18
Zachary Construction Corporation San Antonio TX	$69,229,659.20-Disqualified for failure to submit in duplicate as required.
ORC/Jbros JV Roanoke TX	$69,948,252.42-Disqualified for failure to submit in duplicate as required.

FM 1093 Westpark Extension Phase I
CSJ 1258-03-042, etc.
Bid Tabulation

Item Code	Description	Unit	Qty.	Engineer's Estimate	Engineer's Amount	Bidder 1 Bid Price ORC/JBROS JV	Bidder 1 Amount ORC/JBROS JV	Bidder 2 Bid Price ODEBRECHT	Bidder 2 Amount ODEBRECHT	Bidder 3 Bid Price WEBBER	Bidder 3 Amount WEBBER	Bidder 4 Bid Price WILLIAMS BROS	Bidder 4 Amount WILLIAMS BROS	Bidder 5 Bid Price BALFOUR BEATTY	Bidder 5 Amount BALFOUR BEATTY	Bidder 6 Bid Price ZACHRY	Bidder 6 Amount ZACHRY
100 6002	PREPARING ROW	STA	222	$ 4,000.00	$ 888,000.00	$ 8,277.00	$ 1,837,494.00	$ 14,046.95	$ 3,118,422.90	$ 19,400.00	$ 4,306,800.00	$ 37,000.00	$ 8,214,000.00	$ 4,500.00	$ 999,000.00	$ 5,485.00	$ 1,217,670.00
104 6001	REMOVING CONC (PAV)	SY	15,595	$ 5.00	$ 77,975.00	$ 3.00	$ 46,785.00	$ 4.15	$ 64,719.25	$ 3.85	$ 60,040.75	$ 7.00	$ 109,165.00	$ 6.00	$ 93,570.00	$ 5.00	$ 77,975.00
104 6009	REMOVING CONC (RIPRAP)	SY	2,837	$ 6.00	$ 17,022.00	$ 2.00	$ 5,674.00	$ 4.31	$ 12,227.47	$ 3.85	$ 10,922.45	$ 5.00	$ 14,185.00	$ 6.00	$ 17,022.00	$ 4.00	$ 11,348.00
104 6017	REMOVING CONC (DRIVEWAYS)	SY	4,006	$ 7.00	$ 28,042.00	$ 15.00	$ 60,090.00	$ 5.61	$ 22,473.66	$ 3.00	$ 12,018.00	$ 6.00	$ 24,036.00	$ 6.00	$ 24,036.00	$ 3.00	$ 12,018.00
104 6022	REMOVING CONC (CURB AND GUTTER)	LF	3,681	$ 6.00	$ 22,086.00	$ 5.00	$ 18,405.00	$ 2.46	$ 9,055.26	$ 5.00	$ 18,405.00	$ 2.00	$ 7,362.00	$ 2.50	$ 9,202.50	$ 11.50	$ 42,331.50
104 6023	REMOVING CONC (CTB)	LF	1,353	$ 6.50	$ 8,794.50	$ 5.00	$ 6,765.00	$ 8.49	$ 11,486.97	$ 6.50	$ 8,794.50	$ 10.00	$ 13,530.00	$ 6.00	$ 8,118.00	$ 7.00	$ 9,471.00
104 6024	REMOVING CONC (RETAINING WALLS)	SY	360	$ 25.00	$ 9,000.00	$ 4.00	$ 1,440.00	$ 15.95	$ 5,742.00	$ 7.50	$ 2,700.00	$ 50.00	$ 18,000.00	$ 11.00	$ 3,960.00	$ 10.00	$ 3,600.00
104 6033	REMOVING CONC (DRAIN)	SY	235	$ 10.00	$ 2,350.00	$ 3.00	$ 705.00	$ 11.85	$ 2,784.75	$ 12.50	$ 2,937.50	$ 50.00	$ 11,750.00	$ 6.00	$ 1,410.00	$ 13.00	$ 3,055.00
104 6037	REMOVE CONC (RAIL)	LF	3,887	$ 8.00	$ 31,096.00	$ 7.00	$ 27,209.00	$ 5.60	$ 21,767.20	$ 6.50	$ 25,265.50	$ 10.00	$ 38,870.00	$ 6.00	$ 23,322.00	$ 7.00	$ 27,209.00
105 6018	REMOVING STAB BASE AND ASPH PAV (7")	SY	8,620	$ 5.00	$ 43,100.00	$ 2.00	$ 17,240.00	$ 2.09	$ 18,015.80	$ 2.20	$ 18,964.00	$ 4.00	$ 34,480.00	$ 1.85	$ 15,947.00	$ 5.00	$ 43,100.00
105 6049	REMOVING STAB BASE & ASPH PAV (4"-22")	SY	132,247	$ 7.00	$ 925,729.00	$ 2.00	$ 264,494.00	$ 5.23	$ 691,651.81	$ 2.48	$ 327,972.56	$ 11.00	$ 1,454,717.00	$ 7.50	$ 991,852.50	$ 3.00	$ 396,741.00
110 6001	EXCAVATION (ROADWAY)	CY	208,890	$ 7.00	$ 1,462,230.00	$ 3.00	$ 626,670.00	$ 4.99	$ 1,042,361.10	$ 4.65	$ 971,338.50	$ 11.00	$ 2,297,790.00	$ 5.50	$ 1,148,895.00	$ 3.75	$ 783,337.50
110 6003	EXCAVATION (SPECIAL)	CY	55,104	$ 10.00	$ 551,040.00	$ 3.00	$ 165,312.00	$ 5.19	$ 285,989.76	$ 2.86	$ 157,597.44	$ 8.00	$ 440,832.00	$ 6.50	$ 358,176.00	$ 4.50	$ 247,968.00
132 6006	EMBANKMENT (FINAL)(DENS CONT)(TY C)	CY	313,830	$ 12.00	$ 3,765,960.00	$ 10.00	$ 3,138,300.00	$ 1.43	$ 448,776.90	$ 3.89	$ 1,220,798.70	$ 9.00	$ 2,824,470.00	$ 7.85	$ 2,463,565.50	$ 9.00	$ 2,824,470.00
132 6035	EMBANK(FINAL)(DC)(TY E)(CSBE)	CY	12,134	$ 40.00	$ 485,360.00	$ 38.00	$ 461,092.00	$ 40.20	$ 487,786.80	$ 33.84	$ 410,614.56	$ 35.00	$ 424,690.00	$ 37.00	$ 448,958.00	$ 40.00	$ 485,360.00
134 6004	BACKFILL (TY A OR B)	STA	132	$ 300.00	$ 39,600.00	$ 190.00	$ 25,080.00	$ 55.96	$ 7,386.72	$ 333.49	$ 44,020.68	$ 800.00	$ 105,600.00	$ 250.00	$ 33,000.00	$ 70.00	$ 9,240.00
161 6017	COMPOST MANUF TOPSOIL (4")	SY	393,461	$ 1.00	$ 393,461.00	$ 1.00	$ 393,461.00	$ 0.75	$ 295,095.75	$ 0.81	$ 318,703.41	$ 1.00	$ 393,461.00	$ 0.77	$ 302,964.97	$ 2.50	$ 983,652.50
162 6002	BLOCK SODDING	SY	70,189	$ 3.00	$ 210,567.00	$ 2.75	$ 193,019.75	$ 2.85	$ 200,038.65	$ 3.05	$ 214,076.45	$ 2.50	$ 175,472.50	$ 2.92	$ 204,951.88	$ 3.25	$ 228,114.25
162 6003	STRAW OR HAY MULCH	SY	786,922	$ 0.15	$ 118,038.30	$ 0.20	$ 157,384.40	$ 0.28	$ 220,338.16	$ 0.18	$ 141,645.96	$ 0.25	$ 196,730.50	$ 0.28	$ 220,338.16	$ 0.20	$ 157,384.40
164 6009	BROADCAST SEED (TEMP) (WARM)	SY	393,461	$ 0.15	$ 59,019.15	$ 0.15	$ 59,019.15	$ 0.09	$ 35,411.49	$ 0.10	$ 39,346.10	$ 0.15	$ 59,019.15	$ 0.09	$ 35,411.49	$ 0.20	$ 78,692.20
164 6051	DRILL SEED (TEMP)(WARM OR COOL)	SY	393,461	$ 0.15	$ 59,019.15	$ 0.15	$ 59,019.15	$ 0.09	$ 35,411.49	$ 0.10	$ 39,346.10	$ 0.15	$ 59,019.15	$ 0.09	$ 35,411.49	$ 0.20	$ 78,692.20
164 6052	BROADCAST SEED (PERM)(SPECIAL MIX)	SY	382,308	$ 0.15	$ 57,346.20	$ 0.10	$ 38,230.80	$ 0.15	$ 57,346.20	$ 0.10	$ 38,230.80	$ 0.15	$ 57,346.20	$ 0.16	$ 61,169.28	$ 0.20	$ 76,461.60
164 6066	DRILL SEEDING (PERM)(WARM OR COOL)	SY	382,308	$ 0.15	$ 57,346.20	$ 0.15	$ 57,346.20	$ 0.15	$ 57,346.20	$ 0.10	$ 38,230.80	$ 0.15	$ 57,346.20	$ 0.16	$ 61,169.28	$ 0.20	$ 76,461.60
166 6001	FERTILIZER	AC	169.00	$ 500.00	$ 84,500.00	$ 600.00	$ 101,400.00	$ 704.56	$ 119,070.64	$ 435.00	$ 73,515.00	$ 650.00	$ 109,850.00	$ 722.17	$ 122,046.73	$ 695.00	$ 117,455.00
168 6001	VEGETATIVE WATERING	MG	20,332	$ 15.00	$ 304,980.00	$ 5.00	$ 101,660.00	$ 11.96	$ 243,170.72	$ 7.58	$ 154,116.56	$ 15.00	$ 304,980.00	$ 11.25	$ 228,735.00	$ 9.00	$ 182,988.00
247 6232	FL BS (CMP IN PLACE)(TY A GR 1-2)(11")	SY	9,767	$ 25.00	$ 244,175.00	$ 12.00	$ 117,204.00	$ 14.88	$ 145,332.96	$ 15.66	$ 152,951.22	$ 25.00	$ 244,175.00	$ 21.00	$ 205,107.00	$ 24.00	$ 234,408.00
260 6006	LIME TRT (EXST MATL) (6")	SY	332,274	$ 2.00	$ 664,548.00	$ 2.00	$ 664,548.00	$ 2.22	$ 737,648.28	$ 1.20	$ 398,728.80	$ 1.50	$ 498,411.00	$ 1.70	$ 564,865.80	$ 2.00	$ 664,548.00
260 6012	LIME(HYD,COM OR QK)(SLRY)OR QK(DRY)	TON	4,483	$ 150.00	$ 672,450.00	$ 156.00	$ 699,348.00	$ 164.59	$ 737,856.97	$ 146.00	$ 654,518.00	$ 160.00	$ 717,280.00	$ 148.00	$ 663,484.00	$ 145.00	$ 650,035.00
276 6224	CEM TRT(PLNT MX) (CL N)(TY E)(GR 4)(6")	SY	320,853	$ 12.00	$ 3,850,236.00	$ 12.00	$ 3,850,236.00	$ 7.72	$ 2,476,985.16	$ 7.45	$ 2,390,354.85	$ 8.00	$ 2,566,824.00	$ 9.50	$ 3,048,103.50	$ 11.00	$ 3,529,383.00
292 6002	ASPHALT STAB BASE (GR 2)(PG 64)	TON	863	$ 75.00	$ 64,725.00	$ 98.00	$ 84,574.00	$ 117.87	$ 101,721.81	$ 117.24	$ 101,178.12	$ 82.00	$ 70,766.00	$ 121.00	$ 104,423.00	$ 115.00	$ 99,245.00
292 6017	ASPHALT STAB BASE (GR 4)(PG 64)	TON	17,032	$ 75.00	$ 1,277,400.00	$ 58.00	$ 987,856.00	$ 69.70	$ 1,187,130.40	$ 69.24	$ 1,179,295.68	$ 56.10	$ 955,495.20	$ 73.00	$ 1,243,336.00	$ 68.00	$ 1,158,176.00
310 6009	PRIME COAT (MC-30)	GAL	2,894	$ 5.00	$ 14,470.00	$ 3.00	$ 8,682.00	$ 5.64	$ 16,322.16	$ 5.05	$ 14,614.70	$ 4.65	$ 13,457.10	$ 5.25	$ 15,193.50	$ 5.00	$ 14,470.00
340 6106	D-GR HMA(SQ) TY-D PG64-22	TON	1,610	$ 100.00	$ 161,000.00	$ 72.00	$ 115,920.00	$ 97.06	$ 156,266.60	$ 84.90	$ 136,689.00	$ 87.65	$ 141,116.50	$ 90.00	$ 144,900.00	$ 84.00	$ 135,240.00
360 6003	CONC PVMT (CONT REINF - CRCP) (9")	SY	172,915	$ 45.00	$ 7,781,175.00	$ 50.00	$ 8,645,750.00	$ 46.32	$ 8,009,422.80	$ 35.81	$ 6,192,086.15	$ 46.66	$ 8,068,213.90	$ 42.00	$ 7,262,430.00	$ 46.00	$ 7,954,090.00
360 6006	CONC PVMT (CONT REINF - CRCP) (12")	SY	128,376	$ 50.00	$ 6,418,800.00	$ 61.00	$ 7,830,936.00	$ 50.32	$ 6,459,880.32	$ 45.86	$ 5,887,323.36	$ 50.00	$ 6,418,800.00	$ 46.00	$ 5,905,296.00	$ 55.00	$ 7,060,680.00
360 6044	CONC PVMT (CONT REINF)(FAST TRK)(12")	SY	18,593	$ 75.00	$ 1,394,475.00	$ 80.00	$ 1,487,440.00	$ 92.26	$ 1,715,390.18	$ 57.80	$ 1,074,675.40	$ 100.00	$ 1,859,300.00	$ 92.00	$ 1,710,556.00	$ 175.00	$ 3,253,775.00
400 6005	CEM STABIL BKFL	CY	28,636	$ 40.00	$ 1,145,440.00	$ 32.00	$ 916,352.00	$ 35.15	$ 1,006,555.40	$ 35.49	$ 1,016,291.64	$ 42.45	$ 1,215,598.20	$ 42.00	$ 1,202,712.00	$ 42.00	$ 1,202,712.00
400 6006	CUT & RESTORING PAV	SY	874	$ 100.00	$ 87,400.00	$ 150.00	$ 131,100.00	$ 102.97	$ 89,995.78	$ 75.61	$ 66,083.14	$ 249.00	$ 217,626.00	$ 125.00	$ 109,250.00	$ 66.00	$ 57,684.00
400 6009	CEMENT STAB BACKFILL (INLET OR MH)	CY	1,437	$ 35.00	$ 50,295.00	$ 35.00	$ 50,295.00	$ 39.63	$ 56,948.31	$ 35.49	$ 50,999.13	$ 42.40	$ 60,928.80	$ 42.00	$ 60,354.00	$ 36.00	$ 51,732.00
402 6001	TRENCH EXCAVATION PROTECTION	LF	32,558	$ 2.00	$ 65,116.00	$ 0.10	$ 3,255.80	$ 1.70	$ 55,348.60	$ 1.08	$ 35,162.64	$ 1.20	$ 39,069.60	$ 3.00	$ 97,674.00	$ 16.00	$ 520,928.00
403 6001	TEMPORARY SPL SHORING	SF	1,991	$ 10.00	$ 19,910.00	$ 4.00	$ 7,964.00	$ 26.81	$ 53,378.71	$ 30.00	$ 59,730.00	$ 10.00	$ 19,910.00	$ 5.50	$ 10,950.50	$ 20.00	$ 39,820.00
416 6004	DRILL SHAFT (36 IN)	LF	8,821	$ 150.00	$ 1,323,150.00	$ 145.00	$ 1,279,045.00	$ 104.10	$ 918,266.10	$ 122.72	$ 1,082,513.12	$ 200.00	$ 1,764,200.00	$ 127.00	$ 1,120,267.00	$ 130.00	$ 1,146,730.00
416 6005	DRILL SHAFT (42 IN)	LF	624	$ 200.00	$ 124,800.00	$ 150.00	$ 93,600.00	$ 166.04	$ 103,608.96	$ 145.15	$ 90,573.60	$ 250.00	$ 156,000.00	$ 160.00	$ 99,840.00	$ 175.00	$ 109,200.00
416 6006	DRILL SHAFT (48 IN)	LF	714	$ 260.00	$ 185,640.00	$ 205.00	$ 146,370.00	$ 218.57	$ 156,058.98	$ 209.33	$ 149,461.62	$ 300.00	$ 214,200.00	$ 215.00	$ 153,510.00	$ 230.00	$ 164,220.00
416 6008	DRILL SHAFT (60 IN)	LF	440	$ 380.00	$ 167,200.00	$ 325.00	$ 143,000.00	$ 344.28	$ 151,483.20	$ 336.13	$ 147,897.20	$ 400.00	$ 176,000.00	$ 378.00	$ 166,320.00	$ 363.00	$ 159,720.00
416 6015	DRILL SHAFT (NON - REINFORCED) (12 IN)	LF	28	$ 60.00	$ 1,680.00	$ 88.60	$ 2,480.80	$ 86.70	$ 2,427.60	$ 75.00	$ 2,100.00	$ 50.00	$ 1,400.00	$ 104.59	$ 2,928.52	$ 89.00	$ 2,492.00
416 6018	DRILL SHAFT (SIGN MTS) (24 IN)	LF	70	$ 120.00	$ 8,400.00	$ 105.52	$ 7,386.40	$ 127.50	$ 8,925.00	$ 125.00	$ 8,750.00	$ 98.00	$ 6,860.00	$ 135.86	$ 9,510.20	$ 106.00	$ 7,420.00
416 6022	DRILL SHAFT (SIGN MTS) (48 IN)	LF	34	$ 310.00	$ 10,540.00	$ 231.50	$ 7,871.00	$ 382.50	$ 13,005.00	$ 375.00	$ 12,750.00	$ 375.00	$ 12,750.00	$ 496.33	$ 16,875.22	$ 232.00	$ 7,888.00
416 6023	DRILL SHAFT (SIGN MTS) (54 IN)	LF	179	$ 400.00	$ 71,600.00	$ 536.30	$ 95,997.70	$ 433.50	$ 77,596.50	$ 425.00	$ 76,075.00	$ 425.00	$ 76,075.00	$ 589.34	$ 105,491.86	$ 537.00	$ 96,123.00
416 6029	DRILL SHAFT (RDWY ILL POLE) (30 IN)	LF	100	$ 150.00	$ 15,000.00	$ 148.14	$ 14,814.00	$ 132.60	$ 13,260.00	$ 130.00	$ 13,000.00	$ 130.00	$ 13,000.00	$ 140.10	$ 14,010.00	$ 148.00	$ 14,800.00
416 6032	DRILL SHAFT (TRF SIG POLE) (36 IN)	LF	30	$ 200.00	$ 6,000.00	$ 172.57	$ 5,177.10	$ 216.63	$ 6,498.90	$ 195.00	$ 5,850.00	$ 195.00	$ 5,850.00	$ 288.20	$ 8,646.00	$ 172.00	$ 5,160.00
416 6034	DRILL SHAFT (TRF SIG POLE) (48 IN)	LF	132	$ 310.00	$ 40,920.00	$ 210.06	$ 27,727.92	$ 306.00	$ 40,392.00	$ 300.00	$ 39,600.00	$ 300.00	$ 39,600.00	$ 367.91	$ 48,564.12	$ 209.00	$ 27,588.00
420 6008	CL A CONC (DITCH INTERCEPTOR STRUCTURE)	CY	35	$ 400.00	$ 14,000.00	$ 348.45	$ 12,195.75	$ 334.19	$ 11,696.65	$ 695.32	$ 24,336.20	$ 369.00	$ 12,915.00	$ 400.00	$ 14,000.00	$ 800.00	$ 28,000.00
420 6013	CL C CONC (ABUT)	CY	164	$ 750.00	$ 123,000.00	$ 550.00	$ 90,200.00	$ 735.10	$ 120,556.40	$ 852.78	$ 139,855.92	$ 800.00	$ 131,200.00	$ 490.00	$ 80,360.00	$ 795.00	$ 130,380.00
420 6029	CL C CONC (CAP)	CY	180	$ 630.00	$ 113,400.00	$ 675.00	$ 121,500.00	$ 1,724.67	$ 310,440.60	$ 1,082.04	$ 194,767.20	$ 900.00	$ 162,000.00	$ 950.00	$ 171,000.00	$ 1,100.00	$ 198,000.00
420 6037	CL C CONC (COLUMN)	CY	237	$ 800.00	$ 189,600.00	$ 950.00	$ 225,150.00	$ 1,511.85	$ 358,308.45	$ 1,488.26	$ 352,717.62	$ 1,400.00	$ 331,800.00	$ 725.00	$ 171,825.00	$ 1,200.00	$ 284,400.00
420 6043	CL C CONC (FOOTING)	CY	90	$ 650.00	$ 58,500.00	$ 450.00	$ 40,500.00	$ 792.46	$ 71,321.40	$ 1,155.73	$ 104,015.70	$ 1,200.00	$ 108,000.00	$ 450.00	$ 40,500.00	$ 600.00	$ 54,000.00
420 6077	CL E CONC (SEAL SLAB)(NON-REINF)	CY	4	$ 400.00	$ 1,600.00	$ 200.00	$ 800.00	$ 876.51	$ 3,506.04	$ 2,146.83	$ 8,587.32	$ 200.00	$ 800.00	$ 325.00	$ 1,300.00	$ 600.00	$ 2,400.00
422 6001	REINF CONC SLAB	SF	51,186	$ 15.00	$ 767,790.00	$ 15.80	$ 808,738.80	$ 16.34	$ 836,379.24	$ 14.50	$ 742,197.00	$ 15.00	$ 767,790.00	$ 10.00	$ 511,860.00	$ 12.00	$ 614,232.00
423 6001	RETAINING WALL (MSE)	SF	135,641	$ 30.00	$ 4,069,230.00	$ 28.00	$ 3,797,948.00	$ 37.89	$ 5,139,437.49	$ 32.64	$ 4,427,322.24	$ 35.00	$ 4,747,435.00	$ 33.50	$ 4,543,973.50	$ 21.00	$ 2,848,461.00

FM 1093 Westpark Extension Phase I
CSJ 1258-03-042, etc.
Bid Tabulation

Item Code	Description	Unit	Qty	Engineer's Estimate	Engineer's Amount	Bidder 1 Bid Price ORC/JBROS JV	Bidder 1 Amount ORC/JBROS JV	Bidder 2 Bid Price ODEBRECHT	Bidder 2 Amount ODEBRECHT	Bidder 3 Bid Price WEBBER	Bidder 3 Amount WEBBER	Bidder 4 Bid Price WILLIAMS BROS	Bidder 4 Amount WILLIAMS BROS	Bidder 5 Bid Price BALFOUR BEATTY	Bidder 5 Amount BALFOUR BEATTY	Bidder 6 Bid Price ZACHRY	Bidder 6 Amount ZACHRY
425 6038	PRESTR CONC GIRDER (TX46)	LF	3,150	$ 120.00	$ 378,000.00	$ 130.00	$ 409,500.00	$ 144.29	$ 454,513.50	$ 125.77	$ 396,175.50	$ 110.00	$ 346,500.00	$ 124.00	$ 390,600.00	$ 127.00	$ 400,050.00
425 6039	PRESTR CONC GIRDER (TX54)	LF	2,985	$ 140.00	$ 417,900.00	$ 130.00	$ 388,050.00	$ 144.91	$ 432,556.35	$ 126.64	$ 378,020.40	$ 130.00	$ 388,050.00	$ 127.00	$ 379,095.00	$ 131.00	$ 391,035.00
432 6001	RIPRAP (CONC)(4 IN)	CY	1,451	$ 400.00	$ 580,400.00	$ 210.00	$ 304,710.00	$ 280.93	$ 407,629.43	$ 350.00	$ 507,850.00	$ 450.00	$ 652,950.00	$ 400.00	$ 580,400.00	$ 360.00	$ 522,360.00
432 6002	RIPRAP (CONC)(5 IN)	CY	139	$ 400.00	$ 55,600.00	$ 210.00	$ 29,190.00	$ 410.26	$ 57,026.14	$ 370.00	$ 51,430.00	$ 450.00	$ 62,550.00	$ 400.00	$ 55,600.00	$ 450.00	$ 62,550.00
432 6009	RIPRAP (CONC) (CL B) (4")	CY	545	$ 400.00	$ 218,000.00	$ 210.00	$ 114,450.00	$ 308.02	$ 167,870.90	$ 330.00	$ 179,850.00	$ 450.00	$ 245,250.00	$ 400.00	$ 218,000.00	$ 400.00	$ 218,000.00
432 6031	RIPRAP (STONE PROTECTION)(12 IN)	CY	260	$ 120.00	$ 31,200.00	$ 75.00	$ 19,500.00	$ 90.93	$ 23,641.80	$ 300.00	$ 78,000.00	$ 130.00	$ 33,800.00	$ 155.00	$ 40,300.00	$ 120.00	$ 31,200.00
432 6045	RIPRAP (MOW STRIP)(4 IN)	CY	228	$ 400.00	$ 91,200.00	$ 210.00	$ 47,880.00	$ 281.41	$ 64,161.48	$ 330.00	$ 75,240.00	$ 450.00	$ 102,600.00	$ 450.00	$ 102,600.00	$ 430.00	$ 98,040.00
442 6007	STR STEEL (MISC NON - BRIDGE)	LB	1,712	$ 5.00	$ 8,560.00	$ 5.00	$ 8,560.00	$ 8.62	$ 14,757.44	$ 8.84	$ 15,134.08	$ 2.00	$ 3,424.00	$ 7.00	$ 11,984.00	$ 9.00	$ 15,408.00
442 9001	STRUCTURAL STEEL	EA	1	$ 192,200.00	$ 192,200.00	$ 165,000.00	$ 165,000.00	$ 197,294.00	$ 197,294.00	$ 155,000.00	$ 155,000.00	$ 155,000.00	$ 155,000.00	$ 180,000.00	$ 180,000.00	$ 65,000.00	$ 65,000.00
450 6023	RAIL (TY SSTR)	LF	10,489	$ 35.00	$ 367,115.00	$ 40.00	$ 419,560.00	$ 25.16	$ 263,903.24	$ 37.43	$ 392,603.27	$ 30.00	$ 314,670.00	$ 38.00	$ 398,582.00	$ 32.00	$ 335,648.00
450 6054	RAIL (TY SSTR) (W/DRAIN SLOTS)	LF	18,494	$ 35.00	$ 647,290.00	$ 30.00	$ 554,820.00	$ 25.01	$ 462,534.94	$ 37.43	$ 692,230.42	$ 30.00	$ 554,820.00	$ 40.00	$ 739,760.00	$ 33.00	$ 610,302.00
454 6001	SEALED EXPANSION JOINT (4 IN) (SEJ - A)	LF	339	$ 85.00	$ 28,815.00	$ 70.00	$ 23,730.00	$ 62.44	$ 21,167.16	$ 97.56	$ 33,072.84	$ 150.00	$ 50,850.00	$ 75.00	$ 25,425.00	$ 82.00	$ 27,798.00
460 6003	CMP (GAL STL 24 IN)	LF	213	$ 60.00	$ 12,780.00	$ 30.00	$ 6,390.00	$ 62.04	$ 13,214.52	$ 37.60	$ 8,008.80	$ 80.05	$ 17,050.65	$ 60.00	$ 12,780.00	$ 95.00	$ 20,235.00
462 6001	CONC BOX CULV (3 FT X 2 FT)	LF	1,042	$ 130.00	$ 135,460.00	$ 120.00	$ 125,040.00	$ 156.10	$ 162,656.20	$ 100.54	$ 104,762.68	$ 123.00	$ 128,166.00	$ 115.00	$ 119,830.00	$ 155.00	$ 161,510.00
462 6002	CONC BOX CULV (3 FT X 3 FT)	LF	395	$ 145.00	$ 57,275.00	$ 125.00	$ 49,375.00	$ 153.69	$ 60,707.55	$ 116.64	$ 46,072.80	$ 130.00	$ 51,350.00	$ 133.00	$ 52,535.00	$ 200.00	$ 79,000.00
462 6003	CONC BOX CULV (4 FT X 2 FT)	LF	2,547	$ 160.00	$ 407,520.00	$ 132.00	$ 336,204.00	$ 155.13	$ 395,116.11	$ 114.14	$ 290,714.58	$ 134.90	$ 343,590.30	$ 140.00	$ 356,580.00	$ 180.00	$ 458,460.00
462 6004	CONC BOX CULV (4 FT X 3 FT)	LF	1,908	$ 170.00	$ 324,360.00	$ 149.00	$ 284,292.00	$ 165.82	$ 316,384.56	$ 132.91	$ 253,592.28	$ 152.15	$ 290,302.20	$ 158.00	$ 301,464.00	$ 195.00	$ 372,060.00
462 6006	CONC BOX CULV (5 FT X 2 FT)	LF	1,026	$ 210.00	$ 215,460.00	$ 200.00	$ 205,200.00	$ 209.67	$ 215,121.42	$ 170.72	$ 175,158.72	$ 188.70	$ 193,606.20	$ 183.00	$ 187,758.00	$ 240.00	$ 246,240.00
462 6007	CONC BOX CULV (5 FT X 3 FT)	LF	3,437	$ 220.00	$ 756,140.00	$ 202.00	$ 694,274.00	$ 213.60	$ 734,143.20	$ 172.18	$ 591,782.66	$ 194.60	$ 668,840.20	$ 198.00	$ 680,526.00	$ 245.00	$ 842,065.00
462 6008	CONC BOX CULV (5 FT X 4 FT)	LF	1,298	$ 240.00	$ 311,520.00	$ 211.00	$ 273,878.00	$ 215.84	$ 280,160.32	$ 183.69	$ 238,429.62	$ 207.60	$ 269,464.80	$ 212.00	$ 275,176.00	$ 265.00	$ 343,970.00
462 6010	CONC BOX CULV (6 FT X 3 FT)	LF	1,751	$ 250.00	$ 437,750.00	$ 222.00	$ 388,722.00	$ 222.05	$ 388,809.55	$ 188.63	$ 330,291.13	$ 220.20	$ 385,570.20	$ 223.00	$ 390,473.00	$ 265.00	$ 464,015.00
462 6011	CONC BOX CULV (6 FT X 4 FT)	LF	1,483	$ 280.00	$ 415,240.00	$ 236.00	$ 349,988.00	$ 244.67	$ 362,845.61	$ 203.74	$ 302,146.42	$ 244.45	$ 362,519.35	$ 252.00	$ 373,716.00	$ 285.00	$ 422,655.00
462 6012	CONC BOX CULV (6 FT X 5 FT)	LF	382	$ 300.00	$ 114,600.00	$ 900.00	$ 343,800.00	$ 282.32	$ 107,846.24	$ 222.62	$ 85,040.84	$ 274.40	$ 104,820.80	$ 268.00	$ 102,376.00	$ 340.00	$ 129,880.00
462 6014	CONC BOX CULV (7 FT X 3 FT)	LF	3,212	$ 300.00	$ 963,600.00	$ 326.00	$ 1,047,112.00	$ 304.48	$ 977,989.76	$ 245.51	$ 788,578.12	$ 300.05	$ 963,760.60	$ 282.00	$ 905,784.00	$ 350.00	$ 1,124,200.00
462 6019	CONC BOX CULV (8 FT X 4 FT)	LF	2,247	$ 320.00	$ 719,040.00	$ 360.00	$ 808,920.00	$ 323.32	$ 726,500.04	$ 268.78	$ 603,948.66	$ 353.45	$ 794,202.15	$ 318.00	$ 714,546.00	$ 420.00	$ 943,740.00
462 6020	CONC BOX CULV (8 FT X 5 FT)	LF	327	$ 400.00	$ 130,800.00	$ 390.00	$ 127,530.00	$ 375.36	$ 122,742.72	$ 295.19	$ 96,527.13	$ 367.05	$ 120,025.35	$ 338.00	$ 110,526.00	$ 450.00	$ 147,150.00
462 6021	CONC BOX CULV (8 FT X 6 FT)	LF	989	$ 400.00	$ 395,600.00	$ 400.00	$ 395,600.00	$ 368.84	$ 364,782.76	$ 303.72	$ 300,379.08	$ 404.90	$ 400,446.10	$ 363.00	$ 359,007.00	$ 530.00	$ 524,170.00
462 6029	CONC BOX CULV (10 FT X 5 FT)	LF	2,280	$ 500.00	$ 1,140,000.00	$ 475.00	$ 1,083,000.00	$ 455.84	$ 1,039,315.20	$ 400.10	$ 912,228.00	$ 542.95	$ 1,237,926.00	$ 465.00	$ 1,060,200.00	$ 660.00	$ 1,504,800.00
462 6031	CONC BOX CULV (10 FT X 7 FT)	LF	166	$ 500.00	$ 83,000.00	$ 545.00	$ 90,470.00	$ 293.09	$ 48,652.94	$ 487.29	$ 80,890.14	$ 648.85	$ 107,709.10	$ 515.00	$ 85,490.00	$ 670.00	$ 111,220.00
464 6003	RC PIPE (CL III)(18 IN)	LF	1,490	$ 45.00	$ 67,050.00	$ 35.00	$ 52,150.00	$ 79.18	$ 117,978.20	$ 47.73	$ 71,117.70	$ 50.55	$ 75,319.50	$ 44.00	$ 65,560.00	$ 52.00	$ 77,480.00
464 6005	RC PIPE (CL III)(24 IN)	LF	16,147	$ 50.00	$ 807,350.00	$ 37.00	$ 597,439.00	$ 66.81	$ 1,078,781.07	$ 40.88	$ 660,089.36	$ 47.60	$ 768,597.20	$ 51.00	$ 823,497.00	$ 67.00	$ 1,081,849.00
464 6007	RC PIPE (CL III)(30 IN)	LF	1,404	$ 65.00	$ 91,260.00	$ 56.00	$ 78,624.00	$ 97.06	$ 136,272.24	$ 69.22	$ 97,184.88	$ 68.20	$ 95,752.80	$ 66.00	$ 92,664.00	$ 95.00	$ 133,380.00
464 6008	RC PIPE (CL III)(36 IN)	LF	2,041	$ 85.00	$ 173,485.00	$ 75.00	$ 153,075.00	$ 110.89	$ 226,326.49	$ 83.36	$ 170,137.76	$ 76.60	$ 156,340.60	$ 86.00	$ 175,526.00	$ 106.00	$ 216,346.00
464 6012	RC PIPE (CL III)(60 IN)	LF	96	$ 190.00	$ 18,240.00	$ 485.00	$ 46,560.00	$ 247.41	$ 23,751.36	$ 222.79	$ 21,387.84	$ 167.65	$ 16,094.40	$ 205.00	$ 19,680.00	$ 372.00	$ 35,712.00
465 6166	INLET (COMPL)(TY AAD)	EA	12	$ 3,500.00	$ 42,000.00	$ 3,750.00	$ 45,000.00	$ 5,713.00	$ 68,556.00	$ 4,342.71	$ 52,112.52	$ 4,557.00	$ 54,684.00	$ 4,100.00	$ 49,200.00	$ 4,600.00	$ 55,200.00
465 6167	INLET (COMPL)(TY AD)	EA	46	$ 2,800.00	$ 128,800.00	$ 2,050.00	$ 94,300.00	$ 3,740.00	$ 172,040.00	$ 2,594.53	$ 119,348.38	$ 2,857.00	$ 131,422.00	$ 2,300.00	$ 105,800.00	$ 3,000.00	$ 138,000.00
465 6172	INLET (COMPL)(TY AZR2G)	EA	26	$ 6,000.00	$ 156,000.00	$ 5,800.00	$ 150,800.00	$ 7,218.00	$ 187,668.00	$ 6,126.61	$ 159,291.86	$ 8,151.00	$ 211,926.00	$ 6,800.00	$ 176,800.00	$ 6,800.00	$ 176,800.00
465 6173	MANH (COMPL)(TY A)	EA	20	$ 4,000.00	$ 80,000.00	$ 3,652.00	$ 73,040.00	$ 5,507.00	$ 110,140.00	$ 3,776.05	$ 75,521.00	$ 2,483.00	$ 49,660.00	$ 3,500.00	$ 70,000.00	$ 4,000.00	$ 80,000.00
465 6175	INLET (COMPL)(CURB)(TY C)	EA	67	$ 3,000.00	$ 201,000.00	$ 3,295.00	$ 220,765.00	$ 4,510.00	$ 302,170.00	$ 2,887.64	$ 193,471.88	$ 4,577.00	$ 306,659.00	$ 3,700.00	$ 247,900.00	$ 5,000.00	$ 335,000.00
465 6176	INLET (COMPL)(CURB)(TY C1)	EA	27	$ 3,500.00	$ 94,500.00	$ 4,020.00	$ 108,540.00	$ 4,735.00	$ 127,845.00	$ 3,086.97	$ 83,348.19	$ 4,577.00	$ 123,579.00	$ 4,500.00	$ 121,500.00	$ 5,100.00	$ 137,700.00
465 6177	INLET (COMPL)(TY AZ2G)	EA	9	$ 5,500.00	$ 49,500.00	$ 5,340.00	$ 48,060.00	$ 19,782.00	$ 178,038.00	$ 6,213.69	$ 55,923.21	$ 7,874.00	$ 70,866.00	$ 6,600.00	$ 59,400.00	$ 6,450.00	$ 58,050.00
465 6225	JCT BOX (COMPL)(SPL)	EA	24	$ 17,500.00	$ 420,000.00	$ 25,000.00	$ 600,000.00	$ 14,765.00	$ 354,360.00	$ 31,592.48	$ 758,219.52	$ 37,527.00	$ 900,648.00	$ 24,000.00	$ 576,000.00	$ 30,000.00	$ 720,000.00
466 6013	HEADWALL (CH - FW - 0) (DIA= 60 IN)	EA	1	$ 20,000.00	$ 20,000.00	$ 13,000.00	$ 13,000.00	$ 6,007.00	$ 6,007.00	$ 13,186.81	$ 13,186.81	$ 18,164.00	$ 18,164.00	$ 9,500.00	$ 9,500.00	$ 22,000.00	$ 22,000.00
466 6142	WINGWALL (FW - 0) (HW=10 FT)	EA	1	$ 20,000.00	$ 20,000.00	$ 30,000.00	$ 30,000.00	$ 12,013.00	$ 12,013.00	$ 22,340.62	$ 22,340.62	$ 25,612.00	$ 25,612.00	$ 26,000.00	$ 26,000.00	$ 30,000.00	$ 30,000.00
466 6151	WINGWALL (FW - 0) (HW=4 FT)	EA	3	$ 10,000.00	$ 30,000.00	$ 6,000.00	$ 18,000.00	$ 8,113.00	$ 24,339.00	$ 13,110.01	$ 39,330.03	$ 10,156.00	$ 30,468.00	$ 6,500.00	$ 19,500.00	$ 9,500.00	$ 28,500.00
466 6154	WINGWALL (FW - 0) (HW=7 FT)	EA	1	$ 16,000.00	$ 16,000.00	$ 15,000.00	$ 15,000.00	$ 9,047.00	$ 9,047.00	$ 17,686.29	$ 17,686.29	$ 14,057.00	$ 14,057.00	$ 18,000.00	$ 18,000.00	$ 24,000.00	$ 24,000.00
466 6165	WINGWALL (FW - S) (HW=4 FT)	EA	2	$ 7,500.00	$ 15,000.00	$ 7,500.00	$ 15,000.00	$ 7,902.00	$ 15,804.00	$ 13,800.52	$ 27,601.04	$ 10,157.00	$ 20,314.00	$ 7,300.00	$ 14,600.00	$ 12,000.00	$ 24,000.00
466 6178	WINGWALL (PW - 1) (HW=3 FT)	EA	1	$ 7,500.00	$ 7,500.00	$ 9,500.00	$ 9,500.00	$ 5,414.00	$ 5,414.00	$ 7,901.63	$ 7,901.63	$ 8,999.00	$ 8,999.00	$ 6,200.00	$ 6,200.00	$ 14,000.00	$ 14,000.00
466 6208	WINGWALL (SW - 0) (HW=5 FT)	EA	1	$ 7,500.00	$ 7,500.00	$ 9,500.00	$ 9,500.00	$ 6,434.00	$ 6,434.00	$ 13,646.44	$ 13,646.44	$ 10,339.00	$ 10,339.00	$ 6,700.00	$ 6,700.00	$ 10,000.00	$ 10,000.00
466 6210	WINGWALL (SW - 0) (HW=7 FT)	EA	2	$ 7,500.00	$ 15,000.00	$ 13,000.00	$ 26,000.00	$ 11,232.00	$ 22,464.00	$ 21,148.80	$ 42,297.60	$ 19,553.00	$ 39,106.00	$ 13,000.00	$ 26,000.00	$ 15,000.00	$ 30,000.00
467 6006	SET (TY I) (24 IN) (4: 1) (C)	EA	6	$ 5,000.00	$ 30,000.00	$ 790.00	$ 4,740.00	$ 1,418.00	$ 8,508.00	$ 680.07	$ 4,080.42	$ 1,227.00	$ 7,362.00	$ 1,300.00	$ 7,800.00	$ 2,000.00	$ 12,000.00
467 6016	SET (TY I) (36 IN) (6: 1) (C)	EA	1	$ 5,000.00	$ 5,000.00	$ 3,390.00	$ 3,390.00	$ 3,884.00	$ 3,884.00	$ 2,605.06	$ 2,605.06	$ 3,323.00	$ 3,323.00	$ 4,400.00	$ 4,400.00	$ 2,000.00	$ 2,000.00
467 6098	SET (TY I)(S=3 FT)(HW=2FT)(3:1)(C)	EA	1	$ 5,000.00	$ 5,000.00	$ 2,933.00	$ 2,933.00	$ 4,577.00	$ 4,577.00	$ 2,460.06	$ 2,460.06	$ 3,966.00	$ 3,966.00	$ 1,800.00	$ 1,800.00	$ 2,700.00	$ 2,700.00
467 6131	SET (TY I)(S= 4 FT)(HW= 2 FT)(3:1) (C)	EA	2	$ 5,000.00	$ 10,000.00	$ 2,933.00	$ 5,866.00	$ 5,857.00	$ 11,714.00	$ 3,595.07	$ 7,190.14	$ 4,466.00	$ 8,932.00	$ 1,900.00	$ 3,800.00	$ 1,600.00	$ 3,200.00
467 6134	SET (TY I)(S= 4 FT)(HW= 2 FT)(6:1) (P)	EA	3	$ 5,000.00	$ 15,000.00	$ 3,050.00	$ 9,150.00	$ 6,939.00	$ 20,817.00	$ 4,555.07	$ 13,665.21	$ 6,070.00	$ 18,210.00	$ 2,900.00	$ 8,700.00	$ 2,650.00	$ 7,950.00
467 6139	SET (TY I)(S= 4 FT)(HW= 3 FT)(4:1) (C)	EA	1	$ 6,000.00	$ 6,000.00	$ 3,150.00	$ 3,150.00	$ 5,902.00	$ 5,902.00	$ 3,635.06	$ 3,635.06	$ 4,701.00	$ 4,701.00	$ 2,900.00	$ 2,900.00	$ 2,700.00	$ 2,700.00
467 6142	SET (TY I)(S= 4 FT)(HW= 3 FT)(6:1) (P)	EA	1	$ 6,000.00	$ 6,000.00	$ 3,260.00	$ 3,260.00	$ 8,185.00	$ 8,185.00	$ 5,660.06	$ 5,660.06	$ 6,402.00	$ 6,402.00	$ 4,400.00	$ 4,400.00	$ 2,700.00	$ 2,700.00
467 6168	SET (TY I)(S= 5 FT)(HW= 2 FT)(6:1) (P)	EA	4	$ 5,000.00	$ 20,000.00	$ 3,475.00	$ 13,900.00	$ 7,413.00	$ 29,652.00	$ 4,975.07	$ 19,900.28	$ 6,902.00	$ 27,608.00	$ 3,100.00	$ 12,400.00	$ 2,900.00	$ 11,600.00
467 6169	SET (TY I)(S= 5 FT)(HW= 2 FT)(3:1) (C)	EA	1	$ 5,000.00	$ 5,000.00	$ 3,210.00	$ 3,210.00	$ 7,046.00	$ 7,046.00	$ 4,650.06	$ 4,650.06	$ 7,402.00	$ 7,402.00	$ 1,900.00	$ 1,900.00	$ 1,800.00	$ 1,800.00

FM 1093 Westpark Extension Phase I
CSJ 1258-03-042, etc.
Bid Tabulation

Item Code	Description	Unit	Qty	Engineer's Estimate	Engineer's Amount	Bidder 1 Bid Price ORC/JBROS JV	Bidder 1 Amount ORC/JBROS JV	Bidder 2 Bid Price ODEBRECHT	Bidder 2 Amount ODEBRECHT	Bidder 3 Bid Price WEBBER	Bidder 3 Amount WEBBER	Bidder 4 Bid Price WILLIAMS BROS	Bidder 4 Amount WILLIAMS BROS	Bidder 5 Bid Price BALFOUR BEATTY	Bidder 5 Amount BALFOUR BEATTY	Bidder 6 Bid Price ZACHRY	Bidder 6 Amount ZACHRY
467 6174	SET (TY I)(S= 5 FT)(HW= 3 FT)(6:1) (P)	EA	7	$ 5,000.00	$ 35,000.00	$ 3,320.00	$ 23,240.00	$ 8,732.00	$ 61,124.00	$ 6,175.07	$ 43,225.49	$ 7,902.00	$ 55,314.00	$ 4,700.00	$ 32,900.00	$ 4,800.00	$ 33,600.00
467 6184	SET (TY I)(S= 5 FT)(HW= 5 FT)(6:1) (P)	EA	1	$ 10,000.00	$ 10,000.00	$ 3,590.00	$ 3,590.00	$ 11,432.00	$ 11,432.00	$ 8,540.06	$ 8,540.06	$ 9,203.00	$ 9,203.00	$ 9,000.00	$ 9,000.00	$ 7,200.00	$ 7,200.00
467 6215	SET (TY I)(S= 6 FT)(HW= 4 FT)(6:1) (P)	EA	1	$ 10,000.00	$ 10,000.00	$ 3,695.00	$ 3,695.00	$ 13,140.00	$ 13,140.00	$ 10,055.06	$ 10,055.06	$ 11,304.00	$ 11,304.00	$ 7,100.00	$ 7,100.00	$ 5,200.00	$ 5,200.00
467 6226	SET (TY I)(S= 6 FT)(HW= 6 FT)(6:1) (P)	EA	1	$ 10,000.00	$ 10,000.00	$ 3,850.00	$ 3,850.00	$ 16,668.00	$ 16,668.00	$ 13,185.06	$ 13,185.06	$ 11,804.00	$ 11,804.00	$ 12,000.00	$ 12,000.00	$ 10,600.00	$ 10,600.00
467 6354	SET (TY II) (18 IN) (RCP) (2: 1) (C)	EA	1	$ 1,000.00	$ 1,000.00	$ 875.00	$ 875.00	$ 700.00	$ 700.00	$ 530.06	$ 530.06	$ 1,106.00	$ 1,106.00	$ 740.00	$ 740.00	$ 1,100.00	$ 1,100.00
467 6388	SET (TY II) (24 IN) (RCP) (3: 1) (C)	EA	9	$ 1,000.00	$ 9,000.00	$ 660.00	$ 5,940.00	$ 967.00	$ 8,703.00	$ 640.07	$ 5,760.63	$ 1,106.00	$ 9,954.00	$ 880.00	$ 7,920.00	$ 1,460.00	$ 13,140.00
467 6390	SET (TY II) (24 IN) (RCP) (4: 1) (C)	EA	5	$ 1,000.00	$ 5,000.00	$ 795.00	$ 3,975.00	$ 1,012.00	$ 5,060.00	$ 680.07	$ 3,400.35	$ 1,227.00	$ 6,135.00	$ 1,000.00	$ 5,000.00	$ 1,850.00	$ 9,250.00
467 6395	SET (TY II) (24 IN) (RCP) (6: 1) (P)	EA	1	$ 1,500.00	$ 1,500.00	$ 990.00	$ 990.00	$ 1,136.00	$ 1,136.00	$ 790.06	$ 790.06	$ 1,227.00	$ 1,227.00	$ 1,200.00	$ 1,200.00	$ 3,000.00	$ 3,000.00
467 6419	SET (TY II) (30 IN) (RCP) (4: 1) (C)	EA	6	$ 1,500.00	$ 9,000.00	$ 1,160.00	$ 6,960.00	$ 1,591.00	$ 9,546.00	$ 940.07	$ 5,640.42	$ 1,568.00	$ 9,408.00	$ 1,400.00	$ 8,400.00	$ 2,400.00	$ 14,400.00
467 6423	SET (TY II) (30 IN) (RCP) (6: 1) (P)	EA	3	$ 2,000.00	$ 6,000.00	$ 1,505.00	$ 4,515.00	$ 1,642.00	$ 4,926.00	$ 985.07	$ 2,955.21	$ 2,652.00	$ 7,956.00	$ 1,900.00	$ 5,700.00	$ 3,500.00	$ 10,500.00
467 6450	SET (TY II) (36 IN) (RCP) (4: 1) (C)	EA	1	$ 3,000.00	$ 3,000.00	$ 2,290.00	$ 2,290.00	$ 2,666.00	$ 2,666.00	$ 1,710.06	$ 1,710.06	$ 2,936.00	$ 2,936.00	$ 2,900.00	$ 2,900.00	$ 3,200.00	$ 3,200.00
467 6454	SET (TY II) (36 IN) (RCP) (6: 1) (P)	EA	6	$ 3,000.00	$ 18,000.00	$ 3,390.00	$ 20,340.00	$ 3,675.00	$ 22,050.00	$ 2,605.07	$ 15,630.42	$ 3,958.00	$ 23,748.00	$ 4,400.00	$ 26,400.00	$ 5,000.00	$ 30,000.00
476 6013	JACK BOR OR TUN PIPE(24 IN)(RC)(CL III)	LF	65	$ 500.00	$ 32,500.00	$ 490.00	$ 31,850.00	$ 593.34	$ 38,567.10	$ 170.60	$ 11,089.00	$ 807.40	$ 52,481.00	$ 200.00	$ 13,000.00	$ 511.01	$ 33,215.65
476 6024	JACK BOR OR TUN PIPE(36 IN)(RC)(CL III)	LF	184	$ 1,000.00	$ 184,000.00	$ 565.00	$ 103,960.00	$ 648.16	$ 119,261.44	$ 749.09	$ 137,832.56	$ 881.40	$ 162,177.60	$ 900.00	$ 165,600.00	$ 604.88	$ 111,297.92
476 6044	JACK BOR OR TUN PIPE(60 IN)(RC)(CL III)	LF	110	$ 1,000.00	$ 110,000.00	$ 810.00	$ 89,100.00	$ 836.15	$ 91,976.50	$ 923.60	$ 101,596.00	$ 1,736.20	$ 190,982.00	$ 1,200.00	$ 132,000.00	$ 763.57	$ 83,992.70
479 6002	ADJUSTING INLETS	EA	2	$ 1,500.00	$ 3,000.00	$ 2,100.00	$ 4,200.00	$ 312.00	$ 624.00	$ 1,203.82	$ 2,407.64	$ 1,510.00	$ 3,020.00	$ 1,500.00	$ 3,000.00	$ 3,500.00	$ 7,000.00
479 6006	ADJUSTING INLET (CAP)	EA	2	$ 2,000.00	$ 4,000.00	$ 1,500.00	$ 3,000.00	$ 548.00	$ 1,096.00	$ 1,203.82	$ 2,407.64	$ 1,374.00	$ 2,748.00	$ 850.00	$ 1,700.00	$ 1,500.00	$ 3,000.00
481 6023	PIPE (PVC) (SCH 80) (6 IN)	LF	60	$ 60.00	$ 3,600.00	$ 30.00	$ 1,800.00	$ 11.43	$ 685.80	$ 70.83	$ 4,249.80	$ 50.00	$ 3,000.00	$ 30.00	$ 1,800.00	$ 7.00	$ 420.00
496 6002	REMOV STR (INLET)	EA	16	$ 665.00	$ 10,640.00	$ 150.00	$ 2,400.00	$ 511.00	$ 8,176.00	$ 1,103.05	$ 17,648.80	$ 744.00	$ 11,904.00	$ 750.00	$ 12,000.00	$ 730.00	$ 11,680.00
496 6003	REMOV STR (MANHOLE)	EA	4	$ 725.00	$ 2,900.00	$ 290.00	$ 1,160.00	$ 1,023.00	$ 4,092.00	$ 1,224.52	$ 4,898.08	$ 741.00	$ 2,964.00	$ 750.00	$ 3,000.00	$ 630.00	$ 2,520.00
496 6004	REMOV STR (SET)	EA	93	$ 425.00	$ 39,525.00	$ 100.00	$ 9,300.00	$ 272.00	$ 25,296.00	$ 509.34	$ 47,368.62	$ 1,037.00	$ 96,441.00	$ 400.00	$ 37,200.00	$ 380.00	$ 35,340.00
496 6007	REMOV STR (PIPE)	LF	6,211	$ 15.00	$ 93,165.00	$ 7.00	$ 43,477.00	$ 9.56	$ 59,377.16	$ 23.40	$ 145,337.40	$ 23.00	$ 142,853.00	$ 12.00	$ 74,532.00	$ 9.00	$ 55,899.00
496 6043	REMOV STR (SMALL FENCE)	LF	2,902	$ 10.00	$ 29,020.00	$ 2.00	$ 5,804.00	$ 0.79	$ 2,292.58	$ 4.77	$ 13,842.54	$ 5.00	$ 14,510.00	$ 3.00	$ 8,706.00	$ 6.00	$ 17,412.00
496 6048	REMOV STR (PUMP STA)(INTERN COMPONENTS	EA	2	$ 1,000.00	$ 2,000.00	$ 4,100.00	$ 8,200.00	$ 3,453.00	$ 6,906.00	$ 16,594.91	$ 33,189.82	$ 32,850.00	$ 65,700.00	$ 15,000.00	$ 30,000.00	$ 30,000.00	$ 60,000.00
500 6001	MOBILIZATION	LS	1	$ 6,446,609.58	$ 6,446,609.58	$ 6,741,954.00	$ 6,741,954.00	$ 6,543,405.00	$ 6,543,405.00	$ 6,000,000.00	$ 6,000,000.00	$ 9,000,000.00	$ 9,000,000.00	$ 6,500,000.00	$ 6,500,000.00	$ 3,000,000.00	$ 3,000,000.00
502 6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	24	$ 15,000.00	$ 360,000.00	$ 16,000.00	$ 384,000.00	$ 30,791.05	$ 738,985.20	$ 31,553.33	$ 757,279.92	$ 20,000.00	$ 480,000.00	$ 12,000.00	$ 288,000.00	$ 30,000.00	$ 720,000.00
506 6001	ROCK FILTER DAMS (INSTALL) (TY 1)	LF	265	$ 25.00	$ 6,625.00	$ 36.00	$ 9,540.00	$ 31.07	$ 8,233.55	$ 53.95	$ 14,296.75	$ 31.00	$ 8,215.00	$ 40.00	$ 10,600.00	$ 59.00	$ 15,635.00
506 6003	ROCK FILTER DAMS (INSTALL) (TY 3)	LF	50	$ 25.00	$ 1,250.00	$ 55.00	$ 2,750.00	$ 69.59	$ 3,479.50	$ 127.26	$ 6,363.00	$ 29.00	$ 1,450.00	$ 75.00	$ 3,750.00	$ 106.25	$ 5,312.50
506 6011	ROCK FILTER DAMS (REMOVE)	LF	315	$ 10.00	$ 3,150.00	$ 12.00	$ 3,780.00	$ 8.48	$ 2,671.20	$ 13.41	$ 4,224.15	$ 10.00	$ 3,150.00	$ 10.00	$ 3,150.00	$ 59.00	$ 18,585.00
506 6020	CONSTRUCTION EXITS (INSTALL) (TY 1)	SY	1,794	$ 25.00	$ 44,850.00	$ 28.00	$ 50,232.00	$ 22.50	$ 40,365.00	$ 19.44	$ 34,875.36	$ 24.00	$ 43,056.00	$ 26.00	$ 46,644.00	$ 36.55	$ 65,570.70
506 6024	CONSTRUCTION EXITS (REMOVE)	SY	1,794	$ 10.00	$ 17,940.00	$ 7.00	$ 12,558.00	$ 8.60	$ 15,428.40	$ 6.77	$ 12,145.38	$ 11.00	$ 19,734.00	$ 4.50	$ 8,073.00	$ 19.00	$ 34,086.00
506 6040	BIODEG EROSN CONT LOGS (INSTL) (8")	LF	1,918	$ 4.00	$ 7,672.00	$ 7.00	$ 13,426.00	$ 4.68	$ 8,976.24	$ 8.12	$ 15,574.16	$ 4.00	$ 7,672.00	$ 3.50	$ 6,713.00	$ 6.25	$ 11,987.50
506 6041	BIODEG EROSN CONT LOGS (INSTL) (12")	LF	3,157	$ 5.00	$ 15,785.00	$ 15.00	$ 47,355.00	$ 5.17	$ 16,321.69	$ 8.55	$ 26,992.35	$ 5.00	$ 15,785.00	$ 4.50	$ 14,206.50	$ 7.50	$ 23,677.50
506 6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	5,075	$ 1.00	$ 5,075.00	$ 2.00	$ 10,150.00	$ 1.35	$ 6,851.25	$ 5.28	$ 26,796.00	$ 1.00	$ 5,075.00	$ 0.50	$ 2,537.50	$ 1.00	$ 5,075.00
508 6001	CONSTRUCTING DETOURS	SY	27,249	$ 70.00	$ 1,907,430.00	$ 50.00	$ 1,362,450.00	$ 56.02	$ 1,526,488.98	$ 55.30	$ 1,506,869.70	$ 65.00	$ 1,771,185.00	$ 58.00	$ 1,580,442.00	$ 35.00	$ 953,715.00
512 6001	PORT CTB (FUR & INST)(SGL SLOPE)(TY 1)	LF	8,780	$ 50.00	$ 439,000.00	$ 50.00	$ 439,000.00	$ 40.97	$ 359,716.60	$ 46.14	$ 405,109.20	$ 30.00	$ 263,400.00	$ 55.00	$ 482,900.00	$ 49.00	$ 430,220.00
512 6013	PORT CTB (DES SOURCE)(SGL SLP)(TY 1)	LF	4,020	$ 10.00	$ 40,200.00	$ 6.00	$ 24,120.00	$ 9.36	$ 37,627.20	$ 6.93	$ 27,858.60	$ 5.00	$ 20,100.00	$ 7.50	$ 30,150.00	$ 8.00	$ 32,160.00
512 6021	PORT CTB (DES SOURCE)(LOW PROF)(TY 1)	LF	7,240	$ 7.50	$ 54,300.00	$ 6.00	$ 43,440.00	$ 8.12	$ 58,788.80	$ 6.27	$ 45,394.80	$ 5.00	$ 36,200.00	$ 6.50	$ 47,060.00	$ 9.00	$ 65,160.00
512 6022	PORT CTB (DES SOURCE)(LOW PROF)(TY 2)	LF	120	$ 16.00	$ 1,920.00	$ 6.00	$ 720.00	$ 8.16	$ 979.20	$ 6.52	$ 782.40	$ 5.00	$ 600.00	$ 12.00	$ 1,440.00	$ 22.00	$ 2,640.00
512 6025	PORT CTB (MOVE)(SGL SLP)(TY 1)	LF	11,900	$ 8.00	$ 95,200.00	$ 5.00	$ 59,500.00	$ 2.44	$ 29,036.00	$ 3.98	$ 47,362.00	$ 5.00	$ 59,500.00	$ 6.00	$ 71,400.00	$ 6.00	$ 71,400.00
512 6033	PORT CTB (MOVE)(LOW PROF)(TY 1)	LF	6,660	$ 4.55	$ 30,303.00	$ 5.00	$ 33,300.00	$ 2.22	$ 14,785.20	$ 3.56	$ 23,709.60	$ 5.00	$ 33,300.00	$ 6.00	$ 39,960.00	$ 5.00	$ 33,300.00
512 6034	PORT CTB (MOVE)(LOW PROF)(TY 2)	LF	220	$ 4.00	$ 880.00	$ 5.00	$ 1,100.00	$ 2.24	$ 492.80	$ 6.42	$ 1,412.40	$ 5.00	$ 1,100.00	$ 6.00	$ 1,320.00	$ 5.00	$ 1,100.00
512 6037	PORT CTB (STKPL)(SGL SLP)(TY 1)	LF	4,020	$ 7.00	$ 28,140.00	$ 5.00	$ 20,100.00	$ 4.22	$ 16,964.40	$ 7.14	$ 28,702.80	$ 5.00	$ 20,100.00	$ 6.00	$ 24,120.00	$ 9.00	$ 36,180.00
512 6045	PORT CTB (STKPL)(LOW PROF)(TY 1)	LF	7,240	$ 7.00	$ 50,680.00	$ 5.00	$ 36,200.00	$ 5.94	$ 43,005.60	$ 6.27	$ 45,394.80	$ 5.00	$ 36,200.00	$ 6.00	$ 43,440.00	$ 9.00	$ 65,160.00
512 6046	PORT CTB (STKPL)(LOW PROF)(TY 2)	LF	120	$ 4.00	$ 480.00	$ 5.00	$ 600.00	$ 7.96	$ 955.20	$ 6.52	$ 782.40	$ 5.00	$ 600.00	$ 7.00	$ 840.00	$ 7.00	$ 840.00
512 6049	PORT CTB (REMOVE)(SGL SLP)(TY 1)	LF	8,780	$ 10.00	$ 87,800.00	$ 3.00	$ 26,340.00	$ 4.22	$ 37,051.60	$ 7.89	$ 69,274.20	$ 5.00	$ 43,900.00	$ 7.00	$ 61,460.00	$ 6.00	$ 52,680.00
512 6080	PORT CTB CONNECT HARDWARE	EA OTLSP	503	$ 230.00	$ 115,690.00	$ 45.00	$ 22,635.00	$ 33.82	$ 17,011.46	$ 43.30	$ 21,779.90	$ 125.00	$ 62,875.00	$ 17.00	$ 8,551.00	$ 15.00	$ 7,545.00
514 6001	PERM CTB (SGL SLOPE) (TY 1) (42)	LF	11,747	$ 60.00	$ 704,820.00	$ 30.00	$ 352,410.00	$ 35.18	$ 413,259.46	$ 46.90	$ 550,934.30	$ 30.00	$ 352,410.00	$ 60.00	$ 704,820.00	$ 51.00	$ 599,097.00
514 6004	PERM CTB (SGL SLOPE) (TY 4) (42)	LF	580	$ 60.00	$ 34,800.00	$ 145.00	$ 84,100.00	$ 80.44	$ 46,655.20	$ 76.34	$ 44,277.20	$ 100.00	$ 58,000.00	$ 140.00	$ 81,200.00	$ 220.00	$ 127,600.00
529 6005	CONC CURB (MONO) (TY II)	LF	84,999	$ 3.00	$ 254,997.00	$ 5.00	$ 424,995.00	$ 2.18	$ 185,297.82	$ 1.79	$ 152,148.21	$ 5.00	$ 424,995.00	$ 2.90	$ 246,497.10	$ 2.00	$ 169,998.00
529 6010	CONC CURB (U-TURN)	LF	1,694	$ 40.00	$ 67,760.00	$ 30.00	$ 50,820.00	$ 15.54	$ 26,324.76	$ 30.32	$ 51,362.08	$ 38.00	$ 64,372.00	$ 28.00	$ 47,432.00	$ 7.20	$ 12,196.80
529 6011	CONC CURB (DOWEL)	LF	254	$ 25.00	$ 6,350.00	$ 8.00	$ 2,032.00	$ 4.72	$ 1,198.88	$ 7.75	$ 1,968.50	$ 10.00	$ 2,540.00	$ 15.00	$ 3,810.00	$ 22.00	$ 5,588.00
530 6004	DRIVEWAYS (CONC)	SY	4,484	$ 55.00	$ 246,620.00	$ 77.00	$ 345,268.00	$ 46.41	$ 208,102.44	$ 45.62	$ 204,560.08	$ 100.00	$ 448,400.00	$ 50.00	$ 224,200.00	$ 60.00	$ 269,040.00
531 6001	CONC SIDEWALKS (4")	SY	23,589	$ 45.00	$ 1,061,505.00	$ 60.00	$ 1,415,340.00	$ 28.39	$ 669,691.71	$ 50.00	$ 1,179,450.00	$ 60.00	$ 1,415,340.00	$ 50.00	$ 1,179,450.00	$ 54.00	$ 1,273,806.00
531 6004	CURB RAMPS (TY 1)	EA	8	$ 1,500.00	$ 12,000.00	$ 2,775.00	$ 22,200.00	$ 683.00	$ 5,464.00	$ 1,600.00	$ 12,800.00	$ 2,000.00	$ 16,000.00	$ 2,000.00	$ 16,000.00	$ 2,450.00	$ 19,600.00
531 6010	CURB RAMPS (TY 7)	EA	29	$ 1,200.00	$ 34,800.00	$ 1,960.00	$ 56,840.00	$ 722.00	$ 20,938.00	$ 1,800.00	$ 52,200.00	$ 2,000.00	$ 58,000.00	$ 2,000.00	$ 58,000.00	$ 2,357.00	$ 68,353.00
531 6016	CURB RAMPS (TY 21)	EA	7	$ 2,000.00	$ 14,000.00	$ 3,360.00	$ 23,520.00	$ 881.00	$ 6,167.00	$ 2,500.00	$ 17,500.00	$ 2,000.00	$ 14,000.00	$ 2,200.00	$ 15,400.00	$ 2,262.00	$ 15,974.00
540 6006	MTL BEAM GD FEN TRANS (THRIE-BEAM)	EA	4	$ 1,600.00	$ 6,400.00	$ 1,900.00	$ 7,600.00	$ 1,360.00	$ 5,440.00	$ 1,715.00	$ 6,860.00	$ 1,780.00	$ 7,120.00	$ 1,793.02	$ 7,172.08	$ 1,360.00	$ 5,440.00
542 6001	REMOVE METAL BEAM GUARD FENCE	LF	643	$ 4.00	$ 2,572.00	$ 1.50	$ 964.50	$ 2.00	$ 1,286.00	$ 5.00	$ 3,215.00	$ 4.50	$ 2,893.50	$ 5.23	$ 3,362.89	$ 2.00	$ 1,286.00

FM 1093 Westpark Extension Phase I
CSJ 1258-03-042, etc.
Bid Tabulation

Item Code	Description	Unit	Qty	Engineer's Estimate	Engineer's Amount	Bidder 1 Bid Price ORC/JBROS JV	Bidder 1 Amount ORC/JBROS JV	Bidder 2 Bid Price ODEBRECHT	Bidder 2 Amount ODEBRECHT	Bidder 3 Bid Price WEBBER	Bidder 3 Amount WEBBER	Bidder 4 Bid Price WILLIAMS BROS	Bidder 4 Amount WILLIAMS BROS	Bidder 5 Bid Price BALFOUR BEATTY	Bidder 5 Amount BALFOUR BEATTY	Bidder 6 Bid Price ZACHRY	Bidder 6 Amount ZACHRY
544 6001	GUARDRAIL END TREATMENT (INSTALL)	EA	4	$ 2,000.00	$ 8,000.00	$ 2,450.00	$ 9,800.00	$ 2,110.00	$ 8,440.00	$ 2,325.00	$ 9,300.00	$ 2,110.00	$ 8,440.00	$ 2,430.77	$ 9,723.08	$ 2,110.00	$ 8,440.00
545 6001	CRASH CUSH ATTEN (INSTL)	EA	22	$ 12,500.00	$ 275,000.00	$ 19,500.00	$ 429,000.00	$ 19,176.00	$ 421,872.00	$ 20,500.00	$ 451,000.00	$ 18,800.00	$ 413,600.00	$ 17,000.00	$ 374,000.00	$ 18,800.00	$ 413,600.00
545 6003	CRASH CUSH ATTEN (MOVE & RESET)	EA	10	$ 2,000.00	$ 20,000.00	$ 3,750.00	$ 37,500.00	$ 2,448.00	$ 24,480.00	$ 4,250.00	$ 42,500.00	$ 2,400.00	$ 24,000.00	$ 2,500.00	$ 25,000.00	$ 2,400.00	$ 24,000.00
545 6005	CRASH CUSH ATTEN (REMOVE)	EA	20	$ 1,000.00	$ 20,000.00	$ 2,000.00	$ 40,000.00	$ 1,030.00	$ 20,600.00	$ 950.00	$ 19,000.00	$ 1,010.00	$ 20,200.00	$ 750.00	$ 15,000.00	$ 1,010.00	$ 20,200.00
610 6002	RELOCATE RD IL ASM (SHOE-BASE)	EA	6	$ 355.00	$ 2,130.00	$ 1,067.00	$ 6,402.00	$ 170.00	$ 1,020.00	$ 1,000.00	$ 6,000.00	$ 1,300.00	$ 7,800.00	$ 618.01	$ 3,708.06	$ 1,060.00	$ 6,360.00
610 6003	RELOCATE RD IL ASM (CTB MOUNT)	EA	7	$ 2,000.00	$ 14,000.00	$ 978.00	$ 6,846.00	$ 1,020.00	$ 7,140.00	$ 1,000.00	$ 7,000.00	$ 1,000.00	$ 7,000.00	$ 649.38	$ 4,545.66	$ 973.00	$ 6,811.00
610 6011	IN RD IL AM (U/P) (TY 1) (150W) S	EA	16	$ 800.00	$ 12,800.00	$ 1,132.00	$ 18,112.00	$ 995.00	$ 15,920.00	$ 975.00	$ 15,600.00	$ 975.00	$ 15,600.00	$ 1,091.19	$ 17,459.04	$ 1,124.00	$ 17,984.00
610 6102	REPLACE LUMINAIRE W/LED (250W EQ)	EA	26	$ 750.00	$ 19,500.00	$ 588.00	$ 15,288.00	$ 612.00	$ 15,912.00	$ 600.00	$ 15,600.00	$ 600.00	$ 15,600.00	$ 670.39	$ 17,430.14	$ 585.00	$ 15,210.00
610 6191	IN RD IL (TY SP) 38S-8-8 (250W EQ) LED	EA	50	$ 5,000.00	$ 250,000.00	$ 3,460.00	$ 173,000.00	$ 3,060.00	$ 153,000.00	$ 3,000.00	$ 150,000.00	$ 3,000.00	$ 150,000.00	$ 3,809.35	$ 190,467.50	$ 3,439.00	$ 171,950.00
618 6040	CONDT (PVC) (SCH 80) (1")	LF	1,870	$ 5.00	$ 9,350.00	$ 8.30	$ 15,521.00	$ 6.38	$ 11,930.60	$ 6.00	$ 11,220.00	$ 6.00	$ 11,220.00	$ 3.08	$ 5,759.60	$ 9.00	$ 16,830.00
618 6044	CONDT (PVC) (SCH 80) (1 1/2")	LF	500	$ 6.00	$ 3,000.00	$ 14.00	$ 7,000.00	$ 11.48	$ 5,740.00	$ 11.25	$ 5,625.00	$ 11.25	$ 5,625.00	$ 4.30	$ 2,150.00	$ 14.00	$ 7,000.00
618 6046	CONDT (PVC) (SCH 80) (2")	LF	15,210	$ 5.00	$ 76,050.00	$ 6.00	$ 91,260.00	$ 7.91	$ 120,311.10	$ 7.25	$ 110,272.50	$ 7.25	$ 110,272.50	$ 3.66	$ 55,668.60	$ 6.00	$ 91,260.00
618 6047	CONDT (PVC) (SCH 80) (2") (BORE)	LF	960	$ 10.00	$ 9,600.00	$ 11.00	$ 10,560.00	$ 10.15	$ 9,744.00	$ 9.95	$ 9,552.00	$ 9.95	$ 9,552.00	$ 5.33	$ 5,116.80	$ 11.00	$ 10,560.00
618 6053	CONDT (PVC) (SCH 80) (3")	LF	940	$ 10.00	$ 9,400.00	$ 9.00	$ 8,460.00	$ 10.21	$ 9,597.40	$ 10.01	$ 9,409.40	$ 10.01	$ 9,409.40	$ 5.44	$ 5,113.60	$ 10.00	$ 9,400.00
618 6054	CONDT (PVC) (SCH 80) (3") (BORE)	LF	585	$ 15.00	$ 8,775.00	$ 19.00	$ 11,115.00	$ 16.06	$ 9,395.10	$ 15.75	$ 9,213.75	$ 15.75	$ 9,213.75	$ 8.36	$ 4,890.60	$ 20.00	$ 11,700.00
618 6058	CONDT (PVC) (SCH 80) (4")	LF	575	$ 13.00	$ 7,475.00	$ 16.00	$ 9,200.00	$ 14.94	$ 8,590.50	$ 14.65	$ 8,423.75	$ 14.65	$ 8,423.75	$ 7.34	$ 4,220.50	$ 16.00	$ 9,200.00
618 6059	CONDT (PVC) (SCH 80) (4") (BORE)	LF	585	$ 15.00	$ 8,775.00	$ 19.00	$ 11,115.00	$ 18.72	$ 10,951.20	$ 18.35	$ 10,734.75	$ 18.35	$ 10,734.75	$ 7.34	$ 4,293.90	$ 19.00	$ 11,115.00
618 6062	CONDT (RM) (3/4")	LF	208	$ 21.00	$ 4,368.00	$ 21.00	$ 4,368.00	$ 10.61	$ 2,206.88	$ 10.40	$ 2,163.20	$ 10.40	$ 2,163.20	$ 6.60	$ 1,372.80	$ 22.00	$ 4,576.00
618 6066	CONDT (RM) (1 1/4")	LF	278	$ 13.00	$ 3,614.00	$ 18.00	$ 5,004.00	$ 12.23	$ 3,399.94	$ 11.99	$ 3,333.22	$ 11.99	$ 3,333.22	$ 8.18	$ 2,274.04	$ 19.00	$ 5,282.00
618 6070	CONDT (RM) (2")	LF	300	$ 18.00	$ 5,400.00	$ 18.00	$ 5,400.00	$ 17.79	$ 5,337.00	$ 17.44	$ 5,232.00	$ 17.44	$ 5,232.00	$ 11.63	$ 3,489.00	$ 19.00	$ 5,700.00
618 6074	CONDT (RM) (3")	LF	976	$ 23.00	$ 22,448.00	$ 29.00	$ 28,304.00	$ 36.61	$ 35,731.36	$ 32.75	$ 31,964.00	$ 32.75	$ 31,964.00	$ 46.64	$ 45,520.64	$ 29.00	$ 28,304.00
620 6007	ELEC CONDR (NO.8) BARE	LF	14,541	$ 1.00	$ 14,541.00	$ 1.00	$ 14,541.00	$ 0.90	$ 13,086.90	$ 0.90	$ 13,086.90	$ 0.90	$ 13,086.90	$ 0.75	$ 10,905.75	$ 0.83	$ 12,069.03
620 6008	ELEC CONDR (NO.8) INSULATED	LF	30,542	$ 1.00	$ 30,542.00	$ 1.00	$ 30,542.00	$ 0.97	$ 29,625.74	$ 0.95	$ 29,014.90	$ 0.95	$ 29,014.90	$ 0.83	$ 25,349.86	$ 0.90	$ 27,487.80
620 6009	ELEC CONDR (NO.6) BARE	LF	2,120	$ 1.25	$ 2,650.00	$ 1.00	$ 2,120.00	$ 1.02	$ 2,162.40	$ 1.00	$ 2,120.00	$ 1.00	$ 2,120.00	$ 0.99	$ 2,098.80	$ 1.00	$ 2,120.00
620 6011	ELEC CONDR (NO.4) BARE	LF	854	$ 1.25	$ 1,067.50	$ 1.00	$ 854.00	$ 1.78	$ 1,520.12	$ 1.75	$ 1,494.50	$ 1.75	$ 1,494.50	$ 1.31	$ 1,118.74	$ 1.60	$ 1,366.40
620 6012	ELEC CONDR (NO.4) INSULATED	LF	850	$ 1.50	$ 1,275.00	$ 2.00	$ 1,700.00	$ 1.99	$ 1,691.50	$ 1.95	$ 1,657.50	$ 1.95	$ 1,657.50	$ 1.36	$ 1,156.00	$ 1.70	$ 1,445.00
620 6020	ELEC CONDR (NO.1/0) INSULATED	LF	1,332	$ 2.00	$ 2,664.00	$ 3.90	$ 5,194.80	$ 4.99	$ 6,646.68	$ 4.89	$ 6,513.48	$ 4.89	$ 6,513.48	$ 2.36	$ 3,143.52	$ 3.90	$ 5,194.80
621 6005	TRAY CABLE (4 CONDR) (12 AWG)	LF	2,920	$ 1.50	$ 4,380.00	$ 2.00	$ 5,840.00	$ 1.82	$ 5,314.40	$ 1.78	$ 5,197.60	$ 1.78	$ 5,197.60	$ 1.50	$ 4,380.00	$ 1.50	$ 4,380.00
624 6010	GROUND BOX TY D (162922)W/APRON	EA	38	$ 700.00	$ 26,600.00	$ 780.00	$ 29,640.00	$ 714.00	$ 27,132.00	$ 700.00	$ 26,600.00	$ 700.00	$ 26,600.00	$ 739.69	$ 28,108.22	$ 775.00	$ 29,450.00
624 6014	GROUND BOX TY 1 (122422)W/APRON	EA	7	$ 1,800.00	$ 12,600.00	$ 1,115.00	$ 7,805.00	$ 1,199.00	$ 8,393.00	$ 1,175.00	$ 8,225.00	$ 1,175.00	$ 8,225.00	$ 1,191.08	$ 8,337.56	$ 1,110.00	$ 7,770.00
624 6021	GROUND BOX TY 2 (243636)W/APRON	EA	13	$ 1,300.00	$ 16,900.00	$ 1,517.00	$ 19,721.00	$ 1,301.00	$ 16,913.00	$ 1,275.00	$ 16,575.00	$ 1,275.00	$ 16,575.00	$ 1,450.11	$ 18,851.43	$ 1,510.00	$ 19,630.00
628 6001	RELOCATE ELECTRICAL SERVICES	EA	1	$ 7,500.00	$ 7,500.00	$ 2,495.00	$ 2,495.00	$ 255.00	$ 255.00	$ 250.00	$ 250.00	$ 550.00	$ 550.00	$ 963.02	$ 963.02	$ 2,480.00	$ 2,480.00
628 6086	ELC SRV TY A 240/480 100(SS)SS(E)SP(O)	EA	3	$ 5,000.00	$ 15,000.00	$ 5,725.00	$ 17,175.00	$ 5,355.00	$ 16,065.00	$ 5,250.00	$ 15,750.00	$ 5,750.00	$ 17,250.00	$ 5,649.49	$ 16,948.47	$ 5,690.00	$ 17,070.00
628 6188	ELC SRV TY D 120/240 070(NS)SS(E)SP(O)	EA	2	$ 3,500.00	$ 7,000.00	$ 4,142.00	$ 8,284.00	$ 4,335.00	$ 8,670.00	$ 4,250.00	$ 8,500.00	$ 4,750.00	$ 9,500.00	$ 4,018.52	$ 8,037.04	$ 4,145.00	$ 8,290.00
636 6002	ALUMINUM SIGNS (TY G)	SF	690	$ 22.00	$ 15,180.00	$ 29.50	$ 20,355.00	$ 19.07	$ 13,158.30	$ 29.50	$ 20,355.00	$ 19.60	$ 13,524.00	$ 16.51	$ 11,391.90	$ 22.00	$ 15,180.00
636 6003	ALUMINUM SIGNS (TY O)	SF	1,759	$ 22.00	$ 38,698.00	$ 17.20	$ 30,254.80	$ 17.19	$ 30,237.21	$ 16.85	$ 29,639.15	$ 16.85	$ 29,639.15	$ 16.53	$ 29,076.27	$ 16.00	$ 28,144.00
644 6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	124	$ 400.00	$ 49,600.00	$ 332.00	$ 41,168.00	$ 470.00	$ 58,280.00	$ 332.00	$ 41,168.00	$ 395.00	$ 48,980.00	$ 347.10	$ 43,040.40	$ 395.00	$ 48,980.00
644 6004	IN SM RD SN SUP&AM TY10BWG(1)SA(T)	EA	66	$ 500.00	$ 33,000.00	$ 488.00	$ 32,208.00	$ 605.00	$ 39,930.00	$ 488.00	$ 32,208.00	$ 570.00	$ 37,620.00	$ 510.20	$ 33,673.20	$ 570.00	$ 37,620.00
644 6005	IN SM RD SN SUP&AM TY10BWG(1)SA(T-2EXT)	EA	7	$ 800.00	$ 5,600.00	$ 600.00	$ 4,200.00	$ 628.00	$ 4,396.00	$ 600.00	$ 4,200.00	$ 615.00	$ 4,305.00	$ 627.30	$ 4,391.10	$ 615.00	$ 4,305.00
644 6007	IN SM RD SN SUP&AM TY10BWG(1)SA(U)	EA	4	$ 600.00	$ 2,400.00	$ 527.00	$ 2,108.00	$ 697.00	$ 2,788.00	$ 527.00	$ 2,108.00	$ 655.00	$ 2,620.00	$ 550.98	$ 2,203.92	$ 655.00	$ 2,620.00
644 6035	IN SM RD SN SUP&AM TYS80(1)SA(U-2EXT)	EA	4	$ 800.00	$ 3,200.00	$ 765.00	$ 3,060.00	$ 959.00	$ 3,836.00	$ 765.00	$ 3,060.00	$ 900.00	$ 3,600.00	$ 799.80	$ 3,199.20	$ 900.00	$ 3,600.00
644 6076	REMOVE SM RD SN SUP&AM	EA	87	$ 100.00	$ 8,700.00	$ 75.00	$ 6,525.00	$ 90.00	$ 7,830.00	$ 75.00	$ 6,525.00	$ 96.00	$ 8,352.00	$ 78.41	$ 6,821.67	$ 46.00	$ 4,002.00
647 6001	INSTALL LRSS (STRUCT STEEL)	LB	3,600	$ 5.00	$ 18,000.00	$ 3.75	$ 13,500.00	$ 4.40	$ 15,840.00	$ 3.75	$ 13,500.00	$ 3.35	$ 12,060.00	$ 4.20	$ 15,120.00	$ 3.76	$ 13,536.00
647 6003	REMOVE LRSA	EA	2	$ 500.00	$ 1,000.00	$ 1,500.00	$ 3,000.00	$ 510.00	$ 1,020.00	$ 1,500.00	$ 3,000.00	$ 960.00	$ 1,920.00	$ 419.67	$ 839.34	$ 1,625.00	$ 3,250.00
650 6032	INS OH SN SUP(30 FT CANT)	EA	2	$ 20,000.00	$ 40,000.00	$ 16,795.00	$ 33,590.00	$ 17,828.00	$ 35,656.00	$ 17,478.00	$ 34,956.00	$ 17,478.00	$ 34,956.00	$ 18,482.03	$ 36,964.06	$ 16,795.00	$ 33,590.00
650 6038	INS OH SN SUP(35 FT CANT)	EA	3	$ 25,000.00	$ 75,000.00	$ 23,390.00	$ 70,170.00	$ 23,832.00	$ 71,496.00	$ 23,365.00	$ 70,095.00	$ 23,365.00	$ 70,095.00	$ 25,554.17	$ 76,662.51	$ 23,390.00	$ 70,170.00
650 6045	INS OH SN SUP(40 FT CANT)	EA	5	$ 30,000.00	$ 150,000.00	$ 27,260.00	$ 136,300.00	$ 27,716.00	$ 138,580.00	$ 27,173.00	$ 135,865.00	$ 27,173.00	$ 135,865.00	$ 29,735.72	$ 148,678.60	$ 27,260.00	$ 136,300.00
650 6204	REMOVE OVERHD SIGN SUP	EA	1	$ 5,000.00	$ 5,000.00	$ 7,321.00	$ 7,321.00	$ 7,650.00	$ 7,650.00	$ 7,500.00	$ 7,500.00	$ 9,000.00	$ 9,000.00	$ 1,678.65	$ 1,678.65	$ 7,322.00	$ 7,322.00
650 6205	REMOVE OVERHD SIGN SUP (SIGN ONLY)	EA	1	$ 675.00	$ 675.00	$ 627.00	$ 627.00	$ 510.00	$ 510.00	$ 500.00	$ 500.00	$ 500.00	$ 500.00	$ 839.32	$ 839.32	$ 630.00	$ 630.00
662 6060	WK ZN PAV MRK REMOV (W)4"(BRK)	LF	8,890	$ 3.00	$ 26,670.00	$ 0.60	$ 5,334.00	$ 0.61	$ 5,422.90	$ 0.60	$ 5,334.00	$ 0.65	$ 5,778.50	$ 0.63	$ 5,600.70	$ 1.00	$ 8,890.00
662 6063	WK ZN PAV MRK REMOV (W)4"(SLD)	LF	42,991	$ 0.60	$ 25,794.60	$ 0.60	$ 25,794.60	$ 0.61	$ 26,224.51	$ 0.60	$ 25,794.60	$ 0.52	$ 22,355.32	$ 0.63	$ 27,084.33	$ 1.00	$ 42,991.00
662 6071	WK ZN PAV MRK REMOV (W)8"(SLD)	LF	120	$ 2.00	$ 240.00	$ 1.90	$ 228.00	$ 1.94	$ 232.80	$ 1.90	$ 228.00	$ 1.05	$ 126.00	$ 1.99	$ 238.80	$ 1.10	$ 132.00
662 6075	WK ZN PAV MRK REMOV (W)24"(SLD)	LF	363	$ 6.00	$ 2,178.00	$ 6.10	$ 2,214.30	$ 6.22	$ 2,257.86	$ 6.10	$ 2,214.30	$ 12.00	$ 4,356.00	$ 6.38	$ 2,315.94	$ 5.00	$ 1,815.00
662 6080	WK ZN PAV MRK REMOV (W)(ARROW)	EA	5	$ 140.00	$ 700.00	$ 140.00	$ 700.00	$ 143.00	$ 715.00	$ 140.00	$ 700.00	$ 185.00	$ 925.00	$ 146.37	$ 731.85	$ 113.00	$ 565.00
662 6090	WK ZN PAV MRK REMOV (W)(WORD)	EA	5	$ 150.00	$ 750.00	$ 160.00	$ 800.00	$ 163.00	$ 815.00	$ 160.00	$ 800.00	$ 265.00	$ 1,325.00	$ 167.28	$ 836.40	$ 136.00	$ 680.00
662 6094	WK ZN PAV MRK REMOV (Y)4"(DOT)	LF	680	$ 1.00	$ 680.00	$ 1.40	$ 952.00	$ 1.43	$ 972.40	$ 1.40	$ 952.00	$ 1.00	$ 680.00	$ 1.46	$ 992.80	$ 2.00	$ 1,360.00
662 6095	WK ZN PAV MRK REMOV (Y)4"(SLD)	LF	71,078	$ 0.50	$ 35,539.00	$ 0.60	$ 42,646.80	$ 0.61	$ 43,357.58	$ 0.60	$ 42,646.80	$ 0.52	$ 36,960.56	$ 0.63	$ 44,779.14	$ 0.50	$ 35,539.00
662 6100	WK ZN PAV MRK REMOV (Y)12"(SLD)	LF	1,979	$ 5.00	$ 9,895.00	$ 3.60	$ 7,124.40	$ 3.67	$ 7,262.93	$ 3.60	$ 7,124.40	$ 1.65	$ 3,265.35	$ 3.76	$ 7,441.04	$ 2.00	$ 3,958.00
668 6018	REFL PAV MRK TY I (W)6"(DOT)(100MIL)	LF	451	$ 0.80	$ 360.80	$ 2.30	$ 1,037.30	$ 2.35	$ 1,059.85	$ 2.30	$ 1,037.30	$ 1.00	$ 451.00	$ 2.40	$ 1,082.40	$ 1.65	$ 744.15

FM 1093 Westpark Extension Phase I
CSJ 1258-03-042, etc.
Bid Tabulation

Item Code	Description	Unit	Qty	Engineer's Estimate	Engineer's Amount	Bidder 1 Bid Price ORC/JBROS JV	Bidder 1 Amount ORC/JBROS JV	Bidder 2 Bid Price ODEBRECHT	Bidder 2 Amount ODEBRECHT	Bidder 3 Bid Price WEBBER	Bidder 3 Amount WEBBER	Bidder 4 Bid Price WILLIAMS BROS	Bidder 4 Amount WILLIAMS BROS	Bidder 5 Bid Price BALFOUR BEATTY	Bidder 5 Amount BALFOUR BEATTY	Bidder 6 Bid Price ZACHRY	Bidder 6 Amount ZACHRY
666 6036	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF	10,073	$ 0.80	$ 8,058.40	$ 0.85	$ 8,562.05	$ 0.87	$ 8,763.51	$ 0.85	$ 8,562.05	$ 0.80	$ 8,058.40	$ 0.89	$ 8,964.97	$ 1.00	$ 10,073.00
666 6042	REFL PAV MRK TY I (W)12"(SLD)(100MIL)	LF	2,764	$ 2.25	$ 6,219.00	$ 3.00	$ 8,292.00	$ 3.06	$ 8,457.84	$ 3.00	$ 8,292.00	$ 2.95	$ 8,153.80	$ 3.14	$ 8,678.96	$ 3.00	$ 8,292.00
666 6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	644	$ 6.00	$ 3,864.00	$ 6.00	$ 3,864.00	$ 6.12	$ 3,941.28	$ 6.00	$ 3,864.00	$ 4.85	$ 3,123.40	$ 6.27	$ 4,037.88	$ 5.30	$ 3,413.20
666 6054	REFL PAV MRK TY I (W)(ARROW)(100MIL)	EA	69	$ 100.00	$ 6,900.00	$ 160.00	$ 11,040.00	$ 163.00	$ 11,247.00	$ 160.00	$ 11,040.00	$ 95.00	$ 6,555.00	$ 167.28	$ 11,542.32	$ 22.00	$ 1,518.00
666 6057	REFL PAV MRK TY I(W)(DBL ARROW)(100MIL)	EA	5	$ 175.00	$ 875.00	$ 330.00	$ 1,650.00	$ 337.00	$ 1,685.00	$ 330.00	$ 1,650.00	$ 155.00	$ 775.00	$ 345.01	$ 1,725.05	$ 300.00	$ 1,500.00
666 6063	REFL PAV MRK TY I(W)(UTURN ARW)(100MIL)	EA	8	$ 200.00	$ 1,600.00	$ 220.00	$ 1,760.00	$ 224.00	$ 1,792.00	$ 220.00	$ 1,760.00	$ 125.00	$ 1,000.00	$ 230.01	$ 1,840.08	$ 220.00	$ 1,760.00
666 6078	REFL PAV MRK TY I (W)(WORD)(100MIL)	EA	75	$ 125.00	$ 9,375.00	$ 170.00	$ 12,750.00	$ 173.00	$ 12,975.00	$ 170.00	$ 12,750.00	$ 100.00	$ 7,500.00	$ 177.73	$ 13,329.75	$ 300.00	$ 22,500.00
666 6141	REFL PAV MRK TY I (Y)12"(SLD)(100MIL)	LF	724	$ 3.00	$ 2,172.00	$ 2.60	$ 1,882.40	$ 2.65	$ 1,918.60	$ 2.60	$ 1,882.40	$ 2.95	$ 2,135.80	$ 2.72	$ 1,969.28	$ 3.00	$ 2,172.00
666 6199	REFL PAV MRK TY II (W) 36" (YLD TRI)	EA	36	$ 40.00	$ 1,440.00	$ 50.00	$ 1,800.00	$ 51.00	$ 1,836.00	$ 50.00	$ 1,800.00	$ 15.00	$ 540.00	$ 52.27	$ 1,881.72	$ 23.00	$ 828.00
666 6225	PAVEMENT SEALER 6"	LF	25,665	$ 0.20	$ 5,133.00	$ 0.08	$ 2,053.20	$ 0.08	$ 2,053.20	$ 0.08	$ 2,053.20	$ 0.12	$ 3,079.80	$ 0.08	$ 2,053.20	$ 0.10	$ 2,566.50
666 6226	PAVEMENT SEALER 8"	LF	10,073	$ 0.25	$ 2,518.25	$ 0.15	$ 1,510.95	$ 0.15	$ 1,510.95	$ 0.15	$ 1,510.95	$ 0.20	$ 2,014.60	$ 0.16	$ 1,611.68	$ 0.15	$ 1,510.95
666 6228	PAVEMENT SEALER 12"	LF	3,488	$ 0.40	$ 1,395.20	$ 0.40	$ 1,395.20	$ 0.41	$ 1,430.08	$ 0.40	$ 1,395.20	$ 0.40	$ 1,395.20	$ 0.42	$ 1,464.96	$ 0.40	$ 1,395.20
666 6230	PAVEMENT SEALER 24"	LF	644	$ 1.50	$ 966.00	$ 0.65	$ 418.60	$ 0.64	$ 412.16	$ 0.63	$ 405.72	$ 0.50	$ 322.00	$ 0.66	$ 425.04	$ 0.65	$ 418.60
666 6231	PAVEMENT SEALER (ARROW)	EA	69	$ 20.00	$ 1,380.00	$ 50.00	$ 3,450.00	$ 51.00	$ 3,519.00	$ 50.00	$ 3,450.00	$ 15.00	$ 1,035.00	$ 52.27	$ 3,606.63	$ 35.00	$ 2,415.00
666 6232	PAVEMENT SEALER (WORD)	EA	75	$ 30.00	$ 2,250.00	$ 50.00	$ 3,750.00	$ 51.00	$ 3,825.00	$ 50.00	$ 3,750.00	$ 15.00	$ 1,125.00	$ 52.27	$ 3,920.25	$ 34.00	$ 2,550.00
666 6234	PAVEMENT SEALER (DBL ARROW)	EA	5	$ 42.50	$ 212.50	$ 56.00	$ 280.00	$ 57.00	$ 285.00	$ 56.00	$ 280.00	$ 20.00	$ 100.00	$ 58.55	$ 292.75	$ 35.00	$ 175.00
666 6236	PAVEMENT SEALER (UTURN ARROW)	EA	8	$ 42.50	$ 340.00	$ 50.00	$ 400.00	$ 51.00	$ 408.00	$ 50.00	$ 400.00	$ 15.00	$ 120.00	$ 52.28	$ 418.24	$ 38.00	$ 304.00
666 6243	PAVEMENT SEALER (YLD TRI)	EA	36	$ 20.00	$ 720.00	$ 50.00	$ 1,800.00	$ 51.00	$ 1,836.00	$ 50.00	$ 1,800.00	$ 1.00	$ 36.00	$ 52.27	$ 1,881.72	$ 13.00	$ 468.00
666 6306	RE PM W/RET REQ TY I (W)6"(BRK)(100MIL)	LF	11,176	$ 0.35	$ 3,911.60	$ 0.45	$ 5,029.20	$ 0.45	$ 5,029.20	$ 0.44	$ 4,917.44	$ 0.50	$ 5,588.00	$ 0.46	$ 5,140.96	$ 0.52	$ 5,811.52
666 6309	RE PM W/RET REQ TY I (W)6"(SLD)(100MIL)	LF	7,528	$ 0.35	$ 2,634.80	$ 0.40	$ 3,011.20	$ 0.42	$ 3,161.76	$ 0.41	$ 3,086.48	$ 0.50	$ 3,764.00	$ 0.43	$ 3,237.04	$ 0.46	$ 3,462.88
666 6321	RE PM W/RET REQ TY I (Y)6"(SLD)(100MIL)	LF	6,510	$ 0.50	$ 3,255.00	$ 0.40	$ 2,604.00	$ 0.42	$ 2,734.20	$ 0.41	$ 2,669.10	$ 0.50	$ 3,255.00	$ 0.43	$ 2,799.30	$ 0.45	$ 2,929.50
672 6007	REFL PAV MRKR TY I-C	EA	344	$ 3.25	$ 1,118.00	$ 3.60	$ 1,238.40	$ 4.00	$ 1,376.00	$ 3.60	$ 1,238.40	$ 5.00	$ 1,720.00	$ 3.76	$ 1,293.44	$ 10.00	$ 3,440.00
672 6009	REFL PAV MRKR TY II-A-A	EA	113	$ 5.00	$ 565.00	$ 3.60	$ 406.80	$ 4.00	$ 452.00	$ 3.60	$ 406.80	$ 5.00	$ 565.00	$ 3.76	$ 424.88	$ 10.00	$ 1,130.00
672 6010	REFL PAV MRKR TY II-C-R	EA	2,065	$ 3.50	$ 7,227.50	$ 3.60	$ 7,434.00	$ 4.00	$ 8,260.00	$ 3.60	$ 7,434.00	$ 4.00	$ 8,260.00	$ 3.76	$ 7,764.40	$ 4.00	$ 8,260.00
678 6002	PAV SURF PREP FOR MRK (6")	LF	91,240	$ 0.10	$ 9,124.00	$ 0.15	$ 13,686.00	$ 0.13	$ 11,861.20	$ 0.13	$ 11,861.20	$ 0.09	$ 8,211.60	$ 0.14	$ 12,773.60	$ 0.10	$ 9,124.00
678 6004	PAV SURF PREP FOR MRK (8")	LF	21,816	$ 0.10	$ 2,181.60	$ 0.25	$ 5,454.00	$ 0.27	$ 5,890.32	$ 0.26	$ 5,672.16	$ 0.14	$ 3,054.24	$ 0.27	$ 5,890.32	$ 0.10	$ 2,181.60
678 6005	PAV SURF PREP FOR MRK (10")	LF	6,509	$ 0.20	$ 1,301.80	$ 0.25	$ 1,627.25	$ 0.27	$ 1,757.43	$ 0.26	$ 1,692.34	$ 0.16	$ 1,041.44	$ 0.27	$ 1,757.43	$ 0.10	$ 650.90
678 6006	PAV SURF PREP FOR MRK (12")	LF	3,488	$ 0.20	$ 697.60	$ 0.35	$ 1,220.80	$ 0.34	$ 1,185.92	$ 0.33	$ 1,151.04	$ 0.25	$ 872.00	$ 0.35	$ 1,220.80	$ 0.10	$ 348.80
678 6008	PAV SURF PREP FOR MRK (24")	LF	644	$ 0.30	$ 193.20	$ 0.65	$ 418.60	$ 0.67	$ 431.48	$ 0.66	$ 425.04	$ 0.45	$ 289.80	$ 0.69	$ 444.36	$ 0.15	$ 96.60
678 6009	PAV SURF PREP FOR MRK (ARROW)	EA	69	$ 10.00	$ 690.00	$ 17.00	$ 1,173.00	$ 17.00	$ 1,173.00	$ 17.00	$ 1,173.00	$ 15.00	$ 1,035.00	$ 17.77	$ 1,226.13	$ 15.00	$ 1,035.00
678 6010	PAV SURF PREP FOR MRK (DBL ARROW)	EA	5	$ 10.00	$ 50.00	$ 21.00	$ 105.00	$ 21.00	$ 105.00	$ 21.00	$ 105.00	$ 25.00	$ 125.00	$ 21.96	$ 109.80	$ 19.00	$ 95.00
678 6012	PAV SURF PREP FOR MRK (UTURN ARR)	EA	8	$ 20.00	$ 160.00	$ 17.00	$ 136.00	$ 17.00	$ 136.00	$ 17.00	$ 136.00	$ 15.00	$ 120.00	$ 17.77	$ 142.16	$ 15.00	$ 120.00
678 6016	PAV SURF PREP FOR MRK (WORD)	EA	75	$ 10.00	$ 750.00	$ 17.00	$ 1,275.00	$ 17.00	$ 1,275.00	$ 17.00	$ 1,275.00	$ 15.00	$ 1,125.00	$ 17.77	$ 1,332.75	$ 15.00	$ 1,125.00
678 6023	PAV SURF PREP FOR MRK (36")(YLD TRI)	EA	36	$ 15.00	$ 540.00	$ 17.00	$ 612.00	$ 17.00	$ 612.00	$ 17.00	$ 612.00	$ 5.00	$ 180.00	$ 17.77	$ 639.72	$ 15.00	$ 540.00
680 6002	INSTALL HWY TRF SIG (ISOLATED)	EA	2	$ 24,000.00	$ 48,000.00	$ 30,128.00	$ 60,256.00	$ 28,050.00	$ 56,100.00	$ 27,500.00	$ 55,000.00	$ 27,500.00	$ 55,000.00	$ 30,479.00	$ 60,958.00	$ 30,000.00	$ 60,000.00
680 6004	REMOVING TRAFFIC SIGNALS	EA	2	$ 3,000.00	$ 6,000.00	$ 3,075.00	$ 6,150.00	$ 3,285.00	$ 6,570.00	$ 2,000.00	$ 4,000.00	$ 2,500.00	$ 5,000.00	$ 1,678.65	$ 3,357.30	$ 3,055.00	$ 6,110.00
681 6001	TEMP TRAF SIGNALS	EA	4	$ 28,000.00	$ 112,000.00	$ 36,402.00	$ 145,608.00	$ 2,550.00	$ 10,200.00	$ 29,500.00	$ 118,000.00	$ 29,500.00	$ 118,000.00	$ 34,349.64	$ 137,398.56	$ 36,170.00	$ 144,680.00
682 6001	VEH SIG SEC (12")LED(GRN)	EA	36	$ 160.00	$ 5,760.00	$ 201.00	$ 7,236.00	$ 184.00	$ 6,624.00	$ 180.00	$ 6,480.00	$ 180.00	$ 6,480.00	$ 152.73	$ 5,498.28	$ 200.00	$ 7,200.00
682 6002	VEH SIG SEC (12")LED(GRN ARW)	EA	4	$ 160.00	$ 640.00	$ 201.00	$ 804.00	$ 184.00	$ 736.00	$ 180.00	$ 720.00	$ 180.00	$ 720.00	$ 152.73	$ 610.92	$ 200.00	$ 800.00
682 6003	VEH SIG SEC (12")LED(YEL)	EA	36	$ 160.00	$ 5,760.00	$ 201.00	$ 7,236.00	$ 184.00	$ 6,624.00	$ 180.00	$ 6,480.00	$ 180.00	$ 6,480.00	$ 152.73	$ 5,498.28	$ 200.00	$ 7,200.00
682 6004	VEH SIG SEC (12")LED(YEL ARW)	EA	4	$ 160.00	$ 640.00	$ 201.00	$ 804.00	$ 184.00	$ 736.00	$ 180.00	$ 720.00	$ 180.00	$ 720.00	$ 152.73	$ 610.92	$ 200.00	$ 800.00
682 6005	VEH SIG SEC (12")LED(RED)	EA	36	$ 160.00	$ 5,760.00	$ 201.00	$ 7,236.00	$ 184.00	$ 6,624.00	$ 180.00	$ 6,480.00	$ 180.00	$ 6,480.00	$ 152.73	$ 5,498.28	$ 200.00	$ 7,200.00
682 6006	VEH SIG SEC (12")LED(RED ARW)	EA	4	$ 160.00	$ 640.00	$ 201.00	$ 804.00	$ 184.00	$ 736.00	$ 180.00	$ 720.00	$ 180.00	$ 720.00	$ 152.73	$ 610.92	$ 200.00	$ 800.00
682 6018	PED SIG SEC (LED)(COUNTDOWN)	EA	30	$ 350.00	$ 10,500.00	$ 400.00	$ 12,000.00	$ 566.00	$ 16,980.00	$ 555.00	$ 16,650.00	$ 555.00	$ 16,650.00	$ 347.19	$ 10,415.70	$ 400.00	$ 12,000.00
682 6023	BACK PLATE (12")(3 SEC)	EA	40	$ 55.00	$ 2,200.00	$ 80.00	$ 3,200.00	$ 56.00	$ 2,240.00	$ 55.00	$ 2,200.00	$ 55.00	$ 2,200.00	$ 54.42	$ 2,176.80	$ 80.00	$ 3,200.00
682 6047	LOUVER (12") (ADJUSTABLE)	EA	8	$ 230.00	$ 1,840.00	$ 276.00	$ 2,208.00	$ 214.00	$ 1,712.00	$ 210.00	$ 1,680.00	$ 210.00	$ 1,680.00	$ 255.25	$ 2,042.00	$ 275.00	$ 2,200.00
684 6007	TRF SIG CBL (TY A)(12 AWG)(2 CONDR)	LF	5,270	$ 1.50	$ 7,905.00	$ 1.00	$ 5,270.00	$ 1.00	$ 5,270.00	$ 0.98	$ 5,164.60	$ 0.98	$ 5,164.60	$ 1.32	$ 6,956.40	$ 1.00	$ 5,270.00
684 6009	TRF SIG CBL (TY A)(12 AWG)(4 CONDR)	LF	5,635	$ 1.50	$ 8,452.50	$ 1.25	$ 7,043.75	$ 1.68	$ 9,466.80	$ 1.65	$ 9,297.75	$ 1.65	$ 9,297.75	$ 1.66	$ 9,354.10	$ 1.30	$ 7,325.50
684 6012	TRF SIG CBL (TY A)(12 AWG)(7 CONDR)	LF	6,810	$ 2.00	$ 13,620.00	$ 1.90	$ 12,939.00	$ 2.02	$ 13,756.20	$ 1.98	$ 13,483.80	$ 1.98	$ 13,483.80	$ 2.19	$ 14,913.90	$ 1.90	$ 12,939.00
684 6080	TRF SIG CBL (TY C)(14 AWG)(2 CONDR)	LF	34,470	$ 1.50	$ 51,705.00	$ 0.90	$ 31,023.00	$ 0.94	$ 32,401.80	$ 0.92	$ 31,712.40	$ 0.92	$ 31,712.40	$ 1.22	$ 42,053.40	$ 0.85	$ 29,299.50
685 6003	REMOVE RDSD FLASH BEACON ASSEMBLY	EA	4	$ 400.00	$ 1,600.00	$ 598.00	$ 2,392.00	$ 510.00	$ 2,040.00	$ 500.00	$ 2,000.00	$ 800.00	$ 3,200.00	$ 1,678.65	$ 6,714.60	$ 595.00	$ 2,380.00
686 5043	INS TRF SIG PL AM(S)1 ARM(40')LUM	EA	2	$ 7,500.00	$ 15,000.00	$ 8,918.00	$ 17,836.00	$ 8,753.00	$ 17,506.00	$ 8,581.00	$ 17,162.00	$ 8,581.00	$ 17,162.00	$ 7,916.73	$ 15,833.46	$ 8,865.00	$ 17,730.00
686 6059	INS TRF SIG PL AM(S)1 ARM(55')LUM	EA	1	$ 15,000.00	$ 15,000.00	$ 15,522.00	$ 15,522.00	$ 13,722.00	$ 13,722.00	$ 13,453.00	$ 13,453.00	$ 13,453.00	$ 13,453.00	$ 15,036.54	$ 15,036.54	$ 16,000.00	$ 16,000.00
686 6063	INS TRF SIG PL AM(S)1 ARM(60')LUM	EA	1	$ 15,500.00	$ 15,500.00	$ 16,084.00	$ 16,084.00	$ 13,874.00	$ 13,874.00	$ 13,602.00	$ 13,602.00	$ 13,602.00	$ 13,602.00	$ 15,412.92	$ 15,412.92	$ 16,000.00	$ 16,000.00
686 6235	INS TRF SIG PL AM(S)2 ARM(60-28')LUM	EA	1	$ 18,000.00	$ 18,000.00	$ 18,702.00	$ 18,702.00	$ 16,082.00	$ 16,082.00	$ 15,767.00	$ 15,767.00	$ 15,767.00	$ 15,767.00	$ 17,075.25	$ 17,075.25	$ 18,585.00	$ 18,585.00
686 6267	INS TRF SIG PL AM(S)2 ARM(65-32')LUM	EA	3	$ 20,000.00	$ 60,000.00	$ 16,940.00	$ 50,820.00	$ 16,343.00	$ 49,029.00	$ 16,023.00	$ 48,069.00	$ 16,023.00	$ 48,069.00	$ 17,733.91	$ 53,201.73	$ 16,835.00	$ 50,505.00
687 6001	PED POLE ASSEMBLY	EA	22	$ 1,300.00	$ 28,600.00	$ 2,802.00	$ 61,644.00	$ 1,020.00	$ 22,440.00	$ 1,000.00	$ 22,000.00	$ 1,000.00	$ 22,000.00	$ 1,438.26	$ 31,641.72	$ 2,785.00	$ 61,270.00
688 6001	PED DETECT PUSH BUTTON (APS)	EA	28	$ 250.00	$ 7,000.00	$ 868.00	$ 24,304.00	$ 663.00	$ 18,564.00	$ 650.00	$ 18,200.00	$ 650.00	$ 18,200.00	$ 531.26	$ 14,875.28	$ 865.00	$ 24,220.00
688 6003	PED DETECTOR CONTROLLER UNIT	EA	2	$ 2,571.50	$ 5,143.00	$ 3,375.00	$ 6,750.00	$ 3,060.00	$ 6,120.00	$ 3,000.00	$ 6,000.00	$ 3,000.00	$ 6,000.00	$ 4,212.42	$ 8,424.84	$ 3,355.00	$ 6,710.00

FM 1093 Westpark Extension Phase I
CSJ 1258-03-042, etc.
Bid Tabulation

Item Code	Description	Unit	Qty	Engineer's Estimate	Engineer's Amount	Bidder 1 Bid Price ORC/JBROS JV	Bidder 1 Amount ORC/JBROS JV	Bidder 2 Bid Price ODEBRECHT	Bidder 2 Amount ODEBRECHT	Bidder 3 Bid Price WEBBER	Bidder 3 Amount WEBBER	Bidder 4 Bid Price WILLIAMS BROS	Bidder 4 Amount WILLIAMS BROS	Bidder 5 Bid Price BALFOUR BEATTY	Bidder 5 Amount BALFOUR BEATTY	Bidder 6 Bid Price ZACHRY	Bidder 6 Amount ZACHRY
688 6004	VEH LP DETECT (SAWCUT)	LF	6,685	$ 10.00	$ 66,850.00	$ 10.00	$ 66,850.00	$ 8.16	$ 54,549.60	$ 8.00	$ 53,480.00	$ 8.00	$ 53,480.00	$ 7.55	$ 50,471.75	$ 10.00	$ 66,850.00
690 6006	REMOVAL OF GROUND BOXES	EA	12	$ 300.00	$ 3,600.00	$ 320.00	$ 3,840.00	$ 102.00	$ 1,224.00	$ 100.00	$ 1,200.00	$ 100.00	$ 1,200.00	$ 335.73	$ 4,028.76	$ 320.00	$ 3,840.00
690 6036	INSTALL OF FND FOR GROUND MNT CABINETS	EA	2	$ 2,000.00	$ 4,000.00	$ 4,520.00	$ 9,040.00	$ 2,805.00	$ 5,610.00	$ 2,750.00	$ 5,500.00	$ 2,750.00	$ 5,500.00	$ 4,615.39	$ 9,230.78	$ 4,495.00	$ 8,990.00
730 6107	FULL - WIDTH MOWING	CYC	6	$ 1,500.00	$ 9,000.00	$ 2,000.00	$ 12,000.00	$ 2,294.95	$ 13,769.70	$ 2,265.16	$ 13,590.96	$ 2,601.20	$ 15,607.20	$ 5,633.70	$ 33,802.20	$ 2,000.00	$ 12,000.00
734 6002	LITTER REMOVAL	CYC	6	$ 1,500.00	$ 9,000.00	$ 1,700.00	$ 10,200.00	$ 1,648.59	$ 9,891.54	$ 2,728.63	$ 16,371.78	$ 1,822.37	$ 10,934.22	$ 2,800.00	$ 16,800.00	$ 2,860.00	$ 17,160.00
735 6001	DEBRIS REMOVAL (CNTR MEDIANS/MAINLANES)	CYC	6	$ 2,000.00	$ 12,000.00	$ 2,500.00	$ 15,000.00	$ 2,760.00	$ 16,560.00	$ 2,728.63	$ 16,371.78	$ 3,314.30	$ 19,885.80	$ 2,100.00	$ 12,600.00	$ 4,800.00	$ 28,800.00
735 6003	DEBRIS REMOVAL (FRONTAGE ROADS)	CYC	6	$ 1,500.00	$ 9,000.00	$ 2,500.00	$ 15,000.00	$ 2,720.00	$ 16,320.00	$ 2,728.63	$ 16,371.78	$ 3,314.30	$ 19,885.80	$ 2,100.00	$ 12,600.00	$ 2,500.00	$ 15,000.00
735 6005	DEBRIS REMOVAL (ENTRANCE/EXIT RAMPS)	CYC	6	$ 1,000.00	$ 6,000.00	$ 2,000.00	$ 12,000.00	$ 1,760.00	$ 10,560.00	$ 2,728.63	$ 16,371.78	$ 3,247.75	$ 19,486.50	$ 750.00	$ 4,500.00	$ 1,800.00	$ 10,800.00
738 6003	CLEANING / SWEEPING (OUTSIDE MAIN LANE)	CYC	12	$ 1,200.00	$ 14,400.00	$ 2,100.00	$ 25,200.00	$ 1,705.30	$ 20,463.60	$ 2,767.22	$ 33,206.64	$ 2,175.25	$ 26,103.00	$ 2,100.00	$ 25,200.00	$ 3,400.00	$ 40,800.00
738 6005	CLEANING / SWEEPING (FRONTAGE ROAD)	CYC	12	$ 1,500.00	$ 18,000.00	$ 2,100.00	$ 25,200.00	$ 2,000.00	$ 24,000.00	$ 2,767.22	$ 33,206.64	$ 2,175.25	$ 26,103.00	$ 2,100.00	$ 25,200.00	$ 1,000.00	$ 12,000.00
738 6007	CLEANING / SWEEPING(ENTRANCE/EXIT RAMP)	CYC	12	$ 1,000.00	$ 12,000.00	$ 2,100.00	$ 25,200.00	$ 867.74	$ 10,412.88	$ 2,767.22	$ 33,206.64	$ 1,063.20	$ 12,758.40	$ 750.00	$ 9,000.00	$ 540.00	$ 6,480.00
751 6003	IRRIG SYS OPERATION AND REPAIR	MO	4	$ 2,500.00	$ 10,000.00	$ 5,000.00	$ 20,000.00	$ 1,500.00	$ 6,000.00	$ 1,000.00	$ 4,000.00	$ 5,000.00	$ 20,000.00	$ 10,454.93	$ 41,819.72	$ 2,500.00	$ 10,000.00
3021 6001	WIDE FLANGE PAVEMENT TERMINALS	LF	342	$ 500.00	$ 171,000.00	$ 300.00	$ 102,600.00	$ 534.82	$ 182,908.44	$ 210.09	$ 71,850.78	$ 200.00	$ 68,400.00	$ 450.00	$ 153,900.00	$ 240.00	$ 82,080.00
4006 6004	SOUND WALL (11 FT)	LF	40	$ 240.00	$ 9,600.00	$ 850.00	$ 34,000.00	$ 230.56	$ 9,222.40	$ 304.34	$ 12,173.60	$ 300.00	$ 12,000.00	$ 300.00	$ 12,000.00	$ 285.00	$ 11,400.00
4006 6006	SOUND WALL (12 FT)	LF	4,300	$ 240.00	$ 1,032,000.00	$ 300.00	$ 1,290,000.00	$ 249.42	$ 1,072,506.00	$ 304.30	$ 1,308,490.00	$ 300.00	$ 1,290,000.00	$ 300.00	$ 1,290,000.00	$ 300.00	$ 1,290,000.00
4006 6011	SOUND WALL (10 FEET)	LF	80	$ 240.00	$ 19,200.00	$ 295.00	$ 23,600.00	$ 211.77	$ 16,941.60	$ 278.91	$ 22,312.80	$ 300.00	$ 24,000.00	$ 270.00	$ 21,600.00	$ 270.00	$ 21,600.00
4006 6012	SOUND WALL (11 FT TO 21 FT)	LF	1,835	$ 320.00	$ 587,200.00	$ 400.00	$ 734,000.00	$ 324.70	$ 595,824.50	$ 389.49	$ 714,714.15	$ 300.00	$ 550,500.00	$ 378.64	$ 694,804.40	$ 400.00	$ 734,000.00
6001 6002	PORTABLE CHANGEABLE MESSAGE SIGN	EA	14	$ 9,000.00	$ 126,000.00	$ 15,000.00	$ 210,000.00	$ 8,000.00	$ 112,000.00	$ 974.25	$ 13,639.50	$ 21,330.00	$ 298,620.00	$ 7,500.00	$ 105,000.00	$ 18,000.00	$ 252,000.00
6002 6007	VIVDS TEMPORARY	EA	2	$ 11,000.00	$ 22,000.00	$ 15,970.00	$ 31,940.00	$ 14,790.00	$ 29,580.00	$ 14,500.00	$ 29,000.00	$ 14,500.00	$ 29,000.00	$ 10,045.52	$ 20,091.04	$ 15,890.00	$ 31,780.00
6007 6011	FIBER OPTIC CBL (SNGLE-MODE)(12 FIBER)	LF	365	$ 4.00	$ 1,460.00	$ 7.00	$ 2,555.00	$ 5.10	$ 1,861.50	$ 5.00	$ 1,825.00	$ 5.00	$ 1,825.00	$ 4.82	$ 1,759.30	$ 7.05	$ 2,573.25
6016 9001	MULTI-DUCT CONDUIT (PVC)(INSTALL ONLY)	LF	245	$ 9.80	$ 2,401.00	$ 10.00	$ 2,450.00	$ 11.48	$ 2,812.60	$ 11.25	$ 2,756.25	$ 11.25	$ 2,756.25	$ 2.52	$ 617.40	$ 10.50	$ 2,572.50
6016 9002	MULTI-DUCT CONDUIT (PVC)(INSTALL ONLY)(BC	LF	120	$ 63.00	$ 7,560.00	$ 55.00	$ 6,600.00	$ 25.45	$ 3,054.00	$ 24.95	$ 2,994.00	$ 24.95	$ 2,994.00	$ 19.87	$ 2,384.40	$ 54.00	$ 6,480.00
6019 6006	PREFB PV MK W/WNTY TY B (W)(6")(SLD)	LF	30,720	$ 7.00	$ 215,040.00	$ 4.00	$ 122,880.00	$ 4.18	$ 128,409.60	$ 4.10	$ 125,952.00	$ 3.45	$ 105,984.00	$ 4.29	$ 131,788.80	$ 6.00	$ 184,320.00
6019 6007	PREFB PV MK W/WNTY TY B(W)6"(BRK)CNTST	LF	6,509	$ 7.00	$ 45,563.00	$ 6.60	$ 42,959.40	$ 6.73	$ 43,805.57	$ 6.60	$ 42,959.40	$ 5.65	$ 36,775.85	$ 6.90	$ 44,912.10	$ 6.00	$ 39,054.00
6019 6014	PREFB PV MK W/WNTY TY B (Y)(6")(SLD)	LF	33,769	$ 7.00	$ 236,383.00	$ 4.10	$ 138,452.90	$ 4.18	$ 141,154.42	$ 4.10	$ 138,452.90	$ 3.45	$ 116,503.05	$ 4.29	$ 144,869.01	$ 6.00	$ 202,614.00
6019 6050	PREFB PV MK W/WNTY TY B (W)(8")(SLD)	LF	11,743	$ 7.00	$ 82,201.00	$ 5.50	$ 64,586.50	$ 5.61	$ 65,878.23	$ 5.50	$ 64,586.50	$ 5.85	$ 68,696.55	$ 5.75	$ 67,522.25	$ 8.00	$ 93,944.00
6019 6060	PREFB PV MK W/WNTY TY B (W)(8")(ARROW)	EA	2	$ 300.00	$ 600.00	$ 390.00	$ 780.00	$ 398.00	$ 796.00	$ 390.00	$ 780.00	$ 465.00	$ 930.00	$ 407.74	$ 815.48	$ 300.00	$ 600.00
6019 6061	PREFB PV MK W/WNTY TY B (W)(8")WORD)	EA	1	$ 400.00	$ 400.00	$ 520.00	$ 520.00	$ 530.00	$ 530.00	$ 520.00	$ 520.00	$ 600.00	$ 600.00	$ 543.66	$ 543.66	$ 300.00	$ 300.00
6058 6002	BBU SYSTEM (STAND-ALONE BATT CABINET)	EA	2	$ 6,504.20	$ 13,008.40	$ 5,874.00	$ 11,748.00	$ 6,375.00	$ 12,750.00	$ 6,250.00	$ 12,500.00	$ 6,250.00	$ 12,500.00	$ 6,607.19	$ 13,214.38	$ 5,835.00	$ 11,670.00
9008 2000	POLICE OFFICER (FORCE ACCOUNT)	EA	50,000	$ 1.00	$ 50,000.00	$ 1.00	$ 50,000.00	$ 1.00	$ 50,000.00	$ 1.00	$ 50,000.00	$ 1.00	$ 50,000.00	$ 1.00	$ 50,000.00	$ 1.00	$ 50,000.00
9008 3000	LANE CLOSURE ASSESSMENT FEE	HR	50	$ 500.00	$ 25,000.00	$ 500.00	$ 25,000.00	$ 500.00	$ 25,000.00	$ 500.00	$ 25,000.00	$ 500.00	$ 25,000.00	$ 500.00	$ 25,000.00	$ 500.00	$ 25,000.00
16060 1	GROUNDING AND BONDING SYSTEMS	LS	1	$ 8,000.00	$ 8,000.00	$ 7,606.00	$ 7,606.00	$ 12,750.00	$ 12,750.00	$ 9,500.00	$ 9,500.00	$ 9,500.00	$ 9,500.00	$ 9,400.66	$ 9,400.66	$ 17,585.00	$ 17,585.00
16070 1	EQ. RACK W/PANELBOARD,TVSS,CONTRACTOR	EA	2	$ 7,500.00	$ 15,000.00	$ 7,486.00	$ 14,972.00	$ 11,730.00	$ 23,460.00	$ 11,500.00	$ 23,000.00	$ 11,500.00	$ 23,000.00	$ 12,554.71	$ 25,109.42	$ 7,440.00	$ 14,880.00
16670 1	LIGHTING PROTECTION SYSTEM	LS	1	$ 22,500.00	$ 22,500.00	$ 20,784.00	$ 20,784.00	$ 25,500.00	$ 25,500.00	$ 22,500.00	$ 22,500.00	$ 22,500.00	$ 22,500.00	$ 14,851.86	$ 14,851.86	$ 20,655.00	$ 20,655.00
SS8911 2001	TRUSS SCREEN	LS	1	$ 85,000.00	$ 85,000.00	$ 104,536.00	$ 104,536.00	$ 162,304.00	$ 162,304.00	$ 117,040.00	$ 117,040.00	$ 150,000.00	$ 150,000.00	$ 122,364.55	$ 122,364.55	$ 104,000.00	$ 104,000.00
					$ 70,912,705.33		$ 69,948,252.42		$ 67,582,179.23		$ 63,811,753.94		$ 82,706,991.18		$ 67,208,547.67		$ 69,229,959.20

CONTRACT

THE STATE OF TEXAS §

FORT BEND COUNTY §

THIS AGREEMENT is made this 5th day of JANUARY, 2016, by and between Fort Bend County, Texas, a political subdivision of the State of Texas, hereinafter called, "County" and Webber, LLC

a LLC, whose principal place of business is located at The Woodlands, TX, and is hereinafter called "Contractor."

WHEREAS, County has awarded to Contractor a contract for the construction of a Public Works Project generally described as **CONSTRUCTION OF FM 1093 WESTPARK EXTENSION FROM FM 1463/FM 359 TO WEST OF SH 99 CONSISTING OF GRADING, LIME TREATED SUBGRADE, PORTLAND CEMENT TREATED BASE, CONCRETE PAVEMENT, STORM SEWERS, STRUCTURES, RETAINING WALLS, ETC.** and being more particularly described in the Plans and Specifications accompanying this agreement, and;

WHEREAS, Contractor has agreed to construct such Public Works project in conformity with the Plans and Specifications and to supply all necessary labor and materials at the prices set forth in the bid form submitted by Contractor and accompanying this agreement:

NOW THEREFORE be it agreed by County and contractor as follows:

1. The following documents attached hereto and accompanying this agreement are incorporated herein, and the provisions set forth therein shall become a part of this agreement:

a. Notice to the Bidder
b. Bid Sheets
c. General Provisions and Attachments
d. Special provisions
e. Technical Provisions including all Plans, Specifications and Technical Requirements
f. Contractor's Performance and Payment Bonds

2. It is expressly understood and agreed that County has available the total maximum sum of funds hereinafter certified available by its County Auditor for the purpose of satisfying County's obligations under the terms and provisions of this agreement; that notwithstanding anything to the contrary or that may be construed to the contrary, the liability of County is limited to said sum, plus additional amounts of funds from time to time certified, available for the purpose of satisfying County's obligations under the terms and provisions of this agreement. Should County, without cause, fail or refuse to pay Contractor any consideration due under this agreement or fail to refuse to appropriate such additional funds, if any, as may be required to complete the contract work, then the sole

and exclusive remedy of Contractor shall be to terminate this agreement and take possession of any goods or materials not then complete in place and for which County had not previously paid the consideration established under this agreement.

3. This Contract, including all items listed under Number 1 page 11 of 290, contains the whole agreement between the conditions, or collateral agreements, other than those expressly set forth herein.

Effective as of the date first written hereinabove.

CONTRACTOR
BY: Todd Jackson
NAME: Todd Jackson
TITLE: Vice President of Estimating
COMPANY: Webber, LLC

(If this Contract is with a Corporation, it must be executed by an officer thereof and the seal of the Corporation impressed.)

FORT BEND COUNTY, TEXAS

Robert E. Hebert
Fort Bend County Judge

2-4-16
Date Approved in commissioners Court on 1-5-16

ATTEST:

Laura Richard, County Clerk

COMMISSIONERS COURT FORT BEND COUNTY, TEXAS

APPROVED:

Richard W. Stolleis, P .E., County Engineer

AUDITOR'S CERTIFICATE

I hereby certify that funds are available in the amount of $63,811,753.84 to accomplish and pay the obligation of the Fort Bend County under this contract.

Ed Sturdivant, Fort Bend County Auditor

FORT BEND COUNTY

PROJECT MANUAL

FM 1093 WESTPARK EXTENSION PHASE I
FORT BEND COUNTY, TEXAS

Control	1258-03-042, etc.
Project	CC 1258-3-42, etc.
Highway	FM 1093 Westpark Extension Phase I
County	FORT BEND

Control	1258-03-042, etc.	BID#: 16-035
Project	CC 1258-3-42, etc.	OPEN: December 17, 2015
Highway	FM 1093 Westpark Extension Phase I	1:30 P.M.
County	FORT BEND	

INVITATION TO BID
FM 1093 WESTPARK EXTENSION PHASE I
FORT BEND COUNTY, TEXAS

BID #: 16-035
Fort Bend County solicits bids on the following project:

Contract to furnish labor, equipment, materials and incidentals as required for:
Bid #16-035, FM 1093 WESTPARK EXTENSION PHASE I.

Sealed bids in duplicate will be received in the Fort Bend County Purchasing Department, until **1:30 P.M.** on **December 17, 2015. Bidders are specifically advised that any bid delivered after this time will be returned unopened.**

Submitted bids will be publicly opened on **December 17, 2015** at **1:30 P.M.** in the Purchasing Agents office located at 301 Jackson Street, Suite 201, Richmond, TX 77469.

All bids must be marked on the outside of the envelope:
Bid # 16-035 - FM 1093 WESTPARK EXTENSION PHASE I.
Bidder's name and return address should be on the outside of the envelope.

Plans and specifications in PDF format may be obtained on CD from the Fort Bend County Purchasing Department located at 301 Jackson Street, Suite 201, Richmond, TX 77469, and are available at www.civcastusa.com

A mandatory pre-bid meeting will be held at 9:00 AM on Friday December 4, 2015 at 301 Jackson Street, Suite 201, Richmond, TX 77469.

No interpretation of the meaning of the drawings, specifications or other bid documents will be made to any bidder orally. All requests for such interpretations must be made in writing addressed to Ms Debbie Kaminski, County Assistant Purchasing Agent, 301 Jackson, Suite 201, Richmond, Texas 77469, phone number (281) 341-8643, e-mail: Debbie.Kaminski@fortbendcountytx.gov. Any and all interpretations and any supplemental instructions will be in the form of written addenda to the contract documents which will be mailed by certified mail, return receipt requested, to all prospective bidders. Addenda will **ONLY** be issued by the Fort Bend County Purchasing Agent. It is the sole responsibility of each bidder to insure receipt of any and all addenda. All addendum issued will become part of the contract documents. Bidders must sign and include it in the returned bid package. Deadline for submission of questions and/or clarification is **Thursday, December 10, 2015 at 3:00 p.m. (CST).** Requests received after the deadline will not be responded to due to the time constraints of this bid process.

Bids may be completed on the forms and Bid sheets provided. The Contractor may regenerate the Bid form. However, it is at the Contractor's own risk. If any errors are found, the bid will be considered as non-responsive. All bids must be completed on 8.5"x11" paper.

Each Bid must be accompanied by a good and sufficient bid guaranty in the amount of five percent (5%) of the total contract price. Use either a guaranty check or a printed bid bond. A bid bond must be executed with a surety company authorized to do business in this state. Within thirty (30) days after the date of the signing of a contract or issuance of a purchase order following the acceptance of a bid and prior to commencement of the actual work, the bidder shall furnish a performance bond and a payment bond to the County for the full amount of the contract.

Control	1258-03-042, etc.
Project	1258-3-42, etc.
Highway	FM 1093 Westpark Extension Phase I
County	FORT BEND

BID TO FORT BEND COUNTY

2014 SPECIFICATIONS

CONSTRUCTION OF FM 1093 WESTPARK EXTENSION FROM FM 1463/FM 359 TO WEST OF SH 99 CONSISTING OF GRADING, LIME TREATED SUBGRADE, PORTLAND CEMENT TREATED BASE, CONCRETE PAVEMENT, STORM SEWERS, STRUCTURES, RETAINING WALLS, ETC.

The quantities in the Bid are approximate. The quantities of work and materials may be increased or decreased as considered necessary to complete the work as planned and contemplated.

This project is to be completed in 720 calendar days per Item 8.3.1.5 and will be accepted when fully completed and finished to the satisfaction of TxDOT, Fort Bend County or designee.

Each Bid must be accompanied by a good and sufficient bid guaranty in the amount of five percent (5%) of the total contract price. Use either a guaranty check or a printed bid bond. A bid bond must be executed with a surety company authorized to do business in this state. Within thirty (30) days after the date of the signing of a contract or issuance of a purchase order following the acceptance of a bid and prior to commencement of the actual work, the bidder shall furnish a performance bond and a payment bond to the County for the full amount of the contract.

Any addenda issued amending this Bid and/or the plans that have been acknowledged by the Bidder, become part of this Bid.

By signing the Bid the Bidder certifies:

1. The only persons or parties interested in this Bid are those named and the Bidder has not directly or indirectly participated in collusion, entered into an agreement or otherwise taken any action in restraint of free competitive bidding in connection with the above captioned project.
2. In the event of the award of a contract, the organization represented will secure bonds for the full amount of the contract.
3. The signatory represents and warrants that they are an authorized signatory for the organization for which the bid is submitted and they have full and complete authority to submit this bid on behalf of their firm.
4. That the certifications and representations contained in the Bid are true and accurate and the Bidder intends the Bid to be taken as a genuine government record.

• **Signed:** ** (1) Todd Jackson (2)_____ (3)_____

Print Name: (1) Todd Jackson (2)_____ (3)_____

Title: (1) V.P. of Estimating (2)_____ (3)_____

Company: (1) Webber, LLC (2)_____ (3)_____

• Signatures to comply with Item 2 of the specifications.

**Note: Complete (1) for single venture, through (2) for joint venture and through (3) for triple venture.

*** When the working days field contains an asterisk (*) refer to the Special Provisions and General Notes.**

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NOTE: Bold capitalized Specification Sections are included in the **Texas Department of Transportation Standard Specifications for Construction of Highways, Streets and Bridges** dated **November 1, 2014** and are incorporated in Project Manuals by reference as if copied verbatim. Documents listed "for filing" are to be provided by Bidder and are not included in this Project Manual unless indicated for example only. The Document numbers and titles hold places for actual documents to be submitted by Contractor during Bid, post-bid, or construction phase of the Project.

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NOTE: For the purpose of construing this Bid and the attached form of Contract, the Texas Department of Transportation Standard Specifications for Construction of Highways, Streets and Bridges, as adopted by the Texas Department of Transportation on November 1, 2014, hereinafter referred to are approved and incorporated herein by reference for all purposes by Fort Bend County as official specifications, together with and to be modified by the Special Provisions and Special Specifications as are listed herein.

BID PACKAGE CHECKLIST

Items checked below represent components which comprise this Bid Package. If the item is not designated on the left side of the form by Fort Bend County, it is not applicable to this Bid. Bidders are asked to review the Package to ensure that all applicable parts have been included. If any portion of the Package is missing, notify Fort Bend County Purchasing Department at 281-341-8640.

It is the Bidder's responsibility to be thoroughly familiar with all Bid Requirements and Specifications.

Bidder must check the right-hand column when task is completed. Submit this form with the appropriate bid documents with Bid Package.

X 1. NOTICE TO THE BIDDER AND BID SHEETS ✓

Must be completed and signed in ink. Failure to do so will cause Bid(s) to be rejected.

X 2. FORT BEND COUNTY CONTRACT ✓

This Contract MUST be signed by an officer or authorized representative prior to the award of Bid. Contract is not binding until countersigned by Fort Bend County Commissioners' Court.

X 3. BID GUARANTY REQUIREMENTS ✓

This Bid Guaranty applies to certain Bids as stated in Fort Bend County Terms and Conditions.

X 4. BIDDER'S CHECK RETURN ✓

Bidder must submit with Bid Package.

X 5. FINANCIAL AND QUALIFICATIONS STATEMENT ✓

Bidder must submit with Bid Package, when this information is required.

X 6. GENERAL REQUIREMENTS AND TERMS ✓

Bidder should be familiar with all General Requirements and Terms, including Local Government Items 1L through 9L

X 7. SUBMITTING PROCEDURE ✓

Sealed envelope containing bid documents must be marked with the following: Contractor/company name, opening date, project number, and project title.

X 8. AFFIDAVIT AND NON-COLLUSION AFFIDAVIT ✓

Bidder must submit with Bid Package.

X 9. ADDENDA ACKNOWLEDGEMENT ✓

Bidder must submit with Bid Package.

X 10. VENDOR INFORMATION, W-9, AND TAX FORM ✓
Bidder must submit with Bid Package.

X 11. CHILD SUPPORT STATEMENT ✓
Bidder must submit with Bid Package.

X 12. CONTRACTOR ACKNOWLEDGEMENT OF STORMWATER MANAGEMENT PROGRAM ✓
Bidder must submit with Bid Package.

INSURANCE REQUIREMENTS PER ITEM 3L.4.3:

X 13. WORKERS' COMPENSATION ✓
Bidder must submit with Bid Package.

X 14. EMPLOYERS' LIABILITY INSURANCE ✓
Bidder must submit with Bid Package.

X 15. COMMERCIAL GENERAL LIABILITY INSURANCE ✓
Bidder must submit with Bid Package.

X 16. BUSINESS AUTOMOBILE LIABILITY INSURANCE ✓
Bidder must submit with Bid Package.

THE FOLLOWING ITEMS APPLY ONLY TO THE BIDDER WHO HAS BEEN AWARDED THE PROJECT. SUBMIT WITHIN 15 DAYS AFTER WRITTEN NOTIFICATION OF AWARD:

X 17. TEST REPORTS
If awarded contract, Test Reports must be submitted, if applicable.

X 18. MATERIAL SAFETY DATA SHEETS
If awarded contract, Material Safety Data Sheets must be furnished, if applicable.

X 19. PERFORMANCE BOND REQUIREMENTS
This Bond applies to Bids that will exceed the sum of $100,000.00 as stated in the Fort Bend County Terms and Conditions.

X 20. PAYMENT BOND REQUIREMENTS
This Bond applies to Bids that will exceed the sum of $25,000.00 as stated in the Fort Bend County Terms and Conditions.

X 21. DBE COMMITMENT
If awarded contract, DBE Commitment must be submitted, if applicable.

X 22. TxDOT FORM 1560
If awarded contract, Form 1560 must be submitted, if applicable.

THE FORT BEND COUNTY
BID BOND

KNOW ALL PERSONS BY THESE PRESENTS,

That we, (Contractor Name) Webber, LLC

9303 New Trails Drive, Suite 200, The Woodlands, Texas 77381

Hereinafter called the Principal, and (Surety Name) Zurich American Insurance Company

1400 American Lane, Tower 1, 19th Floor, Schaumburg, Illinois 60196

a corporation or firm duly authorized to transact surety business in the State of Texas, hereinafter called the Surety, are held and firmly bound unto The Fort Bend County, hereinafter called the Obligee, in the sum of not less than five percent (5%) of the engineer's estimate, rounded to the nearest one thousand dollars, as a proposal guaranty (amount displayed on the cover of the Bid), the payment of which sum will and truly be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the principal has submitted a bid for the following project identified as:

Control	**1258-03-042, etc.**
Project	**1258-3-42, etc.**
Highway	**FM 1093 Westpark Extension Phase I**
County	**FORT BEND**

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

Signed this 17th Day of December 20 15

By: Webber, LLC
(Contractor/Principal Name)

Todd [illegible] V.P. OF ESTIMATING
(Signature and Title of Authorized Signatory for Contractor/Principal)

WEBBER, LLC TEXAS

*By: Zurich American Insurance Company
(Surety Name)

Adrienne C. Stevenson
Adrienne C. Stevenson (Signature of Attorney-in-Fact)

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

Impressed Surety Seal Only

This form may be removed from the Bid.

STATE OF ILLINOIS
COUNTY OF COOK

I, Rebecca J. Hobbs, a Notary Public in and for said County, do hereby certify that Adrienne C. Stevenson as Attorney-in-Fact, who is personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person, and acknowledged that they signed, sealed, and delivered said instrument for and on behalf of

ZURICH AMERICAN INSURANCE COMPANY

for the uses and purposed therein set forth.

Given under my hand and notarial seal at my office in the City of Chicago in said County, this 17th day of December A.D. 2015

Notary Public

OFFICIAL SEAL
REBECCA J. HOBBS
Notary Public - State of Illinois
My Commission Expires 8/06/2018

ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND
POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, a corporation of the State of Maryland, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Maryland (herein collectively called the "Companies"), by **THOMAS O. MCCLELLAN, Vice President,** in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint **C. R. HERNANDEZ, Katherine J. FOREIT, Adrienne C. STEVENSON, Beatriz POLITO, Amy B. WICKETT, John K. JOHNSON, Michael DOUGHERTY, Triniy GARCIA and Rebecca J. HOBBS, all of Chicago, Illinois, EACH** its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: **any and all bonds and undertakings,** and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICH AMERICAN INSURANCE COMPANY at its office in New York, New York., the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland., and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland., in their own proper persons.

The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies, and is now in force.

IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said **ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and FIDELITY AND DEPOSIT COMPANY OF MARYLAND,** this 6th day of February, A.D. 2015.

ATTEST:

ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND

By: _____
Secretary
Eric D. Barnes

_____
Vice President
Thomas O. McClellan

State of Maryland
County of Baltimore

On this 6th day of February, A.D. 2015, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, **THOMAS O. MCCLELLAN, Vice President, and ERIC D. BARNES,** Secretary, of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, deposeth and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.

_____
Maria D. Adamski, Notary Public
My Commission Expires: July 8, 2019

EXTRACT FROM BY-LAWS OF THE COMPANIES

"Article V, Section 8, Attorneys-in-Fact. The Chief Executive Officer, the President, or any Executive Vice President or Vice President may, by written instrument under the attested corporate seal, appoint attorneys-in-fact with authority to execute bonds, policies, recognizances, stipulations, undertakings, or other like instruments on behalf of the Company, and may authorize any officer or any such attorney-in-fact to affix the corporate seal thereto; and may with or without cause modify of revoke any such appointment or authority at any time."

CERTIFICATE

I, the undersigned, Vice President of the ZURICH AMERICAN INSURANCE COMPANY, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that Article V, Section 8, of the By-Laws of the Companies is still in force.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the ZURICH AMERICAN INSURANCE COMPANY at a meeting duly called and held on the 15th day of December 1998.

RESOLVED: "That the signature of the President or a Vice President and the attesting signature of a Secretary or an Assistant Secretary and the Seal of the Company may be affixed by facsimile on any Power of Attorney...Any such Power or any certificate thereof bearing such facsimile signature and seal shall be valid and binding on the Company."

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at a meeting duly called and held on the 5th day of May, 1994, and the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies, this 17 day of December, 2015.

Michael Bond, Vice President

BIDDER'S CHECK RETURN

IMPORTANT

The space provided for the return address must be completed to facilitate the return of your Bidder's check. Care must be taken to provide a legible, accurate, and complete return address, including zip code. A copy of this sheet should be used for each different return address.

NOTE

Successful Bidders will receive their guaranty checks with the executed contract.

RETURN BIDDERS CHECK TO (PLEASE PRINT):

Webber, LLC
Attn: Todd Jackson
9303 New Trails Dr., Suite 200
The Woodlands, TX 77381

Control	**1258-03-042, etc.**
Project	**1258-3-42, etc.**
Highway	**FM 1093 Westpark Extension Phase I**
County	**FORT BEND**

IMPORTANT

PLEASE RETURN THIS SHEET IN ITS ENTIRETY

Please acknowledge receipt of this check(s) at your earliest convenience by signing below in longhand, in ink, and returning this acknowledgement in the enclosed self addressed envelope.

Check Received By: _____ Date: _____

Title: _____

For (Contractor's Name): _____

Project _____ County _____

NOTICE TO THE BIDDER

In the space provided below, please enter your total bid amount for this project. Only this figure will be read publicly by Fort Bend County at the public bid opening.

It is understood and agreed by the Bidder in signing this Bid that the total bid amount entered below is not binding on either the Bidder or Fort Bend County. It is further agreed that **the official total bid amount for this Bid will be determined by multiplying the unit bid prices for each pay item by the respective estimated quantities shown in this Bid and then totaling all of the extended amounts.**

Webber, LLC
Bidder: (Company Name)

$ 63,811,753.94
Total Bid Amount

$ Sixty Three Million Eight Hundred Elcven Thousand
Total Bid Amount in Words
Seven Hundred Fifty Three Dollars and 94/xx.

Control 0001-03-030
Project STP 2000(938)HES
Highway SH 20
County EL PASO

ALT	ITEM	DESC	SP	Bid Item Description	Unit	Quantity	Bid Price	Amount	Seq
	104	509		REMOV CONC (SDWLK)	SY	266.400	$10.000	$2,664.00	1

EXAMPLE

Total Bid Amount $2,664.00

Signed _____
Title _____
Date _____

Additional Signature for Joint Venture:

Signed _____
Title _____
Date _____

EXAMPLE OF BID PRICES SUBMITTED BY COMPUTER PRINTOUT

Control: 1258-03-042, etc.
Project: CC 1258-3-42-etc.
Highway: FM 1093 Westpark Extension Phase I
County: Fort Bend

Alt. No.	Item No.	Desc. Code	S.P. No.	Bid Item Description	Unit Measure	Estimated Quantities	Unit Bid Price	Extended Amount	Sequence No.
	100	6002		PREPARING ROW	STA	222.00	$19,400.00	$4,306,800.00	1
	104	6001		REMOVING CONC (PAV)	SY	15,595.00	$3.85	$60,040.75	2
	104	6009		REMOVING CONC (RIPRAP)	SY	2,837.00	$3.85	$10,922.45	3
	104	6017		REMOVING CONC (DRIVEWAYS)	SY	4,006.00	$3.00	$12,018.00	4
	104	6022		REMOVING CONC (CURB AND GUTTER)	LF	3,681.00	$5.00	$18,405.00	5
	104	6023		REMOVING CONC (CTB)	LF	1,353.00	$6.50	$8,794.50	6
	104	6024		REMOVING CONC (RETAINING WALLS)	SY	360.00	$7.50	$2,700.00	7
	104	6033		REMOVING CONC (DRAIN)	SY	235.00	$12.50	$2,937.50	8
	104	6037		REMOVE CONC (RAIL)	LF	3,887.00	$6.50	$25,265.50	9
	105	6018		REMOVING STAB BASE AND ASPH PAV (7")	SY	8,620.00	$2.20	$18,964.00	10
	105	6049		REMOVING STAB BASE & ASPH PAV (4"-22")	SY	132,247.00	$2.48	$327,972.56	11
	110	6001		EXCAVATION (ROADWAY)	CY	208,890.00	$4.65	$971,338.50	12
	110	6003		EXCAVATION (SPECIAL)	CY	55,104.00	$2.86	$157,597.44	13
	132	6006	001	EMBANKMENT (FINAL)(DENS CONT)(TY C)	CY	313,830.00	$3.89	$1,220,798.70	14
	132	6035	001	EMBANK(FINAL)(DC)(TY E)(CSBE)	CY	12,134.00	$33.84	$410,614.56	15
	134	6004		BACKFILL (TY A OR B)	STA	132.00	$333.49	$44,020.68	16
	161	6017		COMPOST MANUF TOPSOIL (4")	SY	393,461.00	$0.81	$318,703.41	17
	162	6002		BLOCK SODDING	SY	70,189.00	$3.05	$214,076.45	18
	162	6003		STRAW OR HAY MULCH	SY	786,922.00	$0.18	$141,645.96	19
	164	6009		BROADCAST SEED (TEMP) (WARM)	SY	393,461.00	$0.10	$39,346.10	20
	164	6051		DRILL SEED (TEMP)(WARM OR COOL)	SY	393,461.00	$0.10	$39,346.10	21
	164	6052		BROADCAST SEED (PERM)(SPECIAL MIX)	SY	382,308.00	$0.10	$38,230.80	22
	164	6066		DRILL SEEDING (PERM)(WARM OR COOL)	SY	382,308.00	$0.10	$38,230.80	23
	166	6001		FERTILIZER	AC	169.00	$435.00	$73,515.00	24
	168	6001		VEGETATIVE WATERING	MG	20,332.00	$7.58	$154,116.56	25
	247	6232		FL BS (CMP IN PLACE)(TY A GR 1-2)(11")	SY	9,767.00	$15.66	$152,951.22	26
	260	6006		LIME TRT (EXST MATL) (6")	SY	332,274.00	$1.20	$398,728.80	27
	260	6012		LIME(HYD,COM OR QK)(SLRY)OR QK(DRY)	TON	4,483.00	$146.00	$654,518.00	28
	276	6224		CEM TRT(PLNT MX) (CL N)(TY E)(GR 4)(6")	SY	320,853.00	$7.45	$2,390,354.85	29
	292	6002		ASPHALT STAB BASE (GR 2)(PG 64)	TON	863.00	$117.24	$101,178.12	30
	292	6017		ASPHALT STAB BASE (GR 4)(PG 64)	TON	17,032.00	$69.24	$1,179,295.68	31
	310	6009		PRIME COAT (MC-30)	GAL	2,894.00	$5.05	$14,614.70	32
	340	6106		D-GR HMA(SQ) TY-D PG64-22	TON	1,610.00	$84.90	$136,689.00	33
	360	6003		CONC PVMT (CONT REINF -CRCP) (9")	SY	172,915.00	$35.81	$6,192,086.15	34
	360	6006		CONC PVMT (CONT REINF -CRCP) (12")	SY	128,376.00	$45.86	$5,887,323.36	35
	360	6044		CONC PVMT (CONT REINF)(FAST TRK)(12")	SY	18,593.00	$57.80	$1,074,675.40	36
	400	6005		CEM STABIL BKFL	CY	28,636.00	$35.49	$1,016,291.64	37

Control: 1258-03-042, etc.
Project: CC 1258-3-42-etc.
Highway: FM 1093 Westpark Extension Phase I
County: Fort Bend

Alt. No.	Item No.	Desc. Code	S.P. No.	Bid Item Description	Unit Measure	Estimated Quantities	Unit Bid Price	Extended Amount	Sequence No.
	400	6006		CUT & RESTORING PAV	SY	874.00	$75.61	$66,083.14	38
	400	6009		CEMENT STAB BACKFILL (INLET OR MH)	CY	1,437.00	$35.49	$50,999.13	39
	402	6001		TRENCH EXCAVATION PROTECTION	LF	32,558.00	$1.08	$35,162.64	40
	403	6001		TEMPORARY SPL SHORING	SF	1,991.00	$30.00	$59,730.00	41
	416	6004		DRILL SHAFT (36 IN)	LF	8,821.00	$122.72	$1,082,513.12	42
	416	6005		DRILL SHAFT (42 IN)	LF	624.00	$145.15	$90,573.60	45
	416	6006		DRILL SHAFT (48 IN)	LF	714.00	$209.33	$149,461.62	46
	416	6008		DRILL SHAFT (60 IN)	LF	440.00	$336.13	$147,897.20	47
	416	6015		DRILL SHAFT (NON -REINFORCED) (12 IN)	LF	28.00	$75.00	$2,100.00	48
	416	6018		DRILL SHAFT (SIGN MTS) (24 IN)	LF	70.00	$125.00	$8,750.00	49
	416	6022		DRILL SHAFT (SIGN MTS) (48 IN)	LF	34.00	$375.00	$12,750.00	50
	416	6023		DRILL SHAFT (SIGN MTS) (54 IN)	LF	179.00	$425.00	$76,075.00	51
	416	6029		DRILL SHAFT (RDWY ILL POLE) (30 IN)	LF	100.00	$130.00	$13,000.00	52
	416	6032		DRILL SHAFT (TRF SIG POLE) (36 IN)	LF	30.00	$195.00	$5,850.00	53
	416	6034		DRILL SHAFT (TRF SIG POLE) (48 IN)	LF	132.00	$300.00	$39,600.00	54
	420	6008		CL A CONC (DITCH INTERCEPTOR STRUCTURE)	CY	35.00	$695.32	$24,336.20	55
	420	6013		CL C CONC (ABUT)	CY	164.00	$852.78	$139,855.92	56
	420	6029		CL C CONC (CAP)	CY	180.00	$1,082.04	$194,767.20	57
	420	6037		CL C CONC (COLUMN)	CY	237.00	$1,488.26	$352,717.62	58
	420	6043		CL C CONC (FOOTING)	CY	90.00	$1,155.73	$104,015.70	61
	420	6077		CL E CONC (SEAL SLAB)(NON-REINF)	CY	4.00	$2,146.83	$8,587.32	62
	422	6001		REINF CONC SLAB	SF	51,186.00	$14.50	$742,197.00	63
	423	6001		RETAINING WALL (MSE)	SF	135,641.00	$32.64	$4,427,322.24	64
	425	6038		PRESTR CONC GIRDER (TX46)	LF	3,150.00	$125.77	$396,175.50	65
	425	6039		PRESTR CONC GIRDER (TX54)	LF	2,985.00	$126.64	$378,020.40	66
	432	6001		RIPRAP (CONC)(4 IN)	CY	1,451.00	$350.00	$507,850.00	67
	432	6002		RIPRAP (CONC)(5 IN)	CY	139.00	$370.00	$51,430.00	68
	432	6009		RIPRAP (CONC) (CL B) (4")	CY	545.00	$330.00	$179,850.00	69
	432	6031		RIPRAP (STONE PROTECTION)(12 IN)	CY	260.00	$300.00	$78,000.00	70
	432	6045		RIPRAP (MOW STRIP)(4 IN)	CY	228.00	$330.00	$75,240.00	71
	442	6007		STR STEEL (MISC NON -BRIDGE)	LB	1,712.00	$8.84	$15,134.08	72
	442	9001		STRUCTURAL STEEL	EA	1.00	$155,000.00	$155,000.00	73
	450	6023		RAIL (TY SSTR)	LF	10,489.00	$37.43	$392,603.27	74
	450	6054		RAIL (TY SSTR) (W/DRAIN SLOTS)	LF	18,494.00	$37.43	$692,230.42	75
	454	6001		SEALED EXPANSION JOINT (4 IN) (SEJ -A)	LF	339.00	$97.56	$33,072.84	76
	460	6003		CMP (GAL STL 24 IN)	LF	213.00	$37.60	$8,008.80	77
	462	6001		CONC BOX CULV (3 FT X 2 FT)	LF	1,042.00	$100.54	$104,762.68	78

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	462	6002		CONC BOX CULV (3 FT X 3 FT)	LF	395.00	$116.64	$46,072.80	79
	462	6003		CONC BOX CULV (4 FT X 2 FT)	LF	2,547.00	$114.14	$290,714.58	80
	462	6004		CONC BOX CULV (4 FT X 3 FT)	LF	1,908.00	$132.91	$253,592.28	81
	462	6006		CONC BOX CULV (5 FT X 2 FT)	LF	1,026.00	$170.72	$175,158.72	82
	462	6007		CONC BOX CULV (5 FT X 3 FT)	LF	3,437.00	$172.18	$591,782.66	83
	462	6008		CONC BOX CULV (5 FT X 4 FT)	LF	1,298.00	$183.69	$238,429.62	84
	462	6010		CONC BOX CULV (6 FT X 3 FT)	LF	1,751.00	$188.63	$330,291.13	85
	462	6011		CONC BOX CULV (6 FT X 4 FT)	LF	1,483.00	$203.74	$302,146.42	86
	462	6012		CONC BOX CULV (6 FT X 5 FT)	LF	382.00	$222.62	$85,040.84	87
	462	6014		CONC BOX CULV (7 FT X 3 FT)	LF	3,212.00	$245.51	$788,578.12	88
	462	6019		CONC BOX CULV (8 FT X 4 FT)	LF	2,247.00	$268.78	$603,948.66	89
	462	6020		CONC BOX CULV (8 FT X 5 FT)	LF	327.00	$295.19	$96,527.13	90
	462	6021		CONC BOX CULV (8 FT X 6 FT)	LF	989.00	$303.72	$300,379.08	91
	462	6029		CONC BOX CULV (10 FT X 5 FT)	LF	2,280.00	$400.10	$912,228.00	92
	462	6031		CONC BOX CULV (10 FT X 7 FT)	LF	166.00	$487.29	$80,890.14	93
	464	6003		RC PIPE (CL III)(18 IN)	LF	1,490.00	$47.73	$71,117.70	94
	464	6005		RC PIPE (CL III)(24 IN)	LF	16,147.00	$40.88	$660,089.36	95
	464	6007		RC PIPE (CL III)(30 IN)	LF	1,404.00	$69.22	$97,184.88	96
	464	6008		RC PIPE (CL III)(36 IN)	LF	2,041.00	$83.36	$170,137.76	97
	464	6012		RC PIPE (CL III)(60 IN)	LF	96.00	$222.79	$21,387.84	98
	465	6166		INLET (COMPL)(TY AAD)	EA	12.00	$4,342.71	$52,112.52	99
	465	6167		INLET (COMPL)(TY AD)	EA	46.00	$2,594.53	$119,348.38	100
	465	6172		INLET (COMPL)(TY AZR2G)	EA	26.00	$6,126.61	$159,291.86	101
	465	6173		MANH (COMPL)(TY A)	EA	20.00	$3,776.05	$75,521.00	102
	465	6175		INLET (COMPL)(CURB)(TY C)	EA	67.00	$2,887.64	$193,471.88	103
	465	6176		INLET (COMPL)(CURB)(TY C1)	EA	27.00	$3,086.97	$83,348.19	104
	465	6177		INLET (COMPL)(TY AZ2G)	EA	9.00	$6,213.69	$55,923.21	105
	465	6225		JCT BOX (COMPL)(SPL)	EA	24.00	$31,592.48	$758,219.52	106
	466	6013		HEADWALL (CH -FW -0) (DIA= 60 IN)	EA	1.00	$13,186.81	$13,186.81	107
	466	6142		WINGWALL (FW -0) (HW=10 FT)	EA	1.00	$22,340.62	$22,340.62	108
	466	6151		WINGWALL (FW -0) (HW=4 FT)	EA	3.00	$13,110.01	$39,330.03	109
	466	6154		WINGWALL (FW -0) (HW=7 FT)	EA	1.00	$17,686.29	$17,686.29	110
	466	6165		WINGWALL (FW -S) (HW=4 FT)	EA	2.00	$13,800.52	$27,601.04	111
	466	6178		WINGWALL (PW -1) (HW=3 FT)	EA	1.00	$7,901.63	$7,901.63	112
	466	6208		WINGWALL (SW -0) (HW=5 FT)	EA	1.00	$13,646.44	$13,646.44	113
	466	6210		WINGWALL (SW -0) (HW=7 FT)	EA	2.00	$21,148.80	$42,297.60	114
	467	6006		SET (TY I) (24 IN) (4: 1) (C)	EA	6.00	$680.07	$4,080.42	115

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	467	6016		SET (TY I) (36 IN) (6: 1) (C)	EA	1.00	$2,605.06	$2,605.06	116
	467	6098		SET (TY I)(S=3 FT)(HW=2FT)(3:1)(C)	EA	1.00	$2,460.06	$2,460.06	117
	467	6131		SET (TY I)(S= 4 FT)(HW= 2 FT)(3:1) (C)	EA	2.00	$3,595.07	$7,190.14	118
	467	6134		SET (TY I)(S= 4 FT)(HW= 2 FT)(6:1) (P)	EA	3.00	$4,555.07	$13,665.21	119
	467	6139		SET (TY I)(S= 4 FT)(HW= 3 FT)(4:1) (C)	EA	1.00	$3,635.06	$3,635.06	120
	467	6142		SET (TY I)(S= 4 FT)(HW= 3 FT)(6:1) (P)	EA	1.00	$5,660.06	$5,660.06	121
	467	6168		SET (TY I)(S= 5 FT)(HW= 2 FT)(6:1) (P)	EA	4.00	$4,975.07	$19,900.28	122
	467	6169		SET (TY I)(S= 5 FT)(HW= 2 FT)(3:1) (C)	EA	1.00	$4,650.06	$4,650.06	123
	467	6174		SET (TY I)(S= 5 FT)(HW= 3 FT)(6:1) (P)	EA	7.00	$6,175.07	$43,225.49	124
	467	6184		SET (TY I)(S= 5 FT)(HW= 5 FT)(6:1) (P)	EA	1.00	$8,540.06	$8,540.06	125
	467	6215		SET (TY I)(S= 6 FT)(HW= 4 FT)(6:1) (P)	EA	1.00	$10,055.06	$10,055.06	126
	467	6226		SET (TY I)(S= 6 FT)(HW= 6 FT)(6:1) (P)	EA	1.00	$13,185.06	$13,185.06	127
	467	6354		SET (TY II) (18 IN) (RCP) (2:1) (C)	EA	1.00	$530.06	$530.06	128
	467	6388		SET (TY II) (24 IN) (RCP) (3:1) (C)	EA	9.00	$640.07	$5,760.63	129
	467	6390		SET (TY II) (24 IN) (RCP) (4: 1) (C)	EA	5.00	$680.07	$3,400.35	130
	467	6395		SET (TY II) (24 IN) (RCP) (6: 1) (P)	EA	1.00	$790.06	$790.06	131
	467	6419		SET (TY II) (30 IN) (RCP) (4: 1) (P)	EA	6.00	$940.07	$5,640.42	132
	467	6423		SET (TY II) (30 IN) (RCP) (6: 1) (P)	EA	3.00	$985.07	$2,955.21	133
	467	6450		SET (TY II) (36 IN) (RCP) (4: 1) (C)	EA	1.00	$1,710.06	$1,710.06	134
	467	6454		SET (TY II) (36 IN) (RCP) (6: 1) (P)	EA	6.00	$2,605.07	$15,630.42	135
	476	6013		JACK BOR OR TUN PIPE(24 IN)(RC)(CL III)	LF	65.00	$170.60	$11,089.00	136
	476	6024		JACK BOR OR TUN PIPE(36 IN)(RC)(CL III)	LF	184.00	$749.09	$137,832.56	137
	476	6044		JACK BOR OR TUN PIPE(60 IN)(RC)(CL III)	LF	110.00	$923.60	$101,596.00	138
	479	6002		ADJUSTING INLETS	EA	2.00	$1,203.82	$2,407.64	139
	479	6006		ADJUSTING INLET (CAP)	EA	2.00	$1,203.82	$2,407.64	140
	481	6023		PIPE (PVC) (SCH 80) (6 IN)	LF	60.00	$70.83	$4,249.80	141
	496	6002		REMOV STR (INLET)	EA	16.00	$1,103.05	$17,648.80	142
	496	6003		REMOV STR (MANHOLE)	EA	4.00	$1,224.52	$4,898.08	143
	496	6004		REMOV STR (SET)	EA	93.00	$509.34	$47,368.62	144
	496	6007		REMOV STR (PIPE)	LF	6,211.00	$23.40	$145,337.40	145
	496	6043		REMOV STR (SMALL FENCE)	LF	2,902.00	$4.77	$13,842.54	146
	496	6048		REMOV STR (PUMP STA)(INTERN COMPONENTS)	EA	2.00	$16,594.91	$33,189.82	147
	500	6001		MOBILIZATION	LS	1.00	$6,000,000.00	$6,000,000.00	148
	502	6001		BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	24.00	$31,553.33	$757,279.92	149
	506	6001	001	ROCK FILTER DAMS (INSTALL) (TY 1)	LF	265.00	$53.95	$14,296.75	150
	506	6003	001	ROCK FILTER DAMS (INSTALL) (TY 3)	LF	50.00	$127.26	$6,363.00	151
	506	6011	001	ROCK FILTER DAMS (REMOVE)	LF	315.00	$13.41	$4,224.15	152

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	506	6020	001	CONSTRUCTION EXITS (INSTALL) (TY 1)	SY	1,794.00	$19.44	$34,875.36	153
	506	6024	001	CONSTRUCTION EXITS (REMOVE)	SY	1,794.00	$6.77	$12,145.38	154
	506	6040	001	BIODEG EROSN CONT LOGS (INSTL) (8")	LF	1,918.00	$8.12	$15,574.16	155
	506	6041	001	BIODEG EROSN CONT LOGS (INSTL) (12")	LF	3,157.00	$8.55	$26,992.35	156
	506	6043	001	BIODEG EROSN CONT LOGS (REMOVE)	LF	5,075.00	$5.28	$26,796.00	157
	508	6001		CONSTRUCTING DETOURS	SY	27,249.00	$55.30	$1,506,869.70	158
	512	6001	001	PORT CTB (FUR & INST)(SGL SLOPE)(TY 1)	LF	8,780.00	$46.14	$405,109.20	159
	512	6013	001	PORT CTB (DES SOURCE)(SGL SLP)(TY 1)	LF	4,020.00	$6.93	$27,858.60	160
	512	6021	001	PORT CTB (DES SOURCE)(LOW PROF)(TY 1)	LF	7,240.00	$6.27	$45,394.80	161
	512	6022	001	PORT CTB (DES SOURCE)(LOW PROF)(TY 2)	LF	120.00	$6.52	$782.40	162
	512	6025	001	PORT CTB (MOVE)(SGL SLP)(TY 1)	LF	11,900.00	$3.98	$47,362.00	163
	512	6033	001	PORT CTB (MOVE)(LOW PROF)(TY 1)	LF	6,660.00	$3.56	$23,709.60	164
	512	6034	001	PORT CTB (MOVE)(LOW PROF)(TY 2)	LF	220.00	$6.42	$1,412.40	165
	512	6037	001	PORT CTB (STKPL)(SGL SLP)(TY 1)	LF	4,020.00	$7.14	$28,702.80	166
	512	6045	001	PORT CTB (STKPL)(LOW PROF)(TY 1)	LF	7,240.00	$6.27	$45,394.80	167
	512	6046	001	PORT CTB (STKPL)(LOW PROF)(TY 2)	LF	120.00	$6.52	$782.40	168
	512	6049	001	PORT CTB (REMOVE)(SGL SLP)(TY 1)	LF	8,780.00	$7.89	$69,274.20	169
	512	6080	001	PORT CTB CONNECT HARDWARE	EA OTU- SP REQ	503.00	$43.30	$21,779.90	170
	514	6001		PERM CTB (SGL SLOPE) (TY 1) (42)	LF	11,747.00	$46.90	$550,934.30	171
	514	6004		PERM CTB (SGL SLOPE) (TY 4) (42)	LF	580.00	$76.34	$44,277.20	172
	529	6005		CONC CURB (MONO) (TY II)	LF	84,999.00	$1.79	$152,148.21	173
	529	6010		CONC CURB (U-TURN)	LF	1,694.00	$30.32	$51,362.08	174
	529	6011		CONC CURB (DOWEL)	LF	254.00	$7.75	$1,968.50	175
	530	6004		DRIVEWAYS (CONC)	SY	4,484.00	$45.62	$204,560.08	176
	531	6001		CONC SIDEWALKS (4")	SY	23,589.00	$50.00	$1,179,450.00	177
	531	6004		CURB RAMPS (TY 1)	EA	8.00	$1,600.00	$12,800.00	178
	531	6010		CURB RAMPS (TY 7)	EA	29.00	$1,800.00	$52,200.00	179
	531	6016		CURB RAMPS (TY 21)	EA	7.00	$2,500.00	$17,500.00	180
	540	6006		MTL BEAM GD FEN TRANS (THRIE-BEAM)	EA	4.00	$1,715.00	$6,860.00	181
	542	6001		REMOVE METAL BEAM GUARD FENCE	LF	643.00	$5.00	$3,215.00	182
	544	6001		GUARDRAIL END TREATMENT (INSTALL)	EA	4.00	$2,325.00	$9,300.00	183
	545	6001		CRASH CUSH ATTEN (INSTL)	EA	22.00	$20,500.00	$451,000.00	184
	545	6003		CRASH CUSH ATTEN (MOVE & RESET)	EA	10.00	$4,250.00	$42,500.00	185
	545	6005		CRASH CUSH ATTEN (REMOVE)	EA	20.00	$950.00	$19,000.00	186
	610	6002		RELOCATE RD IL ASM (SHOE-BASE)	EA	6.00	$1,000.00	$6,000.00	187
	610	6003		RELOCATE RD IL ASM (CTB MOUNT)	EA	7.00	$1,000.00	$7,000.00	188
	610	6011		IN RD IL AM (U/P) (TY 1) (150W) S	EA	16.00	$975.00	$15,600.00	189

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	610	6102		REPLACE LUMINAIRE W/LED (250W EQ)	EA	26.00	$600.00	$15,600.00	190
	610	6191		IN RD IL (TY SP) 38S-8-8 (250W EQ) LED	EA	50.00	$3,000.00	$150,000.00	191
	618	6040		CONDT (PVC) (SCH 80) (1")	LF	1,870.00	$6.00	$11,220.00	192
	618	6044		CONDT (PVC) (SCH 80) (1 1/2")	LF	500.00	$11.25	$5,625.00	193
	618	6046		CONDT (PVC) (SCH 80) (2")	LF	15,210.00	$7.25	$110,272.50	194
	618	6047		CONDT (PVC) (SCH 80) (2") (BORE)	LF	960.00	$9.95	$9,552.00	195
	618	6053		CONDT (PVC) (SCH 80) (3")	LF	940.00	$10.01	$9,409.40	196
	618	6054		CONDT (PVC) (SCH 80) (3") (BORE)	LF	585.00	$15.75	$9,213.75	197
	618	6058		CONDT (PVC) (SCH 80) (4")	LF	575.00	$14.65	$8,423.75	198
	618	6059		CONDT (PVC) (SCH 80) (4") (BORE)	LF	585.00	$18.35	$10,734.75	199
	618	6062		CONDT (RM) (3/4")	LF	208.00	$10.40	$2,163.20	200
	618	6066		CONDT (RM) (1 1/4")	LF	278.00	$11.99	$3,333.22	201
	618	6070		CONDT (RM) (2")	LF	300.00	$17.44	$5,232.00	202
	618	6074		CONDT (RM) (3")	LF	976.00	$32.75	$31,964.00	203
	620	6007		ELEC CONDR (NO.8) BARE	LF	14,541.00	$0.90	$13,086.90	204
	620	6008		ELEC CONDR (NO.8) INSULATED	LF	30,542.00	$0.95	$29,014.90	205
	620	6009		ELEC CONDR (NO.6) BARE	LF	2,120.00	$1.00	$2,120.00	206
	620	6011		ELEC CONDR (NO.4) BARE	LF	854.00	$1.75	$1,494.50	207
	620	6012		ELEC CONDR (NO.4) INSULATED	LF	850.00	$1.95	$1,657.50	208
	620	6020		ELEC CONDR (NO.1/0) INSULATED	LF	1,332.00	$4.89	$6,513.48	209
	621	6005		TRAY CABLE (4 CONDR) (12 AWG)	LF	2,920.00	$1.78	$5,197.60	210
	624	6010		GROUND BOX TY D (162922)W/APRON	EA	38.00	$700.00	$26,600.00	211
	624	6014		GROUND BOX TY 1 (122422)W/APRON	EA	7.00	$1,175.00	$8,225.00	212
	624	6021		GROUND BOX TY 2 (243636)W/APRON	EA	13.00	$1,275.00	$16,575.00	213
	628	6001		RELOCATE ELECTRICAL SERVICES	EA	1.00	$250.00	$250.00	214
	628	6086		ELC SRV TY A 240/480 100(SS)SS(E)SP(O)	EA	3.00	$5,250.00	$15,750.00	215
	628	6188		ELC SRV TY D 120/240 070(NS)SS(E)SP(O)	EA	2.00	$4,250.00	$8,500.00	216
	636	6002		ALUMINUM SIGNS (TY G)	SF	690.00	$29.50	$20,355.00	217
	636	6003		ALUMINUM SIGNS (TY O)	SF	1,759.00	$16.85	$29,639.15	218
	644	6001		IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	124.00	$332.00	$41,168.00	219
	644	6004		IN SM RD SN SUP&AM TY10BWG(1)SA(T)	EA	66.00	$488.00	$32,208.00	220
	644	6005		IN SM RD SN SUP&AM TY10BWG(1)SA(T-2EXT)	EA	7.00	$600.00	$4,200.00	221
	644	6007		IN SM RD SN SUP&AM TY10BWG(1)SA(U)	EA	4.00	$527.00	$2,108.00	222
	644	6035		IN SM RD SN SUP&AM TYS80(1)SA(U-2EXT)	EA	4.00	$765.00	$3,060.00	223
	644	6076		REMOVE SM RD SN SUP&AM	EA	87.00	$75.00	$6,525.00	224
	647	6001		INSTALL LRSS (STRUCT STEEL)	LB	3,600.00	$3.75	$13,500.00	225
	647	6003		REMOVE LRSA	EA	2.00	$1,500.00	$3,000.00	226

Control: 1258-03-042, etc.
Project: CC 1258-3-42-etc.
Highway: FM 1093 Westpark Extension Phase I
County: Fort Bend

Alt. No.	Item No.	Desc. Code	S.P. No.	Bid Item Description	Unit Measure	Estimated Quantities	Unit Bid Price	Extended Amount	Sequence No.
	650	6032		INS OH SN SUP(30 FT CANT)	EA	2.00	$17,478.00	$34,956.00	227
	650	6038		INS OH SN SUP(35 FT CANT)	EA	3.00	$23,365.00	$70,095.00	228
	650	6045		INS OH SN SUP(40 FT CANT)	EA	5.00	$27,173.00	$135,865.00	229
	650	6204		REMOVE OVERHD SIGN SUP	EA	1.00	$7,500.00	$7,500.00	230
	650	6205		REMOVE OVERHD SIGN SUP (SIGN ONLY)	EA	1.00	$500.00	$500.00	231
	662	6060		WK ZN PAV MRK REMOV (W)4"(BRK)	LF	8,890.00	$0.60	$5,334.00	232
	662	6063		WK ZN PAV MRK REMOV (W)4"(SLD)	LF	42,991.00	$0.60	$25,794.60	233
	662	6071		WK ZN PAV MRK REMOV (W)8"(SLD)	LF	120.00	$1.90	$228.00	234
	662	6075		WK ZN PAV MRK REMOV (W)24"(SLD)	LF	363.00	$6.10	$2,214.30	235
	662	6080		WK ZN PAV MRK REMOV (W)(ARROW)	EA	5.00	$140.00	$700.00	236
	662	6090		WK ZN PAV MRK REMOV (W)(WORD)	EA	5.00	$160.00	$800.00	237
	662	6094		WK ZN PAV MRK REMOV (Y)4"(DOT)	LF	680.00	$1.40	$952.00	238
	662	6095		WK ZN PAV MRK REMOV (Y)4"(SLD)	LF	71,078.00	$0.60	$42,646.80	239
	662	6100		WK ZN PAV MRK REMOV (Y)12"(SLD)	LF	1,979.00	$3.60	$7,124.40	240
	666	6018		REFL PAV MRK TY I (W)6"(DOT)(100MIL)	LF	451.00	$2.30	$1,037.30	241
	666	6036		REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF	10,073.00	$0.85	$8,562.05	242
	666	6042		REFL PAV MRK TY I (W)12"(SLD)(100MIL)	LF	2,764.00	$3.00	$8,292.00	243
	666	6048		REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	644.00	$6.00	$3,864.00	244
	666	6054		REFL PAV MRK TY I (W)(ARROW)(100MIL)	EA	69.00	$160.00	$11,040.00	245
	666	6057		REFL PAV MRK TY I(W)(DBL ARROW)(100MIL)	EA	5.00	$330.00	$1,650.00	246
	666	6063		REFL PAV MRK TY I(W)(UTURN ARW)(100MIL)	EA	8.00	$220.00	$1,760.00	247
	666	6078		REFL PAV MRK TY I (W)(WORD)(100MIL)	EA	75.00	$170.00	$12,750.00	248
	666	6141		REFL PAV MRK TY I (Y)12"(SLD)(100MIL)	LF	724.00	$2.60	$1,882.40	249
	666	6199		REFL PAV MRK TY II (W) 36" (YLD TRI)	EA	36.00	$50.00	$1,800.00	250
	666	6225		PAVEMENT SEALER 6"	LF	25,665.00	$0.08	$2,053.20	251
	666	6226		PAVEMENT SEALER 8"	LF	10,073.00	$0.15	$1,510.95	252
	666	6228		PAVEMENT SEALER 12"	LF	3,488.00	$0.40	$1,395.20	253
	666	6230		PAVEMENT SEALER 24"	LF	644.00	$0.63	$405.72	254
	666	6231		PAVEMENT SEALER (ARROW)	EA	69.00	$50.00	$3,450.00	255
	666	6232		PAVEMENT SEALER (WORD)	EA	75.00	$50.00	$3,750.00	256
	666	6234		PAVEMENT SEALER (DBL ARROW)	EA	5.00	$56.00	$280.00	257
	666	6236		PAVEMENT SEALER (UTURN ARROW)	EA	8.00	$50.00	$400.00	258
	666	6243		PAVEMENT SEALER (YLD TRI)	EA	36.00	$50.00	$1,800.00	259
	666	6306		RE PM W/RET REQ TY I (W)6"(BRK)(100MIL)	LF	11,176.00	$0.44	$4,917.44	260
	666	6309		RE PM W/RET REQ TY I (W)6"(SLD)(100MIL)	LF	7,528.00	$0.41	$3,086.48	261
	666	6321		RE PM W/RET REQ TY I (Y)6"(SLD)(100MIL)	LF	6,510.00	$0.41	$2,669.10	262
	672	6007		REFL PAV MRKR TY I-C	EA	344.00	$3.60	$1,238.40	263

Control: 1258-03-042, etc.
Project: CC 1258-3-42-etc.
Highway: FM 1093 Westpark Extension Phase I
County: Fort Bend

Alt. No.	Item No.	Desc. Code	S.P. No.	Bid Item Description	Unit Measure	Estimated Quantities	Unit Bid Price	Extended Amount	Sequence No.
	672	6009		REFL PAV MRKR TY II-A-A	EA	113.00	$3.60	$406.80	264
	672	6010		REFL PAV MRKR TY II-C-R	EA	2,065.00	$3.60	$7,434.00	265
	678	6002		PAV SURF PREP FOR MRK (6")	LF	91,240.00	$0.13	$11,861.20	266
	678	6004		PAV SURF PREP FOR MRK (8")	LF	21,816.00	$0.26	$5,672.16	267
	678	6005		PAV SURF PREP FOR MRK (10")	LF	6,509.00	$0.26	$1,692.34	268
	678	6006		PAV SURF PREP FOR MRK (12")	LF	3,488.00	$0.33	$1,151.04	269
	678	6008		PAV SURF PREP FOR MRK (24")	LF	644.00	$0.66	$425.04	270
	678	6009		PAV SURF PREP FOR MRK (ARROW)	EA	69.00	$17.00	$1,173.00	271
	678	6010		PAV SURF PREP FOR MRK (DBL ARROW)	EA	5.00	$21.00	$105.00	272
	678	6012		PAV SURF PREP FOR MRK (UTURN ARR)	EA	8.00	$17.00	$136.00	273
	678	6016		PAV SURF PREP FOR MRK (WORD)	EA	75.00	$17.00	$1,275.00	274
	678	6023		PAV SURF PREP FOR MRK (36")(YLD TRI)	EA	36.00	$17.00	$612.00	275
	680	6002		INSTALL HWY TRF SIG (ISOLATED)	EA	2.00	$27,500.00	$55,000.00	276
	680	6004		REMOVING TRAFFIC SIGNALS	EA	2.00	$2,000.00	$4,000.00	277
	681	6001		TEMP TRAF SIGNALS	EA	4.00	$29,500.00	$118,000.00	278
	682	6001		VEH SIG SEC (12")LED(GRN)	EA	36.00	$180.00	$6,480.00	279
	682	6002		VEH SIG SEC (12")LED(GRN ARW)	EA	4.00	$180.00	$720.00	280
	682	6003		VEH SIG SEC (12")LED(YEL)	EA	36.00	$180.00	$6,480.00	281
	682	6004		VEH SIG SEC (12")LED(YEL ARW)	EA	4.00	$180.00	$720.00	282
	682	6005		VEH SIG SEC (12")LED(RED)	EA	36.00	$180.00	$6,480.00	283
	682	6006		VEH SIG SEC (12")LED(RED ARW)	EA	4.00	$180.00	$720.00	284
	682	6018		PED SIG SEC (LED)(COUNTDOWN)	EA	30.00	$555.00	$16,650.00	285
	682	6023		BACK PLATE (12")(3 SEC)	EA	40.00	$55.00	$2,200.00	286
	682	6047		LOUVER (12") (ADJUSTABLE)	EA	8.00	$210.00	$1,680.00	287
	684	6007		TRF SIG CBL (TY A)(12 AWG)(2 CONDR)	LF	5,270.00	$0.98	$5,164.60	288
	684	6009		TRF SIG CBL (TY A)(12 AWG)(4 CONDR)	LF	5,635.00	$1.65	$9,297.75	289
	684	6012		TRF SIG CBL (TY A)(12 AWG)(7 CONDR)	LF	6,810.00	$1.98	$13,483.80	290
	684	6080		TRF SIG CBL (TY C)(14 AWG)(2 CONDR)	LF	34,470.00	$0.92	$31,712.40	291
	685	6003		REMOVE RDSD FLASH BEACON ASSEMBLY	EA	4.00	$500.00	$2,000.00	292
	686	6043		INS TRF SIG PL AM(S)1 ARM(40')LUM	EA	2.00	$8,581.00	$17,162.00	293
	686	6059		INS TRF SIG PL AM(S)1 ARM(55')LUM	EA	1.00	$13,453.00	$13,453.00	294
	686	6063		INS TRF SIG PL AM(S)1 ARM(60')LUM	EA	1.00	$13,602.00	$13,602.00	295
	686	6235		INS TRF SIG PL AM(S)2 ARM(60-28')LUM	EA	1.00	$15,767.00	$15,767.00	296
	686	6267		INS TRF SIG PL AM(S)2 ARM(65-32')LUM	EA	3.00	$16,023.00	$48,069.00	297
	687	6001		PED POLE ASSEMBLY	EA	22.00	$1,000.00	$22,000.00	298
	688	6001		PED DETECT PUSH BUTTON (APS)	EA	28.00	$650.00	$18,200.00	299
	688	6003		PED DETECTOR CONTROLLER UNIT	EA	2.00	$3,000.00	$6,000.00	300

Control: 1258-03-042, etc.
Project: CC 1258-3-42-etc.
Highway: FM 1093 Westpark Extension Phase I
County: Fort Bend

Alt. No.	Item No.	Desc. Code	S.P. No.	Bid Item Description	Unit Measure	Estimated Quantities	Unit Bid Price	Extended Amount	Sequence No.
	688	6004		VEH LP DETECT (SAWCUT)	LF	6,685.00	$8.00	$53,480.00	301
	690	6006		REMOVAL OF GROUND BOXES	EA	12.00	$100.00	$1,200.00	302
	690	6036		INSTALL OF FND FOR GROUND MNT CABINETS	EA	2.00	$2,750.00	$5,500.00	303
	730	6107	003	FULL -WIDTH MOWING	CYC	6.00	$2,265.16	$13,590.96	304
	734	6002		LITTER REMOVAL	CYC	6.00	$2,728.63	$16,371.78	305
	735	6001		DEBRIS REMOVAL (CNTR MEDIANS /MAINLANES)	CYC	6.00	$2,728.63	$16,371.78	306
	735	6003		DEBRIS REMOVAL (FRONTAGE ROADS)	CYC	6.00	$2,728.63	$16,371.78	307
	735	6005		DEBRIS REMOVAL (ENTRANCE/EXIT RAMPS)	CYC	6.00	$2,728.63	$16,371.78	308
	738	6003		CLEANING / SWEEPING (OUTSIDE MAIN LANE)	CYC	12.00	$2,767.22	$33,206.64	309
	738	6005		CLEANING / SWEEPING (FRONTAGE ROAD)	CYC	12.00	$2,767.22	$33,206.64	310
	738	6007		CLEANING / SWEEPING(ENTRANCE/EXIT RAMP)	CYC	12.00	$2,767.22	$33,206.64	311
	751	6003		IRRIG SYS OPERATION AND REPAIR	MO	4.00	$1,000.00	$4,000.00	312
	3021	6001		WIDE FLANGE PAVEMENT TERMINALS	LF	342.00	$210.09	$71,850.78	313
	4006	6004		SOUND WALL (11 FT)	LF	40.00	$304.34	$12,173.60	314
	4006	6006		SOUND WALL (12 FT)	LF	4,300.00	$304.30	$1,308,490.00	315
	4006	6011		SOUND WALL (10 FT)	LF	80.00	$278.91	$22,312.80	316
	4006	6012		SOUND WALL (11 FT TO 21 FT)	LF	1,835.00	$389.49	$714,714.15	317
	6001	6002		PORTABLE CHANGEABLE MESSAGE SIGN	EA	14.00	$974.25	$13,639.50	318
	6002	6007		VIVDS TEMPORARY	EA	2.00	$14,500.00	$29,000.00	319
	6007	6011		FIBER OPTIC CBL (SNGLE-MODE)(12 FIBER)	LF	365.00	$5.00	$1,825.00	320
	6016	9001		MULTI-DUCT CONDUIT (PVC)(INSTALL ONLY)	LF	245.00	$11.25	$2,756.25	321
	6016	9002		MULTI-DUCT CONDUIT (PVC)(INSTALL ONLY)(BORE)	LF	120.00	$24.95	$2,994.00	322
	6019	6006		PREFB PV MK W/WNTY TY B (W)(6")(SLD)	LF	30,720.00	$4.10	$125,952.00	323
	6019	6007		PREFB PV MK W/WNTY TY B(W)6"(BRK)CNTST and	LF	6,509.00	$6.60	$42,959.40	324
	6019	6014		PREFB PV MK W/WNTY TY B (Y)(6")(SLD)	LF	33,769.00	$4.10	$138,452.90	325
	6019	6050		PREFB PV MK W/WNTY TY B (W)(8")(SLD)	LF	11,743.00	$5.50	$64,586.50	326
	6019	6060		PREFB PV MK W/WNTY TY B (W)(8")(ARROW)	EA	2.00	$390.00	$780.00	327
	6019	6061		PREFB PV MK W/WNTY TY B (W)(8")WORD)	EA	1.00	$520.00	$520.00	328
	6058	6002		BBU SYSTEM (STAND-ALONE BATT CABINET) and	EA	2.00	$6,250.00	$12,500.00	329
	9008	2000		POLICE OFFICER (FORCE ACCOUNT)	EA	50,000.00	$1.00	$50,000.00	330
	9008	3000		LANE CLOSURE ASSESSMENT FEE	HR	50.00	$500.00	$25,000.00	331
	16060	1		GROUNDING AND BONDING SYSTEMS	LS	1.00	$9,500.00	$9,500.00	332
	16070	1		EQ. RACK W/PANELBOARD,TVSS,CONTRACTOR,TIME CLOCK,PHOTOCELL	EA	2.00	$11,500.00	$23,000.00	333
	16670	1		LIGHTING PROTECTION SYSTEM	LS	1.00	$22,500.00	$22,500.00	334
	SS891	2001		TRUSS SCREEN	EA	1.00	$117,040.00	$117,040.00	335

TOTAL BID AMOUNT: $63,811,753.94

Control: 1258-03-042, etc.
Project: CC 1258-3-42-etc.
Highway: FM 1093 Westpark Extension Phase I
County: Fort Bend

Alt. No.	Item No.	Desc. Code	S.P. No.	Bid Item Description	Unit Measure	Estimated Quantities	Unit Bid Price	Extended Amount	Sequence No.

Signed: Todd

Title: V.P. of Estimating

Date: 12/17/15

Additional Signature for Joint Venture

Signed: _____

Title: _____

Date: _____

DISADVANTAGED BUSINESS ENTERPRISE REQUIREMENTS

Project: CONSTRUCTION OF FM 1093 WESTPARK EXTENSION FROM FM 1463/FM 359 TO WEST OF SH 99 CONSISTING OF GRADING, LIME TREATED SUBGRADE, PORTLAND CEMENT TREATED BASE, CONCRETE PAVEMENT, STORM SEWERS, STRUCTURES, RETAINING WALLS, ETC.

Highway: FM 1093 WESTPARK EXTENSION PHASE I

County: FORT BEND

CSJ No.: 1258-03-042, etc.

The following goal for disadvantaged business enterprises is established:

DBE
10%

Certification of DBE Goal Attainment

By signing the Bid, the Bidder certifies that the above DBE Goal will be met by obtaining commitments equal to or exceeding the DBE percentage or that the Bidder will provide a good faith effort to substitute the attempt to meet the goal.

Failure to provide commitments to meet the stated goal or provide a satisfactory good faith effort will be considered a breach of the requirements of the Bid. As a result, the Bid guarantee of the Bidder will be property of Fort Bend County and the Bidder will be excluded for rebidding on the project when it is re-advertised.

CONTRACTOR
By: Todd Jackson
Name: Todd Jackson
Title: V.P. of Estimating
Phone: 281-987-8787

ADDENDA ACKNOWLEDGEMENT

The undersigned proposes and agrees to perform all work of whatever nature required, in strict accordance with the Drawings and Specifications, for the following sum of prices, to wit:

It is understood that the work proposed to be done will be accepted when fully completed in accordance with the Contract Drawings.

Accompanying this Bid is a certified check, cashier's check or Bid Bond in the amount of five percent (5%) of the engineer's estimate, rounded to the nearest one thousand dollars. Also accompanying this Bid is all information required in the Bidding Requirements.

It is understood that Fort Bend County reserves the right to reject any and all bids and to waive any informality received in the bids.

In the event of the award of a Contract to the undersigned, the undersigned will furnish a Performance Bond and a Payment Bond for the full amount of the Contract, secure proper compliance with the terms and provisions of the Contract, to insure and guarantee the work until final completion and acceptance to guarantee payment of all lawful claim for labor performed and materials furnished in the fulfillment of the Contract, to guarantee the work for a period of one year after final acceptance by the Owner, and to guarantee the Bidder is covered by insurance as required by the Contract Documents.

The undersigned certifies that the bid prices contained in the proposed have been carefully checked and are submitted as correct and final. The unit prices have been shown in words and figures for each item listed in the Bid and it is understood that in the event of a discrepancy, **the words shall govern.**

Receipt is hereby acknowledged the following Addenda to the Contract Documents.

Addendum No. 1 dated 11/20/15 Received 11/23/15
Addendum No. 2 dated 12/14/15 Received 12/15/15
Addendum No. 3 dated _____ Received _____
Addendum No. 4 dated _____ Received _____

Todd Jenkins
Contractor
By V.P. of Estimating
(Title)
9303 New Trails Dr., Suite 200
(Address)
The Woodlands, TX 77381
(City, State, and Zip Code)
281-987-8787
(Area Code) (Telephone)

CONTRACTOR QUALIFICATION STATEMENT

(REQUIRED WITH ALL BIDS)

Webber, LLC — Name of Firm

12/17/15 — Date Completed

9303 New Trails Dr., Suite 200 — Street Address

The Woodlands — City

TX — State

77381 — Zip Code

Phone No: 281-987-8787 Fax No: 281-821-4914

Construction Capabilities:

General: Yes (✓) No ( )
Roadway Construction: Yes (✓) No ( )
Bridge Construction: Yes (✓) No ( )
Other: (Specify):_____

****

FOR CORPORATION USE ONLY:

_____ Date of Incorporation

_____ State(s) in which Incorporated

If Not Incorporated in State where work is being performed, give Certificate of Authority to do business in this State:

Certificate No. _____ Date: _____

_____ PRESIDENT'S NAME

_____ VICE PRESIDENT'S NAME

_____ SECRETARY'S NAME

_____ TREASURER'S NAME

FOR PARTNERSHIP USE ONLY:

Partnership is: Assoc._____ General_____ Ltd._____

Date of Organization

NAMES, ADDRESSES, PHONE AND FAX NUMBERS OF ALL PARTNERS WITH ZIP CODES
(USE ADDITIONAL SHEET, IF NECESSARY)

1. _____

2. _____

3. _____

GENERAL INFORMATION

****

Percentage (%) of Work Performed by Firm's Employees: 70

Number of Permanent Employees: 1600

Number of Years in Business: 51

Geographical Limits: Texas, Louisiana

If you have done business under a different name, please give name and location:
W.W. Webber, LLC Houston, TX

Has Firm ever failed to complete Project or defaulted on a Contract? If so, state where and why:
No

Has Firm ever been engaged in Litigation over any Contract with a Project Owner? If so, explain:

PRESENT PROJECTS

List the Major Construction Projects your Organization presently has under Construction: (Use Additional Sheet, if Necessary)

PROJECT	REPRFSENTATIVE/ OWNER & PHONE NO.	ARCHITECT/ENGINEER & PHONE NO.	CONTRACT AMOUNT	ESTIMATED DATE OF COMPLETION
1.	See attached sheets			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

****

COMPLETED PROJECTS

List the Major Construction Projects your Organization has completed in the past three years:

PROJECT	RFPRESENTATIVE/ OWNER & PHONE NO.	ARCHITECT/ENGINEER & PHONE NO.	CONTRACT AMOUNT	DATE COMPLETED
1.	See attached sheets			
2.				
3.				
4.				
5.				
6.				
7.				

Table 4 – Current Projects and Project Completed within the last 5 Years

Name of Organization:	Webber, LLC				
Project owner	TxDOT	Project name	IH 35E Hill County Line Ellis County (WDW)		
General description of project: Reconstruction of Freeway section and bridges					
Project cost	$64.9 million	Date project completed	February 2007		
Key project personnel	Project manager	Project superintendent	Safety manager	Quality control manager	
Name					
Reference contact information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/ position	Organization	Telephone	E-mail
Owner	Bill Pierce	Area Engineer	TxDOT/Waxahatchie	214-505-7283	bill.pierce@bridgefarmer.com
Designer					
Construction manager					

Project owner	TxDOT	Project name	US 75 Collin County (WEH)
General description of project: Freeway expansion			
Project cost	$18.6 million	Date project completed	May 2008
Key project personnel	Project manager	Project superintendent	Safety manager	Quality control manager
Name	Mark Smith	Gino Morales	David Pleasants	
Reference contact information (listing names indicates approval to contacting the names individuals as a reference)				

	Name	Title/ position	Organization	Telephone	E-mail
Owner	Paul Williams (retired)	Area Engineer	TxDOT/Dallas	214-320-6100	
Designer					
Construction manager					

Project owner	TxDOT	Project name	FM 2499 Denton County (WLO)
General description of project: Roadway rehabilitation			
Project cost	$20.6 million	Date project completed	April 2009
Key project personnel	Project manager	Project superintendent	Safety manager	Quality control manager
Name	Ray Mulholland	Carl Keating	Michael Barefoot	
Reference contact information (listing names indicates approval to contacting the names individuals as a reference)				

	Name	Title/ position	Organization	Telephone	E-mail
Owner	Gary Bailey	Area Engineer	TxDOT/Denton	972-400-1883	glbailey72@sbcglobal.net
Designer					
Construction manager					

Table 4 – Current Projects and Project Completed within the last 5 Years

Name of Organization:	Webber, LLC				
Project owner	TxDOT	Project name	FM 2499 Denton County (WLO)		
General description of project: **Roadway rehabilitation**					
Project cost	$20.6 million	Date project completed.	April 2009		
Key project personnel	Project manager	Project superintendent	Safety manager	Quality control manager	
Name	Ray Mulholland	Carl Keating	Michael Barefoot		
Reference contact information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/ position	Organization	Telephone	E-mail
Owner	Gary Bailey	Area Engineer	TxDOT/Denton	972-400-1883	glbailey72@sbcglobal.net
Designer					
Construction manager					

Project owner	TxDOT	Project name	IH 30 to Entertainment District (WMC)
General description of project: **Reconstruction of 5.8 miles of former turnpike into an expanded freeway**			
Project cost	$146.4 million	Date project completed	October 2010
Key project personnel	Project manager	Project superintendent	Safety manager	Quality control manager
Name	Mark Smith	Jared Lawler	Michael Barefoot	
Reference contact information (listing names indicates approval to contacting the names individuals as a reference)				

	Name	Title/ position	Organization	Telephone	E-mail
Owner	Brian Barth	District Engineer	TxDOT/Fort Worth	817-370-6514	brian.barth@txdot.gov
Designer					
Construction manager					

Project owner	TxDOT	Project name	I-35 Widening to 6 Lanes, Frontage Roads Waco (WMQ)
General description of project: **Freeway expansion and reconstruction**			
Project cost	$89.5 million	Date project completed	July 2011
Key project personnel	Project manager	Project superintendent	Safety manager	Quality control manager
Name	Tommy Walters	Larry Boderick	David Pleasants	
Reference contact information (listing names indicates approval to contacting the names individuals as a reference)				

	Name	Title/ position	Organization	Telephone	E-mail
Owner	John Jasek	Area Engineer	TxDOT/McLennan	254-867-2770	John.Jasek@txdot.gov
Designer					
Construction manager					

Table 4 – Current Projects and Project Completed within the last 5 Years

Name of Organization:	Webber, LLC				
Project owner	TxDOT	Project name	US 75 & Parker Road Interchange Plano (WNB)		
General description of project: Interchange Improvements					
Project cost	$19.9 million	Date project completed	August 2010		
Key project personnel	Project manager	Project superintendent	Safety manager	Quality control manager	
Name	Ray Mulholland	Gino Morales	David Pleasants		

Reference contact information (listing names indicates approval to contacting the names individuals as a reference)

	Name	Title/ position	Organization	Telephone	E-mail
Owner	Barry Heard	Area Engineer	TxDOT/McKinney	972-542-2345	barry.heard@txdot.gov
Designer					
Construction manager					

Project owner	North Texas Tollway Authority	Project name	George Bush Turnpike Section 28 (WQB
General description of project: Construction of 2.3 mile section of turnpike including 1.4 miles of bridges in Garland, TX			
Project cost	$100.1 million	Date project completed	January 2013
Key project personnel	Project manager	Project superintendent	Safety manager / Quality control manager
Name	John Hardy	Rick Finch	David Pleasants / David Pleasants

Reference contact information (listing names indicates approval to contacting the names individuals as a reference)

	Name	Title/ position	Organization	Telephone	E-mail
Owner	Marc Bouma	Technical Oversight Lea	NTTA/Plano	214-461-2058	mbouma@ntta.org
Designer					
Construction manager					

Project owner	TxDOT	Project name	IH 35E Rehabilitation(WRC)
General description of project: Freeway reconstruction			
Project cost	$23.4 million	Date project completed	July 2013
Key project personnel	Project manager	Project superintendent	Safety manager / Quality control manager
Name	Stephanie Beaton	Albert Granado	Mike Barefoot / Mike Barefoot

Reference contact information (listing names indicates approval to contacting the names individuals as a reference)

	Name	Title/ position	Organization	Telephone	E-mail
Owner	John Cordary	Area Engineer	TxDOT/Weatherford	682-229-2800	john.cordary@txdot.gov
Designer					
Construction manager					

Table 4 – Current Projects and Project Completed within the last 5 Years

Name of Organization:	**Webber, LLC**				
Project owner	TxDOT		Project name	IH 10 Chambers County (WCL)	
General description of project: **Freeway widening**					
Project cost	**$72.7 million**		Date project completed	**October 2010**	
Key project personnel	Project manager	Project superintendent	Safety manager	Quality control manager	
Name	**Patrick Pearson**				

Reference contact information (listing names indicates approval to contacting the names individuals as a reference)

	Name	Title/ position	Organization	Telephone	E-mail
Owner	**Cory Taylor**	**Area Engineer**	**TxDOT/Liberty**	**936-336-2244**	cory.taylor@txdot.com
Designer					
Construction manager					

Project owner	TxDOT	Project name	US 90A Fort Bend County (WDF)
General description of project: **Freeway widening**			
Project cost	**$40.6 million**	Date project completed	**December 2008**

Key project personnel	Project manager	Project superintendent	Safety manager	Quality control manager
Name	**James Ross**			

Reference contact information (listing names indicates approval to contacting the names individuals as a reference)

	Name	Title/ position	Organization	Telephone	E-mail
Owner	**Jim Hunt**	**Area Engineer**	**TxDOT/Houston**	**713-802-5000**	jim.hunt@txdot.gov
Designer					
Construction manager					

Project owner	TxDOT	Project name	IH 610 & IH 45 Harris County (WDH)
General description of project: **Rehabilitation of existing roadway**			
Project cost	**$35.3 million**	Date project completed	**October 2008**

Key project personnel	Project manager	Project superintendent	Safety manager	Quality control manager
Name	**Kenneth Bair**			

Reference contact information (listing names indicates approval to contacting the names individuals as a reference)

	Name	Title/ position	Organization	Telephone	E-mail
Owner	**Douglas Stephens**	**Area Engineer**	**TxDOT/Humble**	**281-319-6400**	Not Available (Retired)
Designer					
Construction manager					

Table 4 – Current Projects and Project Completed within the last 5 Years

Name of Organization:	Webber, LLC				
Project owner	TxDOT	Project name	US 90A Fort Bend County (WDK)		
General description of project: Road construction					
Project cost	$24.1 million	Date project completed	July 2008		
Key project personnel	Project manager	Project superintendent	Safety manager	Quality control manager	
Name	Martin Kalinowski Jr.				

Reference contact information (listing names indicates approval to contacting the names individuals as a reference)

	Name	Title/ position	Organization	Telephone	E-mail
Owner	Jim Hunt	Area Engineer	TxDOT/Houston	713-802-5000	jim.hunt@txdot.gov
Designer					
Construction manager					

Project owner	TxDOT	Project name	Nasa Road Harris County (WDM)
General description of project: Interchange construction			
Project cost	$54.4 million	Date project completed	November 2008

Key project personnel	Project manager	Project superintendent	Safety manager	Quality control manager
Name	Juan Embil			

Reference contact information (listing names indicates approval to contacting the names individuals as a reference)

	Name	Title/ position	Organization	Telephone	E-mail
Owner	Quincy Allen	Deputy District Engineer	TxDOT/Houston	713-802-5011	quincy.allen@txdot.gov
Designer					
Construction manager					

Project owner	TxDOT	Project name	Dixie Farm Road Brazoria County (WDP)
General description of project: Roadway widening			
Project cost	$21.7 million	Date project completed	November 2009

Key project personnel	Project manager	Project superintendent	Safety manager	Quality control manager
Name	Victor Vann			

Reference contact information (listing names indicates approval to contacting the names individuals as a reference)

	Name	Title/ position	Organization	Telephone	E-mail
Owner	Jeff A. Volk	Area Engineer	TxDOT/Rosenberg	281-238-7900	jeff.volk@txdot.gov
Designer					
Construction manager					

Table 4 – Current Projects and Project Completed within the last 5 Years

Name of Organization:	Webber, LLC				
Project owner	TxDOT	Project name	IH 610 Harris County (WDR)		
General description of project: Highway overlay					
Project cost	$80.4 million	Date project completed	July 2013		
Key project personnel	Project manager	Project superintendent	Safety manager	Quality control manager	
Name	Kenneth Bair/Jason Esparza				

Reference contact information (listing names indicates approval to contacting the names individuals as a reference)

	Name	Title/ position	Organization	Telephone	E-mail
Owner	Jim Hunt	Area Engineer	TxDOT/Houston	713-802-5000	
Designer					
Construction manager					

Project owner	TxDOT	Project name	SH 3 Texas City (WDS)
General description of project: Roadway widening			
Project cost	$24.6 million	Date project completed	December 2009
Key project personnel	Project manager	Project superintendent	Safety manager	Quality control manager
Name	John Floyd		

Reference contact information (listing names indicates approval to contacting the names individuals as a reference)

	Name	Title/ position	Organization	Telephone	E-mail
Owner	William P. Babbington	Area Engineer	TxDOT/La Marque	409-978-2505	Not Available (Retired)
Designer					
Construction manager					

Project owner	TxDOT	Project name	IH45 (Loop 336-FM830) (WQZ)
General description of project: Reconstruction of 2.75 miles of freeway including storm sewer and bridge structures			
Project cost	$52.5 million	Date project completed	February 2014
Key project personnel	Project manager	Project superintendent	Safety manager	Quality control manager
Name	Masimo De La Rosa	Bennie Grimmer		

Reference contact information (listing names indicates approval to contacting the names individuals as a reference)

	Name	Title/ position	Organization	Telephone	E-mail
Owner	Richard L. Brown	Area Engineer	TxDOT/Montgomery	936-538-3300	richard.brown@txdot.gov
Designer					
Construction manager					

Table 4 – Current Projects and Project Completed within the last 5 Years

Name of Organization:	Webber, LLC		
Project owner	TxDOT	Project name	IH 45-Montgomery County-Shepard Hill Road-(WRE)
General description of project:	Reconstruction of 2.6 miles of freeway including a bridge and storm sewer		
Project cost	$24.9 million	Date project completed	August 2013

Key project personnel	Project manager	Project superintendent	Safety manager	Quality control manager
Name	Masimo De La Rosa	Anthony White		

Reference contact information (listing names indicates approval to contacting the names individuals as a reference)

	Name	Title/ position	Organization	Telephone	E-mail
Owner	Richard L. Brown	Area Engineer	TxDOT/Montgomery	936-538-3300	richard.brown@txdot.gov
Designer					
Construction manager					

Project owner	TxDOT	Project name	US 290 Reconstruction Brenham (WRJ)
General description of project:	Reconstruction of 5 miles of main lane highway and frontage roads with retaining walls and two bridges		
Project cost	$37 million	Date project completed	May 2014

Key project personnel	Project manager	Project superintendent	Safety manager	Quality control manager
Name	Tony Castilleja	Rodney Johnson		

Reference contact information (listing names indicates approval to contacting the names individuals as a reference)

	Name	Title/ position	Organization	Telephone	E-mail
Owner	Mark Shafer	Area Engineer	TxDOT/Brenham	979-836-9359	mark.shafer@txdot.gov
Designer					
Construction manager					

Project owner		Project name	
General description of project:			
Project cost		Date project completed	

Key project personnel	Project manager	Project superintendent	Safety manager	Quality control manager
Name				

Reference contact information (listing names indicates approval to contacting the names individuals as a reference)

	Name	Title/ position	Organization	Telephone	E-mail
Owner					
Designer					
Construction manager					

Current Webber Projects

	Area Mngr	Project Mngr	Project Code	Project Name	Project Value	Start Date	Contract Expires	Schedule Compl	% Status Compl
	Jim Rogers	Jim Rogers	WSG	IH 10 Bexar County (San Antonio)	$ 39,650,000.00	3/25/2013	11/20/2015	11/2/2015	95%
Pavement									
	Ricky Williams		WSL	IAH Project #647 Taxiway	$ 12,728,000.00	1/14/2014	8/22/2015	Aug-15	95%
			WSU	UPRR Mesquite Intermodel Facility	$ 11,377,584.00	9/14/2014	6/1/2015	Dec-15	78%
			WSX	Hobby Airport West Concourse Final	$ 3,593,492.00	9/15/2014	5/1/2015	Aug-15	96%
			WTD	Webber WSS - FM 423	$ 12,709,653.00	8/1/2015		2/1/2017	0%
			WTE	Webber WTA - FM 2499	$ 6,756,842.00	9/1/2015		12/1/2016	0%
			WTF	Webber WSM - Rockwall	$ 2,157,335.00	10/1/2014		9/1/2016	28%
			WTG	Webber WSH - FM 1171	$ 10,217,988.00	6/1/2016		6/1/2018	40%
			WTI	Webber WST - SH 99	$ 5,767,573.00	10/1/2014		12/1/2015	0%
			WTK	Webber WTC - US 59 Nacogdoches	$ 3,380,421.00	10/1/2014		12/1/2015	5%
			WTP	Marine Creek Ranch 9A	$ 334,327.50	12/1/2014		5/31/2015	100%
			WTQ	Tyler Pounds Regional Airport	$ 4,267,460.00	10/1/2014	9/30/2015	9/1/2015	86%
			WTS	Wildridge Phase 1	$ 2,404,098.00	11/1/2014		3/31/2015	90%
			WTY	Webber WRW - Rockwall Royse City	$ 449,564.00			8/1/2015	64%
			WTZ	Webber WSA - Lufkin #1 US 59	$ 965,538.00			12/1/2015	90%
			WUA	Webber WSJ - Lufkin #2	$ 4,495,680.00			9/1/2015	86%
			WUB	Webber WSD - HWY 290 Segment 6	$ 2,049,457.00				33%
			WUC	Webber WSI - HWY 290 Segment 7	$ 1,009,946.00				34%
			WUD	Webber WRN - McKinney	$ 3,021,380.00				83%
			WUK	Webber WUE - Scholes Internation Airport	$ 545,063.00	5/1/2015		12/5/2015	0%
			WUW	Webber WUR - Brazoria CR 48	$ 3,478,826.00	8/1/2015		4/1/2016	0%
			WUX	Bozman Farms Estates Phase 4	$ 331,644.00	7/1/2015	9/1/2015	9/1/2015	0%
			WVC	Webber WUV - HCTRA 417	$ 2,526,241.00	8/1/2015		12/30/2016	0%
			WVH	Webber WVE - IH 45 (South) Navarro County	$ 19,215,288.00	3/1/2016		1/1/2018	0%
			WVI	Tyler Pounds Regional Airport 04/22/2015	$ 3,441,335.00	10/1/2015		12/31/2015	0%
			WVL	Webber WVG - US 87 Dallam County	$ 7,626,767.00	1/4/2016		12/28/2017	0%
Design Build									
		Tim Muller	WRM	CTMC - Manor Expressway US 290E Phase II	$ 211,253,000.00	6/29/2011	4/24/2014	8/22/2014	97%
Utilities									
	Kevin Markhardt	Garry Pierrot	WTJ	Contract 14-273 & 14-274	$ 12,900,200.00	1/15/2015	2/16/2017	11/23/2016	33%
		Sohail Shakil	WTL	Saws Desalination Piping	$ 8,800,000.00	9/15/2014	9/13/2015	12/1/2015	93%
		David Corvi	WTT	Webber WSS - FM 423	$ 13,378,272.17	10/15/2014	9/19/2017	10/1/2015	0%
		Andrew Jerome	WUM	Northgate Crossing Municipal Utilities Dist 1 & 2	$ 2,720,480.00	3/30/2015	2/15/2016	2/15/2016	17%
		Ramon Escanez	WUT	Trophy Club MUD District #1 WWTP (Caduaga JV)	$ 13,335,000.00	6/8/2015	12/2016	12/2016	0%
		Andrew Jerome	WVB	M&G Chemicals Corpus Christi Facility	$ 5,647,700.00	7/13/2015	12/30/2015	TBD	42%
		Keith Meltzler	WVK	City of Dallas, Walcrest Pump Station	$ 36,850,500.00	11/2/2015	11/2/2019	10/15/2019	0%
Completed									
NTR		Felix Martin C	WRP	NTE Loop 820 (Bluebonnet)	$ 75,077,000.00		1/31/2014	6/1/2014	Completed

Current Webber Projects

Area Mngr	Project Mngr	Project Code	Project Name	Project Value	Start Date	Contract Expires	Schedule Compl	% Status Compl
NTR	Felix Martin C	WSB	NTE Segment AP-3 (Bluebonnet)	$ 22,181,000.00		3/31/2014	6/1/2014	Completed
NTR	Jason Pittenger	WQU	SH 121 SW Pkwy Section 3A (Fort Worth)	$ 116,006,000.00	2/1/2010	3/19/2013	5/1/2015	Completed
NTR	Jason Pittenger	WRG	SH 121 SW Pkwy Section 2 (Fort Worth)	$ 81,434,000.00	12/12/2011	8/11/2015	6/25/2015	Completed
NTR	Mark Hutson	WSO	Memorial Spring Creek	$ 14,843,000.00	2/10/2014	7/1/2015	5/21/2015	Completed
NTR	Brian Blair	WRQ	Sylvan Ave Br Over Trinity River	$ 42,307,000.00	9/27/2011	2/3/2015	7/28/2015	Completed
NTR	Mark Zabrocki	WRL	IH 35 Section 5B Abbott	$ 103,321,000.00	10/3/2011	1/31/2015	6/22/2015	Completed
STR	Richard Baca	WRZ	Homestead Rd	$ 15,732,000.00	12/13/2012	4/10/2015	6/9/2015	Completed
STR	Braden Carlton	WSK	Lone Star Airport Conroe	$ 16,365,000.00	9/23/2013	3/26/2015	6/18/2015	Completed
STR	Tony Castilleja	WSN	Tomball Parkway	$ 25,117,000.00	10/21/2013	5/4/2015	7/28/2015	Completed
STR	Thomas Arbuthnot	WUL	Settegast Intermodal Facility	$ 2,959,850.00	2/15/2015	11/22/2015	7/24/2015	Completed
UTIL	Kevin Markhardt	WTM	Webber WSN - Tomball Dewatering	$ 200,000.00	8/18/2014		10/18/2014	Completed
UTIL	Mark Medlin	WVA	TRA Emergency Contracts	$ 300,000.00	6/11/2015			Completed

Highlighted Yellow = New Projects

As Of: 12/14/2015

FINANCIAL CONDITION

$1,000,000,000	$5,000,000,000	Marsh
Bonding Capacity Per Job	Maximum Aggregate Bonding Capacity	Bonding Company
Adrienne Stevenson	540 W. Madison St., Chicago, IL 60661	
Bonding Company Agent	Address and Zip Code	

Attach Statement of Financial Condition, including Contractor's latest regular-dated Financial Statement or Balance Sheet, which must contain the following items:

CURRENT ASSETS: (Cash, Joint Venture Accounts, Accounts Receivable, Notes Receivable, Accrued Interest on Notes, Deposits, and Materials and Prepaid Expenses), Net Fixed Assets amid other Assets.

CURRENT LIABILITIES: (Accounts Payable, Notes Payable, Accrued Interest on Notes, Provision for Income Taxes, Advances Received from Owners, Accrued Payroll Taxes), other Liabilities and Capital, (Capital Stock, Authorized and Outstanding Shares Par Values, Earned Surplus.)

12/31/14	Deloitte & Touche, LLP 1111 Bagby St., Suite 4500 Houston, TX 77002
Date of Statement or Balance Sheet	Name and Address with Zip Code of Firm Preparing Statement

REFERENCES

References (Bank and Trade) with Addresses, Phone Numbers and Zip Codes:

1. See attached sheet
2. _____
3. _____

****

CONTRACTOR

By: _____

Name: Todd Jackson

Title: V.P. of Estimating

Phone: 281-987-8787

****

VERIFICATION

THE STATE OF TEXAS §

COUNTY OF Montgomery §

Before me, the undersigned authority, on this day personally appeared, who being by me first duly sworn, deposed and said that he/she has executed the above and foregoing CONTRACTOR'S QUALIFICATION STATEMENT in the capacity stated, as the authorized act of Contractor and that every statement contained therein is within his/her personal knowledge and found to be true and correct.

Sworn to and signed before me this 17 day of December, 2015.

Donna L. Owens

Notary Public

Name: Donna L. Owens

Commission Expires: March 30, 2017

DONNA L OWENS
My Commission Expires
March 30, 2017

BANK REFERENCE:

JP Morgan Chase, N.A.
420 W. Van Buren, 10th Floor, Suite IL1-0239
Chicago IL 60606-3534
(312) 954-9359
ATTN: Latrice Howard

TRADE REFERENCES:

CMC Construction Services	1599 N Barkers Landing Rd #300 Houston, TX 77079	Katherine Dunn	(281) 597-5523 F: (281) 870-9550
Southern Crushed Concrete	14329 Chrisman Road Houston, TX 77039	Janice Conway	(281) 987-8787 F: (281) 449-7199
Mica Corporation	P. O. Box 161609 Ft. Worth, TX 76161	Carla Danford	(817) 847-6121 X211 F: (817)847-6885

TITLE VI ASSURANCE

During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

(1) Compliance with Regulations: The contractor shall comply with the Regulations relative to nondiscrimination in Federally-assisted programs of the Department of Transportation (hereinafter, "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein :incorporated by reference and made a part of this contract.

(2) Nondiscrimination: The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

(3) Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.

(4) Information and Reports: The contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the Texas Department of Transportation to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information the contractor shall so certify to the Recipient, or the Texas Department of Transportation as appropriate, and shall set forth what efforts it has made to obtain the information.

(5) Sanctions for Noncompliance: In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, the Recipient shall impose such contract sanctions as it or the Texas Department of Transportation may determine to be appropriate, including, but not limited to: (a) withholding of payments to the contractor under the contract until the contractor complies, and/or (b) cancellation, termination or suspension of the contract, in whole or in part.

(6) Incorporation of Provisions: The contractor shall include the provisions of paragraphs (1) through (6) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The contractor shall take such action with respect to any subcontract or procurement as the Recipient or the Texas Department of Transportation may direct as a means of enforcing such provisions including sanctions for non-compliance: Provided, however, that, in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request the Recipient to enter into such litigation to protect the interests of the Recipient, and, in addition, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

CONTRACTOR'S ASSURANCE
(Subcontracts-Federal Aid Projects)

The contractor, sub recipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate.

By signing this Bid, the contractor is giving assurances that all subcontract agreements will incorporate the Standard Specification and Special Provision to Section 9.9, "Payment Provisions for Subcontractors", all subcontract agreements exceeding $2,000 will incorporate the applicable "Wage Determination Decision", and, all subcontract agreements of $10,000 or more will incorporate the following:

Special Provision "Certification of Nondiscrimination in Employment"

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

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

Form FHWA 1273 "Required Contract Provisions Federal-aid Construction Contracts" (Form FHWA 1273 must also be physically attached to subcontracts and purchase orders of $10,000 or more)

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 12/2/2015

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Valenti Trobec Chandler Inc
1175 W. Long Lake, Suite 200
Troy MI 48098

CONTACT NAME: Jennie LaVine
PHONE (A/C, No, Ext): (248) 828-3377 FAX (A/C, No): (248) 828-3741
E-MAIL ADDRESS: jlavine@vtcins.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A: Arch Insurance Company	11150
INSURER B: Lexington Insurance Company	
INSURER C: Travelers Lloyds Insurance Co	41262
INSURER D:	
INSURER E:	
INSURER F:	

INSURED
Webber, LLC
9303 New Trails Drive
Suite 200
The Woodlands TX 77381

CERTIFICATE NUMBER: Webber, LLC w/Umb REVISION NUMBER:

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	GENERAL LIABILITY X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE X OCCUR X X,C,U Included X Contractual Liability GEN'L AGGREGATE LIMIT APPLIES PER: POLICY X PRO-JECT LOC			[redacted]	3/31/2015	3/31/2016	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 1,000,000 $ 500,000 $ 10,000 $ 1,000,000 $ 2,000,000 $ 2,000,000
A	AUTOMOBILE LIABILITY X ANY AUTO ALL OWNED AUTOS X HIRED AUTOS SCHEDULED AUTOS X NON-OWNED AUTOS			[redacted]	3/31/2015	3/31/2016	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) Uninsured/underinsured	$ 1,000,000 $ $ $ $ 1,000,000
B	X UMBRELLA LIAB X OCCUR EXCESS LIAB CLAIMS-MADE DED X RETENTION $ 25,000			[redacted]	3/31/2015	3/31/2016	EACH OCCURRENCE AGGREGATE	$ 20,000,000 $ 20,000,000
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N: N If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		[redacted]	3/31/2015	3/31/2016	X WC STATU-TORY LIMITS OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ 1,000,000 $ 1,000,000 $ 1,000,000
C	Contractors Equipment			[redacted]	3/31/2015	3/31/2016	Leased/Rented Equipment	$1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)
All operations of the named insured. Where required by written contract, Fort Bend County is additional insured on the General Liability policy with respects to liability arising out of ongoing and completed operations performed by the named insured.

CERTIFICATE HOLDER

Fort Bend County
301 Jackson Street
Suite 201
Richmond, TX 77469

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE
Alan Chandler/V44 Alan L. Chandler

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NOTES TO AGENTS:

Agents must provide all requested information then either fax or mail this form directly to the address listed below.

Pre-printed limits are the minimum required; if higher limits are provided by the policy, enter the higher limit amount and strike-through or cross-out the pre-printed limit.

To avoid work suspension, an updated insurance form must reach the address listed below **one business day prior** to the expiration date. **Insurance must be in force in order to perform any work.**

Binder numbers are not acceptable for policy numbers.

The certificate of insurance, once on file with the department, is adequate for subsequent department contracts provided adequate coverage is still in effect. Do not refer to specific projects/contracts on this form.

List the contractor's legal company name, including the DBA (doing business as) name as the insured. If a staff leasing service is providing insurance to the contractor/client company, list the staff leasing service as the insured and show the contractor/client company in parenthesis.

The TxDOT certificate of insurance form is the only acceptable proof of insurance for department contracts.

List the contractor's legal company name, including the DBA (doing business as) name as the insured or list both the contractor and staff leasing service as insured when a staff leasing service is providing insurance.

Over-stamping and/or over-typing entries on the certificate of insurance are not acceptable if such entries change the provisions of the certificate in any manner.

This form may be reproduced.

DO NOT COMPLETE THIS FORM UNLESS THE WORKERS' COMPENSATION POLICY IS ENDORSED WITH A WAIVER OF SUBROGATION IN FAVOR OF TXDOT.

The SIGNATURE of the agent is required.

CERTIFICATE OF INSURANCE REQUIREMENTS:

WORKERS' COMPENSATION INSURANCE:

The contractor is required to have Workers' Compensation Insurance if the contractor has any employees including relatives.

The word STATUTORY, under limits of liability, means that the insurer would pay benefits allowed under the Texas Workers' Compensation Law.

GROUP HEALTH or ACCIDENT INSURANCE is not an acceptable substitute for Workers' Compensation.

COMMERCIAL GENERAL LIABILITY INSURANCE:

MANUFACTURERS' or CONTRACTOR LIABILITY INSURANCE is not an acceptable substitute for Comprehensive General Liability Insurance or Commercial General Liability Insurance.

BUSINESS AUTOMOBILE POLICY:

If coverages are specified separately, they must be at least these amounts:

Bodily Injury	$500,000 each occurrence $100,000 each occurrence
Property Damage	$100,000 for aggregate

PRIVATE AUTOMOBILE LIABILITY INSURANCE is not an acceptable substitute for a Business Automobile Policy.

MAIL ALL CERTIFICATES TO:

Texas Department of Transportation
CST – Contract Processing Unit (RA/200 – 1st Fl.)
125 E. 11th Street
Austin, TX 78701-2483
512/416-2540 (Voice), 512/416-2536 (Fax)

Contact/Help

COUNTY PURCHASING AGENT
Fort Bend County, Texas

Gilbert D. Isbom, Jr., CPPB
County Purchasing Agent

(281) 341-8648
Fax (281) 341-8642 or 341-8645

Vendor Information

Federal ID # or S.S #	[redacted]	Dun and Bradstreet # 180539660
Type of Business	✓ Corporation/LLC ___ Sole Proprietor/Individual ___ Partnership ___ Tax Exempt Organization	Year Business was Established _____
Legal Company Name	Webber, LLC	
Remittance Address	9303 New Trails Dr., Suite 200	
City/State/Zip	The Woodlands, TX 77381	
Physical Address	Same as Remittance Address	
City/State/Zip		
County	Fort Bend County Other: Montgomery	
Phone/Fax Number	Phone: 281-987-8787 Fax: 281-821-4914	
Contact Person	Todd Jackson	
E-mail	Todd.Jackson@wwebber.com	
Special Notes		
The Company listed above is a (check all that apply and attached certificate).	___ DBE-Disadvantaged Business Enterprise Certification #_____ ___ SBE-Small Business Enterprise Certification #_____ ___ HUB-Texas Historically Underutilized Business Certification #_____ ___ WBE-Women's Business Enterprise Certification #_____ ___ MBE-Minority Business Enterprise Certification #_____	
Company's gross annual receipts:	___ <$500,000 ___ $500,000-$4,999,999 ___ $5,000,000-$16,999,999 ___ $17,000,000-$22,399,999 ✓ >$22,400,000	
NAICs codes (Please enter all that apply).		

PLEASE NOTE: W-9 needs to be attached in order to be entered into our system

Form **W-9**
(Rev. August 2013)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

Give Form to the requester. Do not send to the IRS.

Print or type
See Specific Instructions on page 2.

Name (as shown on your income tax return)
Webber, LLC

Business name/disregarded entity name, if different from above

Check appropriate box for federal tax classification:
☐ Individual/sole proprietor ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate
☑ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶
☐ Other (see instructions) ▶

Exemptions (see instructions):
Exempt payee code (if any)
Exemption from FATCA reporting code (if any)

Address (number, street, and apt. or suite no.)
9393 New Trails Drive Suite 200

Requester's name and address (optional)

City, state, and ZIP code
The Woodlands, TX 77381

List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on the "Name" line to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.

Social security number
___ – ___ – ____

Employer identification number
[redacted]

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and
3. I am a U.S. citizen or other U.S. person (defined below), and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign Here | Signature of U.S. person ▶ [signature] | Date ▶ 1/9/14

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. The IRS has created a page on IRS.gov for information about Form W-9, at www.irs.gov/w9. Information about any future developments affecting Form W-9 (such as legislation enacted after we release it) will be posted on that page.

Purpose of Form

A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, payments made to you in settlement of payment card and third party network transactions, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct.

Note. If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien,
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States,
- An estate (other than a foreign estate), or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

Note. If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States:

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,
2. You do not certify your TIN when required (see the Part II instructions on page 3 for details),
3. The IRS tells the requester that you furnished an incorrect TIN,
4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or
5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code* on page 2 and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships* above.

What is FATCA reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code* on page 3 and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of $50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a $500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account, list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9.

a. Individual. Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note. FBB applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. Sole proprietor or single-member LLC. Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. Partnership, LLC that is not a single-member LLC, C Corporation, or S Corporation. Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. Other entities. Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. Disregarded entity. For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box in line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box in line 3.

Limited Liability Company (LLC). If the name on line 1 is an LLC treated as a partnership for U.S. federal tax purposes, check the "Limited Liability Company" box and enter "P" in the space provided. If the LLC has filed Form 8832 or 2553 to be taxed as a corporation, check the "Limited Liability Company" box and in the space provided enter "C" for C corporation or "S" for S corporation. If it is a single-member LLC that is a disregarded entity, do not check the "Limited Liability Company" box; instead check the first box in line 3 "Individual/sole proprietor or single-member LLC."

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space in line 4 any code(s) that may apply to you.

Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)

2—The United States or any of its agencies or instrumentalities

3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

4—A foreign government or any of its political subdivisions, agencies, or instrumentalities

5—A corporation

6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession

7—A futures commission merchant registered with the Commodity Futures Trading Commission

8—A real estate investment trust

9—An entity registered at all times during the tax year under the Investment Company Act of 1940

10—A common trust fund operated by a bank under section 584(a)

11—A financial institution

12—A middleman known in the investment community as a nominee or custodian

13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over $600 required to be reported and direct sales over $5,000[1]	Generally, exempt payees 1 through 5[2]
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

[1] See Form 1099-MISC, Miscellaneous Income, and its instructions.

[2] However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B—The United States or any of its agencies or instrumentalities

C—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G—A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I—A common trust fund as defined in section 584(a)

J—A bank as defined in section 581

K—A broker

L—A trust exempt from tax under section 664 or described in section 4947(a)(1)

M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

Note. You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-member LLC that is disregarded as an entity separate from its owner (see *Limited Liability Company (LLC)* on this page), enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note. See the chart on page 4 for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at www.ssa.gov. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at www.irs.gov/businesses and clicking on Employer Identification Number (EIN) under Starting a Business. You can get Forms W-7 and SS-4 from the IRS by visiting IRS.gov or by calling 1-800-TAX-FORM (1-800-829-3676).

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note. Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: *A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.*

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if items 1, 4, or 5 below indicate otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see Exempt payee code earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account)	The actual owner of the account or, if combined funds, the first individual on the account[1]
3. Custodian account of a minor (Uniform Gift to Minors Act)	The minor[2]
4. a. The usual revocable savings trust (grantor is also trustee) b. So-called trust account that is not a legal or valid trust under state law	The grantor-trustee[1] The actual owner[1]
5. Sole proprietorship or disregarded entity owned by an individual	The owner[3]
6. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))	The grantor*
For this type of account:	**Give name and EIN of:**
7. Disregarded entity not owned by an individual	The owner
8. A valid trust, estate, or pension trust	Legal entity[4]
9. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
10. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
11. Partnership or multi-member LLC	The partnership
12. A broker or registered nominee	The broker or nominee
13. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
14. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i)(B))	The trust

[1] List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

[2] Circle the minor's name and furnish the minor's SSN.

[3] You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

[4] List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see Special rules for partnerships on page 2.

*Note. Grantor also must provide a Form W-9 to trustee of trust.

Note. If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records from Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Publication 4535, Identity Theft Prevention and Victim Assistance.

Victims of identity theft who are experiencing economic harm or a system problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes. Phishing is the creation and use of emails and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to phishing@irs.gov. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at: spam@uce.gov or contact them at www.ftc.gov/idtheft or 1-877-IDTHEFT (1-877-438-4338).

Visit IRS.gov to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.

Job No: 16-035

TAX FORM/DEBT/RESIDENCE CERTIFICATION
(for Advertised Projects)

Taxpayer Identification Number (TIN): [redacted]

Company Name submitting Bid/Proposal: Webber, LLC

Mailing Address: 9303 New Trails Dr., Suite 200, The Woodlands, TX 77381

Are you registered to do business in the State of Texas? ☐ Yes ☐ No

If you are an individual, list the names and addresses of any partnership of which you are a general partner or any assumed name(s) under which you operate your business

I. Property: List all taxable property in Fort Bend County owned by you or above partnerships as well as any d/b/a names. Include real and personal property as well as mineral interest accounts. (Use a second sheet of paper if necessary.)

Fort Bend County Tax Acct. No.*	Property address or location**
None	None

** This is the property account identification number assigned by the Fort Bend County Appraisal District.*

*** For real property, specify the property address or legal description. For business personal property, specify the address where the property is located. For example, office equipment will normally be at your office, but inventory may be stored at a warehouse or other location.*

II. Fort Bend County Debt - Do you owe any debts to Fort Bend County (taxes on properties listed in I above, tickets, fines, tolls, court judgments, etc.)?

☐ Yes ☑ No If yes, attach a separate page explaining the debt.

III. Residence Certification - Pursuant to Texas Government Code §2252.001 *et seq.*, as amended, Fort Bend County requests Residence Certification. §2252.001 *et seq.* of the Government Code provides some restrictions on the awarding of governmental contracts; pertinent provisions of §2252.001 are stated below:

(3) "Nonresident bidder" refers to a person who is not a resident.

(4) "Resident bidder" refers to a person whose principal place of business is in this state, including a contractor whose ultimate parent company or majority owner has its principal place of business in this state.

☑ I certify that Webber, LLC [Company Name] is a Resident Bidder of Texas as defined in Government Code §2252.001.

☐ I certify that _____ [Company Name] is a Nonresident Bidder as defined in Government Code §2252.001 and our principal place of business is _____ [City and State].

Created 8/502

LOBBYING CERTIFICATION

For Contracts, Grants, Loans, and Cooperative Agreements
The undersigned certifies to the best of his or her knowledge and belief that:

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

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

3. The undersigned shall require that the language of this certification be included in the award documents for all sub awards at all tiers (including subcontracts, sub grants, and contracts under grants, loans and cooperative agreements) and that all sub recipients shall certify and disclosure accordingly.

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

Signature: Todd Jackson

Name: Todd Jackson

Title: V.P. of Estimating

Date: 12/17/15

AFFIDAVIT

THE STATE OF TEXAS

COUNTY OF Montgomery

Before me, the undersigned authority, on this day personally appeared Todd Jackson who being by me duly sworn upon oath says: that he is duly qualified and authorized to make this affidavit for and on behalf of Webber, LLC ("Contractor"), Montgomery County, Texas of and is fully cognizant of the fact herein set out: that Contractor has not, either directly or indirectly, entered into any agreement with Fort Bend County in any collusion: or otherwise taken any action in restraint of free competitive bidding in connection with the contract for the above referenced project.

Todd Jackson

Todd Jackson V.P. of Estimating
NAME TITLE

SWORN TO AND SUBSCRIBED BEFORE ME by the said Todd Jackson, this 17 day of December, 20 15, to certify which witness my hand and seal of office.

Donna L. Owens

NOTARY PUBLIC in and for

State of Texas

Printed Name: Donna L. Owens

My Commission Expires March 30, 2017

NOTARY PUBLIC STATE OF TEXAS
DONNA L OWENS
My Commission Expires
March 30, 2017

NON-COLLUSION AFFIDAVIT AND DEBARMENT CERTIFICATION

INDIVIDUAL DOING BUSINESS UNDER A FIRM NAME OR A CORPORATION

The prequalified Bidder being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with any bid or contract, and that the prequalified Bidder intends to do the work with his own bona-fide employees or subcontractors and will not bid for the benefit of another contractor.

By submitting this non-collusion affidavit, the Contractor is certifying his status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

SIGNATURE OF PREQUALIFIED BIDDER

Name of Prequalified Bidder _____
Print or type individual name

Trading and doing business as _____
Print or type firm name

_____
Address as Prequalified

_____ _____
Witness Signature of Prequalified Bidder, Individually

_____ _____
Print or type witness' name Print or type signer's name

AFFIDAVIT MUST BE NOTARIZED
NOTARY SEAL

Subscribed and sworn to before me this the
_____day_____of 20____.

_____
Signature of Notary Public

Of_____County

State of_____

My Commission Expires:_____

SINGLE CORPORATION OR JOINT VENTURE

The prequalified Bidder being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with any bid or contract, and that the prequalified Bidder intends to do the work with his own bonafide employees or subcontractors and will not bid for the benefit of another contractor.

By submitting this non-collusion affidavit, the Contractor is certifying his status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

SIGNATURE OF PREQUALIFED BIDDERS

Instruction to Prequalified Bidder: On Line (1), fill in the name of each prequalified Bidder. On Line (2), fill in the name of one of the joint venturers and execute below in the appropriate manner. Furnish in the following lines all information require

On Line (3), print or type the name of the other joint venturer and execute below in the appropriate manner. Furnish all information required by said article of the Specifications.

(1) Webber, LLC and _____

A Joint Venture

(2) Webber, LLC (Seal)

Name of Prequalified Bidder

9303 New Trails Dr., Suite 200, The Woodlands, TX 77381

Address as prequalified

AND

Mark Lively

Witness or Attest

Mark Lively

Print or type signer's name

By: _____ (Seal)

Name of Prequalified Bidder

Todd Jackson

Print or type signer's name

If a Corporation, affix corporate seal

(3) _____ (Seal)

Name of Prequalified Bidder

_____

Address as prequalified

_____ By: _____ (Seal)

Witness or Attest

_____

Print or type signer's name

_____

Print type signer's name

If a Corporation, affix corporate seal

Affidavit must be notarized for Line (2)

Subscribed and sworn to before me this the

17 day of December 20 15

Donna L Owens

Signature of Notary Public

of Montgomery County

State of Texas

My Commission Expires: March 30, 2017

Affidavit must be notarized for Line (3)

Subscribed and sworn to before me this the

_____ day of _____ 20 _____

_____

Signature of Notary Public

of _____ County

State of _____

My Commission Expires: _____

DONNA L OWENS
My Commission Expires
March 30, 2017

The prequalified Bidder certifies to the best of his knowledge and belief, that he and his principals:

a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency:

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

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

d) Have not within a three-year period preceding this Bid had one or more public transactions (Federal. State or local) terminated for cause or default.

e) Will submit a revised Debarment Certification immediately if his status changes and will show in his bid Bid an explanation for the change in status.

If the pre-qualified Bidder cannot certify that he is not debarred, he shall provide an explanation with this submittal. An explanation will not necessarily result in denial of participation in a contract.

Failure to submit a non-collusion affidavit and debarment certification will result in the prequalified Bidder's bid being considered non-responsive.

Check here if an explanation is attached to this certification.

CHILD SUPPORT STATEMENT

FORT BEND COUNTY
FOR NEGOTIATED CONTRACTS AND GRANTS

Under Family Code, Section 231.006, Todd Jackson (name of *individual)* certifies that Webber, LLC *(name of business)* _____ *(vendor #,)* as of Dec. 17, 20 15 *(date)* is eligible to receive a grant, loan, or payment and acknowledges that any contract may be terminated and payment may be withheld if this certification is inaccurate.

List below the name and social security number of the individual or sole proprietor and each partner, shareholder, or owner with an ownership interest of at least 25% of the business entity submitting the bid or application. This form must be updated whenever any party obtains a 25% ownership interest in the business entity.

Name (Please Print Legibly)	Social Security Number
N/A	

Family Code, Section 231.006, specifies that a child support obligor who is more than thirty (30) days delinquent in paying child support and a business entity in which the obligor is a sole proprietor, partner, shareholder, or owner with an ownership interest of at least 25% percent is not eligible to receive payments from state funds under a contract to provide property, materials, or services; or receive a state-funded grant or loan.

A child support obligor or business entity ineligible to receive payments described above remains ineligible until all arrearage have been paid or the obligor is in compliance with a written repayment agreement or court order as to any existing delinquency.

Except as provided by Family Code. Section 231.302(d), a social security number is confidential and may be disclosed only for the purposes of responding to a request for information from an agency operating under the provisions of Subchapters A and D of Title IV of the federal Social Security Act (42 U.S.C. Sections 601 et seq. and 651 et seq.)

Fort Bend County maintains the information collected through this article. With few exceptions, you are entitled on request to be informed about the information that we collect about you. Under Sections 552.021 and 552.023 of the Texas Government Code, you also are entitled to receive and review the information. Under Section 559.004 of the Government Code, you are also entitled to have us correct information about you that is incorrect.

SALES TAX INFORMATION

NOTICE TO CONTRACTORS

The Contractor's attention is directed to TEX. TAX CODE ANN. 151.311, which was amended by the Texas Legislature, effective October 1, 1993.

Under Section 151.311, as amended, tangible personal property purchased by a Contractor for use in the performance of a contract for the improvement of real property for an organization such as Fort Bend County is exempt from the payment of sales and use tax thereon when the property is incorporated into the realty in the performance of the contract. Building materials, etc., are exempt from tax if they are:

(1) Necessary and essential for the performance of the contract: and
(2) Completely consumed at the job site (i.e.: being used once for their intended purpose they are used up or destroyed). Items that can be re-used on other jobs are not tax exempt.

Services purchased by a Contractor are also tax exempt, where:

(1) The contract is for an improvement to real estate for an exempt organization: and
(2) The contract expressly requires specific service to be provided or purchased by the person performing the contract: or
(3) The service is integral to the performance of the contract.

Machinery and equipment, including repair and replacement parts for the same, are not tax exempt when used in the performance of a contract for the improvement of real estate for Fort Bend County.

The Contractor should be aware that the Texas Comptroller of Public Accounts issues rules interpreting applicable provisions of the tax code from time to time. The rules should be consulted when answering specific questions. The Contractor can obtain additional information concerning the applicable sales and use tax, as well as sales tax permits and information regarding resale certificates, from the State Comptroller's Office, at (800) 252-5555.

PAYROLL VERIFICATION INFORMATION

1. Payroll will be verified by a Fort Bend County Representative. Certification of payment will be compared with payroll figures upon completion of project. To minimize time in payment of job, the General Contractor can send a certified letter to the effect upon receipt of certification of payment, they will be made available for comparison, and if any discrepancies are found, the necessary adjustments will he made.

2. Submit certified payroll for each week. If no work is being performed, submit a certified payroll weekly stating "No Work Performed this Period". A certified payroll stating "No Work Performed until Further Notice" is not acceptable for this project.

3. Number payrolls consecutively starting with #1 for first month worked.

4. Only one copy of each payroll is required.

5. Include Fort Bend County Contract Purchase Order number and job description on each payroll.

6. Show each employee working on project and his work classification (carpenter, pipe fitter, roofer, etc.). Consult classification and minimum wage schedule in the Prevailing Wage Rate for Engineering Construction in Fort Bend County, in Contract Specifications.

7. On payroll, indicate if fringe benefits (as shown on Fort Bend County Wage Scale) are paid to. approve plans, funds, or programs; or if they are paid in cash to the employee. (In case of cash payment of fringe benefits, show the base rate + fringe benefits — 5.00/6.75.)

8. Show the number of hours worked in each month and/or week.

9. Indicate gross salary, deductions, net salary, and check number issued.

10. Contractor is to submit payroll sheets for each contract he has with Fort Bend County.

11. Show "Final" on last payroll submitted.

12. General Contractor is responsible for sub-contractors submittal of correct payrolls each week. He can only be assured of this by insisting that subcontractor payrolls be submitted to him, not to Fort Bend County.

13. Sub-contractors' payroll to be monitored by prime Contractor in complying to prevailing wage rates.

PAYMENT BOND

THE STATE OF TEXAS §

FORT BEND COUNTY §

KNOW ALL MEN BY THESE PRESENTS:

THAT _____ of the City of _____ _____, County of _____ and State of _____, as Principal, and _____, authorized under the Laws of the State of Texas to act as Surety on Bonds for Principals, are held and firmly bound unto the County Judge of Fort Bend County, Texas, and his duly qualified successors in office, (County), in the penal sum of _____ Dollars ($_____) for the payment whereof, the said Principal and Surety bind themselves and their heirs, administrators, executors, successors and assigns, jointly and severally, by these presents:

WHEREAS, the Principal has entered into a certain written Contract with the County dated the day of _____, 20_____, for construction of a Public Works Project, generally described as **CONSTRUCTION OF FM 1093 WESTPARK EXTENSION FROM FM 1463/FM 359 TO WEST OF SH 99 CONSISTING OF GRADING, LIME TREATED SUBGRADE, PORTLAND CEMENT TREATED BASE, CONCRETE PAVEMENT, STORM SEWERS, STRUCTURES, RETAINING WALLS, ETC.** which Contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION TO THIS OBLIGATION IS SUCH, that if the said Principal shall pay all claimants supplying labor and material to him or a subcontractor in the prosecution of the work provided for in said Contract, then, this obligation shall be void; otherwise, to remain in full force and effect;

PROVIDED, HOWEVER, that this Bond is executed pursuant to the provisions of Texas Government Code, Title 10, Chapter 2253 of the Revised Civil Statutes of Texas, as amended, and all liabilities on this Bond shall be determined in accordance with the provisions of said Article to the same extent as if it were copied at length herein.

Surety, for value received, stipulates and agrees that no change. extension of time, alteration or addition to the terms of the Contract, or to the work performed there under, or the Plans, Specifications or Drawings accompanying the same, shall in any way affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract, or to the work to be performed there under.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this_____ day of _____, 20____.

_____	_____
PRINCIPAL	SURETY
BY: _____	BY: _____
TITLE: _____	TITLE: _____
ADDRESS: _____	ADDRESS: _____
_____	_____
_____	_____

The Name and Address of the Resident Agent of Surety is:

_____

_____

(Attach Power of Attorney evidencing Surety Signatory's authority to execute on behalf of Surety.)

PERFORMANCE BOND

THE STATE OF TEXAS §

FORT BEND COUNTY §

KNOW ALL MEN BY THESE PRESENTS:

THAT _____ of the City of _____ _____, County of _____ and State of _____, as Principal, and _____, authorized under the Laws of the State of Texas to act as Surety on Bonds for Principals, are held and firmly bound unto the County Judge of Fort Bend County, Texas, and his duly qualified successors in office, (County), in the penal sum of _____ Dollars ($_____) for the payment whereof, the said Principal and Surety bind themselves and their heirs, administrators, executors, successors and assigns, jointly and severally, by these presents:

WHEREAS, the Principal has entered into a certain written Contract with the County, dated the _____ day of _____ 20_____, for construction of a Public Works Project, generally described as **CONSTRUCTION OF FM 1093 WESTPARK EXTENSION FROM FM 1463/FM 359 TO WEST OF SH 99 CONSISTING OF GRADING, LIME TREATED SUBGRADE, PORTLAND CEMENT TREATED BASE, CONCRETE PAVEMENT, STORM SEWERS, STRUCTURES, RETAINING WALLS, ETC.** which Contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal shall in all respects duly and faithfully observe and perform all and singular the covenants, conditions, and agreements in and by said Contract agreed and covenanted by the Principal to be observed and performed, and according to the true intent and meaning of said Contract and the Plans and Specifications hereto annexed, then this obligation shall be void: otherwise, to remain in full force and effect;

PROVIDED, HOWEVER, that this Bond is executed pursuant to the provisions of Article No. 5160 of the Revised Civil Statutes of Texas, as amended, and all liabilities on this Bond shall be determined in accordance with the provisions of said Article to the same extent as if it were copied at length herein.

Surety, for value received, stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract, or to the work performed thereunder, or the Plans, Specifications or Drawings accompanying the same, shall in any way affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract, or to the work to be performed thereunder.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this_____ day of _____, 20____.

PRINCIPAL	SURETY
BY: _____	BY: _____
TITLE: _____	TITLE: _____
ADDRESS: _____	ADDRESS: _____
_____	_____
_____	_____

The Name and Address of the Resident Agent of Surety is:

_____

_____

(Attach Power of Attorney evidencing Surety Signatory's authority to execute on behalf of Surety.)

CHANGE ORDER FORM

CHANGE ORDER NUMBER _____

PROJECT:

CONTRACTOR:

DESCRIPTION OF CHANGES:

ATTACHMENTS:

CHANGE IN CONTRACT PRICE		**CHANGE IN CONTRACT TIME**	
1. Original Price:	_____	Original Time:	_____ DAYS
2. Total of Prior Change Orders:	_____	Total of Prior Change Orders:	_____ DAYS
3. Total Price Prior to Current Change Order:	_____	Total Time Prior to Current Change Order:	_____ DAYS
4. **Total of Current Change Order:**	_____	**Total of Current Change Order:**	_____ **DAYS**
5. New Price Resulting from Current Change Order:	_____	New Time Resulting from Current Change Order:	_____ DAYS

AGREED BY:

Contractor: _____
(Signature) (Date)

Engineer of Record _____
(Signature) (Date)

APPROVED BY:

Fort Bend County Engineer _____
(Signature) (Date)

Fort Bend County Judge _____
(Signature) (Date)

Texas Department of Transportation: _____
(Signature) (Date)

Federal Highway Administration: _____
(Signature) (Date)

FINAL RELEASE FOR SUBCONTRACTOR and/or MATERIAL SUPPLIER

STATE OF _____ §

COUNTY OF _____ §

BEFORE ME, the undersigned authority on this day personally appeared_____ _____ who being duly sworn, deposes and says that he is the _____, which company was a Subcontractor and/or Material Supplier performing work and/or supplying material or equipment known as the _____for the _____ _____ for Fort Bend County, a Political Subdivision of the State of Texas.

THE UNDERSIGNED, in consideration of the sum of $_____ representing the final payment under subcontract said work and/or materials, or equipment including any and all change orders or amendments thereto, hereby remises, releases and forever discharges Fort Bend County, a Political Subdivision of Texas *(General Contractor)* from all claims and demands arising out of labor performed and/or materials or equipment supplied by the undersigned in connection with said subcontract, and does hereby release and discharge unto the said Owner, his heirs, and assigns, any and all liens arising out of same.

THE UNDERSIGNED further deposes that all bills and claims of every nature and kind whatsoever in any manner arising from or growing out of labor performed and/or material or equipment furnished in connection with the construction of said project have been fully paid and satisfied and that there are no unsatisfied claims in connection with the performance of said contract; and that he makes this affidavit for the purpose of inducing said General Contractor to make the final payment under the subcontractor described above.

WE HEREBY guarantee, in accordance with the specifications, all labor and material furnished on said job, and work performed under our agreement for construction of the project, to be free from defects resulting from faulty workmanship and/or material for a period of ONE (1) YEAR from date of acceptance of said job by the Owner.

IN WITNESS WHEREOF, the undersigned has caused this Release to be signed and sealed this_____ day of _____ 20_____.

Subcontractor and/or Material Supplier

By _____
Authorized Signature

Title _____

SWORN TO AND SUBSCRIBED BEFORE ME by the said_____, this _____day of _____, 20_, to certify which witness my hand and seal of office.

_____
NOTARY PUBLIC in and for

State of _____

Printed Name:_____
My Commission Expires_____

Contractor Acknowledgement of Stormwater Management Program

I hereby acknowledge that I am aware of the stormwater management program and standard operating procedures developed by Fort Bend County in compliance with the TPDES General Permit No. TXR040000. I agree to comply with all applicable best management practices and standard operating procedures while conducting my services for Fort Bend County. I agree to conduct all services in a manner that does not introduce illicit discharges of pollutants to streets, stormwater inlets, drainage ditches or any portion of the drainage system. The following materials and/or pollutant sources must not be discharged to the drainage system as a result of any services provided:

1. Grass clippings, leaves, mulch, rocks, sand, dirt or other waste materials resulting from landscaping activities, (except those materials resulting from ditch mowing or maintenance activities)
2. Herbicides, pesticides and/or fertilizers, (except those intended for aquatic use)
3. Detergents, fuels, solvents, oils and/or lubricants, other equipment and/or vehicle fluids,
4. Other hazardous materials including paints, thinners, chemicals or related waste materials,
5. Uncontrolled dewatering discharges, equipment and/or vehicle wash waters,
6. Sanitary waste, trash, debris, or other waste products
7. Wastewater from wet saw machinery,
8. Other pollutants that degrade water quality or pose a threat to human health or the environment.

Furthermore, I agree to notify Fort Bend County immediately of any issue caused by or identified by:

Webber, LLC
(Company/Contractor)

that is believed to be an immediate threat to human health or the environment.

Todd [signature] 12/17/15
Contractor Signature Date

Todd Jackson
Printed Name

V.P. of Estimating
Title

ENGINEER SEAL

Control	**1258-03-042, etc.**
Project	**1258-3-42, etc.**
Highway	**FM 1093 Westpark Extension Phase I**
County	**FORT BEND**

"The enclosed Texas Department of Transportation Specifications, Special Specifications, Special Provisions, General Notes and Specification Data in this document have been selected by me, or under my responsible supervision as being applicable to this project. Alteration of a sealed document without proper notification to the responsible Engineer is as offense under the Texas Engineering Practice Act."

Michael J. Kaspar, P.E.
Dannenbaum Engineering Corporation

Date: November 11, 2015

GENERAL NOTES

General:

RAP generated by this project will become the property of the Contractor for use in the current construction project or in future projects. If fixed features require, the governing slopes shown may vary between the limits shown and to the extent determined by the Engineer.

Superelevate the curves to match the existing surface.

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

For convict produced material, the contractor is required to comply with 23 CFR 635.417. This project is classified as a Federal-aid highway construction project.

Fort Bend County has adopted TxDOT specifications for equipment rental rates for this project.

All contractors will be required to abide by all OSHA standards and regulations as they apply to this project.

All contractors will be required to abide by Article 6L.1.1, "Buy America."

For this project, the contractor is prohibited from using any equipment owned by Fort Bend County.

Disposal of surplus material must be in compliance with the Texas Administrative Code.

The contractor will furnish testing equipment necessary to conduct TxDOT test methods at the concrete batch plants, asphalt plants and field operations. A list of the equipment will be furnished in the project proposal as Attachment B.

Provide an all-weather, adequate and safe access to all business and residences at all times. Material, labor and maintenance for the temporary access will not be paid for directly but will considered subsidiary to the various items.

Clean the work location of all excess dirt and rubbish upon completion of the work, or as directed by the Engineer. Restore public and private property, damaged during the prosecution of the work, to an acceptable condition. Leave the work site in a neat and presentable condition throughout the duration of the contract.

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

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

For all DBE/HUB/SBE subcontracts including all tiered DBE/HUB/SBE subcontracts, submit a copy of the executed subcontract agreement after the award of the contract and prior to the commencement of work.

Submit a copy of the executed non-DBE subcontracts including all tiered non-DBE subcontracts when requested.

Submit a list of subcontractors, along with contact person and phone number, to the Engineer after award of the contract and prior to the commencement of work.

If a Joint Check Agreement is to be used to purchase materials that are to be considered part of the DBE Goal, the Joint Check Agreement must be approved prior to any materials being ordered. If materials are ordered prior to the approval of the Joint Check Agreement, then those material will not count towards the DBE Goal.

The contractor is advised that adjacent projects will be under construction concurrently with this project. The contractor shall coordinate with all adjacent projects at no additional cost to Fort Bend County.

The following standard detail sheets are modified:

Modified Standards

None

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

For this project, the Contractor will be required to submit to Fort Bend County an inspection request 15 working days in advance for the inspection of products at manufacturing plants. Inspection service through TxDOT will be performed at steel structure fabrication plants, pipe manufacturing plants, commercial pre-cast pre-stressed and non-stressed concrete product plants, and other miscellaneous fabrication plants where TxDOT currently provides inspection services.

Inspection services, for products at manufacturing plants, not provided by TxDOT, will be the responsibility of the Contractor by use of an approved inspection laboratory at the Contractor's expense. Proposed inspection documentation will be forwarded to Fort Bend County for review and approval prior to using the material or products for the project.

The cost for materials, labor, and incidentals to provide for traffic across the roadway and for ingress and egress to private property in accordance with Section 7.2.4 of the standard specifications is subsidiary to the various bid items. Restore access roadways to their original condition upon completing construction.

Grade street intersections and median openings for surface drainage.

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

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

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

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

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

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

Any groundwater elevation information provided is representative of conditions existing on the day when and for the specific location where this information was collected. The actual groundwater elevation may fluctuate with time, climatic conditions, and construction activity.

General: Roadway Illumination and Electrical

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

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

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

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

General: Traffic Signals

For traffic signal items, use materials from the Pre-Qualified Producers List (located at http://www.dot.state.tx.us/GSD/purchasing/supps.htm) and the materials pre-qualified for illumination and electrical items (located at http://ftp.dot.state.tx.us/pub/txdot-info/cmd/mpl/riaes.pdf) as shown on the Department's Material Producers List and the Roadway Illumination and Electrical Supplies List. Check the latest links on the TxDOT website for these lists. No substitutions will be allowed for materials found on these lists.

General: Site Management

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

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

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

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

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

Tricycle Type	**Truck Type - 4 Wheel**
Wayne Series 900	M-B Cruiser II
Elgin White Wing	Wayne Model 945
Elgin Pelican	Mobile TE-3
	Mobile TE-4
	Murphy 4042

General: Traffic Control and Construction

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

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

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

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

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

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

General: Utilities

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

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

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

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

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

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

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

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

Item 5: Control of Work

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

Prior to beginning earthwork construction, the contractor will notify the Engineer in writing of their agreement with the earthwork sections and quantities. Should there by any disagreements, they shall be resolved prior to earthwork commencement. Once earthwork has commenced, no adjustments will be made to the original earthwork quantities.

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

Table 1
2014 Construction Specification Required Shop/Working Drawing Submittals

Spec Item No.'s	Product	Submittal Required	Approval Required (Y/N)	Contractor/ Fabricator P.E. Seal Required
7.20	Construction Load Analyses	Y	Y	Y
400	Excavation and Backfill for Structures (cofferdams)	Y	N	Y
403	Temporary Special Shoring	Y	N	Y
420	Formwork/Falsework	Y	N	Y
423	Retaining Walls, (calcs req'd.)	Y	Y	Y
425	Optional Design Calculations (Prstrs Bms)	Y	Y	Y
425	Prestr Concr Sheet Piling	Y	Y	N
425	Prestr Concr Beams	Y	Y	N
425	Prestr Concr Bent	Y	Y	N
426	Post Tension Details	Y	Y	N
434	Elastomeric Bearing Pads (All)	Y	Y	N
441	Bridge Protective Assembly	Y	Y	N
441	Misc Steel (various steel assemblies)	Y	Y	N
441	Steel Pedestals (bridge raising)	Y	Y	N
441	Steel Bearings	Y	Y	N
441	Steel Bent	Y	Y	N
441	Steel Diaphragms	Y	Y	N
441	Steel Finger Joint	Y	Y	N
441	Steel Plate Girder	Y	Y	N
441	Steel Tub-Girders	Y	Y	N
441	Erection Plans	Y	N	Y
449	Sign Structure Anchor Bolts	Y	Y	N
450	Railing	Y	Y	N
462	Concrete Box Culvert	Y	Y	N
462	Concrete Box Culvert (Alternate Designs Only,calcs reqd.)	Y	Y	Y
464	Reinforced Concrete Pipe (Jack and Bore only; ONLY when requested)	Y	Y	Y
465	Pre-cast Junction Boxes, Grates, and Inlets	Y	Y	N
465	Pre-cast Junction Boxes, Grates, and Inlets (Alternate Designs Only, calcs req'd.)	Y	Y	Y
466	Pre-cast Headwalls and Wingwalls	Y	Y	N
467	Pre-cast Safety End Treatments	Y	Y	N
495	Raising Existing Structure (calcs reqd.)	Y	Y	Y
610	Roadway Illumination Supports (Non-Standad only, cals reqd.)	Y	Y	Y
644	Special Non-Standard Supports (Bridge Mounts, Barrier Mounts, Etc.)	Y	Y	Y
647	Large Roadside Sign Supports	Y	Y	Y
650	Cantilever Sign Structure Supports -	Y	Y	Y

	Alternate Design Calcs.			
650	Sign Structures	Y	Y	N
654	Sign Walkways	Y	Y	N
680	Installation of Highway Traffic Signals	Y	Y	N
682	Vehicle and Pedestrian Signal Heads	Y	Y	N
684	Traffic Signal Cables	Y	Y	N
685	Roadside Flashing Beacon Assemblies	Y	Y	N
686	Traffic Signal Pole Assemblies (Steel) (Non-Standard only)	Y	Y	Y
687	Pedestal Pole Assemblies	Y	Y	N
688	Detectors	Y	Y	N
784	Repairing Steel Bridge Members	Y	Y	Y
SS	Prestr Concr Crown Span	Y	Y	N
SS	Sound Barrier Walls	Y	Y	N
SS	Camera Poles	Y	Y	Y
SS	Pedestrian Bridge (Calcs req'd.)	Y	Y	Y
SS	Screw-In Type Anchor Foundations	Y	Y	N
SS	Fiber Optic/Communication Cable	Y	Y	N
SS	Spread Spectrum Radios for Signals	Y	Y	N
SS	VIVDS System for Signals	Y	Y	N
SS	CTMS Equipment	Y	Y	N
SS	Toll Gantry Structure	Y	Y	N
SS	Toll Gantry Structure Anchor Bolts	Y	Y	N

Item 7: Legal Relations and Responsibilities

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

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

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

1. **Restricted Use of Materials for the Previously Evaluated Permit Areas.** Document both the Project Specific Locations (PSL) and their authorization. Maintain copies for review by Fort Bend County or any regulatory agency. When an area within the project limits has been evaluated by the USACE as part of the permit process for this project:

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

2. **Contractor Materials from Areas Other than Previously Evaluated Areas.** Provide Fort Bend County with a copy of USACE coordination or approvals before initiating any activities for an area within the project limits that has not been evaluated by the USACE or for any off right of way locations used for the following, but not limited to, haul roads, equipment staging areas, borrow and disposal sites:
   a. The Item, "Embankment" used for temporary or permanent fill within a USACE permit area.
   b. Unsuitable excavation or excess excavation, "Waste" (under the Item, "Excavation"), that is disposed of outside a USACE evaluated area.

The total area disturbed for this project is 167 acres. The disturbed area in this project, the project locations in the Contract, and Contractor project specific locations (PSLs) within 1 mile of the project limits for the Contract, will further establish the authorization requirements for storm water discharges. Fort Bend County will obtain an authorization to discharge storm water from the Texas Commission on Environmental Quality (TCEQ) for the construction activities shown on the plans. The Contractor is to obtain required authorization from the TCEQ for Contractor PSLs for construction support activities on or off the ROW. When the total area disturbed in the Contract and PSLs within 1 mile of the project limits exceeds 5 acres, provide a copy of the Contractor NOI for PSLs on the ROW to the Engineer (to the appropriate MS4 operator when on an off-state system route) and to the local government that operates a separate storm drain system.

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

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

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

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

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

Houston District Environmental Section at 713-802-5244. The cost of this work is subsidiary to the various bid items.

Item 8: Prosecution and Progress

Time charges on this project shall begin no later than 10 days from the issuance of Notice to Proceed.

The contractor is hereby directed to the fact that certain right of way parcels, utility relocations and adjustments will not be completed until approximately May 31, 2016. The contractor shall accommodate access to the work site for the various utility contractors to complete their relocation adjustments during the entirety of the project.

The Contractor must achieve Substantial Completion within 570 calendar days. Substantial completion is considered to be completion, based on approval by Fort Bend County, of all required permanent and temporary construction, striping, safety devices, signage and incidentals in order to open all lanes of traffic.

The Contractor must achieve Final Completion no more than 30 calendar days after the date of Substantial Completion.

Failing to achieve Substantial Completion within the days specified by the Engineer, the Contractor will be assessed a disincentive in the amount of $15,000.00 per day which will be withheld from any amount owed the Contractor. The disincentive will continue until Substantial Completion is obtained.

Once Substantial Completion is obtained, failing to achieve Final Completion 30 calendar days thereafter the Contractor will be assessed daily contract administration liquidated damages of $5,000 per day which will be withheld from any amount owed the Contractor. If the amount owed the Contractor is insufficient to withhold the amount, the Contractor shall pay the difference to Fort Bend County.

The Contractor will receive an incentive credit in the amount of $15,000.00 per day for substantially completing the project in less than the number of days stipulated on the Bid cover. The maximum number of days for computing the incentive credit is 30 days. The maximum amount of incentive is $450,000.

Create, maintain, and submit for approval, a Critical Path Method (CPM) project schedule using Phoenix Project Manager or Primavera P3 or P6 software. Baseline and monthly updates of the schedules to be submitted in an electronic format acceptable to Fort Bend County. Monthly updates must be received and accepted prior to approval and processing of monthly pay estimates.

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

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

Working days will be computed and charged based on a Calendar Day in accordance with Section 8.3.1.5

The contractor is hereby notified that other contractors will be working inside and adjacent to the project limits at various times and locations. The contractor will provide and coordinate adequate access to site areas necessary to allow other contractors to complete their work.

Provide a virus-free computer disk or other acceptable electronic media containing the Primavera construction schedule.

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

Item 100: Preparing Right of Way

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

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

Remove abandoned utilities that are in conflict with the new utilities, proposed storm sewer, and proposed roadway, at no expense to Fort Bend County.

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

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

Removal of any existing erosion control or wetland delineation measures, including, but not limited to, sediment control fence, rock filter dams, orange construction fence, will be incidental to this item of work. Ensure that no vegetation is removed outside of the project work limits.

Item 104: Removing Concrete

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

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

Item 105: Removing Treated and Untreated Base and Asphalt Pavement

Removing the base material and any asphalt bondbreaker material is paid under the Item, "Removing Treated and Untreated Base and Asphalt Pavement."

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

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

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

Item 110: Excavation

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

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

Excavated materials not meeting the requirement for Type C embankments will be considered waste. Waste soil may be used for fill at locations other than beneath roadbeds as approved by the Engineer.

Item 132: Embankment

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

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

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

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

Remove silt from ditches as soon as practical after erosion has occurred and reseed as necessary. Do not return silt to previously completed embankments or embankments under construction. The removal and disposal of silt will not be paid for directly as this work will be considered subsidiary to this item.

Item 161: Compost
Item 162: Sodding for Erosion Control
Item 164: Seeding for Erosion Control
Item 166: Fertilizer

When seeding between September 1 and January 1, place one-half of the amount of fertilizer specified for the seeding with the seeds and place the remainder the following spring unless otherwise directed. When seeding is placed between January 1 and June 1, place one-half the amount of fertilizer specified for seeding with the seeds and place the reminder 30 days later unless otherwise directed.

Item 168: Vegetative Watering

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

Inspector must be present at all times when contractor is watering.

Item 204: Sprinkling

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

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

Item 210: Rolling

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

Item 260: Lime Treatment (Road-Mixed)

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

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

Place the hydrated and the commercial lime as a water suspension or slurry according to the slurry placing method shown in Section 260.4.3.2, "Slurry Placement."

Use the type of lime at particular locations as directed.

Place the quicklime dry or as a slurry. Dry quicklime can only be used if specifically approved by Fort Bend County.

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

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

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

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

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

Item 276: Cement Treatment (Plant-Mixed)

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

If the total thickness of the cement treatment is greater than 8 in., compact it in multiple lifts in accordance with Section 276.4.3, "Compaction." Place the courses in the same working day unless otherwise approved.

Use Class N Cement Treatment containing 4.5 percent cement based on the dry weight of the aggregate. There is no minimum compressive strength requirement for this Item.

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

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

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

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

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

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

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

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

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

If using crushed stone for the Type E material under this Item, ensure it meets the requirements for the Item, "Flexible Base," Type A, Grade 1-2. Texas Test Method TEX-117-E is not required for this Item.

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

If using Recycled Type E cement treatment under proposed concrete pavement, produce it using the existing base salvaged from within this project or from other approved Department projects,

salvaged asphalt concrete pavement, or crushed concrete. If using crushed concrete as an aggregate, meet the requirements of Grade 3.

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

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

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

Item 292: Asphalt Treatment (Plant-Mixed)

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

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

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

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

Furnish the mix designs for approval.

Meet the following grading requirements:

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

Physical requirements are as follows:

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

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

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

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

If the layer thickness after placing is 1.25 in. or less, the bondbreaker is exempt from the in-place density control described in Section 292.4.5, "Compaction."

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

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

Item 360: Concrete Pavement

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

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

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

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

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

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

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

Do not use limestone dust of fracture as fine aggregate.

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

Perform saw cutting as shown on the plans in accordance with Section 360.4.10, "Sawing Joints." This saw cutting is subsidiary to this bid Item.

Use coarse aggregate to produce concrete with a maximum Coefficient of Thermal Expansion (CTE) of 5.5×10^{-6} in/in/°F. Before construction, submit test specimens to the TxDOT Construction Division for aggregate acceptance. Provide samples or test specimens as directed. The TxDOT Construction Division will perform the testing. Test results are final. Testing is required for naturally occurring aggregates.

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

Complete the entire Fast Track Concrete construction process, from the time the Fast Track Work Area is closed to traffic, to the time the Fast Track Work Area is opened to traffic. The Fast Track operation includes, but is not limited to, traffic control, existing pavement and subgrade removal, preparation of subgrade, placement of steel, placement of Fast Track concrete pavement, cure time, striping, etc. Perform work in the Fast Track Work Area in an expeditious manner, within the allowable time period for any area shown below:

Fast Track Work Area	Allowable Duration per Traffic Control Phase

CSJ 1258-03-042

1. Katy Gaston Rd: 2 weekend days maximum
2. Gaston Rd: 2 weekend days maximum
3. Canal Rd: 2 weekend days maximum
4. Driveway Entrance Sta 480+00 LT: 2 weekend days maximum
5. Driveway Entrance Sta 505+00 LT: 2 weekend days maximum

CSJ 1258-03-043

TCP Phase 1A

1. Westheimer Lakes NB half of intersection: 2 weekend days maximum
2. Private driveway WBFR 2337+00: 2 weekend days maximum
3. Cinco Rose SB half of intersection: 2 weekend days maximum
4. Canyon Fields SB half of intersection: 2 weekend days maximum
5. Spring Green Blvd NB 2+00 – 4+50 and 5+80 – 9+60: 2 weekend days plus 3 week days maximum

TCP Phase 1B

1. Westheimer Lakes SB half of intersection: 2 weekend days maximum
2. WBFR 2340+90 – 2342+20: 2 weekend days maximum
3. Cinco Rose NB half of intersection: 2 weekend days maximum
4. Canyon Fields NB half of intersection: 2 weekend days maximum
5. EBFR 1375+00 – 1376+00: 2 days maximum
6. Spring Green Blvd SB 2+00 – 4+50 and 5+80 – 9+60: 2 weekend days plus 3 week days maximum
7. WBFR 2412+30 – 2413+30: 2 days maximum
8. WBFR 2418+00 – 2419+80: 2 days maximum
9. Cinco Terrace intersection: 2 weekend days plus 1 week day maximum

Failure to perform any Fast Track Work Area construction within the above time frames will be cause for the Engineer to require the Contractor to shut down all other construction operations to ensure all resources are directed toward the completion of the Fast Track operation, and may result in lane closure assessment fees by the hour. This shutdown will remain in force until the Fast Track operation is complete. Such a shutdown will not warrant additional time, time suspension, or any additional costs to Fort Bend County.

Unless otherwise directed in writing, provide Class HES concrete with a minimum average flexural strength of 425 psi or a minimum average compressive strength of 3,000 psi in 16 hours.

When directed in writing, open the pavement to traffic before the minimum requirements have been attained.

When needed, place and remove forms in accordance with Section 360.4.5, except do not remove forms until at least 6 hours after concrete has been placed. The time for the form removal may be extended with the direction of the Engineer if weather or other conditions make it advisable.

Sprinkling and rolling, required for the compaction of the rough subgrade in advance of fine-grading are subsidiary to this Item. Maintenance of a moist condition of the subgrade in advance of fine-grading and concrete is subsidiary work, as provided above.

Items 360, 420, and 421: All Concrete Items

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

Item 400: Excavation and Backfill for Structures

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

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

1. Use only approved sand, crushed concrete, or salvaged base free from deleterious matter, as aggregate for cement-stabilized backfill
2. Provide crushed concrete or salvaged base backfill material in accordance with the Item, "Cement Treatment (Plant-Mixed)(Type D)" (base or crushed concrete), except the recycled Type D material must not contain Reclaimed Asphalt Pavement (RAP).
3. For backfill material below the spring line of pipes, use cement-stabilized sand rather than Recycled Type D backfill material.
4. For the cement-stabilized sand backfill, use a minimum of 7 percent of hydraulic cement based on the dry weight of backfill material. The cement content for the crushed concrete and salvaged base is specified in the Item, "Cement Treatment (Plant-Mixed) (Type D)."
5. Place and compact the stabilized backfill material using a gradation that provides a dense mass without segregating and is impervious to passing of water.

Item 416: Drilled Shaft Foundations

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

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

Item 420: Concrete Substructures

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

Item 421: Hydraulic Cement Concrete

Entrained air is required in all slip formed concrete (bridge rail, concrete traffic barrier, pavement, etc.), but is not required for other structural concrete. Adjust the dosage of air entraining agent for

low air content as directed or allowed by the Engineer. If entrained air is provided where not required, do not exceed the manufacturer's recommended dosage.

Item 423: Retaining Walls

Provide a Fractured Fin finish on retaining walls unless otherwise shown on the plans. Fractured Fin form liners: Fitzgerald #16350, L.M. Scofield #T30405, Symons #30449 or Equal, shall be the required surface finish on wall. The Fractured Fin surface color shall be Sherwin-Williams 2073.

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

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

Approved Mechanically Stabilized Earth (MSE) Wall Systems are listed at the website below:

http://www.dot.state.tx.us/business/contractors_consultants/bridge/mse_wall.htm

Item 432: Riprap

If stone riprap is shown on the plans, use common stone riprap in accordance with Section 432.2.3.3, placed dry in accordance with Section 432.3.2.3. Do not grout. Crushed concrete may also be used.

Item 449: Anchor Bolts

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

Item 450: Railing

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

Item 462: Concrete Box Culverts and Drains
Item 464: Reinforced Concrete Pipe

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

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

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

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

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

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

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

Item 465: Junction Boxes, Manholes, and Inlets

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

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

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

Do not leave excavations or trenches open overnight.

Item 502: Barricades, Signs, and Traffic Handling

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

Submit changes to the traffic control plan to the Area Engineer. Provide a layout showing the construction phasing, signs, striping, and signalizations for changes to the original traffic control plan.

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

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

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

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

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

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

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

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

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

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

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

One Lane Closure

Day	Daytime Closure Hours	Nighttime Closure Hours	Restricted Hours Subject to Lane Assessment Fee
Monday	N/A	12:00 AM – 5:00 AM 10:00 PM – 11:59 PM	5:00 AM – 10:00 PM
Tuesday	N/A	12:00 AM – 5:00 AM 10:00 PM – 11:59 PM	5:00 AM – 10:00 PM
Wednesday	N/A	12:00 AM – 5:00 AM 10:00 PM – 11:59 PM	5:00 AM – 10:00 PM
Thursday	N/A	12:00 AM – 5:00 AM 10:00 PM – 11:59 PM	5:00 AM – 10:00 PM
Friday	N/A	12:00 AM – 5:00 AM 10:00 PM – 11:59 PM	5:00 AM – 10:00 PM
Saturday	12:00 AM – 11:59 PM	12:00 AM – 11:59 PM	N/A
Sunday	12:00 AM – 11:59 PM	12:00 AM – 11:59 PM	N/A

Full Closure (Roadway / Ramps / Direct Connector)

Day	Daytime Closure Hours	Nighttime Closure Hours	Restricted Hours Subject to Lane Assessment Fee
Monday	N/A	12:00 AM – 5:00 AM 10:00 PM – 11:59 PM	5:00 AM – 10:00 PM
Tuesday	N/A	12:00 AM – 5:00 AM 10:00 PM – 11:59 PM	5:00 AM – 10:00 PM
Wednesday	N/A	12:00 AM – 5:00 AM 10:00 PM – 11:59 PM	5:00 AM – 10:00 PM
Thursday	N/A	12:00 AM – 5:00 AM 10:00 PM – 11:59 PM	5:00 AM – 10:00 PM
Friday	N/A	12:00 AM – 5:00 AM 10:00 PM – 11:59 PM	5:00 AM – 10:00 PM
Saturday	N/A	12:00 AM – 5:00 AM 10:00 PM – 11:59 PM	5:00 AM – 10:00 PM
Sunday	N/A	12:00 AM – 5:00 AM 10:00 PM – 11:59 PM	5:00 AM – 10:00 PM

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

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

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

A minimum of 7 days in advance of any total closure, notify the Houston District Public Information Office of which roadways, ramps, intersections, or lanes will be closed, the dates they will remain closed, and when they will be opened again to traffic. Any lane or road closure must be approved by Fort Bend County a minimum of 7 days in advance of closure. Any road closure must be approved by Fort Bend County Commissioner's Court.

A minimum of 7 days in advance of any total closure, place a portable changeable message (PCM) sign at the location of each total closure which informs the traveling public of the details of the closure. Alternately, if the Traffic Control Plan provides a positive barrier at the location, a non-trailer mounted static message board sign behind the positive barrier may be used in place of a PCM.

Provide a maximum of 14 portable changeable message signs as shown on the Traffic Control Plan and the Special Specification Item, "Portable Changeable Message Signs." A minimum of 6 Portable Changeable Message signs are to be available for use within the corridor at all times for the duration of construction at the Engineer's discretion.

Minimize the number of working days for street closures. The following table lists the maximum number of working days allowed for each street closure. The closure period for each intersection occurs only during the phase when constructing that street, unless otherwise directed. Reopen the street within the number of working days allowed; otherwise the Engineer may cease construction activities not affiliated with reopening the closed street, until it fully reopens to the traveling public. Time charges will not be suspended nor increased to compensate for this occurrence. Failure to complete work within the allowed time may result in lane closure assessment fees by the hour.

Street Name	**Number of Working Days Allowed for Closure**
Canal Road	*2*
Katy-Gaston Road	*2*
Spring Green Boulevard/FM 723	*2*
Cinco Terrace Drive	*2*

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

Item 504: Field Office and Laboratory

Furnish two Type E structures for the field office for exclusive use by the Engineer and Inspection Staff. Ensure the windows for the structure have burglar bars.

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

1. Three desks with 3 swivel chairs, two 5-drawer file cabinets and 3 straight back chairs.
2. Telephone service and equipment consisting of a minimum of one telephone with one extension. Include the call-waiting feature in the service.
3. Potable water with an electric water cooler, a cup dispenser, and cups.
4. Adequate heating, air conditioning, lighting, and a sufficient number of electrical outlets.
5. A commercially available toilet or equivalent facility for the field office and each laboratory.
6. A suitable copy machine for the field office capable of producing 11"x17" copies.
7. Internet service that is T1 or equal bandwidth and sufficient to provide high-speed connection to the internet to allow large electronic file transfer (minimum 50 Mbps upload and 10 Mbps download). One jack shall be located in each of the offices. Provide all necessary hardware for the network connection, including a dual-band wireless gigabit router.

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

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

The above requirements are subsidiary to the various bid items.

Assume ownership of temporary chain link security fences.

Equip each field office with a first aid kit and at least a 20 lb. ABC type fire extinguisher.

Item 506: Temporary Erosion, Sedimentation and Environmental Controls

A Storm Water Pollution Prevention Plan (SWP3) is required. Since the disturbed area is more than 5 acres, a "Notice of Intent" (NOI) is also required.

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

Before starting construction, review with the Engineer the SWP3 used for temporary erosion control as outlined on the plans. Before construction, place the temporary erosion and sedimentation control features as shown on the SWP3.

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

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

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

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

Item 512: Portable Traffic Barrier

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

Where required by the Engineer, provide anchor pins for Type 2 Low Profile Traffic Barriers as shown on the current LPTB standard. Anchor pins are subsidiary to the Low Profile Traffic Barrier.

Transport Standard Height Portable Traffic Barriers (including JJ Hook and Safety Shape) used for traffic handling from the Department stockpile located on the south side of IH 610 at Cedar Crest Blvd. (located across IH 610 from Long Drive).

Use only the J-J Hook type connection between barriers.

After completing the project, return Low Profile Portable Traffic Barriers (PTB) used for traffic handling, to the Department stockpile located on the north side of IH 610 at Long Drive. After completing the project, return the associated PTB connecting hardware to the area office or as directed.

After completing the project, return Standard Height Portable Traffic Barriers (including J-J Hook and Single Slope) used for traffic handling, to the Department stockpile located on the south side of at IH 610 at Cedar Crest Blvd. (located across IH 610 from Long Drive). After completing the project, return the associated connecting hardware to the areas office or as directed.

If placing the portable traffic barrier on pre-stressed concrete box beams with exposed reinforcing steel, protect the reinforcing steel by supporting the portable traffic barrier on 4 in. by 4 in. timbers. Place the timbers transversely and space them on 4 ft. centers. The cost of the labor and materials to perform this work are subsidiary to the Item, "Portable Traffic Barrier."

Item 514: Permanent Concrete Traffic Barrier

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

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

An air-entraining admixture is not required.

For concrete curbs, use Grade 7 aggregate conforming to Section 421.2.6 of the Item, "Hydraulic Cement Concrete."

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

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

Item 540: Metal Beam Guard Fence

Painting the timber posts is not required.

Use timber posts for galvanized steel metal beam guard fence, except for anchorage at turned down ends.

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

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

Provide a mow strip as shown on the plans, at metal beam guard fence locations, including any guardrail end treatments.

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

Item 542: Removing Metal Beam Guard Fence

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

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

Item 545: Crash Cushion Attenuators

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

Unless otherwise shown on the plans, Test Level 70 is required for all temporary and permanent Crash Cushion Attenuator (CCA) installations on freeways where the backup support width is 36 in. or less. Test Level TL-3 is required for all temporary and permanent CCA installations at all other locations requiring a CCA.

Item 556: Pipe Underdrains

Do not use crushed blast furnace slag.

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

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

Item 585: Ride Quality for Pavement Surfaces

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

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

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

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

Item 610: Roadway Illumination Assemblies

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

Fabricate steel roadway illumination poles in accordance with TxDOT Standard RIP-11 (Roadway Illumination Poles - 2011). Poles manufactured according to RIP-11 require no shop drawings. Alternate designs to RIP-11 or the use of aluminum to fabricate poles will require the submission of shop drawings electronically.

For poles to be installed in regions where the maximum basic wind speed exceeds 110 mph or to be mounted more than 25 ft. above the surrounding terrain, provide shop drawings (see ftp://ftp.dot.state.tx.us/pub/txdot-info/library/pubs/bus/bridge/e_submit_guide.pdf) and calculations that are sealed, signed, and dated by a professional engineer registered or licensed in Texas.

Supply anchor bolt assemblies as shown on the RIP standard sheets, unless a larger capacity bolt assembly is required for the 3-second gust wind speed and mounting elevation at the pole installation location.

Item 616: Performance Testing of Lighting Systems

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

After satisfactory completion of tests, place the new lighting fixtures in operation. Final acceptance will be made after the fixtures operate satisfactorily for 24-hours for a minimum period of 14 consecutive days. The 14-day test period is included in the allowed working days.

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

Item 618: Conduit
Item 620: Electrical Conductors
Item 628: Electrical Services

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

Item 618: Conduit

When backfilling bore pits, ensure that the conduit is not damaged during installation or due to settling backfill material. Compact select backfill in 3 equal lifts to the bottom of the conduit; or if

using sand, place it 2 in. above the conduit. Ensure backfill density is equal to that of the existing soil. Prevent material from entering the conduit.

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

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

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

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

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

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

Do not use cast iron junction boxes in concrete traffic barriers and single slope traffic barriers. Use polymer concrete junction boxes in place of the cast iron junction boxes shown on standard sheets CTBI (3), CTBI (4), and SSCB (4). Mount the junction boxes flush (+ 0 in., - 1/2 in.) with the concrete surface of the concrete barrier.

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

Locate the underground utilities within the project limits. Provide the equipment necessary for locating these utilities, locate, and mark them before starting any excavation work in the area. This work is subsidiary to the various bid items. If the Contractor damages or cause damage to any existing underground utilities, repair such damage at no cost to the County.

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

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

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

Use Rigid Metal Conduit (RMC) for exposed conduit.

Before backfilling conduit trenches, place a detectable underground metalized mylar marking tape above the conduit and concrete encasement. Imprint the marking tape with, "TxDOT CONDUIT AND FIBER OPTIC CABLE SYSTEM. CALL (713) 802-5909 BEFORE PROCEEDING" every 18 in. Supplying and installing the marking tapes is subsidiary to the various bid items.

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

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

Item 620: Electrical Conductors

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

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

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

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

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

For Roadside Flashing Beacon Assemblies (Item 685) and Pedestal Pole Assemblies (Item 687) within the project, provide single-pole breakaway disconnects as shown on the Construction Division (CST) material producers list. Check the latest link on the Department website for this list. The category is "Roadway Illumination and Electrical Supplies." The fuse holder is shown on the list under Item 685. For underground (hot) conductors, install a breakaway connector with a dummy fuse (slug). Provide dummy fuse (slug). For grounded (neutral) conductors, install a breakaway connector with a white colored marking and a permanently installed dummy fuse (slug).

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

Item 624: Ground Boxes

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

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

Ground the existing metal ground box covers as shown on the latest standard sheet ED (4)-14.

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

Construct concrete aprons in accordance with the latest standard sheet ED (4)-14. Make the depth of the concrete apron the same as the depth of the ground box, except for Type 1 and Type 2 ground boxes. For Type 1 or Type 2 ground boxes, construct the concrete apron in accordance with details shown on the "Ground Box Details Installations" standard.

The requirements included in DMS-11070 supersede the requirements of standard sheet ED (4)-14.

Item 628: Electrical Services

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

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

Item 636: Signs

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

Furnish and install signs shown on the traffic signal "Summary of Traffic Signal Materials" sheet. Ensure that the legend on these sign panels is in accordance with the latest "Standard Highway Sign Designs for Texas" manual.

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

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

Attachment of small panels such as EZ Tag logo, route markers, etc. to large signs will not be paid for directly as this work will be considered subsidiary to this item.

Item 644: Small Roadside Sign Assemblies

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

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

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

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

Provide and install the materials for speed limit signs. For speed limit signs that are indicated with "XX," the Area Engineer will request a speed study through the Director of Transportation Operations to determine the legal speeds to be posted. This request will be made as soon as possible

after the roadway opens to traffic. After the speed limit to be posted is determined, this information will be provided to the Contractor by the Area Engineer.

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

Assume ownership of the removed existing signs.

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

Replace existing signs that become damaged during relocation at no expense to Fort Bend County.

Item 647: Large Roadside Sign Supports and Assemblies

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

Replace existing signs that become damaged during relocation at no expense to Fort Bend County.

Assume ownership of the removed existing signs.

Item 650: Overhead Sign Supports

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

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

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

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

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

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

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

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

Item 656: Foundations for Traffic Control Devices

Using ready mix concrete for sign foundations is optional.

Item 662: Work Zone Pavement Markings

At the end of each workday, mark roadways that remain open to traffic during construction operations with standard pavement markings, in accordance with the latest "Texas Manual on Uniform Traffic Control Devices."

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

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

Item 662: Work Zone Pavement Markings
Item 666: Reflectorized Pavement Markings
Item 668: Prefabricated Pavement Markings
Item 6019: Longitudinal Prefabricated Pavement Markings (PPM) with Warranty

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

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

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

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

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

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

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

Stripe all roadways before opening them to traffic.

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

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

Item 672: Raised Pavement Markers

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

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

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

Item 677: Eliminating Existing Pavement Markings and Markers

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

Item 678: Pavement Surface Preparation for Markings

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

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

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

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

Item 680: Highway Traffic Signals

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

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

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

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

Staking in the field is subject to approval.

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

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

Allow the electrical work to be inspected by Fort Bend County. Complying with the provisions and requirements of the County electrical ordinance is not required. Such inspection does not make Fort Bend County a party to this contract.

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

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

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

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

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

Furnish signal heads from the same manufacturer.

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

The Contractor may use ready mix concrete.

Apply membrane curing on concrete work in accordance with Section 420.4.10.3, "Membrane Curing."

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

Item 682: Vehicle and Pedestrian Signal Heads

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

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

Item 686: Traffic Signal Pole Assemblies (Steel)

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

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

Set the anchor bolts for the steel strain poles so that two are in compression and two are in tension.

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

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

Place steel strain poles at a 10 ft. desirable minimum distance from the roadway curb or pavement edge.

After the traffic signal pole assembly is plumb and the nuts are tight, tack-weld each anchor bolt nut in two places to its washer. Tack-weld each washer to the base plate in two places. Do not weld components to the bolt. Perform tack-welding in accordance with the Item, "Steel Structures." After tack-welding, repair galvanizing damage on bolts, nuts, and washers in accordance with Section 445.3.5, "Repairs."

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

Item 687: Pedestal Pole Assemblies

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

Item 688: Pedestrian Detectors and Vehicle Loop Detectors

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

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

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

Item 730: Roadside Mowing
Item 734: Litter Removal
Item 735: Debris Removal
Item 738: Cleaning and Sweeping Highways

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

Roadside Mowing	Litter Removal	Debris Removal	Cleaning and Sweeping Highways
6 cycles	6 cycles	6 cycles	12 cycles

Item 6002: Video Imaging Vehicle Detection System

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

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

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

Detector zone videotaping for this project will not be required.

Special Specification 6002 Video Imaging Vehicle Detection System Requirements

Specification Items	Description	Not Required	Required	State Supplied
1	**VIVDS Configuration**		X	
	Cameras, Connectors and Mounting Hardware		X	
	VIVDS Processor Unit		X	
	Field Setup Computer (1 Required) (Laptop)	X		
	Field Setup Video Monitor (1 EA. Controller)		X	
	Field Communications Link		X	
3	**Functional Capabilities**			
	System Software		X	
4	**Vehicle Detection**			
	Detection Zone Video Taping	X		
5	**VIVDS Processor Unit**			
	Provide both TS1 and TS2 Interfaces		X	
	12 Volt/5 Amp Power Supply		X	
6	**Camera Assembly**			
	Camera Interface Panel		X	
7	**Field Communications Link**			
	Lightning and Transient Surge Suppression Devices		X	
9	**Temporary Use and Retesting**		X	
10	**Operation from Central Control**	X		
	Telephone Interconnect	X		
	ISDN Interconnect	X		
11	**Installation and Training**		X	

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

Basis of Estimate

Item	Description	Limit and Rate	Unit
134	Backfilling Pavement Edges • Asphalt Emulsion	 0.25 Gal. / Sq. Yd.	STA
247	Flexible Base • Crushed Stone	 138 Lb. / Cu. Ft.	TON
260	Lime Treatment (Road-Mixed) For materials used as subgrade * • Lime(HYD, COM, or QK)(SLRY) or QK(DRY)	 6 % by weight based on 100 Lb. / Cu. Ft. subgrade	SY TON
292	Asphalt Treatment (Plant-Mixed) • Asphalt • Aggregate	110 Lb. / Sq. Yd.-In. 5 % by weight 95 % by weight	TON
310	Prime Coat	0.25 Gal. / Sq. Yd.	GAL
340	Dense-Graded Hot Mix Asphalt (Small Quantity) • Asphalt • Aggregate	110 Lb. / Sq. Yd.-In. 6 % by weight 94 % by weight	TON

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

Governing Specifications and Special Provisions

TEXAS DEPARTMENT OF TRANSPORTATION

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

STANDARD SPECIFICATIONS: ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION NOVEMBER 1, 2014. STANDARD SPECIFICATIONS ARE INCORPORATED INTO THE CONTRACT BY REFERENCE.

ITEMS 1L TO 9L 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) (160) (204) (210) (216) (260) (400)
ITEM 134	BACKFILLING PAVEMENT EDGES (162) (166) (168) (300) (314)
ITEM 161	COMPOST (160)
ITEM 162	SODDING FOR EROSION CONTROL (166) (168)
ITEM 164	SEEDING FOR EROSION CONTROL (162) (166) (168)
ITEM 166	FERTILIZER (520)
ITEM 168	VEGETATIVE WATERING
ITEM 247	FLEXIBLE BASE (105) (204) (210) (216) (520)
ITEM 260	LIME TREATMENT (ROAD-MIXED) (105) (132) (204) (210) (216) (247) (300) (310) (520)
ITEM 276	CEMENT TREATMENT (PLANT-MIXED) (204) (210) (216) (247) (300) (310) (520)
ITEM 292	ASPHALT TREATMENT (PLANT-MIXED) (300) (301) (320) (520) (585)
ITEM 310	PRIME COAT (300) (316)
ITEM 340	DENSE-GRADED HOT-MIX ASPHALT (METHOD) (300) (301) (320) (520) (585)
ITEM 360	CONCRETE PAVEMENT (421) (422) (438) (440) (529) (585)
ITEM 400	EXCAVATION AND BACKFILL FOR STRUCTURES (110) (132) (401) (402) (403) (416) (420) (421) (423)
ITEM 402	TRENCH EXCAVATION PROTECTION
ITEM 403	TEMPORARY SPECIAL SHORING (410) (411) (423)
ITEM 416	DRILLED SHAFT FOUNDATIONS (405) (420) (421) (423) (440) (448)
ITEM 420	CONCRETE SUBSTRUCTURES (400) (404) (421) (422) (426) (427) (440) (441) (448)
ITEM 422	CONCRETE SUPERSTRUCTURES (420) (421) (424) (438) (440) (448) (454) (782)
ITEM 423	RETAINING WALLS (110) (132) (216) (400) (416) (420) (421) (424) (440) (445) (458) (556)
ITEM 425	PRECAST PRESTRESSED CONCRETE STRUCTURAL MEMBERS (409) (420) (421) (424) (426) (427) (434) (440) (442) (445) (448)
ITEM 432	RIPRAP (247) (420) (421) (431) (440)
ITEM 442	METAL FOR STRUCTURES (441) (445) (446) (447) (448)
ITEM 450	RAILING (420) (421) (422) (424) (440) (441) (442) (445) (446) (448) (540)
ITEM 454	BRIDGE EXPANSION JOINTS (429) (442) (785)
ITEM 460	CORRUGATED METAL PIPE (400) (402) (403) (445) (467) (476)
ITEM 462	CONCRETE BOX CULVERTS AND STORM DRAINS (400) (402) (403) (420) (421) (422) (424) (440) (464) (476)
ITEM 464	REINFORCED CONCRETE PIPE (400) (402) (403) (467) (476)
ITEM 465	MANHOLES AND INLETS (400) (420) (421) (424) (440) (471)
ITEM 466	HEADWALLS AND WINGWALLS (400) (420) (421) (432) (440) (464)
ITEM 467	SAFETY END TREATMENT (400) (420) (421) (432) (440) (442) (445) (460) (464)
ITEM 476	JACKING, BORING, OR TUNNELING PIPE OR BOX (402) (403) (460) (462) (464)
ITEM 479	ADJUSTING MANHOLES AND INLETS (400) (421) (465) (471)
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 (161) (432) (556)

ITEM 508	CONSTRUCTING DETOURS
ITEM 512	PORTABLE CONCRETE TRAFFIC BARRIER (420) (421) (424) (440) (442)
ITEM 514	PERMANENT CONCRETE TRAFFIC BARRIER (400) (416) (420) (421) (424) (440) (442) (448)
ITEM 529	CONCRETE CRUB, GUTTER, AND COMBINED CURB AND GUTTER (360) (420) (421) (440)
ITEM 530	INTERSECTIONS, DRIVEWAYS, AND TURNOUTS (247) (260) (263) (275) (276) (292) (316) (330) (334) (340) (360) (421) (440)
ITEM 531	SIDEWALKS (104) (360) (420) (421) (440) (530)
ITEM 540	METAL BEAM GUARD FENCE (421) (441) (445) (529)
ITEM 542	REMOVING METAL BEAM GUARD FENCE
ITEM 544	GUARDRAIL END TREATMENTS
ITEM 545	CRASH CUSHION ATTENUATORS (421)
ITEM 610	ROADWAY ILLUMINATION ASSEMBLIES (416) (421) (432) (441) (442) (445) (449) (614) (616) (618) (620) (622) (624) (628)
ITEM 618	CONDUIT (400) (476)
ITEM 620	ELECTRICAL CONDUCTORS (610) (628)
ITEM 621	TRAY CABLE (620)
ITEM 624	GROUND BOXES (420) (421) (432) (440) (618) (620)
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) (636) (643) (656)
ITEM 647	LARGE ROADSIDE SIGN SUPPORTS AND ASSEMBLIES (416) (421) (440) (441) (442) (445) (636)
ITEM 650	OVERHEAD SIGN SUPPORTS (416) (420) (421) (441) (442) (445) (449) (618) (636) (654)
ITEM 662	WORK ZONE PAVEMENT MARKINGS (666) (668) (672) (677)
ITEM 666	RETROREFLECTORIZED PAVEMENT MARKINGS (316) (318) (502) (662) (677) (678)
ITEM 668	PREFABRICATED PAVEMENT MARKINGS (678)
ITEM 672	RAISED PAVEMENT MARKERS (677) (678)
ITEM 678	PAVEMENT SURFACE PREPARATION FOR MARKINGS (677)
ITEM 680	HIGHWAY TRAFFIC SIGNALS (416) (610) (618) (624) (625) (627) (628) (636) (656) (682) (684) (686) (688)
ITEM 681	TEMPORARY TRAFFIC SIGNALS (416) (610) (618) (620) (621) (622) (624) (625) (627) (628) (636) (644) (656) (680) (682) (684) (686) (687) (688) (690)
ITEM 682	VEHICLE AND PEDESTRIAN SIGNAL HEADS
ITEM 684	TRAFFIC SIGNAL CABLES
ITEM 685	ROADSIDE FLASHING BEACON ASSEMBLIES (441) (442) (445) (449) (610) (620) (621) (624) (628) (656) (682) (684) (687)
ITEM 686	TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL) (416) (421) (441) (442) (445) (449)
ITEM 687	PEDESTAL POLE ASSEMBLIES (445) (449) (656) (682) (4004)
ITEM 688	PEDESTRIAN DETECTORS AND VEHICLE LOOP DETECTORS (618) (624) (682) (684)
ITEM 690	MAINTENANCE OF TRAFFIC SIGNALS (416) (421) (476) (610) (618) (620) (622) (624) (625) (627) (628) (636) (656) (680) (682) (684) (685) (686) (687) (688)
ITEM 730	ROADSIDE MOWING
ITEM 734	LITTER REMOVAL
ITEM 735	DEBRIS REMOVAL (734) (738)
ITEM 738	CLEANING AND SWEEPING HIGHWAYS
ITEM 751	LANDSCAPE MAINTENANCE (193) (730) (734) (745)

SPECIAL SPECIFICATIONS: ALL SPECIFICATIONS ARE INCLUDED HEREIN.

ITEM 3021	CONCRETE PAVEMENT WIDE FLANGE TERMINALS (360) (400) (421) (422) (440) (442)
ITEM 4004	SCREW-IN TYPE ANCHOR FOUNDATIONS (685) (687)
ITEM 4006	SOUND WALLS (420) (421) (424) (425) (426) (427) (429) (440) (441) (442) (445) (446) (447) (448) (449)
ITEM 6001	PORTABLE CHANGEABLE MESSAGE SIGN
ITEM 6002	VIDEO IMAGING VEHICLE DETECTION SYSTEM
ITEM 6005	TESTING, TRAINING, DOCUMENTATION, FINAL ACCEPTANCE, AND WARRANTY

ITEM 6007	FIBER OPTIC CABLE (6005) (6006)
ITEM 6016	MULTI-DUCT CONDUIT SYSTEM
ITEM 6019	LONGITUDINAL PREFABRICATED PAVEMENT MARKINGS (PPM) WITH WARRANTY (677)
ITEM 6040	MOBILE RETROREFLECTIVITY DATA COLLECTION FOR PAVEMENT MARKINGS
ITEM 6054	SPREAD SPECTRUM RADIOS FOR TRAFFIC SIGNALS
ITEM 6058	BATTERY BACK-UP SYSTEM FOR SIGNAL CABINETS (420) (620)
ITEM 8911	TRUSS SCREENS (442) (445) (650)
ITEM 16060	GROUNDING AND BONDING SYSTEMS
ITEM 16070	EQUIPMENT RACK
ITEM 16670	LIGHTNING PROTECTION SYSTEM

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

REQUIRED CONTRACT PROVISIONS, FEDERAL-AID CONSTRUCTION CONTRACTS (FORM FHWA 1273, MAY 2012)

WAGE RATES

FORT BEND COUNTY SPECIAL PROVISION TO ITEM 0 (000---001)

SPECIAL PROVISION	"SCHEDULE OF LIQUIDATED DAMAGES" (000-001L)
SPECIAL PROVISION	"NONDISCRIMINATION" (000-002L)
SPECIAL PROVISION	"CERTIFICATION OF NONDISCRIMINATION IN EMPLOYMENT" (000-003L)
SPECIAL PROVISION	"NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)" (000-004L)
SPECIAL PROVISION	"STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)" (000-005L)
SPECIAL PROVISION	"ON-THE-JOB TRAINING" (000—006)
SPECIAL PROVISION	"DISADVANTAGED BUSINESS ENTERPRISE IN FEDERAL AID CONTRACTS" (000-007L)
SPECIAL PROVISION	"IMPORTANT NOTICE TO CONTRACTORS" (000---010)

SPECIAL PROVISION TO ITEM 2L	(002L---001)
SPECIAL PROVISION TO ITEM 3L	(003L---005)
SPECIAL PROVISION TO ITEM 7L	(007L---001L)
SPECIAL PROVISION TO ITEM 8L	(008L---001) (008L---002) (008L---006)
SPECIAL PROVISION TO ITEM 132	(132---001)
SPECIAL PROVISION TO ITEM 506	(506---001L)
SPECIAL PROVISION TO ITEM 512	(512---001)
SPECIAL PROVISION TO ITEM 730	(730---003)

GENERAL: THE ABOVE LISTED SPECIFICATIONS 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 SPECIFICATIONS ITEMS AND INCLUDING THE SPECIAL PROVISIONS LISTED ABOVE, CONSTITUTE THE COMPLETE SPECIFICATIONS FOR THIS PROJECT.

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. General
II. Nondiscrimination
III. Nonsegregated Facilities
IV. Davis-Bacon and Related Act Provisions
V. Contract Work Hours and Safety Standards Act Provisions
VI. Subletting or Assigning the Contract
VII. Safety: Accident Prevention
VIII. False Statements Concerning Highway Projects
IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
X. Compliance with Governmentwide Suspension and Debarment Requirements
XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

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

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

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

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

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

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

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

II. NONDISCRIMINATION

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

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

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

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

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

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

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

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

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

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

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

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

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

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

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

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

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

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

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

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

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

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more.

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

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

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

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

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

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

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

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

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

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

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

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

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

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

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

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

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the

wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

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

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

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

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

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

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

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

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

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

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

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

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

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

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

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

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

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;
(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

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

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

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

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

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

VII. SAFETY: ACCIDENT PREVENTION

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

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

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

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

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

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

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

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

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

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

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

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

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

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

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

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

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

1. Instructions for Certification – First Tier Participants:

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

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

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

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

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as

the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

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

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

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

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

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

* * * * *

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

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

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

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

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

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

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

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

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

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

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

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

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

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

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

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

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

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

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

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

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

Special Provision – Prevailing Wage Rate to be Maintained

This is a "Public Works Project" within the meaning of Article No. 5159a, Revised Civil Statutes of Texas. The Commissioners' Court of Fort Bend County has ascertained that the rates set out in the following schedule hereby constitute the general prevailing rate of "per diem" wages for the work classifications set out in such Schedule for the general locality of Fort Bend' County, Texas. Such Schedule sets forth the prevailing wage rate for each craft or type of "laborer", "workman", or "mechanic" considered necessary to the performance of the work.

The Contractor, and all Subcontractors, shall pay each "laborer", "workman", or "mechanic" employed, or providing services in connection with the work, an amount not less than the prevailing wage rate hereby established for such class of "laborer", "workman", or "mechanic". A contractor or subcontractor who violates this section shall pay to the state or a political subdivision of the state on whose behalf the contract is made, $60 for each worker employed for each calendar day or part of the day that the worker is paid less than the wage rates stipulated in the contract. A public body awarding a contract shall specify this penalty in the contract. Such forfeiture shall be made in accordance with the provisions of Article No. 5159a, R.C.S. Any "laborer"," workman or "mechanic" employed, and whose position is not listed, shall be paid not less than the "per diem" wage rate established on the Project for the "laborer", "workman", or "mechanic" whose duties are most nearly comparable to those of such employees.

The Contractor and all Subcontractors shall keep, or cause to be kept, Weekly Payrolls showing the name, occupation, number of hours worked each day, and "per diem" wage paid each "laborer", "workman" or "mechanic", together with a complete record of all deductions made from such wages. During the construction period, the Contractor shall keep a copy of each Weekly Payroll available in the immediate vicinity of the Project site and shall allow inspection of such Payrolls at all reasonable hours by any authorized representative of Fort Bend County, Texas.

General Decision Number: TX150056 01/02/2015 TX56

Superseded General Decision Number: TX20140056

State: Texas

Construction Type: Highway

Counties: Austin, Brazoria, Chambers, Fort Bend, Galveston, Hardin, Harris, Jefferson, Liberty, Montgomery, Orange, San Jacinto and Waller Counties in Texas.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Executive Order (EO) 13658 establishes an hourly minimum wage of $10.10 for 2015 that applies to all contracts subject to the Davis-Bacon Act for which the solicitation is issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.10 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract. The EO minimum wage rate will be adjusted annually. Additional

information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/02/2015

* SUTX2011-013 08/10/2011

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER (Paving and Structures)	$ 12.98	
ELECTRICIAN	$ 27.11	
FORM BUILDER/FORM SETTER		
Paving & Curb	$ 12.34	
Structures	$ 12.23	
LABORER		
Asphalt Raker	$ 12.36	
Flagger	$ 10.33	
Laborer, Common	$ 11.02	
Laborer, Utility	$ 11.73	
Pipelayer	$ 12.12	
Work Zone Barricade Servicer	$ 11.67	
PAINTER (Structures)	$ 18.62	
POWER EQUIPMENT OPERATOR:		
Asphalt Distributor	$ 14.06	
Asphalt Paving Machine	$ 14.32	
Broom or Sweeper	$ 12.68	
Concrete Pavement Finishing Machine	$ 13.07	
Concrete Paving, Curing, Float, Texturing Machine	$ 11.71	
Concrete Saw	$ 13.99	
Crane, Hydraulic 80 Tons or less	$ 13.86	
Crane, Lattice boom 80 tons or less	$ 14.97	
Crane, Lattice boom over 80 Tons	$ 15.80	
Crawler Tractor	$ 13.68	
Excavator, 50,000 pounds or less	$ 12.71	
Excavator, Over 50,000 pounds	$ 14.53	
Foundation Drill, Crawler Mounted	$ 17.43	
Foundation Drill, Truck Mounted	$ 15.89	
Front End Loader 3 CY or Less	$ 13.32	
Front End Loader, Over 3 CY	$ 13.17	
Loader/Backhoe	$ 14.29	
Mechanic	$ 16.96	

Milling Machine.....$ 13.53
Motor Grader, Fine Grade....$ 15.69
Motor Grader, Rough.....$ 14.23
Off Road Hauler.....$ 14.60
Pavement Marking Machine....$ 11.18
Piledriver.....$ 14.95
Roller, Asphalt.....$ 11.95
Roller, Other.....$ 11.57
Scraper.....$ 13.47
Spreader Box.....$ 13.58

Servicer.....$ 13.97

Steel Worker
Reinforcing Steel.....$ 15.15
Structural Steel Welder.....$ 12.85
Structural Steel.....$ 14.39

TRUCK DRIVER
Low Boy Float.....$ 16.03
Single Axle.....$ 11.46
Single or Tandem Axle Dump..$ 11.48
Tandem Axle Tractor w/Semi
Trailer.....$ 12.27

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number,

005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

FORT BEND COUNTY

SPECIAL PROVISION
(000 – 001)
Important Notice to Contractors

The Contractor's attention is directed to the fact that as of November 11, 2015 certain utility adjustments have not been completed. Fort Bend County anticipates clearance by the dates listed below. Unless otherwise stated, clearance of these utilities will be performed by their owners. Estimated clearance dates are not anticipated to interfere with the Contractor's operations. It will be the responsibility of the Contractor to prosecute the Work in such a manner and sequence that there will be no interference with the work of others in adjusting utilities. The Contractor will allow free ingress to and egress from these areas over the Right of Way to these workers if necessary.

In the event the clearance dates are not met, requests for additional compensation or time will be made in accordance with the standard specifications.

For the Contractor's information, the following is a list of all utilities requiring adjustments. The Contractor is invited to review the existing utilities with the Engineer assigned to this project.

UTILITY RELOCATION			
UTILITY OWNER	**APPROXIMATE LOCATION**	**ESTIMATED CLEARANCE DATE**	**EFFECT ON CONSTRUCTION**
AT&T	Buried Fiber Optic – (1) FM 1463/FM 359 to Cinco Rose Dr along North ROW; (2) Cinco Rose Dr to SH 99 along North ROW (1) Sta 300+00 to Sta 358+00 (2) Sta 358+00 to Sta 517+00	(1) May 31, 2016 (2) March 31, 2016	Contractor may work in other areas of the project.
AT&T Legacy	Buried Fiber Optic – Katy-Gaston Rd to SH 99 along North ROW Sta 470+00 to Sta 517+00	February 29, 2016	Contractor may work in other areas of the project.
Comcast	Buried Fiber Optic – (1) East of FM 1463/FM 359; (2) Cinco Rose Dr/Canyon Fields Dr; (3) East of FM 723/Spring Green Blvd; (4) Katy-Gaston Rd; (5) Katy-Gaston Rd to East of Gaston Rd along North ROW; (6) Canal Rd (1) Sta 314+00 to Sta 321+00 (2) Sta 356+43 (3) Sta 411+88 (4) Sta 467+53 (5) Sta 470+00 to Sta 504+00 (6) Sta 514+00	(1) May 31, 2016 (2) May 31, 2016 (3) May 31, 2016 (4) May 31, 2016 (5) May 31, 2016 (6) May 31, 2016	Contractor may work in other areas of the project.
Comcast	Overhead Cable on CenterPoint Poles – (1) FM 1463/FM 359 to East of Westheimer Lakes North Dr; (2) East of Westheimer Lakes North Dr to Katy-Gaston Rd; (3) East of Gaston Rd to SH 99 (1) Sta 300+00 to Sta 344+00 (2) Sta 344+00 to Sta 470+00 (3) Sta 504+00 to Sta 520+00	(1) May 31, 2016 (2) May 31, 2016 (3) May 31, 2016	Contractor may work in other areas of the project.
Entouch	Buried Fiber Optic – Spring Green Blvd Sta 405+00	April 30, 2016	Contractor may work in other areas of the project.

UTILITY RELOCATION			
UTILITY OWNER	**APPROXIMATE LOCATION**	**ESTIMATED CLEARANCE DATE**	**EFFECT ON CONSTRUCTION**
Entouch	Overhead Cable on CenterPoint Poles – Westheimer Lakes North Dr to Katy-Gaston Rd Sta 344+00 to Sta 470+00	May 31, 2016	Contractor may work in other areas of the project.
Level 3	Buried Fiber Optic – (1) FM 1463/FM 359 to East of Westheimer Lakes North Dr along North ROW; (2) East of Westheimer Lakes North Dr to SH 99 along North ROW (1) Sta 300+00 to Sta 344+00 (2) Sta 344+00 to Sta 517+00	(1) May 31, 2016 (2) March 31, 2016	Contractor may work in other areas of the project.
MCI/ Verizon	Buried Fiber Optic – FM 1463/FM 359 to SH 99 along South ROW Sta 300+00 to Sta 521+00	February 29, 2016	Contractor may work in other areas of the project.
FBCTRA	Buried Fiber Optic – FM 1463/FM 359 to SH 99 along South ROW Sta 300+00 to Sta 521+00	February 29, 2016	Contractor may work in other areas of the project.
Phonoscope	Overhead Cable on CenterPoint Poles – (1) FM 1463/FM 359 to East of Westheimer Lakes North Dr; (2) East of Westheimer Lakes North Dr to Katy-Gaston Rd (1) Sta 300+00 to Sta 344+00 (2) Sta 344+00 to Sta 470+00	(1) May 31, 2016 (2) May 31, 2016	Contractor may work in other areas of the project.
Phonoscope	Buried Fiber Optic – Crossing at Canal Rd Sta 513+00	May 31, 2016	Contractor may work in other areas of the project.
Center Point Gas	Buried Gas Lines – (1) Westheimer Lakes North Dr to Cinco Rose Dr along North ROW; (2) Crossing at FM 723/Spring Green Blvd; (3) West of Katy-Gaston Rd to Canal Rd along South ROW; (4) Katy-Gaston Rd to Canal Rd along North and South ROW; (5) East of Canal Rd (1) Sta 333+00 to Sta 356+00 (2) Sta 404+00 (3) Sta 445+00 to Sta 507+00 (4) Sta 470+00 to Sta 513+00 (5) Sta 516+00	(1) May 31, 2016 (2) February 29, 2016 (3) March 31, 2016 (4) February 29, 2016 (5) February 29, 2016	Contractor may work in other areas of the project.
Center Point Electric	Overhead Electric Lines – (1) FM 1463/FM 359 to East of Westheimer Lakes North Dr along North ROW; (2) FM 1463/FM 359 to SH 99 along South ROW; (3) East of Westheimer Lakes North Dr to SH 99 along North ROW (1) Sta 300+00 to Sta 344+00 (2) Sta 329+00 to Sta 352+00; Sta 422+00 to Sta 462+00; Sta 508+00 to Sta 516+00 (3) Sta 344+00 to Sta 515+00	(1) May 31, 2016 (2) March 31, 2016 (3) March 31, 2016	Contractor may work in other areas of the project.
Enterprise Products	Buried Pipeline – Crossing at Cinco Rose Dr Sta 357+00	May 31, 2016	Contractor may work in other areas of the project.
Gulf South Pipeline	Buried Pipeline – Crossing West of FM 723/Spring Green Blvd Sta 389+00	May 31, 2016	Contractor may work in other areas of the project.

UTILITY RELOCATION			
UTILITY OWNER	**APPROXIMATE LOCATION**	**ESTIMATED CLEARANCE DATE**	**EFFECT ON CONSTRUCTION**
Southcross Energy	Buried Natural Gas Pipelines – (1) West of FM 723/Spring Green Blvd to West of Katy-Gaston Rd; (2) Crossing at Katy-Gaston Rd (1) Sta 393+00 to Sta 450+00 (2) Sta 475+00	(1) May 31, 2016 (2) May 31, 2016	Contractor may work in other areas of the project.
CINCO SW MUD #2	Abandon Buried Water, Wastewater, and Storm Sewer – FM 723/Spring Green Blvd Sta 404+00	March 31, 2016	Contractor may work in other areas of the project.
FBC MUD #34	Relocate Buried 12" Water Line – Gaston Rd to Canal Rd along North ROW Sta 494+00 to Sta 514+00	March 31, 2016	Contractor may work in other areas of the project.
FBC MUD #50	Abandon Buried 12" Water Line – Crossing at Canal Rd Sta 514+00	March 31, 2016	Contractor may work in other areas of the project.
FBC MUD #142	Relocate Buried Water and Wastewater Lines – Westheimer Lakes North Dr to Canyon Fields Dr along North and South ROW Sta 333+00 to Sta 357+00	March 31, 2016	Contractor may work in other areas of the project.

As of November 11, 2015, right of way, encroachments, and relocations within the project limits have not been cleared. Fort Bend County anticipates clearance in sufficient time to prevent any undue delay to the Contractor in his normal operations.

In the event the clearance dates are not met, requests for additional compensation or time will be made in accordance with the standard specifications.

For the Contractor's information, the following is a list of all tracts of right of way required for the construction of this project that have not been obtained. Parcels designated by the asterisk have right of entry to use and occupy. The Contractor is invited to review the outstanding right of way with Fort Bend County. A right of way map reflecting the tracts of right of way locations is on file with Fort Bend County.

Right of entry is provided on all available properties that have a Fort Bend County interest within the limits of this project. The Contractor is responsible for obtaining right of entry at no additional cost to Fort Bend County on all additional properties deemed necessary for the execution of the Work.

The following outstanding right of way, encroachment, and relocation is expected to be complete by the date shown.

RIGHT-OF-WAY ACQUISITION				
PARCEL NUMBER	**OWNER**	**LOCATION**	**ESTIMATED CLEARANCE DATE**	**EFFECT ON CONSTRUCTION**
102	Westheimer Holdings LLC	North of FM 1093 at Westheimer Lakes North Drive (Sta 334+00 to Sta 341+50)	March 31, 2016	None
103	Interim Portfolio Lending Corporation	North of FM 1093 at Westheimer Lakes North Drive (Sta 341+50 to Sta 343+00)	March 31, 2016	None
106	Estate of Norman A. Binz	North of FM 1093 and East of Cinco Rose Drive (Sta 362+00 to Sta 373+00)	January 04, 2016	None
107	McGall Jane H & The Lynn M Harwood Marital Trust	North of FM 1093 and West of Spring Green Boulevard (Sta 388+00 to Sta 393+00)	January 04, 2016	None
111-121	Sage Fulshear East LLC	North of FM 1093 and East of FM 1463 (Sta 300+00 to Sta 327+50)	March 31, 2016	None
203	Stephens Debra Ann Dalio & Derwana Ann Dalio Grover	North of FM 1093 at Katy-Gaston Road (Sta 467+50 to Sta 473+00)	January 04, 2016	None
206	Storit @ Seven Meadows LP	North of FM 1093 and East of Gaston Road (Sta 504+00 to Sta 506+50)	January 04, 2016	None

ENCROACHMENT			
OWNER	**TYPE OF ENCROACHMENT**	**TYPE OF STRUCTURE**	**EFFECT ON CONSTRUCTION**
Storit @ Seven Meadows LP	Parking lot	Pavement, signs, gates, and drainage structures	Construction cannot begin until ROW Cleared for Utility Relocation

RELOCATION		
PARCEL NUMBER	**OWNER**	**ESTIMATED COMPLETION DATE**
206	Storit @ Seven Meadows LP	January 31, 2015

Item 1L
Abbreviations and Definitions

1. APPLICABILITY

Wherever the following terms are used in these specifications or other Contract documents, the intent and meaning will be interpreted as shown below.

2. ABBREVIATIONS

AAR	Association of American Railroads
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
ACPA	American Concrete Pipe Association
AI	Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
ALSC	American Lumber Standard Committee, Inc.
AMRL	AASHTO Materials Reference Laboratory
ANLA	American Nursery and Landscape Association
ANSI	American National Standards Institute
APA	The Engineered Wood Association
API	American Petroleum Institute
APWA	American Public Works Association
AREMA	American Railway Engineering and Maintenance-of-Way Association
ASBI	American Segmental Bridge Institute
ASCE	American Society of Civil Engineers
ASLA	American Society of Landscape Architects
ASME	American Society of Mechanical Engineers
ASNT	American Society for Nondestructive Testing
ASTM	American Society for Testing and Materials
AWC	American Wood Council
AWG	American Wire Gage
AWPA	American Wood Protection Association
AWPI	American Wood Preservers Institute
AWS	American Welding Society
AWWA	American Water Works Association
BMP	Best Management Practices
CFR	Code of Federal Regulations
CMP	Corrugated Metal Pipe
COE	U.S. Army Corps of Engineers
CRSI	Concrete Reinforcing Steel Institute
DBE	Disadvantaged Business Enterprise
DMS	Departmental Material Specification
EIA	Electronic Industries Alliance
EPA	United States Environmental Protection Agency
FHWA	Federal Highway Administration, U.S. Department of Transportation
FSS	Federal Specifications and Standards (General Services Administration)
GSA	United States General Services Administration
HUB	Historically Underutilized Business
ICEA	Insulated Cable Engineers Association
IEEE	Institute of Electrical and Electronics Engineers
IESNA	Illuminating Engineering Society of North America
IMSA	International Municipal Signal Association
ISO	International Organization for Standardization

ITS	Intelligent Transportation System
ITE	Institute of Transportation Engineers
LG	Local Government
LRFD	Load and Resistance Factor Design
MASH	Manual for Assessing Safety Hardware
MPL	Material Producer List (TxDOT document)
NCHRP	National Cooperative Highway Research Program
NCR	Nonconformance Report (TxDOT form)
NEC	National Electrical Code (Published by NFPA)
NEMA	National Electrical Manufacturers Association
NEPA	National Environmental Policy Act
NESC	National Electrical Safety Code
NFPA	National Fire Protection Association
NIST	National Institute of Standards and Technology
NRM	Nonhazardous Recyclable Material
NRMCA	National Ready Mixed Concrete Association
NSBA	National Steel Bridge Alliance
NTPEP	National Transportation Product Evaluation Program
OSHA	Occupational Safety & Health Administration, U.S. Department of Labor
PCA	Portland Cement Association
PCI	Precast/Prestressed Concrete Institute
PE	Professional Engineer
PPI	Plastics Pipe Institute
PS&E	Plans, Specifications, and Estimates
PSL	Project-Specific Location
PTI	Post-Tension Institute
QA	Quality Assurance
QC	Quality Control
RCP	Reinforced Concrete Pipe
RPLS	Registered Public Land Surveyor
RRC	Railroad Commission of Texas
SBE	Small Business Enterprise
SFPA	Southern Forest Products Association
SI	International System of Units
SPIB	Southern Pine Inspection Bureau
SSPC	The Society for Protective Coatings
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
TDLR	Texas Department of Licensing and Regulation
TGC	Texas Government Code
TMUTCD	Texas Manual on Uniform Traffic Control Devices
TxDOT	Texas Department of Transportation
UL	Underwriters Laboratory, Inc.
USC	United States Code
WRI	Wire Reinforcement Institute
WWPA	Western Wood Products Association

3. DEFINITIONS

3.1. **Abrasive Blasting.** Spraying blasts of pressurized air combined with abrasive media.

3.2. **Actual Cost.** Contractor's actual cost to provide labor, material, equipment, and project overhead necessary for the work.

3.3. **Addendum.** Change in bid documents developed between advertising and bid submittal deadline.

3.4. **Additive Alternate.** A bid item contained in the bid documents that is not a regular item or a replacement alternate bid item. The additive alternate items include work that may be added to the base bid work.

3.5. **Deductive Alternate.** A bid item contained in the bid documents that is not a regular item or a replacement alternate bid item. The deductive alternate items include work that may be deducted from the base bid work.

3.6. **Advertisement.** The public announcement required by law inviting bids for work to be performed or materials to be furnished.

3.7. **Affiliates.** Two or more firms are affiliated if they share common officers, directors, or stockholders; a family member of an officer, director, or stockholder of one firm serves in a similar capacity in another of the firms; an individual who has an interest in, or controls a part of, one firm either directly or indirectly also has an interest in, or controls a part of, another of the firms; the firms are so closely connected or associated that one of the firms, either directly or indirectly, controls or has the power to control another firm; one firm controls or has the power to control another of the firms; or the firms are closely allied through an established course of dealings, including, but not limited to, the lending of financial assistance.

3.8. **Air Blasting.** Spraying blasts of pressurized air free of oil and moisture.

3.9. **Air Temperature.** The temperature measured in degrees Fahrenheit (°F) in the shade, not in the direct rays of the sun, and away from artificial heat.

3.10. **Anticipated Profit.** Profit for work not performed.

3.11. **Apparent Low Bidder.** The Bidder determined to have the numerically lowest total bid as a result of the tabulation of bids by the Owner.

3.12. **Architect of Record.** A person registered as an architect or licensed as a landscape architect, in accordance with State law, exercising overall responsibility for the design or a significant portion of the design and performs certain Contract administration responsibilities as described in the Contract; or a firm employed by the Owner to provide professional architectural services.

3.13. **Arterial Highway.** A highway used primarily for through traffic and usually on a continuous route.

3.14. **Notice of Award.** The Owner's acceptance of a Contractor's bid for a proposed Contract that authorizes the Owner to enter into a Contract.

3.15. **Base Bid.** The total bid amount without additive alternates.

3.16. **Bid.** The offer from the Bidder for performing the work described in the bid documents, submitted on the prescribed bid form, considering addenda issued and giving unit bid prices for performing the work described in the bid documents.

3.17. **Bid Bond.** The security executed by the Contractor and the Surety furnished to the Owner to guarantee payment of liquidated damages if the Contractor fails to enter into an awarded Contract.

3.18. **Bid Documents.** The complete set of documents necessary for a Bidder to submit a bid. The documents may include plans, specifications, special specifications, special provisions, addenda, and the prescribed form a Bidder is to submit as the Bid. Other terms used may include general conditions, proposal, instructions to bidders, and construction specifications.

3.19. **Bid Error.** A mathematical mistake made by a Bidder in the unit price entered into the bid documents.

3.20. **Bid Form.** The portion of the bid documents that a prospective Bidder must submit to the Owner for their bid to be considered.

3.21. **Bidder**. An individual, partnership, limited liability company, corporation, or joint venture submitting a bid for a proposed Contract.

3.22. **Blast Cleaning**. Using one of the blasting methods, including, but not limited to, water blasting, low-pressure water blasting, high-pressure water blasting, abrasive blasting, water-abrasive blasting, shot blasting, slurry blasting, water injected abrasive blasting, and brush blasting.

3.23. **Bridge**. A structure, including supports, erected over a depression or an obstruction (e.g., water, a highway, or a railway) having a roadway or track for carrying traffic or other moving loads, and having an opening measured along the center of the roadway of more than 20 ft. between faces of abutments, spring lines of arches, or extreme ends of the openings for multiple box culverts.

3.24. **Brush Blasting**. Sweeping lightly with an abrasive blast to remove loose material.

3.25. **Building Contract**. A Contract entered under State law for the construction or maintenance of an Owner building or appurtenance facilities. Building Contracts are considered to be construction Contracts.

3.26. **Certificate of Insurance**. A form approved by the Owner covering insurance requirements stated in the Contract.

3.27. **Change Order**. Written order to the Contractor detailing changes to the specified work, item quantities or any other modification to the Contract.

3.28. **Concrete Construction Joint**. A joint formed by placing plastic concrete in direct contact with concrete that has attained its initial set.

3.29. **Concrete Repair Manual**. TxDOT manual specifying methods and procedures for concrete repair as an extension of the standard specifications.

3.30. **ConcreteWorks©**. TxDOT-owned software for concrete heat analysis. Software is available on the TxDOT's website.

3.31. **Construction Contract**. A Contract entered under State law for the construction, reconstruction, or maintenance of a segment of the Owner's transportation system.

3.32. **Consultant**. The licensed professional engineer or engineering firm, or the architect or architectural firm, registered in the State of Texas and under Contract to the Owner to perform professional services. The consultant may be the Engineer or architect of record or may provide services through and be subcontracted to the Engineer or architect of record.

3.33. **Contract**. The agreement between the Owner and the Contractor establishing the obligations of the parties for furnishing of materials and performance of the work prescribed in the Contract documents.

3.34. **Contract Documents**. Elements of the Contract, including, but not limited to, the plans, specifications incorporated by reference, special provisions, special specifications, Contract bonds, change orders, addendums, and supplemental agreements.

3.35. **Contract Time**. The number of days specified for completion of the work, including authorized additional working days.

3.36. **Contractor**. The individual, partnership, limited liability company, corporation, or joint venture and all principals and representatives with which the Contract is made by the Owner.

3.37. **Controlled Access Highway**. Any highway to or from which access is denied or controlled, in whole or in part, from or to abutting land or intersecting streets, roads, highways, alleys, or other public or private ways.

3.38. **Control of Access.** The condition in which the right to access of owners or occupants of abutting land or other persons in connection with a highway is fully or partially controlled by public authority.

3.39. **Control Point.** An established point shown on the plans to provide vertical and horizontal references for geometric control for construction.

3.40. **Cross-Sections.** Graphic representations of the original ground and the proposed facility, at right angles to the centerline or base line.

3.41. **Culvert.** Any buried structure providing an opening under a roadway for drainage or other purposes. Culverts may also be classified as bridges. (See Section 1.3.23., "Bridge.")

3.42. **Cycle.** The activity necessary for performing the specified work within the right of way project limits once.

3.43. **Daily Road-User Cost.** Damages based on the estimated daily cost of inconvenience to the traveling public resulting from the work.

3.44. **Date of Written Authorization.** Date of the written Notice to Proceed authorizing the Contractor to begin work.

3.45. **Debar (Debarment).** Action taken by the Owner, State, or federal government pursuant to regulation that prohibits a person or company from entering into a Contract, or from participating as a subcontractor, or supplier of materials or equipment used in a highway improvement Contract as defined in local, state, or federal law.

3.46. **Detour.** A temporary traffic route around a closed portion of a road.

3.47. **Department.** When used in the context of the party with whom the Contractor has a Construction Contract, Department refers to Owner. When used in other contexts such as technical specifications, refers to the Texas Department of Transportation.

3.48. **Departmental Material Specifications.** Reference specifications for various materials published by TxDOT's Construction Division with a DMS-XXXXX numbering system.

3.49. **Direct Traffic Culvert.** Concrete box culvert whose top slab is used as the final riding surface or is to have an overlay or other riding surface treatment.

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

3.51. **Divided Highway.** A highway with separate roadways intended to move traffic in opposite directions.

3.52. **Easement.** A real property right acquired by one party to use land belonging to another party for a specified purpose.

3.53. **Engineer.** The Professional Engineer licensed in Texas who represents the interests of the Owner.

3.54. **Entity.** Political subdivision for which the project is designed and constructed. Either a Municipality (City) or a County or other entity organized under the authority of State of Texas statutes. May also be referred to as an Owner.

3.55. **Expressway.** A divided arterial highway for through traffic with full or partial control of access and generally with grade separations at intersections.

3.56. **Family Member.** A family member of an individual is the individual's parent, parent's spouse, step-parent, step-parent's spouse, sibling, sibling's spouse, spouse, child, child's spouse, spouse's child, spouse's child's spouse, grandchild, grandparent, uncle, uncle's spouse, aunt, aunt's spouse, first cousin, or first cousin's spouse.

3.57. **Force Account.** Payment for directed work based on the actual cost of labor, equipment, and materials furnished with markups for project overhead and profit.

3.58. **Freeway.** An expressway with full control of access.

3.59. **Frontage Road.** A local street or road auxiliary to and located along an arterial highway for service to abutting property and adjacent areas and for control of access (sometimes known as a service road, access road, or insulator road).

3.60. **Hazardous Materials or Waste.** Hazardous materials or waste include, but are not limited to, explosives, compressed gas, flammable liquids, flammable solids, combustible liquids, oxidizers, poisons, radioactive materials, corrosives, etiologic agents, and other material classified as hazardous by 40 CFR 261, or applicable state and federal regulations.

3.61. **High-Pressure Water Blasting.** Water blasting with pressures between 5,000 and 10,000 psi.

3.62. **Highway, Street, or Road.** General terms denoting a public way for purposes of vehicular travel, including the entire area within the right of way. Recommended usage in urban areas is highway or street; in rural areas, highway or road.

3.63. **Historically Underutilized Business.** A corporation, sole proprietorship, partnership, or joint venture formed for the purpose of making a profit certified by the Texas Comptroller of Public Accounts, and 51% owned by one or more persons who are economically disadvantaged because of their identification as members of certain groups, including African Americans, Hispanic Americans, Asian-Pacific Americans, Native Americans, or women, and have a proportionate interest and demonstrate active participation in the control, operation, and management of the business' affairs. Individuals meeting the HUB definition are required to be residents of the State of Texas. Businesses that do not have their primary headquarters in the State of Texas are not eligible for HUB certification.

3.64. **Incentive/Disincentive Provisions.** An adjustment to the Contract price of a predetermined amount for each day the work is completed ahead of or behind the specified milestone, phase, or Contract completion dates. The amount of the incentive/disincentive is determined based on estimated costs for engineering, traffic control, delays to the motorists, and other items involved in the Contract.

3.65. **Independent Assurance Tests.** Tests used to evaluate the sampling and testing techniques and equipment used in the acceptance program. The tests are performed by the Owner or the Owner's representative and are not used for acceptance purposes.

3.66. **Inspector.** The person assigned by the Owner to inspect any or all parts of the work and the materials used for compliance with the Contract.

3.67. **Intelligent Transportation System.** An integrated system that uses video and other electronic detection devices to monitor traffic flows.

3.68. **Intersection.** The general area where 2 or more highways, streets, or roads join or cross, including the roadway and roadside facilities for traffic movements within it.

3.69. **Island.** An area within a roadway from which vehicular traffic is intended to be excluded, together with any area at the approach occupied by protective deflecting or warning devices.

3.70. **Joint Venture.** Any combination of individuals, partnerships, limited liability companies, or corporations submitting a single bid form.

3.71. **Lane Rental.** A method to assess the Contractor daily or hourly rental fees for each lane, shoulder, or combination of lanes and shoulders taken out of service.

3.72. **Letting.** The receipt, opening, tabulation, and determination of the apparent low Bidder.

3.73. **Letting Official.** The Owner representative empowered by the Owner to officially receive bids and close the receipt of bids at a letting.

3.74. **Licensed Professional Engineer.** A person who has been duly licensed by the Texas Board of Professional Engineers to engage in the practice of engineering in the State of Texas; also referred to as a Professional Engineer.

3.75. **Limits of Construction.** An area with established boundaries, identified within the highway right of way and easements, where the Contractor is permitted to perform the work.

3.76. **Local Street or Road.** A street or road primarily for access to residence, business, or other abutting property.

3.77. **Low-Pressure Water Blasting.** Water blasting with pressures between 3,000 and 5,000 psi.

3.78. **Major Item.** An item of work included in the Contract that has a total cost equal to or greater than 5% of the original Contract or $100,000 whichever is less. A major item at the time of bid will remain a major item. An item not originally a major item does not become one through the course of the Contract.

3.79. **Material Producer List.** TxDOT-maintained list of approved products. Referenced as "Department's MPL".

3.80. **Materially Unbalanced Bid.** A bid that generates a reasonable doubt that award to the Bidder submitting a mathematically unbalanced bid will result in the lowest ultimate cost to the Owner.

3.81. **Mathematically Unbalanced Bid.** A bid containing bid prices that do not reflect reasonable actual costs plus a reasonable proportionate share of the Bidder's anticipated profit, overhead costs, and other indirect costs.

3.82. **Median.** The portion of a divided highway separating the traffic lanes in opposite directions.

3.83. **Milestone Date.** The date that a specific portion of the work is to be completed, before the completion date for all work under the Contract.

3.84. **Monolithic Concrete Placement.** The placement of plastic concrete in such manner and sequence to prevent a construction joint.

3.85. **National Holidays.** January 1, the last Monday in May, July 4, the first Monday in September, the fourth Thursday in November, and December 24 or December 25.

3.86. **Nonhazardous Recyclable Material.** A material recovered or diverted from the nonhazardous waste stream for the purposes of reuse or recycling in the manufacture of products that may otherwise be produced using raw or virgin materials.

3.87. **Nonresident Bidder.** A Bidder whose principal place of business is not in Texas. This includes a Bidder whose ultimate parent company or majority owner does not have its principal place of business in Texas.

3.88. **Nonresponsive Bid.** A bid that does not meet the criteria for acceptance contained in the bid documents.

3.89. **Non-Site-Specific Contracts.** Contracts in which a geographic region is specified for the work and for which work orders, with or without plans, further detail the limits and work to be performed.

3.90. **Notice to Proceed**, Written notification to the Contractor authorizing work to begin.

3.91. **Notification.** Either written or oral instruction to the Contractor concerning the work. Voice mail is oral notification.

3.92. **Owner**, Political subdivision for whom the project is designed and constructed. Either a Municipality (City), a County or other entity organized under the authority of State of Texas statutes. May also be referred to as an Entity.

3.93. **Pavement.** That part of the roadway having a constructed surface for the use of vehicular traffic.

3.94. **Pavement Structure.** Combination of surface course and base course placed on a subgrade to support the traffic load and distribute it to the roadbed.

3.94.1. **Surface Course.** Pavement structure layers designed to accommodate the traffic load. The top layer resists skidding, traffic abrasion, and the disintegrating effects of climate and is sometimes called the wearing course.

3.94.2. **Base Course.** One or more layers of specified material thickness placed on a subgrade to support a surface course.

3.94.3. **Subgrade.** The top surface of a roadbed upon which the pavement structure, shoulders, and curbs are constructed.

3.94.4. **Subgrade Treatment.** Modifying or stabilizing material in the subgrade.

3.95. **Payment Bond.** The security executed by the Contractor and the Surety, furnished to the Owner to guarantee payment of all legal debts of the Contractor pertaining to the Contract.

3.96. **Performance Bond.** The security executed by the Contractor and the Surety, furnished to the Owner to guarantee the completion of the work in accordance with the terms of the Contract.

3.97. **Plans.** The approved drawings, including true reproductions of the drawings that show the location, character, dimensions, and details of the work and are a part of the Contract.

3.98. **Power of Attorney for Surety Bonds.** An instrument under corporate seal appointing an attorney-in-fact to act on behalf of a Surety in signing bonds.

3.99. **Qualification.** The process for determining a Contractor's eligibility to be awarded a construction contract

3.100. **Prequalification.** The process for determining a Contractor's eligibility to bid work.

3.101. **Prequalification Statement.** The forms on which required information is furnished concerning the Contractor's ability to perform and finance the work.

3.102. **Prequalified Contractor.** A contractor that is approved to bid on TxDOT contracts by satisfying their Prequalification Process.

3.103. **Post Qualfication.** The owner will determine if contractors are qualified to bid on the project after bids are open. The bid documents will identify the minimum requirements that contractor must meet to be qualified for the project. Unqualified contractors' bids will be considered non-responsive and not accepted.

3.104. **Project-Specific Location.** A material source, plant, waste site, parking area, storage area, field office, staging area, haul road, or other similar location either outside the project limits or within the project limits but not specifically addressed in the Contract.

3.105. **Proposal Guaranty.** The security furnished by the Bidder as a guarantee that the Bidder will enter into a Contract if awarded the work.

3.106. **Quality Assurance.** Sampling, testing, inspection, and other activities conducted by the Engineer to determine payment and make acceptance decisions.

3.107. **Quality Control.** Sampling, testing, and other process control activities conducted by the Contractor to monitor production and placement operations.

3.108. **Ramp.** A section of highway for the primary purpose of making connections with other highways.

3.109. **Referee Tests.** Tests requested to resolve differences between Contractor and Owner test results. The referee laboratory is the Owners .

3.110. **Regular Item.** A bid item contained in the bid documents and not designated as an additive alternate or replacement alternate bid item.

3.111. **Rental Rate Blue Book for Construction Equipment.** Publication containing equipment rental rates.

3.112. **Replacement Alternate.** A bid item identified on the bid documents that a Bidder may substitute for a specific regular item of work.

3.113. **Responsive Bid.** A bid that meets all requirements of the advertisement and the bid documents for acceptance.

3.114. **Right of Way.** A general term denoting land or property devoted to transportation purposes.

3.115. **Roadbed.** The graded portion of a highway prepared as foundation for the pavement structure and shoulders. On divided highways, the depressed median type and the raised median type highways are considered to have 2 roadbeds. Highways with a flush median are considered to have 1 roadbed. Frontage roads are considered separate roadbeds.

3.116. **Road Master.** A railroad maintenance official in charge of a division of railway.

3.117. **Roadside.** The areas between the outside edges of the shoulders and the right of way boundaries. Unpaved median areas between inside shoulders of divided highways and areas within interchanges are included.

3.118. **Roadway.** The portion of the highway (including shoulders) used by the traveling public.

3.119. **Sandblasting, Dry.** Spraying blasts of pressurized air combined with sand.

3.120. **Sandblasting, Wet.** Spraying blasts of pressurized water combined with sand.

3.121. **Shoulder.** That portion of the roadway contiguous with the traffic lanes for accommodation of stopped vehicles for emergency use or for lateral support of base and surface courses.

3.122. **Shot Blasting.** Spraying blasts of pressurized air combined with metal shot.

3.123. **Sidewalk.** Portion of the right of way constructed exclusively for pedestrian use.

3.124. **Slurry Blasting.** Spraying blasts of pressurized air combined with a mixture of water and abrasive media.

3.125. **Special Provisions.** Additions or revisions to these standard specifications or special specifications.

3.126. **Special Specifications.** Supplemental specifications applicable to the Contract not covered by these standard specifications.

3.127. **Specifications.** Directives or requirements issued or made pertaining to the method and manner of performing the work or to quantities and qualities of materials to be furnished under the Contract. References to DMSs, ASTM or AASHTO specifications, or TxDOT bulletins and manuals, imply the latest standard or tentative standard in effect on the date of the bid. The Owner will consider incorporation of subsequent changes to these documents in accordance with Item 4L, "Scope of Work."

3.128. **Small Business Enterprise.** A firm (including affiliates) whose annual gross receipts do not exceed the U.S. Small Business Administration's size standards for 4 consecutive years.

3.129. **State.** The State of Texas.

3.130. **State Holiday.** A holiday authorized by the State Legislature excluding optional state holidays and not listed in Section 1.3.85., "National Holidays." A list of state holidays can be found on the TxDOT's website.

3.131. **Station.** A unit of measurement consisting of 100 horizontal feet.

3.132. **Subcontract.** The agreement between the Contractor and subcontractor establishing the obligations of the parties for furnishing of materials and performance of the work prescribed in the Contract documents.

3.133. **Subcontractor.** An individual, partnership, limited liability company, corporation, or any combination thereof that the Contractor sublets, or proposes to sublet, any portion of a Contract, excluding a material supplier, a hauling firm hauling only from a commercial source to the project, truck owner-operator, wholly-owned subsidiary, or specialty-type businesses such as security companies and rental companies.

3.134. **Subsidiary.** Materials, labor, or other elements that because of their nature or quantity have not been identified as a separate item and are included within the items on which they necessarily depend.

3.135. **Substructure.** The part of the structure below the bridge seats, but not including bearings, drilled shafts, or piling. Parapets, back walls, wing walls of the abutments, and drainage structures are considered parts of the substructure.

3.136. **Superintendent.** The representative of the Contractor who is available at all times and able to receive instructions from the Owner or authorized Owner representatives and to act for the Contractor.

3.137. **Superstructure.** The part of the structure above the bridge seats or above the springing lines of arches and including the bearings. Flatwork construction may be considered superstructure.

3.138. **Supplemental Agreement.** Written agreement entered into between the Contractor and the Owner and approved by the Surety, covering alterations and changes in the Contract. A supplemental agreement is used by the Owner whenever the modifications include assignment of the Contract from one party to another or other cases as desired by the Owner.

3.139. **Surety.** The corporate body or bodies authorized to do business in Texas bound with and for the Contractor for the faithful performance of the work covered by the Contract and for the payment for all labor and material supplied in the prosecution of the work.

3.140. **Surplus Materials.** Any debris or material related to the Contract but not incorporated into the work.

3.141. **Suspension.** Action taken by the Owner, State, or federal government pursuant to regulation that prohibits a person or company from entering into a Contract, or from participating as a subcontractor, or supplier of materials or equipment used in a contract

3.142. **Tex –XXX-X.** TxDOT material test methods found on TxDOT's Construction Division Web Site.

3.143. **Traffic Lane.** The strip of roadway intended to accommodate the forward movement of a single line of vehicles.

3.144. **Traveled Way.** The portion of the roadway for the movement of vehicles, exclusive of shoulders and auxiliary lanes.

3.145. **Truck Owner-Operator.** An individual who owns and operates 1 truck for hire.

3.146. **UT-Bridge.** TxDOT-owned software for steel girder erection. Software is available on TxDOT's website.

3.147. **UT-Lift.** TxDOT-owned software for steel girder erection. Software is available on TxDOT's website.

3.148. **Utility.** Privately, publicly, or cooperatively owned lines, facilities, and systems for producing, transmitting, or distributing communications, power, heat, gas, oil, water, waste, or storm water that are not connected with the highway drainage, signal systems, or other products that directly or indirectly serve the public; the utility company.

3.149. **Verification Tests.** Tests used to verify accuracy of QC and QA and mixture design testing.

3.150. **Water-Abrasive Blasting.** Spraying blasts of pressurized water combined with abrasive media.

3.151. **Water Blasting.** Spraying blasts of pressurized water of at least 3,000 psi.

3.152. **Water-Injected Abrasive Blasting.** Abrasive blasting with water injected into the abrasive/air stream at the nozzle.

3.153. **Wholly-Owned Subsidiary.** A legal entity owned entirely by the Contractor or subcontractor.

3.154. **Work.** The furnishing of all labor, materials, equipment, and other incidentals necessary for the successful completion of the Contract.

3.155. **Written Notice.** Written notice is considered to have been duly given if delivered in person to the individual or member to whom it is intended or if sent by regular, registered, or certified mail and delivered to the last known business address; sent by facsimile to the last known phone number; or sent by e-mail to the last known address. The date of the letter will serve as the beginning day of notice. Unclaimed mail or failure to provide current mailing address will not be considered a failure to provide written notice.

Item 2L
Instructions to Bidders

1. INTRODUCTION

Instructions to the Contractor in these specifications are generally written in active voice, imperative mood. The subject of imperative sentences is understood to be "the Contractor." The Owner's responsibilities are generally written in passive voice, indicative mood. Phrases such as "as approved," "unless otherwise approved," "upon approval," "as directed," "as verified," "as ordered," and "as determined" refer to actions of the Engineer unless otherwise stated, and it is understood that the directions, orders, or instructions to which they relate are within the limitations of and authorized by the Contract.

2. ELIGIBILITY OF BIDDERS

Bidders on this project must be prequalified though TxDOT. Refer to TxDOT's web site for prequalification requirements. Assure prequalification documents are submitted to TxDOT at least 14 days before bid opening. Comply with all technical prequalification requirements in the bid documents.

3. ISSUING BID DOCUMENTS

Bid Documents may be obtained at Fort Bend County Purchasing Department located at 301 Jackson Street, Suite 201, Richmond, TX 77469, and are available at www.civcastusa.com.

Copies will be available in CD format at no cost.

At the time Bid Documents are obtained, Bidder must provide a working e-mail address, so as to receive any addenda or clarification issued by the Owner.

The Owner will not issue bid documents if one or more of the following apply:
the Bidder is prohibited from rebidding a specific project due to a bid error on the original bid documents,
the Bidder failed to enter into a Contract on the original award,
the Bidder was defaulted or terminated on the original Contract, unless the Owner terminated for convenience, or
the Bidder or a subsidiary or affiliate of the Bidder has received compensation from the Owner to participate in the preparation of the plans or specifications on which the bid or Contract is based.

4. INTERPRETING ESTIMATED QUANTITIES

The quantities listed in the bid documents are approximate and will be used for the comparison of bids. Payments will be made for actual quantities of work performed in accordance with the Contract.

5. EXAMINING DOCUMENTS AND WORK LOCATIONS

Examine the bid documents and specified work locations before submitting a bid for the work. Submitting a bid will be considered evidence that the Bidder has performed this examination. Borings, soil profiles, water elevations, and underground utilities shown on the plans were obtained for the use of the Owner in the preparation of plans. This information is provided for the Bidder's information only and the Owner makes no representation as to the accuracy of the data. Be aware of the difficulty of accurately classifying all material encountered in making foundation investigations, the possible erosion of stream channels and banks after survey data have been obtained, and the unreliability of water elevations other than for the date recorded.

Oral explanations, instructions, or consideration for Contractor-proposed changes in the bid documents given during the bidding process are not binding. Only requirements included in the bid documents and Owner-issued addenda are binding. Request explanations of documents at least five(5) days prior to the bid opening.

Immediately notify the Owner of any error, omission, or ambiguity discovered in any part of the bid documents. The Owner will issue addenda when appropriate.

6. PREPARING THE BID

Prepare the bid form furnished by the Owner. Informational bid forms printed from the Owner's website will not be accepted.

Specify a unit price in dollars and cents for each regular item, additive alternate item, deductive alternate item or replacement alternate item for which an estimated quantity is given.

When "Working Days" is an item, submit the number of working days to be used to complete the Contract or phases of the Contract.

The Owner will not accept an incomplete bid. A bid that has one or more of the deficiencies listed below is considered incomplete:

- the bid form was not signed,
- the Contract was not executed by the Bidder,
- all certifications were not acknowledged,
- a regular item, additive alternate item or deductive alternate item is left blank,
- a regular item and the corresponding replacement alternate item are left blank,
- the bid form submitted had the incorrect number of items, or
  all addenda were not acknowledged.

7. NONRESPONSIVE BID

The Owner will not accept a nonresponsive bid. A bid that has one or more of the deficiencies listed below is considered nonresponsive:

- The bid was not in the hands of the Letting Official at the time and location specified in the advertisement.
- A bid was submitted for the same project by a Bidder or Bidders and one or more of its partners or affiliates.
- The Bidder failed to acknowledge receipt of all addenda issued.
- The bid form was signed by a person who was not authorized to bind the Bidder or Bidders.
- The bid guaranty did not comply with the requirements contained in this Item.
- The Bidder modified the bid in a manner that altered the conditions or requirements for work as stated in the bid documents.
- The Bidder bid more than the maximum or less than the minimum number of allowable working days when working days was an item.
- The Bidder did not attend a specified mandatory pre-bid conference.
- The Bidder did not meet the requirements of the technical qualification.
- The Bidder did not include a signed State of Texas Child Support Business Ownership Form.
- The bidder is not prequalified by TxDOT.
- The bidder does not meet the Owner's qualification requirements.
- The bidder did not include the executed Contract.

8. SUBMITTAL OF BIDS

8.1 **Electronic Bids.** Not available for this project.

8.1.3. **Submittal of Bid.** Submit the bid using the Owner's bidding system.

Bidders must respond to this bid in duplicate.

8.2 **Printed Bid.**

8.2.1. **Bid Form.** Mark all entries in ink. As an alternative to hand writing the unit prices in the bid form, submit a typed bid form. A typed bid form must contain the information in the format shown on the "Example of Bid Prices Submitted by Computer Printout" in the bid form.

When regular bid items have corresponding replacement alternate items, select the bid item or group of items to be used for the bid tabulation. Acknowledge all addenda by checking the appropriate box on the addendum acknowledgement page. Provide the complete and correct name of the Bidder submitting the bid. A person authorized to bind the Bidder must sign the bid form. In the case of a joint venture, provide the complete and correct name of all Bidders submitting the bid. In the case of a joint venture, the person signing the bid form must be authorized to bind all joint venture participants.

If a bid form contains both regular items for domestic steel or iron materials and replacement alternate items for foreign steel or iron materials, the Bidder must either:
submit unit bid prices for domestic items only, or
submit unit bid prices for both the domestic and foreign items.

8.2.2. **Bid Guaranty.** Provide a bid guaranty in the amount indicated on the bid documents. Use either a guaranty check or a printed bid bond.

8.2.3. **Guaranty Check.** Make the check payable to the Owner. The check must be a cashier's check, money order, or teller's check drawn by or on a state or national bank, or a state or federally chartered credit union (collectively referred to as "bank"). The check must be dated on or before the date of the bid opening. Postdated checks will not be accepted. The type of check or money order must be indicated on the face of the instrument, except in the case of a teller's check, and the instrument must be no more than 90 days old. A check must be made payable at or through the institution issuing the instrument; be drawn by a bank and on a bank; or be payable at or through a bank. The Owner will not accept personal checks, certified checks, or other types of money orders.

8.2.4. **Bid Bond.** Use the bid bond form provided by the Owner. Submit the bid bond with the powers of attorney attached and in the amount specified. The bond must be dated on or before the date of the bid opening, bear the impressed seal of the Surety, and be signed by the Bidder or Bidders and an authorized individual of the Surety. As an alternative for joint venture Bidders, each of the Bidders may submit a separate bid bond completed as outlined in this section. Bid bonds will only be accepted from Sureties authorized to execute a bond under and in accordance with State law.

8.2.5. **Submittal of Bid.** Place the completed bid package checklist and all required items in a sealed envelope marked as indicated in the invitation to bid.

When submitting by mail or delivery service, place the envelope in another sealed envelope and address as indicated in the official advertisement or in the bid documents. It is the Bidder's responsibility to ensure that the sealed bid arrives at the location described on or before the time and date set for the bid opening. To be accepted, the bid must be in the hands of the Letting Official by that time of opening regardless of the method chosen for delivery.

8.2.6. **Revising the Bid Form.** Make desired changes to the bid form in ink and submit the bid to the Letting Official. The Owner will not make revisions to a bid on behalf of a Bidder.

8.2.7. **Withdrawing a Bid.** Submit a written request to withdraw a bid before the time and date set for the opening. The Owner will not accept oral requests. A written request must be signed and submitted to the Letting Official with proof of identification. The request must be made by a person authorized to bind the Bidder or Bidders. In the case of joint venture, the Owner will accept a request from any person authorized to bind a party to the joint venture. The Owner may require written delegation of authority to withdraw a bid when the individual sent to withdraw the bid is not authorized to bind the Bidder or Bidders.

9. OPENING AND READING OF BIDS

At the time, date, and location specified in the official advertisement, the Owner will publicly open and read bids.

10. TABULATING BIDS

10.1 **Official Total Bid Amount.** The Owner will sum the products of the quantities and the unit prices bid in the bid form to determine the official total bid amount, except as provided in Section 2.11., "Consideration of Unit Prices." The official total bid amount is the basis for determining the apparent low Bidder. The total bid amounts will be compared and the results made public.

10.2 **Rounding of Unit Prices.** The Owner will round off all unit bids involving fractional parts of a cent to the nearest one-tenth cent ($0.001) in determining the amount of the bid as well as computing the amount due for payment of each item under the Contract. For rounding purposes, entries of five-hundredths of a cent ($0.0005) or more will be rounded up to the next highest tenth of a cent, while entries less than five-hundredths of a cent will be rounded down to the next lowest tenth of a cent.

10.3 **Interpretation of Unit Prices.** The Owner will make a documented determination of the unit bid price if a unit bid price is illegible or conflicting in the case of replacement alternate items. The Owner's determination will be final.

10.4 **Consideration of Unit Prices.**

10.4.1. **A + B Bidding.** The official total bid amount will be determined by the summation of the Contract amount and the time element. The Owner will use the following formula to make the calculation:

A + B1 + B2 + BX + ... + BT

The Contract amount, equal to A in the formula, is determined by the summation of the products of the approximate quantities shown in the bid and the unit bid prices bid. The time element, equal to B1, B2, BX (when phases are included as bid components), and BT (substantial completion of the project when included as a bid component), of the bid is determined by multiplying the number of working days bid to substantially complete the project, or phases, by the daily road-user cost (RUC) provided on the bid documents. When partial days are bid they will be rounded up to the nearest whole day.

The formula above determines the low Bidder and establishes the Contract time.

10.4.2. **"Buy America."** Comply with Buy America in accordance with Section 6.1.1.. For a Bidder who proposes to use foreign steel or iron materials to be considered the apparent low Bidder, their total bid must be at least 25% lower than the next lowest bid if that bid proposes to use domestic steel or iron materials.

This requirement does not apply to minimal use of steel or iron materials provided that the total cost of all foreign source items used in the project, as delivered to the project site, is less than $2,500 or one-tenth-of-one-percent (1/10 of 1%) of the Contract amount, whichever is greater

11. CONSIDERATION OF BID ERRORS.

The Owner will consider a claim of a bid error by the apparent low Bidder if the following requirements have been met:

Submit written notification to the Owner within 5 business days after the date the bid is opened.

Identify the items of work involved and include bidding documentation. The Owner may request clarification of submitted documentation.

The Owner will evaluate the claim of an error by the apparent low Bidder by considering the following:

The bid error relates to a material item of work.

The bid error amount is a significant portion of the total bid.

The bid error occurred despite the exercise of ordinary care.

The delay of the proposed work will not impact cost and safety to the public.

Acceptance of the bid error claim by the Owner will result in the rejection of the bid of the apparent low bidder .and the Owner may consider the second responsive bid. The erring Contractor will not be allowed to bid the project if it is relet. Rejection of bids due to the Contractor's bid error may result in the application of sanctions by the Owner.

12. TIE BIDS

If the official total bid amount for 2 or more Bidders is equal and those bids are the lowest submitted, each tie Bidder will be given an opportunity to withdraw their bid. If 2 or more tie Bidders do not withdraw their bids, the low Bidder will be determined by a coin toss. If all tie Bidders request to withdraw their bids, no withdrawals will be allowed and the low Bidder will be determined by a coin toss. The Letting Official will preside over the proceedings for the coin toss.

Item 3L
Award and Execution of Contract

1. AWARD OF CONTRACT

The Owner will award, reject, or defer the Contract within 60 days after the opening of the bid. The Owner reserves the right to reject any or all bids and to waive technicalities in the best interest of the Owner.

Prices will remain firm for the duration of this contract. Prices shall be all inclusive. Any price not shown on this contract will not be honored for payment when submitted by vendor

1.1. **Award.** The Owner will award the Contract to the low Bidder as determined by Article 2.10., "Tabulating Bids." The Owner may award a Contract to the second lowest Bidder when the following requirements have all been met:

- The low Bidder withdraws its bid.
- The low Bidder fails to enter into a contract with the Owner after Award
- The second low Bidder's unit bid prices are reasonable.

1.2. **Rejection.** The Owner will reject the Contract if:

- Collusion may have existed among the Bidders. Collusion participants will not be allowed to bid future bids for the same Contract.
- The low bid is mathematically and materially unbalanced. The Bidder will not be allowed to bid future bids for the same Contract.
- The lowest bid is higher than the Owner's estimate and re-advertising for bids may result in a lower bid.
- Rejection of the Contract is in the best interest of the Owner.

1.3. **Deferral.** The Owner may defer the award or rejection of the Contract when deferral is in the best interest of the Owner.

2. RESCINDING OF AWARD

The Owner reserves the right to cancel the award of any Contract before Contract execution with no compensation due when the cancellation is in the best interest of the Owner. The Owner will return the bid guaranty to the Contractor.

3. DISADVANTAGED BUSINESS ENTERPRISE (DBE)/HISTORICALLY UNDERUTILIZED BUSINESS/SMALL BUSINESS ENTERPRISE (SBE)

Submit all DBE/HUB/SBE information in the time frame specified when required by the bid documents.

4. EXECUTION OF CONTRACT

Provide the following within 15 days after written notification of award of the Contract:

4.2. **Bonds.** Executed performance bond and payment bond in the full amount of the Contract price with powers of attorney. Provide bonds in accordance with Table 1. Furnish the payment and performance bonds as a guaranty for the protection of the claimants and the Owner for labor and materials and the faithful performance of the work.

Table 1
Bonding Requirements

Contract Amount	Required Bonds
Less than $25,000	None
$25,000 to $100,000	Payment
More than $100,000	Performance and Payment

4.3. **Insurance.** Submit Certificates of Insurance showing coverages in accordance with Contract requirements.

Insurances must cover the contracted work for the duration of the Contract and must remain in effect until final acceptance. Failure to obtain and maintain insurance for the contracted work may result in suspension of work or default of the Contract. If the insurance expires and coverage lapses for any reason, stop all work until the Owner and/or TxDOT receives an acceptable Certificate of Insurance (as applicable).

Contractor will be performing work on State right of way. Contractor must provide a fully executed copy of TxDOT's Form 1560 Certificate of Insurance to Owner verifying the existence of coverage in the amounts and types specified on the Certificate of Insurance for all persons and entities working on the State right of way. Owner will furnish the Form 1560 Certificate of Insurance provided by Contractor to TxDOT and maintain a copy in its records.

Provide the Owner with a Certificate of Insurance verifying the types and amounts of coverage shown in Table 2. The Certificate of Insurance must be in a form approved by the Owner. Any Certificate of Insurance provided must be available for public inspection.

Table 2
Insurance Requirements

Type of Insurance	Amount of Coverage
Commercial General Liability Insurance	Not Less Than: $600,000 each occurrence
Business Automobile Policy	Not Less Than: $600,000 combined single limit
Workers' Compensation	Not Less Than: Statutory
All Risk Builder's Risk Insurance (For building-facilities Contracts only)	100% of Contract Price

By signing the Contract, the Contractor certifies compliance with all applicable laws, rules, and regulations pertaining to workers' compensation insurance. This certification includes all subcontractors. Pay all deductibles stated in the policy. Subcontractors must meet the requirements either through their own coverage or through the Contractor's coverage.

The Workers' Compensation policy must include a waiver of subrogation endorsement in favor of the Owner.

Provide a substitute Surety on the Contract bonds in the original full Contract amount within 15 days of notification if the Surety is declared bankrupt or insolvent, the Surety's underwriting limitation drops below the Contract amount or the Surety's right to do business is terminated by the Owner. The substitute Surety must be authorized by the laws of the State and acceptable to the Owner. Work will be suspended until a substitute Surety is provided. Working day charges will be suspended for 15 days or until an acceptable Surety is provided, whichever is sooner.

The work performed under this section will not be measured or paid for directly but will be subsidiary to pertinent items.

4.3.1 **Fort Bend County Insurance Requirement.**

4.3.1.1 All respondents must submit, with bid, a current certificate of insurance indicating coverage in the amounts stated below. In lieu of submitting a certificate of insurance, respondents may submit, with bid, a notarized statement from an Insurance company, authorized to conduct business in the State of Texas, and acceptable to Fort Bend County, guaranteeing the issuance of an insurance policy, with the coverage stated below, to the contractor

named therein, if successful, upon award of this Contract. Failure to provide current insurance certificate or notarized statement will result in disqualification of submittal.

4.3.1.2 The certificates of insurance to be satisfactory to Fort Bend County, naming the Contractor and its employees as insured:

4.3.1.2.1 Workers Compensation in accordance with the laws of the State of Texas. Substitutes to genuine Workers' Compensation Insurance will not be allowed.

4.3.1.2.2 Employers' Liability insurance with limits of not less than $1,000,000 per injury by accident, $1,000,000 per injury by disease, and $1,000,000 per bodily injury by disease.

4.3.1.2.3 Commercial general liability insurance with a limit of not less than $1,000,000 each occurrence and $2,000,000 in the annual aggregate. Policy shall cover liability for bodily injury, personal injury, and property damage and products/completed operations arising our of the business operations of the policyholder.

4.3.1.2.4 Business Automobile Liability coverage applying to owned, non-owned and hired automobiles with limits not less than $1,000,000 each occurrence combined single limit for Bodily Injury and Property Damage combined.

4.3.1.2.5 Excess Liability Insurance that follows the form of the underlying primary liability insurance required by Sections 4.3.1.2.3 and 4.3.1.2.4 with limits of not less than $2,000,000 per occurrence and $2,000,000 in the aggregate.

4.3.1.3 County and the members of Commissioners Court shall be named as additional insured to all required coverage except for Workers' Compensation and Professional Liability (if required). All Liability policies written on behalf of Contractor shall contain a waiver of subrogation in favor of County and members of Commissioners Court.

4.3.1.4 If required coverage is written on a claims-made basis, Contractor warrants that any retroactive date applicable to coverage under the policy precedes the effective date of the Contract and that continuous coverage will be maintained or an extended discovery period will be exercised for a period of 2 years beginning from the time the work under this Contract is completed.

4.3.1.5 Contractor shall not commence any portion of the work under this Contract until it has obtained the insurance required herein and certificates of such insurance have been filed with and approved by Fort Bend County.

4.3.1.6 No cancellation of or changes to the certificates, or the policies, may be made without sixty (60) days prior, written notification to Fort Bend County.

4.3.1.7 Approval of the insurance by Fort Bend County shall not relieve or decrease the liability of the Contractor.

4.4. **Railroad Documents.** No railroad coordination is required for this project.

5. FAILURE TO ENTER CONTRACT

If the Contractor fails to comply with all of the requirements in Article 3.4., "Execution of Contract," the bid guaranty will become the property of the Owner, not as a penalty, but as liquidated damages. The Contractor forfeiting the bid guaranty will not be considered in future bids for the same work unless there has been a substantial change in design of the work.

6. APPROVAL AND EXECUTION OF CONTRACT

The Contract will be approved and signed under authority of the Owner.

7. RETURN OF BID GUARANTY

The bid guaranty of the three (3) lowers Bidders will be retained until after the Contract has been awarded and executed and after bonds have been made. The bid guaranty of each Bidder, except the three lowers Bidders will be returned within seventy-two (72) hours after the bids are opened.

8. BEGINNING OF WORK

Do not begin work until authorized in writing by the Owner.

When callout work is required, provide a method of contact available from 8 A.M. until 5 P.M. every work day and 24 hr. a day, 7 days a week for projects with emergency mobilization, unless otherwise shown on the plans. The time of notice will be the transmission time of the notice sent, provided orally, or provided in person by the Owner's representative.

Verify all quantities of materials shown on the plans before ordering.

For projects with alternate bid items, the work order will identify the base bid work and additive or deductive alternate work to be performed. The Owner makes no guarantee that the additive or deductive alternate work will be required.

The Contractor shall make himself, with his key personnel, available for a "Preconstruction Conference" to plan the upcoming project. One week prior to this conference, the Contractor shall furnish the Engineer an all-inclusive list of the bid items with the unit price broken down in to the costs for labor, material, and indirect costs including equipment; the sum of these costs must equal the unit bid price.

One week prior to the time of this meeting, the Contractor shall provide the Construction Manager with a copy of the following:

- Organization Chart - An organization chart listing the superintendents and all supervising personnel who will be employed in the work, describing by date and job their experience in the field of highway construction.
- Subcontracts - A list of the work to subcontracted describing the scope of work for each subcontractor and the name of the subcontractor.
- Vendors - A list of the items of material to be purchased and the name of the proposed vendor.
- Proposed Schedule – A baseline CPM Schedule prepared in accordance with Item 8.
- Construction Equipment - A list of major construction equipment indicating age, ownership, and leasing price for this contract. For each piece of equipment furnish an equipment schedule based this proposed construction schedule.
- Job Safety - Provide a narrative or outline describing the accident prevention program or safety program to be employed on the project as well as the individual responsible for the program implementation.

9. ASSIGNMENT OF CONTRACT

Do not assign, sell, transfer, or otherwise dispose of the Contract or any portion rights, title, or interest (including claims) without the approval of the Owner or designated representative. The Owner must deem any proposed assignment justified and legally acceptable before the assignment can take place.

10. EXCLUDED PARTIES

The Contractor certifies by signing the Contract that the Contractor will not enter into any subcontract with a subcontractor that is debarred or suspended by the Owner or by any state or federal agency.

Item 4L
Scope of Work

1. CONTRACT INTENT

The intent of the Contract is to describe the completed work to be performed. Furnish materials, supplies, tools, equipment, labor, and other incidentals necessary for the proper prosecution and completion of the work in accordance with Contract documents.

2. PRECONSTRUCTION CONFERENCE

Before starting work, schedule and attend a preconstruction conference with the Owner. Failure to schedule and attend a preconstruction conference is not grounds for delaying the beginning of working day charges.

Work with the Owner to resolve all issues during the course of the Contract. Refer to Article 4.7., "Dispute or Claims Procedure," for all unresolved issues.

3. PARTNERING

The intent of this Article is to promote an environment of trust, mutual respect, integrity, and fair-dealing between the Owner and the Contractor.

Informal partnering does not make use of a facilitator, while formal partnering uses the services of a facilitator (internal or external).

3.1. **Procedures for Partnering Meetings and Format.** Informal partnering is required, unless formal partnering is mutually agreed to instead of the informal partnering.

3.2. **Facilitators.** The facilitator is to act as a neutral party seeking to initiate cooperative working relationships. This individual must have the technical knowledge and ability to lead and guide discussions. Choose either an internal or external facilitator. The facilitator must be acceptable to the Engineer.

3.2.1. **Internal Facilitators.** An Owner or Contractor internal (staff) facilitator may be selected as the facilitator at no additional cost to either party.

3.2.2. **External Facilitators.** A private firm or individual that is independent of the Contractor and the Owner may be selected as the facilitator. Submit the facilitator's name and estimated fees for approval before contracting with the facilitator.

3.3. **Meetings and Arrangements.** Coordinate with the Engineer for meeting dates and times, locations including third party facilities, and other needs and appurtenances, including, but not limited to, audio or visual equipment. Make all meeting arrangements for formal partnering. Use Owner facilities or facilities in the vicinity of the project if available. Submit the estimated meeting costs for approval before finalizing arrangements.

Coordinate facilitator discussions before the partnering meeting to allow the facilitator time to prepare an appropriate agenda. Prepare a list of attendees with job titles and include critical Contractor, subcontractor, and supplier staff in the list. Provide the facilitator the list of attendees and invite the attendees listed.

The Owner will invite and provide a list of attendees that includes, but is not limited to, Owner, TxDOT, other local governments, law enforcement, railroad, and utility representatives.

Participate in additional partnering meetings as mutually agreed.

3.4. **Payment.** Expenses for labor, Contractor equipment, or overhead will not be allowed. Markups as prescribed in Article 9.7., "Payment for Extra Work and Force Account Method," will not be allowed.

Informal partnering will be conducted with each party responsible for their own costs.

For formal partnering using internal facilitators, the Contractor will be responsible for arrangements and for expenses incurred by its internal facilitator, including, but not limited to, meals, travel, and lodging. Owner facilitators, if available, may be used at no additional cost.

For formal partnering using external facilitators, submit an invoice to the Engineer for reimbursement. The Owner will reimburse the Contractor for half of the eligible expenses as approved. For external facilitators not approved by the Owner but used at the Contractor's option, the Contractor will be responsible for all costs of the external facilitator.

For meeting facilities and appurtenances, submit an invoice to the Engineer for reimbursement. The Owner will reimburse the Contractor for half of the eligible expenses as approved.

4. CHANGES IN THE WORK

The Engineer reserves the right to make changes in the work including addition, reduction, or elimination of quantities and alterations needed to complete the Contract. Perform the work as altered. These changes will not invalidate the Contract nor release the Surety. The Contractor is responsible for notifying the sureties of any changes to the Contract.

If the changes in quantities or the alterations do not significantly change the character of the work under the Contract, the altered work will be paid for at the Contract unit price. If the changes in quantities or the alterations significantly change the character of the work, the Contract will be amended by a change order. If no unit prices exist, this will be considered extra work and the Contract will be amended by a change order. Provide cost justification as requested, in an acceptable format. Payment will not be made for anticipated profits on work that is eliminated.

Agree on the scope of work and the basis of payment for the change order before beginning the work. If there is no agreement, the Engineer may order the work to proceed under Article 9.7., "Payment for Extra Work and Force Account Method," or by making an interim adjustment to the Contract. In the case of an adjustment, the Engineer will consider modifying the compensation after the work is performed.

A significant change in the character of the work occurs when:

- the character of the work for any item as altered differs materially in kind or nature from that in the Contract or
- a major item of work varies by more or less than 25% from the original Contract quantity.

When the quantity of work to be done under any major item of the Contract is more than 125% of the original quantity stated in the Contract, then either party to the Contract may request an adjustment to the unit price on the portion of the work that is above 125%.

When the quantity of work to be done under any major item of the Contract is less than 75% of the original quantity stated in the Contract, then either party to the Contract may request an adjustment to the unit price. When mutually agreed, the unit price may be adjusted by multiplying the Contract unit price by the factor in Table 1. If an adjusted unit price cannot be agreed upon, the Engineer may determine the unit price by multiplying the Contract unit price by the factor in Table 1.

Table 1
Quantity-Based Price Adjustment Factors

% of Original Quantity	Factor
≥ 50 and < 75	1.05
≥ 25 and < 50	1.15
< 25	1.25

If the changes require additional working days to complete the Contract, Contract working days will be adjusted in accordance with Item 8, "Prosecution and Progress."

5. DIFFERING SITE CONDITIONS

During the progress of the work, differing subsurface or latent physical conditions may be encountered at the site. The 2 types of differing site conditions are defined as:

- those that differ materially from those indicated in the Contract and
- unknown physical conditions of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the Contract.

Notify the Engineer in writing when differing site conditions are encountered. The Engineer will notify the Contractor when the Owner discovers differing site conditions. Unless directed otherwise, do not work on the affected items and leave the site undisturbed. The Engineer will investigate the conditions and determine whether differing site conditions exist. If the differing site conditions cause an increase or decrease in the cost or number of working days specified for the performance of the Contract, the Engineer will make adjustments, excluding the loss of anticipated profits, in accordance with the Contract. Additional compensation will be made only if the required written notice has been provided.

6. REQUESTS FOR ADDITIONAL COMPENSATION

Notify the Engineer in writing of any intent to request additional compensation once there is knowledge of the basis for the request. An assessment of damages is not required to be part of this notice but is desirable. The intent of the written notice requirement is to provide the Owner an opportunity to evaluate the request and to keep an accurate account of the actual costs that may arise. Minimize impacts and costs.

If written notice is not given, the Contractor waives the right to additional compensation unless the circumstances could have reasonably prevented the Contractor from knowing the cost impact before performing the work. Notice of the request and the documentation of the costs will not be construed as proof or substantiation of the validity of the request. Submit the request in enough detail to enable the Owner to determine the basis for entitlement, adjustment in the number of working days specified in the Contract, and compensation.

The Owner will not consider fees and interest on requests for additional compensation. Fees include, but are not limited to: preparation, attorney, printing, shipping, and various other fees.

Damages occur when impacts that are the responsibility of the Owner result in additional costs to the Contractor that could not have been reasonably anticipated at the time of letting. Costs of performing additional work are not considered damages. For Contractor damages, the intent is to reimburse the Contractor for actual expenses arising out of a compensable impact. No profit or markups, other than labor burden, will be allowed. For damages, labor burden will be reimbursed at 35% unless the Contractor can justify higher actual cost. Justification for a higher percentage must be in accordance with the methodology provided by the Owner , submitted separately for project overhead labor and direct labor, and determined and submitted by a Certified Public Accountant (CPA). Submit CPA-prepared labor burden rates directly to the Owner.

If the Contractor requests compensation for delay damages and the delay is determined to be compensable, then standby equipment costs and project overhead compensation will be based on the duration of the compensable delay and will be limited as follows:

6.1. **Standby Equipment Costs.** Payment will be made in accordance with Section 9.7.1.4.3., "Standby Equipment Costs."

6.2. **Project Overhead.** Project overhead is defined as the administrative and supervisory expenses incurred at the work locations. When delay to project completion occurs, reimbursement for project overhead for the Contractor will be made using the following options:

- reimbursed at 6% (computed as daily cost by dividing 6% of the original Contract amount by the number of original Contract work days), or
- actual documented costs for the impacted period.

Project overhead for delays impacting subcontractors will be determined from actual documented costs submitted by the Contractor.

Time extensions and suspensions alone will not be justification for reimbursement for project overhead.

6.3. **Home Office Overhead.** The Owner will not compensate the Contractor for home office overhead.

7. DISPUTE OR CLAIMS PROCEDURE

The dispute resolution policy promotes a cooperative attitude between the Engineer and Contractor. Emphasis is placed on resolving issues while they are still current, at the project office, and in an informal manner. Open sharing of information is encouraged by all parties involved so the information provided completely and accurately reflects the issues and facts. If information is not shared, decisions may be limited to relying on the documentation that is available for review.

The Owners's goal is to have a dispute settled by the Engineer before elevating it as a claim.

If a dispute cannot be resolved, initiate the Contract claim procedure by filing a Contract claim after the completion of the Contract or when required for orderly performance of the Contract. Submit the claim to the Owner in accordance with state law.

For a claim resulting from enforcement of a warranty period, file the claim no later than one year after expiration of the warranty period. For all other claims, file the claim no later than the date the Owner issues notice to the Contractor that they are in default, the date the Owner terminates the Contract, or one year after the date of final acceptance of the Contract. It is the Contractor's responsibility to submit requests in a timely manner.

Item 5L
Control of the Work

1. AUTHORITY OF ENGINEER

The Engineer has the authority to observe, test, inspect, approve, and accept the work on behalf of the Owner. The Engineer decides all questions about the quality and acceptability of materials, work performed, work progress, Contract interpretations, and acceptable Contract fulfillment. The Engineer has the authority to enforce and make effective these decisions.

The Engineer acts as a referee in all questions arising under the terms of the Contract. The Engineer's decisions will be final and binding.

2. PLANS AND WORKING DRAWINGS

When required, provide working drawings to supplement the plans with all necessary details not included on the Contract plans. Prepare and furnish working drawings in a timely manner and obtain approval, if required, before the beginning of the associated work. For all working drawing submittal requirements, the Engineer may allow electronic and other alternative submission procedures. Have a licensed professional engineer sign, seal, and date the working drawings as indicated in Table 1.

Prepare working drawings using United States standard measures in the English language. The routing of submittals for review and approval will be established at the preconstruction conference. The Contractor is responsible for the accuracy, coordination, and conformity of the various components and details of the working drawings. Owner approval of the Contractor's working drawings will not relieve the Contractor of any responsibility under the Contract. The work performed under this article will not be measured or paid for directly but will be subsidiary to pertinent items.

Table 1
Signature and Approval Requirements for Working Drawings

Working Drawings For		Requires Licensed Professional Engineer's Signature, Seal, and Date	Requires Owner Approval
1. Alternate or optional designs submitted by Contractor		Yes	Yes
2. Supplementary shop and fabrication drawings for structural Items		No unless required on the plans	See applicable Item
3. Contractor-proposed temporary facilities that affect the public safety, not included on the plans		Yes	Yes
4. Form and falsework details	Bridges, retaining walls, and other major structures	Yes unless otherwise shown on the plans	No[1]
	Minor structures	No unless otherwise shown on the plans	No
5. Erection drawings		Yes	No[1,2]
6. Contractor-proposed major modifications to traffic control plan		Yes	Yes

1. The Engineer may require that the Contractor have a licensed professional engineer certify that the temporary works are constructed according to the sealed drawings.

2. Approval is required for items spanning over live traffic or where safety of the traveling public is affected, in the opinion of the Engineer.

3. CONFORMITY WITH PLANS, SPECIFICATIONS, AND SPECIAL PROVISIONS

Furnish materials and perform work in reasonably close conformity with the lines, grades, cross-sections, dimensions, details, gradations, physical and chemical characteristics of materials, and other requirements shown in the Contract (including additional plans for non-site-specific work). Reasonably close conformity limits will be as defined in the respective items of the Contract or, if not defined, as determined by the Engineer. Obtain approval before deviating from the plans and approved working drawings. Do not perform work beyond the lines and grades shown on the plans or any extra work without the Engineer's approval. Work performed beyond the lines and grades shown on the plans or any extra work performed without approval is considered unauthorized and excluded from pay consideration. The Owner will not pay for material rejected due to improper fabrication, excess quantity, or any other reasons within the Contractor's control.

3.1. **Acceptance of Defective or Unauthorized Work.** When work fails to meet Contract requirements, but is adequate to serve the design purpose, the Engineer will decide the extent to which the work will be accepted and remain in place. The Engineer will document the basis of acceptance by a letter and may adjust the Contract price.

3.2. **Correction of Defective or Unauthorized Work.** When work fails to meet Contract requirements and is inadequate to serve the design purpose it will be considered defective. Correct, or remove and replace, the work at the Contractor's expense, as directed.

The Engineer has the authority to correct or to remove and replace defective or unauthorized work. The cost may be deducted from any money due or to become due to the Contractor.

4. COORDINATION OF PLANS, SPECIFICATIONS, AND SPECIAL PROVISIONS

The specifications, accompanying plans (including additional plans for non-site-specific work), special provisions, change orders, and supplemental agreements are intended to work together and be interpreted as a whole.

Numerical dimensions govern over scaled dimensions. Special provisions govern over plans (including general notes), which govern over standard specifications and special specifications. Job-specific plan sheets govern over standard plan sheets.

However, in the case of conflict between plans (including general notes) and specifications regarding responsibilities for hazardous materials and traffic control in Items 1L through 9L and Item 502, "Barricades, Signs, and Traffic Handling," special provisions govern over standard specifications and special specifications, which govern over the plans.

Notify the Engineer promptly of any omissions, errors, or discrepancies discovered so that necessary corrections and interpretations can be made. Failure to promptly notify the Engineer will constitute a waiver of all claims for misunderstandings or ambiguities that result from the errors, omissions, or discrepancies discovered.

5. COOPERATION OF CONTRACTOR

Cooperate with the Engineer. Respond promptly to instructions from the Engineer. Provide all information necessary to administer the Contract.

Designate in writing a competent, English-speaking Superintendent employed by the Contractor. The Superintendent must be experienced with the work being performed and capable of reading and understanding the Contract. Ensure the Superintendent is available at all times and able to receive instructions from the Engineer or authorized Owner representatives and to act for the Contractor. The Engineer may suspend work without suspending working day charges if a Superintendent is not available or does not meet the above criteria.

At the written request of the Engineer, immediately remove from the project any employee or representative of the Contractor or a subcontractor who, in the opinion of the Engineer, does not perform work in a proper and skillful

manner or who is disrespectful, intemperate, disorderly, uncooperative, or otherwise objectionable. Do not reinstate these individuals without the written consent of the Engineer.

Furnish suitable machinery, equipment, and construction forces for the proper prosecution of the work. Provide adequate lighting to address quality requirements and inspection of nighttime work.

The Engineer may suspend the work without suspending working day charges until the Contractor complies with this requirement. All work associated with fulfilling this requirement is subsidiary to the various items of the Contract and no direct compensation will be made.

6. COOPERATING WITH UTILITIES

Use established safety practices when working near utilities. Consult with the appropriate utilities before beginning work. Notify the Engineer immediately of utility conflicts. The Engineer will decide whether to adjust utilities or adjust the work to eliminate or lessen the conflict. Unless otherwise shown on the plans, the Engineer will make necessary arrangements with the utility owner when utility adjustments are required.

Use work procedures that protect utilities or appurtenances that remain in place during construction. Cooperate with utilities to remove and rearrange utilities to avoid service interruption or duplicate work by the utilities. Allow utilities access to the right of way.

Immediately notify the appropriate utility of service interruptions resulting from damage due to construction activities. Cooperate with utilities until service is restored. Provide the Engineer twenty-four (24) hours' notice before resuming construction activities. Where any gas, water, or other utility installations will be affected by the work to be carried on by the Contractor he shall see that ample notice is given to the owners, operators, or persons in charge to the end that the prosecution of the work under his Contract shall not be delayed. Maintain access to active fire hydrants at all times unless approved by the Engineer.

7. COOPERATION BETWEEN CONTRACTORS

Cooperate and coordinate with other Contractors working within the limits or adjacent to the limits.

8. COOPERATION WITH RAILROADS

No railroad coordination is required for this project.

9. CONSTRUCTION SURVEYING

Use Method A unless otherwise specified in the Contract. Upon request, the Engineer will allow the Contractor to copy available earthwork cross-sections, computer printouts or data files, and other information necessary to establish and control work. Maintain the integrity of control points. Preserve all control points, stakes, marks, and right of way markers. Assume cost and responsibility of replacing disturbed control points, stakes, marks, and right of way markers damaged by the Contractor's or its subcontractor operations. If the Owner repairs disturbed control points, stakes, marks, or right of way markers, the cost of repair may be deducted from money due or to become due to the Contractor. Replace right of way markers under the direction of a RPLS. This work will be subsidiary to pertinent items.

The Engineer reserves the right to make measurements and surveys to determine the accuracy of the work and determine pay quantities. The Engineer's measurements and surveys do not relieve the Contractor's responsibility for accuracy of work. Allow the Engineer adequate time to verify the surveying.

9.1. **Method A.** The Engineer will set control points for establishing lines, slopes, grades, and centerlines and for providing both vertical and horizontal control. At a minimum, provide a controlling pair of monument points at both the beginning and end of construction project for projects less than 2 miles in length. For projects greater than 2

miles in length, monuments will be set in pairs of 2 at a minimum of 2 miles based on the overall length of the project. Use these control points as reference to perform the work.

Furnish materials, equipment, and qualified workforce necessary for the construction survey work. Place construction points, stakes, and marks at intervals sufficient to control work to established tolerances. Place construction stakes at intervals of no more than 100 ft., or as directed. Place stakes and marks so as not to interfere with normal maintenance operations.

9.2. **Method B.** The Engineer will set adequate control points, stakes, and marks to establish lines, slopes, grades, and centerlines. Furnish additional work, stakes, materials, and templates necessary for marking and maintaining points and lines.

9.3. **Method C.** Set adequate control points, stakes, and marks to establish lines, slopes, grades, and centerlines.

10. INSPECTION

Inspectors are authorized representatives of the Engineer. Inspectors are authorized to examine all work performed and materials furnished, including preparation, fabrication, and material manufacture. Inspectors inform the Contractor of failures to meet Contract requirements. Inspectors may reject work or materials and may suspend work until any issues can be referred to and decided by the Engineer. Inspectors cannot alter, add, or waive Contract provisions, issue instructions contrary to the Contract, act as foremen for the Contractor, or interfere with the management of the work. Inspection, or lack of inspection, will not relieve the Contractor from obligation to provide materials or perform the work in accordance with the Contract.

Provide safe access to all parts of the work and provide information and assistance to the Engineer to allow a complete and detailed inspection. Give the Engineer sufficient notice to inspect the work. Work performed without suitable inspection, as determined by the Engineer, may be ordered removed and replaced at Contractor's expense. Remove or uncover portions of finished work as directed. Once inspected, restore work to Contract requirements. If the uncovered work is acceptable, the costs to uncover, remove, and replace or make good the parts removed will be paid for in accordance with Article 4.4., "Changes in the Work." If the work is unacceptable, assume all costs associated with repair or replacement, including the costs to uncover, remove, and replace or make good the parts removed.

When a government entity, utility, railroad company, or other entity accepts or pays a portion of the Contract, that organization's representatives may inspect the work but cannot direct the Contractor. The right of inspection does not make that entity a party to the Contract and does not interfere with the rights of the parties to the Contract.

11. FINAL CLEANUP

Upon completion of the work, remove litter, debris, objectionable material, temporary structures, excess materials, and equipment from the work locations. Clean and restore property damaged by the Contractor's operations during the prosecution of the work. Leave the work locations in a neat and presentable condition. This work will not be paid for directly but will be considered subsidiary to items of the Contract.

Remove from the right of way cofferdams, construction buildings, material and fabrication plants, temporary structures, excess materials, and debris resulting from construction. Where work is in a stream, remove debris to the ground line of the bed of the stream. Leave stream channels and rights of way in a neat and presentable condition. Clean structures to the flow line or the elevation of the outfall channel, whichever is higher. Dispose of all excess material in accordance with federal, state, and local regulations.

12. FINAL ACCEPTANCE

12.1 Final acceptance is made when all work is complete and the Engineer, in writing, accepts all work for the work locations in the Contract. Final acceptance relieves the Contractor from further Contract responsibilities.

12.1.1. **Work Completed.** Work completed must include work for vegetative establishment and maintenance, test, and performance periods and work to meet the requirements of Article 5.11., "Final Cleanup."

12.1.2. **Final Inspection.** After all work is complete, the Contractor will request a final inspection by the Engineer authorized to accept the work.

The final inspection will be made as soon as possible, and not later than 10 calendar days after the request. No working day charges will be made between the date of request and final inspection.

After the final inspection, if the work is satisfactory, the Engineer will notify the Contractor in writing of the final acceptance of the work. If the final inspection finds any work to be unsatisfactory, the Engineer will identify in writing all deficiencies in the work requiring correction. Correct the deficiencies identified. Working day charges will resume if these deficiencies are not corrected within 7 calendar days, unless otherwise approved. Upon correction, the Engineer will make an inspection to verify that all deficiencies were corrected satisfactorily. The Engineer will provide written notice of the final acceptance.

12.1.3. **Final Measurement.** Final measurements and pay quantity adjustments may be made after final acceptance.

12.1.4. **Removal of Traffic Control Devices.** Remove construction traffic control devices and advance warning signs upon final acceptance or as directed.

Item 6L
Control of Materials

1. SOURCE CONTROL

Use only materials that meet Contract requirements. Unless otherwise specified or approved, use new materials for the work. Secure the Engineer's approval of the proposed source of materials to be used before their delivery. Materials can be approved at a supply source or staging area but may be reinspected in accordance with Article 6.4., "Sampling, Testing, and Inspection."

1.1. **Buy America.** Comply with the latest provisions of Buy America as listed at 23 CFR 635.410. Use steel or iron materials manufactured in the United States except when:

- the cost of materials, including delivery, does not exceed 0.1% of the total Contract cost or $2,500, whichever is greater;
- the Contract contains a replacement alternate item for a foreign source steel or iron product and the Contract is awarded based on the replacement alternate item; or
- the materials are temporarily installed.

Provide a notarized original of the TxDOT FORM D-9-USA-1 (or equivalent) with the proper attachments for verification of compliance.

Manufacturing is any process that modifies the chemical content, physical shape or size, or final finish of a product. Manufacturing begins with initial melting and mixing and continues through fabrication (cutting, drilling, welding, bending, etc.) and coating (paint, galvanizing, epoxy, etc.).

1.2. **Convict Produced Materials.** Materials produced by convict labor may only be incorporated in the work if such materials have been:

- produced by convicts who are on parole, supervised release, or probation from prison; or
- produced in a qualified prison facility.

A "qualified prison facility" means any prison facility in which convicts, during the 12-month period ending July 1, 1987, produced materials for use in federal-aid highway construction projects.

2. MATERIAL QUALITY

Correct or remove materials that fail to meet Contract requirements or that do not produce satisfactory results. Reimburse the Owner for cost incurred if additional sampling and testing is required by a change of source.

Materials not meeting Contract requirements will be rejected, unless the Engineer approves corrective actions. Upon rejection, immediately remove and replace rejected materials.

If the Contractor does not comply with this article, the Owner may have defective material removed and replaced. The cost of testing, removal, and replacement will be deducted from the estimate.

3. MANUFACTURER WARRANTIES

Transfer to the Owner warranties and guarantees required by the Contract or received as part of normal trade practice.

4. SAMPLING, TESTING, AND INSPECTION

Incorporate into the work only material that has been inspected, tested, and accepted by the Engineer. Remove, at the Contractor's expense, materials from the work locations that are used without prior testing and approval or written permission.

Unless otherwise mutually agreed, the material requirements and standard test methods in effect at the time the proposed Contract is advertised govern. Unless otherwise noted, the Engineer will perform testing at Owner's expense. In addition to facilities and equipment required by the Contract, furnish facilities and calibrated equipment required for tests to control the manufacture of construction items. If requested, provide a complete written statement of the origin, composition, and manufacture of materials.

All materials used are subject to inspection or testing at any time during preparation or use. Material which has been tested and approved at a supply source or staging area may be reinspected or tested before or during incorporation into the work, and rejected if it does not meet Contract requirements. Copies of test results are to be made available upon request. Do not use material that, after approval, becomes unfit for use.

Unless otherwise noted in the Contract, all testing must be performed within the United States and witnessed by the Engineer. If materials or processes require testing outside the contiguous 48 United States, reimburse the Owner for inspection expenses.

5. PLANT INSPECTION AND TESTING

The Engineer may, but is not obligated to, inspect materials at the acquisition or manufacturing source. Material samples will be obtained and tested for compliance with quality requirements.

If inspection is at the plant, meet the following conditions unless otherwise specified:

- Cooperate fully and assist the Engineer during the inspection.
- Ensure the Engineer has full access to all parts of the plant used to manufacture or produce materials.
- In accordance with pertinent items and the Contract, provide a facility at the plant for use by the Engineer as an office or laboratory.
- Provide and maintain adequate safety measures and restroom facilities.
- Furnish and calibrate scales, measuring devices, and other necessary equipment.

The Engineer may provide inspection for periods other than daylight hours if:

- continuous production of materials for Owner use is necessary due to the production volume being handled at the plant, and
- the lighting is adequate to allow satisfactory inspection.

6. STORAGE OF MATERIALS

Store and handle materials to preserve their quality and fitness for the work. Store materials so that they can be easily inspected and retested. Place materials under cover, on wooden platforms, or on other hard, clean surfaces as necessary or when directed.

Obtain approval to store materials on the right of way. Storage space off the right of way is at the Contractor's expense.

7. OWNER-FURNISHED MATERIAL

The Owner will supply materials as shown in the Contract documents. The cost of handling and placing materials supplied by the Owner will not be paid for directly but is subsidiary to the item in which they are used. Assume responsibility for materials upon receipt.

8. USE OF MATERIALS FOUND ON THE RIGHT OF WAY

Material found in the excavation areas and meeting the Owner's specifications may be used in the work. This material will be paid for at the Contract bid price for excavation and under the item for which the material is used.

Do not excavate or remove any material from within the right of way that is not within the limits of the excavation without written permission. If excavation is allowed within a right of way project-specific location (PSL), replace the removed material with suitable material at no cost to the Owner as directed.

9. RECYCLED MATERIALS

The Owner will not allow hazardous wastes, as defined in 30 TAC 335, proposed for recycling to be used on the project. Use nonhazardous recyclable materials (NRMs) only if the specification for the item does not disallow or restrict use. Determine if NRMs are regulated under 30 TAC 312, 330, 332, 334, or 335, and comply with all general prohibitions and requirements. Use NRMs in accordance with DMS-11000, "Evaluating and Using Nonhazardous Recyclable Materials Guidelines," and furnish all documentation required by that specification.

10. HAZARDOUS MATERIALS

Use materials that are free of hazardous materials as defined in Item 1L, "Abbreviations and Definitions."

Notify the Engineer immediately when a visual observation or odor indicates that materials in required material sources or on sites owned or controlled by the owner may contain hazardous materials. Except when the contract includes bid items for the contractor to remove hazardous materials, the Engineer is responsible for testing and removing or disposing of hazardous materials not introduced by the Contractor on sites owned or controlled by the Owner as indicated below.

The plans will indicate locations where paint on steel is suspected to contain hazardous materials and where regulated asbestos containing materials have been found. The Engineer may suspend work wholly or in part during the testing, removal, or disposition of hazardous materials on sites owned or controlled by the Owner, except in the case of when the contract includes removing and disposing of hazardous materials.

When a visual observation or odor indicates that materials delivered to the work locations by the Contractor may contain hazardous materials, have an approved commercial laboratory test the materials for contamination. Remove, remediate, and dispose of any of these materials found to be contaminated. Testing, removal, and disposition of hazardous materials introduced onto the work locations by the Contractor will be at the Contractor's expense. Working day charges will not be suspended and extensions of working days will not be granted for activities related to handling hazardous material delivered by the Contractor.

10.1. **Painted Steel Requirements.** Paint containing hazardous materials will be removed as shown on the plans.

10.1.1. **Paint Removed by Third Party.** The Owner may provide a third party to remove paint containing hazardous materials where paint must be removed to perform work or to allow dismantling of the steel.

10.1.2. **Paint Removed by the Contractor.** This work may only be performed by a firm or company with one of the following certifications:

- SSPC-QP2 certification for lead painting operations, or
- Certified Lead Firm by the Texas Department of State Health Services.

Maintain certification for the duration of the work. Provide copies of audits or certification if requested.

Comply with worker and public safety regulations, including, but not limited to, OSHA 29 CFR Parts 1910.1025, 1926.62, and 1926.63. Monitor permissible exposure limits in accordance with OSHA requirements.

Remove paint containing hazardous materials from designated areas shown on the plans or as directed. Comply with access limitations shown on the plans.

Provide power hand tools, equipped with high-efficiency particulate air filter vacuums to mechanically remove paint.

Contain, collect, store, transport, and dispose of all waste generated by cleaning operation in accordance with local, state, and federal requirements including 40 CFR 302. Properly characterize and dispose of all wastes. Manage any hazardous wastes in accordance with regulatory requirements and dispose in a facility authorized to accept such wastes. Provide copies of disposal manifests.

The work performed, materials furnished, equipment, labor, tools, and incidentals will be paid for in accordance with Item 446, "Field Cleaning and Painting Steel."

10.2. **Removal and Disposal of Painted Steel.** Painted steel will be disposed of at a steel recycling or smelting facility unless otherwise shown on the plans. If the paint contains hazardous materials, maintain and make available to the Engineer invoices and other records obtained from the facility showing the received weight of the steel and the facility name.

For steel that is dismantled by unbolting, no paint stripping will be required. Use care to not damage existing paint. When dismantling is performed using flame or saw-cutting methods to remove steel elements coated with paint containing hazardous materials, the plans will show stripping locations.

The work provided, materials furnished, equipment, labor, tools, and incidentals will be paid for in accordance with Item 496, "Removing Structures," and Item 497, "Sale of Salvagable Material."

10.3. **Asbestos Requirements.** The plans will indicate locations or elements where asbestos containing materials (ACM) have been found. At locations where previously unknown ACM has been found, the Owner will arrange for abatement by a third party. For work at these locations, notify the Engineer of proposed dates of demolition or removal of structural elements with ACM at least 60 days before work is to begin to allow the Owner enough time to abate the asbestos.

10.4. **Work Performed by a Third Party.** When the work for removal of paint or asbestos abatement is to be provided by a third party, coordinate and cooperate with the third party and the Owner. Continue other work detailed on the plans not directly involved in the paint removal or asbestos abatement work. Provide notice to the Owner regarding the progress of the work to allow the Owner enough time to schedule the third party work.

11. SURPLUS MATERIALS

Take ownership of surplus materials unless otherwise shown on the plans or as directed by the Engineer. Remove and dispose of materials in accordance with federal, state, and local regulations. If requested, provide an appropriate level of documentation to verify proper disposal. When materials are disposed of on private property, provide written authorization from the property owner for the use of the property for this purpose upon request.

Item 7L
Legal Relations and Responsibilities

1. SAFETY

1.1. **Point of Contact.** Designate a Contractor Safety Point of Contact (CSPOC). The Owner will assign an Owner employee for their point of contact designated as Owner's Safety Point of Contact OSPOC. The CSPOC will ensure that the Contractor's and Subcontractor's employees' use the appropriate personal protection equipment (hard hats, safety vests, protective toe footwear, etc.).

The CSPOC will ensure that crew leaders and foremen (including subcontractors) have attended the required training.

1.2. **Safety Preconstruction Meeting.** In cooperation with the Engineer, schedule and attend a safety preconstruction meeting (may be a part of the preconstruction conference in Article 4.2., "Preconstruction Conference." Attendees for this safety preconstruction meeting will be:

- the Contractor,
- subcontractors,
- Owner,
- local law enforcement, and
- other personnel that play an active role on the project.

1.3. **Public Safety and Convenience.** Ensure the safety and convenience of the public and property as provided in the Contract and as directed by the Engineer. Keep existing roadways open to traffic or construct and maintain detours and temporary structures for safe public travel. Manage construction to minimize disruption to traffic. Maintain the roadway in a good and passable condition, including proper drainage and provide for ingress and egress to adjacent property.

Store all equipment not in use in a manner and at locations that will not interfere with the safe passage of traffic.

Provide qualified flaggers in accordance with Item 502.2.2., "Flaggers," for the safety and convenience of the traveling public and workers, as directed.

If the Engineer determines that any of the requirements of this article have not been met, the Engineer may take any necessary corrective action. This will not change the legal responsibilities set forth in the Contract. The cost to the Owner for this work will be deducted from any money due or to become due to the Contractor.

1.4. **Use of Blue Warning Lights.** Texas Transportation Code 547.105 authorizes the use of warning lights to promote safety and provides an effective means of gaining the travelling public's attention as they drive in areas where construction crews are present. In order to influence the public to move over when high risk construction activities are taking place, minimize the utilization of blue warning lights. These lights must be used only while performing work on or near the travel lanes or shoulder where the travelling public encounters construction crews that are not protected by a standard work zone set up such as a lane closure, shoulder closure, or one-way traffic control. Refrain from leaving the warning lights engaged while travelling from one work location to another or while parked on the right of way away from the pavement or a work zone.

1.5. **Barricades, Warning and Detour Signs, and Traffic Handling.** Provide, install, move, replace, maintain, clean, and remove all traffic control devices in accordance with the traffic control devices specifications and as shown on the plans and as directed. If details are not shown on the plans, provide devices and work in accordance with the

TMUTCD and as directed by the Engineer. When authorized or directed by the Engineer, provide additional signs or traffic control devices not required by the plans.

If an unexpected situation arises that causes the Contractor to believe that the traffic control should be changed, make all reasonable efforts to promptly contact the Engineer. Take prudent actions until the Engineer can be contacted.

The Engineer may authorize or direct in writing the removal or relocation of project limit advance warning signs. When project limit advance warning signs are removed before final acceptance, traffic control in accordance with the TMUTCD may be used for minor operations as approved. Removal or relocation of project limit advance warning signs does not imply final acceptance.

2. LAWS TO BE OBSERVED

Comply with all federal, state, and local laws, ordinances, and regulations that affect the performance of the work. Indemnify and save harmless the Owner and its representatives against any claim arising from violation by the Contractor of any law, ordinance, or regulation.

This Contract is between the Owner and the Contractor only. No person or entity may claim third-party beneficiary status under this Contract or any of its provisions, nor may any non-party sue for personal injuries or property damage under this Contract.

The operation of heavy construction equipment over adjacent streets shall be avoided to the greatest extent practicable. If such operation is unavoidable, care shall be taken to prevent the creation of any nuisance, including, but not limited to, the tracking of dirt or the blowing of dust from uncovered loads.

Any damage to existing facilities due to contracting operator should be promptly repaired by the contractor to the owner's satisfaction.

If sites, buildings, and locations of historical archaeological, educational, or scientific interest discovered after construction operations have begun, operation in that particular area shall cease immediately and the sites, buildings, or locations shall be investigated and evaluated by FORT BEND COUNTY. An extension of time will be granted, if necessary, for delays caused by these investigations and evaluations. It is specifically understood, however, that if the Contractor is delayed by virtue of an investigation and evaluation that this delay will not be considered as a basis for claim for damages or additional compensation of any kind by the Contractor and that an extension of time will be sole remedy of Contractor for such delay.

3. PERMITS, LICENSES, AND TAXES

Procure all permits and licenses; pay all charges, fees, and taxes; and give all notices necessary and incidental to the due and lawful prosecution of work, except for permits provided by the Owner and as specified in Article 7.6., "Preservation of Cultural and Natural Resources and the Environment."

4. PATENTED DEVICES, MATERIAL, AND PROCESSES

Indemnify and save harmless the Owner from any claims for infringement from the Contractor's use of any patented design, device, material, process, trademark, or copyright selected by the Contractor and used in connection with the work. Indemnify and save harmless the Owner against any costs, expenses, or damages that it may be obliged to pay, by reason of this infringement, at any time during the prosecution or after the completion of the work.

5. PERSONAL LIABILITY OF PUBLIC OFFICIALS

In carrying out the provisions of the Contract Documents or in exercising any power or authority granted there under, there shall be no liability for the Engineer, the Consultant, their respective officers, employees, subcontractors or authorized assistants, either personally or otherwise, as they are agents and representatives of Fort Bend County, and there shall be no liability, either personal or otherwise, for any member of the Commissioners' Court, of Fort Bend County or any of Fort Bend County's officers, employees, or consultants. Neither the contract Documents nor Authority's or Contractor course of conduct shall be deemed to create the relationship of principal and agent by and between the County' and the Contractor

6. PRESERVATION OF CULTURAL AND NATURAL RESOURCES AND THE ENVIRONMENT

If the Contractor initiates changes to the Contract and the Owner approves the changes, the Contractor is responsible for obtaining clearances and coordinating with the appropriate regulatory agencies.

6.1. **Cultural Resources.** Cease all work immediately if a site, building, or location of historical, archeological, educational, or scientific interest is discovered within the right of way. The site, building, or location will be investigated and evaluated by the Owner.

6.2. **Texas Pollutant Discharge Elimination System (TPDES) Permits and Storm Water Pollution Prevention Plans (SWP3).** The Owner will file the Notice of Intent (NOI) and the Notice of Termination (NOT) for work shown on the plans in the right of way. Adhere to all requirements of the SWP3.

6.3. **Work in Waters of the United States.** For work in the right of way, the Owner will obtain any required Section 404 permits from the U.S. Army Corps of Engineers before work begins. Adhere to all agreements, mitigation plans, and standard best management practices required by the permit. When Contractor-initiated changes in the construction method changes the impacts to waters of the U.S., obtain new or revised Section 404 permits.

6.4. **Work in Navigable Waters of the United States.** For work in the right of way, the Owner will obtain any required Section 9 permits from the U.S. Coast Guard before work begins. Adhere to the stipulations of the permits and associated best management practices. When Contractor-initiated changes in the construction method changes the impacts to navigable waters of the U.S., obtain new or revised Section 9 permits.

6.5. **Work Over the Recharge or Contributing Zone of Protected Aquifers.** Make every reasonable effort to minimize the degradation of water quality resulting from impacts relating to work over the recharge or contributing zones of protected aquifers, as defined and delineated by the TCEQ. Use best management practices and perform work in accordance with Contract requirements.

6.6. **Project-Specific Locations.** For all project-specific locations (PSLs) on or off the right of way (material sources, waste sites, parking areas, storage areas, field offices, staging areas, haul roads, etc.), signing the Contract certifies compliance with all applicable laws, rules, and regulations pertaining to the preservation of cultural resources, natural resources, and the environment as issued by the following or other agencies:

- Occupational Safety and Health Administration,
- Texas Commission on Environmental Quality,
- Texas Department of Transportation,
- Texas Historical Commission,
- Texas Parks and Wildlife Department,
- Texas Railroad Commission,
- U.S. Army Corps of Engineers,
- U.S. Department of Energy,

- U.S. Department of Transportation,
- U.S. Environmental Protection Agency,
- U.S. Federal Emergency Management Agency, and
- U.S. Fish and Wildlife Service.

All subcontractors must also comply with applicable environmental laws, rules, regulations, and requirements in the Contract. Maintain documentation of certification activities including environmental consultant reports, Contractor documentation on certification decisions and contacts, and correspondence with the resource agencies. Provide documentation upon request.

Obtain written approval from the Engineer for all PSLs in the right of way not specifically addressed on the plans. Prepare an SWP3 for all Contractor facilities, such as asphalt or concrete plants located within public right of way. Comply with all TCEQ permit requirements for portable facilities, such as concrete batch plants, rock crushers, asphalt plants, etc. Address all environmental issues, such as Section 404 permits, wetland delineation, endangered species consultation requirements, or archeological and historic site impacts. Obtain all permits and clearances in advance.

7. AGRICULTURAL IRRIGATION

Regulate the sequence of work and make provisions as necessary to provide for agricultural irrigation or drainage during the work. Meet with the Irrigation District or land owner to determine the proper time and sequence when irrigation demands will permit shutting-off water flows to perform work.

Unless otherwise provided on the plans, the work performed under this article will not be measured or paid for directly but will be subsidiary to pertinent items.

8. SANITARY PROVISIONS

Provide and maintain adequate, neat, and sanitary toilet accommodations for employees, including Owner employees, in compliance with the requirements and regulations of the Texas Department of Health or other authorities with jurisdiction.

9. ABATEMENT AND MITIGATION OF EXCESSIVE OR UNNECESSARY NOISE

Minimize noise throughout all phases of the Contract. Exercise particular and special efforts to avoid the creation of unnecessary noise impact on adjacent noise sensitive receptors in the placement of non-mobile equipment such as air compressors, generators, pumps, etc. Place mobile and stationary equipment to cause the least disruption of normal adjacent activities.

All equipment associated with the work must be equipped with components to suppress excessive noise and these components must be maintained in their original operating condition considering normal depreciation. Noise-attenuation devices installed by the manufacturer such as mufflers, engine covers, insulation, etc. must not be removed nor rendered ineffectual nor be permitted to remain off the equipment while the equipment is in use.

10. USING EXPLOSIVES

Do not endanger life or property. The contractor is required to submit a written Blasting Plan if required by the plans or requested by the Engineer. The Owner retains the right to reject the blasting plan. Store all explosives securely and clearly mark all storage places with "DANGER – EXPLOSIVES." Store, handle, and use explosives and highly flammable material in compliance with federal, state, and local laws, ordinances, and regulations. Assume liability for property damage, injury, or death resulting from the use of explosives.

Give at least a 48-hr. advance notice to the appropriate Road Master before doing any blasting work involving the use of electric blasting caps within 200 ft. of any railroad track.

11. RESPONSIBILITY FOR HAZARDOUS MATERIALS

Indemnify and save harmless the Owner and its agents and employees from all suits, actions, or claims and from all liability and damages for any injury or damage to any person or property arising from the generation or disposition of hazardous materials introduced by the Contractor on any work done by the Contractor on Owner-owned or controlled sites. Indemnify and save harmless the Owner and its representatives from any liability or responsibility arising out of the Contractor's generation or disposition of any hazardous materials obtained, processed, stored, shipped, etc., on sites not owned or controlled by the Owner. Reimburse the Owner for all payments, fees, or restitution the Owner is required to make as a result of the Contractor's actions.

12. ASBESTOS CONTAINING MATERIAL

In Texas, the Department of State Health Services (DSHS), Asbestos Programs Branch, is responsible for administering the requirements of the National Emissions Standards for Hazardous Air Pollutants, 40 CFR, Subpart M (NESHAP) and the Texas Asbestos Health Protection Rules (TAHPR). Based on EPA guidance and regulatory background information, bridges are considered to be a regulated "facility" under NESHAP. Therefore, federal standards for demolition and renovation apply.

Provide notice to the Owner of demolition or renovation to the structures listed on the plans at least 30 calendar days before initiating demolition or renovation of each structure or load bearing member. Provide the scheduled start and completion date of structure demolition, renovation, or removal.

When demolition, renovation, or removal of load-bearing members is planned for several phases, provide the start and completion dates identified by separate phases.

DSHS requires that notifications be postmarked at least 10 working days before initiating demolition or renovation. If the date of actual demolition, renovation, or removal is changed, the Owner will be required to notify DSHS at least 10 days in advance of the work. This notification is also required when a previously scheduled (notification sent to DSHS) demolition, renovation, or removal is delayed. Therefore, if the date of actual demolition, renovation, or removal is changed, provide the Engineer, in writing, the revised dates in enough time to allow for the Owner's notification to DSHS to be postmarked at least 10 days in advance of the actual work.

Failure to provide the above information may require the temporary suspension of work under Article 8.4., "Temporary Suspension of Work or Working Day Charges," due to reasons under the control of the Contractor. The Owner retains the right to determine the actual advance notice needed for the change in date to address post office business days and staff availability.

13. RESTORING SURFACES OPENED BY PERMISSION

Do not authorize anyone to make an opening in the highway for utilities, drainage, or any other reason without written permission by the Engineer. Repair all openings as directed by the Engineer. Payment for repair of surfaces opened by permission will be made in accordance with pertinent items or Article 4.4., "Changes in the Work." Costs associated with openings made with Contractor authorization but without Owner approval will not be paid.

14. PROTECTING ADJACENT PROPERTY

Protect adjacent property from damage. If any damage results from an act or omission on the part of or on behalf of the Contractor, take corrective action to restore the damaged property to a condition similar or equal to that existing before the damage was done.

15. RESPONSIBILITY FOR DAMAGE CLAIMS

Indemnify and save harmless the Owner and its agents and employees from all suits, actions, or claims and from all liability and damages for any injury or damage to any person or property due to the Contractor's negligence in the performance of the work and from any claims arising or amounts recovered under any laws, including workers' compensation and the Texas Tort Claims Act. Indemnify and save harmless the Owner and assume responsibility for all damages and injury to property of any character occurring during the prosecution of the work resulting from any act, omission, neglect, or misconduct on the Contractor's part in the manner or method of executing the work; from failure to properly execute the work; or from defective work or material.

Pipelines and other underground installations that may or may not be shown on the plans may be located within the right of way. Indemnify and save harmless the Owner from any suits or claims resulting from damage by the Contractor's operations to any pipeline or underground installation. Make available the scheduled sequence of work to the respective utility owners so that they may coordinate and schedule adjustments of their utilities that conflict with the proposed work.

16. HAULING AND LOADS ON ROADWAYS AND STRUCTURES

Comply with federal and state laws concerning legal gross and axle weights. Except for the designated Interstate system, vehicles with a valid yearly overweight tolerance permit may haul materials to the work locations at the permitted load. Provide copies of the yearly overweight tolerance permits to the Engineer upon request. Construction equipment is not exempt from oversize or overweight permitting requirements on roadways open to the traveling public.

Protect existing bridges and other structures that will remain in use by the traveling public during and after the completion of the Contract. Construction traffic on roadways, bridges, and culverts within the limits of the work, including any structures under construction that will remain in service during and after completion of the Contract is subject to legal size and weight limitations.

Additional temporary fill may be required by the Engineer for hauling purposes for the protection of certain structures. This additional fill will not be paid directly but will be subsidiary.

Replace or restore to original condition any structure damaged by the Contractor's operations.

The Engineer may allow equipment with oversize or non-divisible overweight loads to operate without a permit within the work locations on pavement structures not open to the traveling public. Submit Contractor-proposed changes to traffic control plans for approval, in accordance with Item 502, "Barricades, Signs, and Traffic Handling." The following sections further address overweight allowances. The Owner will make available to the Contractor any available plans and material reports for existing structures.

16.1. **Overweight Construction Traffic Crossing Structures.** The Engineer may allow crossing of a structure not open to the public within the work locations, when divisible or non-divisible loads exceed legal weight limitations, including limits for load-posted bridges. Obtain written permission to make these crossings. Submit for approval a structural analysis by a licensed professional engineer indicating that the excessive loads should be allowed. Provide a manufacturer's certificate of equipment weight that includes the weight distribution on the various axles and any additional parts such as counterweights, the configuration of the axles, or other information necessary for the analysis. Submit the structural analysis and supporting documentation sufficiently in advance of the move to allow for review. Permission may be granted if the Engineer finds that no damage or overstresses in excess of those normally allowed for occasional overweight loads will result to structures that will remain in use after Contract completion. Provide temporary matting or other protective measures as directed.

Schedule loads so that only one vehicle is on any span or continuous unit at any time. Use barricades, fences, or other positive methods to prevent other vehicular access to structures at any time the overweight load is on any span or continuous unit.

16.2. **Construction Equipment Operating on Structures.** Cranes and other construction equipment used to perform construction operations that exceed legal weight limits may be allowed on structures. Before any operation that

may require placement of equipment on a structure, submit for approval a detailed structural analysis prepared by a licensed professional engineer.

Submit the structural analysis and supporting documentation sufficiently in advance of the use to allow for review and approval. Include all axle loads and configurations, spacing of tracks or wheels, tire loads, outrigger placements, center of gravity, equipment weight, and predicted loads on tires and outriggers for all planned movements, swings, or boom reaches. The analysis must demonstrate that no overstresses will occur in excess of those normally allowed for occasional overweight loads.

16.3. **Loads on Structures.** Do not store or stockpile material on bridge structures without written permission. If required, submit a structural analysis and supporting documentation by a licensed professional engineer for review. Permission may be granted if the Engineer finds that no damage or overstresses in excess of those normally allowed for occasional overweight loads will result to structures that will remain in use after Contract completion. Provide temporary matting or other protective measures as directed.

16.4. **Hauling Divisible Overweight Loads on Pavement Within the Work Locations.** The Engineer may allow divisible overweight loads on pavement structures within the work locations not open to the traveling public. Obtain written approval before hauling the overweight loads. Include calculations to demonstrate that there will be no damage or overstress to the pavement structure.

17. CONTRACTOR'S RESPONSIBILITY FOR WORK

Until final acceptance of the Contract, take every precaution against injury or damage to any part of the work by the action of the elements or by any other cause, whether arising from the execution or from the nonexecution of the work. Protect all materials to be used in the work at all times, including periods of suspension.

When any roadway or portion of the roadway is in suitable condition for travel, it may be opened to traffic as directed. Opening of the roadway to traffic does not constitute final acceptance.

Repair damage to all work until final acceptance. Repair damage to existing facilities in accordance with the Contract or as directed. Repair damage to existing facilities or work caused by Contractor operations at the Contractor's expense. Repair work for damage that was not due to the Contractor's operations will not be paid for except as provided below.

17.1. **Reimbursable Repair.** Except for damage to appurtenances listed in Section 7.17.2.1., "Unreimbursed Repair," the Contractor will be reimbursed for repair of damage caused by:

- motor vehicle, watercraft, aircraft, or railroad-train incident;
- vandalism; or
- Acts of God, such as earthquake, tidal wave, tornado, hurricane, or other cataclysmic phenomena of nature.

17.2. **Appurtenances.**

17.2.1. **Unreimbursed Repair.** Except for destruction (not reusable) due to hurricanes, reimbursement will not be made for repair of damage to the following temporary appurtenances, regardless of cause:

- signs,
- barricades,
- changeable message signs, and
- other work zone traffic control devices.

Crash cushion attenuators and guardrail end treatments are the exception to the above listing and are to be reimbursed in accordance with Section 7.17.2.2., "Reimbursed Repair."

For the devices listed in this section, reimbursement may be made for damage due to hurricanes. Where the Contractor retains replaced appurtenances after completion of the project, the Owner will limit the reimbursement to the cost that is above the salvage value at the end of the project.

17.2.2. **Reimbursed Repair.** Reimbursement will be made for repair of damage due to the causes listed in Section 7.17.1., "Reimbursable Repair," to appurtenances (including temporary and permanent crash cushion attenuators and guardrail end treatments).

17.3. **Roadways and Structures.** Until final acceptance, the Contractor is responsible for all work constructed under the Contract. The Owner will not reimburse the Contractor for repair work to new construction, unless the failure or damage is due to one of the causes listed in Section 7.17.1., "Reimbursable Repair."

The Owner will be responsible for the cost for repair of damage to existing roadways and structures not caused by the Contractor's operations.

17.4. **Detours.** The Contractor will be responsible for the cost of maintenance of detours constructed under the Contract, unless the failure or damage is due to one of the causes listed in Section 7.17.1., "Reimbursable Repair." The Engineer may consider failures beyond the Contractor's control when determining reimbursement for repairs to detours constructed. The Owner will be responsible for the cost of maintenance of existing streets and roadways used for detours or handling traffic.

17.5. **Relief from Maintenance.** The Engineer may relieve the Contractor from responsibility of maintenance as outlined in this section. This relief does not release the Contractor from responsibility for defective materials or work or constitute final acceptance.

17.5.1. **Isolated Work Locations.** For isolated work locations, when all work is completed, including work for Article 5.11., "Final Cleanup," the Engineer may relieve the Contractor from responsibility for maintenance.

17.5.2. **Work Except for Vegetative Establishment and Test Periods.** When all work for all or isolated work locations has been completed, including work for Article 5.11., "Final Cleanup," with the exception of vegetative establishment and maintenance periods and test and performance periods, the Engineer may relieve the Contractor from responsibility for maintenance of completed portions of work.

17.5.3. **Work Suspension.** When all work is suspended for an extended period of time, the Engineer may relieve the Contractor from responsibility for maintenance of completed portions of work during the period of suspension.

17.5.4. **When Directed by the Engineer.** The Engineer may relieve the Contractor from the responsibility for maintenance when directed.

17.6. **Basis of Payment.** When reimbursement for repair work is allowed and performed, payment will be made in accordance with pertinent items or Article 4.4., "Changes in the Work."

18. ELECTRICAL REQUIREMENTS

18.1. **Definitions.**

18.1.1. **Electrical Work.** Electrical work is work performed for:

- Item 610, "Roadway Illumination Assemblies,"
- Item 614, "High Mast Illumination Assemblies,"
- Item 616, "Performance Testing of Lighting Systems,"
- Item 617, "Temporary Roadway Illumination,"

- Item 618, "Conduit,"
- Item 620, "Electrical Conductors,"
- Item 621, "Tray Cable,"
- Item 622, "Duct Cable,"
- Item 628, "Electrical Services,"
- Item 680, "Highway Traffic Signals,"
- Item 681, "Temporary Traffic Signals,"
- Item 684, "Traffic Signal Cables,"
- Item 685, "Roadside Flashing Beacon Assemblies,"
- other items that involve either the distribution of electrical power greater than 50 volts or the installation of conduit and duct banks,
- the installation of conduit and wiring associated with Item 624, "Ground Boxes," and Item 656, "Foundations for Traffic Control Devices," and
- the installation of the conduit system for communication and fiber optic cable.

Electrical work does not include the installation of communications or fiber optic cable, or the connections for low voltage and inherently power limited circuits such as electronic or communications equipment. Assembly and placement of poles, structures, cabinets, enclosures, manholes, or other hardware will not be considered electrical work as long as no wiring, wiring connections, or conduit work is done at the time of assembly and placement.

18.1.2. **Specialized Electrical Work.** Specialized electrical work is work that includes the electrical service and feeders, sub-feeders, branch circuits, controls, raceways, and enclosures for the following:

- pump stations,
- moveable bridges,
- ferry slips,
- motor control centers,
- facilities required under Item 504, "Field Office and Laboratory,"
- rest area or other public buildings,
- weigh-in-motion stations,
- electrical services larger than 200 amps,
- electrical services with main or branch circuit breaker sizes not shown in the Contract, and
- any 3-phase electrical power.

18.1.3. **Certified Person.** A certified person is a person who has passed the test from the TxDOT course TRF450, "TxDOT Roadway Illumination and Electrical Installations," or other courses as approved by the Owner. Submit a current and valid certification upon request.

18.1.4. **Licensed Electrician.** A licensed electrician is a person with a current and valid unrestricted master electrical license, or unrestricted journeyman electrical license that is supervised or directed by an unrestricted master electrician. An unrestricted master electrician need not be on the work locations at all times electrical work is being done, but the unrestricted master electrician must approve work performed by the unrestricted journeyman. Licensed electrician requirements by city ordinances do not apply to on state system work.

The unrestricted journeyman and unrestricted master electrical licenses must be issued by the Texas Department of Licensing and Regulation or by a city in Texas with a population of 50,000 or greater that issues licenses based on passing a written test and demonstrating experience.

The Engineer may accept other states' electrical licenses. Submit documentation of the requirements for obtaining that license. Acceptance of the license will be based on sufficient evidence that the license was issued based on:

- passing a test based on the NEC similar to that used by Texas licensing officials, and
- sufficient electrical experience commensurate with general standards for an unrestricted master and unrestricted journeyman electrician in the State of Texas.

18.2. **Work Requirements.** The qualifications required to perform electrical work and specialized electrical work are listed in Table 2.

Table 2
Work Requirements

Type of Work	Qualifications to Perform Work
Electrical work with plans	Licensed electrician, certified person, or workers directly supervised by a licensed electrician or certified person
Electrical work without plans	Licensed electrician or workers directly supervised by a licensed electrician
Specialized electrical work	Licensed electrician or workers directly supervised by a licensed electrician
Replace lamps, starting aids, and changing fixtures	Licensed electrician, certified person, or workers directly supervised by a licensed electrician or certified person
Conduit in precast section with approved working drawings	Inspection by licensed electrician or certified person
Conduit in cast-in-place section	Inspection by licensed electrician or certified person
All other electrical work (troubleshooting, repairs, component replacement, etc.)	Licensed electrician or workers directly supervised by a licensed electrician

A licensed electrician must be physically present during all electrical work when Table 2 states that workers are to be directly supervised by a licensed electrician or certified person.

A non-certified person may install conduit in cast-in-place concrete sections if the work is verified by a certified person before concrete placement.

When the plans specify IMSA certification, the requirements of Table 2 will still apply to the installation of the conduit, ground boxes, electrical services, pole grounding, and electrical conductors installed under Item 620, "Electrical Conductors."

Item 8L
Prosecution and Progress

1. PROSECUTION OF WORK

Unless otherwise shown in the Contract, begin work within 10 calendar days after the authorization date to begin work as shown on the Notice to Proceed. Prosecute the work continuously to completion within the working days specified. Unless otherwise shown in the Contract documents, work may be prosecuted in concurrent phases if no changes are required in the traffic control plan or if a revised traffic control plan is approved. Notify the Engineer at least 24 hr. before beginning work or before beginning any new operation. Do not start new operations to the detriment of work already begun. Minimize interference to traffic.

2. SUBCONTRACTING

Do not sublet any portion of a construction Contract without the Engineer's written approval. A subcontract does not relieve any responsibility under the Contract and bonds. Ensure that all subcontracted work complies with all governing labor provisions.

The Contractor certifies by signing the Contract that the Contractor will not enter into any subcontract with a subcontractor that is debarred or suspended by the Owner, or any state or federal agency.

For federally funded Contracts, ensure the required federal documents are physically attached to each subcontract agreement including all tiered subcontract agreements.

For all DBE/HUB/SBE subcontracts including all tiered DBE/HUB/SBE subcontracts, submit a copy of the executed subcontract agreement after the award of the contract and prior to the commencement of work.

Submit a copy of the executed non-DBE subcontracts including all tiered non-DBE subcontracts when requested.

Submit a list of subcontractors, along with contact person and phone number, to the Engineer after award of the contract and prior to the commencement of work.

2.1. **Construction Contracts**. Perform work with own organization on at least 30% of the total original Contract cost (25% if the Contractor is an SBE on a wholly State or local funded Contract) excluding any items determined to be specialty items. Specialty items are those that require highly specialized knowledge, abilities, or equipment not usually available in the contracting firm expected to bid on the proposed Contract as a whole.

Specialty items will be shown on the plans or as directed by the Engineer. Bid cost of specialty items performed by subcontractors will be deducted from the total original Contract cost before computing the required amount of work to be performed by the Contractor's own organization.

The term "perform work with own organization" includes only:

- workers employed and paid directly by the Contractor or wholly owned subsidiary;
- equipment owned by the Contractor or wholly owned subsidiary;
- rented or leased equipment operated by the Contractor's employees or wholly owned subsidiary's employees;
- materials incorporated into the work if the majority of the value of the work involved in incorporating the material is performed by the Contractor's own organization, including a wholly owned subsidiary's organization; and

- labor provided by staff leasing firms licensed under Chapter 91 of the Texas Labor Code for nonsupervisory personnel if the Contractor or wholly owned subsidiary maintains direct control over the activities of the leased employees and includes them in the weekly payrolls.

When staff leasing firms provide materials or equipment, they are considered subcontractors. In these instances, submit staff leasing firms for approval as a subcontractor.

Copies of cancelled checks and certified statements may be required to verify compliance with the requirements of this section.

2.2. **Payments to Subcontractors.** Report payments for DBE/HUB/SBE subcontracts including tiered DBE/HUB/SBE subcontracts in the manner as prescribed by the Owner.

2.3. **Payment Records.** Make payment records, including copies of cancelled checks, available for inspection by the Owner. Submit payment records upon request. Retain payment records for a period of 3 yr. following completion of the Contract work or as specified by the Owner.

Failure to submit this information to the Engineer by the 20th day of each month will result in the Owner taking actions, including, but not limited to, withholding estimates and suspending the work. This work will not be measured or paid for directly but will be subsidiary to pertinent items.

3. COMPUTATION OF CONTRACT TIME FOR COMPLETION

Upon request, the Engineer will provide the conceptual time determination schedule to the Contractor for informational purposes only. The schedules assume generic resources, production rates, sequences of construction and average weather conditions based on historic data. The Owner will not adjust the number of working days and milestones, if any, due to differences in opinion regarding any assumptions made in the preparation of the schedule or for errors, omissions, or discrepancies found in the Owner's conceptual time schedule.

The number of working days is established by the Contract. Working day charges will begin 30 calendar days after the date of the written authorization to begin work. Working day charges will continue in accordance with the Contract. The Engineer may consider increasing the number of working days under extraordinary circumstances.

3.1. **Working Day Charges.** Working days will be charged in accordance with Section 8.3.1.4., "Standard Workweek," unless otherwise shown in the Contract documents. Working days will be computed and charged in accordance with one of the following:

3.1.1. **Five-Day Workweek.** Working days will be charged Monday through Friday, excluding national holidays, regardless of weather conditions or material availability. The Contractor has the option of working on Saturdays. Provide sufficient advance notice when scheduling work on Saturdays. Work on Sundays and national holidays will not be permitted without written permission. If work requiring an Inspector to be present is performed on a Saturday, Sunday, or national holiday, and weather and other conditions permit the performance of work for 7 hr. between 7 A.M. and 6 P.M., a working day will be charged.

3.1.2. **Six-Day Workweek.** Working days will be charged Monday through Saturday, excluding national holidays, regardless of weather conditions or material availability. Work on Sundays and national holidays will not be permitted without written permission. If work requiring an Inspector to be present is performed on a Sunday or a national holiday, and weather or other conditions permit the performance of work for 7 hr. between 7 A.M. and 6 P.M., a working day will be charged.

3.1.3. **Seven-Day Workweek.** Working days will be charged Monday through Sunday, excluding national holidays, regardless of weather conditions or material availability. Work on national holidays will not be permitted without written permission. If work is performed on any of these holidays requiring an Inspector to be present, and

weather or other conditions permit the performance of work for 7 hr. between 7 A.M. and 6 P.M., a working day will be charged.

3.1.4. **Standard Workweek.** Working days will be charged Monday through Friday, excluding national or state holidays, if weather or other conditions permit the performance of the principal unit of work underway, as determined by the Engineer, for a continuous period of at least 7 hr. between 7 A.M. and 6 P.M., unless otherwise shown in the Contract. The Contractor has the option of working on Saturdays or state holidays. Provide sufficient advance notice to the Engineer when scheduling work on Saturdays. Work on Sundays and national holidays will not be permitted without written permission. If work requiring an Inspector to be present is performed on a Saturday, Sunday, or holiday, and weather or other conditions permit the performance of work for 7 hr. between 7 A.M. and 6 P.M., a working day will be charged.

3.1.5. **Calendar Day.** Working days will be charged Sunday through Saturday, including all holidays, regardless of weather conditions, material availability, or other conditions not under the control of the Contractor.

3.1.6. **Other.** Working days will be charged as shown in the Contract documents.

3.2. **Restricted Work Hours.** Restrictions on Contractor work hours and the related definition for working day charges are as prescribed in this article unless otherwise shown in the Contract documents.

3.3. **Nighttime Work.** Nighttime work is allowed only when shown in the Contract documents or as directed. Nighttime work is defined as work performed from 30 min. after sunset to 30 min. before sunrise.

3.3.1 **Five-, Six-, and Seven-Day Workweeks.** Nighttime work that extends past midnight will be assigned to the following day for the purposes of approval for allowing work on Sundays or national holidays.

3.3.2 **Standard Workweek.**

3.3.2.1. **Nighttime Work Only.** When nighttime work is allowed or required and daytime work is not allowed, working day charges will be made when weather and other conditions permit the performance of the principal unit of work underway, as determined by the Engineer, for a continuous period of at least 7 hr. for the nighttime period, as defined in Section 8.3.3., "Nighttime Work," unless otherwise shown in the Contract documents.

3.3.2.2. **Nighttime Work and Daytime Work Requiring Inspector.** When nighttime work is performed or required and daytime work is allowed, working day charges will be made when weather and other conditions permit the performance of the principal unit of work underway, as determined by the Engineer, for a continuous period of at least 7 hr. for the nighttime period, as defined in Section 8.3.3., "Nighttime Work," or for a continuous period of at least 7 hr. for the alternative daytime period unless otherwise shown in the Contract documents. Only one day will be charged for each 24-hr. time period. When the Engineer agrees to restrict work hours to the nighttime period only, working day charges will be in accordance with Section 8.3.3.2.1., "Nighttime Work Only."

3.4 **Time Statements.** The Engineer will furnish the Contractor a monthly time statement. Review the monthly time statement for correctness. Report protests in writing, no later than 30 calendar days after receipt of the time statement, providing a detailed explanation for each day protested. Not filing a protest within 30 calendar days will indicate acceptance of the working day charges and future consideration of that statement will not be permitted.

4. TEMPORARY SUSPENSION OF WORK OR WORKING DAY CHARGES

The Engineer may suspend the work, wholly or in part, and will provide notice and reasons for the suspension in writing. Suspend and resume work only as directed in writing.

When part of the work is suspended, the Engineer may suspend working day charges only when conditions not under the control of the Contractor prohibit the performance of critical activities. When all of the work is suspended for reasons not under the control of the Contractor, the Engineer will suspend working day charges.

5. PROJECT SCHEDULES

Prepare, maintain, and submit project schedules. Project schedules are used to convey the Contractor's intended work plan to the Owner. Prepare project schedules with a level of effort sufficient for the work being performed. Project schedules will not be used as a basis to establish the amount of work performed or for the preparation of the progress payments.

5.1 **Project Scheduler.** Designate an individual who will develop and maintain the progress schedule. The Project Scheduler will be prepared to discuss, in detail, the proposed sequence of work and methods of operation, and how that information will be communicated through the Progress Schedule at the Preconstruction Meeting. This individual will also attend the project meetings and make site visits to prepare, develop, and maintain the progress schedules.

5.2 **Construction Details.** Before starting work, prepare and submit a progress schedule based on the sequence of work and traffic control plan shown in the Contract documents. At a minimum, prepare the progress schedule as a Bar Chart or Critical Path Method (CPM), as shown on the plans. Include all planned work activities and sequences and show Contract completion within the number of working days specified. Incorporate major material procurements, known utility relocations, and other activities that may affect the completion of the Contract in the progress schedule. Show a beginning date, ending date, and duration in whole working days for each activity. Do not use activities exceeding 20 working days, except for agreed upon activities. Show an estimated production rate per working day for each work activity.

5.3 **Schedule Format.** Format all project schedules according to the following:

- Begin the project schedule on the date of the start of Contract time or start of activities affecting work on the project;
- Show the sequence and interdependence of activities required for complete performance of the work. If using a CPM schedule, show a predecessor and a successor for each activity; and
- Ensure all work sequences are logical and show a coordinated plan of the work.

CPM schedules must also include:

- Clearly and accurately identify the critical path as the longest continuous path;
- Provide a legend for all abbreviations, run date, data date, project start date, and project completion date in the title block of each schedule submittal; and
- Through the use of calendars, incorporate seasonal weather conditions into the schedule for work (e.g., earthwork, concrete paving, structures, asphalt, drainage, etc.) that may be influenced by temperature or precipitation. Also, incorporate non-work periods such as holidays, weekends, or other non-work days as identified in the Contract.

5.4 **Activity Format.** For each activity on the project schedule provide:

- A concise description of the work represented by the activity;
- An activity duration in whole working days;
- Code activities so that organized plots of the schedule may be produced.

CPM schedules must also include the quantity of work and estimated production rate for major items of work. Provide enough information for review of the work being performed.

5.5 **Schedule Types.**

5.5.1. **Bar Chart.** Seven calendar days before the preconstruction meeting, prepare and submit a hard copy of the schedule using the bar chart method.

5.5.1.1. **Progress Schedule Reviews.** Update the project schedule and submit a hard copy when changes to the schedule occur or when requested.

5.5.2. **Critical Path Method.** Prepare and submit the schedule using the CPM.

5.5.2.1. **Preliminary Schedule.** Seven calendar days before the preconstruction meeting, submit both the plotted and electronic copies of the project schedule showing work to be performed within the first 90 calendar days of the project.

5.5.2.2. **Baseline Schedule.** The baseline schedule will be considered the Contractor's plan to successfully construct the project within the time frame and construction sequencing indicated in the Contract. Submit both plotted and electronic copies of the baseline schedule. Submit 2 plots of the schedule: one organized with the activities logically grouped using the activity coding; and the other plot showing only the critical path determined by the longest path, not based on critical float.

Develop and submit the baseline schedule for review within the first 45 calendar days of the project unless the time for submission is extended.

5.5.2.2.1. **Review.** Within 15 calendar days of receipt of the schedule, the Engineer will evaluate, and inform the Contractor if the schedule has been accepted. If the schedule is not accepted, the Engineer will provide comments to the Contractor for incorporation. Provide a revised schedule based on the Engineer's comments, or reasons for not doing so within 10 calendar days. The Engineer's review and acceptance of the project schedule is for conformance to the requirements of the Contract documents only and does not relieve the Contractor of any responsibility for meeting the interim milestone dates (if specified) or the Contract completion date. Review and acceptance does not expressly or by implication warrant, acknowledge, or admit the reasonableness of the logic or durations of the project schedule. If the Contractor fails to define any element of work, activity, or logic and the Engineer's review does not detect this omission or error, the Contractor is responsible for correcting the error or omission.

Submit an acceptable baseline schedule before the 90th calendar day of the project unless the time for submission is extended.

5.5.2.3. **Progress Schedule.** Maintain the project schedule for use by both the Contractor and the Engineer. Submit both the plotted and electronic copy as it will become an as-built record of the daily progress achieved on the project. If continuous progress of an activity is interrupted for any reason except non-work periods (such as holidays, weekend, or interference from temperature or precipitation), then the activity will show the actual finish date as that date of the start of the interruption and the activity will be broken into a subsequent activity (or activities, based on the number of interruptions) similarly numbered with successive alpha character as necessary. The original duration of the subsequent activity will be that of the remaining duration of the original activity. Relationships of the subsequent activity will match those of the original activity so that the integrity of the project schedule logic is maintained. Once established, the original durations and actual dates of all activities must remain unchanged. Revisions to the schedule may be made as necessary.

The project schedule must be revised when changes in construction phasing and sequencing occur or other changes that cause deviation from the original project schedule occur. Any revisions to the schedule must be listed in the monthly update narrative with the purpose of the revision and description of the impact on the project schedule's critical path and project completion date. Create the schedule revision using the latest update before the start of the revision.

Monthly updating of the project schedule will include updating of:

- The actual start dates for activities started;
- The actual finish dates for activities completed;

- The percentage of work completed and remaining duration for each activity started but not yet completed; and
- The calendars to show days actual work was performed on the various work activities.

The cut-off day for recording monthly progress will be the last day of each month. Submit the updated project schedule no later than the 20th calendar day of the following month. The Engineer will evaluate the updated schedule within 5 calendar days of receipt and inform the Contractor if it has or has not been accepted. If the schedule is not accepted, the Engineer will provide comments to the Contractor for incorporation. Provide a revised schedule based on the Engineer's comments, or reasons for not doing so within 5 calendar days.

Provide a brief narrative in a bulleted statement format for major items that have impacted the schedule. Notify the Engineer if resource-leveling is being used.

5.5.2.3.1. **Project Schedule Summary Report (PSSR).** When shown on the plans, provide the PSSR instead of the narrative required in Section 8.5.5.2.3., "Progress Schedule." The PSSR includes a listing of major items that have impacted the schedule as well as a summary of progress in days ahead or behind schedule. Include an explanation of the project progress for the period represented on the form provided by the Owner.

5.5.3. **Notice of Potential Time Impact.** Submit a "Notice of Potential Time Impact" when a Contract time extension or adjustment of milestone dates may be justified or when directed.

Failure to provide this notice within 5 working days will compromise the Owner's ability to mitigate the impacts and the Contractor forfeits the right to request a time extension or adjustment of milestone dates unless the circumstances are such that the Contractor could not reasonably have had knowledge of the impact at the time. Failure to provide the Owner within 5 working days of the commencement of Potential Time Impact may result in the Owner's denial of any additional days resulting from that impact.

5.5.4. **Time Impact Analysis.** When directed, provide a time impact analysis. A time impact analysis is an evaluation of the effects of impacts on the project. A time impact analysis consists of the following steps:

- **Step 1.** Establish the status of the project immediately before the impact.
- **Step 2.** Predict the effect of the impact on the schedule update used in Step 1.
- **Step 3.** Track the effects of the impact on the schedule during its occurrence.
- **Step 4.** Establish the status of the project after the impact's effect has ended and provide details identifying any mitigating actions or circumstances used to keep the project ongoing during the impact period.

Determine the time impact by comparing the status of the work before the impact (Step 1) to the prediction of the effect of the impact (Step 2), if requested, and to actual effects of the impact once it is complete (Step 4). Unless otherwise approved, Steps 1, 3, and 4, must be completed before consideration of a Contract time extension or adjustment of a milestone date will be provided. Time extensions will only be considered when delays that affect milestone dates or the Contract completion date are beyond the Contractor's control. Submit Step 4 no later than 15 calendar days after the impact's effects have ended or when all the information on the effect has been realized.

Submit one electronic backup copy of the complete time impact analysis and a copy of the full project schedule incorporating the time impact analysis. If the project schedule is revised after the submittal of a time impact analysis, but before its approval, indicate in writing the need for any modification to the time impact analysis.

The Engineer will review the time impact analysis upon completion of step 4. If this review detects revisions or changes to the schedule that had not been performed and identified in a narrative, the Engineer may reject the time impact analysis. If the Engineer is in agreement with the time impact analysis, a change order may be issued to grant additional working days, or to adjust interim milestones. Once a change order has been executed, incorporate the time impact analysis into the project schedule. The time impact analysis may also be used to support the settlement of disputes and claims. Compensation related to the time impact analysis may be provided at the completion of the analysis or the completion of the project to determine the true role the impact played on the final completion.

The work performed under this article will not be measured or paid for directly but will be subsidiary to pertinent items.

6. FAILURE TO COMPLETE WORK ON TIME

The time established for the completion of the work is an essential element of the Contract. If the Contractor fails to complete the work within the number of calendar days specified, calendar days will continue to be charged. Failure to complete the Contract, a separate work order, or callout work within the number of calendar days specified, including any approved additional calendar days, will result in liquidated damages for each calendar day charged over the number of calendar days specified in the Contract. The dollar amount specified in the Contract will be deducted from any money due or to become due the Contractor for each calendar day the Contract remains incomplete. This amount will be calculated as a disincentive as described in Item 8: Prosecution and Progress.

7. DEFAULT OF THE CONTRACT

7.1 **Declaration of Default.** The Engineer may declare the Contractor to be in default of the Contract if the Contractor:

- fails to begin the work within the number of days specified,
- fails to prosecute the work to assure completion within the number of days specified,
- is uncooperative, disruptive or threatening,
- fails to perform the work in accordance with the Contract requirements,
- neglects or refuses to remove and replace rejected materials or unacceptable work,
- discontinues the prosecution of the work without the Engineer's approval,
- makes an unauthorized assignment,
- fails to resume work that has been discontinued within a reasonable number of days after notice to do so,
- fails to conduct the work in an acceptable manner, or
- commits fraud or other unfixable conduct as determined by the Owner.

If any of these conditions occur, the Engineer will give notice in writing to the Contractor and the Surety of the intent to declare the Contractor in default. If the Contractor does not proceed as directed within 10 days after the notice, the Owner will provide written notice to the Contractor and the Surety to declare the Contractor to be in default of the Contract. The Owner will also provide written notice of default to the Surety. If the Contractor provides the Owner written notice of voluntary default of the Contract, the Owner may waive the 10 day notice of intent to declare the Contractor in default and immediately provide written notice of default to the Contractor and the Surety. Working day charges will continue until completion of the Contract. The Owner may suspend work in accordance with Section 8.4., "Temporary Suspension of Work or Working Day Charges," to investigate apparent fraud or other unfixable conduct before defaulting the Contractor. The Contractor may be subject to sanctions under the state and/or federal laws and regulations.

The Owner will determine the method used for the completion of the remaining work as follows:

- **Contracts without Performance Bonds.** The Owner will determine the most expeditious and efficient way to complete the work, and recover damages from the Contractor.
- **Contracts with Performance Bonds.** The Owner will, without violating the Contract, demand that the Contractor's Surety complete the remaining work in accordance with the terms of the original Contract. A completing Contractor will be considered a subcontractor of the Surety. The Owner reserves the right to approve or reject proposed subcontractors. Work may resume after the Owner receives and approves Certificates of Insurance as required in Section 3.4.3., "Insurance." Certificates of Insurance may be issued in the name of the completing Contractor. The Surety is responsible for making every effort to expedite the resumption of work and completion of the Contract. The Owner may complete the work using any or all materials at the work locations that it deems suitable and acceptable. Any costs incurred by the Owner for the completion of the work under the Contract will be the responsibility of the Surety.

From the time of notification of the default until work resumes (either by the Surety or the Owner), the Owner will maintain traffic control devices and will do any other work it deems necessary, unless otherwise agreed upon by the Owner and the Surety. All costs associated with this work will be deducted from money due to the Surety.

The Owner will hold all money earned but not disbursed by the date of default. Upon resumption of the work after the default, all payments will be made to the Surety. All costs and charges incurred by the Owner as a result of the default, including the cost of completing the work under the Contract, costs of maintaining traffic control devices, costs for other work deemed necessary, and any applicable liquidated damages or disincentives will be deducted from money due the Contractor for completed work. If these costs exceed the sum that would have been payable under the Contract, the Surety will be liable and pay the Owner the balance of these costs in excess of the Contract price. In case the costs incurred by the Owner are less than the amount that would have been payable under the Contract if the work had been completed by the Contractor, the Owner will be entitled to retain the difference.

Comply with Article 8.2., "Subcontracting," and abide by the DBE/HUB/SBE commitments previously approved by the Owner .

No markups as defined in Article 9.7., "Payment for Extra Work and Force Account Method," will be allowed for the Surety.

7.2 **Wrongful Default.** Submit a written request to the Owner within 14 calendar days of receipt of the notice of default for consideration of wrongful default.

The Owner will determine if the Contractor has been wrongfully defaulted, and will proceed with the following:

If the Owner determines the default is proper, the default will remain. If the Contractor is in disagreement, the Contractor may file a claim in accordance with Article 4.7., "Dispute or Claims Procedure."

If the Owner determines it was a wrongful default, the Owner will terminate the Contract for convenience, in accordance with Article 8.8., "Termination of the Contract."

8. TERMINATION OF THE CONTRACT

The Owner may terminate the Contract in whole or in part whenever:

- the Contractor is prevented from proceeding with the work as a direct result of an executive order of the President of the United States or the Governor of the State;
- the Contractor is prevented from proceeding with the work due to a national emergency, or when the work to be performed under the Contract is stopped, directly or indirectly, because of the freezing or diversion of materials, equipment or labor as the result of an order or a proclamation of the President of the United States;
- the Contractor is prevented from proceeding with the work due to an order of any federal authority;
- the Contractor is prevented from proceeding with the work by reason of a preliminary, special, or permanent restraining court order where the issuance of the restraining order is primarily caused by acts or omissions of persons or agencies other than the Contractor; or
- the Owner determines that termination of the Contract is in the best interest of the Owner or the public. This includes, but is not limited to, the discovery of significant hazardous material problems, right of way acquisition problems, or utility conflicts that would cause substantial delays or expense to the Contract.

8.1 **Procedures and Submittals.** The Engineer will provide written notice to the Contractor of termination specifying the extent of the termination and the effective date. Upon notice, immediately proceed in accordance with the following:

- stop work as specified in the notice;
- place no further subcontracts or orders for materials, services, or facilities, except as necessary to complete a critical portion of the Contract, as approved;
- terminate all subcontracts to the extent they relate to the work terminated;
- complete performance of the work not terminated;

- settle all outstanding liabilities and termination settlement proposals resulting from the termination for public convenience of the Contract;
- create an inventory report, including all acceptable materials and products obtained for the Contract that have not been incorporated in the work that was terminated (include in the inventory report a description, quantity, location, source, cost, and payment status for each of the acceptable materials and products); and
- take any action necessary, or that the Engineer may direct, for the protection and preservation of the materials and products related to the Contract that are in the possession of the Contractor and in which the Owner has or may acquire an interest.

8.2 **Settlement Provisions.** Within 60 calendar days of the date of the notice of termination, submit a final termination settlement proposal, unless otherwise approved. The Engineer will prepare a change order that reduces the affected quantities of work and adds acceptable costs for termination. No claim for loss of anticipated profits will be considered. The Owner will pay reasonable and verifiable termination costs including:

- all work completed at the unit bid price and partial payment for incomplete work;
- the percentage of Item 500, "Mobilization," equivalent to the percentage of work complete or actual cost that can be supported by cost records, whichever is greater;
- expenses necessary for the preparation of termination settlement proposals and support data;
- the termination and settlement of subcontracts;
- storage, transportation, restocking, and other costs incurred necessary for the preservation, protection, or disposition of the termination inventory; and
- other expenses acceptable to the Own

Item 9L
Measurement and Payment

1. MEASUREMENT OF QUANTITIES

The Engineer will measure all completed work using United States standard measures, unless otherwise specified.

1.1 **Linear Measurement.** Unless otherwise specified, all longitudinal measurements for surface areas will be made along the actual surface of the roadway and not horizontally. No deduction will be made for structures in the roadway with an area of 9 sq. ft. or less. For all transverse measurements for areas of base courses, surface courses, and pavements, the dimensions to be used in calculating the pay areas will be the neat dimensions and will not exceed those shown on the plans, unless otherwise directed.

1.2 **Volume Measurement.** Transport materials measured for payment by volume in approved hauling vehicles. Display a unique identification mark on each vehicle. Furnish information necessary to calculate the volume capacity of each vehicle. The Engineer may require verification of volume through weight measurement. Use body shapes that allow the capacity to be verified. Load and level the load to the equipment's approved capacity. Loads not hauled in approved vehicles may be rejected.

1.3 **Weight Measurement.** Transport materials measured for payment by weight or truck measure in approved hauling vehicles. Furnish certified measurements, tare weights, and legal gross weight calculations for all haul units. Affix a permanent, legible number on the truck and on the trailer to correspond with the certified information. Furnish certified weights of loaded haul units transporting material if requested.

The material will be measured at the point of delivery. The cost of supplying these volume and weight capacities is subsidiary to the pertinent item. For measurement by the ton, in the field, provide measurements in accordance with Item 520, "Weighing and Measuring Equipment," except for items where ton measurements are measured by standard tables.

The Engineer may reject loads and suspend hauling operations for overloading.

1.3.1. **Hauling on Routes Accessible to the Traveling Public.** For payment purposes on haul routes accessible to the traveling public, the net weight of the load will be calculated as follows:

- If the gross vehicle weight is less than the maximum allowed by state law, including applicable yearly weight tolerance permit, the net weight of the load will be determined by deducting the tare weight of the vehicle from the gross weight.
- If the gross vehicle weight is more than the maximum allowed by state law, including applicable yearly weight tolerance permit, the net weight of the load will be determined by deducting the tare weight of the vehicle from the maximum gross weight allowed.

1.3.2. **Hauling on Routes Not Accessible to the Traveling Public.** For payment purposes on haul routes that are not accessible to the traveling public where advance permission is obtained in writing from the Engineer:

- If the gross vehicle weight is less than the maximum allowed, including applicable yearly weight tolerance permit, the net weight of the load will be determined by deducting the tare weight of the vehicle from the gross weight.
- If the gross vehicle weight is more than the maximum allowed, the net weight of the load will be determined by deducting the tare weight of the vehicle from the maximum gross weight allowed.

2. PLANS QUANTITY MEASUREMENT

Plans quantities may or may not represent the exact quantity of work performed or material moved, handled, or placed during the execution of the Contract. The estimated bid quantities are designated as final payment quantities, unless revised by the governing specifications or this article.

If the quantity measured as outlined under "Measurement" varies by more than 5% (or as stipulated under "Measurement" for specific Items) from the total estimated quantity for an individual item originally shown in the Contract, an adjustment may be made to the quantity of authorized work done for payment purposes.

When quantities are revised by a change in design approved by the Owner, by change order, or to correct an error on the plans, the plans quantity will be increased or decreased by the amount involved in the change, and the 5% variance will apply to the new plans quantity.

If the total Contract quantity multiplied by the unit bid price for an individual item is less than $250 and the item is not originally a plans quantity item, then the item may be paid as a plans quantity item if the Engineer and Contractor agree in writing to fix the final quantity as a plans quantity.

For Contracts with callout work and work orders, plans quantity measurement requirements are not applicable.

3. ADJUSTMENT OF QUANTITIES

The party to the Contract requesting the adjustment will provide field measurements and calculations showing the revised quantity. When approved, this revised quantity will constitute the final quantity for which payment will be made. Payment for revised quantity will be made at the unit price bid for that item, except as provided for in Article 4.4., "Changes in the Work."

4. SCOPE OF PAYMENT

Payment of the Contract unit price is full compensation for all materials, equipment, labor, tools, and supplies necessary to complete the item of work under the Contract. Until final acceptance in accordance with Article 5.12., "Final Acceptance," assume liability for completing the work according to the Contract documents and any loss or damage arising from the performance of the work or from the action of the elements, infringement of patent, trademark, or copyright, except as provided elsewhere in the Contract.

The Owner will only pay for material incorporated into the work in accordance with the Contract. Payment of progress estimates will in no way affect the Contractor's obligation under the Contract to repair or replace any defective parts in the construction or to replace any defective materials used in the construction and to be responsible for all damages due to defects if the defects and damages are discovered on or before final inspection and acceptance of the work.

5. PROGRESS PAYMENTS

The Engineer will prepare a monthly estimate of the amount of work performed, including materials in place. Incomplete items of work may be paid at an agreed upon percentage as approved. Payment of the monthly estimate is determined at the Contract item prices less any withholdings or deductions in accordance with the Contract. Progress payments may be withheld for failure to comply with the Contract.

6. PAYMENT FOR MATERIAL ON HAND (MOH)

If payment for MOH is desired, request compensation for 75% of the invoice cost of acceptable nonperishable materials that have not been used in the work before the request, and that have been delivered to the work location or are in acceptable storage places. Nonperishable materials are those that do not have a shelf life or whose characteristics do not materially change when exposed to the elements. Include only materials that have

been sampled, tested, approved, or certified, and are ready for incorporation into the work. Only materials which are completely constructed or fabricated on the Contractor's order for a specific Contract and are so marked and on which an approved test report has been issued are eligible. Payment for MOH may include the following types of items: concrete traffic barrier, precast concrete box culverts, concrete piling, reinforced concrete pipe, and illumination poles. Any repairs required after fabricated materials have been approved for storage will require approval of the Engineer before being made and will be made at the Contractor's expense. Include only those materials that have an invoice cost of at least $1,000 in the request for MOH payment.

If the request is acceptable, the Engineer will include payment for MOH in a progress payment. Payment for MOH does not constitute acceptance of the materials. Payment will not exceed the actual cost of the material as established by invoice, or the total cost for the associated item less reasonable placement costs, whichever is less. Materials for which the Contractor does not have a paid invoice within 60 days will not be eligible for payment and will be removed from the estimate. Payment may be limited to a portion of the invoice cost or unit price if shown elsewhere in the Contract. Payment for precast products fabricated or constructed by the Contractor for which invoices or freight bills are not available may be made based on statements of actual cost.

Submit the request on forms provided by the Owner. These forms may be electronically reproduced, provided they are in the same format and contain all the required information and certifications. Continue to submit monthly MOH forms until the total value of MOH is $0.

By submitting a request for MOH payment, the Contractor expressly authorizes the Owner to audit MOH records, and to perform process reviews of the record-keeping system. If the Owner determines noncompliance with any of the requirements of this provision, the Owner may exclude payment for any or all MOH for the duration of the Contract.

Maintain all records relating to MOH payment until final acceptance. Provide these records to the Engineer upon request.

7. PAYMENT FOR EXTRA WORK AND FORCE ACCOUNT METHOD

Payment for extra work directed, performed, and accepted will be made in accordance with Article 4.4., "Changes in the Work." Payment for extra work may be established by agreed unit prices or by Force Account Method.

Agreed unit prices are unit prices that include markups and are comparable to recent bid prices for the same character of work. These unit prices may be established without additional breakdown justification.

When using Force Account Method, determine an estimated cost for the proposed work and establish labor and equipment rates and material costs. Maintain daily records of extra work and provide copies of these records daily, signed by the Contractor's representative, for verification by the Engineer. Request payment for the extra work no later than the 10th day of the month following the month in which the work was performed. Include copies of all applicable invoices. If the extra work to be performed has an estimated cost of less than $10,000, submit for approval and payment an invoice of actual cost for materials, equipment, labor, tools, and incidentals necessary to complete the extra work.

7.1 **Markups.** Payment for extra work may include markups as compensation for the use of small tools, overhead expense, and profit.

7.1.1. **Labor.** Compensation will be made for payroll rates for each hour that the labor, foremen, or other approved workers are actually engaged in the work. In no case will the rate of wages be less than the minimum shown in the Contract for a particular category. An additional 15% of this sum will be paid as compensation for overhead, superintendence, profit, and small tools.

7.1.2. **Insurance and Taxes.** An additional 55% of the labor cost, excluding the 15% compensation provided in Section 9.7.1.1., "Labor," will be paid as compensation for labor insurance and labor taxes including the cost of

premiums on non-project-specific liability (excluding vehicular) insurance, workers compensation insurance, Social Security, unemployment insurance taxes, and fringe benefits.

7.1.3. **Materials.** Compensation will be made for materials associated with the work based on actual delivered invoice costs, less any discount. An additional 25% of this sum will be paid as compensation for overhead and profit.

7.1.4. **Equipment.** Payment will be made for the established equipment hourly rates for each hour that the equipment is involved in the work. An additional 15% of this sum will be paid as compensation for overhead and profit not included in the rates.

Transportation cost for mobilizing equipment will be included if the equipment is mobilized from an off-site location.

7.1.4.1. **Contractor-Owned Equipment.** For Contractor-owned machinery, trucks, power tools, or other equipment, use the FHWA rental rates found in the *Rental Rate Blue Book* multiplied by the regional adjustment factor and the rate adjustment factor to establish hourly rates. Use the rates in effect for each section of the *Rental Rate Blue Book* at the time of use.

If a rate has not been established for a particular piece of equipment in the *Rental Rate Blue Book*, the Engineer will allow a reasonable hourly rate. This price will include operating costs.

Payment for equipment will be made for the actual hours used in the work. The Owner reserves the right to withhold payment for low production or lack of progress. Payment will not be made for time lost for equipment breakdowns, time spent to repair equipment, or time after equipment is no longer needed.

If equipment is used intermittently while dedicated solely to the work, payment will be made for the duration the equipment is assigned to the work but no more than 8 hours will be paid during a 24-hour day, nor more than 40 hours per week, nor more than 176 hours per month, except when time is computed using a six-day or seven-day workweek. When using a six-day workweek, no more than 8 hours will be paid during a 24-hour day, nor more than 48 hours per week, nor more than 211 hours per month. When using a seven-day workweek, no more than 8 hours will be paid during a 24-hour day, nor more than 56 hours per week, nor more than 246 hours per month.

7.1.4.2. **Equipment Not Owned by the Contractor.** For equipment rented from a third party not owned by the Contractor, payment will be made at the invoice daily rental rate for each day the equipment is needed for the work. The Owner reserves the right to limit the daily rate to comparable *Rental Rate Blue Book* rates. When the invoice specifies that the rental rate does not include fuel, lubricants, repairs, and servicing, the *Rental Rate Blue Book* hourly operating cost for each hour the equipment is operated will be added.

When the invoice specifies equipment operators as a component of the equipment rental, payment will be made at the invoice rate for each operator for each day the equipment is needed for the work.

7.1.4.3. **Standby Equipment Costs.** Payment for standby equipment will be made in accordance with Section 9.7.1.4., "Equipment," except that:

7.1.4.3.1. **Contractor-Owned Equipment.** For Contractor-owned machinery, trucks, power tools, or other equipment:

- Standby will be paid at 50% (to remove operating cost) of the FHWA rental rates found in the *Rental Rate Blue Book* multiplied by the regional adjustment factor and the rate adjustment factor.
- Standby costs will not be allowed during periods when the equipment would have otherwise been idle.

7.1.4.3.2. **Equipment Not Owned by the Contractor.** For equipment rented from a third party not owned by the Contractor:

- Standby will be paid at the invoice daily rental rate, excluding operating cost, which includes fuel, lubricants, repairs, and servicing. The Owner reserves the right to limit the daily standby rate to comparable FHWA

rental rates found in the *Rental Rate Blue Book* multiplied by the regional adjustment factor and the rate adjustment factor.

- Standby will be paid for equipment operators when included on the invoice and equipment operators are actually on standby.
- Standby costs will not be allowed during periods when the equipment would have otherwise been idle.

7.1.5. **Subcontracting.** An additional 5% of the actual invoice cost will be paid to the Contractor as compensation for administrative cost, superintendence, and profit.

7.1.6. **Law Enforcement.** An additional 5% of the actual invoice cost will be paid as compensation for administrative costs, superintendence, and profit.

7.1.7. **Railroad Flaggers.** An additional 5% of the actual invoice cost will be paid as compensation for administrative cost, superintendence, and profit.

7.1.8. **Bond Cost.** An additional 1% of the total compensation provided in Article 9.7., "Payment for Extra Work and Force Account Method," will be paid for the increase in bond.

8. RETAINAGE

The Owner will not withhold retainage on the Contractor. The Contractor may withhold retainage on subcontractors in accordance with state and federal regulations.

9. PAYMENT PROVISIONS FOR SUBCONTRACTORS

For the purposes of this article only, the term subcontractor includes suppliers and the term work includes materials provided by suppliers at a location approved by the Engineer.

These requirements apply to all tiers of subcontractors. Incorporate the provisions of this article into all subcontract or material purchase agreements.

Pay subcontractors for work performed within 10 days after receiving payment for the work performed by the subcontractor. Also, pay any retainage on a subcontractor's work within 10 days after satisfactory completion of all of the subcontractor's work. Completed subcontractor work includes vegetative establishment, test, maintenance, performance, and other similar periods that are the responsibility of the subcontractor.

For the purpose of this section, satisfactory completion is accomplished when:

- the subcontractor has fulfilled the Contract requirements of both the Owner and the subcontract for the subcontracted work, including the submittal of all information required by the specifications and the Owner; and
- the work done by the subcontractor has been inspected, approved, and paid by the Owner.

Provide a certification of prompt payment in accordance with the Owner's prompt payment procedure to certify that all subcontractors and suppliers were paid from the previous months payments and retainage was released for those whose work is complete. Submit the completed form each month and the month following the month when final acceptance occurred at the end of the project.

The inspection and approval of a subcontractor's work does not eliminate the Contractor's responsibilities for all the work as defined in Article 7.17., "Contractor's Responsibility for Work."

The Owner may pursue actions against the Contractor, including withholding of estimates and suspending the work, for noncompliance with the subcontract requirements of this section upon receipt of written notice with sufficient details showing the subcontractor has complied with contractual obligations.

10. FINAL PAYMENT

When the Contract has been completed, all work has been approved, final acceptance has been made in accordance with Article 5.12., "Final Acceptance," and Contractor submittals have been received, the Engineer will prepare a final estimate for payment showing the total quantity of work completed and the money owed the Contractor. The final payment will reflect the entire sum due, less any sums previously paid.

Special Provision to Item 000
Schedule of Liquidated Damages

000-001L

The dollar amount of daily contract administration Liquidated Damages per Working Day is $5,000.00

Special Provision to Item 000 — 000-002L
Nondiscrimination

1. DESCRIPTION

All recipients of federal financial assistance are required to comply with various nondiscrimination laws including Title VI of the Civil Rights Act of 1964, as amended, (Title VI). Title VI forbids discrimination against anyone in the United States on the grounds of race, color, or national origin by any agency receiving federal funds.

Owner, as a recipient of Federal financial assistance, and under Title VI and related statutes, ensures that no person shall on the grounds of race, religion (where the primary objective of the financial assistance is to provide employment per 42 U.S.C. § 2000d-3), color, national origin, sex, age or disability be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination under any of Owner's programs or activities.

2. DEFINITION OF TERMS

Where the term "contractor" appears in the following six nondiscrimination clauses, the term "contractor" is understood to include all parties to contracts or agreements with the Owner.

3. NONDISCRIMINATION PROVISIONS

During the performance of this contract, the contractor agrees as follows:

3.1. **Compliance with Regulations.** The Contractor shall comply with the Regulations relative to nondiscrimination in Federally-assisted programs of the Department of Transportation (hereinafter, "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.

3.2. **Nondiscrimination.** The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

3.3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations either by competitive bidding or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.

3.4. **Information and Reports:** The contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Owner or the Texas Department of Transportation to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information the contractor shall so certify to the Owner or the Texas Department of Transportation as appropriate, and shall set forth what efforts it has made to obtain the information.

3.5. **Sanctions for Noncompliance.** In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, the Owner shall impose such contract sanctions as it, the Owner may determine to be appropriate, including, but not limited to:

- withholding of payments to the contractor under the contract until the contractor complies, and/or
- cancellation, termination or suspension of the contract, in whole or in part.

3.6. **Incorporation of Provisions.** The contractor shall include the provisions of paragraphs (3.1) through (3.6) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The contractor shall take such action with respect to any subcontract or procurement as the Owner may direct as a means of enforcing such provisions including sanctions for non-compliance: provided, however that, in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request the Owner to enter into such litigation to protect the interests of the Owner, and, in addition, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

Special Provision to Item 000 — 000-003L

Certification of Nondiscrimination in Employment

1. GENERAL

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

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

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

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b)(1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

Special Provision to Item 000 — 000-004L

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

1. GENERAL

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

2. GOALS

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

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

Goals for minority participation in each trade, %	Goals for female participation in each trade, %
See Table 1	6.9

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

2.4. A Contractor or subcontractor will be considered in compliance with these provisions by participation in the Texas Highway-Heavy Branch, AGC, Statewide Training and Affirmative Action Plan. Provided that each Contractor or subcontractor participating in this plan must individually comply with the equal opportunity clause set forth in 41 CFR 60-1.4 and must make a good faith effort to achieve the goals set forth for each participating trade in the plan in which it has employees. The overall good performance of other Contractors and subcontractors toward a goal in an approved plan does not excuse any covered Contractor's or subcontractor's failure to make good faith efforts to achieve the goals contained in these provisions. Contractors or subcontractors participating in the plan must be able to demonstrate their participation and document their compliance with the provisions of this Plan.

3. SUBCONTRACTING

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

4. COVERED AREA

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

5. REPORTS

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

Table 1
Goals for Minority Participation

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

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

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

Special Provision to Item 000

000-005L

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

1. GENERAL

1.1. As used in these specifications:

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

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

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

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

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

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

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

1.7. The Contractor will take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications will be based upon its effort to achieve maximum results from its actions. The Contractor will document these efforts fully, and will implement affirmative action steps at least as extensive as the following:

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

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

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

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

1.7.5. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the U.S. Department of Labor. The Contractor will provide notice of these programs to the sources compiled under 7b above.

1.7.6. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and Collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least

once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

1.7.7. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Foremen, etc., before the initiation of construction work at any job site. A written record must be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

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

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

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

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

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

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

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

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

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

1.8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (Section 7.1. through Section 7.16.). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under Section 7.1. through Section 7.16. of these Specifications provided that the Contractor actively participates in the group, makes every

effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation will not be a defense for the Contractor's noncompliance.

1.9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

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

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

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

1.13. The Contractor, in fulfilling its obligations under these specifications, will implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director will proceed in accordance with 41 CFR 60-4.8.

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

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

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

Special Provision to Item 000

000-006 On-the-Job Training Program

1. DESCRIPTION

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

2. TRAINEE ASSIGNMENT

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

3. PROGRAM REQUIREMENTS

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

4. REIMBURSEMENT

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

5. COMPLIANCE

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

Special Provision to Item 000 000-007L

Disadvantaged Business Enterprise in Federal Aid Contracts

1. DESCRIPTION

The purpose of this Special Provision is to carry out the U.S. Department of Transportation's (DOT) policy of ensuring nondiscrimination in the award and administration of DOT assisted Contracts and creating a level playing field on which firms owned and controlled by individuals who are determined to be socially and economically disadvantaged can compete fairly for DOT assisted Contracts. If the Disadvantaged Business Enterprise (DBE) goal is greater than zero, Article A, "Disadvantaged Business Enterprise in Federal Aid Contracts", of this Special Provision shall apply to this Contract. If there is no DBE goal, Article B, "Race-Neutral DBE Participation," of this Special Provision will apply to this Contract. The percentage goal for DBE participation in the work to be performed under this Contract will be shown on the proposal.

1.1. **Article A. Disadvantaged Business Enterprise in Federal Aid Contracts.**

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

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

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

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

1.1.1.4. By signing the Contract proposal, the Bidder is certifying that the DBE goal as stated in the proposal will be met by obtaining commitments from eligible DBEs or that the Bidder will provide acceptable evidence of good faith effort to meet the commitment. The Owner will determine the adequacy of a Contractor's efforts to meet the Contract goal, within 10 business days, excluding national holidays, from receipt of the information outlined in this Special Provision under Section 1.1.3., "Contractor's Responsibilities." If the requirements of Section 1.A.3 are met, the conditional situation will be removed and the Contract will be forwarded to the Contractor for execution.

1.1.2. **Definitions.**

1.1.2.1. "Broker" is an intermediary or middleman that does not take possession of a commodity or act as a regular dealer selling to the public.

1.1.2.2. "Disadvantaged Business Enterprise" or "DBE" is defined in the standard specifications, Article 1, Definition of Terms.

1.1.2.3. "DBE Joint Venture" means an association of a DBE firm and 1 or more other firm(s) to carry out a single business enterprise for profit for which purpose they combine their property, capital, efforts, skills and knowledge, and in which the DBE is responsible for a distinct, clearly defined portion of the work of the Contract and whose share in the capital contribution, control, management, risks, and profits of the joint venture are commensurate with its ownership interest.

1.1.2.4. "DOT" means the U.S. Department of Transportation, including the Office of the Secretary, the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), and the Federal Aviation Administration (FAA).

1.1.2.5. "Federal Aid Contract" is any Contract between the Owner and a Contractor which is paid for in whole or in part with DOT financial assistance.

1.1.2.6. "Good Faith Effort" means efforts to achieve a DBE goal or other requirement of this Special Provision which, by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the program requirement.

1.1.2.7. "Manufacturer" is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the Contract and of the general character described by the specifications."

1.1.2.8. "Race-conscious" means a measure or program that is focused specifically on assisting only DBEs, including women-owned businesses.

1.1.2.9. "Race-neutral DBE Participation" means any participation by a DBE through customary competitive procurement procedures.

1.1.2.10. "Regular Dealer" is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the Contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. To be a regular dealer, the firm must be an established, regular business that engages in, as its principal business and under its own name, the purchase and sale or lease of the products in question.

A regular dealer in such bulk items as steel, cement, gravel, stone, and petroleum products need not keep such products in stock if it owns and operates distribution equipment for the products. Any supplementing of regular dealers own distribution equipment shall be by a long-term lease agreement and not on an ad hoc or contract-by-contract basis. Brokers, packagers, manufacturers' representatives, or other persons who arrange or expedite transactions shall not be regarded as a regular dealer.

1.1.2.11. "Texas Unified Certification Program" or "TUCP" provides one-stop shopping to applicants for certification, such that applicants are required to apply only once for a DBE certification that will be honored by all recipients of federal funds in the state. The TUCP by Memorandum of Agreement established six member entities to serve as certifying agents for Texas in specified regions.

1.1.3. **Contractor's Responsibilities.** These requirements must be satisfied by the Contractor.

1.1.3.1. After conditional award of the Contract, the Contractor shall submit a completed Form SMS.4901 "DBE Commitment Agreement", From SMS 4901-T "DBE Trucking Commitment Agreement", or Form SMS.4901-MS "DBE Material & Supplier Commitment Agreement" for each DBE he/she intends to use to satisfy the DBE goal or a good faith effort to explain why the goal could not be reached. Provide these forms to the Owner so as to arrive not later than 5:00 p.m. on the 10th business day, excluding national holidays, after the conditional award of the

Contract. When requested, additional time, not to exceed 7 business days, excluding national holidays, may be granted based on documentation submitted by the Contractor.

1.1.3.2. DBE prime Contractors may receive credit toward the DBE goal for work performed by his/her own forces and work subcontracted to DBEs. A DBE prime must make a good faith effort to meet the goals. In the event a DBE prime subcontracts to a non-DBE, that information must be reported on Form SMS.4902.

1.1.3.3. A Contractor who cannot meet the Contract goal, in whole or in part, shall make adequate good faith efforts to obtain DBE participation as so stated and defined in 49 CFR Part 26, Appendix A. The following is a list of the types of action that may be considered as good faith efforts. It is not intended to be a mandatory checklist, nor is it intended to be exclusive or exhaustive. Other factors or types of efforts may be relevant in appropriate cases.

- Soliciting through all reasonable and available means (e.g. attendance at prebid meetings, advertising, and/or written notices) the interest of all certified DBEs who have the capability to perform the work of the Contract. The solicitation must be done within sufficient time to allow the DBEs to respond to it. Appropriate steps must be taken to follow up initial solicitations to determine, with certainty, if the DBEs are interested.
- Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out Contract work items into economically feasible units to facilitate DBE participation, even when the Contractor might otherwise prefer to perform the work items with its own forces.
- Providing interested DBEs with adequate information about the plans, specifications, and requirements of the Contract in a timely manner to assist them in responding to a solicitation.
- Negotiating in good faith with interested DBEs to make a portion of the work available to DBE subcontractors and suppliers and select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiations includes the names, addresses, and telephone numbers of DBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBEs to perform the work.
- A Bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm price and capabilities as well as Contract goals into consideration. However, the fact that there may be some additional cost involved in finding and using DBEs is not in itself sufficient reason for a bidders failure to meet the Contract DBE goal as long as such cost are reasonable. Also, the ability or desire of the Contractor to perform the work of the Contract with its own organization does not relieve the Bidder of the responsibility to make good faith effort. Contractors are not, however, required to accept higher quotes from DBEs if the price difference is excessive or unreasonable.
- Not rejecting DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The Contractor's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate cause for the rejection or non-solicitation of bids and the Contractors efforts to meet the project goal.
- Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.
- Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.
- Effectively using the services of available minority/women community organizations; minority/women Contractors' groups; local, state, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBEs.
- If the Owner determines that the Contractor has failed to meet the good faith effort requirements, the Contractor will be given an opportunity for reconsideration by the Owner.

1.1.3.4. Should the bidder to whom the Contract is conditionally awarded refuse, neglect or fail to meet the DBE goal or comply with good faith effort requirements, the proposal guaranty filed with the bid shall become the property of the Owner, not as a penalty, but as liquidated damages to the Owner.

1.1.3.5. The preceding information shall be submitted directly to the Owner.

1.1.3.6. The Contractor shall not terminate for convenience a DBE subcontractor named in the commitment submitted under Section 1.A.3.a, of this Special Provision. Before terminating or removing a DBE subcontractor named in the commitment, the Contractor must have a written consent of the Owner.

1.1.3.7. The Contractor shall also make a good faith effort to replace a DBE subcontractor that is unable to perform successfully with another DBE, to the extent needed to meet the Contract goal. The Contractor shall submit a completed Form 4901 "DBE Commitment Agreement", From SMS 4901-T "DBE Trucking Commitment Agreement", or Form SMS.4901-MS "DBE Material & Supplier Commitment Agreement" for the substitute DBE firm(s). Any substitution of DBEs shall be subject to approval by the Owner. Before approving the substitution, the Owner will request a statement from the DBE concerning it being replaced.

1.1.3.8. The Contractor shall designate a DBE liaison officer who will administer the Contractor's DBE program and who will be responsible for maintenance of records of efforts and contacts made to subcontract with DBEs.

1.1.3.9. Contractors are encouraged to investigate the services offered by banks owned and controlled by disadvantaged individuals and to make use of these banks where feasible.

1.1.4. **Eligibility of DBEs.**

1.1.4.1. The member entities of the TUCP certify the eligibility of DBEs and DBE joint ventures to perform DBE subcontract work on DOT financially assisted Contracts.

1.1.4.2. The Department maintains the Texas Unified Certification Program DBE Directory containing the names of firms that have been certified to be eligible to participate as DBE's on DOT financially assisted Contracts. An update of the Directory can be found on the Internet at http://www.txdot.gov/apps-cg/tucp/default.htm.

1.1.4.3. Only DBE firms certified at the time commitments are submitted are eligible to be used in the information furnished by the Contractor as required under Section 1.A.3.a. and 3.g. above. For purposes of the DBE goal on this project, DBEs will only be allowed to perform work in the categories of work for which they are certified.

1.1.4.4. Only DBE firms certified at the time of execution of a Contract/subcontract/purchase order, are eligible for DBE goal participation.

1.1.5. **Determination of DBE Participation.** When a DBE participates in a Contract, only the values of the work actually performed by the DBE, as referenced below, shall be counted by the prime Contractor toward DBE goals:

1.1.5.1. The total amount paid to the DBE for work performed with his/her own forces is counted toward the DBE goal. When a DBE subcontracts part of the work of its Contract to another firm, the value of the subcontracted work may be counted toward DBE goals only if the subcontractor is itself a DBE. Work that a DBE subcontracts to a non-DBE firm does not count toward DBE goals.

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

1.1.5.2.1. A Contractor may count toward its DBE goal only expenditures to DBEs that perform a commercially useful function (CUF) in the work of a Contract or purchase order. A DBE is considered to perform a CUF when it is responsible for execution of the work of the Contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a CUF, the DBE must also be responsible, with respect to materials and supplies used on the Contract, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself.

In accordance with 49 CFR Part 26, Appendix A, guidance concerning Good Faith Efforts, Contractors may make efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services. Contractors may not however, negotiate the price of materials or supplies used on the Contract by the DBE, nor may they determine quality and quantity, order the materials themselves, nor install the materials (where applicable), or pay for the material themselves. Contractors however, may share the quotations they receive from the material supplier with the DBE firm, so that the DBE firm may negotiate a reasonable price with the material supplier.

In all cases, prime or other non-DBE subcontractor assistance will not be credited toward the DBE goal.

1.1.5.2.2. A DBE does not perform a CUF if its role is limited to that of an extra participant in a transaction, Contract, or project through which funds are passed in order to obtain the appearance of DBE participation.

Consistent with industry practices and the DOT/Department's DBE program, a DBE subcontractor may enter into second-tier subcontracts, amounting up to 70% of their Contract. Work subcontracted to a non-DBE does not count towards DBE goals. If a DBE does not perform or exercise responsibility for at least 30% of the total cost of its Contract with its own work force, or the DBE subcontracts a greater portion of the work of a Contract than would be expected on the basis of normal industry practice for the type of work involved, it will be presumed that the DBE is not performing a CUF

1.1.5.2.3. A DBE trucking firm (including an owner operator who is certified as a DBE is considered to be performing a CUF when the DBE is responsible for the management and supervision of the entire trucking operation on a particular Contract and the DBE itself owns and operates at least 1 fully licensed, insured, and operational truck used on the Contract.

1.1.5.2.3.1. The Contractor receives credit for the total value of the transportation services the DBE provides on a Contract using trucks it owns, insures, and operates using drivers it employs.

1.1.5.2.3.2. The DBE may lease trucks from another DBE firm, including an owner operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the Contract.

1.1.5.2.3.3. The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit for the total value of transportation services provided by non-DBE lessees not to exceed the value of transportation services provided by the DBE-owned trucks on the Contract. Additional participation by non-DBE lessees receive credit only for the fee or commission it receives as result of the lease arrangement

1.1.5.2.3.4. A lease must indicate that the DBE has exclusive use of and control over the trucks giving the DBE absolute priority for use of the leased trucks. Leased trucks must display the name and identification number of the DBE.

1.1.5.2.4. When a DBE is presumed not to be performing a CUF the DBE may present evidence to rebut this presumption.

1.1.5.2.5. Project materials or supplies acquired from an affiliate of the prime Contractor can not directly or indirectly (2nd or lower tier subcontractor) be used for DBE goal credit.

1.1.5.3. A Contractor may count toward its DBE goals expenditures for materials and supplies obtained from a DBE manufacturer, provided that the DBE assumes the actual and contractual responsibility for the materials and supplies. Count expenditures with DBEs for materials or supplies toward DBE goals as provided in the following:

1.1.5.3.1. If the materials or supplies are obtained from a DBE manufacturer, count 100% of the cost of the materials or supplies toward DBE goals. (Definition of a DBE manufacturer found at 1A.c.(1) of this provision.)

For purposes of this Section (1.A.c.(1)), a manufacturer is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the Contract and of the general character described by the specifications.

1.1.5.3.2. If the materials or supplies are purchased from a DBE regular dealer, count 60% of the cost of the materials or supplies toward DBE goals.

For purposes of this Section (1.A.5.c.(2)), a regular dealer is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the Contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business:

1.1.5.3.2.1. To be a regular dealer, the firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question.

1.1.5.3.2.2. A person may be a regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone or asphalt without owning, operating, or maintaining a place of business as provided in the first paragraph under Section 1.A.5.c.(2), if the person both owns and operates distribution equipment for the products. Any supplementing of regular dealers' own distribution equipment shall be by a long-term lease agreement and not on an ad hoc or contract-by-contract basis.

1.1.5.3.2.3. Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions are not regular dealers within the meaning of Section 1.A.5.c.(2).

1.1.5.3.3. With respect to materials or supplies purchased from DBE which is neither a manufacturer nor a regular dealer, count the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site, toward DBE goals, provided you determine the fees to be reasonable and not excessive as compared with fees customarily allowed for similar services.

Do not count any portion of the cost of the materials and supplies themselves toward DBE goals.

1.1.5.3.4. Count the entire amount of fees or commissions charged by a DBE firm for providing a bona fide service, such as professional, technical, consultant or managerial services, or for providing bonds or insurance specifically required for the performance of a DOT-assisted Contract, toward DBE goals, provided you determine the fee to be reasonable and not excessive as compared with fees customarily allowed for similar services.

1.1.5.4. If the Contractor chooses to assist a DBE firm, other than a manufacturing material supplier or regular dealer, and the DBE firm accepts the assistance, the Contractor may act solely as a guarantor by use of a two-party check for payment of materials to be used on the project by the DBE. The material supplier must invoice the DBE who will present the invoice to the Contractor. The Contractor may issue a joint check to the DBE and the material supplier and the DBE firm must issue the remittance to the material supplier. No funds shall go directly from the Contractor to the material supplier. The DBE firm may accept or reject this joint checking arrangement.

The Contractor must obtain approval from the Owner before implementing the use of joint check arrangements with the DBE. Submit to the Owner, Joint Check Approval Form 2178 for requesting approval. Provide copies of cancelled joint checks upon request. No DBE goal credit will be allowed for the cost of DBE materials that are paid by the Contractor directly to the material supplier.

1.1.5.5. No DBE goal credit will be allowed for supplies and equipment the DBE subcontractor leases from the Contractor or its affiliates.

1.1.5.6. No DBE goal credit will be allowed for the period of time determined by the Owner that the DBE was not performing a CUF. The denial period of time may occur before or after a determination has been made by the Owner. In case of the denial of credit for non-performance of a CUF of a DBE, the Contractor will be required to provide a substitute DBE to meet the Contract goal or provide an adequate good faith effort when applicable.

1.1.6. **Records and Reports.**

1.1.6.1. The Contractor shall submit monthly reports, after work begins, on DBE payments to meet the DBE goal and for DBE or HUB race-neutral participation. Report payments made to non-DBE HUBs. The monthly report is to be sent to the Owner. These reports will be due within 15 days after the end of a calendar month. These reports will be required until all DBE subcontracting or material supply activity is completed. Form SMS.4903, "DBE Progress Report," is to be used for monthly reporting. Form. SMS.4904, "DBE Final Report," is to be used as a final summary of DBE payments submitted upon completion of the project.

The original final report must be submitted to the Owner. These forms may be obtained from the Owner or may be reproduced by the Contractor. The Owner may verify the amounts being reported as paid to DBEs by requesting copies of cancelled checks paid to DBEs on a random basis. Cancelled checks and invoices should reference the Owner's project number.

1.1.6.2. DBE subcontractors and/or material suppliers should be identified on the monthly report by Vendor Number, name, and the amount of actual payment made to each during the monthly period. Negative reports are required when no activity has occurred in a monthly period.

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

1.1.6.4. Before receiving final payment, the Contractor shall submit Form SMS.4904, "DBE Final Report". If the DBE goal requirement is not met, documentation supporting Good Faith Efforts, as outlined in Section 1.A.3.c of this Special Provision, must be submitted with the "DBE Final Report."

1.1.6.5. Provide a certification of prompt payment in accordance with the Owner's prompt payment procedure to certify that all subcontractors and suppliers were paid from the previous months payments and retainage was released for those whose work is complete. Submit the completed form each month and the month following the month when final acceptance occurred at the end of the project.

1.1.7. **Compliance of Contractor**. To ensure that DBE requirements of this DOT assisted Contract are complied with, the Ownert will monitor the Contractor's efforts to involve DBEs during the performance of this Contract. This will be accomplished by a review of monthly reports submitted to the Owner by the Contractor indicating his progress in achieving the DBE Contract goal, and by compliance reviews conducted on the project site by the Owner.

The Contractor shall receive credit toward the DBE goal based on actual payments to the DBE subcontractor. The Contractor shall notify the Owner if he/she withholds or reduces payment to any DBE subcontractor. The

Contractor shall submit an affidavit detailing the DBE subcontract payments before receiving final payment for the Contract.

Contractors' requests for substitutions of DBE subcontractors shall be accompanied by a detailed explanation which should substantiate the need for a substitution. The Contractor may not be allowed to count work on those items being substituted toward the DBE goal before approval of the substitution from the Owner.

The prime Contractor is prohibited from providing work crews and equipment to DBEs. DBE Goal credit for the DBE subcontractors leasing of equipment or purchasing of supplies from the prime Contractor or its affiliates is not allowed.

When a DBE subcontractor named in the commitment under Section 1.A.3.a. of this Special Provision, is terminated or fails to complete its work on the Contract for any reason, the prime Contractor is required to make good faith efforts to find another DBE subcontractor to substitute for the original DBE. These good faith efforts shall be directed at finding another DBE to perform at least the same amount of work under the Contract as the DBE that was terminated, to the extent needed to meet the Contract goal.

A Contractor's failure to comply with the requirements of this Special Provision shall constitute a material breach of this Contract. In such a case, the Owner reserves the right to terminate the Contract; to deduct the amount of DBE goal not accomplished by DBEs from the money due or to become due the Contractor, or to secure a refund, not as a penalty but as liquidated damages to the Owner or such other remedy or remedies as the Owner deems appropriate.

Forward Form 2371, "DBE Trucking Credit Worksheet," completed by the DBE trucker every month DBE credit is used.

1.2. **Article B. Race-Neutral Disadvantaged Business Enterprise Participation.** It is the policy of the DOT that Disadvantaged Business Enterprises (DBE) as defined in 49 CFR Part 26 Subpart A, be given the opportunity to compete fairly for Contracts and subcontracts financed in whole or in part with Federal funds and that a maximum feasible portion of the Department's overall DBE goal be met using race-neutral means. Consequently, if there is no DBE goal, the DBE requirements of 49 CFR Part 26, apply to this Contract as follows:

The Contractor will offer DBEs as defined in 49 CFR Part 26, Subpart A, the opportunity to compete fairly for Contracts and subcontractors financed in whole or in part with Federal funds. Race-Neutral DBE and non-DBE HUB participation on projects with no DBE goal shall be reported on Form SMS.4903, "DBE or HUB Progress Report" and submitted to the Owner each month and at project completion. Payments to DBEs reported on Form SMS.4903 are subject to the requirements of Section 1.1.5., "Determination of DBE Participation."

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

Special Provision to Item 000
000-010 Important Notice to Contractors

By the 20th day of each month, report to the Engineer the number of incidents and injuries that occurred on the project the previous month. Report:

- the total number of incidents and injuries for the Contractor and all subcontractors, and
- the number of Contractor and subcontractor-related incidents and injuries that involved a third party.

An "incident" is defined as any work-related occurrence that caused damage only to vehicles, equipment, materials, etc.

An "injury" is defined as an OSHA recordable injury.

Failure to submit this information to the Engineers by the 20th day of each month will result in the Department taking actions including, but not limited to withholding estimates and suspending the work. This report will not be paid for directly, but will be considered subsidiary to Items of the contract.

Special Provision to Item 2L

002L-001 Instructions to Bidders

For this project, Item 2L, "Instructions to Bidders," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 2., "Eligibility of Bidders," is supplemented by the following:

Bids will not be accepted from bidders unless the bidder or the bidder's designated subcontractor(s) have been pre-qualified by the Texas Department of Transportation, Traffic Operations Division. This technical pre-qualification is in addition to all other bidder pre-qualification requirements set forth by the Construction Division of TxDOT. To pre-qualify, file acceptable documentation demonstrating the capability of the bidder or the bidder's designated subcontractor(s) to perform the specific categories of work that are described below which apply to this contract. The categories of work that apply to this contract are listed in the "Important Notice to Contractors" Special Provision in the contract.

Category A.1.0. Pulling Fiber Optic Cable.

The bidder or the designated subcontractor must meet the following experience requirements:

a. Two years continuous existence offering services in the installation of fiber optic cable through a conduit system and terminating in ground boxes, field cabinets or buildings.

b. Two completed projects where the personnel pulled a minimum of 5 mi. in length of fiber optic cable through an outdoor conduit system for each project. The completed fiber optic cable systems must have been in continuous satisfactory operation for a minimum of 1 yr.

Category A.2.0. Splicing and Testing of Fiber Optic Cable

The bidder or the designated subcontractor must meet the following experience requirements:

a. Two years continuous existence offering services in the fields of fiber optic cable splicing and testing of fiber optic cable installed through a conduit system and terminating in ground boxes, field cabinets or buildings.

Experience must include all of the following:

- Termination of a minimum of 36 fibers within a Fiber Distribution Frame.
- OTDR testing and measurement of end to end attenuation of single mode and multimode fibers.
- System troubleshooting and maintenance.
- Training of personnel in system maintenance.
- Use of water-tight splice enclosures.
- Fusion splicing of fiber optic cable which meet the tolerable dB losses listed below:

Mode	dB Loss Range
Single mode	0.05 to 0.10
Multimode	0.20 to 0.30

b. Two completed projects where the personnel performed fiber optic cable splicing and terminations, system testing, system troubleshooting and maintenance during the course of the project and provided training on system maintenance. Each project must have consisted of a minimum 5 mi. of fiber optic cable. The completed fiber optic cable systems must have been in continuous satisfactory operation for a minimum of 1 yr.

Category B.1.0. Dynamic Message Sign (DMS) Installation.

The bidder or the designated subcontractor must meet the following experience requirements:

a. Two years continuous existence offering services in the installation of DMS signs.

b. Two completed projects consisting of a minimum of 2 signs in each project where the personnel installed and tested DMS on outdoor, permanently mounted overhead structure(s) and related sign control equipment. The completed sign system installations must have been in continuous satisfactory operation for a minimum of 1 yr.

c. One project (may be one of the two in the preceding paragraph) in which the personnel worked in cooperation with technical representatives of equipment suppliers to perform specific stages of work. The Contractor will not be required to furnish equipment on this project from any supplier mentioned in submitted pre-qualification documentation.

Category C.1.0. Closed Circuit Television (CCTV) Equipment Installation.

The bidder or the designated subcontractor must meet the following experience requirements:

a. Two years continuous existence offering services in the installation of CCTV camera systems.

b. Two completed projects consisting of a minimum of 5 cameras in each project where the personnel installed and tested CCTV cameras on outdoor, permanently mounted structure(s) and related camera control and transmission equipment. The completed CCTV camera system installations must have been in continuous satisfactory operation for a minimum of 1 yr.

c. One project (may be one of the two in the preceding paragraph) in which the personnel worked in cooperation with technical representatives of equipment suppliers to perform specific stages of work. The Contractor will not be required to furnish equipment on this project from the supplier who furnished pre-qualification documentation.

Category D.1.0. T-1 Digital Communication System Installation.

The bidder or the designated subcontractor must meet the following experience requirements:

a. Two years continuous existence offering services in the installation of data, voice and video communication systems operating at a minimum of a T-1 communication rate (1.544 Megabytes/second (Mbps)).

Experience must include all of the following:

- Installation of multiplexing/demultiplexing equipment.

- Installation of communication switching equipment.
- Integration of a network management system.
- End to end communication system testing and maintenance.

b. Two projects completed by the personnel consisting of T-1 digital communication system installations, with a minimum of 3 drop/insert nodes, operating at a minimum of a T-1 (1.544 Mbps) communication rate over transmission distances exceeding 5 mi. for each project. The completed communications system installation must have been in continuous satisfactory operation for a minimum of 1 yr.

c. One project (may be one of the two in the preceding paragraph) in which the personnel worked in cooperation with technical representatives of equipment suppliers to perform specific stages of work. The Contractor will not be required to furnish equipment on this project from any supplier mentioned in submitted pre-qualification documentation.

Category D.2.0. Synchronous Optical Network (SONET) Communication System Installation.

The bidder or the designated subcontractor must meet the following experience requirements:

a. Two years continuous existence offering services in the installation of data, voice and video communication systems operating at a minimum of an OC1 communication rate (51.84 Mbps).

Experience must include all of the following:

- Installation of multiplexing/demultiplexing equipment.
- Installation and integration of digital DS1 and DS3 communication switching equipment.
- Integration of a network management system.
- End to end communication system testing and maintenance.

b. Two projects completed by the personnel consisting of communication system installations with a minimum of 3 drop/insert nodes operating at a minimum of an OC1 (51.84 Mbps) communication rate over transmission distances exceeding 5 mi. for each project. The completed communications system installations must have been in continuous satisfactory operation for a minimum of 1 yr.

c. One project (may be one of the two in the preceding paragraph) in which the personnel worked in cooperation with technical representatives of equipment suppliers to perform specific stages of work. The Contractor will not be required to furnish equipment on this project from any supplier mentioned in submitted pre-qualification documentation.

Category D.3.0. Asynchronous Transfer Mode (ATM) Communication System Installation.

The bidder or the designated subcontractor must meet the following experience requirements:

a. Two years continuous existence offering services in the installation of data, voice and video communication systems operating at a minimum of an OC3 communication rate (155 Mbps).

Experience must include all of the following:

- Installation of multiplexing/demultiplexing equipment.
- Installation and integration of digital DS1, DS3 and ethernet communication switching equipment.

- Integration of a SNMP (Simple Network Management Protocol) based network management system.
- Installation and configuration of circuit emulation for T1 and PBX circuit transmission.
- End to end communication system testing and maintenance.
- Configuration of control signaling via PNNI (Private Network to Network Interface) protocol.

b. Two projects completed by the personnel consisting of communication system installations with a minimum of 1 ATM node operating at a minimum of an OC3 (155 Mbps) communication rate over transmission distances exceeding 5 mi. for each project. The completed communications system installations must have been in continuous satisfactory operation for a minimum of 1 yr.

c. One project (may be one of the two in the preceding paragraph) in which the personnel worked in cooperation with technical representatives of equipment suppliers to perform specific stages of work. The Contractor will not be required to furnish equipment on this project from any supplier mentioned in submitted pre-qualification documentation.

Submit completed prequalification documents by 12:00 P.M. (CST), 8 working days prior to bid opening to the Engineer of Traffic, Texas Department of Transportation, Traffic Operations Division, 125 East 11th Street, Austin, Texas, 78701- 2483. This will allow the Department adequate time to review the statements and respond to the prospective bidder with the status of their submittal. Any documentation which does not correctly address all specified items will be rejected for the reason of insufficient data and additional information must be provided.

Failure to submit prequalification documentation prior to 12:00 P.M. (CST), 8 working days prior to bid opening, will be sufficient reason for not being approved for bidding.

All prequalification documentation must appear on TxDOT Technical Prequalification Forms for each applicable category of work. Technical Prequalification Forms may be obtained upon written request to the above address, or by calling the office of the Engineer of Traffic at 512/416-3118.

Should the bidder have approved subcontractors which meet the above requirements, and should these subcontractors be unable to complete the entire project, the successful bidder must resubmit technical pre-qualification material on alternate subcontractors for approval before the applicable category of work can be continued.

Special Provision to Item 3L

003L-005 Award and Execution of Contract

Item 3L, "Award and Execution of Contract" of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Section 4.2., "Bonds," is supplemented by the following:

On the Department's form, provide a warranty bond executed by either the manufacturer of the warranted items or the Contractor, and a U. S. Treasury listed surety with attached powers of attorney and notification information. The warranty bond will be for the total amount of the items that are warranted and furnished as a guarantee for the protection of the Department for all labor, materials, equipment and other incidentals for the replacement of defective work. The party providing the warranty bond is responsible for meeting the warranty requirements.

Special Provision to Item 7L
Legal Relations and Responsibilities

007L-001L

Item 7L, "Legal Relations and Responsibilities," of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Section 2.6.5., "Training", is supplemented by the following:

Coordinate enrollment, pay associated fees, and successfully complete approved Training or Contractor Delivered Training. Training is valid for the period prescribed by the provider but no less than 3 yrs. from the date of completion. The Owner may require training at a frequency less than the period prescribed or 3 yrs. based on Owner's needs. Training and associated fees will not be measured or paid for directly but are considered subsidiary to pertinent Items.

2.6.5.1. **Approved Training.** Approved training is listed below:

2.6.5.1.1 **Contractor Responsible Person and Alternate.**

Provider	Course Title
American Traffic Safety Services Association	Traffic Control Supervisor
National Highway Institute	Maintenance of Traffic Control for Supervisors

2.6.5.1.2. **Flagger Instructor Training.**

Provider	Course Title
American Traffic Safety Services Association	Flagging Instructor Training Course
Texas Engineering Extension Services	Train-the-Trainer Flaggers
National Safety Council	Flagger (Instructor)
University of Texas at Arlington, Division for Enterprise Development	Certified Flagger Instructor

Flagger Training.

Provider	Course Title
Texas Engineering Extension Services	Flaggers in Work Zones
National Safety Council	Flagger (Novice)
University of Texas at Arlington, Continuing Education Department	Flaggers in Work Zones (TxDOT Training)
University of Texas at Arlington, Continuing Education Department	WZ Traffic Control/Qualified Flagger
Associated Builders and Contractors, Austin Chapter	Flagger Training
LDI Safety Training	Flagger Training
Tipton Compliance and Safety	Flagger Training

2.6.5.1.3. **Law Enforcement Personnel.**

Provider	Course Title
National Highway Institute	Safe and Effective Use of Law Enforcement Personnel in Work Zones

2.6.5.1.4. **Other Work Zone Personnel.**

Provider	Course Title
American Traffic Safety Services Association	Traffic Control Technician Training
Texas Engineering Extension Services	Work Zone Traffic Control
National Highway Institute	Maintenance of Traffic Control for Technicians
National Highway Institute	Maintenance Training Series: Basics of Work Zone Traffic Control

2.6.5.2. **Contractor Delivered Training.** Develop Contractor Delivered Training curriculum and submit the curriculum to the Owner for approval. Do not implement the training curriculum before receiving written approval from the Owner. The work performed and materials furnished to develop the curriculum and provide training will not be measured or paid for directly but will be considered subsidiary to pertinent Items.

A contractor's certified flagging instructor is permitted to train other flaggers.

Special Provision to Item 8L
008L-001 Prosecution and Progress

Item 8L, "Prosecution and Progress," of the Standard Specifications, is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Article 8.6., "Failure to Complete Work on Time," is supplemented by the following:

8.6.1. **Lane Closure Assessment Fees.**

Monetary assessment, as shown on the plans, will be made against the Contractor for any lane closure or obstruction that overlaps into the peak hour traffic for each hour or portion thereof, per lane, regardless of the length of lane closure or obstruction.

8.6.1.1. **Definition of Terms.** For this Contract the following definitions apply:

8.6.1.1.1 **Hour.** Any continuous 60 min. period or portion of a continuous 60 min. period beginning at that point when a lane(s) is closed or obstructed by the Contractor's operations.

8.6.1.1.2. **Assessment Fee.** The amount shown in the proposal, representing the average hourly cost of interference and inconvenience to the road user for each lane closed or obstructed during peak hour traffic.

8.6.1.1.3. **Closure or Obstruction.** When the Contractor's operations result in a useable lane width of the travelway or shoulder less than that specified in the plan documents.

8.6.1.1.4. **Peak Hour Traffic Times.** Schedule of days and times described in the General Notes, when lane closures or obstructions are not allowed.

8.6.1.2. **Fee Calculation and Collection.** The assessment fee will be deducted from the amount due the Contractor on the monthly construction estimate, and thus retained by the Department. The Engineer will determine the time of overlap of lane closure(s) or obstruction(s) for calculating the assessment fee. The assessment fee is based on road user costs and is assessed not as a penalty, but for added expense incurred by the traveling public.

Special Provision to Item 8L
008L-006 Prosecution and Progress

Item 8L, "Prosecution and Progress" of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

This item is supplemented by the following:

9. **Incentive Using Road-User Cost or Contract Administration Liquidated Damage Values and Disincentive Using Road-User Cost.** This special provision is for the application of incentives and disincentives as follows:

- incentives for early Contract completion using contract administration liquidated damage or substantial completion of work ahead of time using daily road-user cost values as basis and
- disincentives for late substantial completion of work using daily road-user costs.

Incentive provisions, based on contract administration liquidated damages, will apply when shown on the plans. Incentive provisions, based on road-user cost, will apply when shown on the plans. Disincentive provisions, based on road-user cost, will apply when road-user cost incentive provisions are shown on the plans. The disincentive provisions, based on road-user cost, will also apply when shown separately on the plans (without an associated road-user cost incentive). Definitions are as follows:

- Contract Completion - The final acceptance date (day) unless performance, establishment and maintenance periods occur. In the case of performance, establishment and maintenance periods, completion shall be considered when all work is complete and accepted except for performance, establishment and maintenance periods, with time computed to the suspension of time charges for the acceptance process.
- Substantial Completion of Work - The date (day) when all project work (or the work for a specified milestone or phase) requiring lane or shoulder closures or obstructions is completed, and traffic is following the lane arrangement as shown on the plans for the finished roadway (or the specified milestone or phase of work); all pavement construction and resurfacing are complete; and traffic control devices and pavement markings are in their final position (or as called for on the plans for the specified milestone of work). Substantial completion is considered to be completion, based on approval by Fort Bend County, of all required permanent and temporary construction, striping, safety devices, signage and incidentals in order to open all lanes of traffic.

When A + B Bidding provisions are included in the Contract, the B working days bid will be considered as the time allowed for completion, contract or substantial as applicable. In addition, the plans will show either the number of working days or a specific date for the purposes of computing substantial completion incentives or disincentives.

Time charge adjustments will be made in accordance with the schedule required to meet Article 8.1, "Prosecution of Work" and Article 8.5, "Project Schedules," the proposal, and the plans. For Contracts with milestone dates, time charges for the completion incentives and disincentives will not be adjusted for weather, weekends, holidays, or other unforeseeable events not under the control or responsibility of the Department. However, time charges for completion incentives or disincentives may be adjusted by the Engineer when;

- work, under the control of the Department, such as extension of limits or changes in scope, change the actual duration of completion,
- delays occur due to unadjusted utilities or unclear right-or-way when clearance is not the responsibility of the Contractor, or

- catastrophic events occur, such as a declared state of emergency or natural disaster, if the event directly affects the Contractor's prosecution.

9.1. **Incentives.** When shown on the plans and in accordance with the Contract, the Department will pay an incentive for the early Contract completion or substantial completion of work under the number of working days stipulated in the Contract. The maximum number of working days used in computing the credit will be 30 days for each milestone and Contract completion incentive unless otherwise shown in the Contract. The amount of the credit will be added to money due or to become due to the Contractor.

9.1.1. **Early Contract Completion Incentive.** The incentive will be based on the difference between the actual early Contract completion days and the Contract completion days in the Contract. The difference will then be multiplied by the daily contract administration liquidated damage value shown in the proposal.

9.1.2. **Early Substantial Completion of Work Incentive.** The incentive will be based on the differences between the actual early substantial completion of work and the Contract days allowed to substantially complete the work (or the specified milestone or phase of work). The difference will then be multiplied by the daily road-user cost values specified for substantial Contract completion (or road-user cost specified for the corresponding milestone or phase of work).

9.2. **Disincentives for Failure to Substantially Complete Work on Time.** When shown on the plans and in accordance with the Contract, failure to substantially complete the work (or specified milestone or phase of work) within the established number of working days will result in the assessment of disincentives using the daily road-user cost shown on the plans for each working day in excess of those allowed. The road-user cost disincentive deductions will be in addition to any Contract administration liquidated damages, in accordance with Article 8.6, "Failure to Complete Work on Time." The amount of the disincentive will be deducted from money due or to become due to the Contractor. The road-user cost disincentives will be assessed not as a penalty, but for added expense incurred by the traveling public.

Special Provision to Item 132
132-001 Embankment

Item 132, "Embankment" of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Article 132.2., "Materials", is supplemented with the following:

- **Type E.** Cement stabilized material consisting of Type CS select backfill meeting the requirements of Section 423.2.4.2.Table 2. Select Backfill Gradation Limits and hydraulic cement meeting the requirements of DMS-4600, "Hydraulic Cement," and the Department's Hydraulic Cement Quality Monitoring Program (HCQMP). Sources not on the HCQMP will require testing and approval before use.

Article 132.2., "Materials", the last paragraph is voided and not replaced.

Section 132.3.3, "Embankments Adjacent to Culverts and Bridges", is voided and replaced by the following:

132.3.3. Embankments Adjacent to Culverts and Bridges. Except as noted below, in Section 132.3.4, compact embankments adjacent to culverts, under bridge approach slabs, and adjacent to abutments where using Wide Flange Terminal Anchorage systems but not cement stabilized embankment, in accordance with Item 400, "Excavation and Backfill for Structures."

Section 132.3.4., "Compaction Methods", the first paragraph is supplemented by the following:

When cement stabilized backfill embankment, reinforced volume embankment, retaining wall foundation improvements, or embankment foundation improvements are shown on the plans, compact each layer to the required density, in accordance with Section 276.4.3, "Compaction."

Article 132.3., "Construction", is supplemented with the following:

Section 132.3.7 Cement Stabilized Backfill Embankment (CSBE). Provide Type E material for cement stabilized backfill embankment. Place CSBE for embankments, retaining wall foundation improvements, embankment foundation improvements and backfill material placed between the reinforced volume of retaining walls in accordance with the requirements of Section 423.2.4.4, "Cement Stabilized Backfill" at the locations shown on the plans or as directed.

Article 132.5., "Payment", the first paragraph is voided and replaced by the following:

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Embankment (Final)," "Embankment (Original)," or "Embankment (Vehicle)," of the compaction method and type specified. Where Cement Stabilized Backfill Embankment (CSBE) is shown on the plans, it will be paid for at the unit price bid for "Embankment (Final) (CSBE)", "Embankment (Final)(CSBE)(Retaining Wall Foundation Improvement)," "Embankment (Final)(CSBE)(Embankment Foundation Improvement)," or "Embankment (Final)(CSBE) (Reinforced Volume of Retaining Walls) of the compaction method and type shown on the plans. When the embankment adjacent to the cement stabilized reinforced volume is not cement stabilized, the cement stabilized reinforced volume will be paid as "Embankment (Final)" of the compaction method and type shown on the plans. This price is full compensation for all cement, cement treatment and stabilization, furnishing embankment, hauling, placing, compacting, curing, finishing, and reworking; disposal of waste material; and equipment, labor, tools, and incidentals.

Special Provision to Item 506 — 506-001L
Temporary Erosion, Sedimentation, and Environmental Controls

For this project, item 506, "Temporary Erosion, Sedimentation, and Environmental Controls," of the standard specifications, is hereby voided and replaced with the following.

1. DESCRIPTION

Install, maintain, and remove erosion, sedimentation, and environmental control measures to prevent or reduce the discharge of pollutants in accordance with the Storm Water Pollution Prevention Plan (SWP3) in the plans and the Texas Pollutant Discharge Elimination System (TPDES) General Permit TXR150000.

2. MATERIALS

Furnish materials in accordance with the following:
Item 161, "Compost"
Item 432, "Riprap"
Item 556, "Pipe Underdrains"

2.1. **Rock Filter Dams.**

2.1.1. **Aggregate.** Furnish aggregate with hardness, durability, cleanliness, and resistance to crumbling, flaking, and eroding acceptable to the Owner. Provide the following:

Types 1, 2, and 4 Rock Filter Dams. Use 3 to 6 in. aggregate.
Type 3 Rock Filter Dams. Use 4 to 8 in. aggregate.

2.1.2. **Wire.** Provide minimum 20 gauge galvanized wire for the steel wire mesh and tie wires for Types 2 and 3 rock filter dams. Type 4 dams require:

a double-twisted, hexagonal weave with a nominal mesh opening of 2-1/2 in. × 3-1/4 in.;
minimum 0.0866 in. steel wire for netting;
minimum 0.1063 in. steel wire for selvages and corners; and
minimum 0.0866 in. for binding or tie wire.

2.1.3. **Sandbag Material.** Furnish sandbags meeting Section 506.2.8., "Sandbags," except that any gradation of aggregate may be used to fill the sandbags.

2.2. **Temporary Pipe Slope Drains.** Provide corrugated metal pipe, polyvinyl chloride (PVC) pipe, flexible tubing, watertight connection bands, grommet materials, prefabricated fittings, and flared entrance sections that conform to the plans. Recycled and other materials meeting these requirements are allowed if approved.

Furnish concrete in accordance with Item 432, "Riprap."

2.3. **Temporary Paved Flumes.** Furnish asphalt concrete, hydraulic cement concrete, or other comparable non-erodible material that conforms to the plans. Provide rock or rubble with a minimum diameter of 6 in. and a maximum volume of 1/2 cu. ft. for the construction of energy dissipaters.

2.4. **Construction Exits.** Provide materials that meet the details shown on the plans and this Section.

2.4.1. **Rock Construction Exit.** Provide crushed aggregate for long- and short-term construction exits. Furnish aggregates that are clean, hard, durable, and free from adherent coatings such as salt, alkali, dirt, clay, loam, shale, soft or flaky materials, and organic and injurious matter. Use 4- to 8-in. aggregate for Type 1. Use 2- to 4-in. aggregate for Type 3.

2.4.2. **Timber Construction Exit.** Furnish No. 2 quality or better railroad ties and timbers for long-term construction exits, free of large and loose knots and treated to control rot. Fasten timbers with nuts and bolts or lag bolts, of at least 1/2 in. diameter, unless otherwise shown on the plans or allowed. Provide plywood or pressed wafer board at least 1/2 in. thick for short-term exits.

2.4.3. **Foundation Course.** Provide a foundation course consisting of flexible base, bituminous concrete, hydraulic cement concrete, or other materials as shown on the plans or directed.

2.5. **Embankment for Erosion Control.** Provide rock, loam, clay, topsoil, or other earth materials that will form a stable embankment to meet the intended use.

2.6. **Pipe.** Provide pipe outlet material in accordance with Item 556, "Pipe Underdrains," and details shown on the plans.

2.7. **Construction Perimeter Fence.**

2.7.1. **Posts.** Provide essentially straight wood or steel posts that are at least 60 in. long. Furnish soft wood posts with a minimum diameter of 3 in., or use nominal 2 × 4 in. boards. Furnish hardwood posts with a minimum cross-section of 1-1/2 × 1-1/5 in. Furnish T- or L-shaped steel posts with a minimum weight of 0.5 lb. per foot.

2.7.2. **Fence.** Provide orange construction fencing as approved.

2.7.3. **Fence Wire.** Provide 11 gauge or larger galvanized smooth or twisted wire. Provide 16 gauge or larger tie wire.

2.7.4. **Flagging.** Provide brightly-colored flagging that is fade-resistant and at least 3/4 in. wide to provide maximum visibility both day and night.

2.7.5. **Staples.** Provide staples with a crown at least 1/2 in. wide and legs at least 1/2 in. long.

2.7.6. **Used Materials.** Previously used materials meeting the applicable requirements may be used if approved.

2.8. **Sandbags.** Provide sandbag material of polypropylene, polyethylene, or polyamide woven fabric with a minimum unit weight of 4 oz. per square yard, a Mullen burst-strength exceeding 300 psi, and an ultraviolet stability exceeding 70%.

Use natural coarse sand or manufactured sand meeting the gradation given in Table 1 to fill sandbags. Filled sandbags must be 24 to 30 in. long, 16 to 18 in. wide, and 6 to 8 in. thick.

Table 1
Sand Gradation

Sieve #	Retained (% by Weight)
4	Maximum 3%
100	Minimum 80%
200	Minimum 95%

Aggregate may be used instead of sand for situations where sandbags are not adjacent to traffic. The aggregate size shall not exceed 3/8 in.

2.9. **Temporary Sediment Control Fence.** Provide a net-reinforced fence using woven geo-textile fabric. Logos visible to the traveling public will not be allowed.

2.9.1. **Fabric.** Provide fabric materials in accordance with DMS-6230, "Temporary Sediment Control Fence Fabric."

2.9.2. **Posts.** Provide essentially straight wood or steel posts with a minimum length of 48 in., unless otherwise shown on the plans. Furnish soft wood posts at least 3 in. in diameter, or use nominal 2 × 4 in. boards. Furnish hardwood posts with a minimum cross-section of 1-1/2 × 1-1/2 in. Furnish T- or L-shaped steel posts with a minimum weight of 1.3 lb. per foot.

2.9.3. **Net Reinforcement.** Provide net reinforcement of at least 12-1/2 gauge galvanized welded wire mesh, with a maximum opening size of 2 × 4 in., at least 24 in. wide, unless otherwise shown on the plans.

2.9.4. **Staples.** Provide staples with a crown at least 3/4 in. wide and legs 1/2 in. long.

2.9.5. **Used Materials.** Use recycled material meeting the applicable requirements if approved.

2.10. **Biodegradable Erosion Control Logs.**

2.10.1. **Core Material.** Furnish core material that is biodegradable or recyclable. Use compost, mulch, aspen excelsior wood fibers, chipped site vegetation, agricultural rice or wheat straw, coconut fiber, 100% recyclable fibers, or any other acceptable material unless specifically called out on the plans. Permit no more than 5% of the material to escape from the containment mesh. Furnish compost meeting the requirements of Item 161, "Compost."

2.10.2. **Containment Mesh.** Furnish containment mesh that is 100% biodegradable, photodegradable, or recyclable such as burlap, twine, UV photodegradable plastic, polyester, or any other acceptable material.

Furnish biodegradable or photodegradable containment mesh when log will remain in place as part of a vegetative system.

Furnish recyclable containment mesh for temporary installations.

2.10.3. **Size.** Furnish biodegradable erosion control logs with diameters shown on the plans or as directed. Stuff containment mesh densely so logs do not deform.

3. CONSTRUCTION

3.1. **Contractor Responsibilities.** Implement the Owner's Storm Water Pollution Prevention Plan (SWP3) for the project in accordance with the plans and specifications, TPDES General Permit TXR150000, and as directed by the Owner. Develop and implement an SWP3 for project-specific material supply plants within and outside of the Owner's right of way in accordance with the specific or general storm water permit requirements. Prevent water pollution from storm water associated with construction activity from entering any surface water or private property on or adjacent to the project site.

3.2. **General.**

3.2.1. **Phasing.** Implement control measures in the area to be disturbed before beginning construction, or as directed. Limit the disturbance to the area shown on the plans or as directed. If, in the opinion of the Owner, the Contractor cannot control soil erosion and sedimentation resulting from construction operations, the Owner will limit the disturbed area to that which the Contractor is able to control. Minimize disturbance to vegetation.

3.2.2. **Maintenance.** Immediately correct ineffective control measures. Implement additional controls as directed. Remove excavated material within the time requirements specified in the applicable storm water permit.

3.2.3. **Stabilization.** Stabilize disturbed areas where construction activities will be temporarily stopped in accordance with the applicable storm water permit. Establish a uniform vegetative cover. The project will not be accepted until a 70% density of existing adjacent undisturbed areas is obtained, unless otherwise shown on the plans. When shown on the plans, the Owner may accept the project when adequate controls are in place that will control erosion, sedimentation, and water pollution until sufficient vegetative cover can be established.

3.2.4. **Finished Work.** Upon acceptance of vegetative cover, remove and dispose of all temporary control measures, temporary embankments, bridges, matting, falsework, piling, debris, or other obstructions placed during construction that are not a part of the finished work, or as directed.

3.2.5. **Restricted Activities and Required Precautions.** Do not discharge onto the ground or surface waters any pollutants such as chemicals, raw sewage, fuels, lubricants, coolants, hydraulic fluids, bitumens, or any other petroleum product. Operate and maintain equipment on-site to prevent actual or potential water pollution. Manage, control, and dispose of litter on-site such that no adverse impacts to water quality occur. Prevent dust from creating a potential or actual unsafe condition, public nuisance, or condition endangering the value, utility, or appearance of any property. Wash out concrete trucks only as described in the TPDES General Permit TXR150000. Utilize appropriate controls to minimize the offsite transport of suspended sediments and other pollutants if it is necessary to pump or channel standing water (i.e. dewatering). Prevent discharges that would contribute to a violation of Edwards Aquifer Rules, water quality standards, the impairment of a listed water body, or other state or federal law.

3.3. **Installation, Maintenance, and Removal Work.** Perform work in accordance with the SWP3, according to manufacturers' guidelines, and in accordance with the TPDES General Permit TXR150000. Install and maintain the integrity of temporary erosion and sedimentation control devices to accumulate silt and debris until soil disturbing activities are completed and permanent erosion control features are in place or the disturbed area has been adequately stabilized as determined by the Owner. . If a device ceases to function as intended, repair or replace the device or portions thereof as necessary. Remove sediment, debris, and litter. When approved, sediments may be disposed of within embankments, or in the right of way in areas where the material will not contribute to further siltation. Dispose of removed material in accordance with federal, state, and local regulations.

Remove devices upon approval or as directed. Finish-grade and dress the area upon removal. Stabilize disturbed areas in accordance with the permit, and as shown on the plans or directed. Materials removed are considered consumed by the project. Retain ownership of stockpiled material and remove it from the project when new installations or replacements are no longer required.

3.3.1. **Rock Filter Dams for Erosion Control.** Remove trees, brush, stumps, and other objectionable material that may interfere with the construction of rock filter dams. Place sandbags as a foundation when required or at the Contractor's option.

Place the aggregate to the lines, height, and slopes specified, without undue voids for Types 1, 2, 3, and 5. Place the aggregate on the mesh and then fold the mesh at the upstream side over the aggregate and secure it to itself on the downstream side with wire ties, or hog rings for Types 2 and 3, or as directed. Place rock filter dams perpendicular to the flow of the stream or channel unless otherwise directed. Construct filter dams according to the following criteria unless otherwise shown on the plans:

3.3.1.1. **Type 1 (Non-reinforced).**

3.3.1.1.1. **Height.** At least 18 in. measured vertically from existing ground to top of filter dam.

3.3.1.1.2. **Top Width.** At least 2 ft.

3.3.1.1.3. **Slopes.** No steeper than 2:1.

3.3.1.2. **Type 2 (Reinforced).**

3.3.1.2.1. **Height.** At least 18 in. measured vertically from existing ground to top of filter dam.

3.3.1.2.2. **Top Width.** At least 2 ft.

3.3.1.2.3. **Slopes.** No steeper than 2:1.

3.3.1.3. **Type 3 (Reinforced).**

3.3.1.3.1. **Height.** At least 36 in. measured vertically from existing ground to top of filter dam.

3.3.1.3.2. **Top Width.** At least 2 ft.

3.3.1.3.3. **Slopes.** No steeper than 2:1.

3.3.1.4. **Type 4 (Sack Gabions).** Unfold sack gabions and smooth out kinks and bends. Connect the sides by lacing in a single loop–double loop pattern on 4- to 5-in. spacing for vertical filling. Pull the end lacing rod at one end until tight, wrap around the end, and twist 4 times. Fill with stone at the filling end, pull the rod tight, cut the wire with approximately 6 in. remaining, and twist wires 4 times.

Place the sack flat in a filling trough, fill with stone, connect sides, and secure ends as described above for horizontal filling.

Lift and place without damaging the gabion. Shape sack gabions to existing contours.

3.3.1.5. **Type 5.** Provide rock filter dams as shown on the plans.

3.3.2. **Temporary Pipe Slope Drains.** Install pipe with a slope as shown on the plans or as directed. Construct embankment for the drainage system in 8-in. lifts to the required elevations. Hand-tamp the soil around and under the entrance section to the top of the embankment as shown on the plans or as directed. Form the top of the embankment or earth dike over the pipe slope drain at least 1 ft. higher than the top of the inlet pipe at all points. Secure the pipe with hold-downs or hold-down grommets spaced a maximum of 10 ft. on center. Construct the energy dissipaters or sediment traps as shown on the plans or as directed. Construct the sediment trap using concrete or rubble riprap in accordance with Item 432, "Riprap," when designated on the plans.

3.3.3. **Temporary Paved Flumes.** Construct paved flumes as shown on the plans or as directed. Provide excavation and embankment (including compaction of the subgrade) of material to the dimensions shown on the plans unless otherwise indicated. Install a rock or rubble riprap energy dissipater, constructed from the materials specified above, to a minimum depth of 9 in. at the flume outlet to the limits shown on the plans or as directed.

3.3.4. **Construction Exits.** Prevent traffic from crossing or exiting the construction site or moving directly onto a public roadway, alley, sidewalk, parking area, or other right of way areas other than at the location of construction exits when tracking conditions exist. Construct exits for either long- or short-term use.

3.3.4.1. **Long-Term.** Place the exit over a foundation course as required. Grade the foundation course or compacted subgrade to direct runoff from the construction exits to a sediment trap as shown on the plans or as directed.

Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed.

3.3.4.1.1. **Type 1.** Construct to a depth of at least 8 in. using crushed aggregate as shown on the plans or as directed.

3.3.4.1.2. **Type 2.** Construct using railroad ties and timbers as shown on the plans or as directed.

3.3.4.2. **Short-Term.**

3.3.4.2.1. **Type 3.** Construct using crushed aggregate, plywood, or wafer board. This type of exit may be used for daily operations where long-term exits are not practical.

3.3.4.2.2. **Type 4.** Construct as shown on the plans or as directed.

3.3.5. **Earthwork for Erosion Control.** Perform excavation and embankment operations to minimize erosion and to remove collected sediments from other erosion control devices.

3.3.5.1. **Excavation and Embankment for Erosion Control Features.** Place earth dikes, swales, or combinations of both along the low crown of daily lift placement, or as directed, to prevent runoff spillover. Place swales and dikes at other locations as shown on the plans or as directed to prevent runoff spillover or to divert runoff. Construct cuts with the low end blocked with undisturbed earth to prevent erosion of hillsides. Construct sediment traps at drainage structures in conjunction with other erosion control measures as shown on the plans or as directed.

Create a sediment basin, where required, providing 3,600 cu. ft. of storage per acre drained, or equivalent control measures for drainage locations that serve an area with 10 or more disturbed acres at one time, not including offsite areas.

3.3.5.2. **Excavation of Sediment and Debris.** Remove sediment and debris when accumulation affects the performance of the devices, after a rain, and when directed.

3.3.6. **Construction Perimeter Fence.** Construct, align, and locate fencing as shown on the plans or as directed.

3.3.6.1. **Installation of Posts.** Embed posts 18 in. deep or adequately anchor in rock, with a spacing of 8 to 10 ft.

3.3.6.2. **Wire Attachment.** Attach the top wire to the posts at least 3 ft. from the ground. Attach the lower wire midway between the ground and the top wire.

3.3.6.3. **Flag Attachment.** Attach flagging to both wire strands midway between each post. Use flagging at least 18 in. long. Tie flagging to the wire using a square knot.

3.3.7. **Sandbags for Erosion Control.** Construct a berm or dam of sandbags that will intercept sediment-laden storm water runoff from disturbed areas, create a retention pond, detain sediment, and release water in sheet flow. Fill each bag with sand so that at least the top 6 in. of the bag is unfilled to allow for proper tying of the open end. Place the sandbags with their tied ends in the same direction. Offset subsequent rows of sandbags 1/2 the length of the preceding row. Place a single layer of sandbags downstream as a secondary debris trap. Place additional sandbags as necessary or as directed for supplementary support to berms or dams of sandbags or earth.

3.3.8. **Temporary Sediment-Control Fence.** Provide temporary sediment-control fence near the downstream perimeter of a disturbed area to intercept sediment from sheet flow. Incorporate the fence into erosion-control measures used to control sediment in areas of higher flow. Install the fence as shown on the plans, as specified in this Section, or as directed.

3.3.8.1. **Installation of Posts.** Embed posts at least 18 in. deep, or adequately anchor, if in rock, with a spacing of 6 to 8 ft. and install on a slight angle toward the runoff source.

3.3.8.2. **Fabric Anchoring.** Dig trenches along the uphill side of the fence to anchor 6 to 8 in. of fabric. Provide a minimum trench cross-section of 6 × 6 in. Place the fabric against the side of the trench and align approximately 2 in. of fabric along the bottom in the upstream direction. Backfill the trench, then hand-tamp.

3.3.8.3. **Fabric and Net Reinforcement Attachment.** Attach the reinforcement to wooden posts with staples, or to steel posts with T-clips, in at least 4 places equally spaced unless otherwise shown on the plans. Sewn vertical pockets may be used to attach reinforcement to end posts. Fasten the fabric to the top strand of reinforcement by hog rings or cord every 15 in. or less.

3.3.8.4. **Fabric and Net Splices.** Locate splices at a fence post with a minimum lap of 6 in. attached in at least 6 places equally spaced unless otherwise shown on the plans. Do not locate splices in concentrated flow areas.

Requirements for installation of used temporary sediment-control fence include the following:

- fabric with minimal or no visible signs of biodegradation (weak fibers),
- fabric without excessive patching (more than 1 patch every 15 to 20 ft.),
- posts without bends, and
- backing without holes.

3.3.9. **Biodegradable Erosion Control Logs.** Install biodegradable erosion control logs near the downstream perimeter of a disturbed area to intercept sediment from sheet flow. Incorporate the biodegradable erosion control logs into the erosion measures used to control sediment in areas of higher flow. Install, align, and locate the biodegradable erosion control logs as specified below, as shown in plans or as directed.

Secure biodegradable erosion control logs in a method adequate to prevent displacement as a result of normal rain events, prevent damage to the logs, and to the satisfaction of the Owner such that flow is not allowed under the logs. Temporarily removing and replacing biodegradable erosion logs as to facilitate daily work is allowed at the Contractor's expense.

3.3.10. **Vertical Tracking.** Perform vertical tracking on slopes to temporarily stabilize soil. Provide equipment with a track undercarriage capable of producing a linear soil impression measuring a minimum of 12 in. long × 2 to 4 in. wide × 1/2 to 2 in. deep. Do not exceed 12 in. between track impressions. Install continuous linear track impressions where the 12 in. length impressions are perpendicular to the slope. Vertical tracking is required on projects where soil disturbing activities have occurred unless otherwise approved.

4. MEASUREMENT

4.1. **Rock Filter Dams.** Installation or removal of rock filter dams will be measured by the foot or by the cubic yard. The measured volume will include sandbags, when used.

4.1.1. **Linear Measurement.** When rock filter dams are measured by the foot, measurement will be along the centerline of the top of the dam.

4.1.2. **Volume Measurement.** When rock filter dams are measured by the cubic yard, measurement will be based on the volume of rock computed by the method of average end areas.

4.1.2.1. **Installation.** Measurement will be made in final position.

4.1.2.2. **Removal.** Measurement will be made at the point of removal.

4.2. **Temporary Pipe Slope Drains.** Temporary pipe slope drains will be measured by the foot.

4.3. **Temporary Paved Flumes.** Temporary paved flumes will be measured by the square yard of surface area. The measured area will include the energy dissipater at the flume outlet.

4.4. **Construction Exits.** Construction exits will be measured by the square yard of surface area.

4.5. **Earthwork for Erosion and Sediment Control.**

4.5.1. **Equipment and Labor Measurement.** Equipment and labor used will be measured by the actual number of hours the equipment is operated and the labor is engaged in the work.

4.5.2. **Volume Measurement.**

4.5.2.1. **In Place.**

4.5.2.1.1. **Excavation.** Excavation will be measured by the cubic yard in its original position and the volume computed by the method of average end areas.

4.5.2.1.2. **Embankment.** Embankment will be measured by the cubic yard in its final position by the method of average end areas. The volume of embankment will be determined between:

the original ground surfaces or the surface upon that the embankment is to be constructed for the feature and the lines, grades and slopes of the accepted embankment for the feature.

4.5.2.2. **In Vehicles.** Excavation and embankment quantities will be combined and paid for under "Earthwork (Erosion and Sediment Control, In Vehicle)." Excavation will be measured by the cubic yard in vehicles at the point of removal. Embankment will be measured by the cubic yard in vehicles measured at the point of delivery. Shrinkage or swelling factors will not be considered in determining the calculated quantities.

4.6. **Construction Perimeter Fence.** Construction perimeter fence will be measured by the foot.

4.7. **Sandbags for Erosion Control.** Sandbags will be measured as each sandbag or by the foot along the top of sandbag berms or dams.

4.8. **Temporary Sediment-Control Fence.** Installation or removal of temporary sediment-control fence will be measured by the foot.

4.9. **Biodegradable Erosion Control Logs.** Installation or removal of biodegradable erosion control logs will be measured by the foot along the centerline of the top of the control logs.

4.10. **Vertical Tracking.** Vertical tracking will not be measured or paid for directly but is considered subsidiary to this Item.

5. PAYMENT

The following will not be paid for directly but are subsidiary to pertinent Items:

- erosion-control measures for Contractor project-specific locations (PSLs) inside and outside the right of way (such as construction and haul roads, field offices, equipment and supply areas, plants, and material sources);
- removal of litter, unless a separate pay item is shown on the plans;
- repair to devices and features damaged by Contractor operations;

- added measures and maintenance needed due to negligence, carelessness, lack of maintenance, and failure to install permanent controls;
- removal and reinstallation of devices and features needed for the convenience of the Contractor;
- finish grading and dressing upon removal of the device; and
- minor adjustments including but not limited to plumbing posts, reattaching fabric, minor grading to maintain slopes on an erosion embankment feature, or moving small numbers of sandbags.

Stabilization of disturbed areas will be paid for under pertinent Items.

Furnishing and installing pipe for outfalls associated with sediment traps and ponds will not be paid for directly but is subsidiary to the excavation and embankment under this Item.

5.1. **Rock Filter Dams.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid as follows:

5.1.1. **Installation.** Installation will be paid for as "Rock Filter Dams (Install)" of the type specified. This price is full compensation for furnishing and operating equipment, finish backfill and grading, lacing, proper disposal, labor, materials, tools, and incidentals.

5.1.2. **Removal.** Removal will be paid for as "Rock Filter Dams (Remove)." This price is full compensation for furnishing and operating equipment, proper disposal, labor, materials, tools, and incidentals.

When the Owner directs that the rock filter dam installation or portions thereof be replaced, payment will be made at the unit price bid for "Rock Filter Dams (Remove)" and for "Rock Filter Dams (Install)" of the type specified. This price is full compensation for furnishing and operating equipment, finish backfill and grading, lacing, proper disposal, labor, materials, tools, and incidentals.

5.2. **Temporary Pipe Slope Drains.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Temporary Pipe Slope Drains" of the size specified. This price is full compensation for furnishing materials, removal and disposal, furnishing and operating equipment, labor, tools, and incidentals.

Removal of temporary pipe slope drains will not be paid for directly but is subsidiary to the installation Item. When the Owner directs that the pipe slope drain installation or portions thereof be replaced, payment will be made at the unit price bid for "Temporary Pipe Slope Drains" of the size specified, which is full compensation for the removal and reinstallation of the pipe drain.

Earthwork required for the pipe slope drain installation, including construction of the sediment trap, will be measured and paid for under "Earthwork for Erosion and Sediment Control."

Riprap concrete or stone, when used as an energy dissipater or as a stabilized sediment trap, will be measured and paid for in accordance with Item 432, "Riprap."

5.3. **Temporary Paved Flumes.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Temporary Paved Flume (Install)" or "Temporary Paved Flume (Remove)." This price is full compensation for furnishing and placing materials, removal and disposal, equipment, labor, tools, and incidentals.

When the Owner directs that the paved flume installation or portions thereof be replaced, payment will be made at the unit prices bid for "Temporary Paved Flume (Remove)" and "Temporary Paved Flume (Install)." These prices are full compensation for the removal and replacement of the paved flume and for equipment, labor, tools, and incidentals.

Earthwork required for the paved flume installation, including construction of a sediment trap, will be measured and paid for under "Earthwork for Erosion and Sediment Control."

5.4. **Construction Exits.** Contractor-required construction exits from off right of way locations or on-right of way PSLs will not be paid for directly but are subsidiary to pertinent Items.

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" for construction exits needed on right of way access to work areas required by the Owner will be paid for at the unit price bid for "Construction Exits (Install)" of the type specified or "Construction Exits (Remove)." This price is full compensation for furnishing and placing materials, excavating, removal and disposal, cleaning vehicles, labor, tools, and incidentals.

When the Owner directs that a construction exit or portion thereof be removed and replaced, payment will be made at the unit prices bid for "Construction Exit (Remove)" and "Construction Exit (Install)" of the type specified. These prices are full compensation for the removal and replacement of the construction exit and for equipment, labor, tools, and incidentals.

Construction of sediment traps used in conjunction with the construction exit will be measured and paid for under "Earthwork for Erosion and Sediment Control."

5.5. **Earthwork for Erosion and Sediment Control.**

5.5.1. **Initial Earthwork for Erosion and Sediment Control.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Excavation (Erosion and Sediment Control, In Place)," "Embankment (Erosion and Sediment Control, In Place)," "Excavation (Erosion and Sediment Control, In Vehicle)," "Embankment (Erosion and Sediment Control, (In Vehicle)," or "Earthwork (Erosion and Sediment Control, In Vehicle)."

This price is full compensation for excavation and embankment including hauling, disposal of material not used elsewhere on the project; embankments including furnishing material from approved sources and construction of erosion-control features; and equipment, labor, tools, and incidentals.

Sprinkling and rolling required by this Item will not be paid for directly, but will be subsidiary to this Item.

5.5.2. **Maintenance Earthwork for Erosion and Sediment Control for Cleaning and Restoring Control Measures.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid under a Contractor Force Account Item from invoice provided to the Owner.

This price is full compensation for excavation, embankment, and re-grading including removal of accumulated sediment in various erosion control installations as directed, hauling, and disposal of material not used elsewhere on the project; excavation for construction of erosion-control features; embankments including furnishing material from approved sources and construction of erosion-control features; and equipment, labor, tools, and incidentals.

Earthwork needed to remove and obliterate erosion-control features will not be paid for directly but is subsidiary to pertinent Items unless otherwise shown on the plans.

Sprinkling and rolling required by this Item will not be paid for directly, but will be subsidiary to this Item.

5.6. **Construction Perimeter Fence.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Construction Perimeter Fence." This price is full compensation for furnishing and placing the fence; digging, fence posts, wire, and flagging; removal and disposal; and materials, equipment, labor, tools, and incidentals.

Removal of construction perimeter fence will be not be paid for directly but is subsidiary to the installation Item. When the Owner directs that the perimeter fence installation or portions thereof be removed and replaced, payment will be made at the unit price bid for "Construction Perimeter Fence," which is full compensation for the removal and reinstallation of the construction perimeter fence.

5.7. **Sandbags for Erosion Control.** Sandbags will be paid for at the unit price bid for "Sandbags for Erosion Control" (of the height specified when measurement is by the foot). This price is full compensation for materials, placing sandbags, removal and disposal, equipment, labor, tools, and incidentals.

Removal of sandbags will not be paid for directly but is subsidiary to the installation Item. When the Owner directs that the sandbag installation or portions thereof be replaced, payment will be made at the unit price bid for "Sandbags for Erosion Control," which is full compensation for the reinstallation of the sandbags.

5.8. **Temporary Sediment-Control Fence.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid as follows:

5.8.1. **Installation.** Installation will be paid for as "Temporary Sediment-Control Fence (Install)." This price is full compensation for furnishing and operating equipment finish backfill and grading, lacing, proper disposal, labor, materials, tools, and incidentals.

5.8.2. **Removal.** Removal will be paid for as "Temporary Sediment-Control Fence (Remove)." This price is full compensation for furnishing and operating equipment, proper disposal, labor, materials, tools, and incidentals.

5.9. **Biodegradable Erosion Control Logs.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid as follows:

5.9.1. **Installation.** Installation will be paid for as "Biodegradable Erosion Control Logs (Install)" of the size specified. This price is full compensation for furnishing and operating equipment finish backfill and grading, staking, proper disposal, labor, materials, tools, and incidentals.

5.9.2. **Removal.** Removal will be paid for as "Biodegradable Erosion Control Logs (Remove)." This price is full compensation for furnishing and operating equipment, proper disposal, labor, materials, tools, and incidentals.

5.10. **Vertical Tracking.** Vertical tracking will not be measured or paid for directly but is considered subsidiary to this Item.

Special Provision to Item 512
512-001 Portable Traffic Barrier

Item 512, "Portable Traffic Barrier" of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Section 512.2.2., "Furnished by the Department" is supplemented by the following:

2.2.1. **Connection Hardware.** When shown on the plans provide connection hardware in accordance with the plan details conforming to the requirements of Item 442, "Metal for Structures". Connection hardware is defined as being sufficient hardware for one complete connection between two traffic-barrier sections, including the required bolts, nuts, washers, structural-steel shapes and dowels.

Article 512.4., "Measurement," is supplemented by the following:

For Department-furnished barrier sections, connection hardware will be measured by the each.

Article 512.5., "Payment." The first paragraph is voided and replaced by the following:

The work performed and material furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Portable Traffic Barrier" of the work category (Furnish and Install, Designated Source, Move, Stockpile, Remove, or Connection Hardware), shape (e.g., Single Slope, Safety Shape, F-Shape, or Low Profile) and Type (1, 2, 3, etc.) of barrier sections specified. This price is full compensation for furnishing, delivering and installing the barrier sections and connection hardware; and equipment, labor, tools, and incidentals

Special Provision to Item 730
730-003 Roadside Mowing

For this project, Item 730, "Roadside Mowing," of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Article 730.4., "Measurement," is voided and replaced by the following:

This Item will be measured by the cycle or the acre.

4.1. **Strip and Full-Width Mowing.** "Strip Mowing" and "Full-Width Mowing" will be measured by the cycle.

4.2. **Spot Mowing.** "Spot Mowing" will be measured by the acre mowed. The minimum quantity per callout is 3 acres, unless otherwise shown on the plans.

Special Specification 3021
Concrete Pavement Wide Flange Terminals

1. DESCRIPTION

Construct wide flange terminals for concrete pavement.

2. MATERIALS

Furnish materials conforming to the following:

- Item 360, "Concrete Pavement,"
- Item 421, "Hydraulic Cement Concrete,"
- Item 440, "Reinforcement for Concrete," and
- Item 442, "Metal for Structures."

Use ASTM A 36 steel for wide-flange structural steel. Shop-fabricate wide-flange beams in accordance with the plans. Unless otherwise shown on the plans, wide-flange beams are not required to be welded or spliced at longitudinal construction joints.

3. CONSTRUCTION

Construct concrete pavement wide flange terminals in accordance with the plans.

3.1. **Excavation, Backfilling, and Base Preparation.** Excavate and backfill in accordance with Item 400, "Excavation and Backfill for Structures," and the plans. Avoid over-excavation. Restore subgrade and base layers damaged by excavation. Construct subgrade, base, and pavement layers in accordance with the plans.

3.2. **Reinforcement and Structural Steel.** Secure reinforcement in position before concrete placement in accordance with Item 440, "Reinforcement for Concrete," and the plans. Accurately secure wide-flange beams in position in accordance with the plans and with sufficient supports to safely maintain alignment during concrete placement and finishing.

3.3. **Concrete Placement and Finishing.** Use Class P hydraulic cement concrete. Place hydraulic concrete pavement in accordance with Item 360, "Concrete Pavement." Place bridge approach slabs in accordance with Item 422, "Concrete Superstructures."

3.4. **Opening to Traffic.** Open concrete pavement terminal to traffic in conformance with Item 360, "Concrete Pavement."

4. MEASUREMENT

This Item will be measured by the foot of concrete pavement terminal complete in place. Measurement will be made perpendicular to the direction of the flow of traffic.

This is a plans quantity measurement Item. The quantity to be paid is the quantity shown in the proposal, unless modified by Article 9.2, "Plans Quantity Measurement." Additional measurement or calculations will be made if adjustments of quantities are required.

5. PAYMENT

The work performed and the materials furnished in accordance with this Item and measured as specified under "Measurement" will be paid for at the unit price bid for "Wide Flange Pavement Terminals."

This price is full compensation for excavation, disposal of waste material, backfilling, 12 in. cement treatment, hydraulic cement concrete (sleeper slab and support slab) underneath the concrete pavement, joint material, reinforcing steel, wide-flange beams, equipment, materials, labor, tools and incidentals.

Subgrade treatment, asphalt concrete, base material, and curbing required by the plans will be measured and paid for in accordance with pertinent Items. Concrete pavement constructed as part of the concrete pavement terminal will be paid for under Item 360, "Concrete Pavement."

Special Specification 4004
Screw-In Type Anchor Foundations

1. DESCRIPTION

Construct screw-in type foundations only for roadside flashing beacon assembly (RFBA), solar-power roadside flashing beacon assembly (SPRFBA) and pedestal poles as required on the plans.

2. MATERIALS

Ensure materials conform to Item 441, "Steel Structures," Item 442, "Metal for Structures," and Item 445, "Galvanizing." Provide only new screw-in type foundations, and unless otherwise specified, a minimum 5 ft. in length and 8 in. in diameter pipe with a minimum 13 in. helix. Provide a base plate capable of accommodating four mounting holes to fit a variable bolt circle up to a 17 in. Ensure a minimum 12 in. conduit opening is located approximately 12 in. from the base. Provide pipe conforming to ASTM A-53, grade B or equal. Provide base plates conforming to ASTM A-36 or better. Use anchor bolts having minimum yield strength of 36 ksi. Stamp, incise or mark the foundation by other approved means, to show the fabricator's model number, and name or logo. Place this information in a readily seen location. Unless otherwise specifically noted and requested in writing, and subsequently approved by the Engineer, in writing, supply the foundation with the bolts and flat washers needed for attaching the pedestal base to the foundation. Provide seven copies of shop drawings for review and approval prior to ordering materials.

3. CONSTRUCTION METHODS

Fabricate and install screw-in anchors in accordance with the specifications, details and dimensions shown on the plans or as approved in writing. Locate screw-in anchors as shown on the plans except that the Engineer may shift the location, within design guidelines, where necessary to secure a more desirable location or to avoid conflict with utilities or a very dense soil condition. Unless otherwise shown on the plans, stake all screw-in anchor locations for verification by the Engineer. Install screw-in anchors located near any overhead or underground utilities using established industry and utility safety practices. Consult with the appropriate utility company prior to beginning such work. Install screw-in anchors using power-digging equipment equipped with an adapter designed for installing screw-in anchors. Ensure shaft alignment is within a tolerance of 1/4 in. per 5 ft. of depth. Install anchors level and the top of the anchor base is either flush to or within no more than 2 in. of the ground level.

4. MEASUREMENT AND PAYMENT

The work performed and materials furnished in accordance with this Item will not be paid for directly but shall be considered subsidiary to the Item 685, "Roadside Flashing Beacon Assemblies" and Item 687, "Pedestal Pole Assemblies."

Special Specification 4006
Sound Walls

1. DESCRIPTION

Furnish the materials for and construct a sound wall as shown on the plans and required by this specification.

2. MATERIALS

Use materials conforming to the pertinent requirements of the following Standard Specification Items:

Item 420, "Concrete Substructures"
Item 421, "Hydraulic Cement Concrete"
Item 425, "Precast Prestressed Concrete Structural Members"
Item 426, "Post-Tensioning"
Item 427, "Surface Finishes For Concrete"
Item 440, "Reinforcement for Concrete"
Item 441, "Steel Structures"
Item 442, "Metal for Structures"
Item 445, "Galvanizing"
Item 446, "Field Cleaning and Painting Steel"
Item 449, "Anchor Bolts"
DMS – 4640 "Chemical Admixtures for Concrete"
DMS – 6100 "Epoxies and Adhesives"
DMS – 6310 "Joint Sealants and Fillers"

Unless otherwise shown on the plans, construct sound wall panels of concrete. Concrete or steel sound wall posts are allowed. For precast and cast-in-place components, use Class "F" concrete with f'c = 4000 psi minimum. For prestressed components, use Class "H" concrete with f'c = 5000 psi minimum.

Use Galvinized anchor bolts, nuts and washers. Galvanize or paint exposed steel components with the protection system shown on the plans.

Use approved joint fillers, grout, and other incidental materials as shown on the plans.

3. GENERAL

3.1. Options. Furnish any proprietary sound wall system meeting the requirements of this specification and complying with the design criteria shown on the plans. Construct sound wall systems that have drilled shafts with the same spacing, diameter, length and reinforcing steel as shown on the plans. Provide for the use of these systems in accordance with Article 7.3.

3.2. Working Drawings. Prior to fabricating, prepare and submit working drawings and design calculations for the proposed sound wall system for approval. Submit drawings on 11 in. x 17 in. size sheets. Submit 7 sets of casting drawings for precast segments and shop drawings for each detail of the plans requiring the use of structural steel, 7 sets of construction drawings and 2 sets of design calculations. Upon completing construction, submit 1 set of reproducible as-built drawings.

On casting drawings, include all information necessary for precasting wall elements. Ensure casting drawings reflect the shape and dimension of precast components, the size, quantity and details of the reinforcing steel, the

quantity, type, size and details of connection and lifting hardware, the size and location of drain openings, and any necessary additional details.

On construction drawings, include a numbered wall component layout reflecting field-verified horizontal and vertical alignment of the wall. Also include on these drawings all information needed to erect the wall, including the proposed drilled shaft elevations and lengths, limits of riprap, the type, details, and construction procedure for connecting the wall to the drilled shafts, details necessary to account for change of grade, existing and proposed utilities, and any necessary additional details.

Ensure design calculations include a summary of design parameters used, including material types, strength values, allowable stresses, assumed loads and load combinations. Submit calculations covering the range of heights and loading conditions on the project.

Submit only drawings and design calculations bearing the seal of a Professional Engineer who is licensed in the State of Texas.

4. CONSTRUCTION METHODS

Construct sound walls conforming to the design and details shown on the plans and to the pertinent requirements of the following Items:

Item 424, "Precast Concrete Structural Members (Fabrication)"
Item 429, "Concrete Structure Repair"
Item 447, "Structural Bolting"
Item 448, "Structural Field Welding"

Set posts plumb and firm to the line and grade shown on the plans.

Do not exceed a horizontal alignment tolerance of 3/4 in. from post to post. Do not exceed 1/2 in. per 10 ft. of wall height for the overall vertical tolerance of the wall (plumb from top to bottom).

5. MEASUREMENT

Sound walls will be measured by the foot along the alignment of the sound wall. Length will be measured from center to center of posts.

6. PAYMENT

The work performed and material furnished in accordance with this Item and measured as provided for under "Measurement" will be paid for at the unit price bid for "Sound Wall," of the height specified. This price is full compensation for furnishing, designing, and installing sound wall materials including anchorage into the drilled shaft; for sound wall preparation, hauling and erection; and for labor, tools, equipment and incidentals.

Special Specification 6001
Portable Changeable Message Sign

1. DESCRIPTION

Furnish, operate, and maintain portable trailer mounted changeable message sign (PCMS) units.

2. MATERIALS

Furnish new or used material in accordance with the requirements of this Item and the details shown on the plans. Provide a self-contained PCMS unit with the following:

- Sign controller
- Changeable Message Sign
- Trailer
- Power source

Paint the exterior surfaces of the power supply housing, supports, trailer, and sign with Federal Orange No. 22246 or Federal Yellow No. 13538 of Federal Standard 595C, except paint the sign face assembly flat black.

2.1. **Sign Controller.** Provide a controller with permanent storage of a minimum of 75 pre-programmed messages. Provide an external input device for random programming and storage of a minimum of 75 additional messages. Provide a controller capable of displaying up to 3 messages sequentially. Provide a controller with adjustable display rates. Enclose sign controller equipment in a lockable enclosure.

2.2. **Changeable Message Sign.** Provide a sign capable of being elevated to at least 7 ft. above the roadway surface from the bottom of the sign. Provide a sign capable of being rotated 360° and secured against movement in any position.

Provide a sign with 3 separate lines of text and 8 characters per line minimum. Provide a minimum 18 in. character height. Provide a 5 × 7 character pixel matrix. Provide a message legibility distance of 600 ft. for nighttime conditions and 800 ft. for normal daylight conditions. Provide for manual and automatic dimming light sources.

The following are descriptions for 3 screen types of PCMS:

- **Character Modular Matrix.** This screen type comprises of character blocks.
- **Continuous Line Matrix.** This screen type uses proportionally spaced fonts for each line of text.
- **Full Matrix.** This screen type uses proportionally spaced fonts, varies the height of characters, and displays simple graphics on the entire sign.

2.3. **Trailer.** Provide a 2 wheel trailer with square top fenders, 4 leveling jacks, and trailer lights. Do not exceed an overall trailer width of 96 in. Shock mount the electronics and sign assembly.

2.4. **Power Source.** Provide a diesel generator, solar powered power source, or both. Provide a backup power source as necessary.

2.5. **Cellular Telephone.** When shown on the plans, provide a cellular telephone connection to communicate with the PCMS unit remotely.

3. CONSTRUCTION

Place or relocate PCMS units as shown on the plans or as directed. The plans will show the number of PCMS units needed, for how many days, and for which construction phases.

Maintain the PCMS units in good working condition. Repair damaged or malfunctioning PCMS units as soon as possible. PCMS units will remain the property of the Contractor.

4. MEASUREMENT

This Item will be measured by each PCMS or by the day used. All PCMS units must be set up on a work area and operational before a calendar day can be considered measurable. When measurement by the day is specified, a day will be measured for each PCMS set up and operational on the worksite.

5. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Portable Changeable Message Sign." This price is full compensation for PCMS units; set up; relocating; removing; replacement parts; batteries (when required); fuel, oil, and oil filters (when required); cellular telephone charges (when required); software; and equipment, materials, tools, labor, and incidentals.

Special Specification 6002
Video Imaging Vehicle Detection System

1. DESCRIPTION

Install a Video Imaging Vehicle Detection System (VIVDS) that monitors vehicles on a roadway via processing of video images and provides detector outputs to a traffic controller or similar device.

A VIVDS configuration for a single intersection will consist of variable focal length cameras, VIVDS card rack processor system, and all associated equipment required to setup and operate in a field environment, including a video monitor and laptop (if required), connectors, and camera mounting hardware.

The system is composed of these principal items: the cameras, the field communications link between the camera and the VIVDS processor unit, and the VIVDS processor unit along with a PC, video monitor, or associated equipment required to setup the VIVDS and central control software to communicate to the VIVDS processor.

The VIVDS Card Rack Processor must be either NEMA TS 2 TYPE 1 or TYPE 2. TYPE 2 must have RS 485 SDLC.

2. DEFINITIONS

2.1. **VIVDS Processor Unit.** The electronic unit that converts the video image provided by the cameras, generates vehicle detections for defined zones, and collects vehicular data as specified.

2.2. **VIVDS Processor System.** One or more VIVDS processor modular units required to handle the number of camera inputs.

2.3. **Central Control.** A remotely located control center, which communicates with the VIVDS. The VIVDS operator at the central control has the ability to monitor the operation and modify detector placement and configuration parameters. The equipment that constitutes central control is comprised of a workstation microcomputer along with the associated peripherals as described in this Special Specification.

2.4. **Field Setup Computer.** A portable microcomputer used to set up and monitor the operation of the VIVDS processor unit. If required to interface with the VIVDS processor unit, the field setup computer with the associated peripherals described in this Special Specification and a video monitor, also described in this Special Specification, must be supplied as part of the VIVDS.

2.5. **Field Communications Link.** The communications connection between the camera and the VIVDS processor unit. The primary communications link media may be coaxial cable or fiber optic cable.

2.6. **Remote Communications Link.** The communications connection between the VIVDS processor unit and the central control.

2.7. **Camera Assembly.** The complete camera or optical device assembly used to collect the visual image. The camera assembly consists of a charged coupled device (CCD) camera, environmental enclosure, sun shield, temperature control mechanism, and all necessary mounting hardware.

2.8. **Occlusion**. The phenomenon when a vehicle passes through the detection zone but the view from the sensor is obstructed by another vehicle. This type of occlusion results in the vehicle not being detected by the sensor or when a vehicle in one lane passes through the detection zone of an adjacent lane. This type of occlusion can result in the same vehicle being counted in more than one lane.

2.9. **Detection Zone.** The detection zone is a line or area selected through the VIVDS processor unit that when occupied by a vehicle, sends a vehicle detection to the traffic controller or freeway management system.

2.10. **Detection Accuracy**. The measure of the basic operation of a detection system (shows detection when a vehicle is in the detection zone and shows no detection when there is not a vehicle in the detection zone).

2.11. **Live Video.** Video being viewed or processed at 30 frames per second.

2.12. **Lux**. The measure of light intensity at which a camera may operate. A unit of illumination equal to one lumen per square meter or to the illumination of a surface uniformly one meter distant from a point source of one candle.

2.13. **Video Monitor**. As a minimum must be a 9-in. black and white monitor with BNC connectors for video in and out.

3. FUNCTIONAL CAPABILITIES

The system software must be able to detect either approaching or departing vehicles in multiple traffic lanes. A minimum of 4 detector outputs per video processor module card and each card must have a minimum of 24 detection zones. Each zone and output must be user definable through interactive graphics by placing lines or boxes in an image on a video or VGA monitor. The user must be able to redefine previously defined detection zones.

The VIVDS must provide real time vehicle detection (within 112 milliseconds (ms) of vehicle arrival).

The VIVDS processor unit must be capable of simultaneously processing information from various video sources, including CCTV video image sensors and video tape players. The video sources may be, but are not required to be, synchronized or line-locked. The video must be processed at a rate of 30 times per second by the VIVDS processor unit.

The system must be able to detect the presence of vehicles in a minimum of 12 detection zones within the combined field of view of all cameras (a minimum of 12 detection zones per camera input to the VIVDS processor unit).

Provide detection zones that are sensitive to the direction of vehicle travel. The direction to be detected by each detection zone must be user programmable.

The VIVDS processor unit must compensate for minor camera movement (up to 2% of the field of view at 400 ft.) without falsely detecting vehicles. The camera movement must be measured on the unprocessed video input to the VIVDS processor unit.

The camera must operate while directly connected to VIVDS Processor Unit.

Once the detector configuration has been downloaded or saved into the VIVDS processor unit, the video detection system must operate with the monitoring equipment (monitor or laptop) disconnected or online.

When the monitoring equipment is directly connected to the VIVDS processor unit, it must be possible to view vehicle detections in real time as they occur on the field setup computer's color VGA display or the video monitor.

4. VEHICLE DETECTION

4.1. **Detection Zone Placement.** The video detection system must provide flexible detection zone placement anywhere within the combined field of view of the image sensors. Preferred presence detector configurations must be lines or boxes placed across lanes of traffic or lines placed in line with lanes of traffic. A single detector must be able to replace one or more conventional detector loops. Detection zones must be able to be fully overlapped. In addition, detection zones must have the capability of implementing "AND" and "OR" logical functions including presence, extension and delay timing. These logical functions may be excluded if provisions are made to bring each detector separately into the controller and the controller can provide these functions.

4.2. **Detection Zone Programming.** Placement of detection zones must be by means of a graphical interface using the video image of the roadway. The monitor must show images of the detection zones superimposed on the video image of traffic while the VIVDS processor is running.

The detection zones must be created by using the mouse or keypad to draw detection zones on the monitor. The detection zones must be capable of being sized, shaped and overlapped to provide optimal road coverage and detection. It must be possible to upload detector configurations to the VIVDS processor unit and to retrieve the detector configuration that is currently running in the VIVDS processor unit.

The mouse or keypad must be used to edit previously defined detector configurations so as to fine tune the detection zone placement size and shape. Once a detection configuration has been created, the system must provide a graphic display of the new configuration on its monitor. While this fine-tuning is being done, the detection must continue to operate from the detector configuration that is currently called.

When a vehicle occupies a detection zone, the detection zone on the live video must indicate the presence of a vehicle, thereby verifying proper operation of the detection system. With the absence of video, the card must have an LED that will indicate proper operation of the detection zones.

Provide detection zones that are sensitive to the direction of vehicle travel. The direction to be detected by each detection zone must be user programmable. The vehicle detection zone should not activate if a vehicle traveling any direction other than the one specified for detection occupies the detection zone. Cross-street and wrong way traffic should not cause a detection.

4.3. **Design Field of View.** The video detection system must reliably detect vehicle presence in the design field of view. The design field of view must be defined as the sensor view when the image sensor is mounted 24 ft. or higher above the roadway, when the camera is adjacent (within 15 ft.) to the edge of the nearest vehicle travel lane, and when the length of the detection area is not greater than 10 times the mounting height of the image sensor. Within this design field of view, the VIVDS processor unit must be capable of setting up a single detection zone for point detection (equivalent to the operation of a 6 ft. × 6 ft. inductive loop). A single camera, placed at the proper mounting height with the proper lens, must be able to monitor up to and including 5 traffic lanes simultaneously.

4.4. **Detection Performance.** Detection accuracy of the video detection system must be comparable to properly operating inductive loops. Detection accuracy must include the presence of any vehicle in the defined detection zone regardless of the lane, which the vehicle is occupying. Occlusion produced by vehicles in the same or adjacent lanes must not be considered a failure of the VIVDS processor unit, but a limitation of the camera placement. Detection accuracy (a minimum of 95%) must be enforced for the entire design field of view on a lane by lane and on a time period basis. When specified on the plans, furnish up to 24 continuous hours of recorded video of all installed intersection cameras within the 30 day test period for verification of proper camera placement, field of view, focus, detection zone placement, processor setup and operation. The video from each camera must show vehicle detections for all zones.

4.5. **Equipment Failure.** Either camera or VIVDS processor unit must result in constant vehicle detection on affected detection zones.

5. VIVDS PROCESSOR UNIT

5.1. **Cabinet Mounting.** The VIVDS processor unit must be rack mountable.

5.2. **Environmental Requirements.** The VIVDS processor unit must be designed to operate reliably in the adverse environment found in the typical roadside traffic cabinet. It must meet the environmental requirements set forth by the latest NEMA (National Electrical Manufacturers Association) TS1 and TS2 standards as well as the environmental requirements for Type 170, Type 179 and 2070 controllers. Operating temperature must be from -30°F to +165°F at 0% to 95% relative humidity, non-condensing.

5.3. **Electrical.** The VIVDS must have a modular electrical design.

The VIVDS must operate within a range of 89 to 135 VAC, 60 Hz single phase. Power to the VIVDS must be from the transient protected side of the AC power distribution system in the traffic control cabinet in which the VIVDS is installed.

Serial communications to the field setup computer must be through an RS 232, USB or Ethernet port. This port must be able to download the real time detection information needed to show detector actuations. A connector on the front of the VIVDS processor unit must be used for serial communications.

The unit must be equipped with RS 170 (monochrome) or RS170A (color) composite video inputs video inputs, so that signals from image sensors or other synchronous or asynchronous video sources can be processed in real time. BNC connectors on the front of the VIVDS processor unit or video patch panel must be used for all video inputs.

The unit must be equipped with a single RS 170 composite video output. This output must be capable of corresponding to any one of the video inputs, as selected remotely via the field setup computer or front panel switch. Multiple video outputs requiring external cable connections to create a combined single video output must not be acceptable. A BNC or RCA connector must be used for video output on the front of the processor unit. Any other video formats must be approved by a Department TRF Signal Operation Engineer before use.

Software upgrades or changes must be presented to and approved by the Department's TRF-TM Division before use. Failure to do so will be grounds for termination of contract and probation for responsible partys.

The unit software and the supervisor software must include diagnostic software to allow testing the VIVDS functions. This must include the capability to set and clear individual detector outputs and display the status of inputs to enable setup and troubleshooting in the field.

6. CAMERA ASSEMBLY

6.1. **Camera.** The video detection system must use medium resolution, monochrome image sensors as the video source for real time vehicle detection. The cameras must be approved for use with the VIVDS processor unit by the supplier of the VIVDS. As a minimum, each camera must provide the following capabilities:

- Images must be produced with a Charge Coupled Device (CCD) sensing element with horizontal resolution of at least 480 lines for black and white or 470 lines for color and vertical resolution of at least 350 lines for black and white or color. Images must be output as a video signal conforming to RS170.
- Useable video and resolvable features in the video image must be produced when those features have luminance levels as low as 0.1 lux for black and white, and as low as 1.0 lux for color, for night use.

- Useable video and resolvable features in the video image must be produced when those features have luminance levels as high as 10,000 lux during the day.
- The camera must include an electronic shutter or auto-iris control based upon average scene luminance and must be equipped with an electronic shutter or auto-iris lens with variable focal length and variable focus that can be adjusted without opening up the camera housing to suit the site geometry. The variable focal length must be adjustable from 6 mm to 34 mm.

6.2. **Camera and Lens Assembly.** The camera and lens assembly must be housed in an environmental enclosure that provides the following capabilities:

- The enclosure must be waterproof and dust tight to the latest NEMA 4 specifications.
- The enclosure must allow the camera to operate satisfactorily over an ambient temperature range from -30°F to +140°F while exposed to precipitation as well as direct sunlight.
- The enclosure must allow the camera horizon to be rotated in the field during installation.
- The enclosure must include a provision at the rear of the enclosure for connection of power and video signal cables fabricated at the factory. Input power to the environmental enclosure must be nominally 115 VAC 60 Hz.
- A thermostatically controlled heater must be at the front of the enclosure to prevent the formation of ice and condensation, as well as to assure proper operation of the lens's iris mechanism. The heater must not interfere with the operation of the camera electronics, and it must not cause interference with the video signal.
- The enclosure must be light colored or unfinished and must include a sun shield to minimize solar heating. The front edge of the sunshield must protrude beyond the front edge of the environmental enclosure and must include provision to divert water flow to the sides of the sunshield. The amount of overhang of the sun shield must be adjustable to block the view of the horizon to prevent direct sunlight from entering the lens. Any plastics used in the enclosure must include ultra violet inhibitors.
- The total weight of the image sensor in the environmental enclosure with sunshield must be less than 10 lb.
- When operating in the environmental enclosure with power and video signal cables connected, the image sensor must meet FCC class B requirements for electromagnetic interference emissions.

The video output of the cameras must be isolated from earth ground. All video connections for the cameras to the video interface panel must also be isolated from earth ground.

Use waterproof, quick disconnect connectors to the image sensor for both video and power.

Provide a camera interface panel capable of being mounted to sidewalls of a controller cabinet for protection of the VIVDS processor unit, camera video and power inputs/outputs. The panel must consist of, as a minimum, 4 Edco CX06 coax protectors, an Edco ACP-340 for the cameras and VIVDS processor unit power, a 10 amp breaker, a convenience outlet protected the ACP-340 and a terminal strip with a minimum of sixteen 8-32 binder head screws. The terminal strip must be protected by a piece of 1/8 in. Plexiglas.

When the connection between the image sensor and the VIVDS processor unit is coaxial cable, the coaxial cable used must be a low loss, 75 ohm, precision video cable suited for outdoor installation, such as Belden 8281 or a Department-approved equal.

Camera mounting hardware must allow for vertical or horizontal mounting to the camera enclosure. Pelco AS-0166-4-62 or equivalent is acceptable.

7. FIELD COMMUNICATION LINK

The field communications link must be a one way communications connection from the camera to the equipment cabinet. The primary communications link media may be coaxial cable or fiber optic cable accompanied by a 3 conductor minimum 18 AWG, 24 VDC or 115 VAC camera power cable, or appropriate cable as approved.

The following requirements must govern for the various types of field communications link media described on the plans:

7.1. **Coaxial Cable.** In locations where the plans indicate coaxial cable is required as the primary communications link, this cable must be of the RG 59 type with a nominal impedance of 75 ohms. All cable must have a polyethylene dielectric with copper braid shield having a minimum of 98% shield coverage and not greater than 0.78 dB attenuation per 100 feet at 10 MHz with a minimum 18 AWG external 3 conductor power cable or approved equivalent as directed.

7.2. **Fiber Optic Cable.** If shown on the plans, furnish fiber optic cable in accordance with the Special Specification for fiber optic cable.

7.3. **Twisted Wire Pairs.** Must be Belden 9556 or equivalent 18 AWG TWP control cable.

All connection cables must be continuous from the equipment cabinet to the camera. No splices of any type will be permitted.

Install lightning and transient surge suppression devices on the processor side of the field communications link to protect the peripheral devices. The suppression devices must be all solid state. Lightning protection is not required for fiber optic communication lines. The devices must present high impedance to, and must not interfere with, the communications lines during normal operation. The suppression devices must not allow the peak voltage on any line to exceed 300% of the normal operating peak voltage at any time. The response time of the devices must not exceed 5 nanoseconds.

8. VIVDS SET-UP SYSTEM

The minimum VIVDS set-up system, as needed for detector setup and viewing of vehicle detections, must consist of a field setup computer and Windows based interface software (if required) or a video monitor with interface software built-in to the VIVDS processor unit. Live video (30 frames per second) must be available on the field setup computer to determine proper operation of detectors. The field set-up computer as a minimum, must have an NTSC video input port or equivalent.

If a field setup computer is required for system set-up, it must be supplied by the supplier of the VIVDS.

The field setup computer must include all necessary cabling and a Windows based program to interface with the VIVDS processor unit. This software must provide an easy to use graphical user interface and support all models/versions of the supplied VIVDS.

Live video with the detection overlaid is required for field verification of the system.

9. TEMPORARY USE AND RETESTING

9.1. **Temporary Use.** When shown on the plans, the VIVDS equipment must be used to provide vehicle detection on a temporary basis. When the permanent vehicle detection system and related equipment are installed and made operational, the VIVDS equipment must be carefully removed and delivered to the location shown on the plans.

9.2. **State Retesting and Acceptance.** Before acceptance, all VIVDS equipment may be retested by the Department, even if the system was operating properly before removal. Repair or replace any equipment damaged during removal or transport and any equipment that does not meet the various test requirements.

10. OPERATION FROM CENTRAL CONTROL

The central control must transmit and receive all information needed for detector setup, monitor the vehicle detection, view the vehicle traffic flow at a rate of 2 frames per second or greater for telephone, or 5 frames per second or greater for ISDN lines (as specified by the plans), and interrogate all required stored data. The remote communications link between the VIVDS processor unit and central control may be dial-up (telephone or ISDN lines) or dedicated twisted wire pair communications cable which may be accompanied with coaxial cable or fiber-optic cable, as shown on the plans. Communications with the central control must not interfere with the on-street detection of the VIVDS processor. Quality of the video at 2 frames per second rate must be such that the view with the traffic flow is clear and in focus.

11. INSTALLATION AND TRAINING

The supplier of the video detection system must supervise the installation and testing of the video and computer equipment. A factory certified representative from the supplier must be on site during installation.

If the field setup computer is furnished by the Department, such installation and testing must be done at the time that training is conducted.

Provide up to 2 days of training to personnel of the Department in the operation, setup and maintenance of the video detection system. Provide instruction and materials for a maximum of 20 persons and conduct at a location selected by the Department. The Department will be responsible for any travel and room and board expenses for its own personnel.

Instruction personnel are required to be certified by the equipment manufacturer. The User's Guide is not an adequate substitute for practical, classroom training and formal certification by an approved agency.

Formal levels of factory authorized training are required for installers, contractors, and system operators. All training must be certified by the manufacturer.

12. WARRANTY, MAINTENANCE, AND SUPPORT

The video detection system must be warranted to be free of defects in material and workmanship for a period of 5 yr. from date of shipment from the supplier's facility. During the warranty period, the supplier must repair with new or refurbished materials, or replace at no charge, any product containing a warranty defect provided the product is returned FOB to the supplier's factory or authorized repair site. Return product repair or replaced under warranty by the supplier with transportation prepaid. This warranty does not apply to products damaged by accident, improperly operated, abused, serviced by unauthorized personnel or unauthorized modification.

During the warranty period, technical support must be available from the supplier via telephone within 4 hr. of the time a call is made by a user, and this support must be available from factory certified personnel or factory certified installers.

Ongoing software support by the supplier must include updates of the VIVDS processor unit and supervisor software (if a field setup computer is required for set up). Provide these updates free of charge during the warranty period. The update of the VIVDS software to be NTCIP compliant must be included.

The supplier must maintain a program for technical support and software updates following expiration of the warranty period. Make this program available to the Department in the form of a separate agreement for continuing support.

The supplier must maintain an ongoing program of technical support for the wireless camera system. This technical support must be available via telephone or personnel sent to the installation site.

The supplier must maintain an adequate inventory of parts to support maintenance and repair of the camera system.

13. MEASUREMENT

The VIVDS will be measured as each major system component furnished, installed, made fully operational, and tested in accordance with this Special Specification or as directed.

The VIVDS communication cable will be measured by the foot of the appropriate media type furnished, installed, made fully operational, and tested in accordance with this Specification, other referenced Special Specifications or as directed.

When the VIVDS is used on a temporary basis, the VIVDS will be measured as each system furnished, installed, made fully operational, including reconfiguration and removal if required by the plans, and tested in accordance with this Special Specification or as directed.

This is a plans quantity measurement Item. The quantity to be paid is the quantity shown in the proposal unless modified by Article 9.2., "Plans Quantity Measurement." Additional measurements or calculations will be made if adjustments of quantities are required.

When recorded video is required by the plans it will be paid for by each camera recorded.

14. PAYMENT

The work performed, materials, and all accompanying software furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "VIVDS Processor System," "VIVDS Camera Assembly," "VIVDS Central Control," "VIVDS Set-up System," "VIVDS Temporary," "VIVDS Communication Cable (Coaxial)," "VIVDS Communication Cable (Fiber Optic)," and "VIVDS Video Recording," These prices are full compensation for furnishing, placing, and testing all materials and equipment, and for all tools, labor, equipment, hardware, operational software packages, supplies, support, personnel training, shop drawings, documentation, and incidentals. A 3-conductor power cable must be included with the communication cable.

These prices also include any and all interfaces required for the field and remote communications links along with any associated peripheral equipment, including cables; all associated mounting hardware and associated field equipment; required for a complete and fully functional visual image vehicle detection system component.

Special Specification 6005

Testing, Training, Documentation, Final Acceptance, and Warranty

1. DESCRIPTION

Perform or furnish testing, training, documentation, final acceptance, and warranty on the applicable equipment or systems.

2. TESTING

Unless otherwise shown on the plans, perform the following tests on the applicable equipment or systems.

2.1. **Test Procedures Documentation.** Provide 5 copies of the test procedures and blank data forms 60 days prior to testing for each test required on this project. Include the sequence of the tests in the procedures. The Engineer will approve test procedures prior to submission of equipment for tests. Conduct all tests in accordance with the approved test procedures.

Record test data on the data forms, as well as quantitative results. Ensure the data forms are signed by an authorized representative (company official) of the equipment manufacturer. Submit 1 copy of the completed and signed data forms for acceptance or rejection of the test or equipment.

2.2. **Design Approval Test.** Conduct a Design Approval Test on randomly selected units from the prototype design manufacturing run. If only 1 design prototype is manufactured, perform this test on that unit. If supplying multiple types of the equipment, provide and test a sample of each type.

Certification from an independent testing laboratory of a successfully completed Design Approval Test is acceptable. Ensure that the testing by this laboratory is performed in accordance with the requirements of this specification. Failure of independent tests to comply with the requirements of this specification will be grounds for rejection of any certification.

Notify the Engineer 10 working days before conducting this testing. The Department may witness all the tests. Perform the following tests:

2.2.1. **Power Service Transients.** The equipment must meet the performance requirements, specified in the parent specification, when subjected to the power service transients as specified in Section 2.2.7.2, "Transient Tests (Power Service)" of the NEMA TS 2 standard, latest edition.

2.2.2. **Temperature and Condensation.** The equipment must meet the performance requirements, specified in the parent specification, when subjected to the following conditions in the order specified below:

- Stabilize the equipment at -30°F and test as specified in Sections 2.2.7.3., "Low-Temperature Low-Voltage Tests" and 2.2.7.4., "Low-Temperature High-Voltage Tests" of the NEMA TS 2 standard, latest edition.
- Allow the equipment to warm up to room temperature in an atmosphere having relative humidity of at least 40%. Operate the equipment for 2 hr., while wet, without degradation or failure.
- Stabilize the equipment at 165°F and test as specified in Sections 2.2.7.5., "High-Temperature High Voltage Tests" and 2.2.7.6, "High-Temperature Low-Voltage Tests" of the NEMA TS 2 standard, latest edition.

2.2.3. **Relative Humidity.** The equipment must meet the performance requirements, specified in the parent specification, within 30 min. of being subjected to a temperature of 165°F and a relative humidity of 18% for 48 hr.

2.2.4. **Vibration.** The equipment must show no degradation of mechanical structure, soldered components, or plug-in components and must operate in accordance with the manufacturer's equipment specifications after being subjected to the vibration tests as described in Section 2.2.8, "Vibration Test," of the NEMA TS 2 standard, latest edition.

2.2.5. **Power Interruption.** The equipment must meet the performance requirements, specified in the parent specification, when subjected to nominal input voltage variations as specified in Section 2.2.10, "Power Interruption Test," of the NEMA TS 2 standard, latest edition.

2.3. **Demonstration Test.** Conduct a Demonstration Test on applicable equipment at an approved Contractor facility. Notify the Engineer 10 working days before conducting this testing. The Department may witness all the tests. Perform the following tests:

2.3.1. **Examination of Product.** Examine each unit carefully to verify that the materials, design, construction, markings and workmanship comply with the requirements of the parent specification.

2.3.2. **Continuity Tests.** Check the wiring to determine conformance with the requirements of the appropriate paragraphs in the parent specification.

2.3.3. **Operational Test.** Operate each unit for at least 15 min. to permit equipment temperature stabilization and an adequate number of performance characteristics to ensure compliance with the requirements of the parent specification.

2.4. **Stand-Alone Tests.** Conduct a Stand-Alone Test for each unit after installation. The test must exercise all stand-alone (non-network) functional operations. Notify the Engineer 5 working days before conducting this test. The Department may witness all the tests.

2.5. **System Integration Test.** Conduct a System Integration Test on the complete functional system. Demonstrate all control and monitor functions for each system component for 72 hr. Supply 2 copies of the System Operations manual before the System Integration Test. Notify the Engineer 10 working days before conducting this testing. The Department may witness all the tests.

2.6. **Final Acceptance Test.** Conduct a Final Acceptance Test on the complete functional system. Demonstrate all control, monitor, and communication requirements for 90 days. The Engineer will furnish a Letter of Approval stating the first day of the Final Acceptance Test. The completion of the Final Acceptance Test occurs when system downtime due to mechanical, electrical, or other malfunctions to equipment furnished or installed does not exceed 72 hr. and any individual points of failure identified during the test period have operated free of defects as required in Section 2.7.5., "Consequences of Final Acceptance Test Failure."

2.7. **Consequences of Test Failure.** If a unit fails a test, submit a report describing the nature of the failure and the actions taken to remedy the situation prior to modification or replacement of the unit. If a unit requires modification, correct the fault and then repeat the test until successfully completed. Correct minor discrepancies within 30 days of written notice to the Engineer. If a unit requires replacement, provide a new unit and then repeat the test until successfully completed. Major discrepancies that will substantially delay receipt and acceptance of the unit will be sufficient cause for rejection of the unit.

If a failure pattern develops in similar units within the system, implement corrective measures, including modification or replacement of units, to all similar units within the system as directed. Perform the corrective measures without additional cost or extension of the contract period.

2.7.1. **Consequences of Design Approval Test Failure.** If the equipment fails the Design Approval Test, correct the fault and then repeat the Design Approval Test until successfully completed.

2.7.2. **Consequences of Demonstration Test Failure.** If the equipment fails the Demonstration Test, correct the fault and then repeat the Demonstration Test until successfully completed.

2.7.3. **Consequences of Stand-Alone Test Failure.** If the equipment fails the Stand-Alone Test, correct the fault and then repeat the Demonstration Test until successfully completed.

2.7.4. **Consequence of System Integration Test Failure.** If the equipment fails the System Integration Test, correct the fault and then repeat the Systems Integration Test until successfully completed.

2.7.5. **Consequences of Final Acceptance Test Failure.** If a defect within the system is detected during the Final Acceptance Test, document and correct the source of failure. Once corrective measures are taken, monitor the point of failure until a consecutive 30 day period free of defects is achieved.

If after completion of the initial test period, the system downtime exceeds 72 hr. or individual points of failure have not operated for 30 consecutive days free of defects, extend the test period by an amount of time equal to the greater of the downtime in excess of 72 hr. or the number of days required to complete the performance requirement of the individual point of failure.

3. TRAINING

When required on the plans, provide a minimum of 24 hr. of instruction to 10 designated personnel in the operation and maintenance procedures of equipment or systems installed. Provide the training during installation, testing, and integration. Provide the training through practical demonstrations, seminars, and other related technical procedures.

Furnish a training session agenda, a complete set of training material (manuals and schematics), and the names and qualifications of proposed instructors for approval 60 days before the training. Provide a training location. Provide 1 copy of the course material for each person. Provide training in the following areas of interest and as shown on the plans:

- The "Hands-on" operation for each type of equipment.
- Explanation of all system commands, their function and usage.
- Required preventative maintenance procedures.
- All equipment servicing procedures.
- System "troubleshooting"/problem identification procedures.

4. DOCUMENTATION

Provide "as-built" documentation for the entire system and all of its individual components. Supply one (1) 11 in. x 17 in. reproducible copy of the wiring diagrams. Supply three (3) copies of the following in a manual for each equipment component:

- Complete and accurate schematic diagrams.
- Complete and accurate cabinet, enclosure, and building wiring diagrams.
- Complete installation procedures.
- Complete performance specifications (functional, electrical, mechanical and environmental) on the unit.

- Complete parts list including names of vendors for parts not identified by universal part numbers such as JEDEC, RETMA, or EIA.
- Pictorial of component layout on circuit board.
- Complete maintenance and trouble-shooting procedures.
- Complete stage-by-stage explanation of circuit theory and operation.
- Complete and detailed system operations manuals.

Furnish additional information as shown on the plans.

5. FINAL ACCEPTANCE

Final acceptance is made when all work is complete, the system has successfully completed all test requirements, and the Engineer, in writing, accepts all work for the work locations in the Contract in accordance with Article 5.12., "Final Acceptance." Final acceptance relieves the Contractor from further Contract responsibilities.

6. WARRANTY

Guarantee equipment furnished and installed to perform according to the manufacturer's published specifications. Warrant equipment against defects or failure in design, materials, and workmanship in accordance with the manufacturer's standard warranty. Supply equipment with no less than 95% of the manufacturer's warranty remaining on the date that equipment invoices are submitted for final payment. Any equipment with less than 95% warranty remaining will be rejected.

The Contractor will warrant or guarantee all such electronic, electrical, and mechanical equipment, materials, technical data, and products furnished and installed for a period of 1 yr. after final acceptance of the project by the Department. The Contractor's warranty or guarantee must provide for the "on-site" repair or replacement, at the Contractor's option, within 2 working days and at no cost to the Department.

Once the Contractor's warranty or guarantee expires, assign to the Department any manufacturer's standard warranty or guarantee coverage still remaining on all such electronic, electrical, and mechanical equipment, materials, technical data, and products furnished for and installed on the project. Repair or replace defective equipment, at the manufacturer's option, at no cost to the Department.

7. MEASUREMENT AND PAYMENT

The work performed, materials furnished, equipment, labor, tools, and incidentals will not be measured or paid for directly but will be considered subsidiary to bid items of the Contract.

Special Specification 6007
Fiber Optic Cable

1. DESCRIPTION

Furnish, install, splice, field terminate, and test the fiber optic cables.

2. MATERIALS

2.1. **General Requirements.** Provide new corrosion resistant materials that comply with the details shown on the plans and the requirements of this Item.

Provide splicing kits, fiber optic cable caps, moisture/water sealants, terminators, splice trays, fiber distribution housings, fiber distribution unit, fiber interconnect housing, fiber optic jumpers, and accessories to complete the fiber optic cable system. Furnish equipment for installation, splicing, and testing.

2.2. **Cable Requirements.** Furnish fiber optic cable suitable for underground conduit environment. There are 2 fiber classifications: multimode and singlemode. Use multimode fiber optic cable for video, voice, and data communications between the building and the field cabinets. Use singlemode fiber optic cable for voice, data, and video communications between buildings.

Splice or terminate fiber optic cables in field cabinets and buildings that comply with the details shown in the plans, and the requirements of this Item.

Furnish two fiber optic cables; one composed of multimode dual window (graded index) glass fibers, the other composed of singlemode glass fibers. Use fiber optic glass from Corning, Lucent, or approved equal.

Provide fiber optic cable from the same manufacturer.

2.3. **Optical Requirements.**

Table 2
Optical Requirements

	Singlemode	Multimode	Multimode
Cable Configuration			
Core Diameter (microns)	8.3 ±1	50 ±3	62.5 ±3
Cladding Diameter (microns)	125 ±1	125 ±2	125 ±2
Attenuation, (dB/km)			
850 nm	N/A	2.5	3.5 or less
1300/1310 nm	0.4 or less	0.8	1.0 or less
1550 nm	0.3 or less	0.6	0.3
Bandwidth, (MHz-km)			
850 nm	N/A	600	160 or higher
1300 nm	N/A	1000	500 or higher
Dispersion, (ps/nm-km)			
1310 nm	3.2	N/A	N/A
1550 nm	17	N/A	N/A

2.3.1. **Cable Configuration.** Provide a core/cladding size in accordance with Table 1.

2.3.2. **Attenuation.** Provide attenuation in accordance with Table 1.

2.3.3. **Bandwidth and Dispersion.** Provide bandwidth and dispersion in accordance with Table 1.

2.4. **Mechanical Requirements.**

2.4.1. **Fibers.** Provide the number of fibers as shown on the plans.

2.4.2. **Core/Clad Concentricity.** Provide an offset between the center of the core and cladding less than 0.8 microns for singlemode cable and less than 3.0 microns for multimode cable.

2.4.3. **Primary Coating.** Provide fiber with a coating diameter of 245 ±10 microns.

2.4.4. **Tensile Strength.** Provide a cable withstanding a pulling tension of 2700 N (600 lbf) without changing optical fiber characteristics or as directed.

2.4.5. **Bend Radius.** Provide a cable withstanding a bending radius of 10 times its outer diameter during operation, and 20 times its outer diameter during installation without changing optical fiber characteristics.

2.4.6. **Buffering.** Use a buffering tube or jacket with an outer diameter of 1.0 to 3.0 mm containing 6 individual fiber strands.

2.4.7. **Color Coding.** Provide separate color codes for each fiber buffer tube and different color codes within unit tubes or sub-bundles. Use color codes in accordance with TIA/EIA-598.

2.4.8. **Cable Configuration.** Provide cables with a reverse oscillation or planetary stranding structure.

Group each cable in sub-bundles of 6 or 12. Jacket construction and group configuration should separate at splice points to cut and splice 1 set of fibers while the others remain continuous. Submit cable designs for approval.

Strand loose buffer tubes around a dielectric central anti-buckling strength member. Provide dielectric aramid and/or fiber glass yarn strength members with specified strength for the cable. Provide cable with a water-blocking material, which is non-hygroscopic, non-nutritive to fungus, non-conductive, non-toxic, and homogeneous. Apply a polyethylene inner jacket over the cable core, and enclose entire cable with a polyethylene outer jacket.

Demonstrate crush and abrasion resistance of final cable design, and conduit installation under tensile loads and multiple bends.

2.4.9. **Diameter.** Provide a maximum 19 mm outer diameter for each cable or as directed.

2.4.10. **Environmental Requirements.** Provide cable that functions in a temperature range from -40°F to 158°F, and when immersed in water for indefinite periods of time.

3. CONSTRUCTION

Install fiber optic cable without changing the optical and mechanical characteristics of the cables.

Utilize available machinery, jacking equipment, cable pulling machinery with appropriate tension monitors, splicing and testing equipment, and other miscellaneous tools to install cable, splice fibers, attach connectors and mount hardware in cabinets employed with the above "Mechanical Requirements." Avoid jerking the cable during installation. Adhere to the maximum pulling tensions and bending radii as specified by the manufacturer.

Use installation techniques and fixtures that provide for ease of maintenance and easy access to all components for testing and measurements.

3.1. **Installation in Conduit.** Install fiber optic cable in conduits. If required, relocate existing cable to allow new fiber optic cable routing in conduits.

When pulling the cable, do not exceed the bending radius. Use rollers, wheels, or guides that have radii greater than the bending radius. Provide separate grooved rollers for each cable when simultaneously pulling multiple cables. Use a lubricating compound to minimize friction. Use fuse links and breaks. Measure the pulling tension. Do not exceed a pulling tension of 2700 N (600 lbf).

Seal conduits with a 2 part urethane after installation of cable.

3.2. **Cable Installation between Pull Boxes and Cabinets/Buildings.** Do not break or splice a second interconnect cable to complete a run when pulling the cable from the nearest ground box to a cabinet or building. Pull sufficient length of cable in the ground box to reach the designated cabinet or building. Pull the cable through the cabinet to coil, splice, or terminate the cable in the cabinet or building. Avoid bending the cable beyond its minimum bend radius.

Coil and tie cable inside cabinet, building, or boxes for future splicing or termination as shown in the plans. Coat the open end of the coiled cable with protective coating and provide a dust cap.

3.3. **Splicing Requirements.** Splice fibers as shown on the plans, in accordance with TIA/EIA-568, TIA/EIA-758, or as directed.

Use the fusion technique on all splices. Use fusion splicing equipment recommended by the cable manufacturer. Clean, calibrate, and adjust the fusion splicing equipment at the start of each shift. Use splice enclosures, organizers, cable end preparation tools, and procedures compatible with the cable furnished.

Package each spliced fiber in a protective sleeve or housing. Re-coat bare fiber with a protective 8 RTV, gel or similar substance, prior to application of the sleeve or housing.

Perform splices with losses no greater than 0.10 dB for singlemode cable and 0.30 dB for multimode cable. Use an Optical Time Domain Reflectometer (OTDR) to test splices in accordance with Article 5.1.1. Record splice losses on a tabular form and submit for approval.

3.4. **Termination Requirements.** Provide matching connectors with 900 micron buffer fiber pigtails of sufficient length and splice the corresponding optical fibers in cabinets where the optical fibers are to be connected to terminal equipment. Buffer, strengthen, and protect fiber pigtails with dielectric aramid yarn and outer PVC jacket to reduce mishandling that can damage the fiber or connection. Use epoxy style connectors and not the crimp on connectors. Terminate multimode fiber optic cable with ST connectors and singlemode fiber optic cable with FC connectors, unless otherwise shown on the plans.

The connector pigtail/splice loss for complete connection at the patch panel in front of the terminal equipment shall not exceed a mean of 0.4 dB mated pair with a maximum loss of 0.75 dB. Maintain this loss characteristic for a minimum of 500 disconnections and reconnections with periodic cleanings. Qualify and accept connectors by the connector-to-connector mating using similar fibers.

Connectors shall meet the TIA/EIA-568 fiber optic test procedures for multimode and singlemode specifications. Test connections at the patch panel and splices made between cables to pigtails with the OTDR to verify acceptable losses.

Remove 5 ft. of unused optical fibers at the ends of the system from the buffer tubes and place coiled fibers into a splice tray. Clean the water blocking compound from all fibers destined for splice tray usage.

3.5. **Fiber Optic Accessories.**

3.5.1. **Rack Mount Splice Enclosures.** Provide a 19 in. rack mounted splice enclosure module to hold spliced fibers as shown in the plans.

Splice or terminate fibers inside rack mounted fiber optic splice enclosures. Provide an enclosed unit enclosure designed to support a minimum of 4 cables, with each cable having 36 fibers. Provide enclosures that support up to 72 fiber optic connectors in bulkheads.

Provide splice enclosures containing mounting brackets with 4 cable clamps. Install cable according to manufacturer standards for the cable distribution panel.

3.5.2. **Fiber Distribution Housings.** Install the cables according to manufacturer standards for the rack mount splice enclosure, fiber distribution housing, and splice trays.

Coil and protect a maintenance loop of at least 5 ft. of buffer tube inside the rack mount, fiber distribution housing, or splice tray. Allow for future splices in the event of a damaged splice or pigtail.

3.5.2.1. **Cabinet.** Terminate or splice fibers inside the compact and modular fiber distribution housing in the cabinet. Provide a 9 in. x 17 in. x 11 in. (h x w x l) housing, each housing having 4 snap-in simplex connector panel modules, each module having 6 fiber termination/connection capabilities. Use a pre-assembled compact modular unit snap-in simplex connector panel module, with a removable cover having 6 pre-connectorized fiber pigtails, interconnection sleeves, and dust caps installed by the manufacturer. Provide a 12 fusion splice tray capability housing, each tray holding 12 fusion splices as shown in the plans. Stack splice trays on a rack to permit access to individual trays without disturbing other trays. Locate the rack on a pull-out shelf. Protect the housing with doors capable of pivoting up or down and sliding into the unit. Document the function of each terminated/spliced fiber, along with the designation of each connector on labels and charts on the housing door. Provide each housing with strain relief. Terminate multimode fiber optic cable with ST connectors and singlemode fiber optic cable with FC connectors, unless otherwise shown on the plans.

Install the fiber distribution housing as an integral unit as shown in the plans.

3.5.2.2. **Building.** Provide a fiber distribution unit with a modular design allowing interchangeability of connector panel module housing and splice housing within the rack, as shown on the plans.

Provide the number of multimode and singlemode fibers, connector panel module housings, and splice housings for the fiber distribution unit in the building as shown on the plans.

Provide a fiber distribution unit less than 7 ft. in height, capable of housing 8 connector panel module housings or 8 splice housings. Protect the housing with doors capable of pivoting up or down and sliding into the unit.

Provide 12 snap-in simplex connector panel modules with each connector panel module housing, each module having 6 fiber termination/connector capabilities. Use a pre-assembled compact modular unit with a removable cover for the snap-in simplex connector panel module having 6 pre-connectorized fiber pigtails, interconnection sleeves, and dust caps installed by the manufacturer. Provide each connector panel module housing with a jumper routing shelf, storing up to 5 ft. (minimum) of cable slack for each termination within the housing. Provide the fiber distribution unit with strain relief.

Provide splice enclosure with 24 fusion splice tray capabilities, each splice tray holding 12 fusion splices. Stack splice trays on a rack to permit access to individual trays without disturbing other trays. Locate the rack on a pull-out shelf.

Document the function of each terminated/spliced fiber, along with the designation of each connector on labels and charts on the housing door.

Allow terminations only in the fiber interconnect housings placed in the cabinets as shown in the plans or as directed.

3.5.3. **Splice Trays.** Use splice tray and fan-out tubing for handling each fiber. Provide a splice tray and 6 fan-out tubing with each housing for use with the 245 microns coated fiber. The fan-out will occur within the splice tray (no splicing of the fiber required). Allow each tube to fan out each fiber for ease of connectorization. Provide fan-out tubing with 3 layers of protection consisting of fluoropolymer inner tube, a dielectric strength member, and a 2.9 mm minimum outer protective PVC orange jacketing.

3.5.4. **Jumpers.** Provide fiber optic jumper cables to cross connect the cable distribution panel to the fiber optic transmission equipment as shown in the plans or as directed. Match the core size, type, and attenuation from jumper to the cable. Use orange jumpers for multimode fiber, and a yellow for singlemode fiber, provide strain relief on the connectors. Provide fiber with a 900 micron polymer buffer, Kevlar strength member, and a PVC jacket with an outer jacket of 2.4 mm in diameter.

Provide 10 ft. long jumpers, unless otherwise shown on the plans. One end of each jumper shall have an ST connector and the other end shall be a connector that is suitable to be connected to the fiber optic transmission equipment selected.

Provide each cabinet with eight, 1 ft. each, 62.5/125 multimode fiber jumpers with ST connectors for testing purposes. After test completion, the 1 ft. jumpers will remain property of the Department.

3.6. **Electronic Components.** Provide electronic components in accordance with Special Specification, "Electronic Components."

3.7. **Mechanical Components.** Provide stainless steel external screws, nuts and locking washers. Do not use self-tapping screws unless approved. Provide corrosion resistant material parts and materials resistant to fungus growth and moisture deterioration. Separate dissimilar metals with an inert dielectric material.

4. DOCUMENTATION REQUIREMENTS

Provide 10 complete sets of operation and maintenance manuals with the following:

- Complete and accurate schematic diagrams showing the fiber optic cable system.
- Complete performance data of the cable system showing the losses at each splice joint and each terminal connector.
- Installing, splicing, terminating and testing procedures.
- Complete parts list including names of vendors.
- Complete maintenance and trouble-shooting procedures.

4.1. **Installation Practice.** Submit for approval 10 copies of the Contractors Installation Practices thirty working days prior to installation. Submit practices for approval, which includes practices, list of installation equipment and splicing and test equipment. Detail field quality control procedures and corrective action procedures.

4.2. **Manufacturer's Certification.** Accompany each reel of fiber optic cable with the manufacturer's test data showing the conformance to the requirements in this Item.

5. TESTING

Perform tests in accordance with testing requirements in this Item.

5.1. Test Methods.

5.1.1. **Optical Time Domain Reflectometer (OTDR) Tests.** Use the OTDR to measure fiber optic cable for overall attenuation (signal loss dB/km), fiber cable length, and identify fiber optic cable anomalies such as breaks. Perform 4 OTDR tests. They are follows:

- Acceptance test
- Post installation test
- Post termination test
- Final end to end test

5.1.1.1. **OTDR Settings.**

- Use the file name of the fiber scan to indicate the location or direction the test was run from, as well as the fiber number being tested.
- Set the "A" cursor at the beginning of the fiber trace and set the "B" cursor at the end of the fiber trace. The distance to cursor "B" indicates the length of the fiber cable segment being measured.
- Match the index of refraction to the index of the factory report.
- Set the loss indicator to dB's/km for the acceptance test.
- The reflectance is automatically set internally by the OTDR.
- Set the pulse width at a medium range. Change the pulse width to a slow pulse width when an anomaly occurs on the fiber trace so that it can be examined closely.
- Set the average at medium speed. Change the average to slow when an anomaly appears on the fiber trace to allow for closer examination of the anomaly.
- Set wavelength at 850 nm and then at 1300 nm for multimode cable, set at 1310 nm and 1550 nm for singlemode cable so the cable is tested at both windows for each type of cable.

Show all settings on test result fiber scans.

5.1.2. **Pre-Installation Tests.** Test and record the fiber optic cable at the site storage area prior to installation.

Test each optical fiber in the cable from 1 end with an OTDR compatible with wavelength and fiber type. Check testing for length, point discontinuity, and approximate attenuation. Record each measurement by color, location, and type of fiber measured. Perform a measurement from the opposite end of that fiber in case a measurement cannot be made from 1 end. Wait for notification if loss per Km exceeds manufacturer's test data by more than 0.5 dB/km or point discontinuity greater than 0.2 dB.

Perform this test within 3 days from receipt of the fiber optic cable. Test overall attenuation (dB/km), total cable length, anomalies, or cable problems. Test cable at both windows (850 nm and 1300 nm for multimode and 1310 nm and 1550 nm for singlemode cable).

Compare factory test results with test results and return if test results are not identical to factory test results. If identical, document the test results. Deliver documentation for future reference.

5.1.3. **Post-Installation Tests.** Re-test and re-record each optical fiber in the cable after installation, before termination, for loss characteristics. Test both directions of operations of the fiber.

Immediately perform the post installation test after the fiber optic cable has been installed. Test cable for overall attenuation, cable segment length, and damage with the OTDR in accordance within this Item. Replace any cable segment that is damaged during the test and document test results. Deliver tests results for future reference.

Use the same OTDR settings for Post Installation Test as the Pre-Installation Test.

5.1.4. **Subsystem Tests.** Perform Network Subsystem Tests after integration to the fiber optic network. Test the capability of the fiber optic cable to transmit video and digital information. Complete and submit approved data forms for review and rejection or acceptance.

Correct and substitute components in the subsystem if the Subsystem Tests fail and repeat the tests.

Prepare and submit a report if a component was modified as result of the Subsystem Test failure. Describe in the report the failure and action taken to remedy the situation.

5.2. **Test Procedures.** Submit test procedures and data forms for the pre-installation, post-installation, subsystem, and system integration test for approval. Test procedures will require approval before performing tests. Submit 1 copy data forms containing data and quantitative results, as well as an authorized signature. Submit a copy of the OTDR results as a hard or electronic copy; supply original software packages and PC for OTDR results interpretation.

5.3. **Post Termination Test.** Perform the post termination test as the cable is terminated or spliced, whether there is termination of fiber cable to fiber cable or fiber cable to fiber pigtail. Check attenuation, fusion or termination point problems, and overall fiber cable segment. Determine if the attenuation and quality of the termination meets the specification; if not, repeat the termination until it meets specification requirements. Test the fiber segment for attenuation and anomalies after termination acceptance. Document and submit test results as stated in this Item after fiber segment acceptance.

Test the splices at 1300 nm for multimode and 1310 nm for singlemode and provide printouts of the splice tests. Take tests in both directions and record the average.

Use a launch reel of the same type of fiber to test the fusion splices on pigtails.

Use the same OTDR settings for Post Termination Test as the Post Installation Test and Pre-Installation Test, except move the "B" cursor to the middle of the termination or splice point. After the termination, return "B" cursor to the end of the fiber segment and measure overall length and attenuation.

5.4. **Final End-to-End Test.** Perform final end-to-end test after fiber cable segments of the system are terminated. Use the OTDR test as specified in this Item.

Perform the final end-to-end test as follows:

- Measure the overall fiber cable system length.
- Measure the overall system attenuation.
- Check for anomalies.

Document and submit results as stated in this Item after test acceptance.

6. TRAINING

Perform training in accordance with Article 3, Special Specification, "Testing, Training, Documentation, Final Acceptance, and Warranty." Include the following training material: code compliance, pulling and installation techniques, use of installation tools, splicing and terminating equipment and test instruments, and methods of recording installation and test data. Furnish 10 copies of training material 30 days before training begins for approval.

7. WARRANTY

Provide a warranty in accordance with Article 6, Special Specification, "Testing, Training, Documentation, Final Acceptance, and Warranty."

8. MEASUREMENT

This Item will be measured by the foot of cable furnished, installed, spliced, connected, and tested.

9. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Fiber Optic Cable System" of the type, and number of fibers as applicable. This price is full compensation for furnishing and installing all cable; for relocating cables as required; for pulling through conduit or duct; testing; splicing; connecting; and for materials, equipment, labor, tools, documentation, warranty, training and incidentals.

Special Specification 6016
Multi-Duct Conduit System

1. DESCRIPTION

Furnish and place a Multi-Duct Conduit (MDC) system that is suitable for installation in an outdoor underground environment including constant immersion in water, and/or hung from a bridge without any degradation in the conduit.

2. MATERIALS

Provide new materials that conform to the details shown on the plans, the requirements of this Item, and to the pertinent requirements of the following Items:

- UL-listed,
- Meet NEMA requirements,
- Meet NEC requirements,

Provide underground MDC that conforms to the pertinent requirements of the following items:

- Telcordia Technologies document GR-356, October 1995,
- ASTM D1785,
- ASTM D2122,
- ASTM D2412.

Provide aerial MDC that conforms to the pertinent requirements of the following items:

- ASTM D2996,
- ASTM D2310,
- ASTM D2517.

Provide all required sweeps, bends, repair couplings, ground box/manhole termination kits, alternative outer ducts, adapters, pre-assembled split repair kits, lubrication access fittings, tug-plugs, slit-innerduct plugs, hangers, brackets, expansion joints, and accessories to complete the MDC system.

Provide expansion joints and conduit that is similar to the connecting conduit.

Furnish components of the MDC system that are provided by the same manufacturer.

Provide a pre-assembled conduit section manufactured from a 4-in. round outer duct containing 4 factory installed round inner ducts held together in a square configuration by a tightly locking system of spacers to prevent free twisting of the inner ducts.

Provide a coupling body for sealing the outer and inner ducts of adjacent conduit sections in an end-to-end relationship.

Provide a MDC system that is manufactured without the use of adhesives to allow for inner duct movement.

Provide a MDC system with the availability of a complete line of accessory items including, but not limited to, alternative outer ducts, sweeps and bends, repair couplings, ground box/manhole termination kits, pre-assembled split repair kits, and lubrication access fittings.

Provide a single protective end cap for each end of all 20 ft conduit sections, factory bends and fittings, to minimize the risk of damage to the conduit system during shipping and handling.

Provide a MDC system that conforms to the following requirements:

- A percent ovality of less than 5%,
- An underground system that performs in an ambient temperature range of -30°F to 130°F without degradation of material properties,
- An aerial system that performs in an ambient temperature range of -104°F to 200°F without degradation of material properties,
- Resistant to most harsh chemicals,
- Protected against degradation due to oxidation or general corrosion
- Capable of being direct buried by trenching or boring with no special consideration to using selective backfill,
- Has a low coefficient of thermal expansion, such that expansion and contraction is minimal.
- Free of visible cracks, holes or other physical defects that would degrade its performance,
- Uniform as practical in respect to overall dimensions, color, density, thickness, etc,
- Contains a UV light stabilizer which will protect it, for a minimum of 12 mo., in direct sunlight,
- Durable identification showing the name and trademark of the manufacturer, conduit size, date of manufacture and "TxDOT - Fiber Optic Cable System".

2.1. **Outer Duct.** Provide 4 in. round outer duct MDC heavy walled schedule 40 or schedule 80 polyvinyl chloride conduit (PVC) as shown on the plans. Incorporate a longer integral bell in place of the standard 3-1/2 in. bell to accommodate the length of the coupling body.

Provide Schedule 40 or schedule 80 PVC conduit that conforms to the pertinent requirements of the following items:

- Telecommunication industry standard TC-2,
- UL 651,
- The NEC

Provide 4 in. schedule 40, or schedule 80, with an average outer diameter of 4-1/2 in. minimum. Provide 4 in. schedule 40 with a wall thickness of 0.237 in. minimum. Provide 4 in. schedule 80 with a wall thickness of 0.337 in. minimum.

Provide a Fiberglass MDC that is bullet resistant, heavy walled, pure, high grade, filament wound fiberglass reinforced epoxy conduit. Provide conduit, elbows and fittings that are manufactured from the same resin/hardener/glass systems manufactured by the same filament wound system. Provide MDC aerial elbows, conduit, fittings and hangers that are gray in color.

Provide rigid metal MDC system that is hot-dipped galvanized steel conduit.

2.2. **Inner Ducts.** Provide inner ducts that are extruded from a 90%, or higher, Virgin High Density Polyethylene (PE) compound. Provide this compound specifically blended to produce inner ducts for use in MDC systems. Furnish this blend with characteristics that add rigidity to the extruded PE inner ducts, minimize the differences between the expansion and contraction rates of PVC and the PE inner ducts, create a burn resistant PE inner duct to minimize the chance of damaging the inner duct during the cable placing operation, and provide a permanent dry lubricant that is extruded within the wall of the inner duct.

Incorporate longitudinal ribs within the extruded wall.

Provide inner ducts that are uniquely defined by the extrusion of a different color for each of the inner ducts, colors shall be orange, yellow, red, and white. Provide white inner duct that is placed directly in-line with the manufacturer's identification on the outer duct for ease of identification and installation.

Provide inner ducts that are extruded in a controlled outer diameter that meet the requirements of Table 1.

Size	O.D.	I.D.
1 in.	1.375 (Max)	1.000 (Min)
1-1/4 in.	1.670 (Max)	1.250 (Min)
1-1/2 in.	2.000 (Max)	1.500 (Min).

Provide inner ducts that are capable of being stored, installed and used under any humidity.

2.3. **Coupling Body**. Provide a factory installed primary coupling body that is manufactured as a hard plastic coupling body incorporating conical shaped target areas to accommodate self-alignment of each inner-duct upon field assembly. Provide a coupling body that incorporates sealing devices to facilitate field assembly and prevent water and foreign material leakage from outside the multi-duct system and to prevent air leakage from inside the inner ducts. Assemble solely by hand without use of special tools such that no lubricant will be required for field assembly of this conduit system.

Provide the coupling body with a plurality of bores containing principal seals which are molded as an integral part of the coupling body.

Provide the coupling body with its sealing member(s) sealing the outer walls of the inner ducts and the inner wall of the outer duct providing an airtight seal from within the inner duct system and a watertight seal from the outside of the outer duct.

Provide the gasket or sealing member(s) that is an anti-reversing design in such that the lengths of conduit stay joined together without the need for solvent cement.

Provide the field connection end of the internal coupling body that incorporates shaped target areas to accommodate self-alignment of the inner ducts with bore openings during field assembly.

Provide the coupling body that has 1 of the bore openings on the field assembly side uniquely identified to facilitate proper continuous inner duct alignment during field assembly.

3. CONSTRUCTION

Place conduit in accordance with the lines, grades, details and dimensions shown on the plans or as directed. Install underground MDC system at a minimum of 18 in. unless otherwise shown on the plans. Install conduit in accordance with the requirements of the NEC.

Ream all conduit ends to remove burrs and sharp edges. Fasten all conduit placed on structures with conduit straps or hangers as shown on the plans or as directed. Fit the conduit terminations with bushings or bell ends.

Prior to installation of cables or final acceptance, draw a spherical template having a diameter of not less than 75 percent of the inside diameter of the inner duct through the inner duct to insure that the inner duct is free from obstruction. Fit the ends of all empty inner duct with caps.

Trench excavate and backfill as shown on the plans and in accordance with Item 400, "Excavation and Backfill for Structures", except for measurement and payment. Place a detectable underground metalized mylar conduit marking tape, as directed, over the MDC on top of a 6 in. backfill, prior to final backfill of the trench. Imprint the marking tape "TxDOT Conduit and Fiber Optic Cable System - Call TxDOT Before Proceeding" every 18 in. Where existing surfacing is removed for placing conduit, repair by backfilling with material equal in composition and density to the surrounding areas and by replacing any removed surfacing, such as asphalt pavement or concrete riprap, with like material to equivalent condition. Provide a bare copper no. 6 AWG in all multi-duct runs, if no other cable is to be installed in the MDC system.

4. TESTING

4.1. **General.** Performance test of all materials and equipment not previously tested and approved. If technical data is not considered adequate for approval, samples may be requested for test. The contract period will not be extended for time lost or delays caused by testing prior to final approval of any items.

Compare the results of each test with the requirements specified herein. Failure to conform to the requirements of any test shall be counted as a defect and the materials will be subject to rejection by the Engineer. Offer rejected materials again for retest provided all non-compliances have been corrected and retested by the Contractor and evidence thereof submitted to the Engineer.

4.2. **Examination of Product.** Examine each conduit system component carefully to verify that the materials, design, construction, markings, and workmanship comply with the requirements of this specification.

4.3. **Testing of Product.** The coupling body must seal the inner duct so that after the application of 100 psi to an inner duct, the inner duct shall be capable of maintaining a minimum of 15 psi for 24 hours. Employ an approved independent commercial testing laboratory to perform the above test. Submit certified reports of test.

Furnish certified documentation of compliance with PVC, Fiberglass and PE requirements based on random testing of products by an independent testing laboratory. Such testing must conform with all ASTM, NEMA STANDARD TC-2, UL 651, and Telcordia Technologies standards as referenced in this specification.

5. REFERENCES

The MDC System Supplier shall submit 3 references, preferably State Departments of Transportation, where this supplier's conduit system has functioned successfully for a period of no less than 1 year. Include current name and address of organization, and the current name and telephone number of an individual from the organization who can be contacted to verify system installation. Provide this information prior to documentation submittal. Failure to furnish the above references will be sufficient reason for rejection of the supplier's equipment.

6. MEASUREMENT

This Item will be measured by the foot of the conduit system furnished, installed and tested.

7. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided for under "Measurement" will be paid for at the unit price bid for "Multi-Duct Conduit" of the type specified. This price is full compensation for furnishing, and installing conduit; for jacking, boring, excavating, furnishing and placing backfill, replacing pavement structure, sod, riprap, curbs or other surface; for furnishing and installing all fittings, sweeps, bends, repair couplings, adapters, ground box/manhole termination kits, pre-assembled split repair kits, lubrication access fittings, hangers, brackets, expansion joints, concrete, and detectable underground metalized mylar conduit marking tape; and for all labor, tools, equipment and incidentals necessary to complete the work. Copper cable will not be paid for directly but shall be subsidiary to this Special Specification. The furnishing and installing of the detectable underground metalized mylar conduit marking tape along the MDC system shall be subsidiary to this item.

Special Specification 6019

Longitudinal Prefabricated Pavement Markings (PPM) with Warranty

1. DESCRIPTION

Furnish and place longitudinal PPM as shown on the plans. Provide a manufacturer's warranty bond for a 6 year period. The Department will allow a Contractor provided warranty bond instead of the manufacturer's bond if all conditions of the manufacturer's warranty, including the requirements of this Item, are met. In such case, the Contractor is responsible for meeting the warranty requirements. Use the form provided by the Department. The Department will allow substitution of a contractor's bond with a manufacturer's bond after execution of the Contract before final acceptance.

2. MATERIALS

Use pavement markings that meet the requirements of Type B in DMS-8240, "Permanent Prefabricated Pavement Markings," and that are shown on the Department's MPL

3. EQUIPMENT

Provide equipment as required or directed according to the following: (The provider of the warranty bond is responsible for providing equipment during the warranty period unless otherwise shown on the plans.)

3.1. **Preparation and Application.** Use equipment designed for the pavement preparation and application of the type of PPM material selected.

3.2. **Colorimeter.** Provide a colorimeter using 45°/0° geometry CIE, D65 Illuminant, 2° standard observation angle meeting the requirements of ASTM E1347, E1348, or E1349.

3.3. **Retroreflectometer.** Unless otherwise shown on the plans, provide a portable or mobile retroreflectometer meeting the following requirements.

3.3.1. **Portable Retroreflectometer.** Provide a portable retroreflectometer that meets the requirements of ASTM E1710.

3.3.2. **Mobile Retroreflectometer.** Provide a mobile retroreflectometer that:

- is approved by the Construction Division (CST) and certified by the Texas Transportation Institute Mobile Retroreflectometer Certification Program for project evaluation of retroreflectivity
- is calibrated daily, before measuring retroreflectivity on any pavement stripe, with a portable retroreflectometer meeting the following requirements: ASTM E1710, entrance angle of 88.76°, observation angle of 1.05°, and an accuracy of ±15%; and
- requires no traffic control when retroreflectivity measurements are taken and is capable of taking continuous readings at or near posted speeds

Furnish mobile retroreflectivity measurements in compliance with Special Specification, "Mobile Retroreflectivity Data Collection for Pavement Markings," unless otherwise approved by the Engineer. The Engineer may require an occasional field comparison check with a portable retroreflectometer meeting the requirements listed above to ensure accuracy.

4. CONSTRUCTION

4.1. **General.** Prepare the pavement surface using controlled techniques that minimize pavement damage and hazards to the traveling public. Apply the PPM materials according to the manufacturer's recommendations, using widths, colors, and shapes at locations as shown on the plans.

Obtain approval for the sequence of work and estimated daily production. Use traffic control as shown on the plans or as approved. Establish guides to mark the lateral location of pavement markings as shown on the plans or as directed, and have guide locations verified. Use material for guides that will not leave a permanent mark on the roadway. Apply markings in alignment with the guides and without deviating for the alignment more than 1 in. per 200 ft. of roadway or more than 2 in. maximum. Remove all applied markings that are not in alignment or sequence as stated in the plans or as stated in the specifications at the Contractor's expense and in accordance with Item 677, "Eliminating Existing Pavement Markings and Markers," except for measurement and payment.

4.2. **Initial Performance Requirements.** Meet Article 5, "Performance Requirements" initially, after installation.

The Engineer will conduct visual performance evaluations of PPM. For markings that do not meet the Engineer's visual performance evaluation, the Contractor may present test results for color (using a colorimeter), retroreflectivity (using a retroreflectometer in accordance with this Item), and durability (in accordance with ASTM D913) for the Engineer's use in making acceptance or rejection decisions.

For PPM not meeting performance requirements, repair or replace until reevaluation shows the PPM meet the performance requirements as approved by the Engineer.

4.3. **Written Acceptance.** The Department will provide written acceptance after the Contractor meets the initial performance requirements. This written acceptance (see attached sample form) will include the date, location, length, and type of PPM.

5. PERFORMANCE REQUIREMENTS

5.1. **Color.** Provide PPM consisting of pigments blended to provide color conforming to highway colors as shown in Table 1.

Table 3
Color Requirements

Federal 595 Color		Chromaticity Coordinates								Brightness (Y)
		1		2		3		4		
		x	y	x	y	X	y	x	y	
White	17855	.290	.315	.310	.295	.350	.340	.330	.360	60 Min
Yellow	33538	.470	.455	.510	.489	.490	.432	.537	.462	30 Min
Black										5 Max

5.2. **Retroreflectivity.** Provide PPM for longitudinal markings meeting the minimum retroreflectivity values listed in Table 2.

Table 4
Minimum Retroreflectivity Requirements

Color	Retroreflectivity, mcd/m²/lx, Min
White	120
Yellow	120

5.3. **Durability.** Provide PPM that do not lose more than 5% of the striping material in a 1,000-ft. section of continuous stripe or broken stripe (25 broken stripes). Pavement markings must remain in the proper alignment and location.

5.4. **Performance Evaluation Procedures.** Provide traffic control and conduct evaluations of color, retroreflectivity, and durability as required or directed.

5.4.1. **Color.** Measure color using 45°/0° geometry CIE, D65 Illuminant, 2° standard observation angle in accordance with ASTM E 1347, E 1348, or E 1349.

5.4.2. **Retroreflectivity.** Unless otherwise shown on the plans, conduct retroreflectivity evaluations of pavement markings with either a portable or mobile retroreflectometer. Make all measurements in the direction of traffic flow, except for broken centerline on 2-way roadways, where measurements will be made in both directions.

If using a portable retroreflectometer, take a minimum of 1 measurement every mile on each series of markings (i.e., edgeline, center skipline, each line of a double line, etc.), at locations approved by the Engineer. If more than 1 measurement is taken, average the measurements. For all markings measured in both directions, take a minimum of 1 measurement in each direction. If the measurement taken on a specific series of markings within each mile segment falls below the minimum retroreflectivity values, take a minimum of 5 more measurements at locations determined by the Engineer within that mile segment for that series of marking. If the average of these 5 measurements falls below the minimum retroreflectivity requirements, that mile segment of the applied markings does not meet the performance requirement.

If using a mobile retroreflectometer, review the results to determine deficient sections and deficient areas of interest. These areas do not meet the performance requirements.

5.4.3. **Durability.** Measure durability in accordance with ASTM D913 for marking material loss and visual inspection for alignment and location. Conduct evaluations at locations approved by the Engineer.

6. WARRANTY REQUIREMENTS

Each warranty period is for 6 yr. and starts the day after written acceptance.

The marking warrantor is responsible for meeting Article 5, "Performance Requirements," for the duration of the warranty period.

During the warranty period, the Engineer will conduct periodic visual performance evaluations of PPM. For retroreflectivity the Engineer will use Tex-828-B, "Determining Functional Characteristics of Pavement Markings." The warrantor may be present during these evaluations. For areas, which, in the opinion of the Engineer, have a questionable visual evaluation, the warrantor may replace the PPM or may conduct a performance evaluation for the performance requirement in question, according to Section 5.4., "Performance Evaluation Procedures." Conduct retroreflectivity evaluations according to Section 5.4.2., "Retroreflectivity," using either portable or mobile retroreflectometer unless otherwise shown on the plans. The warrantor is responsible for traffic control when conducting performance evaluations.

The warrantor will replace PPM that fails to meet the color, retroreflectivity, or durability performance requirements during the warranty period. Replace PPM that fails to meet the performance requirements within 30 days of notification.

All replacement PPM must meet the materials and performance requirements of this specification, under the following conditions to complete the warranty period:

If the longitudinal PPM fails to meet the performance requirements in Article 5 in Years 1 through 4, use materials meeting Type B requirements of specification DMS-8240.

If the longitudinal PPM fails to meet the performance requirements in Article 5 in Years 5 or 6, use materials that meet DMS-8240 (Type A or B), or on the Department's MPL, to meet the performance requirements of Article 5.

The end of the warranty period does not relieve the warrantor from the performance deficiencies requiring corrective action identified during the warranty period.

The Engineer may exclude PPM from the replacement provisions of the warranty period, provided the Engineer determines that the failure is a result of outside causes rather than defective material. Examples of outside causes are extreme wear at intersections, damage by snow or ice removal, and premature pavement failure.

Provide a contact person, address and telephone number for notification of needed PPM replacement.

7. MEASUREMENT

This Item will be measured by the foot or by any other unit shown on the plans. Each stripe will be measured separately.

This is a plans quantity measurement Item. The quantity to be paid is the quantity shown in the proposal unless modified by Article 9.2., "Plans Quantity Measurement." Additional measurements or calculations will be made if adjustments of quantities are required

8. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Longitudinal Prefabricated Pavement Markings (PPM) with Warranty" of the color, shape and width, specified as applicable, at the time of project acceptance. This price is full compensation for materials, application of longitudinal PPM, testing, warranty work, equipment, labor, tools, and incidentals

WMS INSTALLATION RECORD FOR WRITTEN ACCEPTANCE

** Warranty period begins the day after written acceptance

COUNTY HIGHWAY	CONTROL PROJECT	LIMITS FROM LIMITS TO	LENGTH	TYPE PPM	ACCEPTANCE DATE

Contractor Signature _____ Date _____

Department Signature _____ Date _____

WARRANTY BOND		CONTRACT NO.	
		COUNTY	
		BOND NO	

KNOW ALL PERSONS BY THESE PRESENTS: That we, _ _____, manufacturer of or Contractor for prefabricated pavement markings, as Principal, and _ _____, as Surety, are held and firmly bound unto the State of Texas, as Obligee, in the penal sum of _ _____ __Dollars $_ _____, lawful money of the United States, well and truly to be paid to the State of Texas, and we bind ourselves, our heirs, successors, executors, and administrators jointly and severally, firmly by these presents.

Whereas, the above bounden Principal has provided prefabricated pavement markings to _ _____for the foregoing contract entered into between _ _____ and the Obligee, attached hereto; and

Whereas, the Principal is required to protect the Obligee against any defects resulting from faulty prefabricated pavement markings installed under said contract for a period of 6 years beginning the day after written acceptance.

Now, therefore, the condition of this obligation is such that if the above bounden principal, its heirs, successors, executors, and administrators shall promptly and faithfully carry out and perform the warranty as provided in said contract, and shall, within thirty days of due notice, replace any installed prefabricated pavement markings that may fail to meet Obligee's performance evaluation as provided for in the Contract during the period specified above or shall pay over, make good, and reimburse to the said Obligee all loss and damage that said Obligee may sustain by reason of failure or default of said Principal so to do, then this obligation shall be null and void, otherwise it shall remain in full force and effect.

Provided further that the end of a warranty period shall not relieve Principal from its obligation to correct deficiencies requiring corrective action, so long as those deficiencies are identified during the warranty period.

WITNESS our hand this _____ day of _____ 20 _____

_____
(Warrantor Name)

_____ * By: _____
**SURETY (Print Firm Name and Seal) (Warrantor Officer)

* By: _____ * By: _____
(Title) (Warrantor Officer)

_____ _____
**SURETY (Print Firm Name and Seal) **SURETY (Print Firm Name and Seal)

* By: _____ * By: _____
(Title) (Title)

Note:
* Attach a Power of Attorney showing that the officer of the installing contractor has authority to sign this obligation.
** Attach a Power of Attorney showing that the surety officer or Attorney-In-Fact has authority to sign this obligation; the Power of Attorney and bond must be impressed with the corporate seal. The surety must be a US Treasury listed company and provide notification information.

Special Specification 6040

Mobile Retroreflectivity Data Collection for Pavement Markings

1. DESCRIPTION

Furnish mobile retroreflectivity data collection (MRDC) for pavement markings on roadways as shown in the plans or as designated by the Engineer. Conduct MRDC on dry pavement only.

2. EQUIPMENT AND PERSONNEL

2.1. **Mobile Retroreflectometer.** Provide a self-propelled, mobile retroreflectometer certified by the Texas Transportation Institute (TTI) Mobile Retroreflectometer Certification Program.

2.2. **Portable Retroreflectometer.** Provide a portable retroreflectometer that uses 30-meter geometry meeting the requirements described in ASTM E1710. Maintain, service, and calibrate all portable retroreflectometers according to the manufacturer's instructions.

2.3. **Operating Personnel for Mobile Retroreflectometer.** Provide all personnel required to operate the mobile retroreflectometer and portable retroreflectometer. Ensure MRDC system operator has a current certification from the TTI Mobile Retroreflectometer Certification Program to conduct MRDC with the certified mobile retroreflectometer provided.

2.4. **Additional Personnel.** Provide any other personnel necessary to compile, evaluate, and submit MRDC.

2.5. **Safety Equipment.** Supply and operate all required safety equipment to perform this service.

3. MRDC DOCUMENTATION

Document all MRDC by county and roadway or as directed by the Engineer. Submit all data to the Department no later than three working days after the day the data is collected. Submit all raw data collected in addition to all other data submitted. Provide data files in Microsoft Excel format or a format approved by the Engineer. Provide a high-quality DVD showing the markings as they are measured. The data file and video must contain the following information:

3.1. **Preliminary Documentation Sample.** Submit a sample data file, video, and map of MRDC data in the required format ten working days prior to beginning any work. The format must meet specification and be approved by the Engineer before any work may begin.

3.2. **Initial Documentation Review and Approval.** The Department will review documentation submitted for the first day of MRDC, and if it does not meet specification requirements, will not allow further MRDC until deficiencies are corrected. The Department will inform the contractor no later than three working days after submittal if the first day of MRDC does not meet specification requirements. Time charges will continue unless otherwise directed by the Engineer.

3.3. **Data File.** Provide data files with the following:

- date;
- district number;
- county;
- route number with reference markers or other reference information provided by the Engineer to indicate the location of beginning and end data collection points on that roadway;
- cardinal direction;
- line type (single solid, single broken, double solid, etc.);
- line color;
- file name corresponding to video;
- data for each centerline listed separately;
- average reading taken for each 0.1 mi. interval or interval designated by the Engineer;
- accurate GPS coordinates (within 20 feet) for each interval;
- color-coding for each interval indicating passing or failing, unless otherwise directed by the Engineer (Passing and failing thresholds will be provided by the Engineer);
- graphical representation of the MRDC (y-axis showing retroreflectivity and x-axis showing intervals) corresponding with each data file;
- distance in miles driven while measuring the pavement markings;
- event codes (pre-approved by the Engineer) indicating problems with measurement;
- portable retroreflectometer field check average reading and corresponding mobile average reading for that interval when applicable; and
- upper validation threshold (may be included separately with the raw data but must be clearly identified with the data collected using that threshold).

3.4. **Map in Electronic Format.** Provide a map in an electronic format approved by the Engineer with each MRDC submission that includes the following information:

- date;
- district number;
- county;
- color-coded one mile intervals (or interval length designated by the Engineer) for passing and failing retroreflectivity values or retroreflectivity threshold values provided by the Engineer; and
- percentage of passing and failing intervals, if required by the Engineer.

3.5. **Video.** Provide a high-quality DVD with the following information:

- labeled with date and corresponding data file name;
- district number;
- county;
- route number with reference markers or other designated reference information to indicate the location of beginning and end collection points on that roadway; and
- retroreflectivity values presented on the same screen with the following information:
  - date;
  - location;
  - starting and ending mileage;
  - total miles;
  - retroreflectivity readings; and
  - upper validation thresholds (may be included separately with the raw data but must be clearly identified with the data collected using that threshold).

3.6. **Field Comparison Checks with a Portable Retroreflectometer.** Take a set of field comparison readings with the portable retroreflectometer at least once every four hours while conducting MRDC or at the frequency designated by the Engineer. Take a minimum of twenty readings, spread out over the interval measured. List the average portable retroreflectometer reading next to the mobile average reading for that interval with the reported MRDC data. Request approval from the Engineer to take field comparison readings on a separate roadway, when

measuring a roadway where portable retroreflectometer readings are difficult to take. Take the off-location field comparison readings at no additional cost. Submit the portable retroreflectometer printout of all the readings taken for the field comparison check with the corresponding MRDC data submitted. The mobile average reading must be within ±15% of the portable average reading. The Engineer may require new MRDC for some or all of the pavement markings measured in a four hour interval prior to a field comparison check not meeting the ±15% range. Provide the new MRDC at no extra cost to the Department. The Engineer may take readings with a Department portable retroreflectometer to ensure accuracy at any time. The Department's Construction Division will take comparison readings and serve as the referee if there is a significant difference between the Engineer's portable readings and the Contractor's mobile and handheld readings. For best results, take field comparison readings on a fairly flat and straight roadway when possible.

3.7. **Periodic Field Checks at Pre-Measured Locations.** When requested by the Engineer, measure with the mobile unit and report to the Engineer immediately after measurement the average retroreflectivity values for a designated pre-measured test location. The Engineer will have taken measurements at the test location within ten days of the test. The test location will not include pavement markings less than thirty days old. If the measured averages do not fall within ±15 % of the pre-measured averages, further calibration and comparison measurements may be required before any further MRDC. Submit the results of the field check with the MRDC report for that day.

4. FINAL REPORT

Submit a final report in the format specified by the Engineer to the Department's Traffic Engineering representative within one calendar week after the service is complete. The final report must contain a list of all problems encountered (pre-approved event codes) and the locations where problems occurred during MRDC.

5. MEASUREMENT

When mobile retroreflectivity data collection for pavement markings is specified on the plans to be a pay item, measurement will be by the mile driven while measuring pavement markings.

6. PAYMENT

Unless otherwise specified on the plans, the work performed, materials furnished, equipment, labor, tools, and incidentals will not be paid for directly, but will be considered subsidiary to bid items of the Contract. When mobile retroreflectivity data collection for pavement markings is specified on the plans to be a pay item, the work performed in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Mobile Retroreflectivity Data Collection." This price is full compensation for providing summaries of readings to the Engineer, equipment calibration and prequalification, equipment, labor, tools, and incidentals.

Special Specification 6054
Spread Spectrum Radios for Traffic Signals

1. DESCRIPTION

Furnish and install spread spectrum radios.

2. MATERIALS

Supply complete manufacturer specifications for radio, antennas, cables, connectors, power supply, mounting hardware, and lightning surge protector, including the exact gain of the antenna.

3. SPREAD SPECTRUM RADIO

Furnish spread spectrum radios with the following operating minimum characteristics:

Table1
Radio Characteristics

Radio Parameters	Radio Requirements
FREQUENCY	902 - 928 MHz
RANGE	15 Miles line of sight
REPEAT CAPABILITIES	Store and Forward Repeater Capabilities
POWER	1.0 Watt Transmitting Power
ENVIRONMENT	Temperature -22°F to 140°F
FCC APPROVAL	No License Requirements Type acceptance under FCC Part 15.247
DATA CHARACTERISTICS	Half or Full Duplex Operation RS232C interface Selectable1,200 thru 19,200 bps
REGULATED POWER SUPPLY	Voltage 12 DC Amperage 3 Amp Operating Temp -22°F to 140°F

Install radios as shown on the plans or as directed.

Supply radios with diagnostic software capable of testing the link between the master radio and the remote radios. Provide software capable of detecting channels which are not adequate for the transmission of data and allow for the exclusion of these frequencies in the selection of frequencies to be scanned.

4. RADIO ANTENNA

Furnish radio antennas with the following minimum characteristics:

Table2
Antenna Characteristics

Antenna Parameters	Antenna Requirements
REMOTE SITE	Unidirectional (Yagi), Minimum 9 dB gain (dB reference to half wave dipole)
MASTER SITE	Omni-directional, Minimum 6 dB gain (dB reference to half wave dipole)
RANGE	15 Miles
IMPEDANCE	50 Ohm
WIND RATING	125 miles per hour
CONNECTORS	Type "N" Female

Mount the antenna on a traffic signal pole, an illumination pole, or a separate steel pole as directed. Ground the antenna to the metal support. Do not use a wood pole or support.

5. CABLE

Furnish low loss coaxial cable with the following minimum characteristics:

Table3
Coaxial Cable Characteristics

Cable Parameters	Cable Requirements
NOMINAL IMPEDANCE	50 Ohm
MAX ATTENUATION	4.2 dB/100 ft. at 900 MHz

Furnish heliax type cable for runs over 100 ft. in length. Furnish cable connectors with a type "N" male connector. Install cable connectors in accordance with manufacturer's recommendations. Install cable as shown on the plans or as directed.

Furnish a coaxial protector (PolyPhaser IS-50NX-C2, Andrew APG-BNFNF- 090, Huber Suhner 3400-41-0048, or equivalent). Mount coaxial protector adjacent to and bonded to the cabinet ground bus.

6. TESTING, TRAINING, AND WARRANTY

Provide a factory certified representative for installation and testing of the equipment. Conduct a test site survey prior to the installation of the equipment. The Department reserves the right to conduct their own site survey as needed.

When required, provide up to 2 days of training to Department personnel in the operation, setup, and maintenance of the spread spectrum radio system. Provide instruction and materials for a maximum of 20 persons and at a location selected by the Department. Provide instruction personnel certified by the manufacturer. The User's Guide is not an adequate substitute for practical classroom training and formal certification.

Provide equipment with no less than 95% of the manufacturer's standard warranty remaining when equipment invoices are submitted for payment. Any equipment with less than 95% of its warranty remaining will not be accepted.

Provide updates of the spread spectrum radio software free of charge during the warranty period, including the update to NTCIP compliancy.

7. MEASUREMENT

This Item will be measured by each spread spectrum radio, antenna and by the linear foot of cable furnished and installed.

8. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Spread Spectrum Radio," "Antenna" of the type specified, "Coaxial Cable," and "Heliax Cable." The price is full compensation for furnishing, assembling, and installing the spread spectrum radios, antennas, and cable; for mounting attachments; and for testing, labor, tools, equipment, and incidentals.

Special Specification 6058
Battery Back-Up System for Signal Cabinets

1. DESCRIPTION

Install a Battery Back-Up System (BBU System) for traffic signals that will provide reliable emergency power in the event of utility power failure or interruption. The system will also function as a power conditioner and/or voltage regulation device.

A BBU System consists of inverter/charger, manual bypass switch, power transfer switch or automatic bypass switch, batteries, battery monitoring device, wiring, external cabinet or stand-alone cabinet, concrete pad, all necessary hardware and software, and all associated equipment required to operate in a field environment.

The BBU System shall be capable of operating an "LED only" signalized intersection (700W load) for 4 hours of full runtime when utility power is disabled and under ambient temperatures of 25oC. The BBU System shall switch the intersection to flash mode of operation when approximately 40% of battery charge is remaining, via relay contact connection points on the front panel of the unit. The BBU system shall operate the intersection in the flash mode of operation (300W load) for an additional 2 hours. BBU system components shall be rated for a minimum 1400W load capacity.

The BBU shall be designed for outdoor applications in accordance with NEMA TS2-2003, Section 2. All components of the BBU system shall be rated to operate under temperature extremes of -34oC to +74oC.

2. DEFINITIONS

2.1. **Automatic Bypass Switch.** A unit connected between the utility power supply and the inverter/charger which can automatically switch power to the controller cabinet service panel from inverter output power to utility line power.

2.2. **Battery Back-Up System (BBU System).** The battery back-us system includes, but is not limited to, a manual bypass switch, automatic bypass switch or power transfer switch, inverter/charger, batteries, battery monitoring device, wiring, external cabinet and all necessary hardware for system operation.

2.3. **Battery Back-Up System Software.** All software associated with operation, programming and functional requirements of the BBU system.

2.4. **Battery Monitoring Device.** The device which monitors battery temperatures and charge rate of the batteries used in the BBU system.

2.5. **Batteries.** Standard 12V batteries wired in series to create a 36VDC to 96VDC voltage storage.

2.6. **Boost.** When enabled, the BBU inverter/charger shall automatically switch into this mode to raise the utility line voltage when it drops below a preset limit. The limit may be user defined or use manufacturer default settings (typically 100V AC).

2.7. **Buck.** When enabled, the unit shall automatically switch into this mode to reduce the utility line voltage when it rises above a preset limit. The limit may be user defined or use manufacturer default settings (typically 135V AC).

2.8. **External or Stand-Alone Cabinet.** The structure which houses the system components and/or batteries for the BBU System.

2.9. **Inverter/Charger.** The unit which converts the DC voltage input into 120 VAC output for the traffic signal cabinet to operate. As a minimum the inverter/charger shall be rated for 1400 watts.

2.10. **Inverter Line Voltage.** The power supplied from the BBU system to the traffic signal cabinet from the BBU System inverter.

2.11. **Manual Bypass.** Manual switch that allows user to bypass BBU power to service system equipment. Manual bypass switch switches utility line power directly to cabinet.

2.12. **Power Transfer Switch.** A unit connected between the utility power supply and the inverter/charger which can automatically switch from utility line power to inverter output power. The power transfer relay may be a separate unit or combined with the manual bypass switch. In the event of battery voltage loss, the power transfer switch will automatically return to utility line power.

2.13. **Signal Operation Mode.** A signalized intersection generating a 700W load when running in normal operation.

2.14. **Signal Flash Mode.** A signalized intersection generating a 300W load when running in the flash mode of operation.

2.15. **Utility Line Voltage.** The 120V AC power supplied to the BBU system.

3. EQUIPMENT

Ensure electrical materials and construction methods conform to the current NEC and additional local utility requirements. Furnish battery back-up systems prequalified by the Department. The Traffic Operations Division maintains a Material Producer List (MPL) of prequalified battery back-up systems. Ensure all materials and construction methods conform to the details shown on the plans, the requirements of this Item, and the pertinent requirements of the following Items:

- Item 420, "Concrete Substructures"
- Item 620, "Electrical Conductors"

Provide and install a BBU system that is able to fulfill the following requirements:

3.1. **Method of Operation.** The BBU system shall operate using one or more of the following methods:

3.1.1. **Buck and Boost Method.** When the buck and boost functions are enabled they shall set the upper and lower control limit allowable for the utility line voltage.

If the utility line voltage fluctuates above or below the buck and boost values, the BBU system shall raise or lower the voltage by approximately 10-15% of the utility line voltage in an attempt to bring the voltage back into the upper and lower control limits. Buck and boost shall have preset manufacturer defaults.

If the utility line voltage falls above or below the functional capabilities of buck and boost, then the BBU system will transfer power from the utility line voltage to the inverter line voltage.

3.1.2. **Stand-by Method.** The stand-by method shall set upper and lower control limits for the utility line power. If the utility line voltage falls above or below the upper or lower control limits, then the BBU system will transfer power from the utility line voltage to the inverter line voltage.

3.1.3. **Continuous Operating Mode, Double Conversion Method.** The continuous method supplies the cabinet with inverter line voltage at all times. This method requires the disabling of buck and boost functions.

3.2. **System Capabilities.** The BBU system shall be capable of providing 1400W peak load, with a minimum of 80% inverter efficiency, for at least 10 seconds.

The BBU system shall be capable of providing 700W signal operation load for a minimum of 4 hours, and then switching to and providing 300W signal flash load for an additional 2 hours minimum, when batteries are fully charged.

When the BBU system is running on battery power, the inverter/charger shall be capable of allowing the voltage at which the transition from normal operating load to flash mode occurs (usually 47.5V) to be selected by a user, via relay contacts and connection points on the front panel of the inverter/charger.

The transfer time allowed, from disruption of normal utility line voltage to stabilized inverter line voltage from batteries, shall be less than 65 milliseconds. The same allowable transfer time shall also apply when switching from inverter line voltage to utility line voltage.

The BBU system shall bypass utility line voltage whenever the utility line voltage is outside of the manufacturer's default, or a user-programmed voltage range, ±2VAC.

When the utility line power has been restored to a normal operating voltage for more than a user defined setting (default 30 seconds), the BBU system shall transfer from inverter line voltage to utility line voltage. The BBU system shall be equipped to prevent a malfunction feedback to the cabinet or from feeding back to the utility service.

The BBU system shall be compatible with TS1, TS2 and Model 170/2070 controllers and cabinet components for full run-time operation.

Unless the plans indicate otherwise, provide a BBU in an external battery cabinet. When indicated by the plans, provide a BBU system that can be shelf-mounted in NEMA TS-1 and TS-2 cabinets, or rack-mounted for Model 170/2070 332 cabinets. Provide a manual bypass that is capable of shelf mounting or that can be attached to the side of the signal cabinet. Provide interconnect cables that are no less than 10 ft. in length.

Relay contact wiring for each set of NO/NC relay contact closure terminals shall be no less than 6 feet long and #18 AWG wire. Use manufacturer recommendations for size of wire for any cables lengths greater than 10 feet.

The BBU system shall have lightning surge protection compliant with IEEE/ANSI C.62.41 latest edition and meeting all current UL1449 standards. Lightning surge protection shall be provided to the utility line voltage coming into the inverter/charger. The surge protection device shall be easily accessible and mounted externally from the inverter/charger.

The BBU system, including batteries and hardware, shall be easily replaceable and shall not require any special tools for installation.

The BBU system shall operate in automatic "fail-safe" mode. Should a breaker trip on the inverter/charger and/or the power transfer switch, the system will automatically operate from utility line power and bypass the BBU system.

As stated above, in addition to the inverter/charger, the BBU shall be provided with both an external manual bypass switch and either an external automatic transfer switch or external automatic bypass switch.

The BBU system shall be capable of logging up to 100 events. Events shall date- and time-stamp faults with utility line voltage and battery voltages. At the minimum, the BBU system shall log an event when:

- the utility line voltage falls above or below the upper or lower control limits,
- the BBU system automatically switches to battery power, and
- when self-monitoring BBU system components fail.

3.3. **Displays, Controls, Diagnostics and Maintenance.** The BBU system shall include a front panel display. All applicable programmable functions of the operational methods described in this specification shall be viewable from the front panel display.

All events described in Section 3.2, "System Capabilities" shall be viewable from the front panel display.

The BBU system software shall be programmable from the front panel of the inverter/charger by means of a keyboard or momentary buttons allowing user to step through menu driven software.

A 10/100 Ethernet port shall be provided on the front panel of the inverter/charger.

A RS232 port shall be provided on the front panel of the inverter/charger.

The BBU system software shall be provided for the operational needs of the BBU system. The user/operator shall be able to access all system software via the Ethernet and RS232 ports on the front panel of the inverter/charger. The user shall be able to read logged events and change programmable parameters from the keyboard, laptop or local area network via the Ethernet port.

System software shall be upgradeable via the RS232 port on the front panel of the inverter/charger.

3.4. **Inverter/Charger.** The inverter/charger is the unit that provides the voltage regulation; power conditioning of utility line power; convert the DC voltage input into 120 VAC output for the traffic signal cabinet to operate; provides emergency backup power upon loss of utility power and provides for temperature compensated battery charging. As a minimum the inverter/charger shall be rated for 1400 watts. Provide a minimum of 6 sets of normally open (NO) and normally closed (NC) single-pole double-throw dry contact relay closures on the front face of the inverter/charger and labeled so as to identify each contact. The relay closures shall consist a set of NO/NC contact closures that shall be energized whenever the unit switches to battery power (contact shall be labeled or marked as "On Battery" or equivalent) and a second set of NO/NC contact closures shall be energized whenever the battery approaches 40% remaining capacity (contact shall be labeled or marked as "Low battery" or equivalent"), which will determine when the unit will switch from normal operation to flash. A third set of NO/NC contact closures shall be energized after a user settable time after the unit switches to battery power. The contact may be labeled "Timer. The remaining relays shall be user definable.

Operating temperature range for both the inverter/charger and power transfer relay shall be -34°C to +74°C. When battery power is used, the BBU system output voltage shall be between 110VAC and 125VAC, pure sine wave output, ≤ 3% THD, 60Hz ± 3Hz.

3.5. **Manual Bypass Switch.** The manual bypass switch shall be provided as a separate unit external to the inverter/charger unit. The manual bypass switch shall consist of housing, two position switch, terminal blocks, internal wiring, service outlet, circuit breakers and mounting hardware. All components shall be rated at a minimum of 240VAC / 30 amp. Provide the manual bypass switch with # 8 terminal blocks. The manual bypass switch shall be 2 position and allow the user to switch utility line power directly to the cabinet service panel. The switch positions will provide the following functions. In the "Bypass" position the inverter is bypassed, utility power is removed from the BBU and passed directly to the signal power panel. In the "UPS" position the inverter / switch is powered and the signal circuits are supplied by the output of the inverter. When the manual bypass switch is in the "Bypass" position the user may replace the automatic bypass switch (or transfer switch) and the inverter/charger without interrupting power to the intersection. Provide the manual bypass switch with over current protection (20 Amp circuit breaker).

3.6. **Power Transfer Switch.** These requirements are for BBU systems provided with a power transfer switch. The power transfer switch will operate such that the inverter/charger input and cabinet power panel are supplied with power from the utility line, in the event that the utility line power is lost or requires conditioning (buck or boost) the power transfer switch will automatically connect the inverter/charger output to the cabinet power panel such that

the inverter/charger output provides the power. In the event of inverter/charger failure, battery failure, or complete battery discharge, the power transfer shall revert to the NC (de-energized) state, where utility line power is connected to the cabinet service panel.

All wire to the power transfer switch from the manual bypass switch, to and from the inverter/ charger and from the manual bypass switch to utility power service shall be sized accordingly with system requirements.

3.7. **Automatic Bypass Switch.** These requirements are for BBU systems provided with an automatic bypass switch. The automatic bypass switch will operate such that the inverter/charger input is supplied with power from the utility line and the cabinet power panel is supplied with power from the output of the inverter/charger. In the event of inverter/charger failure, battery failure, or complete battery discharge, or other loss of power from the output of the inverter/charger, the automatic bypass switch shall revert to the NC (de-energized) state, where utility line power is connected to the cabinet service panel.

3.8. **Batteries.** Provide batteries from the same manufacturer/vendor of the BBU system.

Individual batteries shall be 12V type, and shall be easily replaceable and commonly available for purchase by common off-the-shelf equivalent.

Batteries shall be sized and rated to operate a 700W load for 4 hours (normal operation) followed by a 300W load for 2 hours (flash operation) for a total of 6 hours.

Battery configuration shall consist of 12V batteries arranged for total voltages of 36V, 48V, 60V, 72V, 84V or 96V.

Batteries shall be deep-discharge, sealed prismatic lead-calcium based, valve-regulated maintenance-free batteries.

Batteries shall operate over a temperature range of -34°C to +74°C.

Batteries shall indicate maximum recharge data and recharging cycles, and manufacturer defaults on the inverter/charger shall not allow the recharging process to exceed the batteries maximum values.

Battery interconnect wiring shall connect to the inverter unit via modular harness with red and black cabling that terminates into a typical power pole style connector. Harness shall be equipped with mating power flag style connectors for batteries and a single insulated plug-in style connection to inverter/charger unit. Harness shall allow batteries to be quickly and easily connected in any order and shall be keyed to ensure proper polarity and circuit configuration. A fusible link or device sized accordingly with system requirements and to protect against currents exceeding each battery current rating shall be provided within 3 inches of the negative and positive leads of each battery. Fusible links shall be insulated stranded wire.

Insulated covers shall be provided at the connection points (post) as to prevent accidental shorting.

Battery cables provided to connect battery to battery harness main cable shall be a minimum of 18 in. or long enough to accommodate the battery covers provided with the battery ground box, whichever is longer. Battery harness shall be sized accordingly with system requirements.

3.9. **Battery Monitoring System.** The BBU system shall use a temperature-compensated battery charging system. The charging system shall compensate over a range of 2.5 – 4.0 mV/°C per cell.

The temperature sensor shall be used to monitor the temperature and regulate the charge rate of the batteries. Unless required otherwise by the plans the temperature sensor wire shall be as follows:

- 8 feet long if external side-mounted cabinet is attached to existing controller cabinet.

- 8 feet long if batteries are housed in traffic signal base used for cabinet foundation and batteries are stored on shelf within base.
- 8 feet long if stand-alone cabinet is used.

Should the temperature sensor fail, the inverter/charger shall not allow the BBU system to overcharge the batteries. The BBU system shall provide an alarm should the temperature sensor fail.

Recharge time for the batteries to obtain 80% or more of full battery charge capacity shall not exceed 20 hours at 21°C (70°F).

Batteries shall not be charged when battery temperature exceeds 50°C.

The BBU system shall monitor battery strings within a system and set a fault indicator if battery voltage falls below normal operating voltage.

3.10. **Battery Housing.** Unless plans require otherwise, project an external battery cabinet or stand-alone BBU/battery cabinet as specified below.

3.10.1. **External Battery Cabinet.** The external cabinet shall be NEMA type 3R all-aluminum with stainless-steel hardware, or approved equivalent. The external cabinet shall be designed to attach on the side of a TS2 size 6 base-mount cabinet. The batteries, inverter, transfer switches, manual bypass and all associated hardware shall be housed in the external cabinet.

The external cabinet shall be equipped with proper ventilation, electric fan, and air filter in accordance with TS2 standards.

External cabinets will be equipped with a door opening to the entire cabinet. The door shall be attached to the cabinet with a full length stainless steel piano hinge or four, two-bolts per leaf, hinges. The door shall be provided with the same latch and lock mechanism as required for standard traffic signal cabinet. In addition, a padlock clasp will be provided.

When using battery ground boxes, an external cabinet is required for the non-battery components. .

3.10.2. **Stand-Alone BBU/Battery Cabinet.** When required for installation by the plans a stand-alone cabinet in accordance with the following shall be provided.

The stand-alone cabinet shall conform to all the specifications of the External BBU/Battery Cabinet, except that it will not mount to the controller cabinet. The stand-alone cabinet shall be designed to attach to a concrete pad.

3.11. **Concrete Pad.** Provide a Class B concrete pad as a foundation for stand-alone cabinets of the size shown in the plans. For external cabinets, extend the controller foundation to provide a class B concrete pad under the external cabinet of the size shown in the plans.

3.12. **Documentation.** Operation and maintenance manuals shall be provided. The operation manual shall include a block diagram schematic of all system hardware components. The manual shall include instructions for programming and viewing software features. The manual shall include all uploading/downloading (communications protocol) requirements via RS232 or Ethernet port.

Board level schematics shall be provided when requested.

Battery documentation and replacement information shall be provided.

3.13. **Testing.** The Department reserves the right to do testing on BBU systems to ensure Quality Assurance on unit before installation and random sampling of units being provided to the State. BBU systems that fail will be taken off the Qualified Products List (QPL).

Department QPL testing procedures will check compliance with all the criteria of this specification including the following:

- Event logging for fault/alarm conditions
- Demonstrated use of one or more of the operating methods described in Section 3.1., "Method of Operation."
- Testing of ability to power a 700W load for 4 hours, transfer to flash mode and power a 300W load for 2 additional hours, at an ambient temperature of +25°C.
- Testing of all components in environmental chamber (temperature ranges from -30°C to +74°C) following NEMA TS2 2003 standards, Section 2.

3.14. **Warranty, Maintenance and Support.** Provide a BBU containing a warranty that requires the manufacturer to replace failed BBUs when non-operable due to defect in material or workmanship within five years of date of purchase from manufacturer. Supply a BBU with no less than 95% of the manufacturer's warranty remaining on the date that the BBU is installed and begins operating. The replacement BBU must meet requirements of this specification. The Contractor will handle all warranty issues until the date of final acceptance.

Batteries shall be warranted for full replacement for 5 years. Batteries shall be defined as bad if they are not able to deliver 80% of battery rating.

4. MEASUREMENT

This Item will be measured by each BBU system installed.

5. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "BBU System" of the type (type of BBU cabinet) specified. This price is full compensation for furnishing, installing, and testing the completed installation, BBU system and associated equipment, mounting hardware, class B concrete pad, software, conduit, conductors; and equipment, labor, tools; and incidentals

SPECIAL SPECIFICATION

8911

TRUSS SCREENS

8911.1 Description

This item shall govern the furnishing and placement of a perforated aluminum panel windscreen on toll gantry trusses. Related items:
Item 442, Metal for Structures
Item 445, Galvanizing
Item 650, Overhead Sign Supports (Trusses)

8911.2 Materials

Except as specified, all material shall be new and of the best quality and all labor shall be done in a most thorough and workmanlike manner and with all reasonable rapidity, all to the full satisfaction of the owner.

A. Fasteners: Type 304 or 316 stainless-steel fasteners for exterior use
B. Perforated Aluminum Panel: 3/16" clear anodized perforated aluminum panel with 48% open area created by ½" diameter holes staggered at 11/16".

8911.3 Truss Screen Construction

The truss screen shall consist of perforated aluminum panels attached to overhead signage support trusses as described by Items 442 and 650.

Screens shall be installed on front and back faces of each truss. No screening on top, bottom, or sides.

Use continuous aluminum angle to fasten to truss, with joint at aluminum angle to match vertical member at truss. Use self-drilling stainless steel fastener through aluminum panel. Align all fasteners.

All dissimilar metals shall be electrically isolated from one another with non-conductive washers, gaskets, spacers or other suitable means to prevent the occurrence of galvanic action.

Use 1/16" x 1-1/2" EPDM metal separator shim between fastener and truss. Use 2-1/2" x 2-1/2" x 3/16" aluminum angle and 2" x 3/16" aluminum pressure bars of clear anodized aluminum pre-drilled holes in shop for fasteners.

Holes for fasteners must be pre-drilled prior to installation. See "Perforated Panel Details" sheet for hole size and locations.

8911.4 Warranty

The contractor shall provide a one-year warranty from all defects.

8911.5 Measurement

Truss Screens shall be measured by Each "EA" complete in place which includes all screens on a single truss frame.

8911.6 Payment

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Truss Screens". The price shall be for full compensation for the complete assembly in place including fabrication, shipment, fasteners, supporting steel, and all labor, materials, equipment, tools and other necessary items to install the screens.

Special Specification 16060
Grounding and Bonding For Electrical Systems

1. DESCRIPTION

1.1 SECTION INCLUDES

- Grounding electrodes and grounding electrode conductors
- Inspection wells
- Equipment grounding conductors

1.2 RELATED SECTIONS

- 16670 Lightning Protection System

1.3 REFERENCES

- NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems (International Electrical Testing Association)
- NEC 250
- NFPA 780

1.4 GROUNDING SYSTEM DESCRIPTION

- The following items will be bonded together to form the grounding system for the power distribution system.
    - Metal underground water pipe – if available
    - Metal frame of the building - if available
    - Concrete-encased electrode consisting of 2/0 AWG minimum size, bare copper conductor embedded in the structure footer and bonded to the rebar. Extend the conductor to the Neutral Bar of the service entrance main disconnect. Ensure this grounding electrode conductor is not spliced and not connected to the supplemental equipment ground bar.
    - Rod electrodes – minimum of two required.
    - The lightning protection system main ground loop (counterpoise) surrounding the toll equipment cabinet in accordance with NFPA 780.

1.5 PERFORMANCE REQUIREMENTS

- Grounding Rod Resistance: Use the fall of potential three point method and test each ground rod individually before connecting it to the system. Ensure the maximum resistance to ground (earth) does not exceed 25 Ohms. If a ground rod measures greater than 25 Ohms to ground, then a second ground rod should be installed nearby, but not closer than the depth of the 1st rod, and then bond the two rods together with a direct buried conductor. Turn over the test reports to the Department within 1 week of performing the test
- The resistance to ground should be fairly consistent between the ground rods. Any rod that measures more than 20% different than the surrounding rods should be investigated.
- After bonding all the power system grounding components together, use the "Clamp on Method" to measure the resistance to ground of the completed system. Ensure the maximum resistance to ground (earth) does not exceed 5

Ohms. Drive additional ground rods if necessary to meet the requirements. Turn over the test reports to the Department within 1 week of performing the test.

1.6 SUBMITTALS FOR REVIEW

- Product Data: Provide data sheets for all grounding electrodes, clamps, bonding straps, ground bars, and inspection wells.
- Show the locations of the grounding system inspection wells on the Electrical Site Plan. Avoid placing inspection wells in paved areas. Inspection wells in paved areas will be "traffic rated" H-20.

1.7 SUBMITTALS FOR CLOSEOUT

- Project Record Documents: Record the actual locations of components, grounding electrodes, and inspection wells.

1.8 QUALIFICATIONS

- Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three years' experience.

2. MATERIALS

2.1 ROD ELECTRODES

- Material: Copper-clad steel, sectional
- Diameter: 5/8 inch
- Length: 20 feet total length.

2.2 MECHANICAL CONNECTORS

- Ground rod clamps will be mechanically fastened using hex head bolts. The clamps will be heavy duty, manufactured from silicon bronze, and the hex head bolts capable of being torque to 300 inch pounds. Ensure the clamps are UL listed for direct burial.

2.3 EXOTHERMIC CONNECTIONS

- Cadweld or equivalent

2.4 GROUNDING CONDUCTORS

- Material: Stranded or solid copper
- Grounding Electrode Conductor: Sized to meet NFPA 70 requirements.

2.5 GROUNDING INSPECTION WELLS

- Light weight polymer concrete inspection wells will meet ASTM C-857 specifications. HARGER Cat# GAW121212HD, or approved equal.

3. CONSTRUCTION

3.1 EXAMINATION

- Verify existing conditions prior to beginning the work.
- Verify that final backfill and compaction has been completed before driving rod electrodes.

3.2 INSTALLATION

- Install rod electrodes at locations indicated on the plans. The service entrance ground rod electrodes shall consist of two 20 ft driven rods spaced 20 feet apart.
- Provide a grounding inspection well at each driven rod location in the power distribution system (not for lightning protection system). The top of the inspection well will be flush with the finished grade
- A main bonding jumper shall connect the neutral bus to the ground bus at the first service disconnect.
- The main grounding electrode conductor shall be continuous and shall not be spliced or broken at the wall mounted ground bus.
- Provide bonding to meet NFPA 70 and Regulatory Requirements (i.e., metal duct work, metal piping, gas piping etc.).
- Bond together metal siding not attached to a grounded structure and bond to ground.
- Equipment Grounding Conductor: Provide separate, insulated conductor within each feeder and branch circuit raceway. Terminate each end on suitable lug, bus, or bushing. Ground the metal wall studs when conductors are installed through holes in the studs.

3.3 FIELD QUALITY CONTROL

Measure the continuity of each grounding electrode conductor after it is installed and prior to connecting it to the system. The minimum acceptable continuity resistance is 0.02 Ohms.

Special Specification 16070
Electronic Equipment Rack

1. DESCRIPTION

This Item shall govern for the furnishing and installation of electronic equipment racks as shown on the plans and as detailed in the Special Specifications. These racks shall comply with the Electronic Industries Association (EIA) standards for 19-in. rack mounted equipment. Upon completion of the work, each rack shall be properly inspected and tested.

2. MATERIALS

2.1. General

The rack shall consist of 4 continuous, adjustable equipment angles manufactured from 6061-T6 aluminum. The hole spacing on the angles shall comply with Standard EIA RS-310.

The minimum dimensions are height 84 in., width 19 in. and depth of 29 in. Rack shall provide a minimum of 78 in. usable equipment mounting space.

Paint color shall be black, but the color(s) and other details of design shall be submitted for review and approval prior to fabrication.

The rack shall be rated for a minimum of 1500 lb of load bearing capacity.

The rack shall include vertical and horizontal cabling section, support hardware and electronic equipment shelves required to properly mount equipment shown in the plans. The rack accessories will be provided and installed by the Contractor.

3. CONSTRUCTION METHODS

3.1. **General.** The rack(s) shall be assembled and installed in accordance with the manufacturer's recommendations.

3.2. **Electronic Components.** All Electronic Components shall comply with Special Specification, "Electronic Components" included elsewhere in the project documents.

3.3. **Installation.** The rack installation shall be included as part of this bid item. The rack(s) shall be placed on an interior floor as shown in the plans.

4. DOCUMENTATION REQUIREMENTS

Three copies and 1 mylar reproducible shall be provided for the following items:

- Complete and accurate final rack wiring diagram.
- Complete parts list including names of vendors for parts not identified by universal part numbers such as JEDEC, RETMA or EIA.

The documentation shall be delivered to the Engineer.

5. TESTING AND WARRANTY

Testing of the electronic equipment rack(s) shall comply with Article 2. of Special Specification, "Testing, Training, Documentation, Final Acceptance and Warranty".

Warranty for the electronic equipment rack(s) shall comply with Article 6 of Special Specification, "Testing, Training, Documentation, Final Acceptance, and Warranty".

5.1. **Measurement.** This Item will be measured as each unit furnished, installed, and tested in accordance with this special specification.

5.2. **Payment.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Electronic Equipment Rack". This price shall be full compensation for all equipment described under this Item with all cables and connectors, and rack components; and for furnishing all labor, materials, training, and equipment necessary to complete the work.
Electronic equipment to be mounted on the rack(s) shall be paid for separately under the corresponding bid items.

Special Specification 16670
Lightning Protection System

1. DESCRIPTION

This Special Specification governs the design and installation of Lightning Protection System (LPS) for structures, buildings, and building site components.

2. MATERIALS

Furnish new or used material in accordance with the details shown on the plans, the requirements of this Item, and the pertinent requirements of the following Items, references, and standards, except for measurement and payment:

- Item 416, "Drilled Shaft Foundations"
- Item 618, "Conduit"
- Item 620, "Electrical Conductors"
- Item 624, "Ground Boxes"
- Item 628, "Electrical Services"
- Item 650, "Overhead Sign Supports"
- TXDOT Traffic Engineering Standard Sheets – ED-03 Electrical Details

2.1 **Components.** LPS Components shall comply with the requirements of the following:

- National Fire Protections Association (NFPA) 70, National Electrical Code (NEC): Latest edition at the time of construction.
- NFPA 780 Standard for Installation of Lightning Protections Systems: Latest edition at the time of construction.
- Lightning Protection Institute – Standard of Practice for the Design-Installation and Inspection of Lightning Protection Systems LPI-175: Latest Edition at the time of construction.
- Institute of Electrical and Electronic Engineers Standard 81-1983
- Underwriters Laboratory Standard UL 96
- Roof- Mounting Air Terminals: NFPA Class 1, aluminum, solid, unless otherwise indicated.
- Ground Rods, Ground Loop Conductors, and Concrete-Encased Electrodes shall comply with the plans, specifications, and applicable portions of the standards listed in this specification.

2.2 **Products.** Provide products that meet this specification. The following list of manufacturers is provided for information only to assist in establishing a product level of quality. Other manufacturer's products may also be submitted provided that the product is of equal or better value and performance as approved by the Engineer.

- A-C Lightning Security, Inc.
- Automatic Lightning Protection
- Erico International Corporation
- Harger Lightning Protection, Inc.
- Independent Protection Company, Inc.
- Robbins Lightning, Inc.
- Thompson Lightning Protection, Inc.

2.3 **LPS Product Submittals.** Submit the following product data, shop drawings and qualifications:

- **Product Data:** For air terminals and mounting accessories, conductors, connections, ground electrode system, and other necessary components.

- **Shop Drawings:** Detail LPS, including air-terminal locations, conductor routing and connections, and bonding and grounding provisions. Include indications for use of raceway and data on how concealment requirements will be met. Provide design analysis data to demonstrate design compliance with the plans specifications, applicable chapters of NFPA 780 and all other requirements in this specification.

- **Qualification Data:** Provide Qualification data for firms and persons that will perform the installation and quality control. Data shall demonstrate capabilities and experience. Include data on listing or certification by Nationally Recognized Testing Laboratory (NRTL) or trade association.

2.4 **Governing Requirements.** In the case where a conflict exists, the more restrictive requirement shall govern. The Engineer shall make a determination regarding the conflicting requirements. The determination of requirements by the Engineer shall govern.

3. CONSTRUCTION

Install LPS components and systems according to approved shop drawings, plans, specifications, and the standards listed in this specification:

- Install LPS strike termination devices. Shop drawings shall provide the final location, mounting or attachment, type and size required by the approved shop drawing.

- Install LPS roof cross-run and down conductors of the type and size required. Install conductors with direct paths from air terminals to ground connections. Avoid sharp bends and narrow loops. Conductor location, mounting or attachment, type and size as required by the plans and approved shop drawings.

- Conceal following conductors:

  - System conductors.
  - Down conductors.
  - Interior conductors
  - Conductors within normal view from exterior locations at grade within 20 feet of building.

3.1 Install LPS ground terminals shall be of the type and size shown on the plans and approved shop drawings, including but not limited to ground rods, encased ground electrodes, ground rings, ground radials, and ground plates to form an integrated earth grounding electrode system (GES). GES shall comply with NEC, NFPA 780, LPI-175 and IEEE Std 81-1993.

3.2 Install LPS ground test well of the type and size shown on the plans and approved shop drawing.

3.3 Install a LPS Master Ground Bus Bar (MGBB) of the type and size as shown on the plans and as approved on the shop drawings. Provide ground bonding connection from electrical service/ and feeder panel to GES as required by NEC Article 250 & and NFPA 780. Placement and location of the MGBB shall be as required by the appliances and equipment to be installed in the protected structure.

3.4 Install approved exothermic-welded connections for all conductor splices and connections between conductors and other components. LPS cable connections shall be of the type, location and size shown on the plans and as approved on the shop drawings.

3.5 Install components that intrinsically provide corrosion protection.

- Do not combine materials that can form electrolytic couple that will accelerate corrosion in presence of moisture unless moisture is permanently excluded from junction of such materials.

- Use conductors with protective coatings where conditions would cause deterioration or corrosion of conductors.

3.6 aPS Coordination.

- Coordinate installation of LPS with installation of other building systems and components, including electrical wiring, supporting structures and building materials, metal bodies requiring bonding to lightning protection components, and building finishes.

- Coordinate installation of air terminals attached to roof systems with roofing/building manufacturer, fabricator, and installer.

3.7 LPS Quality Control.

1. LPS Installer Qualifications: Engage experienced installer who is NRTL listed or who is certified by LPI as Master Installer and Designer.
2. LPS Listing and Labeling: As defined in NFPA 780, Article 2-2, "Definitions." All components shall Labeled and Listed as required by NFPA 780.
3. LPS Quality Control Field Inspections: Provide reports indicating compliance with plans & specification requirements.
4. LPS UL Inspection: Apply for inspection by UL as required to obtain UL Master Label for system.
5. LPS UL Master Label: Provide UL Master Label.
6. LPS: Provide as-built drawings of Lightning Protection System.

4. MEASUREMENT

This Item will be measured by the each of Lightning Protection System complete in all respects including furnishing, installation, testing, and affixing a UL Master Label.

5. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Lightning Protection System" of the type and size specified and the installation method specified as applicable. This price is full compensation for furnishing and installing the Lightning Protection System, including but not limited to, strike termination devices, conductors, ground electrode system, master ground bus bar, bonding to metal objects, all connections, conduit, hanging, strapping, drilling, tunneling, excavating, and furnishing and placing backfill; replacing pavement structure, sod, riprap, curbs, or other surface, marking location of conduit (when required), furnishing and installing fittings, junction boxes, and expansion joints; and equipment, labor, tools and incidentals. Unless otherwise shown on the plans, no payment will be allowed under this Item for conduit used on or in walls or foundations.

CERTIFICATE OF INTERESTED PARTIES

FORM 1295

Complete Nos. 1 - 4 and 6 if there are interested parties.
Complete Nos. 1, 2, 3, 5, and 6 if there are no interested parties.

OFFICE USE ONLY

CERTIFICATION OF FILING

Certificate Number:
2016-1136

Date Filed:
01/05/2016

Date Acknowledged:

1 Name of business entity filing form, and the city, state and country of the business entity's place of business.

Webber, LLC
The Woodlands, TX United States

2 Name of governmental entity or state agency that is a party to the contract for which the form is being filed.

Fort Bend County

3 Provide the identification number used by the governmental entity or state agency to track or identify the contract, and provide a description of the goods or services to be provided under the contract.

1258-03-042
FM 1093 Westpark Extension Phase 1

4 Name of Interested Party	City, State, Country (place of business)	Nature of interest (check applicable)	
		Controlling	Intermediary

5 Check only if there is NO Interested Party. [X]

6 AFFIDAVIT

I swear, or affirm, under penalty of perjury, that the above disclosure is true and correct.

NOTARY PUBLIC STATE OF TEXAS
DONNA L OWENS
My Commission Expires
March 30, 2017

Todd Jackson
Signature of authorized agent of contracting business entity

AFFIX NOTARY STAMP / SEAL ABOVE

Sworn to and subscribed before me, by the said Todd Jackson, this the 5th day of January, 20 16, to certify which, witness my hand and seal of office.

Donna L. Owens — Signature of officer administering oath
Donna L. Owens — Printed name of officer administering oath
Notary Public — Title of officer administering oath

CERTIFICATE OF INTERESTED PARTIES

FORM 1295

Complete Nos. 1 - 4 and 6 if there are interested parties.
Complete Nos. 1, 2, 3, 5, and 6 if there are no interested parties.

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CERTIFICATION OF FILING

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Date Filed:
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1 Name of business entity filing form, and the city, state and country of the business entity's place of business.

Webber, LLC
The Woodlands, TX United States

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Fort Bend County

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1258-03-042
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4 Name of Interested Party	City, State, Country (place of business)	Nature of interest (check applicable)	
		Controlling	Intermediary

5 Check only if there is NO Interested Party. [X]

6 AFFIDAVIT

I swear, or affirm, under penalty of perjury, that the above disclosure is true and correct.

_____
Signature of authorized agent of contracting business entity

AFFIX NOTARY STAMP / SEAL ABOVE

Sworn to and subscribed before me, by the said _____, this the _____ day of _____, 20_____, to certify which, witness my hand and seal of office.

_____ _____ _____
Signature of officer administering oath | Printed name of officer administering oath | Title of officer administering oath