

NOTIFICATION OF ADDENDUM

ADDENDUM NO. 1

DATED 8/05/2016

Control	2452-01-059, ETC.
Project	NH 1602(550), ETC.
Highway	SL 1604
County	BEXAR

Ladies/Gentlemen:

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

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

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

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

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

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

SUBJECT: PLANS AND PROPOSAL ADDENDUMS

PROJECT: NH 1602(550)

CONTROL: 2452-01-059

COUNTY: BEXAR

LETTING: 08/09/2016

REFERENCE NO: 0805

PROPOSAL ADDENDUMS

- _ PROPOSAL COVER
X BID INSERTS (SH. NO.: 1 THRU 37)
X GENERAL NOTES (SH. NO.: J, K, & S))

X SPEC LIST (SH. NO.: 2 & 4)
_ SPECIAL PROVISIONS:
_ ADDED:

DELETED:

- X SPECIAL SPECIFICATIONS:
ADDED: 5000

DELETED:

- X OTHER: PLAN SHEET AND OTHER CHANGES

DESCRIPTION OF ABOVE CHANGES
(INCLUDING PLANS SHEET CHANGES)

**** BID INSERTS ****

REVISED QUANTITY FOR THE FOLLOWING BID ITEMS: 110-6001, 132-6003,
132-6006, 346-6006, 354-6021, 401-6001, 462-6006.

DELETED THE FOLLOWING BID ITEMS: 462-6005, 628-6167, AND 687-6002.

ADDED THE FOLLOWING BID ITEMS: 429-6002, 462-6004, 628-6217, AND
680-6004.

**** SPEC LIST ****

ADDED SS 5000 AS A REFERENCE TO ITEM 423
ADDED SS 5000 AS A SPECIAL SPEC (NO PAY ITEMS)

**** GENERAL NOTES ****

SHEET J: ADDED NOTE TO ITEM 8 UNDER THE SUBSTANTIAL COMPLETION MILESTONE
NOTES TO BETTER DEFINE SUBSTANTIAL COMPLETION FOR THIS MILESTONE.

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

SHEET K: NOTES SHIFTED DUE TO ADDITION OF NOTE ON SHEET J.

SHEET S: REMOVED NOTE FROM ITEMS 423 ABOUT 25 CSB LIMITS AND ADDED NOTE TO ITEM 423 ABOUT GEOGRID MATERIAL TYPE.

**** PLAN SHEETS ****

SHEET 2: INDEX OF SHEETS. ADDED SHEETS 536 AND 536A

SHEETS 56D, 56E & 56I: GENERAL NOTES SHEETS. ADDED NOTE TO ITEM 8 UNDER THE SUBSTANTIAL COMPLETION MILESTONE NOTES TO BETTER DEFINE SUBSTANTIAL COMPLETION FOR THIS MILESTONE. THE CAUSED A SHIFT IN NOTES ON SHEET 56E. REMOVED NOTE FROM ITEMS 423 ABOUT 25 CSB LIMITS AND ADDED NOTE TO ITEM 423 ABOUT GEOGRID MATERIAL TYPE.

SHEETS 57, 57A-57I: ESTIMATE AND QUANTITY SHEETS. ALL SHEETS HAVE ITEM CHANGES OR SHIFTS DUE TO ADDITION OF BID ITEMS OR BOTH. SEE BID TABS ABOVE FOR CHANGES.

SHEETS 77 & 78: EARTHWORK SUMMARY SHEETS. REVISED QUANTITIES FOR ITEMS 110-6001, 132-6003, & 132-6006.

SHEET 79: REMOVAL SUMMARY SHEET. REVISED QUANTITIES FOR ITEMS 104-6014, 104-6037. ADDED ITEMS 346-6006, 354-6021, 401-6001, & 429-6002.

SHEET 94: GRADING SUMMARY SHEET. REVISED QUANTITIES FOR ITEMS 110-6001, 132-6003, 132-6006.

SHEET 99: MBC, CULVERT, & MEDIO CRK DRAINAGE SUMMARY SHEET. REMOVED ITEM 462-6005 AND ADDED ITEM 462-6004.

SHEETS 100 & 108: INTERIOR DRAINAGE SUMMARY SHEETS. REVISED QUANTITY FOR ITEM 462-6006.

SHEET 113: TRAFFIC SIGNAL SUMMARY SHEET. REMOVED ITEM 687-6002, & 628-6167. ADDED ITEM 628-6217, & 680-6004.

SHEETS 347-349: REMOVAL LAYOUT SHEETS. ADDED CALLOUT, DETAILS, AND NOTES TO CLARIFY THE REMOVAL OF BARRIER.

SHEET 432: US 90 EBML P&P SHEET. REVISED EARTHWORK QUANTITIES.

SHEETS 463-465: US 90 EBFR RAMP P&P SHEETS. REVISED EARTHWORK QUANTITIES.

SHEETS 466, 468: DIRECT CONNECTOR ROADWAY PLAN SHEET. REVISED EARTHWORK QUANTITIES.

SHEETS 536 & 536A: ADDED STANDARD SHEETS CRCP(1)-13.

SHEET 573: CULVERT F LAYOUT SHEET. REMOVED BID ITEM 462-6005 AND REPLACED WITH 462-6004.

SHEETS 609-610: HYDRAULIC DATA STORM DRAIN SYSTEM G SHEET. REVISED

LENTGH OF 5 X 2 RCB.
DESCRIPTION OF ABOVE CHANGES
(INCLUDING PLANS SHEET CHANGES)

(CONTINUED)

SHEET 632: SBFR DRAINAGE P&P SHEET. REVISED LENTGH OF 5 X 2 RCB.

SHEET 715: LP 1604 DRAINAGE LATERAL SHEET. REVISED LENTGH OF 5 X 2 RCB.

SHEET 718: LP 1604 SBFR DITCH CALCULATION SHEET. REVISED DITCH G1 PI
DUE TO REVISED LENGTH OF 5 X 2 RCB.

SHEET 752: US 90 DRAINAGE P&P SHEET. REVISED CALLOUTS OF LINES K28 -
K31 TO 24 RCP.

SHEETS 1302, 1303, 1306, 1307, 1310, & 1314: TRAFFIC SIGNAL
INTERSECTION LAYOUT SHEETS. REMOVED ITEM 687-6002.

SHEET 1315: TRAFFIC SIGNAL INTERSECTION LAYOUT SHEET. REMOVED
ITEM 687-6002 AND REMOVED BID ITEM 628-6167 AND REPLACED
WITH 628-6217.

SHEET 1317: TRAFFIC SIGNAL LAYOUT SHEET. REVISION TO ELECTRICAL SERVICE
FROM ITEM 628-6167 TO 628-6217.

SHEET 1507: ELECTRICIAL SERVICES DATA SHEET. REVISED ELECTRICAL
SERVICE NO. 8.

PROJECT NH 1602(550) , ETC.
COUNTY BEXAR

Proposal Sheet
TxDOT
FORM 234-B I-61-5M

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	100	6001		PREPARING ROW DOLLARS and CENTS	AC	5.760	1
	100	6002		PREPARING ROW DOLLARS and CENTS	STA	310.150	2
	104	6037		REMOVE CONC (RAIL) DOLLARS and CENTS	LF	305.000	3
	105	6036		REMOVING STAB BASE & ASPH PAV(15"-20") DOLLARS and CENTS	SY	71,512.000	4
	110	6001		EXCAVATION (ROADWAY) DOLLARS and CENTS	CY	574,262.000	5
	110	6002		EXCAVATION (CHANNEL) DOLLARS and CENTS	CY	4,449.400	6
	132	6003		EMBANKMENT (FINAL)(ORD COMP)(TY B) DOLLARS and CENTS	CY	301,862.000	7
	132	6006		EMBANKMENT (FINAL)(DENS CONT)(TY C) DOLLARS and CENTS	CY	89,236.000	8
	161	6017		COMPOST MANUF TOPSOIL (4") DOLLARS and CENTS	SY	1,027,963.00	9
	164	6039		DRILL SEEDING (PERM) (URBAN) (CLAY) DOLLARS and CENTS	SY	1,027,963.00	10
	164	6045		STRAW OR HAY MULCHING DOLLARS and CENTS	SY	1,027,963.00	11
	164	6051		DRILL SEED (TEMP)(WARM OR COOL) DOLLARS and CENTS	SY	1,027,963.00	12

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	168	6001		VEGETATIVE WATERING DOLLARS and CENTS	MG	16,036.200	13
	169	6008		SOIL RETENTION BLANKETS (CL 2) (TY H) DOLLARS and CENTS	SY	47,054.000	14
	216	6001		PROOF ROLLING DOLLARS and CENTS	HR	110.000	15
	247	6393		FL BS (RDWY DEL)(TY D GR 5)(FNAL POS) DOLLARS and CENTS	CY	1,578.000	16
	247	6475		FL BS (CIP)(TY D GR 1-2, OR 5)FINAL POS DOLLARS and CENTS	CY	84,838.000	17
	275	6001		CEMENT DOLLARS and CENTS	TON	144.000	18
	275	6003		CEMENT TREAT (NEW BASE) (6") DOLLARS and CENTS	SY	9,812.000	19
	275	6019		CEMENT TREAT (SUBGRADE)(6") DOLLARS and CENTS	SY	5,405.000	20
	276	6077		CM TRT(PM MX)(CL M)(TYA)(GR1-2)(FN POS) DOLLARS and CENTS	CY	1,363.000	21
	310	6009		PRIME COAT (MC-30) DOLLARS and CENTS	GAL	75,142.000	22
	315	6010		FOG SEAL (HRSS) DOLLARS and CENTS	GAL	1,125.000	23
	316	6015		ASPH (AC-15P) DOLLARS and CENTS	GAL	26,602.000	24

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	316	6029		ASPH (RC-250) DOLLARS and CENTS	GAL	2,724.000	25
	316	6177		AGGR(TY-B GR-5 SAC-B) DOLLARS and CENTS	CY	78.000	26
	316	6414		AGGR (TY-B GR-5) DOLLARS and CENTS	CY	772.000	27
	341	6008		D-GR HMA TY-B PG64-22 DOLLARS and CENTS	TON	9,480.000	28
	341	6010		D-GR HMA TY-B PG70-22 DOLLARS and CENTS	TON	1,286.000	29
	341	6028		D-GR HMA TY-C PG70-22 DOLLARS and CENTS	TON	60,433.000	30
	341	6042		D-GR HMA TY-D SAC-B PG70-22 DOLLARS and CENTS	TON	1,063.000	31
	341	6062		D-GR HMA TY-D PG64-22(LEVEL-UP) DOLLARS and CENTS	TON	4,876.000	32
	344	6048		SUPERPAVE MIXTURES SP-C SAC-B PG70-22 DOLLARS and CENTS	TON	834.000	33
	346	6006		STONE-MTRX-ASPH SMA-C SAC-B PG76-22 DOLLARS and CENTS	TON	336.000	34
	347	6001		TOM (ASPHALT) PG 76-22 DOLLARS and CENTS	TON	1,173.000	35
	347	6002		TOM-C (AGGREGATE) SAC-A DOLLARS and CENTS	TON	16,898.000	36

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	354	6021		PLANE ASPH CONC PAV(0" TO 2") DOLLARS and CENTS	SY	89,118.000	37
	360	6004		CONC PVMT (CONT REINF - CRCP) (10") DOLLARS and CENTS	SY	4,717.000	38
	400	6001		STRUCT EXCAV DOLLARS and CENTS	CY	1,324.000	39
	400	6004		STRUCT EXCAV (BRIDGE) DOLLARS and CENTS	CY	2,873.000	40
	400	6005		CEM STABIL BKFL DOLLARS and CENTS	CY	1,965.000	41
	400	6008		CUT & RESTORE ASPH PAVING DOLLARS and CENTS	SY	369.000	42
	401	6001		FLOWABLE BACKFILL DOLLARS and CENTS	CY	49.000	43
	402	6001		TRENCH EXCAVATION PROTECTION DOLLARS and CENTS	LF	9,883.000	44
	403	6001		TEMPORARY SPL SHORING DOLLARS and CENTS	SF	36,810.000	45
	410	6001		SOIL NAIL ANCHORS DOLLARS and CENTS	LF	1,080.000	46
	411	6001		ROCK NAIL ANCHORS DOLLARS and CENTS	LF	8,604.000	47
	416	6001		DRILL SHAFT (18 IN) DOLLARS and CENTS	LF	920.000	48

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	416	6004		DRILL SHAFT (36 IN) DOLLARS and CENTS	LF	7,695.000	49
	416	6005		DRILL SHAFT (42 IN) DOLLARS and CENTS	LF	1,219.000	50
	416	6006		DRILL SHAFT (48 IN) DOLLARS and CENTS	LF	585.000	51
	416	6007		DRILL SHAFT (54 IN) DOLLARS and CENTS	LF	303.000	52
	416	6008		DRILL SHAFT (60 IN) DOLLARS and CENTS	LF	2,355.000	53
	416	6010		DRILL SHAFT (72 IN) DOLLARS and CENTS	LF	368.000	54
	416	6015		DRILL SHAFT (NON - REINFORCED) (12 IN) DOLLARS and CENTS	LF	77.000	55
	416	6018		DRILL SHAFT (SIGN MTS) (24 IN) DOLLARS and CENTS	LF	87.000	56
	416	6020		DRILL SHAFT (SIGN MTS) (36 IN) DOLLARS and CENTS	LF	45.000	57
	416	6021		DRILL SHAFT (SIGN MTS) (42 IN) DOLLARS and CENTS	LF	60.000	58
	416	6023		DRILL SHAFT (SIGN MTS) (54 IN) DOLLARS and CENTS	LF	56.000	59
	416	6029		DRILL SHAFT (RDWY ILL POLE) (30 IN) DOLLARS and CENTS	LF	680.000	60

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	416	6031		DRILL SHAFT (TRF SIG POLE) (30 IN) DOLLARS and CENTS	LF	46.000	61
	416	6032		DRILL SHAFT (TRF SIG POLE) (36 IN) DOLLARS and CENTS	LF	174.000	62
	420	6012		CL B CONC (MISC) DOLLARS and CENTS	CY	4.800	63
	420	6013		CL C CONC (ABUT) DOLLARS and CENTS	CY	477.500	64
	420	6019		CL C CONC (ABUT)(EXTEND) DOLLARS and CENTS	CY	22.200	65
	420	6029		CL C CONC (CAP) DOLLARS and CENTS	CY	2,484.300	66
	420	6031		CL C CONC (CAP)(MASS) DOLLARS and CENTS	CY	372.400	67
	420	6037		CL C CONC (COLUMN) DOLLARS and CENTS	CY	1,039.500	68
	420	6039		CL C CONC (COLUMN)(MASS) DOLLARS and CENTS	CY	2,505.000	69
	420	6045		CL C CONC (FOOTING)(MASS) DOLLARS and CENTS	CY	1,840.400	70
	420	6066		CL C CONC (RAIL FOUNDATION) DOLLARS and CENTS	CY	280.600	71
	422	6001		REINF CONC SLAB DOLLARS and CENTS	SF	282,094.000	72

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	422	6003		REINF CONC SLAB (EXTEND SLAB) DOLLARS and CENTS	SF	4,278.000	73
	422	6013		BRIDGE SIDEWALK DOLLARS and CENTS	SF	11,450.000	74
	422	6015		APPROACH SLAB DOLLARS and CENTS	CY	733.700	75
	423	6001		RETAINING WALL (MSE) DOLLARS and CENTS	SF	70,903.000	76
	423	6003		RETAINING WALL (TEMP WALL) DOLLARS and CENTS	SF	19,716.000	77
	423	6022		RETAINING WALL (SOIL NAIL)(FACIA) DOLLARS and CENTS	SF	1,512.000	78
	423	6023		RETAINING WALL (ROCK NAILED)(FACIA) DOLLARS and CENTS	SF	13,942.000	79
	425	6039		PRESTR CONC GIRDER (TX54) DOLLARS and CENTS	LF	23,884.050	80
	425	6040		PRESTR CONC GIRDER (TX62) DOLLARS and CENTS	LF	2,863.070	81
	429	6002		CONC STR REPAIR (EPOXY MORTAR) DOLLARS and CENTS	SF	420.000	82
	432	6001		RIPRAP (CONC)(4 IN) DOLLARS and CENTS	CY	2,199.000	83
	432	6002		RIPRAP (CONC)(5 IN) DOLLARS and CENTS	CY	76.000	84

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	432	6003		RIPRAP (CONC)(6 IN) DOLLARS and CENTS	CY	1.000	85
	432	6005		RIPRAP (CONC) (CL A) DOLLARS and CENTS	CY	8.000	86
	432	6006		RIPRAP (CONC)(CL B) DOLLARS and CENTS	CY	11.250	87
	432	6008		RIPRAP (CONC)(CL B)(RR8&RR9) DOLLARS and CENTS	CY	685.000	88
	432	6009		RIPRAP (CONC) (CL B) (4") DOLLARS and CENTS	CY	10.000	89
	432	6045		RIPRAP (MOW STRIP)(4 IN) DOLLARS and CENTS	CY	1,640.000	90
	434	6037		ELASTOMERIC BEARING (F9) DOLLARS and CENTS	EA	8.000	91
	434	6119		ELASTOMERIC BEARING (EE4)(MOD) DOLLARS and CENTS	EA	4.000	92
	434	6120		ELASTOMERIC BEARING (EE8)(MOD) DOLLARS and CENTS	EA	4.000	93
	434	6121		ELASTOMERIC BEARING (ES9)(MOD) DOLLARS and CENTS	EA	8.000	94
	434	6122		ELASTOMERIC BEARING (E9)(MOD) DOLLARS and CENTS	EA	4.000	95
	442	6001		STR STEEL (PLATE GIRDER) DOLLARS and CENTS	LB	2,659,473.00	96

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	442	6007		STR STEEL (MISC NON - BRIDGE) DOLLARS and CENTS	LB	3,249.000	97
	442	6009		STR STEEL (DIAPHRAGM & STIFFENER) DOLLARS and CENTS	LB	328,089.000	98
	442	6010		STR STEEL (SHEAR CONNECTOR) DOLLARS and CENTS	LB	11,377.000	99
	450	6006		RAIL (TY T223) DOLLARS and CENTS	LF	1,035.800	100
	450	6012		RAIL (TY T411) DOLLARS and CENTS	LF	451.000	101
	450	6023		RAIL (TY SSTR) DOLLARS and CENTS	LF	6,049.200	102
	450	6036		RAIL (TY C411) DOLLARS and CENTS	LF	479.600	103
	450	6042		RAIL (TY PR1) DOLLARS and CENTS	LF	2,243.000	104
	450	6061		RAIL (TY T411)(MOD) DOLLARS and CENTS	LF	498.000	105
	450	6062		RAIL (TY SSTR)(MOD) DOLLARS and CENTS	LF	8,441.300	106
	450	6064		RAIL (TY SSTR) (W/DRAIN SLOTS) (MOD) DOLLARS and CENTS	LF	2,029.300	107
	450	6066		RAIL (TY C411) (MOD) DOLLARS and CENTS	LF	498.000	108

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	454	6001		SEALED EXPANSION JOINT (4 IN) (SEJ - A) DOLLARS and CENTS	LF	1,272.000	109
	454	6014		SEALED EXPANSION JT(5 IN)(SEJ-A)(MOD) DOLLARS and CENTS	LF	74.000	110
	459	6006		GABION MATTRESSES (GALV)(9 IN) DOLLARS and CENTS	SY	361.000	111
	459	6007		GABION MATTRESSES (GALV)(12 IN) DOLLARS and CENTS	SY	15.000	112
	462	6001		CONC BOX CULV (3 FT X 2 FT) DOLLARS and CENTS	LF	124.000	113
	462	6002		CONC BOX CULV (3 FT X 3 FT) DOLLARS and CENTS	LF	157.000	114
	462	6003		CONC BOX CULV (4 FT X 2 FT) DOLLARS and CENTS	LF	298.000	115
	462	6004		CONC BOX CULV (4 FT X 3 FT) DOLLARS and CENTS	LF	890.000	116
	462	6006		CONC BOX CULV (5 FT X 2 FT) DOLLARS and CENTS	LF	151.000	117
	462	6007		CONC BOX CULV (5 FT X 3 FT) DOLLARS and CENTS	LF	595.000	118
	462	6010		CONC BOX CULV (6 FT X 3 FT) DOLLARS and CENTS	LF	1,092.000	119
	464	6005		RC PIPE (CL III)(24 IN) DOLLARS and CENTS	LF	4,949.000	120

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	464	6007		RC PIPE (CL III)(30 IN) DOLLARS and CENTS	LF	2,757.000	121
	464	6008		RC PIPE (CL III)(36 IN) DOLLARS and CENTS	LF	1,369.000	122
	464	6009		RC PIPE (CL III)(42 IN) DOLLARS and CENTS	LF	1,269.000	123
	464	6018		RC PIPE (CL IV)(24 IN) DOLLARS and CENTS	LF	1,352.000	124
	464	6020		RC PIPE (CL IV)(36 IN) DOLLARS and CENTS	LF	56.000	125
	464	6021		RC PIPE (CL IV)(42 IN) DOLLARS and CENTS	LF	155.000	126
	464	6046		RC PIPE (ARCH)(CL IV)(DES 3) DOLLARS and CENTS	LF	168.000	127
	465	6001		INLET (COMPL)(TY S) DOLLARS and CENTS	EA	12.000	128
	465	6002		MANH (COMPL)(PRM)(48IN) DOLLARS and CENTS	EA	6.000	129
	465	6003		MANH (COMPL)(PRM)(60IN) DOLLARS and CENTS	EA	1.000	130
	465	6004		MANH (COMPL)(PRM)(72IN) DOLLARS and CENTS	EA	2.000	131
	465	6007		JCTBOX(COMPL)(PJB)(3FTX5FT) DOLLARS and CENTS	EA	2.000	132

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	465	6013		INLET (COMPL)(PCO)(3FT)(NONE) DOLLARS and CENTS	EA	3.000	133
	465	6014		INLET (COMPL)(PCO)(3FT)(LEFT) DOLLARS and CENTS	EA	1.000	134
	465	6016		INLET (COMPL)(PCO)(3FT)(BOTH) DOLLARS and CENTS	EA	3.000	135
	465	6017		INLET (COMPL)(PCO)(4FT)(NONE) DOLLARS and CENTS	EA	9.000	136
	465	6020		INLET (COMPL)(PCO)(4FT)(BOTH) DOLLARS and CENTS	EA	1.000	137
	465	6029		INLET (COMPL)(PCU)(3FT)(NONE) DOLLARS and CENTS	EA	7.000	138
	465	6030		INLET (COMPL)(PCU)(3FT)(LEFT) DOLLARS and CENTS	EA	3.000	139
	465	6031		INLET (COMPL)(PCU)(3FT)(RIGHT) DOLLARS and CENTS	EA	4.000	140
	465	6048		INLET (COMPL)(POD)(FG)(3FTX3FT) DOLLARS and CENTS	EA	3.000	141
	465	6159		INLET(COMPL)(PAZD)(FG)(4FTX4FT-3FTX- 3FT) DOLLARS and CENTS	EA	2.000	142
	465	6162		INLET(COMPL)(PAZD)(FG)(5FTX5FT-4FTX- 4FT) DOLLARS and CENTS	EA	16.000	143
	465	6173		MANH (COMPL)(TY A) DOLLARS and CENTS	EA	1.000	144

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	465	6174		MANH (COMPL)(TY B) DOLLARS and CENTS	EA	28.000	145
	465	6176		INLET (COMPL)(CURB)(TY C1) DOLLARS and CENTS	EA	1.000	146
	465	6186		MANH(COMPL)(TY 1) DOLLARS and CENTS	EA	1.000	147
	465	6187		INLET(COMPL)(DROP)(TY 1)(1 GRATE) DOLLARS and CENTS	EA	1.000	148
	465	6196		INLET (COMPL)(TY A)(SPL) DOLLARS and CENTS	EA	1.000	149
	465	6202		INLET (COMPL)(DROP)(TY Y-1) DOLLARS and CENTS	EA	1.000	150
	465	6203		INLET (COMPL)(CURB)(TY 1) DOLLARS and CENTS	EA	18.000	151
	465	6204		MANH (COMPL)(TY 2) DOLLARS and CENTS	EA	2.000	152
	465	6211		INLET (COMP)(DROP)(TY W-3) DOLLARS and CENTS	EA	1.000	153
	465	6212		INLET (COMPL)(DROP)(TY W-1) DOLLARS and CENTS	EA	1.000	154
	465	6220		INLET (COMPL)(DROP)(TY 3) DOLLARS and CENTS	EA	10.000	155
	465	6221		INLET (COMPL)(DROP)(TY 3A) DOLLARS and CENTS	EA	2.000	156

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	465	6225		JCT BOX (COMPL)(SPL) DOLLARS and CENTS	EA	3.000	157
	465	6233		INLET (COMP) (TY SIDEWALK BRIDGE) DOLLARS and CENTS	EA	10.000	158
	465	6257		INLET(COMPL)(WALL)(SPL) DOLLARS and CENTS	EA	1.000	159
	465	6321		INLET(COMPL)(DROP)(TY W-2) DOLLARS and CENTS	EA	2.000	160
	465	6322		INLET(COMPL)(CURB)(EXT)(TY 1-E) DOLLARS and CENTS	EA	4.000	161
	465	6324		CT BOX(COMPL)(CIP)(10FT X 5FT) DOLLARS and CENTS	EA	1.000	162
	466	6153		WINGWALL (FW - 0) (HW=6 FT) DOLLARS and CENTS	EA	2.000	163
	466	6165		WINGWALL (FW - S) (HW=4 FT) DOLLARS and CENTS	EA	2.000	164
	466	6182		WINGWALL (PW - 1) (HW=7 FT) DOLLARS and CENTS	EA	3.000	165
	466	6183		WINGWALL (PW - 1) (HW=8 FT) DOLLARS and CENTS	EA	1.000	166
	466	6184		WINGWALL (PW - 1) (HW=9 FT) DOLLARS and CENTS	EA	1.000	167
	467	6110		SET (TY I)(S=3 FT)(HW= 3 FT)(6:1)(P) DOLLARS and CENTS	EA	2.000	168

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	467	6112		SET (TY I)(S=3 FT)(HW= 4 FT)(4:1)(C) DOLLARS and CENTS	EA	1.000	169
	467	6142		SET (TY I)(S= 4 FT)(HW= 3 FT)(6:1) (P) DOLLARS and CENTS	EA	4.000	170
	467	6174		SET (TY I)(S= 5 FT)(HW= 3 FT)(6:1) (P) DOLLARS and CENTS	EA	2.000	171
	467	6390		SET (TY II) (24 IN) (RCP) (4: 1) (C) DOLLARS and CENTS	EA	4.000	172
	467	6394		SET (TY II) (24 IN) (RCP) (6: 1) (C) DOLLARS and CENTS	EA	3.000	173
	467	6395		SET (TY II) (24 IN) (RCP) (6: 1) (P) DOLLARS and CENTS	EA	10.000	174
	467	6423		SET (TY II) (30 IN) (RCP) (6: 1) (P) DOLLARS and CENTS	EA	3.000	175
	467	6450		SET (TY II) (36 IN) (RCP) (4: 1) (C) DOLLARS and CENTS	EA	4.000	176
	467	6453		SET (TY II) (36 IN) (RCP) (6: 1) (C) DOLLARS and CENTS	EA	1.000	177
	467	6454		SET (TY II) (36 IN) (RCP) (6: 1) (P) DOLLARS and CENTS	EA	4.000	178
	467	6463		SET (TY II) (42 IN) (RCP) (4: 1) (C) DOLLARS and CENTS	EA	2.000	179
	467	6540		SET (TY II) (DES 3) (RCP) (3: 1) (C) DOLLARS and CENTS	EA	2.000	180

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	467	6544		SET (TY II) (DES 3) (RCP) (6: 1) (C) DOLLARS and CENTS	EA	2.000	181
	471	6003		GRATE & FRAME DOLLARS and CENTS	EA	1.000	182
	474	6021		CAST-IN-PLACE TRENCH DRAIN DOLLARS and CENTS	LF	255.000	183
	476	6024		JACK BOR OR TUN PIPE(36 IN)(RC)(CL III) DOLLARS and CENTS	LF	190.000	184
	479	6002		ADJUSTING INLETS DOLLARS and CENTS	EA	1.000	185
	479	6006		ADJUSTING INLET (CAP) DOLLARS and CENTS	EA	8.000	186
	481	6013		PIPE (PVC) (SCH 40) (6 IN) DOLLARS and CENTS	LF	82.000	187
	500	6001		MOBILIZATION DOLLARS and CENTS	LS	1.000	188
	502	6001		BARRICADES, SIGNS AND TRAFFIC HAN- DLING DOLLARS and CENTS	MO	39.000	189
	506	6002	003	ROCK FILTER DAMS (INSTALL) (TY 2) DOLLARS and CENTS	LF	3,948.000	190
	506	6011	003	ROCK FILTER DAMS (REMOVE) DOLLARS and CENTS	LF	3,948.000	191
	506	6020	003	CONSTRUCTION EXITS (INSTALL) (TY 1) DOLLARS and CENTS	SY	936.000	192

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	506	6024	003	CONSTRUCTION EXITS (REMOVE) DOLLARS and CENTS	SY	936.000	193
	506	6038	003	TEMP SEDMT CONT FENCE (INSTALL) DOLLARS and CENTS	LF	32,676.000	194
	506	6039	003	TEMP SEDMT CONT FENCE (REMOVE) DOLLARS and CENTS	LF	32,676.000	195
	506	6040	003	BIODEG EROSN CONT LOGS (INSTL) (8") DOLLARS and CENTS	LF	19,392.000	196
	506	6043	003	BIODEG EROSN CONT LOGS (REMOVE) DOLLARS and CENTS	LF	19,392.000	197
	508	6001		CONSTRUCTING DETOURS DOLLARS and CENTS	SY	11,622.000	198
	512	6001		PORT CTB (FUR & INST)(SGL SLOPE)(TY 1) DOLLARS and CENTS	LF	20,640.000	199
	512	6009		PORT CTB (FUR & INST)(LOW PROF)(TY 1) DOLLARS and CENTS	LF	2,260.000	200
	512	6010		PORT CTB (FUR & INST)(LOW PROF)(TY 2) DOLLARS and CENTS	LF	320.000	201
	512	6025		PORT CTB (MOVE)(SGL SLP)(TY 1) DOLLARS and CENTS	LF	29,070.000	202
	512	6033		PORT CTB (MOVE)(LOW PROF)(TY 1) DOLLARS and CENTS	LF	4,640.000	203
	512	6034		PORT CTB (MOVE)(LOW PROF)(TY 2) DOLLARS and CENTS	LF	380.000	204

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	512	6049		PORT CTB (REMOVE)(SGL SLP)(TY 1) DOLLARS and CENTS	LF	18,840.000	205
	512	6057		PORT CTB (REMOVE)(LOW PROF)(TY 1) DOLLARS and CENTS	LF	2,260.000	206
	512	6058		PORT CTB (REMOVE)(LOW PROF)(TY 2) DOLLARS and CENTS	LF	320.000	207
	528	6002		COLORED TEXTURED CONC (6") DOLLARS and CENTS	SY	9,478.000	208
	529	6001		CONC CURB (TY I) DOLLARS and CENTS	LF	28,388.000	209
	529	6014		CONC CURB (MOD) (TYPE I) DOLLARS and CENTS	LF	319.000	210
	529	6015		CONC CURB (TY C1) DOLLARS and CENTS	LF	272.000	211
	529	6020		CONC CURB & GUTTER (ARMOR CURB) DOLLARS and CENTS	LF	140.000	212
	529	6027		CONC CURB (TY C2) DOLLARS and CENTS	LF	57.000	213
	530	6005		DRIVEWAYS (ACP) DOLLARS and CENTS	SY	947.000	214
	531	6003		CONC SIDEWALKS (6") DOLLARS and CENTS	SY	18,316.000	215
	531	6004		CURB RAMPS (TY 1) DOLLARS and CENTS	EA	26.000	216

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	531	6005		CURB RAMPS (TY 2) DOLLARS and CENTS	EA	25.000	217
	540	6001		MTL W-BEAM GD FEN (TIM POST) DOLLARS and CENTS	LF	18,648.000	218
	540	6006		MTL BEAM GD FEN TRANS (THRIE-BEAM) DOLLARS and CENTS	EA	29.000	219
	540	6010		MTL W-BEAM GD FEN ADJUSTMENT DOLLARS and CENTS	LF	1,425.000	220
	540	6014		SHORT RADIUS DOLLARS and CENTS	LF	22.000	221
	540	6016		DOWNSTREAM ANCHOR TERMINAL SEC- TION DOLLARS and CENTS	EA	42.000	222
	540	6017		MTL BM GD FEN (LONG SPAN SYSTEM) DOLLARS and CENTS	LF	25.000	223
	542	6001		REMOVE METAL BEAM GUARD FENCE DOLLARS and CENTS	LF	2,591.000	224
	542	6002		REMOVE TERMINAL ANCHOR SECTION DOLLARS and CENTS	EA	6.000	225
	542	6003		REMOVE DOWNSTREAM ANCHOR TERMI- NAL DOLLARS and CENTS	LF	10.000	226
	542	6004		RM MTL BM GD FENCE TRANS (THRIE- BEAM) DOLLARS and CENTS	EA	7.000	227

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	543	6009	001	CABLE BARRIER SYSTEM (TL-3) (12'-6") DOLLARS and CENTS	LF	14,152.000	228
	543	6019	001	CABLE BARRIER TERMINAL SECTION (TL-3) DOLLARS and CENTS	EA	12.000	229
	543	6021	001	REMOVE CABLE BARRIER DOLLARS and CENTS	LF	1,148.000	230
	543	6022	001	REMOVE CABLE BARRIER TERMINAL SECTION DOLLARS and CENTS	EA	4.000	231
	544	6001		GUARDRAIL END TREATMENT (INSTALL) DOLLARS and CENTS	EA	2.000	232
	544	6003		GUARDRAIL END TREATMENT (REMOVE) DOLLARS and CENTS	EA	11.000	233
	544	6004		GDRAIL END TRT(INST)(WOOD POST)(TY I) DOLLARS and CENTS	EA	49.000	234
	545	6001		CRASH CUSH ATTEN (INSTL) DOLLARS and CENTS	EA	18.000	235
	545	6003		CRASH CUSH ATTEN (MOVE & RESET) DOLLARS and CENTS	EA	17.000	236
	545	6005		CRASH CUSH ATTEN (REMOVE) DOLLARS and CENTS	EA	20.000	237
	545	6006		CRASH CUSH ATTEN (INSTL)(L)(N)(TL2) DOLLARS and CENTS	EA	2.000	238
	545	6007		CRASH CUSH ATTEN (INSTL)(L)(N)(TL3) DOLLARS and CENTS	EA	5.000	239

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	550	6006		GATE (REMOVE) DOLLARS and CENTS	EA	2.000	240
	556	6006		PIPE UNDERDRAINS (TY 6) (6") DOLLARS and CENTS	LF	1,180.000	241
	610	6004		RELOCATE RD IL ASM (TRANS-BASE) DOLLARS and CENTS	EA	8.000	242
	610	6007		REMOVE RD IL ASM (SHOE-BASE) DOLLARS and CENTS	EA	7.000	243
	610	6009		REMOVE RD IL ASM (TRANS-BASE) DOLLARS and CENTS	EA	4.000	244
	610	6011		IN RD IL AM (U/P) (TY 1) (150W) S DOLLARS and CENTS	EA	18.000	245
	610	6013		IN RD IL AM (U/P) (TY 2) (150W) S DOLLARS and CENTS	EA	18.000	246
	610	6016		IN RD IL AM (TY SA) 20B-8 (250W) S DOLLARS and CENTS	EA	23.000	247
	610	6053		IN RD IL AM (TY SA) 40T-10-10 (250W) S DOLLARS and CENTS	EA	2.000	248
	610	6085		IN RD IL AM (TY SA) 50T-10 (400W) S DOLLARS and CENTS	EA	47.000	249
	610	6086		IN RD IL AM (TY SA) 50T-10-10 (400W) S DOLLARS and CENTS	EA	36.000	250
	617	6001		TEMP RD IL (RD IL ASM) DOLLARS and CENTS	EA	3.000	251

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	618	6023		CONDT (PVC) (SCH 40) (2") DOLLARS and CENTS	LF	26,524.000	252
	618	6025		CONDT (PVC) (SCH 40) (2") (CONC ENCSE) DOLLARS and CENTS	LF	31,000.000	253
	618	6040		CONDT (PVC) (SCH 80) (1") DOLLARS and CENTS	LF	480.000	254
	618	6046		CONDT (PVC) (SCH 80) (2") DOLLARS and CENTS	LF	4,175.000	255
	618	6047		CONDT (PVC) (SCH 80) (2") (BORE) DOLLARS and CENTS	LF	5,112.000	256
	618	6053		CONDT (PVC) (SCH 80) (3") DOLLARS and CENTS	LF	4,002.000	257
	618	6054		CONDT (PVC) (SCH 80) (3") (BORE) DOLLARS and CENTS	LF	5,500.000	258
	618	6068		CONDT (RM) (1 1/2") DOLLARS and CENTS	LF	1,040.000	259
	618	6070		CONDT (RM) (2") DOLLARS and CENTS	LF	1,010.000	260
	618	6071		CONDT (RM) (2") (BORE) DOLLARS and CENTS	LF	6,440.000	261
	620	6007		ELEC CONDR (NO.8) BARE DOLLARS and CENTS	LF	30,836.000	262
	620	6008		ELEC CONDR (NO.8) INSULATED DOLLARS and CENTS	LF	62,084.000	263

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	620	6009		ELEC CONDR (NO.6) BARE DOLLARS and CENTS	LF	10,248.000	264
	620	6010		ELEC CONDR (NO.6) INSULATED DOLLARS and CENTS	LF	2,445.000	265
	620	6012		ELEC CONDR (NO.4) INSULATED DOLLARS and CENTS	LF	9,700.000	266
	621	6005		TRAY CABLE (4 CONDR) (12 AWG) DOLLARS and CENTS	LF	4,330.000	267
	624	6002		GROUND BOX TY A (122311)W/APRON DOLLARS and CENTS	EA	23.000	268
	624	6009		GROUND BOX TY D (162922) DOLLARS and CENTS	EA	61.000	269
	624	6010		GROUND BOX TY D (162922)W/APRON DOLLARS and CENTS	EA	21.000	270
	628	6002		REMOVE ELECTRICAL SERVICES DOLLARS and CENTS	EA	1.000	271
	628	6049		ELC SRV TY A 240/480 060(NS)SS(T)SP(O) DOLLARS and CENTS	EA	9.000	272
	628	6133		ELC SRV TY D 120/240 060(NS)GS(N)TP(O) DOLLARS and CENTS	EA	10.000	273
	628	6217		ELC SRV TY D 120/240 100(NS)AL(E)TP(O) DOLLARS and CENTS	EA	1.000	274
	636	6002		ALUMINUM SIGNS (TY G) DOLLARS and CENTS	SF	1,006.000	275

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	636	6003		ALUMINUM SIGNS (TY O) DOLLARS and CENTS	SF	3,155.000	276
	644	6001		IN SM RD SN SUP&AM TY10BWG(1)SA(P) DOLLARS and CENTS	EA	63.000	277
	644	6004		IN SM RD SN SUP&AM TY10BWG(1)SA(T) DOLLARS and CENTS	EA	99.000	278
	644	6030		IN SM RD SN SUP&AM TYS80(1)SA(T) DOLLARS and CENTS	EA	43.000	279
	644	6033		IN SM RD SN SUP&AM TYS80(1)SA(U) DOLLARS and CENTS	EA	6.000	280
	644	6034		IN SM RD SN SUP&AM TYS80(1)SA(U-1EXT) DOLLARS and CENTS	EA	2.000	281
	644	6050		IN SM RD SN SUP&AM TYS80(2)SA(P) DOLLARS and CENTS	EA	2.000	282
	644	6064		IN BRIDGE MNT CLEARANCE SGN ASSM(TY N) DOLLARS and CENTS	EA	12.000	283
	644	6066		IN SM RD SN SUP&AM (RAIL MOUNT) DOLLARS and CENTS	EA	11.000	284
	644	6076		REMOVE SM RD SN SUP&AM DOLLARS and CENTS	EA	156.000	285
	647	6001		INSTALL LRSS (STRUCT STEEL) DOLLARS and CENTS	LB	4,853.000	286
	650	6028		INS OH SN SUP(30 FT BAL TEE) DOLLARS and CENTS	EA	2.000	287

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	650	6041		INS OH SN SUP(35 FT CANT)(SPAN ONLY) DOLLARS and CENTS	EA	1.000	288
	650	6048		INS OH SN SUP(40 FT CANT)(SPAN ONLY) DOLLARS and CENTS	EA	3.000	289
	650	6101		INS OH SN SUP(90 FT BRDG)(SPAN ONLY) DOLLARS and CENTS	EA	3.000	290
	650	6106		INS OH SN SUP(95 FT BRDG)(SPAN ONLY) DOLLARS and CENTS	EA	3.000	291
	650	6111		INS OH SN SUP(100 FT BRDG)(SPAN ONLY) DOLLARS and CENTS	EA	2.000	292
	654	6002		SIGN WALKWAY (24 IN) WITH HNDRL DOLLARS and CENTS	LF	129.000	293
	658	6015		INSTL DEL ASSM (D-SW)SZ (BRF)GF1 DOLLARS and CENTS	EA	359.000	294
	658	6048		INSTL OM ASSM (OM-2Z)(FLX)GND DOLLARS and CENTS	EA	122.000	295
	662	6012		WK ZN PAV MRK NON-REMOV (W)8"(SLD) DOLLARS and CENTS	LF	428.000	296
	662	6017		WK ZN PAV MRK NON-REMOV (W)(ARROW) DOLLARS and CENTS	EA	8.000	297
	662	6029		WK ZN PAV MRK NON-REMOV(W)(WORD) DOLLARS and CENTS	EA	8.000	298
	662	6034		WK ZN PAV MRK NON-REMOV (Y)4"(SLD) DOLLARS and CENTS	LF	546.000	299

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	662	6050		WK ZN PAV MRK REMOV (REFL) TY II-A-A DOLLARS and CENTS	EA	192.000	300
	662	6052		WK ZN PAV MRK REMOV (REFL) TY II-C-R DOLLARS and CENTS	EA	441.000	301
	662	6060		WK ZN PAV MRK REMOV (W)4"(BRK) DOLLARS and CENTS	LF	8,409.000	302
	662	6061		WK ZN PAV MRK REMOV (W)4"(DOT) DOLLARS and CENTS	LF	522.000	303
	662	6063		WK ZN PAV MRK REMOV (W)4"(SLD) DOLLARS and CENTS	LF	50,881.000	304
	662	6071		WK ZN PAV MRK REMOV (W)8"(SLD) DOLLARS and CENTS	LF	3,047.000	305
	662	6075		WK ZN PAV MRK REMOV (W)24"(SLD) DOLLARS and CENTS	LF	224.000	306
	662	6094		WK ZN PAV MRK REMOV (Y)4"(DOT) DOLLARS and CENTS	LF	192.000	307
	662	6095		WK ZN PAV MRK REMOV (Y)4"(SLD) DOLLARS and CENTS	LF	45,342.000	308
	662	6099		WK ZN PAV MRK REMOV (Y)8"(SLD) DOLLARS and CENTS	LF	367.000	309
	662	6102		WK ZN PAV MRK REMOV (Y)24"(SLD) DOLLARS and CENTS	LF	30.000	310
	666	6006		REFL PAV MRK TY I (W)4"(DOT)(100MIL) DOLLARS and CENTS	LF	240.000	311

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	666	6030		REFL PAV MRK TY I (W)8"(DOT)(100MIL) DOLLARS and CENTS	LF	1,317.000	312
	666	6036		REFL PAV MRK TY I (W)8"(SLD)(100MIL) DOLLARS and CENTS	LF	29,556.000	313
	666	6042		REFL PAV MRK TY I (W)12"(SLD)(100MIL) DOLLARS and CENTS	LF	4,662.000	314
	666	6048		REFL PAV MRK TY I (W)24"(SLD)(100MIL) DOLLARS and CENTS	LF	2,546.000	315
	666	6054		REFL PAV MRK TY I (W)(ARROW)(100MIL) DOLLARS and CENTS	EA	79.000	316
	666	6057		REFL PAV MRK TY I(W)(DBL ARROW)(100MIL) DOLLARS and CENTS	EA	13.000	317
	666	6063		REFL PAV MRK TY I(W)(UTURN ARW)(100MIL) DOLLARS and CENTS	EA	9.000	318
	666	6078		REFL PAV MRK TY I (W)(WORD)(100MIL) DOLLARS and CENTS	EA	80.000	319
	666	6138		REFL PAV MRK TY I (Y)8"(SLD)(100MIL) DOLLARS and CENTS	LF	330.000	320
	666	6147		REFL PAV MRK TY I (Y)24"(SLD)(100MIL) DOLLARS and CENTS	LF	147.000	321
	666	6159		RE PV MRK TY I(BLACK)4"(SHADOW)(100MIL) DOLLARS and CENTS	LF	180.000	322

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	666	6162		RE PV MRK TY I(BLACK)6"(SHADOW)(100MIL) DOLLARS CENTS and	LF	1,903.000	323
	666	6224		PAVEMENT SEALER 4" DOLLARS CENTS and	LF	140,938.000	324
	666	6225		PAVEMENT SEALER 6" DOLLARS CENTS and	LF	15,017.000	325
	666	6226		PAVEMENT SEALER 8" DOLLARS CENTS and	LF	31,130.000	326
	666	6228		PAVEMENT SEALER 12" DOLLARS CENTS and	LF	6,545.000	327
	666	6230		PAVEMENT SEALER 24" DOLLARS CENTS and	LF	2,693.000	328
	666	6231		PAVEMENT SEALER (ARROW) DOLLARS CENTS and	EA	79.000	329
	666	6232		PAVEMENT SEALER (WORD) DOLLARS CENTS and	EA	78.000	330
	666	6234		PAVEMENT SEALER (DBL ARROW) DOLLARS CENTS and	EA	12.000	331
	666	6236		PAVEMENT SEALER (UTURN ARROW) DOLLARS CENTS and	EA	9.000	332
	666	6300		RE PM W/RET REQ TY I (W)4"(BRK)(100MIL) DOLLARS CENTS and	LF	7,349.000	333
	666	6303		RE PM W/RET REQ TY I (W)4"(SLD)(100MIL) DOLLARS CENTS and	LF	2,675.000	334

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	666	6306		RE PM W/RET REQ TY I (W)6"(BRK)(100MIL) DOLLARS and CENTS	LF	13,115.000	335
	666	6315		RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL) DOLLARS and CENTS	LF	27,027.000	336
	666	6342		REF PROF PAV MRK TY I(W)4"(SLD)(100MIL) DOLLARS and CENTS	LF	58,763.000	337
	666	6345		REF PROF PAV MRK TY I(Y)4"(SLD)(100MIL) DOLLARS and CENTS	LF	60,699.000	338
	666	6350		REFL PAV MRK TY I (W)12"(DOT)(100MIL) DOLLARS and CENTS	LF	1,831.000	339
	666	6355		RE PM TY I (BLK)12"(SDW)(DOT)(100 MIL) DOLLARS and CENTS	LF	52.000	340
	672	6008		REFL PAV MRKR TY I-R DOLLARS and CENTS	EA	140.000	341
	672	6009		REFL PAV MRKR TY II-A-A DOLLARS and CENTS	EA	308.000	342
	672	6010		REFL PAV MRKR TY II-C-R DOLLARS and CENTS	EA	3,336.000	343
	677	6001		ELIM EXT PAV MRK & MRKS (4") DOLLARS and CENTS	LF	40,589.000	344
	677	6002		ELIM EXT PAV MRK & MRKS (6") DOLLARS and CENTS	LF	6,794.000	345
	677	6003		ELIM EXT PAV MRK & MRKS (8") DOLLARS and CENTS	LF	385.000	346

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	677	6007		ELIM EXT PAV MRK & MRKS (24") DOLLARS and CENTS	LF	132.000	347
	677	6008		ELIM EXT PAV MRK & MRKS (ARROW) DOLLARS and CENTS	EA	5.000	348
	677	6009		ELIM EXT PAV MRK & MRKS (DBL ARROW) DOLLARS and CENTS	EA	1.000	349
	677	6012		ELIM EXT PAV MRK & MRKS (WORD) DOLLARS and CENTS	EA	6.000	350
	677	6028		ELIM EXT PV MRK & MRKS (RUMBLE STRIP) DOLLARS and CENTS	LF	108.000	351
	678	6001		PAV SURF PREP FOR MRK (4") DOLLARS and CENTS	LF	140,938.000	352
	678	6002		PAV SURF PREP FOR MRK (6") DOLLARS and CENTS	LF	15,017.000	353
	678	6004		PAV SURF PREP FOR MRK (8") DOLLARS and CENTS	LF	31,130.000	354
	678	6006		PAV SURF PREP FOR MRK (12") DOLLARS and CENTS	LF	6,545.000	355
	678	6008		PAV SURF PREP FOR MRK (24") DOLLARS and CENTS	LF	2,693.000	356
	678	6009		PAV SURF PREP FOR MRK (ARROW) DOLLARS and CENTS	EA	78.000	357
	678	6010		PAV SURF PREP FOR MRK (DBL ARROW) DOLLARS and CENTS	EA	12.000	358

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	678	6012		PAV SURF PREP FOR MRK (UTURN ARR) DOLLARS and CENTS	EA	9.000	359
	678	6016		PAV SURF PREP FOR MRK (WORD) DOLLARS and CENTS	EA	78.000	360
	680	6002		INSTALL HWY TRF SIG (ISOLATED) DOLLARS and CENTS	EA	4.000	361
	680	6004		REMOVING TRAFFIC SIGNALS DOLLARS and CENTS	EA	4.000	362
	681	6001		TEMP TRAF SIGNALS DOLLARS and CENTS	EA	1.000	363
	682	6001		VEH SIG SEC (12")LED(GRN) DOLLARS and CENTS	EA	44.000	364
	682	6002		VEH SIG SEC (12")LED(GRN ARW) DOLLARS and CENTS	EA	10.000	365
	682	6003		VEH SIG SEC (12")LED(YEL) DOLLARS and CENTS	EA	44.000	366
	682	6004		VEH SIG SEC (12")LED(YEL ARW) DOLLARS and CENTS	EA	9.000	367
	682	6005		VEH SIG SEC (12")LED(RED) DOLLARS and CENTS	EA	47.000	368
	682	6006		VEH SIG SEC (12")LED(RED ARW) DOLLARS and CENTS	EA	2.000	369
	682	6018		PED SIG SEC (LED)(COUNTDOWN) DOLLARS and CENTS	EA	39.000	370

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	682	6020		PED SIG SEC (HOUSING ONLY) DOLLARS and CENTS	EA	39.000	371
	682	6023		BACK PLATE (12")(3 SEC) DOLLARS and CENTS	EA	44.000	372
	682	6024		BACK PLATE (12")(4 SEC) DOLLARS and CENTS	EA	1.000	373
	682	6025		BACK PLATE (12")(5 SEC) DOLLARS and CENTS	EA	4.000	374
	684	6009		TRF SIG CBL (TY A)(12 AWG)(4 CONDR) DOLLARS and CENTS	LF	10,666.000	375
	684	6012		TRF SIG CBL (TY A)(12 AWG)(7 CONDR) DOLLARS and CENTS	LF	8,484.000	376
	684	6080		TRF SIG CBL (TY C)(14 AWG)(2 CONDR) DOLLARS and CENTS	LF	10,476.000	377
	686	6027		INS TRF SIG PL AM(S)1 ARM(24')LUM DOLLARS and CENTS	EA	2.000	378
	686	6035		INS TRF SIG PL AM(S)1 ARM(32')LUM DOLLARS and CENTS	EA	2.000	379
	686	6039		INS TRF SIG PL AM(S)1 ARM(36')LUM DOLLARS and CENTS	EA	2.000	380
	686	6043		INS TRF SIG PL AM(S)1 ARM(40')LUM DOLLARS and CENTS	EA	4.000	381
	686	6047		INS TRF SIG PL AM(S)1 ARM(44')LUM DOLLARS and CENTS	EA	1.000	382

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	686	6049		INS TRF SIG PL AM(S)1 ARM(48') DOLLARS and CENTS	EA	4.000	383
	686	6051		INS TRF SIG PL AM(S)1 ARM(48')LUM DOLLARS and CENTS	EA	3.000	384
	686	6147		INS TRF SIG PL AM(S)2 ARM(40-36')LUM DOLLARS and CENTS	EA	1.000	385
	687	6001		PED POLE ASSEMBLY DOLLARS and CENTS	EA	29.000	386
	688	6001		PED DETECT PUSH BUTTON (APS) DOLLARS and CENTS	EA	38.000	387
	688	6003		PED DETECTOR CONTROLLER UNIT DOLLARS and CENTS	EA	4.000	388
	690	6023		INSTALL OF TIMBER POLES DOLLARS and CENTS	EA	1.000	389
	730	6002		FULL - WIDTH MOWING DOLLARS and CENTS	AC	157.000	390
	734	6002		LITTER REMOVAL DOLLARS and CENTS	CYC	39.000	391
	740	6004		ANTI - GRAFFITI COATING(PERMNENT-TY II) DOLLARS and CENTS	SF	68,290.000	392
	6001	6001		PORTABLE CHANGEABLE MESSAGE SIGN DOLLARS and CENTS	DAY	1,200.000	393
	6010	6001		CCTV FIELD EQUIPMENT (ANALOG) DOLLARS and CENTS	EA	4.000	394

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	6025	6001		RADAR PRESENCE DETECTOR DOLLARS and CENTS	EA	20.000	395
	6025	6002		RADAR PRESENCE DETECTOR COMM CABLE DOLLARS and CENTS	LF	10,611.000	396
	6027	6003		CONDUIT (PREPARE) DOLLARS and CENTS	LF	85.000	397
	6028	6001		INSTALL DMS (POLE MTD CABINET) DOLLARS and CENTS	EA	2.000	398
	6029	6001	002	RADAR VEHICLE SENSING DEVICE DOLLARS and CENTS	EA	7.000	399
	6056	6001		PREFORMED IN-LANE(TRANS) RUMBLE STRIP DOLLARS and CENTS	LF	108.000	400
	6057	6001		RADAR ADVANCED DETECTION DEVICE DOLLARS and CENTS	EA	14.000	401
	6064	6010		ITS POLE (30 FT)(90 MPH) DOLLARS and CENTS	EA	3.000	402
	6064	6037		ITS POLE (50 FT)(90 MPH) DOLLARS and CENTS	EA	1.000	403
	6064	6046		ITS POLE (55 FT)(90 MPH) DOLLARS and CENTS	EA	3.000	404
	6064	6076		ITS POLE MNT CAB (TY 1)(CONF 2) DOLLARS and CENTS	EA	2.000	405
	6064	6084		ITS POLE MNT CAB (TY 2)(CONF 2) DOLLARS and CENTS	EA	4.000	406

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	6071	6001		FIB OPT CBL (SM) 6 STRAND DOLLARS and CENTS	LF	2,615.000	407
	6071	6011		FIB OPT CBL (SM) 96 STRAND DOLLARS and CENTS	LF	18,425.000	408
	6072	6001		MODULAR GLARE SCREENS (FURN & INSTALL) DOLLARS and CENTS	LF	1,000.000	409
	6072	6002		MODULAR GLARE SCREENS (REMOVE) DOLLARS and CENTS	LF	1,000.000	410
	6082	6001		LED LANE CONTROL SYSTEM DOLLARS and CENTS	EA	3.000	411
	6082	6002		LCS CABINET FOUNDATION DOLLARS and CENTS	EA	3.000	412
	6096	6002		INS LED WW SGN W/BASIC SOL PWR KIT DOLLARS and CENTS	EA	10.000	413
	7087	6001		TRENCH EXCAVATION PROTECTION DOLLARS and CENTS	LF	5,930.000	414
	7087	6011		DUCTILE IRON FITTINGS DOLLARS and CENTS	TON	4.020	415
	7087	6014		HYDROSTATIC PRESSURE TEST DOLLARS and CENTS	EA	2.000	416
	7087	6015		TEMPORARY BLOW-OFF (COMP)(2") DOLLARS and CENTS	EA	4.000	417
	7087	6016		AUTOMATIC AIR RELEASE VALVE (COMP)(1") DOLLARS and CENTS	EA	4.000	418

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	7087	6027		ADJUST EXISTING VALVE BOX DOLLARS and CENTS	EA	21.000	419
	7087	6028		CONCRETE ENCASEMENT AND SADDLES DOLLARS and CENTS	CY	7.900	420
	7087	6029		RELOCATE FIRE HYDRANT DOLLARS and CENTS	EA	4.000	421
	7087	6040		PIPE WATER MAIN (DI)(12") DOLLARS and CENTS	LF	5,741.000	422
	7087	6041		PIPE WATER MAIN (DI)(20") DOLLARS and CENTS	LF	10.000	423
	7087	6042		12" DI CARRIER PIPE FOR JACK,BOR/TUN DOLLARS and CENTS	LF	54.000	424
	7087	6043		STEEL CASING FOR OPEN CUT TRENCH(24") DOLLARS and CENTS	LF	54.000	425
	7087	6044		SPLIT STEEL CASING (30")(OPEN CUT) DOLLARS and CENTS	LF	82.000	426
	7087	6045		GATE VALVE AND BOX (COMP)(12") DOLLARS and CENTS	EA	6.000	427
	7087	6046		FIRE HYDRANT WITH 6IN VALVE AND BOX DOLLARS and CENTS	EA	6.000	428
	7087	6048		TIE IN (COMP)(12") DOLLARS and CENTS	EA	3.000	429
	7087	6049		TIE IN (COMP)(20") DOLLARS and CENTS	EA	1.000	430

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	7087	6050		FLOWABLE BACKFILL DOLLARS and CENTS	CY	114.700	431
	7087	6051		SERV LINE BRK/LEAK REPAIR(ALL SIZES) DOLLARS and CENTS	EA	1.000	432
	7087	6052		WATER MAIN BREAK / LEAK REPAIR (20") DOLLARS and CENTS	EA	1.000	433
	7087	6053		WATER MAIN BREAK / LEAK REPAIR (12") DOLLARS and CENTS	EA	1.000	434
	7087	6054		RELOCATE EXIST METER AND NEW METER BOX DOLLARS and CENTS	EA	2.000	435

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*****GENERAL NOTES*****
2014 Specification Book (Revised March 3, 2016)

===== **Basis of Estimate** =====

===== **Cement Treatment** =====

Type	Location	Depth	Area(*)	Rate	Quantity(*)
Cement (3% By Weight)	LP1604 NBML	6.0"	642 SY	3%	6 Tons
Cement (3% By Weight)	DC-SE	6.0"	4,763 SY	3%	45 Tons
Cement (3% By Weight)	US90 EBML	6.0"	5,625 SY	3%	53 Tons
Cement (3% By Weight)	US90 EB Ramp	6.0"	4,187 SY	3%	40 Tons

(*) Areas and quantities are based on rounded values. See plans for bid quantities.

===== **Asphalt Concrete Pavement** =====

Type	Location	Depth	Area(*)	Rate	Quantity(*)
B (PG 64-22)	Cross Streets	11.0"	11,666 SY	110lbs/sy	7,058 Tons
B (PG 64-22)	Turnarounds	11.0"	3,305 SY	110lbs/sy	1,999 Tons
B (PG 70-22)	LP1604 NBML	12.0"	639 SY	110lbs/sy	422 Tons
B (PG 70-22)	US90 EBML	4.5"	5,195 SY	110lbs/sy	1,286 Tons
C (PG 70-22)	LP1604 SBFR	5.0"	75,130 SY	110lbs/sy	20,362 Tons
C (PG 70-22)	LP1604 SBML	5.0"	74,905 SY	110lbs/sy	20,283 Tons
C (PG 70-22)	LP1604 NBML	5.0"	9,307 SY	110lbs/sy	3,347 Tons
C (PG 70-22)	LP1604 NBFR	5.0"	26,332 SY	110lbs/sy	7,121 Tons
C (PG 70-22)	LP1604 Ramps	5.0"	8,928 SY	110lbs/sy	2,402 Tons
C (PG 70-22)	Cross Streets	5.0"	11,247 SY	110lbs/sy	3,062 Tons
C (PG 70-22)	Turnarounds	5.0"	3,137 SY	110lbs/sy	848 Tons
C (PG 70-22)	LP1604 Ramps	3.0"	2,569 SY	110lbs/sy	424 Tons
C (PG 70-22)	LP1604 NBFR	1.5"	6,661 SY	110lbs/sy	550 Tons
C (PG 70-22)	LP1604 NBFR	1.0"	1,518 SY	110lbs/sy	83 Tons
D (PG 70-22)	DC-SE Bond Breaker	1.0"	4,739 SY	110lbs/sy	261 Tons
D (PG 70-22)	US90 EB Ramp	2.5"	3,788 SY	110lbs/sy	521 Tons
D (PG 64-22)(Level-up)	LP1604 SBML	1.0"	34,039 SY	110lbs/sy	1,684 Tons
D (PG 64-22)(Level-up)	LP1604 NBML	1.0"	44,901 SY	110lbs/sy	1,820 Tons
D (PG 64-22)(Level-up)	LP1604 NBFR	1.0"	29,924 SY	110lbs/sy	1,373 Tons
SMA-C SAC-B (PG76-22)	LP1604 NBML	2.0"	1,286 SY	110lbs/sy	141 Tons
SMA-C SAC-B (PG76-22)	LP1604 NBFR	2.0"	1,329 SY	110lbs/sy	146 Tons
SP-C SAC-B (PG 70-22)	US90 EBML	2.0"	4,847 SY	110lbs/sy	533 Tons

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SP-C SAC-B (PG 70-22) US90 EB Ramp 1.5" 3,629 SY 110lbs/sy 299 Tons

(*) Areas and quantities are based on rounded values. See plans for bid quantities.

===== Surface Treatment Data =====

Type	Location	Depth	Area(*)	Rate	Quantity(*)
Prime Coat MC-30	LP1604 SBFR	N/A	76,787 SY	0.3 gal	23,036 gal
Prime Coat MC-30	LP1604 SBML	N/A	78,768 SY	0.3 gal	23,630 gal

=====+ Surface Treatment Data (cont)=====

Type	Location	Depth	Area(*)	Rate	Quantity(*)
Prime Coat MC-30	LP1604 NBML	N/A	25,594 SY	0.3 gal	7,678 gal
Prime Coat MC-30	LP1604 NBFR	N/A	31,829 SY	0.3 gal	9,549 gal
Prime Coat MC-30	LP1604 Ramps	N/A	10,564 SY	0.3 gal	3,169 gal
Prime Coat MC-30	Cross Streets	N/A	11,471 SY	0.3 gal	3,441 gal
Prime Coat MC-30	Turnarounds	N/A	3,225 SY	0.3 gal	967 gal
Prime Coat MC-30	DC-SE	N/A	3,001 SY	0.3 gal	900 gal
Prime Coat MC-30	US90 EBML	N/A	5,451 SY	0.3 gal	1,635 gal
Prime Coat MC-30	US90 EB Ramp	N/A	3,789 SY	0.3 gal	1,137 gal

OCST-ASPH(AC-15P)	LP1604 SBML	N/A	30,625 SY	0.3 gal	9,187 gal
OCST-ASPH(AC-15P)	LP1604 NBML	N/A	33,082 SY	0.3 gal	9,925 gal
OCST-ASPH(AC-15P)	LP1604 NBFR	N/A	24,964 SY	0.3 gal	7,489 gal

OCST-ASPH(RC-250)	US90 EBML	N/A	5,451 SY	0.3 gal	1,635 gal
OCST-ASPH(RC-250)	US90 EB Ramp	N/A	3,629 SY	0.3 gal	1,089 gal

OCST-AGGR(TY B GR-5)	LP1604 SBML	N/A	30,625 SY	1CY/115SY	266 CY
OCST-AGGR(TY B GR-5)	LP1604 NBML	N/A	33,082 SY	1CY/115SY	288 CY
OCST-AGGR(TY B GR-5)	LP1604 NBFR	N/A	24,964 SY	1CY/115SY	217 CY
OCST-AGGR(TY B GR-5)	US90 EBML	N/A	5,451 SY	1CY/115SY	47 CY
OCST-AGGR(TY B GR-5)	US90 EB Ramp	N/A	3,629 SY	1CY/115SY	32 CY

===== Surface Treatment Data (cont)=====

Type	Location	Depth	Area(*)	Rate	Quantity(*)
TOM (Asphalt) PG 76-22	LP1604 SBFR	1.0"	70,421 SY	115lbs/sy@6.5%	263 Tons
TOM (Asphalt) PG 76-22	LP1604 SBML	1.0"	103,964 SY	115lbs/sy@6.5%	389 Tons
TOM (Asphalt) PG 76-22	LP1604 NBML	1.0"	56,965 SY	115lbs/sy@6.5%	213 Tons
TOM (Asphalt) PG 76-22	LP1604 NBFR	1.0"	53,214 SY	115lbs/sy@6.5%	199 Tons
TOM (Asphalt) PG 76-22	LP1604 Ramps	1.0"	9,590 SY	115lbs/sy@6.5%	36 Tons
TOM (Asphalt) PG 76-22	Cross Streets	1.0"	14,387 SY	115lbs/sy@6.5%	54 Tons
TOM (Asphalt) PG 76-22	Turnarounds	1.0"	2,844 SY	115lbs/sy@6.5%	11 Tons
TOM (Asphalt) PG 76-22	DC-SE	1.0"	2,770 SY	115lbs/sy@6.5%	10 Tons

TOM (Aggregate) PG 76-22	LP1604 SBFR	1.0"	70,421 SY	115lbs/sy@93.5%	3,786 Tons
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TOM (Aggregate) PG 76-22	LP1604 SBML	1.0"	103,964 SY	115lbs/sy@93.5%	5,589 Tons
TOM (Aggregate) PG 76-22	LP1604 NBML	1.0"	56,965 SY	115lbs/sy@93.5%	3,063 Tons
TOM (Aggregate) PG 76-22	LP1604 NBFR	1.0"	53,214 SY	115lbs/sy@93.5%	2,868 Tons
TOM (Aggregate) PG 76-22	LP1604 Ramps	1.0"	9,590 SY	115lbs/sy@93.5%	516 Tons
TOM (Aggregate) PG 76-22	Cross Streets	1.0"	14,387 SY	115lbs/sy@93.5%	773 Tons
TOM (Aggregate) PG 76-22	Turnarounds	1.0"	2,844 SY	115lbs/sy@93.5%	153 Tons
TOM (Aggregate) PG 76-22	DC-SE	1.0"	2,770 SY	115lbs/sy@93.5%	149 Tons
Fog Seal (HRSS)	Cross Streets	N/A	21,240 SY	0.25 gal/sy	590 Gals
Fog Seal (HRSS)	Cross Streets	N/A	19,260 SY	0.25 gal/sy	535 Gals

(*). Areas and quantities are based on rounded values. See plans for bid quantities.

Item	Description	Rate/Area	Quant-Unit
168	Vegetative Watering	15.6 Gal /_1,027,963 SY	16,037 MG

- The Following Is For Information Only - Non Pay-

Item	Description	Rate/Area	Quant-Unit
166	Fertilizer	0.095 lbs/1,027,963 SY	49 TONS

The following State, District, Local and/or Utility Standards have been modified: ARMOR CURB SLOT (MOD), BD-1 (MOD), IGMS (MOD), IGTS (MOD), SSTR (MOD), T411(MOD), PCP(MOD), PCP-FAB(MOD), SEJ-A (MOD), C411 (MOD).

Steel Wrapped or Asbestos Utility Lines:

Existing steel wrapped natural gas and/or asbestos cement (AC) water lines that will no longer be in service are usually abandoned in place (AIP). However, if any of these lines have to be removed for whatever reason (in the way of other construction, to make tie-ins, etc.) comply with all federal, state and local laws, ordinances and regulations regarding the management of these materials. At a minimum:

1. Contact the Engineer.
2. Remove the minimum amount of pipe needed to perform the proposed work.
3. Cover and secure the ends of the pipe with a double layer of 6 mil plastic. If the pipe is damaged, cover the entire pipe.
4. Move the pipe to an approved temporary site within the project.

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5. The Engineer will determine the owner (utility company) of the pipe and will coordinate removal from the project. The contractor will load the pipe onto the removal vehicles but will NOT be responsible for removing the pipe from the project.

6. Removal of the pipe from the trench is subsidiary to the work that created the need for the removal (excavation for structures, roadway, a new line, tie-ins, etc.). The work performed in handling the pipe after it has been removed from the trench (covering with plastic, hauling to the temporary site and later loading on to the disposal vehicles will be paid for through the Force Account procedure.

Contact the Engineer or the City when construction operations are within 400 feet of a signalized intersection to determine/verify the location of loop detectors, conduit, ground-boxes, etc. Repair or replace any signal equipment damaged by construction operations. The method of repair or replacement shall be pre-approved and inspected. Depending on the type and extent of the damage, the Engineer reserves the right to perform the repair or replacement work and the Contractor will be billed for this work.

Remove existing raised pavement markings as the work progresses or as approved. This work is subsidiary to the various bid items. Properly dispose materials removed.

To better fit field conditions, the cross sections may be varied when approved.

If there are waste areas or material source areas, follow the Texas Aggregate Quarry and Pit Safety Act requirements.

Any materials removed and not reused and determined to be salvageable shall be stored within the project limits at an approved location or delivered undamaged to the storage yard as directed. Properly dispose unsalvageable materials in accordance with local, state, and federal regulations. Deface traffic signs so that they will not reappear in public as signs.

Any sign panels that are adjusted or removed and replaced, shall be done the same workday unless otherwise approved. This work shall be considered subsidiary to Item 502.

Notify the Engineer at least two weeks prior to a proposed traffic pattern change(s) that will require a revision to traffic signals.

Locate and reference all manholes and valves within the construction area with station and offset. Each manhole and valve shall be identified by its owner (SAWS, CPS, etc.). No roadwork will begin until this list has been submitted. Gas valves have to be accessible at all times, therefore; temp. CTB, material stock piles, etc. cannot be placed over these valves.

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Construct all manholes and valves to final pavement elevations prior to the final mat of ACP. If, between the final elevation adjustment and the final mat of ACP, the manholes and valves are going to be exposed to traffic, place temporary asphalt around the manhole and valve to provide a +/- 50:1 taper. The cost of elevation adjustment will be part of the manhole and valve work, and asphalt tapers are part of the ACP work.

Hurricane Evacuation

Hurricane Season is from June 1 thru November 30. As the closest metropolitan city inland from the Texas Coast, the City of San Antonio is a major shelter destination during mandatory hurricane evacuations. As such, planned work zone lane or road closures may be restricted and/or suspended during mandatory hurricane evacuation operations. The District will coordinate these restrictions at a minimum H-120 from any projected impact to the Texas Coast.

No time charges will be made if the Engineer determines that work on the project was impacted by the hurricane.

The Engineer may order changes in the Traffic Control Plan to accommodate evacuation traffic, and may suspend the work, all or in part, to ensure timely completion of this work. All work to implement changes in the Traffic Control Plan will be paid through existing bid prices or through Item 9.5, Force Account. However, the Department will not entertain any request for delay damages, loss of efficiency that may be attributed to the restriction or suspension of road or lane closures, or to changes in the Traffic Control Plan.

The Contractor should be aware that the "City Public Service" (CPS) will be consulted by the Engineer in matters concerning the execution of the work, materials and testing related to the CPS work. As such; a CPS employee may be observing the construction and related operations as they progress.

If a sanitary sewer overflow (SSO) occurs:

1. Attempt to eliminate the source of the SSO.
2. Contain sewage from the SSO to the extent possible to prevent contamination of waterways.
3. Call SAWS at (210) 233-2015.

The Contractor should be aware that the "San Antonio Water System" (SAWS) will be consulted by the Engineer in matters concerning the execution of the joint bid Water and/or Sanitary work. This may include reviewing material submittals and testing related to this work, as well as inspection and observation of the actual work. As such, a SAWS employee may be reviewing submittals and test results as well as observing the construction and related operations as they progress.

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--Item 5--

Reference all existing striping and other pavement markings to allow these markings to be re-established. Ensure the markings (lane lines, edge lines, ramp gores, etc.) are in line with signs, TMS arrows, etc. located on overhead sign supports.

Taper ACP placed at curb inlets, traffic inlets and slotted drains.

When a bridge deck is milled, seal coated and overlaid, remove excess material. Do not just broom to the sides of the bridge, under guardrail, etc. Cover or protect all sealed expansion joints and rails on bridges and all railroad tracks encountered as approved. Clean all of these features if they weren't properly protected. This work is subsidiary work to applicable bid items.

Prior to letting, bidders may obtain a free computer diskette or a computerized transfer of files (from the Engineer's office) that contains the earthwork information. If copies of the cross-sections in addition to, or instead of, the CD are requested, they will be available at the Engineer's office for borrowing by copying companies at the bidder's expense.

When working near aerial electrical lines or utility poles, comply with Federal, State and local regulations. For electrical lines and poles shown in the plans, if the lines need to be de-energized or if poles need to be braced, contact the electrical company. Work pertaining to de-energizing lines, bracing poles and other protective measures will not be paid by TxDOT.

Prevention of Migratory Bird Nesting

It is anticipated that migratory birds, a protected group of species, may try to nest on bridges, culverts, vegetation, or gravel substrate, at any time of the year. The preferred nesting season for migratory birds is from February 15 through October 1. When practicable, schedule construction operations outside of the preferred nesting season. Otherwise, nests containing migratory birds must be avoided and no work will be performed in the nesting areas until the young birds have fledged.

Structures

Bridge and culvert construction operations can not begin until swallow nesting prevention is implemented, until after October 1 if it's determined that swallow nesting is actively occurring, or until it's determined swallow nests have been abandoned. If the State installed nesting deterrent on the bridges and culverts, maintain the existing nesting deterrent to prevent swallow nesting until October 1 or completion of the bridge and culvert work, whichever occurs earlier. If new nests are built and occupied after the beginning of the work, do not perform work that can interfere with or discourage swallows from returning to their nests. Prevention of swallow nesting can be performed by one of the following methods:

County: Bexar

Highway: LP 1604

1. By February 15 begin the removal of any existing mud nests and all other mud placed by swallows for the construction of nests on any portion of the bridge and culverts. The Engineer will inspect the bridges and culverts for nest building activity. If swallows begin nest building, scrape or wash down all nest sites. Perform these activities daily unless the Engineer determines the need to do this work more frequently. Remove nests and mud through October 1 or until bridge and culvert construction operations are completed.

2. By February 15 place a nesting deterrent (which prevents access to the bridge and culvert by swallows) on the entire bridge (except deck and railing) and culverts.

No extension of time or compensation payment will be granted for a delay or suspension of work caused by nesting swallows. This work is subsidiary to the various bid items.

Provide a non-intrusive back-up alarm system on all heavy equipment used in close proximity to residential areas. This item is subsidiary to various bid items.

--Item 6--

Show the stockpile lot and/or sub lot numbers on all tickets for all materials.

--Item 7--

The project's total disturbed area is 277 AC. The disturbed area in all project locations and Contractor project specific locations (PSL's), within 1/4 mile of the project limits, will further establish the authorization requirements for storm water discharges. The department will obtain an authorization to discharge storm water from the Texas Commission on Environmental Quality (TCEQ) for the construction activities shown on the plans. Obtain any required authorization from the TCEQ for any PSL's on or off the ROW. When the total area disturbed on the project and PSL's within 1/4 mile of the project exceeds 5 acres, provide a copy of the Contractor NOI for PSL's to the Engineer (to the appropriate MS4 operator when the project is on an off-state system route).

Notify the Engineer of the disturbed acreage within one (1) mile of the project limits. Obtain authorization from the TCEQ for Contractor PSL's for construction support activities on or off ROW.

--Item 8--

Working days will be computed and charged in accordance with Article 8.3.1. 2 : 6-Day work week.

Create and maintain a Critical Path Method (CPM) schedule.

The CPM schedule shall be created and maintained using software fully compatible with version 6.1 of Primavera Project Planner or SureTrak Project Scheduler.

County: Bexar

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Provide a Project Schedule Summary Report.

A lane closure assessment fee will be assessed as per the "Lane Closure Assessment Fee Table" in the plans.

MILESTONE 1 (MARBACH ROAD RECONSTRUCTION)

Milestone 1 includes Phase 1 construction operations for the reconstruction of the Marbach Road intersection.

Working day time charges for Milestone 1 will be computed based upon a Six-Day Work Week and charged in accordance with Article 8.3.1.2 Six-Day Workweek.

Time charges of Milestone 1 shall begin at initiation of any work for Phase 1, Step 1 that partially impedes traffic (even on daily basis) for the reconstruction of the cross street. The time charges for substantial completion of Milestone 1 shall end when all construction work that requires interruption of two-lane each way operations ceases.

The daily road-user cost for Milestone 1 shall be \$4,320 per day.

The Contractor shall have 71 calendar days to complete Milestone 1.

MILESTONE 2 (NBML RECONSTRUCTION AT MARBACH ROAD)

Milestone 2 includes Phase 2 construction operations for the reconstruction of the proposed NBML on existing overpass at Marbach Road intersection.

Working day time charges for Milestone 2 will be computed based upon a Six-Day Work Week and charged in accordance with Article 8.3.1.2 Six-Day Workweek.

Time charges of Milestone 2 shall begin at initiation of any work for Phase 2 that restricts traffic (even on daily basis) from the use of the northbound overpass at Marbach Road. The time charges for substantial completion of Milestone 2 shall end when all construction work that requires interruption of traffic operations on the overpass ceases.

The daily road-user cost for Milestone 2 shall be \$11,110 per day.

The Contractor shall have 92 calendar days to complete Milestone 2.

The maximum number of working days for computing the incentive credit for Milestone 2 shall be 10 days.

County: Bexar

Highway: LP 1604

MILESTONE 3 (DOVE CANYON RECONSTRUCTION – PHASE 1)

Milestone 3 includes Phase 1 construction operations for the reconstruction of the proposed Dove Canyon intersection from the proposed SBFR to the west terminus.

Working day time charges for Milestone 3 will be computed based upon a Six-Day Work Week and charged in accordance with Article 8.3.1.2 Six-Day Workweek.

Time charges of Milestone 3 shall begin at initiation of any work for Phase 1, Step 1 of Dove Canyon that interrupts normal traffic flow (even on daily basis) from normal travel patterns. The time charges for substantial completion of Milestone 3 shall end when all construction work at the intersection is complete and traffic is operating on the Phase 1 detour plan.

The daily road-user cost for Milestone 3 shall be \$7,220 per day.

The Contractor shall have 61 calendar days to complete Milestone 3.

MILESTONE 4 (DOVE CANYON DETOUR – PHASE 1)

Milestone 4 includes the Phase 1 detour of Dove Canyon traffic to existing Southbound SL 1604.

Working day time charges for Milestone 4 will be computed based upon a Six-Day Work Week and charged in accordance with Article 8.3.1.2 Six-Day Workweek.

Time charges of Milestone 4 shall begin at completion of work for Milestone 3 (traffic beginning operation in Detour). The time charges for substantial completion of Milestone 4 shall end when traffic is placed in Phase 2 traffic operations with all southbound traffic on the proposed SBFR.

The daily road-user cost for Milestone 4 shall be \$9,540 per day.

The Contractor shall have 288 calendar days to complete Milestone 4.

The maximum number of working days for computing the incentive credit for Milestone 4 shall be 20 days.

MILESTONE 5 (DOVE CANYON COMPLETION – PHASE 2)

Milestone 5 includes Phase 2 construction operations for the completion of the proposed Dove Canyon underpass.

Working day time charges for Milestone 5 will be computed based upon a Six-Day Work Week and charged in accordance with Article 8.3.1.2 Six-Day Workweek.

County: Bexar

Highway: LP 1604

Time charges of Milestone 5 shall begin at initiation of any work for Phase 2 that places southbound traffic on the proposed SBFR. The time charges for substantial completion of Milestone 5 shall end when all construction work at the intersection is complete and traffic is operating on the final traffic configuration for the frontage roads at the intersection.

The daily road-user cost for Milestone 5 shall be \$8,870 per day.

The Contractor shall have 33 calendar days to complete Milestone 5.

SUBSTANTIAL COMPLETION OF WORK

Substantial Completion is defined as the date (day) when all mainlanes, frontage roads, ramps, and direct connector are opened to normal traffic and in its final configuration. This includes removal of the cloverleaf connection from LP 1604 SB to US 90 EB and all mill and overlay work.

The contractor has 970 working days to substantially complete this project. Working days will be computed and charged in accordance with Article 8.3.1.2 Six-Day Workweek.

The daily road user cost for substantial completion of the project is \$8,460 per day. The maximum number of working days for computing the incentive credit for substantial completion shall be 97 days.

--Item 9--

When approved, provide uniformed, off-duty law enforcement officers with marked vehicles during work that requires a lane closure. The officer in marked vehicles shall be located as approved to monitor or direct traffic during the closure. The method used to direct traffic at signalized intersections shall be as approved. Additional officers and vehicles may be provided when approved or directed.

Complete the daily tracking form provided by the department and submit invoices that agree with the tracking form for payment at the end of each month approved services were provided.

Show proof of certification by the Texas Commission on Law Enforcement Standards.

All law enforcement personnel used in Work Zone Traffic Control shall be trained for performing duties in work zones and are required to take "Safe and Effective Use of Law Enforcement Personnel in Work Zones" (Course #133119) which can be found online at the following site: www.nhi.fhwa.dot.gov

Certificates of completion should be available to all who finish the course. These should be kept by the officers in order to substantiate completion when reporting to the work site.

County: Bexar

Highway: LP 1604

Minimums, scheduling fees, etc. will not be paid; TxDOT will consider paying cancellation fees on a case by case basis.

--Item 100--

Begin clearing operations after trees and other areas of vegetation to be protected have been identified and approved. Install fencing around features to be protected as shown in the plans or directed. Coordinate all right of way clearing operations with the SW3P.

Trim and remove brush and trees as needed for construction operations. Obtain approval for proposed method of tree and brush trimming and removal. Vertical flailing equipment is not allowed. Treat damaged or cut branches, roots and/or stumps of all oak trees with a commercial tree wound dressing. Disinfect all pruning tools with a solution of 70% alcohol before moving from one tree to another. Unless otherwise approved remove all resulting vegetative debris from the ROW within 24 hours. The Engineer can stop all construction operations if the dressing, cut and removal requirements are not followed.

All clearing operations shall be completed for the entire clearing limits to initiate utility relocations by others.

--Item 110--

Where excavation extends beyond a right of way fence, remove and replace the fence to a comparable condition. This work shall be considered subsidiary to the bid item.

This project will include Rock Excavation as shown in the Drilling Logs provided in the plans. All Rock Excavation shall be considered subsidiary to Item 110-6001 EXCAVATION(ROADWAY). Blasting shall not be considered an approved method for Rock Excavation.

--Item 132--

At no time shall the retaining wall backfill material exceed the adjacent embankment operation by more than one embankment lift. At no time will the embankment adjacent to the retaining wall backfill exceed the wall backfill by any elevation.

EMBANKMENT(ORDINARY)(TY C- SELECT FILL) shall meet the following specifications:

Description	Percent Retained - Sieve					LL	PI	PI
	1 3/4"	7/8"	3/8"	#4	#40	MAX	MAX	MIN
Embankment (TY C)	0-10	-	-	45-75	60-85	45	20	6

County: Bexar

Highway: LP 1604

--Item 164--

Drill seeding of permanent grasses requires the use of approved grass seeding equipment capable of properly storing and metering the release of small seeds (such as Bermuda grass) separately from fluffy type seeds (such as bluestems). Equipment manufactured for planting grain crops is acceptable for planting temporary cool season seeds, but not for planting the permanent seed mix.

When drill seeding is required, cultivate the area to a depth of 4 in. after the fertilizer has been applied and before placing the seed.

If performing a permanent seeding in an area with established temporary grass cover and mowing is performed instead of tilling, seed and fertilizer may be distributed simultaneously during "Broadcast Seeding" operations, provided each component is applied at the specified rate.

--Item 166--

Use a fertilizer with an analysis of 13-13-13 (50% of the total N must be sulfur coated urea) to apply 60 lbs of actual N per acre. This requires 460 lbs of 13-13-13 per acre or .095 lbs per SY of area.

--Item 168--

Apply vegetative watering as needed to supplement natural rainfall during the vegetation establishment period. Plan quantity of irrigation water is based on the application of a total of 1.3 gal of water each week for each sq. yd. of area that is sodded or seeded. Establishment time is estimated to be 12 weeks for both sod and permanent seed mixes. Temporary seeding will require less time for establishment. Provide a schedule and coordinate watering cycles and rates per cycle with the Engineer. Obtain approval if the quantity of water to be applied is expected to exceed the plan quantity. Adjust the amount of water applied with each cycle and the number of cycles each wk. according to actual site conditions. Drought or other conditions, as determined by the Engineer, may require the application of supplemental irrigation during hours other than normal working hours.

--Item 247--

There is no minimum PI requirement for this project.

--Item 275--

The Engineer will designate a target cement content and optimum moisture content necessary to produce a stabilized mixture that meets the strength requirements and moisture susceptibility requirements shown in Table 1. The Contractor shall furnish the Engineer with representative samples of the materials to be used in production of the cement treated base.

County: Bexar

Highway: LP 1604

Table 1
Requirements for Cement Treatment

Description	Minimum	Maximum
Cement Content (by dry weight of base)	2%	5%
7-Day Unconfined Compressive Strength (min.) ¹	Tex-120-E, Part I	150 psi
Retained Strength after Moisture Conditioning (min.)	Tex-120-E, Part I (10 day capillary soak)	80% of 7—Day Unconfined Compressive Strength

Microcracking will be required in accordance with Item 275.4.7.

--Item 302--

Previously tested aggregates found to contain excessive quantities of dust (more than 0.5 percent passing the No. 40 sieve) during precoating, stockpiling or hauling operations, may be rejected. Use Test Method Tex-200-F, Part I for testing.

Precoated Aggregate Type PE shall consist of crushed slag, crushed stone or natural limestone rock asphalt.

The Engineer will utilize the Ignition Oven Method (Tex 236-F) for aggregate gradation, with the option of utilizing belt or vacuum extraction gradation in the event the ignition oven malfunctions.

--Item 305--

All reclaimable asphalt pavement (RAP) material will be retained by the Contractor.

--Item 316--

When using latex asphalt, avoid drifting of asphalt onto traffic and adjacent properties.

Asphalt season will be year around, but meet sections 316.4.4.1 through 4.4.3.

Ensure that the asphalt for precoating the aggregate and the asphalt used for the surface treatment will not result in a reaction that may adversely affect the bonding of the aggregate and asphalt during the surface treatment operation.

Do not add bag house fines in the production of precoated material.

County: Bexar

Highway: LP 1604

Clean all concrete curbs, islands, medians, etc. that get coated with asphalt.

--Item 320--

Construct all longitudinal ACP joints adjacent to a travel lane with a joint maker device that will create a 3:1 to 6:1 taper. For placement of 2 inches or more, the device shall provide a maximum ½ inch vertical edge. Taper outside edges (next to the grass) or backfill (shoulder-up) the same day.

Provide a material transfer device capable of providing a continuous flow of material to the paver. The material transfer device will consist of a windrow elevator or better.

When placing Item 346 mixtures, provide a material transfer vehicle that is capable of providing a remixing, and continuous flow of material from the haul truck to the paver, such as a Roadtec SM-2500e/ex.

--Item 341, 344, 346, & 347--

Table 10 in Item 341 and Table 11 in Item 344, Hamburg Wheel Test Requirements tested in accordance with Tex-242-F are changed for PG 64-22 or lower and PG 70-22. Minimum number of passes at 1/2" Rut Depth, Tested at 122 degrees F will be 5,000 and 10,000 respectively.

The asphalt plant shall have truck scales as defined in Item 520. Give three weight tickets bearing the date, the truck number, the gross, net & tare weights to the truck driver for the State inspector at the spreading and finishing operation. Trucks may be required to weigh on public scales or portable platform scales to verify the weight of the ticket.

Submit a copy of the Tex 233-F production charts on a weekly basis. At the end of the ACP work, provide all originals.

Crushing of aggregate for hot mix and immediate use for production of the mix is not allowed. Stockpile the aggregate until enough material is available for five days of production unless prior approval is provided. Hold a pre-placement meeting one month prior to the placement of the hot mix.

The main purpose of hot mix cores taken by the State are for payment calculations. If (for quality control purposes) the core information is needed sooner, take additional cores.

Do not use diesel or solvents as asphalt release agents in production, transportation, or construction. A list of approved asphalt release agents is available from the District Laboratory.

County: Bexar**Highway: LP 1604**

No more than one hot mix lot will be open for any specific type of hot mix, unless authorized. After a lot is open and the Contractor gets approval to change plants, the previous lot will be closed and a new lot will be opened. The numbering for the lots produced at the new plant will start with No. 1. If allowed to switch back to the original or previous plant, the next lot from that plant will resume numbering sequentially from the last lot produced by that plant.

Schedule lay-down placement where uneven travel lanes are minimized and eliminated weekly.

If asphalt material is obtained from other than a commercial source presently inspected by TxDOT, furnish a Type D structure for the asphalt mix control laboratory for the Engineer's use. Provide a minimum height of 8 feet and a minimum of 400 square feet of gross floor area for permanently located asphalt plants or 200 square feet for a temporary plant. The floor area will be partitioned into a minimum of two rooms, with a minimum of two windows per room. The floor shall have an impervious cover and sufficient strength to support the testing equipment. Portable structures shall be support blocked for stability and shall be tied down.

The use of Recycled Asphalt Shingles (RAS) will not be allowed on the final riding surface.

When placing item 346 mixtures, utilize a material transfer vehicle as defined in the plans for item 320.

Minimum Roadway Placement Temperature**--Item 341, & 344--**

Place mixture when the roadway surface temperature is equal to or higher than listed in Table 1 unless otherwise approved or shown on the plans. Measure the roadway surface temperature with a hand-held thermal camera or infrared thermometer. Placement may be allowed to begin prior to the roadway surface reaching the required temperature if conditions are such that the roadway surface will reach the required temperature within 2 hrs. of beginning placement operations. Place mixtures only when weather and moisture conditions of the roadway surface are suitable in the opinion of the Engineer. The Engineer may restrict the Contractor from paving if the ambient temperature is likely to drop below 32°F within 12 hr. of paving.

County: Bexar

Highway: LP 1604

Table 1
Minimum Pavement Surface Temperatures

Specification Item Number	High Temperature Binder Grade	Minimum Pavement Surface Temperatures in Degrees Fahrenheit *	
		Subsurface Layers or Night Paving Operations	Surface Layers Placed in Daylight Operations
340, 341, & 344	PG 64	45	50
	PG 70	55	60
	PG 76	60	60

* Except for PG 64, may pave at temperatures 10° F lower than the values shown in Table 1 when utilizing a Material Transfer Vehicle that is capable of providing a remixing, and continuous flow of material from the haul truck to the paver, such as a Roadtec SM-2500e/ex, that eliminates thermal segregation. In these cases, use either an infrared bar attached to the paver, or a hand held thermal camera or infrared thermometer, or a hand held infrared thermometer operated in accordance with Text Method 244-F to demonstrate that the uncompacted mat has no more than 10° F of thermal segregation.

Substitute Binder
--Item 341 & 344--

The Contractor may use a substitute PG binder listed below in Table 1 instead of the PG binder originally specified in Table 5 of the Standard Specification, if the substitute PG binder and mixture made with the substitute PG binder meet the following:

- ◆ The substitute binder meets the specification requirements for the substitute binder grade in accordance with Section 300.2.10., “Performance-Graded Binders;” and
- ◆ The mixture has less than 10.0 mm of rutting on the Hamburg Wheel test (Tex-242-F) after the number of passes required for the originally specified binder. Use of substitute PG binders may only be allowed at the discretion of the Engineer if the Hamburg Wheel test results are between 10.0 mm and 12.5 mm.

County: Bexar

Highway: LP 1604

Table 1
Allowable Substitute PG Binders and Maximum Recycled Binder Ratios

Originally Specified PG Binder	Allowable Substitute PG Binder	Maximum Ratio of Recycled Binder ¹ to Total Binder (%)		
		Surface	Intermediate	Base
HMA				
76-22 ^{2,5}	70-22	20.0	20.0	20.0
	70-28	20.0	35.0	40.0
70-22 ²	64-22	20.0	20.0	20.0
	64-28 or 58-28	20.0	35.0	40.0
64-22 ²	58-28	20.0	35.0	40.0
76-28 ^{2,5}	70-28	20.0	20.0	20.0
70-28 ²	64-28 or 58-28	20.0	20.0	20.0
	64-34 or 58-34	20.0	35.0	40.0
64-28 ²	58-28	20.0	20.0	20.0
	58-34	20.0	35.0	40.0
WMA³				
76-22 ^{2,5}	70-22	20.0	35.0	40.0
70-22 ²	64-22 or 58-28	20.0	35.0	40.0
64-22 ⁴	58-28	20.0	35.0	40.0
76-28 ^{2,5}	70-28	20.0	35.0	40.0
70-28 ²	64-28 or 58-28	20.0	35.0	40.0
64-28 ⁴	58-28	20.0	35.0	40.0

1. Combined recycled binder from RAP and RAS.
2. Use no more than 20.0% recycled binder when using this originally specified PG binder.
3. WMA as defined in Section 341.2.6.2., "Warm Mix Asphalt (WMA)."
4. When used with WMA, this originally specified PG binder is allowed for use at the maximum recycled binder ratios shown in this table.
5. No more than 1-PG grade lower than what is show on the plans will be permitted for Surface mixtures

--Item 354--

Retain planed material.

Take precaution to avoid damage to existing bridge decks and armor joints. Repair any damage to the bridge decks and/or armor joints as approved. This work will not be paid directly, but will be performed at the Contractor's expense.

--Item 401--

A shrinkage compensator is not required for when used for backfilling pipes. Strength of the Flowable Backfill will be verified by the District Laboratory. Field testing is not required, unless deemed necessary.

--Item 420--

Mass concrete will be measured in place.

Restrict large aggregate size to ¾" maximum for class "C" concrete used in aesthetic details requiring form liners.

County: Bexar

Highway: LP 1604

Columns for the LP 1604 to US 90 EB Direct Connector and columns and ear walls for LP 1604 NBFR bridge over US 90 ML shall have an aesthetic theme as shown for the Mission Region in the “San Antonio District Urban Themes for Bexar and Outlying Counties”.

Columns for the LP 1604 SBML over Marbach Road and Dove Canyon over LP 1604 Mainlanes Shall have an aesthetic theme as shown for the Hill Country Region in the “San Antonio District Urban Themes for Bexar and Outlying Counties”.

--Item 421--

Use an automated ticket that contains the same information as TxDOT's ticket. Submit the ticket for approval prior to use. The concrete producer will contact the District Laboratory or the Engineer's Office (outside the San Antonio area) to inform TxDOT of scheduled structural concrete batching. Structural concrete includes bridge drill shafts, columns, caps, abutments, deck or top slabs of direct traffic culverts.

Entrained air is allowed for Class P and Class HES concrete only. Air content testing is waived for all classes of concrete.

Poly-fiber reinforced concrete may be used as an option, with the approval by the Engineer, for riprap, sidewalk, curb/gutter, and mow strip. Use a TxDOT approved manufacturer or producer for the poly-fiber. The poly-fibers shall be combined with the concrete in proportions as recommended by the manufacturer. A concrete mix design must be approved by the Engineer.

--Item 422--

For construction of approach slabs, longitudinal joints shall be placed on lane lines. Joints may be either a saw-cut crack control joint or a construction joint. Saw cut joints shall terminate 1'-0" before reaching the edge of the slab, must be saw cut as soon as possible after placement of concrete, and will be cut within 12 hours of concrete placement. Once sawing begins, it should be a continuous operation and should only be stopped if raveling occurs. Saw cut will be to a depth of 1.5" and filled with approved joint sealant.

--Item 423--

The backfill material for pre cast retaining walls shall be approved before placement. Build stockpile(s) in lifts not to exceed 2 feet and a minimum working face of not less than 10 feet, but not more than 20 feet.

Use the approved Mechanically Stabilized Earth (MSE) wall systems listed at:

<http://www.txdot.gov/business/resources/consultants-contractors/publications/mse-wall.html>

TxDOT does not allow the use of experimental systems on projects with over 50,000 square feet walls over 25 ft. tall, or walls supporting or immediately adjacent to interstate highways.

County: Bexar**Highway: LP 1604**

When proprietary wall systems are used, a qualified representative of the retaining wall manufacturer must be available upon request during wall construction. As requested or required the manufacturer's representative must be on site to assist with the initial stages of wall construction, provide training to the Contractor wall crew and ensure proper interpretation of MSE wall shop drawings and details. Specific attention must be given to nonstandard wall installation details. The Contractor's wall crew foreman must be on site for the duration of wall construction. Any change to the wall crew foreman may require additional training by the wall supplier. The Contractor will ensure that the retaining walls are installed per the details presented in the construction drawings and as per the proprietary wall system requirements. The Engineer reserves the right to suspend wall construction activities due to any construction issue encountered.

Proof Nail and Nail Verification Tests will be required for MSE Walls including Soil Nail Walls to be used for temporary shoring.

On site investigation of soils to confirm data in plans is to be performed before erection of temporary or permanent walls.

For MSE wall; Contractor to provide alternative for soil reinforcement to attach to the back of the precast inlets.

Shotcrete nozzleman should have a minimum of 2 years of previous structural shotcreting experience and be certified by the American Concrete Institute (ACI). Submit a copy of ACI shotcrete nozzleman certificate and resume supporting previous experiences to the engineer prior to beginning work.

The contractor is to provide design and detail of the wall repair, panel and coping repair and/or replacement. Design calculations, plans, and details are to be signed and sealed by a registered professional engineer and submitted to the District Bridge Section for approval. Temporary shoring for the repair will be the responsibility of the contractor. Temporary shoring for the repair will be in accordance with Item 403. Payment for this repair will be in accordance with Item 423 and Item 403.

Stockpile material and test to ensure uniformity.

All new material to be stockpiled separately and tested. No adding to previously tested stockpiles.

All geogrid material shall be TY A and in accordance with SS5000 Geogrid Reinforcements for Embankments.

Seal all construction joints such as riprap, inlets, etc.

County: Bexar

Highway: LP 1604

Seal all coping joints with silicon or use 3" to 4" Cement Stabilized Backfill at bottom of pavement structure.

If during the course of construction; rain fall events result in loss of material within the constructed MSE volume, the MSE volume will be removed as instructed and rebuilt.

At the end of wall construction, the MSE wall will be inspected for settlement. Any locations where water infiltration is evident or possible will be resealed at that time.

Customize wall design for the fill material using dry unit weight.

The maximum internal friction angle to use is 34 degrees, this value will be periodically measured in the laboratory on stockpiled material or when the properties of the fill used varies. Gradation testing will also be conducted on the material at the same frequency.

Have wall engineer representative present at the beginning of wall construction and available throughout the duration of wall construction. TxDOT reserves the right to suspend wall construction activities due to any construction issue encountered.

Any alternate designs to what is submitted in plans is to be signed and sealed and as good as or better than what is designed and in complete accordance with AASHTO/LRFD specifications as well as TxDOT specifications.

Horizontal and vertical nail spacing on temp or permanent soil nail walls shall not exceed 4 ft.

Type DS material will be required on MSE walls in the area of the reinforcement mats.

--Item 432--

In all riprap slopes, provide 3 inch diameter weep holes at 10 foot maximum spacing and backed with loose graded gravel or crushed stone and galvanized hardware cloth.

In areas where guard fence posts are to be placed in riprap, the riprap shall have an 18 inch +/- blocked out area (round or square). Blocked out areas shall be backfilled with 2 sack flowable backfill and considered subsidiary to the various bid items.

Match the slope of the Riprap (Mow Strip) to the slope of the adjacent roadway.

County: Bexar

Highway: LP 1604

--Item 450--

The Type SSTR rail for the LP 1604 to US 90 EB Direct Connector shall have an aesthetic theme as shown in the Mission Region Modified SSTR detail sheet. The Type T411 and C411 rails for the LP 1604 NBFR bridge over US 90 ML shall have an aesthetic theme as shown in the Mission Region TxDOT Classic Bridge Rail (T411 & C411) detail sheet.

Rail (TY SSTR) (MOD) item applies to LP 1604 to US 90 EB Direct Connector. Use TYPE SSTR (MOD) standard for structural details and Mission Region Modified SSTR detail sheet for aesthetic information. Rail (TY 411) (MOD) and Rail (TY C411) (MOD) items apply to LP 1604 NBFR bridge over US 90 ML. Use TYPE T411 (MOD) and TYPE C411 (MOD) standards for structural details and Mission Region TxDOT Classic Bridge Rail (T411 & C411) detail sheet for aesthetic information.

--Item 454--

Existing expansion joint at LP 1604 NBML over Medio Creek to remain in place. Contractor shall exercise care not to damage existing joint when breaking back abutment backwall to install proposed approach slab.

--Item 462--

Use lean concrete or 2 sack flowable backfill for fill between pre-cast boxes. Lean concrete and 2 sack flowable backfill shall be considered subsidiary to this bid item.

The following structures shall be pre-cast:

- Culvert B
- Culvert C
- Culvert D
- Culvert E
- Culvert F
- Culvert G
- Culvert H
- Culvert I
- Culvert J

--Item 465--

Concrete Class B invert shaping is required at all inlets, manholes and junction boxes in order to insure positive flow. The material and work performed for the placement of the inverts shall be considered subsidiary to this item.

--Item 496--

The Contractor will submit a demolition plan for all structures to be replaced and/or removed in accordance with Item 496.

County: Bexar

Highway: LP 1604

Provide for the safety and health of employees and abide by all OSHA Standards and Regulations. All costs incurred for proper management, shall be subsidiary to this Item.

--Item 500--

"Materials on Hand" payments will not be considered in determining percentages for mobilization payments.

--Item 502--

The Contractor Force Account "Safety Contingency" that has been established for this project is intended to be utilized for work zone enhancements, to improve the effectiveness of the Traffic Control Plan, that could not be foreseen in the project planning and design stage. These enhancements will be mutually agreed upon by the Engineer and the Contractor's Responsible Person based on weekly or more frequent traffic management reviews on the project. The Engineer may choose to use existing bid items if it does not slow the implementation of enhancement.

Place standard markings no later than 14 days after surface treatment operations are completed.

When advanced warning flashing arrow panels and/or changeable message sign is specified, have one standby unit in good condition at the job site. Standby time shall be considered subsidiary to the bid item.

Treat the pavement drop-offs as shown in the TCP.

After written notification, the time frame to provide properly maintained signs and barricades before considered in non-compliance is 48 hours from receipt of the notification. Failure to make corrections as noted may result in payment for this item being withheld.

There are existing traffic signals at the intersections of LP 1604, and US 90 EBFR, LP 1604 and US 90 WBFR, LP 1604 and Marbach Rd, and LP 1604 and Emory Peak. Keep the signals in operation except when necessary for specific installation operations.

Moving an existing sign to a temporary location is subsidiary to this Item. Installations with permanent supports at permanent locations will be paid for under the applicable bid item (s).

Mount temporary mailboxes on plastic drum in accordance with Compliant Work Zone Traffic Control Devices, Section K. Mounting and moving the mailbox as needed for the various construction phases is subsidiary to this Item.

County: Bexar

Highway: LP 1604

Notify the Engineer in writing 10 business days in advance of any temporary or permanent lane, ramp, connector, etc. closures/detours, restrictions to lane widths, alterations to vertical clearances, or modifications to radii. Any other modifications to the roadway that may adversely affect the mobility of oversized/overweight trucks also require 10 business days advance written notice to the Engineer. Unless shown in the TCP, no lane, ramp, connector, etc. closures are allowed during special events. At least one lane has to remain open at all times. Lane closures will not be allowed if this reporting requirement is not met.

For closures not listed in the TCP; the lane closures are limited to between the hours of 9:00 PM and 5:00 AM, and at least one lane has to remain open at all times.

Avoid placing stockpiles within the roadway's horizontal clear zone. If a stockpile is placed within the clear zone, address in accordance with the TMUTCD.

Do not place barricades, signs, or any other traffic control devices where they interfere with sight distance at driveways or side streets.

In addition to providing a Contractor's Responsible Person and a phone number for emergency contact, have an employee available to respond on the project for emergencies and for taking corrective measures within 2 hours or within a reasonable time frame as specified by the Engineer.

Temporary Rumble Strips are to be used according to WZ (RS)-14.

If Nighttime work is required and work is not behind positive barrier then full TY 3 reflective gear is required to be worn by all workers, hard hat halos are required to be worn by the flaggers at flagging stations, TY III barricades are required to be spaced at 500 ft, and a mandatory night work meeting is required.

--Item 504--

Furnish one field office type TY C Field Office. Furnish 6-ft chain link fence, a top-mounted 3-strand barbed wire and a 12-ft gate. Provide internet connectivity.

Provide internet connectivity, a printer/fax/scanner/copier, and telephone(s) as directed.

--Item 506--

An Inspector will perform a regularly scheduled SWP3 inspection every 7 calendar days.

Failure to address items noted on the SW3P inspection report within two report cycles may result in the Department stopping all construction operations, exclusive of time charges, or withholding that month's estimate until the SW3P deficiencies are corrected unless the Engineer determines that the area is too wet to correct SW3P deficiencies.

County: Bexar

Highway: LP 1604

--Item 508--

Unless noted otherwise in the plans, temporary detour pavement shall consist of 5.0" D-GR HMA TY-C, PG70-22 over 10.0" Flex Base TY-D, GR 1-2.

--Item 512--

New Single Slope or F-Shape CTB (cast in accordance with the Standard Sheets in the plans) may be furnished or the same pre-used shapes (that meet the requirements of this Item) may be furnished. New Safety Shape (New-Jersey) CTB is not allowed, but pre-used New-Jersey (that meets the requirements of this Item) may be furnished. More than one type may be furnished but do not mix the types when placed along the roadway.

--Item 529--

Class "C" concrete is required for machine extruded curb.

Curb inlets and extensions are based on an exposed curb height of 7 inches except at Dove Canyon where a curb height of 5 inches is also used. The roadway curb height and shape will be transitioned to the inlet's curb with a 40: 1 taper.

--Item 531--

The curb ramp locations shown in the plans have taken into account the geometric features of the intersection, traffic signals, and the pavement markings. If anything changes during construction, the location of curb ramps must be adjusted to ensure they meet TAS requirements.

--Item 540--

MBGF posts shall be round with domed tops, and not painted. If 10 or less timber posts are needed, they may be purchased locally and will be accepted by visual inspection.

Guard fence posts placed in proposed and/or existing areas of riprap, sidewalks or other concrete shall have an 18 inch +/- (square or round) block out in the concrete. After the posts are installed, the blocked out area shall be topped off with 4 inches of low strength grout/mortar consisting of about 1 sack of cement per cubic yard of mix.

When connecting a Thrie-Beam to a concrete wingwall, bridge rail, CTB, etc., drill the holes for bolt placement using rotary or core type equipment. Use a core type drill when reinforcing steel is encountered. Do not use percussion or impact drilling. Repair damage to the concrete and spalls exceeding 1/2" from the edge of the hole.

--Item 542--

Salvage all undamaged/acceptable radius guardrail and deliver to the TxDOT maintenance section yard.

--Item 545--

See the Crash Cushion Summary Sheet.

County: Bexar

Highway: LP 1604

--Item 585--

Use Surface Test Type B, pay adjustment schedule 2 to evaluate ride quality of travel lanes.

--Item 610--

Fabricate steel roadway illumination poles in accordance with the RIP standards. Poles fabricated according to RIP require no shop drawings. Alternate designs or the use of aluminum to fabricate poles will require the submission of shop drawings electronically.

For instructions on submitting shop drawings electronically go to:

<http://www.dot.state.tx.us/publications/bridge.htm>. File is titled: Guide to Electronic Shop Drawing Submittal.

Provide lamps from the pre-qualified Materials Producers List, Category is "Roadway Illumination and Electrical Supplies" located on the Construction Divisions (CST) web site.

Ballast/capacitors removed from the light assembly, will remain the property of the State. Assume all ballast/capacitors contain Polychlorinated Biphenyl (PCB), unless a notation appears on the outside of the unit that specifies it does not contain PCB's. All ballast/capacitors with PCB's shall be placed in 55 gallon open top drum in accordance with Department of Transportation (DOT) specifications. Place six (6) inches of sawdust or other absorbent material in the bottom of the drum. Furnish and place a DOT approved PCB warning label on the outside of the drum. Do not fill a drum more than $\frac{3}{4}$ of capacity. Avoid rupturing the ballast/capacitor(s). If a ballast/capacitor is ruptured, use proper procedures, specialist trained staff and personal protective equipment for the clean-up operations.

The lamps in light fixtures may contain hazardous levels of mercury, halide, and sodium vapors. Observe and comply with all federal, state and local laws, ordinances and regulations regarding the management of these lamps. Prevent the breakage of the lamps. At a minimum, package all lamps removed from the light fixture(s) in a container that minimizes the breakage of the lamps. Broken lamps shall be collected in a sealed plastic bag (i.e. Ziploc). Broken lamps shall be stored in separate containers from unbroken lamps. Furnish a suitable container and attach a label stating "Universal Waste Lamps" on the container. Write the date the first lamp was placed in the container on the "Universal Waste Lamp" label. Within one (1) week after the first lamp is placed in a container, notify the Engineer. The lamps and PCB containing ballast/capacitors, placed in properly labeled containers, will remain the property of the State. Place the container in an area where it is protected from damage and the elements. The Engineer will make arrangements to collect, transport, and dispose/recycle the container. The ballast/capacitor and lamp's removal and storage is subsidiary to this item.

Stencil each illumination assembly with the circuit, light and relay numbers in black paint on the roadway side of the pole at a 45 degree angle. The numbers shall be in 3" tall and begin 6' from the top of the foundation. This work will be considered subsidiary to this item.

County: Bexar

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--Item 613--

Use an electrically conducting protective thread lubricant compound (Crouse-Hinds TL-2, 0Z/Gedney STL, Thomas & Betts Kopr-Shield) for the pipe joint compound to coat the threads of the anchor bolts, prior to installation of nuts.

--Item 614--

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

For project specific shop drawings, furnish seven sets of drawings of the complete assembly in accordance with Item 441, "Steel Structures". Deliver shop drawings to the Director of Traffic Operations Division, Texas Department of Transportation, 125 East 11th Street, Austin, Texas 78701-2483.

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

For pre-approval and updates to previously approved standard shop drawings, furnish seven sets of drawings of the complete assembly in accordance with Item 441, "Steel Structures" to the Director of Traffic Operations Division, Texas Department of Transportation, 125 East 11th Street, Austin, Texas 78701-2483.

Copies of the standard shop drawings are on file with Traffic Operations Division, Bridge Division, and the Materials Section of Construction Division. Additional shop drawings for high mast illumination assemblies built in accordance with these drawings are not required. Pre-approved shop drawing manufacturers and assembly model numbers can be found on the Materials Produce list of the Construction Divisions (CST) web site.

Category is roadway illumination and electrical supplies.

--Item 618--

It might be necessary to cut concrete for placement of conduit. Saw cut existing concrete, remove the concrete from the steel reinforcement (bars or fabric) and bend the steel to install the conduit. After the conduit has been placed, bend the steel back to its original position and back-fill the trench with an approved concrete. This work is subsidiary to this Item.

The conduit depth for illumination under the City of San Antonio streets is 36 inches.

County: Bexar

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Use materials from Material Producers list as shown on the Construction Division's (CST) web site. Category is "Roadway Illumination and Electrical Supplies."

--Item 620--

For both transformer and shoe-base type illumination poles, provide double-pole breakaway fuse holder as shown on the Construction Division's (CST) materials producers list Category is "Roadway Illumination and Electrical Supplies." Fuse holder is shown on list under Items 610 & 620.

Provide 10 amp time delay fuses.

--Item 628--

Make all arrangements for electrical service, and compliance with local standards and practices for proper installations.

--Item 636--

The Contractor shall field verify vertical clearances prior to fabrication of bridge clearance sign panels.

--Item 644--

The wedge anchor system shown on State Standard Sheet SMD (TWT) is not allowed.

--Item 658--

CTB reflectors will not be paid for directly but will be considered subsidiary to the barrier.

--Item 666--

If TY II material is used (vs. an acrylic or epoxy) as the sealer for the TY I markings, place the TY II a minimum of 14 calendar days (to provide adequate curing) before placing the TY I markings.

--Item 672--

Place all adhesive material directly from the heated dispenser to the pavement. Do not use portable or non-heated containers. Use adhesive of sufficient thickness so that when the marker is pressed into the adhesive, 1/8" or more adhesive will remain under 100% of the marker. The adhesive should extend not less than 1/2" but not more than 1 1/2" beyond the perimeter of the marker.

--Item 677--

Obtain approval before using the mechanical method for the elimination of existing thermoplastic pavement markings.

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--Item 680--

Furnish and install all required materials and equipment necessary for the complete and operating traffic signal installation at the following intersections:

LP 1604 NBFR at US 90 EBFR

LP 1604 SBML at US 90 EBFR

LP 1604 NBFR at US 90 WBFR

LP 1604 SBML at US 90 WBFR

LP 1604 NBFR at Marbach Rd

LP 1604 SBFR at Marbach Rd

LP 1604 NBFR at Falcon Wolf

LP 1604 SBFR at Dove Canyon

The locations shown on the plans for signal pole foundations, controller foundations, conduit and other items may be adjusted to better fit field conditions as approved.

High pressure sodium lamps shall meet ANSI C78 requirements and shall be the type that extinguishes at the end of usable lamp life and remains extinguished without cycling. 400 watt lamps shall contain less than 4.0 MG of mercury. 250 watt lamps shall contain less than 3.0 MG of mercury. Lamps shall be lead free. Lamps shall pass the Federal Toxic Characteristic Leachate Procedure (TCLP). Lamp examples: OSRAM-Sylvania LU400/ECO Plus.

Demonstrate that the field wiring is properly installed, install the controller assembly, connect the wiring and turn on the controller.

All existing signal equipment with the exception of the signal controller and related equipment become the property of the Contractor. Deliver the controller and related equipment to the Signal shop, located at 4615 NW Loop 410 (corner of IH 410 and Callaghan Road) in San Antonio, Texas or to the Area Office as directed.

--Item 682--

Provide all signal heads from the same manufacturer. Pedestrian signals may be by a different manufacturer than the vehicle signal heads.

Cover all signal faces until placed in operation.

All pedestrian signal faces shall be single section LED Type. Die cast polycarbonate is acceptable in lieu of die cast aluminum. All mounting attachments shall be constructed of steel pipe and mounted as shown on the plans.

For all proposed mast arm pole assemblies, use mounting bracket assembly Option "C" as shown on the State Standard Sheet(s) "Single Mast Arm Assemblies".

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--Item 684--

Provide an extra 10' for each cable terminating in the controller cabinet. All cables shall be continuous without splices from terminal point to terminal point. All proposed signal cable shall be #12 AWG stranded copper.

--Item 686 & 687--

Provide all signal poles from the same manufacturer. Pedestrian poles may be from a different manufacturer.

--Item 688--

The sealant used for vehicle loop wire must be approved.

The pedestrian push button shall be raised or flush and a minimum of 2 inches in the smallest dimension. The force to activate the control shall be no greater than 5 lb/f. The button placement has to be coordinated with the concrete pad to access the button. The concrete pad (if required) shall be paid separately.

The pedestrian push button shall be wired with a 2/C#14 loop detector cable in lieu of a #12 A.W.G. XHHW wire.

--Item 730--

Mow full-width and hand trim the right of way, including newly seeded or sodded areas, when vegetation reaches a height of 16" or when directed. Removal of brush sprouts growing within guardrail, concrete barriers or at other locations where mowing or hand trimming is done within the limits of construction is required and subsidiary to this item. Mowing may be required more often in newly sodded or seeded areas than in other parts of the project because of the supplemental irrigation these areas receive and the resulting weed growth. Coordinate mowing to avoid rutting or compaction of the soil when mowing where supplemental irrigation is being used. Use mowing equipment that will not adversely affect soil retention blankets or mulches that have been applied. Work performed under this item does not replace the mowing required when placing permanent seeding in an area that has established temporary seeding as described in Article 164.3, Construction.

Mowing Locations are described below.

Phase 1

LP 1604: Mow Area between existing Loop 1604 NB and SB Mainlanes.
Mow Area outside existing Loop 1604 NB Mainlanes.
Total Acres = 44 ac

US 90: Mow Area outside existing US 90 WB Mainlanes.
Mow Area between existing US 90 WB and EB Mainlanes.
Total Acres = 40 ac

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Phase 2

LP 1604: Mow Area outside Proposed Loop 1604 Frontage Rd.
Mow area outside existing Loop 1604 NB Mainlanes.
Total Acres = 33 ac

US 90: Mow Area outside existing US 90 WB Mainlanes.
Mow Area between existing US 90 WB and EB Mainlanes.
Total Acres = 40 ac

--Item 734 & 738--

Perform Litter Removal and Cleaning and Sweeping Highways once a month or as directed.

Litter Removal

1 cycle per month = 39 cycles

TMS General Notes

“TMS” is abbreviation for Traffic Management System.

All references to the TRANSGUIDE mainframe are references to the TRANSGUIDE Lonestar computer network.

Coordinate the installation of permanent TMS equipment, conduit, manholes, ground boxes, etc. with the roadway construction phasing so as to prohibit any open cuts across new construction.

Salvage and deliver to TransGuide Maintenance department the metal lids from any existing TMS manholes removed during construction. Contact the TransGuide Maintenance supervisor at (210)731-5109 24 hrs in advance to schedule delivery. Delivery is subsidiary to the various bid items.

Provide a submittal compliance matrix with all TMS submittals.

Perform all TMS Prototype approval, Design approval, and Demonstration tests within the State of Texas.

Not previously used TMS equipment:

Test any TMS Equipment which has not previously been proven to be fully operational and fully compatible with the existing TRANSGUIDE software and hardware in the following manner:

County: Bexar**Highway: LP 1604**

Conduct tests for each type of TMS equipment, as directed by the Engineer, to determine compatibility of the equipment with the existing TRANSGUIDE Lonestar software and hardware. Prior to field installation, test one complete unit with all components to ensure that it is fully compatible with the existing TRANSGUIDE system. Mount the equipment to a trailer and connect in the field to an existing network cabinet. Make all hardware connections and configuration (in the operations center and in the field) and provide all incidentals (cable, connectors, etc.) to make the unit operational. Test all aspects of the system to show full functionality of the equipment and to show full compatibility with the TRANSGUIDE software and hardware. Failure to perform to the requirements of any test will be considered as a defect, and the equipment will be subject to rejection by the Engineer. Rejected equipment may be offered again for retest provided all noncompliance's have been corrected and retested by the Contractor and evidence thereof submitted to the Engineer. Testing is considered subsidiary to the particular bid item, with no payment made.

Partial payments:

The contractor will receive partial payments for the following TMS items unless otherwise approved by the Engineer.

CCTV Field Equipment

Fiber Optic Dynamic Message Sign System (TY-2)

Lane Control Signal System

Radar Vehicle Sensing Device

Install Wrong Way Driver Sign

Partial Payments Consist Of The Following:

Materials On Hand: The Contractor's paid amount is based on the invoices for the material received and stored in his/her yard.

Field Installation for CCTV Field Equipment, Fiber Optic Dynamic Message Sign System and LED Lane Control System: When the Contractor has completed the support structure, mounted the CCTV camera, installed the Fiber Optic Dynamic Message Sign System, installed the LED Lane Control System; the department will pay up to 80% of the bid item.

Stand-Alone Test: When the CCTV Field Equipment, Fiber Optic Dynamic Message Sign System and LED Lane Control System have passed the stand-alone test, the department will pay up to 95% of the bid item.

When the CCTV Field Equipment, Fiber Optic Dynamic Message Sign System and LED Lane Control System have passed the test portion of the final acceptance test, the Department will pay the final 5% of the bid item.

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Field Installation: When the Contractor has completed the installation of the Radar Vehicle Sensing Device (RVSD), the department will pay up to 80% of the bid item.

Stand-Alone Test: When the Radar Vehicle Sensing Device (RVSD) has passed the stand-alone test, the department will pay up to 95% of the bid item.

When the Radar Vehicle Sensing Device (RVSD) has passed the test portion of the Final Acceptance Test, the Department will pay the final 5% of the bid item.

Field Installation: When the Contractor has completed the installation of the LED Wrong Way Sign System, the department will pay up to 80% of the bid item.

Stand-Alone Test: When the LED Wrong Way Sign System has passed the stand-alone test, the department will pay up to 95% of the bid item.

When the LED Wrong Way Sign System has passed the test portion of the Final Acceptance Test, the Department will pay the final 5% of the bid item.

TMS Submittals:

Include in all TMS submittals the respective bid item (specification number and descriptive code). Indicate compliance on a paragraph by paragraph basis. Ensure that the statements claiming compliance reference the appropriate documentation and the referenced documentation supporting this claim is included with the submittal. Provide referenced documentation that contains the same numbering system as referenced in the submittal. For example, submittal item XXXX-XXXX, article 2.3, Paragraph 3, Meets Requirements (See Attachment "B"). The supporting documentation for Item XXXX-XXXX, article 2.3, Paragraph 3, would be titled as Attachment "B". Provide submittals with the same numbering system as stated in the specification. Failure to submit accordingly will result in rejection by the Engineer.

A TMS submittal will be considered as incomplete and therefore rejected, if it contains items listed as "being furnished by others". It is the responsibility of the Contractor to make sure the submittal addresses all items of the specification.

Provide the following TMS submittals (to be received by TxDOT San Antonio Traffic Management office) within the designated time. The time frame is in calendar days.

County: Bexar

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Item Description	Submitted By Contractor W/I Days After Authorization To Begin Work	Returned By State W/I Days
Equipment & Interconnect Wiring Schematic	30	30
LED LCS System	30	30
*CCTV Field Equipment	30	30
*CCTV Equipment Cabinet	30	30
*Camera Pole Structure	30	30
Radar Vehicle Sensing Device (RVSD)	30	30
Fiber Optic Cable (Single Mode)	60	30
Final Acceptance Plan	90	30

Submit those items designated with the (*), if any, together as a Package.

Submit the Final Acceptance Plan in electronic form.

The Contractor may submit items sooner if needed for construction, but no later than the dates stated above.

Provide, to the Engineer, as-built plans in MicroStation format (.dgn files) of the TMS portion of this project when the project is complete. TxDOT will provide the .dgn files of the TMS plan sheets. Update these files with all TMS items as ACTUALLY CONSTRUCTED in the field. Cost to provide as-built plans as described above is subsidiary to the various bid items with no direct payment.

Customize all training specifically for the TRANSGUIDE system; generic training will not be accepted on this project. Training materials and labor are subsidiary to the various Bid Items with no direct payment.

TMS equipment and conduit locations are approximate; the precise location is to be determined in the field, therefore the Contractor should not scale equipment off of plan sheets. Plan sheets are to be used for visual location (vicinity). Equipment locations may have to be adjusted due to conflicts with utilities or other structures, as approved by the Engineer. Do not obstruct the natural flow of water with Traffic Management equipment. In low water areas, place Traffic Management equipment on high side of ditch.

Replace or repair any existing to remain Traffic Management Equipment, conduit, cables, etc. damaged during construction, subsidiary to the various bid items with no direct payment. Replace all pavements, sidewalk, curb, rip-rap or any item damaged during construction, subsidiary to the various bid items with no direct payment.

Stencil structure numbers on all new TMS structures for permanent identification as directed by the Engineer.

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Ensure that all TMS equipment furnished and installed is completely compatible with existing hardware and software located within the TRANSGUIDE operations center (i.e. TRANSGUIDE central software). TRANSGUIDE is unique and complicated. The Contractor should contact the Traffic Management Engineer for details on the system network architecture.

All new TMS equipment and any existing TMS equipment that is relocated will be incorporated into the existing Network Management System, subsidiary to the various bid items.

Security against theft and vandalism of all Traffic Management equipment is the full responsibility of the Contractor until the date of final acceptance of the project by the Engineer.

Maintenance of all Traffic Management equipment furnished and installed on this project is the full responsibility of the Contractor until date of final acceptance of the project by the Engineer. All required documentation must be turned in before TxDOT will accept project for maintenance.

Submit a layout of equipment and interconnect wiring schematic for the TRANSGUIDE Control Center and field network equipment for approval by the Engineer prior to ordering materials. Consider all interconnect wiring within the TRANSGUIDE Control Center and all interconnect wiring for all equipment in the plans and described within the specifications as subsidiary to the various Bid Items with no direct payment.

Adjustments and/or removal of sign panels on OSB structures discovered to be necessary to mount LED LCS Heads will be considered as subsidiary to the various Bid Items with no direct payment, as directed by the Engineer.

Perform all TMS electrical work and provide all TMS electrical materials in accordance with the National Electrical Code.

The location of utilities (including TMS), either underground or overhead, if shown within the right of way are approximate and must be verified by the Contractor before beginning construction operations. TRANSGUIDE will provide the approximate location of TMS equipment; however, it is the responsibility of the Contractor to determine the depth of the Traffic Management conduit.

In accordance with the Underground Facility Damage Prevention Act (One Call Bill) the phone number for a utility locator is 1-800-545-6005. It is the Contractor's responsibility to make arrangements for utility locators as needed.

TxDOT (Traffic Management)	(210)731-5109
TxDOT (Sign Lighting)	(210)615-6995
TxDOT (Traffic Signal)	(210)615-5975

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In preparing holes for TMS posts and/or foundations, use care so as not to rupture existing drainage structures, sprinkler systems, electrical conduits and public utilities.

Place small signs on ramps and frontage roads at a lateral clearance of 8 feet to 12 feet from the edge of pavement or as directed by the Engineer.

When installing TMS cabinet foundations where rip-rap presently exists, use care in breaking out existing rip-rap. Do not break out area greater than is required for placement of the foundations. Replace broken out rip-rap with class "B" concrete to the exact slope, pattern and thickness of the existing rip-rap in accordance with item 432, subsidiary to the various bid items with no direct payment.

Work on TMS equipment that integrates into the operational system only between the hours of 12:00 am (midnight) and 4:00 am when the work requires an interface with the TRANSGUIDE operational system. Notify the TransGuide maintenance manager (210-731-5109) 48 hrs prior to this work.

The contractor is fully responsible for all necessary cross connects, provisioning and cabling in the TRANSGUIDE computer room and fiber network cabinets, subsidiary to the various bid items.

Notify the TransGuide maintenance manager (210-731-5109) one week in advance of any new fiber to existing fiber splicing operations, and of any fiber optic cable cuts as shown in plans.

Contractor shall connect all field wiring and make traffic signal controllers fully operational with the TransGuide system or as directed by the Engineer, subsidiary to the various bid items.

--Item 421 & 427--

Finish all TMS concrete structures with a Grade I Class B, Type I finish or as approved by the Engineer.

--Item 465—

Install 50 feet of fiber optic cable (single mode) inside all manholes or as shown on plans, racked to the side of manhole. Provide rack and hooks to support the cable, subsidiary to the various bid items with no direct payment. Partial construction of manholes will not be permitted unless adequate protection is provided by the contractor.

Protect all TMS equipment with metal beam guard fence, downstream anchor terminal and guard rail end treatment. Install metal beam guard fence with downstream anchor terminal and guard rail end treatment immediately after the creation of the TMS obstruction. Failure to do so will result in stoppage of all other work on the project until the installation of guard fence is complete.

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Do not install metal beam guard fence for TMS equipment until the exact location of the TMS equipment to be protected has been determined. Obtain prior approval from the engineer before the metal beam guard fence is installed and prior to ordering materials. Due to field conditions the quantity may be reduced. The engineer's approval does not relieve the contractor of his/her responsibility for correctness. Any adjustments to TMS equipment or metal beam guard fence with GET and DAT will be at no cost to the department.

---Item 618---

Make all TMS underground conduit bends of 45 degrees or more in PVC systems, including bends into ground boxes, with rigid metal conduit, subsidiary to the various bid items with no direct payment. Ensure that grounding is in accordance with ED sheets.

Steel case all TMS PVC bores whenever shown on plans, subsidiary to the item "conduit" with no direct payment for labor or materials.

Install a permanent pull cord all new TMS conduit and innderducts which do not contain cables. Provide pull cords that have a minimum tensile strength of 1250 lbs. and are flat with footage markings for determining length installed. Provide pull cords that are water-resistant and resistant to environmental conditions within conduit. Pull cords installed will be considered incidental to the various bid items with no direct payment made for labor and materials.

Install a single 1/C #14 AWG insulated wire (tracer wire) in TMS conduit that does not contain copper cables or contains fiber optic cable only and no copper cables, for the purposed of locating that conduit after installation, subsidiary to the item "conduit".

TMS layout sheets may show multiple TMS cabinets at a particular location, however the conduit & cable which interconnects the equipment is not shown and is not included in the quantities unless stated otherwise on plan sheets.

When installing TMS conduit in areas where riprap presently exists, use care and do not break out more riprap than is necessary for placement of conduit. Replace riprap with concrete to the exact slope, pattern and thickness of existing riprap, subsidiary to the various bid items with no direct payment.

Install TMS concrete encased conduit (except for Multi-duct conduit system) with a minimum of 2 inches of encasement Provide a template at 5 foot intervals to ensure that the conduit remains in its original position as approved by the engineer. Templates are considered subsidiary to the item "conduit" with no direct payment.

TMS bore lengths shown on plan sheets are approximate. Length of bore is measured starting 3 foot min. from each edge of pavement, curb and gutter, or any unforeseen existing utility, and balance of conduit run is measured as trenched conduit.

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Conduit required in the temporary TMS phase will be considered as subsidiary. Due to unknown factors when determining best line of sight for the Wireless network, lengths of conduit will be determined in the field.

Accessories required for conduit mounted to bridge will be subsidiary to item 618 and work will be done as specified in the ED standard sheets or as directed by the engineer. Conduit install in sidewalks or bridge deck will be installed as specified in plans or as directed by the engineer.

--Item 620—

Wire nuts for TMS installation are not permitted.

In locations where TMS service conductors are routed through ground boxes with other cables, install a section of flexible PVC conduit in the ground box. Route the service conductors through this conduit to keep it separated from other cables. Isolate all other cables in the ground box in the same manner. Furnishing and installing the flexible PVC conduit is subsidiary to the various bid items with no direct payment.

To ensure immediate identification, consistently color code and permanently identify all TMS power conductors, twisted wire pair cables, shielded cables, control cables, and fiber optic cables in all manholes, ground boxes, and at all termination points and splices. Submit a chart or list identifying all cables and conductors in a logical and sequential manner.

Install all TMS conductors and cables continuous and without splices from terminal point to terminal point unless otherwise shown on the plans.

The TMS plans show the conduits numbered and specified cables in specific conduits. The purpose of these notes is to instruct the contractor on how to group the cables in the conduits and not to specify the exact conduit to carry the cables. The numbering system is arbitrary and may be set by the contractor.

Provide an electrical conductor insulated ground in accordance with the National Electrical Code for any TMS conduit containing electrical conductors (insulated).

Test all TMS circuits to be clear of faults, grounds or open circuits.

--Item 624—

Place concrete aprons around all TMS ground boxes installed in sodded areas or as directed/approved by the Engineer.

Complete construction of TMS ground boxes within 48 hours after beginning construction for that ground box.

County: Bexar

Highway: LP 1604

Provide TMS ground boxes as shown as state standard ED sheets. Construct the cover of polymer concrete. Legibly imprint the cover with the letters “TMS” – “Danger High Voltage” in minimum 1 inch letters.

--Item 628—

Construct the TMS electrical services as shown on the TMS Electrical Service Data sheets.

--Item 6005-- FINAL ACCEPTANCE PLAN

The 60 day test will begin only when all TMS equipment installation, cabling, wiring, testing, field work, TRANSGUIDE operations center work, etc. for the entire project is completed and acceptable to TxDOT. Partial testing is not allowed.

--Item 6010 -- CCTV FIELD EQUIPMENT

CCTV Field Equipment standard manufacturers’ warranty will not begin until the Final Acceptance Test begins. Any CCTV Field Equipment not having 100% of the standard manufacturer’s warranty remaining when Final Acceptance testing begins will be rejected by TxDOT.

Ensure that all underground coaxial cable is RG-11 (double shielded) or as recommended by the manufacturer of the CCTV Field Equipment.

Furnish and install CCTV communication/power cables recommended or supplied by the manufacturer of CCTV Field Equipment.

If no recommendation for communication/power cables is made by manufacturer of CCTV Field Equipment, the following cable to conduit assignment will be followed:

Conduit #1: Install coaxial drop cable and CCTV control cable.

Conduit #2: Install CCTV power cable.

If the CCTV Field Equipment power cable carries 24 VDC, then the power cable may be installed in the same conduit with the coaxial drop cable. If the CCTV control cables carry 115 VAC, then the control cables must be installed with the 115 VAC power cable in conduit #2.

In cases where the CCTV Field Equipment and conduit are to be mounted on an existing or proposed structure, review the structure and submit the mounting details to the engineer for approval.

--Item 6064 – ITS POLE

The camera pole may be twelve (12) sided

--Item 6071—FIBER OPTIC CABLE (SINGLE MODE)

This project requires the placement of fiber optic cable. In situations where the new fiber optic cable placed by the contractor is spliced to existing TxDOT fiber optic cable, it is the

County: Bexar**Highway: LP 1604**

responsibility of the contractor to ensure that the new fiber optic cable is compatible with the existing TxDOT fiber optic cable. Splicing fiber optic cable of different manufacturers may result in signal degradation as measured through splice loss and DB loss per mile. The contractor must supply documentation of the compatibility of the fiber types with the fiber optic cable submittals. If testing of the new fiber optic cable after installation shows evidence of signal degradation outside of tolerable specifications due to the use of different fiber types, the contractor is responsible for replacing the newly installed fiber optic cable with material that results in signal quality with specifications. A TxDOT representative will be present while the contractor is splicing fibers from two different manufacturers.

The contractor is responsible for testing any existing Fiber Optic cable strands that will be used for the communication links back to TransGuide or to an Aggregation Point (any existing fiber back to TransGuide or to an Aggregation Point to which new fiber will be spliced) for new or relocated TMS equipment, identifying which fibers can be used and ensuring that the Fiber Optic cable meets requirements stated in Fiber Optic Cable specification for dB loss.

If any existing TMS fiber optic cable (that is to remain or to be re-used) is damaged during construction, it will be repaired within 48 hours after detection of damage. The Contractor will be required to test the fiber and provide such tests to the Engineer for determining suitability for splicing. If no splice is permitted, the Contractor will replace the entire run (approx. 15,000 ft or actual length) at no direct cost to the Department. All fiber provided, tested and spliced will be in accordance with special specification "Fiber Optic Cable (Single Mode)".

Install 50 feet of slack of fiber optic cable in each manhole that fiber passes through, racked to side of manholes using support hooks. Rack and hooks are subsidiary to the item manhole with no direct payment.

Use ST connectors where fiber optic cables terminate in TMS equipment.

All fiber optic cable splices and connectors are subsidiary to the item "Fiber Optic Cable (Single Mode)", with no direct payment.

CONTROL : 2452-01-059, ETC
PROJECT : NH 1602(550), ETC
HIGHWAY : SL 1604
COUNTY : BEXAR

TEXAS DEPARTMENT OF TRANSPORTATION

GOVERNING SPECIFICATIONS AND SPECIAL PROVISIONS

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

STANDARD SPECIFICATIONS: ADOPTED BY THE TEXAS DEPARTMENT OF
----- TRANSPORTATION NOVEMBER 1, 2014.
STANDARD SPECIFICATIONS ARE INCORPORATED
INTO THE CONTRACT BY REFERENCE.

ITEMS 1 TO 9 INCL., GENERAL REQUIREMENTS AND COVENANTS
ITEM 100 PREPARING RIGHT OF WAY (100)
ITEM 104 REMOVING CONCRETE
ITEM 105 REMOVING TREATED AND UNTREATED BASE AND ASPHALT PAVEMENT
ITEM 110 EXCAVATION (132)
ITEM 132 EMBANKMENT (100) (160) (204) (210) (216) (260) (400)
ITEM 161 COMPOST (160)
ITEM 164 SEEDING FOR EROSION CONTROL (162) (166) (168)
ITEM 168 VEGETATIVE WATERING
ITEM 169 SOIL RETENTION BLANKETS
ITEM 216 PROOF ROLLING (210)
ITEM 247 FLEXIBLE BASE (105) (204) (210) (216) (520)
ITEM 275 CEMENT TREATMENT (ROAD-MIXED) (132) (204) (210) (216) (247)
(300) (310) (520)
ITEM 276 CEMENT TREATMENT (PLANT-MIXED) (204) (210) (216) (247) (300)
(520)
ITEM 310 PRIME COAT (300) (316)
ITEM 315 FOG SEAL (204) (300) (316)
ITEM 316 SEAL COAT (210) (300) (302) (340) (520)
ITEM 341 DENSE-GRADED HOT-MIX ASPHALT (300) (301) (320) (520) (585)
ITEM 344 SUPERPAVE MIXTURES (300) (301) (320) (520) (585)
ITEM 346 STONE-MATRIX ASPHALT (300) (301) (320) (520) (585)
ITEM 347 THIN OVERLAY MIXTURES (TOM) (300) (301) (320) (520) (585)
ITEM 354 PLANING AND TEXTURING PAVEMENT
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 401 FLOWABLE BACKFILL (421)
ITEM 402 TRENCH EXCAVATION PROTECTION
ITEM 403 TEMPORARY SPECIAL SHORING (410) (411) (423)

ITEM 410 SOIL NAIL ANCHORS (421)(431)(440)
 ITEM 411 ROCK NAIL ANCHORS (421)(431)(440)
 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)(780)
 ITEM 423 RETAINING WALLS (110)(132)(216)(400)(416)(420)(421)(424)
 (440)(445)(5000)
 ITEM 425 PRECAST PRESTRESSED CONCRETE STRUCTURAL MEMBERS (409)
 (420)(421)(424)(426)(427)(434)(440)(442)(445)
 ITEM 429 CONCRETE STRUCTURE REPAIR (421)(431)(440)(780)
 ITEM 432 RIPRAP (247)(420)(421)(431)(440)
 ITEM 434 BRIDGE BEARINGS (420)(441)(442)(445)(446)(449)
 ITEM 442 METAL FOR STRUCTURES (441)(445)(446)(447)(448)
 ITEM 450 RAILING (420)(421)(422)(424)(440)(441)(442)(445)(446)
 (448)
 ITEM 454 BRIDGE EXPANSION JOINTS (429)(442)(785)
 ITEM 459 GABIONS AND GABION MATTRESSES
 ITEM 462 CONCRETE BOX CULVERTS AND DRAINS (400)(402)(403)(420)
 (421)(422)(424)(440)(464)(476)
 ITEM 464 REINFORCED CONCRETE PIPE (400)(402)(403)(467)(476)
 ITEM 465 JUNCTION BOXES, MANHOLES, AND INLETS (400)(420)(421)(424)
 (440)(476)
 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 471 FRAMES, GRATES, RINGS, AND COVERS (441)(445)(448)(465)
 ITEM 474 LINEAR DRAINS (400)(420)(421)(440)(445)(460)(471)
 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 481 PIPE FOR DRAINS (400)
 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 528 COLORED TEXTURED CONCRETE AND LANDSCAPE PAVERS (132)(247)
 (275)(401)(420)(421)(440)
 ITEM 529 CONCRETE CURB, GUTTER, AND COMBINED CURB AND GUTTER (360)
 (420)(421)(440)
 ITEM 530 INTERSECTIONS, DRIVEWAYS, AND TURNOUTS (247)(260)(263)
 (275)(276)(292)(316)(330)(334)(340)(360)(421)(440)
 ITEM 531 SIDEWALKS (104)(360)(420)(421)(440)(530)
 ITEM 540 METAL BEAM GUARD FENCE (421)(441)(445)(529)
 ITEM 542 REMOVING METAL BEAM GUARD FENCE
 ITEM 543 CABLE BARRIER SYSTEM (421)(658)
 ITEM 544 GUARDRAIL END TREATMENTS
 ITEM 545 CRASH CUSHION ATTENUATORS (421)
 ITEM 550 CHAIN LINK FENCE (421)(445)

ITEM 556 PIPE UNDERDRAINS (402) (432)
 ITEM 610 ROADWAY ILLUMINATION ASSEMBLIES (416) (421) (432) (441) (442)
 (445) (449) (614) (616) (618) (620) (622) (624) (628)
 ITEM 617 TEMPORARY ROADWAY ILLUMINATION (416) (610) (613) (614) (618)
 (620) (621) (622) (624) (627) (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 SIGNS (643)
 ITEM 644 SMALL ROADSIDE SIGN 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 654 SIGN WALKWAYS (441) (445)
 ITEM 658 DELINEATOR AND OBJECT MARKER ASSEMBLIES (445)
 ITEM 662 WORK ZONE PAVEMENT MARKINGS (666) (668) (672) (677)
 ITEM 666 RETROREFLECTORIZED PAVEMENT MARKINGS (316) (502) (662) (677)
 (678)
 ITEM 672 RAISED PAVEMENT MARKERS (677) (678)
 ITEM 677 ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS (300)
 (302) (316)
 ITEM 678 PAVEMENT SURFACE PREPARATION FOR MARKINGS (677)
 ITEM 680 HIGHWAY TRAFFIC SIGNALS (416) (610) (618) (620) (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) (656) (680) (682) (684) (686) (687)
 (688)
 ITEM 682 VEHICLE AND PEDESTRIAN SIGNAL HEADS
 ITEM 684 TRAFFIC SIGNAL CABLES
 ITEM 686 TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL) (416) (421) (441)
 (442) (445) (449)
 ITEM 687 PEDESTAL POLE ASSEMBLIES (445) (449) (656) (682)
 ITEM 688 PEDESTRIAN DETECTORS AND VEHICLE LOOP DETECTORS (618)
 (624) (682) (684)
 ITEM 690 MAINTENANCE OF TRAFFIC SIGNALS
 ITEM 730 ROADSIDE MOWING
 ITEM 734 LITTER REMOVAL
 ITEM 740 GRAFFITI REMOVAL AND ANTI-GRAFFITI COATING

SPECIAL PROVISIONS: SPECIAL PROVISIONS WILL GOVERN AND TAKE
 ----- PRECEDENCE OVER THE SPECIFICATIONS ENUMERATED
 HEREON WHEREVER IN CONFLICT THEREWITH.

REQUIRED CONTRACT PROVISIONS, FEDERAL-AID CONSTRUCTION CONTRACTS
 (FORM FHWA 1273, MAY, 2012)

WAGE RATES

SPECIAL PROVISION "SCHEDULE OF LIQUIDATED DAMAGES" (000---001)

SPECIAL PROVISION "NONDISCRIMINATION" (000---002)

SPECIAL PROVISION "CERTIFICATION OF NONDISCRIMINATION IN EMPLOYMENT"
(000---003)

SPECIAL PROVISION "NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO
ENSURE EQUAL EMPLOYMENT OPPORTUNITY" (000---004)

SPECIAL PROVISION "STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY
CONSTRUCTION CONTRACT SPECIFICATIONS" (000---005)

SPECIAL PROVISION "ON-THE-JOB TRAINING PROGRAM" (000---006)

SPECIAL PROVISION "DISADVANTAGED BUSINESS ENTERPRISE IN FEDERAL AID
CONTRACTS" (000---007)

SPECIAL PROVISION "IMPORTANT NOTICE TO CONTRACTORS" (000---010)

SPECIAL PROVISION "CARGO PREFERENCE ACT REQUIREMENTS IN FEDERAL AID
CONTRACTS" (000---241)

SPECIAL PROVISION "CERTIFICATE OF INTERESTED PARTIES (FORM 1295)"
(000---249)

SPECIAL PROVISION "IMPORTANT NOTICE TO CONTRACTORS" (000---323)

SPECIAL PROVISION TO ITEM 2 (002---004)

SPECIAL PROVISION TO ITEM 6 (006---001)

SPECIAL PROVISIONS TO ITEM 7 (007---001) (007---003) (007---004)

SPECIAL PROVISIONS TO ITEM 8 (008---006) (008---017)

SPECIAL PROVISION TO ITEM 300 (300---009)

SPECIAL PROVISION TO ITEM 421 (421---002)

SPECIAL PROVISION TO ITEM 506 (506---003)

SPECIAL PROVISION TO ITEM 543 (543---001)

SPECIAL PROVISION TO SPECIAL SPECIFICATION ITEM 6029 (6029--002)

SPECIAL SPECIFICATIONS:

ITEM 5000 GEOGRID REINFORCEMENT FOR EMBANKMENTS

ITEM 6001 PORTABLE CHANGEABLE MESSAGE SIGN

ITEM 6005 TESTING, TRAINING, DOCUMENTATION, FINAL ACCEPTANCE, AND
WARRANTY

ITEM 6006 ELECTRONIC COMPONENTS

ITEM 6010 CCTV FIELD EQUIPMENT (6005) (6006)

ITEM 6025 RADAR PRESENCE DETECTION DEVICE

ITEM 6027 PREPARATION OF EXISTING CONDUITS, GROUND BOXES, OR
MANHOLES (465) (618) (624)

ITEM 6028 INSTALLATION OF DYNAMIC MESSAGE SIGN SYSTEM (416) (432)
(441) (445) (449) (618) (620) (650) (654) (656)

ITEM 6029 RADAR VEHICLE SENSING DEVICE (RVSD) (6005) (6006)

ITEM 6056 PREFORMED IN-LANE (TRANSVERSE)/CENTERLINE RUMBLE STRIPS

ITEM 6057 RADAR ADVANCE DETECTION DEVICE (RADD)

ITEM 6064 INTELLIGENT TRANSPORTATION SYSTEM (ITS) POLE WITH CABINET
(416) (421) (440) (441) (442) (445) (449) (496) (618) (620) (740)

ITEM 6071 FIBER OPTIC CABLE

ITEM 6072 MODULAR GLARE SCREENS FOR HEADLIGHT BARRIER

ITEM 6082 LED LANE CONTROL SYSTEM

ITEM 6096 WRONG WAY DRIVER SIGN(S) AND RADAR EQUIPMENT (618) (620)
(644) (656)

ITEM 7087 WATER MAINS AND SERVICE LINES

GENERAL: THE ABOVE-LISTED SPECIFICATION ITEMS ARE THOSE UNDER WHICH

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

Special Specification 5000

Geogrid Reinforcement for Embankments



1. DESCRIPTION

Furnish and install geogrid reinforcement.

2. MATERIALS

Furnish geogrid as follows.

- Type A. Geogrid for embankment meeting the following requirements.

Table1
Geogrid Requirements

Property	Test Method	Specification Limit
Percent Open Area	Tex-621-J	> 50 %
Long-term Design Allowable Strength (LTDA)	Furnish manufacturer's certification that material has been tested in accordance with GRI GG-4*	≥ 1300 lb./ft.

* Determination of the Long-term Design Strength of Stiff Geogrids (GG4a) and the Determination of the Long-term Design Strength of Flexible Geogrids (GG4b) test procedures by the Geosynthetic Research Institute (GRI) at Drexel University, Philadelphia, PA.

- Type B. Geogrid for embankment meeting requirements specified on the plans.

3. CONSTRUCTION

Prepare subgrade. Install geogrid in accordance with lines and grades shown on the plans. Orient the geogrid such that the strong direction runs perpendicular to the face of the embankment. Place geogrid adjacent to successive placements with no laps or splices in the geogrid treatment perpendicular to the face of the embankment. Cut geogrid as necessary to maintain complete coverage around corners. Use installation methods that keep the geogrid taut throughout the backfilling section. Use anchor pins as necessary to secure the geogrid. Excessive deformation or damage during installation will not be accepted.

Place fill material in lift thicknesses and to the compaction requirements shown on the plans. A minimum fill cover of 6 in. is required to operate tracked construction equipment on the geogrid. If the underlying material can support the loads and if approved by the Engineer, operation of rubber tired equipment directly on the geogrid is allowed as long as the speed is limited to less than 5 mph. Turn equipment gradually to avoid damage to the geogrid. All geogrid sections damaged by construction activity will be replaced at the Contractor's expense. Lap all repaired sections a minimum of 3 ft. in all directions.

4. MEASUREMENT

Geogrid will be measured by the square yard of each layer in its final position. No measurement will be made for lapping of material, ties and grid anchor pins.

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 "Geogrid Reinforcement for Embankment" of the type

shown. This price is full compensation for furnishing all labor, materials, freight, tools, equipment, and incidentals, and for doing all the work involved in placement of the grid, complete in place.

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