

# NOTIFICATION OF ADDENDUM

## ADDENDUM NO. 2

**DATED 6/22/2022**

<b>Control</b>	<b>0598-02-112</b>
<b>Project</b>	<b>C 598-2-112</b>
<b>Highway</b>	<b>SH 288</b>
<b>County</b>	<b>BRAZORIA</b>

Ladies/Gentlemen:

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

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

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

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

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

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

SUBJECT: PLANS AND PROPOSAL ADDENDUMS

PROJECT: C 598-2-112

CONTROL: 0598-02-112

COUNTY: BRAZORIA

LETTING: 06/29/2022

REFERENCE NO: 0621

**PROPOSAL ADDENDUMS**

- 
- PROPOSAL COVER
  - X BID INSERTS (SH. NO.: 13 and 14 )
  - GENERAL NOTES (SH. NO.: )
  - X SPEC LIST (SH. NO.: 4 )
  - SPECIAL PROVISIONS: )
  - ADDED: )
- DELETED:
- X SPECIAL SPECIFICATIONS:
  - ADDED: 4021
- DELETED:
- X OTHER: PLAN SHEET AND OTHER CHANGES

DESCRIPTION OF ABOVE CHANGES  
(INCLUDING PLANS SHEET CHANGES)

\*\*\*\*\* BID INSERTS \*\*\*\*\*

ADDED BID ITEM: 4021-6001

\*\*\*\*\* SPECIFICATION LIST \*\*\*\*\*

ADDED SPECIAL SPECIFICATION 4021

\*\*\*\*\* PLAN SHEET REVISIONS \*\*\*\*\*

SHEET 9S (ESTIMATE & QUANTITY): ADDED BID ITEM 4021-6001

SHEET 238: ADDED BID ITEM 4021-6001 TO ESTIMATED BRIDGE QUANTITIES

SHEET 265: ADDED BID ITEM 4021-6001 TO ESTIMATED BRIDGE QUANTITIES

Printed Name of Authorized Signer: \_\_\_\_\_

Signature of Authorized Signer: \_\_\_\_\_ Date: \_\_\_\_\_

PROJECT C 598-2-112  
 COUNTY BRAZORIA

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	6002		PREPARING ROW  DOLLARS and CENTS	STA	51.310	1
	104	6001		REMOVING CONC (PAV)  DOLLARS and CENTS	SY	29,454.000	2
	104	6010		REMOVING CONC (RIPRAP)  DOLLARS and CENTS	CY	15.000	3
	105	6076		REMOV STAB BASE AND ASPH PAV (2"-15")  DOLLARS and CENTS	SY	59,956.000	4
	110	6001		EXCAVATION (ROADWAY)  DOLLARS and CENTS	CY	46,267.000	5
	132	6006		EMBANKMENT (FINAL)(DENS CONT)(TY C)  DOLLARS and CENTS	CY	221,020.000	6
	132	6035		EMBANK(FINAL)(DC)(TY E)(CSBE)  DOLLARS and CENTS	CY	38,758.000	7
	132	6036		EMB(FNL)(DC)(TYE)(CSBE)(RWALL FND IMPR  DOLLARS and CENTS	CY	7,893.000	8
	162	6002		BLOCK SODDING  DOLLARS and CENTS	SY	105,584.000	9
	162	6003		STRAW OR HAY MULCH  DOLLARS and CENTS	SY	263,943.000	10

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	164	6051		DRILL SEED (TEMP)(WARM OR COOL) DOLLARS and CENTS	SY	263,943.000	11
	164	6066		DRILL SEEDING (PERM)(WARM OR COOL) DOLLARS and CENTS	SY	158,373.000	12
	166	6001		FERTILIZER DOLLARS and CENTS	AC	72.560	13
	168	6001		VEGETATIVE WATERING DOLLARS and CENTS	MG	8,708.500	14
	260	6006		LIME TRT (EXST MATL) (6") DOLLARS and CENTS	SY	103,963.000	15
	260	6012		LIME(HYD,COM OR QK)(SLRY)OR QK(DRY) DOLLARS and CENTS	TON	1,404.000	16
	276	6224		CEM TRT(PLNT MX) (CL N)(TY E)(GR 4)(6") DOLLARS and CENTS	SY	103,963.000	17
	292	6002		ASPHALT STAB BASE (GR 2)(PG 64) DOLLARS and CENTS	TON	5,718.000	18
	305	6033		SALV, HAUL & STKPL RCL APH PV (0 TO 8") DOLLARS and CENTS	SY	59,956.000	19
	360	6004		CONC PVMT (CONT REINF - CRCP) (10") DOLLARS and CENTS	SY	44,927.000	20
	360	6006		CONC PVMT (CONT REINF - CRCP) (12") DOLLARS and CENTS	SY	52,145.000	21
	400	6001		STRUCT EXCAV DOLLARS and CENTS	CY	7,893.000	22

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	400	6005		CEM STABIL BKFL  DOLLARS and CENTS	CY	4,361.000	23
	400	6009		CEMENT STAB BACKFILL (INLET OR MH)  DOLLARS and CENTS	CY	330.000	24
	401	6001		FLOWABLE BACKFILL  DOLLARS and CENTS	CY	140.000	25
	402	6001		TRENCH EXCAVATION PROTECTION  DOLLARS and CENTS	LF	6,750.000	26
	403	6001		TEMPORARY SPL SHORING  DOLLARS and CENTS	SF	11,523.000	27
	416	6002		DRILL SHAFT (24 IN)  DOLLARS and CENTS	LF	168.000	28
	416	6004		DRILL SHAFT (36 IN)  DOLLARS and CENTS	LF	3,696.000	29
	416	6012		DRILL SHAFT (84 IN)  DOLLARS and CENTS	LF	512.000	30
	416	6015		DRILL SHAFT (NON - REINFORCED) (12 IN)  DOLLARS and CENTS	LF	14.000	31
	416	6029		DRILL SHAFT (RDWY ILL POLE) (30 IN)  DOLLARS and CENTS	LF	370.000	32
	420	6013		CL C CONC (ABUT)  DOLLARS and CENTS	CY	292.600	33
	420	6037		CL C CONC (COLUMN)  DOLLARS and CENTS	CY	127.600	34

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	420	6082		CL F CONC (CAP)  DOLLARS and CENTS	CY	350.000	35
	422	6001		REINF CONC SLAB  DOLLARS and CENTS	SF	39,828.000	36
	423	6012		RETAINING WALL (MSE) (WAVE SCHEME)  DOLLARS and CENTS	SF	64,505.000	37
	425	6028		PRESTR CONC U - BEAM (U54)  DOLLARS and CENTS	LF	3,829.870	38
	432	6001		RIPRAP (CONC)(4 IN)  DOLLARS and CENTS	CY	715.000	39
	432	6002		RIPRAP (CONC)(5 IN)  DOLLARS and CENTS	CY	10.000	40
	432	6003		RIPRAP (CONC)(6 IN)  DOLLARS and CENTS	CY	15.000	41
	432	6045		RIPRAP (MOW STRIP)(4 IN)  DOLLARS and CENTS	CY	313.000	42
	450	6023	001	RAIL (TY SSTR)  DOLLARS and CENTS	LF	14,240.000	43
	454	6018		SEALED EXPANSION JOINT (4 IN) (SEJ - M)  DOLLARS and CENTS	LF	274.000	44
	460	6005		CMP (GAL STL 36 IN)  DOLLARS and CENTS	LF	814.000	45
	462	6003	002	CONC BOX CULV (4 FT X 2 FT)  DOLLARS and CENTS	LF	80.000	46

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	462	6008	002	CONC BOX CULV (5 FT X 4 FT) DOLLARS and CENTS	LF	1,449.000	47
	464	6005	001	RC PIPE (CL III)(24 IN) DOLLARS and CENTS	LF	1,125.000	48
	464	6007	001	RC PIPE (CL III)(30 IN) DOLLARS and CENTS	LF	756.000	49
	464	6008	001	RC PIPE (CL III)(36 IN) DOLLARS and CENTS	LF	1,711.000	50
	464	6009	001	RC PIPE (CL III)(42 IN) DOLLARS and CENTS	LF	1,043.000	51
	464	6010	001	RC PIPE (CL III)(48 IN) DOLLARS and CENTS	LF	98.000	52
	465	6012	001	JCTBOX(COMPL)(PJB)(8FTX8FT) DOLLARS and CENTS	EA	9.000	53
	465	6166	001	INLET (COMPL)(TY AAD) DOLLARS and CENTS	EA	7.000	54
	465	6172	001	INLET (COMPL)(TY AZR2G) DOLLARS and CENTS	EA	20.000	55
	465	6173	001	MANH (COMPL)(TY A) DOLLARS and CENTS	EA	26.000	56
	465	6175	001	INLET (COMPL)(CURB)(TY C) DOLLARS and CENTS	EA	9.000	57
	466	6180		WINGWALL (PW - 1) (HW=5 FT) DOLLARS and CENTS	EA	2.000	58

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	467	6184		SET (TY I)(S= 5 FT)(HW= 5 FT)(6:1) (P) DOLLARS and CENTS	EA	1.000	59
	467	6390		SET (TY II) (24 IN) (RCP) (4: 1) (C) DOLLARS and CENTS	EA	2.000	60
	467	6444		SET (TY II) (36 IN) (CMP) (6: 1) (P) DOLLARS and CENTS	EA	3.000	61
	467	6454		SET (TY II) (36 IN) (RCP) (6: 1) (P) DOLLARS and CENTS	EA	3.000	62
	480	6001		CLEAN EXIST CULVERTS DOLLARS and CENTS	EA	1.000	63
	496	6002		REMOV STR (INLET) DOLLARS and CENTS	EA	11.000	64
	496	6003		REMOV STR (MANHOLE) DOLLARS and CENTS	EA	1.000	65
	496	6004		REMOV STR (SET) DOLLARS and CENTS	EA	21.000	66
	496	6006		REMOV STR (HEADWALL) DOLLARS and CENTS	EA	2.000	67
	496	6007		REMOV STR (PIPE) DOLLARS and CENTS	LF	4,284.000	68
	500	6001		MOBILIZATION DOLLARS and CENTS	LS	1.000	69
	502	6001	008	BARRICADES, SIGNS AND TRAFFIC HAN- DLING DOLLARS and CENTS	MO	16.000	70



ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	506	6002	005	ROCK FILTER DAMS (INSTALL) (TY 2) DOLLARS and CENTS	LF	1,110.000	71
	506	6011	005	ROCK FILTER DAMS (REMOVE) DOLLARS and CENTS	LF	1,110.000	72
	506	6020	005	CONSTRUCTION EXITS (INSTALL) (TY 1) DOLLARS and CENTS	SY	624.000	73
	506	6024	005	CONSTRUCTION EXITS (REMOVE) DOLLARS and CENTS	SY	624.000	74
	506	6036	005	SANDBAGS FOR EROSION CONTROL (6") DOLLARS and CENTS	LF	276.000	75
	506	6038	005	TEMP SEDMT CONT FENCE (INSTALL) DOLLARS and CENTS	LF	1,153.000	76
	506	6039	005	TEMP SEDMT CONT FENCE (REMOVE) DOLLARS and CENTS	LF	1,153.000	77
	506	6041	005	BIODEG EROSN CONT LOGS (INSTL) (12") DOLLARS and CENTS	LF	1,205.000	78
	506	6043	005	BIODEG EROSN CONT LOGS (REMOVE) DOLLARS and CENTS	LF	1,205.000	79
	508	6001		CONSTRUCTING DETOURS DOLLARS and CENTS	SY	19,970.000	80
	512	6013		PORT CTB (DES SOURCE)(SGL SLP)(TY 1) DOLLARS and CENTS	LF	13,050.000	81
	512	6025		PORT CTB (MOVE)(SGL SLP)(TY 1) DOLLARS and CENTS	LF	10,950.000	82

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	512	6037		PORT CTB (STKPL)(SGL SLP)(TY 1) DOLLARS and CENTS	LF	13,050.000	83
	529	6005		CONC CURB (MONO) (TY II) DOLLARS and CENTS	LF	11,702.000	84
	530	6004		DRIVEWAYS (CONC) DOLLARS and CENTS	SY	116.000	85
	545	6003		CRASH CUSH ATTEN (MOVE & RESET) DOLLARS and CENTS	EA	4.000	86
	545	6005		CRASH CUSH ATTEN (REMOVE) DOLLARS and CENTS	EA	6.000	87
	545	6007		CRASH CUSH ATTEN (INSTL)(L)(N)(TL3) DOLLARS and CENTS	EA	10.000	88
	610	6010		REMOVE RD IL ASM (U/P) DOLLARS and CENTS	EA	16.000	89
	610	6104		IN RD IL (U/P) (TY 1) (150W EQ) LED DOLLARS and CENTS	EA	8.000	90
	610	6286		IN RD IL (TY SA) 50T-8 (400W EQ) LED DOLLARS and CENTS	EA	37.000	91
	618	6046		CONDT (PVC) (SCH 80) (2") DOLLARS and CENTS	LF	8,580.000	92
	618	6047		CONDT (PVC) (SCH 80) (2") (BORE) DOLLARS and CENTS	LF	2,215.000	93
	618	6064		CONDT (RM) (1") DOLLARS and CENTS	LF	180.000	94

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	620	6007		ELEC CONDR (NO.8) BARE DOLLARS and CENTS	LF	6,240.000	95
	620	6008		ELEC CONDR (NO.8) INSULATED DOLLARS and CENTS	LF	12,470.000	96
	624	6001		GROUND BOX TY A (122311) DOLLARS and CENTS	EA	6.000	97
	624	6002		GROUND BOX TY A (122311)W/APRON DOLLARS and CENTS	EA	10.000	98
	628	6047		ELC SRV TY A 240/480 060(NS)SS(E)TP(O) DOLLARS and CENTS	EA	3.000	99
	636	6002	001	ALUMINUM SIGNS (TY G) DOLLARS and CENTS	SF	686.000	100
	644	6001		IN SM RD SN SUP&AM TY10BWG(1)SA(P) DOLLARS and CENTS	EA	34.000	101
	644	6002		IN SM RD SN SUP&AM TY10BWG(1)SA(P- BM) DOLLARS and CENTS	EA	4.000	102
	644	6004		IN SM RD SN SUP&AM TY10BWG(1)SA(T) DOLLARS and CENTS	EA	10.000	103
	644	6007		IN SM RD SN SUP&AM TY10BWG(1)SA(U) DOLLARS and CENTS	EA	5.000	104
	644	6030		IN SM RD SN SUP&AM TYS80(1)SA(T) DOLLARS and CENTS	EA	2.000	105
	644	6033		IN SM RD SN SUP&AM TYS80(1)SA(U) DOLLARS and CENTS	EA	2.000	106

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	644	6065		IN BRIDGE MNT CLEARANCE SGN ASSM(TY S)  DOLLARS and CENTS	EA	2.000	107
	644	6076		REMOVE SM RD SN SUP&AM  DOLLARS and CENTS	EA	41.000	108
	647	6001		INSTALL LRSS (STRUCT STEEL)  DOLLARS and CENTS	LB	5,372.000	109
	647	6002		RELOCATE LRSA  DOLLARS and CENTS	EA	1.000	110
	647	6003		REMOVE LRSA  DOLLARS and CENTS	EA	3.000	111
	658	6026		INSTL DEL ASSM (D-SY)SZ (BRF)CTB  DOLLARS and CENTS	EA	95.000	112
	658	6047		INSTL OM ASSM (OM-2Y)(WC)GND  DOLLARS and CENTS	EA	5.000	113
	658	6098		INSTL OM ASSM (OM-1)(WFLX)GND  DOLLARS and CENTS	EA	18.000	114
	662	6060		WK ZN PAV MRK REMOV (W)4"(BRK)  DOLLARS and CENTS	LF	3,655.000	115
	662	6061		WK ZN PAV MRK REMOV (W)4"(DOT)  DOLLARS and CENTS	LF	206.000	116
	662	6063		WK ZN PAV MRK REMOV (W)4"(SLD)  DOLLARS and CENTS	LF	15,166.000	117
	662	6071		WK ZN PAV MRK REMOV (W)8"(SLD)  DOLLARS and CENTS	LF	2,900.000	118

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	662	6080		WK ZN PAV MRK REMOV (W)(ARROW) DOLLARS and CENTS	EA	6.000	119
	662	6090		WK ZN PAV MRK REMOV (W)(WORD) DOLLARS and CENTS	EA	4.000	120
	662	6095		WK ZN PAV MRK REMOV (Y)4"(SLD) DOLLARS and CENTS	LF	14,960.000	121
	666	6198	007	REFL PAV MRK TY II (W) 18" (YLD TRI) DOLLARS and CENTS	EA	86.000	122
	666	6225	007	PAVEMENT SEALER 6" DOLLARS and CENTS	LF	52,130.000	123
	666	6226	007	PAVEMENT SEALER 8" DOLLARS and CENTS	LF	6,432.000	124
	666	6228	007	PAVEMENT SEALER 12" DOLLARS and CENTS	LF	1,522.000	125
	666	6230	007	PAVEMENT SEALER 24" DOLLARS and CENTS	LF	419.000	126
	666	6231	007	PAVEMENT SEALER (ARROW) DOLLARS and CENTS	EA	14.000	127
	666	6232	007	PAVEMENT SEALER (WORD) DOLLARS and CENTS	EA	13.000	128
	666	6234	007	PAVEMENT SEALER (DBL ARROW) DOLLARS and CENTS	EA	6.000	129
	666	6243	007	PAVEMENT SEALER (YLD TRI) DOLLARS and CENTS	EA	86.000	130

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	672	6009		REFL PAV MRKR TY II-A-A  DOLLARS and CENTS	EA	65.000	131
	672	6010		REFL PAV MRKR TY II-C-R  DOLLARS and CENTS	EA	583.000	132
	677	6001		ELIM EXT PAV MRK & MRKS (4")  DOLLARS and CENTS	LF	10,823.000	133
	677	6008		ELIM EXT PAV MRK & MRKS (ARROW)  DOLLARS and CENTS	EA	3.000	134
	677	6012		ELIM EXT PAV MRK & MRKS (WORD)  DOLLARS and CENTS	EA	7.000	135
	678	6002		PAV SURF PREP FOR MRK (6")  DOLLARS and CENTS	LF	52,130.000	136
	678	6004		PAV SURF PREP FOR MRK (8")  DOLLARS and CENTS	LF	6,432.000	137
	678	6006		PAV SURF PREP FOR MRK (12")  DOLLARS and CENTS	LF	1,522.000	138
	678	6008		PAV SURF PREP FOR MRK (24")  DOLLARS and CENTS	LF	419.000	139
	678	6009		PAV SURF PREP FOR MRK (ARROW)  DOLLARS and CENTS	EA	14.000	140
	678	6010		PAV SURF PREP FOR MRK (DBL ARROW)  DOLLARS and CENTS	EA	6.000	141
	678	6016		PAV SURF PREP FOR MRK (WORD)  DOLLARS and CENTS	EA	13.000	142

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	678	6022		PAV SURF PREP FOR MRK (18")(YLD TRI) DOLLARS and CENTS	EA	86.000	143
	685	6003		REMOVE RDSB FLASH BEACON ASSEMBLY DOLLARS and CENTS	EA	4.000	144
	690	6006		REMOVAL OF GROUND BOXES DOLLARS and CENTS	EA	6.000	145
	3021	6001		WIDE FLANGE PAVEMENT TERMINALS DOLLARS and CENTS	LF	192.000	146
	4021	6001		TIP TESTING(DRILL SHAFT) DOLLARS and CENTS	EA	8.000	147
	6001	6001		PORTABLE CHANGEABLE MESSAGE SIGN DOLLARS and CENTS	DAY	2,244.000	148
	6038	6004		MULTIPOLYMER PAV MRK (W)(6")(SLD) DOLLARS and CENTS	LF	27,183.000	149
	6038	6005		MULTIPOLYMER PAV MRK (W)(6")(BRK) DOLLARS and CENTS	LF	4,468.000	150
	6038	6006		MULTIPOLYMER PAV MRK (W)(6")(DOT) DOLLARS and CENTS	LF	93.000	151
	6038	6007		MULTIPOLYMER PAV MRK (W)(8")(SLD) DOLLARS and CENTS	LF	6,432.000	152
	6038	6011		MULTIPOLYMER PAV MRK (W)(12")(SLD) DOLLARS and CENTS	LF	1,489.000	153
	6038	6013		MULTIPOLYMER PAV MRK (W)(24")(SLD) DOLLARS and CENTS	LF	419.000	154

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	6038	6017		MULTIPOLYMER PAV MRK (Y)(6")(SLD) DOLLARS and CENTS	LF	20,386.000	155
	6038	6021		MULTIPOLYMER PAV MRK (Y)(12")(SLD) DOLLARS and CENTS	LF	33.000	156
	6038	6025		MULTIYPOLYMER PAV MRK (W) (ARROW) DOLLARS and CENTS	EA	14.000	157
	6038	6026		MULTIPOLYMER PAV MRK (W) (DBL ARROW) DOLLARS and CENTS	EA	6.000	158
	6038	6027		MULTIPOLYMER PAV MRK (W) (WORD) DOLLARS and CENTS	EA	13.000	159
	6163	6002		REMOVE EXISTING CABLES (POWER) DOLLARS and CENTS	LF	3,873.000	160
	6185	6002	002	TMA (STATIONARY) DOLLARS and CENTS	DAY	1,466.000	161



CONTROL : 0598-02-112  
PROJECT : C 598-2-112  
HIGHWAY : SH 288  
COUNTY : BRAZORIA

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 (103)  
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 162 SODDING FOR EROSION CONTROL (166) (168)  
ITEM 164 SEEDING FOR EROSION CONTROL (162) (166) (168)  
ITEM 166 FERTILIZER (520)  
ITEM 168 VEGETATIVE WATERING  
ITEM 260 LIME TREATMENT (ROAD-MIXED) (105) (132) (204) (210) (216)  
(247) (300) (310) (520) <3096>  
ITEM 275 CEMENT TREATMENT (ROAD-MIXED) (132) (204) (210) (216) (247)  
(300) (310) (520) <3096>  
ITEM 276 CEMENT TREATMENT (PLANT-MIXED) (204) (210) (216) (247) (300)  
<520><3096>  
ITEM 292 ASPHALT TREATMENT (PLANT-MIXED) (300) (301) (320) (520) (585)  
<3096>  
ITEM 305 SALVAGING, HAULING, AND STOCKPILING RECLAIMABLE ASPHALT  
PAVEMENT  
ITEM 360 CONCRETE PAVEMENT (421) (422) (438) (440) (529) (585)  
ITEM 400 EXCAVATION AND BACKFILL FOR STRUCTURES (110) (132) (401)  
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ITEM 401 FLOWABLE BACKFILL (421)  
ITEM 402 TRENCH EXCAVATION PROTECTION  
ITEM 403 TEMPORARY SPECIAL SHORING (410) (411) (423)  
ITEM 416 DRILLED SHAFT FOUNDATIONS (405) (420) (421) (423) (440) (448)  
ITEM 420 CONCRETE SUBSTRUCTURES (400) (404) (421) (422) (426) (427)  
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ITEM 422 CONCRETE SUPERSTRUCTURES (420) (421) (424) (438) (440) (448)

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ITEM 423 RETAINING WALLS (110) (132) (216) (400) (416) (420) (421) (424) (440) (445) <458> <556>

ITEM 425 PRECAST PRESTRESSED CONCRETE STRUCTURAL MEMBERS (409) (420) (421) (424) (426) (427) (434) (440) (442) (445) <448>

ITEM 432 RIPRAP (247) (420) (421) (431) (440)

ITEM 450 RAILING (420) (421) (422) (424) (440) (441) (442) (445) (446) (448) <540>

ITEM 454 BRIDGE EXPANSION JOINTS (429) (442) (785)

ITEM 460 CORRUGATED METAL PIPE (400) (402) (403) (445) (467) (476)

ITEM 462 CONCRETE BOX CULVERTS AND 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) (471)

ITEM 466 HEADWALLS AND WINGWALLS (400) (420) (421) (432) (440) (464)

ITEM 467 SAFETY END TREATMENT (400) (420) (421) (432) (440) (442) (445) (460) (464)

ITEM 480 CLEANING EXISTING CULVERTS

ITEM 496 REMOVING STRUCTURES

ITEM 500 MOBILIZATION

ITEM 502 BARRICADES, SIGNS, AND TRAFFIC HANDLING

ITEM 506 TEMPORARY EROSION, SEDIMENTATION, AND ENVIRONMENTAL CONTROLS (161) (432) (556)

ITEM 508 CONSTRUCTING DETOURS

ITEM 512 PORTABLE TRAFFIC BARRIER (420) (421) (424) (440) (442)

ITEM 529 CONCRETE CURB, GUTTER, AND COMBINED CURB AND GUTTER (360) (420) (421) (440)

ITEM 530 INTERSECTIONS, DRIVEWAYS, AND TURNOUTS (247) (260) (263) (275) (276) (292) (316) (330) (334) (340) <341> (360) (421) (440) <3076>

ITEM 545 CRASH CUSHION ATTENUATORS (421)

ITEM 610 ROADWAY ILLUMINATION ASSEMBLIES (416) (421) (432) (441) (442) (445) (449) (614) (616) (618) (620) (622) (624) (628)

ITEM 618 CONDUIT (400) (476)

ITEM 620 ELECTRICAL CONDUCTORS (610) (628)

ITEM 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 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) <6438>

ITEM 672 RAISED PAVEMENT MARKERS (677) (678)

ITEM 677 ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS (300) (302) (316) <3096>

ITEM 678 PAVEMENT SURFACE PREPARATION FOR MARKINGS (677)

ITEM 685 ROADSIDE FLASHING BEACON ASSEMBLIES (441) (442) (445) (449) (610) (618) (620) (621) (622) (624) (628) (656) (682) (684) (687)

ITEM 690 MAINTENANCE OF TRAFFIC SIGNALS (416) (421) (476) (610) (618)

(620) (622) (624) (625) (627) (628) (636) (656) (680) (682) (684)  
(685) (686) (687) (688)

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

SPECIAL LABOR PROVISIONS FOR STATE PROJECTS (000---008)  
WAGE RATES

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

SPECIAL PROVISION "SMALL BUSINESS ENTERPRISE IN STATE FUNDED PROJECTS  
" (000---009)

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

SPECIAL PROVISION "CERTIFICATE OF INTERESTED PARTIES (FORM 1295)"  
(000--1019)

SPECIAL PROVISION "IMPORTANT NOTICE TO CONTRACTORS" (000--1241)

SPECIAL PROVISION "SCHEDULE OF LIQUIDATED DAMAGES" (000---658)

SPECIAL PROVISION "NOTICE OF CONTRACTOR PERFORMANCE EVALUATIONS"  
(000---659)

SPECIAL PROVISIONS TO ITEM 2 (002---011) (002---013)

SPECIAL PROVISIONS TO ITEM 3 (003---011) (003---013)

SPECIAL PROVISIONS TO ITEM 5 (005---002) (005---003)

SPECIAL PROVISIONS TO ITEM 6 (006---001) (006---012)

SPECIAL PROVISIONS TO ITEM 7 (007---004) (007---008) (007---010)  
(007---011)

SPECIAL PROVISIONS TO ITEM 8 (008---006) (008---030) (008---033)

SPECIAL PROVISIONS TO ITEM 9 (009---010) (009---011)

SPECIAL PROVISION TO ITEM 247 (247---003)

SPECIAL PROVISION TO ITEM 300 (300---020)

SPECIAL PROVISION TO ITEM 302 (302---003)

SPECIAL PROVISION TO ITEM 316 (316---002)

SPECIAL PROVISION TO ITEM 334 (334---003)

SPECIAL PROVISION TO ITEM 340 (340---004)

SPECIAL PROVISION TO ITEM 341 (341---004)

SPECIAL PROVISION TO ITEM 342 (342---005)

SPECIAL PROVISION TO ITEM 347 (347---003)

SPECIAL PROVISION TO ITEM 348 (348---004)

SPECIAL PROVISION TO ITEM 421 (421---010)

SPECIAL PROVISION TO ITEM 426 (426---003)

SPECIAL PROVISION TO ITEM 427 (427---003)

SPECIAL PROVISION TO ITEM 440 (440---004)

SPECIAL PROVISION TO ITEM 441 (441---004)

SPECIAL PROVISION TO ITEM 442 (442---001)

SPECIAL PROVISION TO ITEM 446 (446---005)

SPECIAL PROVISION TO ITEM 448 (448---001)

SPECIAL PROVISION TO ITEM 449 (449---002)

SPECIAL PROVISION TO ITEM 450 (450---001)

SPECIAL PROVISION TO ITEM 462 (462---002)

SPECIAL PROVISION TO ITEM 464 (464---001)

SPECIAL PROVISION TO ITEM 465 (465---001)

SPECIAL PROVISION TO ITEM 502 (502---008)

SPECIAL PROVISION TO ITEM 506 (506---005)

SPECIAL PROVISION TO ITEM 520 (520---002)  
 SPECIAL PROVISION TO ITEM 540 (540---001)  
 SPECIAL PROVISION TO ITEM 636 (636---001)  
 SPECIAL PROVISION TO ITEM 643 (643---001)  
 SPECIAL PROVISION TO ITEM 656 (656---001)  
 SPECIAL PROVISION TO ITEM 666 (666---007)  
 SPECIAL PROVISION TO ITEM 680 (680---006)  
 SPECIAL PROVISION TO ITEM 686 (686---002)  
 SPECIAL PROVISION TO SPECIAL SPECIFICATION ITEM 6185 (6185--002)

SPECIAL SPECIFICATIONS:

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ITEM 3021 CONCRETE PAVEMENT WIDE FLANGE TERMINALS (360) (421) (440)  
 (442)  
 ITEM 3076 DENSE-GRADED HOT-MIX ASPHALT <300><301><316><320><340>  
 <341><342><347><348><520><585><3079><3081><3082><3096>  
 ITEM 3079 PERMEABLE FRICTION COURSE (PFC)  
 ITEM 3081 THIN OVERLAY MIXTURES (TOM)  
 ITEM 3082 THIN BONDED FRICTION COURSES  
 ITEM 3096 ASPHALTS, OILS, AND EMULSIONS  
 ITEM 4021 THERMAL INTEGRITY PROFILER (TIP) TESTING OF DRILLED SHAFTS  
 ITEM 6001 PORTABLE CHANGEABLE MESSAGE SIGN  
 ITEM 6038 MULTI-POLYMER PAVEMENT MARKINGS (MPM) (677)  
 ITEM 6163 REMOVE EXISTING CABLES  
 ITEM 6185 TRUCK MOUNTED ATTENUATOR (TMA) AND TRAILER ATTENUATOR (TA)  
 ITEM 6438 MOBILE RETROREFLECTIVITY DATA COLLECTION FOR PAVEMENT  
 MARKINGS

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 4021

## Thermal Integrity Profiler (TIP) Testing of Drilled Shafts



### 1. DESCRIPTION

Perform the nondestructive testing (NDT) method termed Thermal Integrity Profiler (TIP) testing by obtaining records of the heat generated by curing cement (hydration energy) to assess the quality of drilled shafts. TIP measurements that are colder than normal indicate necks, inclusions, or poor-quality concrete, while warmer than normal measurements are indicative of bulges. Variations of temperatures between tubes reveal cage eccentricity. Furnish all materials, equipment, and labor necessary to conduct TIP testing on production drilled shafts. The TIP testing must meet the requirements of ASTM D 7949, except as noted below.

### 2. EQUIPMENT

Supply all materials and equipment required to perform TIP tests. Equipment to perform the test must have the following minimum requirements:

- 2.1. **Probe or Wire Option.** A computer based TIP data acquisition system for (a) display of signals during data acquisition (probe option only), or (b) to monitor temperature versus time after casting (wire option only).
- 2.2. **Probe Only Option.** Thermal probe with four infrared sensors equally spaced at 90° around the perimeter that read temperatures of the tube wall to within 1°F accuracy. The probes must be less than 1-1/4 in. in diameter and must freely descend through the full depth of properly installed access tubes in the drilled shafts; one depth encoder sensor to determine probe depths; and ability to collect data at user specified depth increment.
- 2.3. **Wire only option.** Ability to collect data at user defined time intervals (typically 15 to 60 min.).

### 3. TESTING PROCEDURE

Conform to testing procedures in ASTM D 7949 specification.

### 4. TEST RESULT REPORTING

Submit a written report within five working days of completion of testing. The report must present results of TIP tests by including:

- 4.1. **Graphical Displays.** Provide graphical displays of all temperature measurements (probes or wires) versus depth.
- 4.2. **Significant Temperature Deviations.** Report indication of unusual temperatures, particularly significantly cooler local deviations of the average at any depth from the overall average over the entire length, in either probe or thermal wire measurements.
- 4.3. **Overall Average Temperature.** This temperature is proportional to the average radius computed from the actual total concrete volume installed (assuming a consistent concrete mix throughout). Radius at any point can then be determined from the temperature at that point compared to the overall average temperature.
- 4.4. **Temperature Variation.** Report variations in temperature between tubes (at each depth) which in turn correspond to variations in cage alignment. Where concrete volume is known, report the cage alignment or offset from center.

- 4.5. **Shaft Specific Information.** Report shaft specific construction information (e.g. elevations of the top of shaft, bottom of casing, bottom of shaft, etc.) when available. These values should be noted on all pertinent graphical displays.

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**5. MEASUREMENT**

This Item measured by each successful test that is approved by the Engineer. Quantities of TIP testing must be shown on the plans.

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**6. PAYMENT**

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for each "Thermal Integrity Profiler (TIP) Testing of Drilled Shaft" of size and type specified. This price is full compensation for material, equipment, labor, work, tools, and incidentals.