CITY OF SAN ANTONIO
DEPARTMENT OF CAPITAL IMPROVEMENTS
MANAGEMENT SERVICES

PROJECT NAME: MARBACH DRAINAGE PHASE IIA (MILITARY TO WEST OF RAWHIDE)
PROJECT NO. 40-00059

DATE: DECEMBER 20, 2010

ADDENDUM NO. #1

This addendum shall be included in and be considered part of the plans and specifications for the above named project. All bidders shall be required to sign an acknowledgment of the receipt of this addendum at the time he receives it.

This addendum has been issued by electronic mail (email) and the Bidders shall be required to reply to the email attaching the duly executed Addendum Acknowledgment Form to acknowledge receipt of this Addendum. This addendum shall also be available at the office of the Engineer Bain Medina Bain, 7073 San Pedro, San Antonio, TX 78216, if the Bidder chooses to pick up and sign for the addendum in person.

This Addendum is being issued to all Bidders to whom documents have been issued. This Addendum shall become a part of the Proposal/Bidding Documents, and in turn, shall become a part of the Contract Documents at the time a Contract for construction is awarded to the successful bidder.

Addendum No. 1 is issued to:

1) Notify all prospective bidders of the change in the solicitation deadline from **1:00 P.M. CST on Wednesday, January 12, 2011** to **1:00 P.M. CST on Wednesday, January 19, 2011**, as specified on the form "Formal Invitation for Bids (IFB) Contract, Marbach Drainage Phase IIA (Prj. No. 40-00059)".

2) Replace the following traffic signal plans and bid proposal form (025 Unit Pricing Form). The attached documents should be used in place of the documents of the same title found within the plans and specification book.

    1. Project Quantities Summary Sheets
        a. Replace Sheet 9 and 9A, Project Quantities Summary, as revised by Addendum 1.

2. Traffic Signal Plans
   a. Replace Sheet 196, Traffic Signal Layout, Marbach Rd at Westedge Dr., Sheet 197, Traffic Signal Layout, Marbach Rd at John Jay HS Faculty Exit, and Sheet 198, Traffic Signal Layout, Marbach Road at Meadow Way Dr. as revised by Addendum No. 1.
   b. Replace Sheet 199, Traffic Signal Notes, Marbach Rd at Westedge Dr., Sheet 200, Traffic Signal Notes, Marbach Rd at John Jay HS Faculty Exit, and Sheet 201, Traffic Signal Notes, Marbach Road at Meadow Way Dr. as revised by Addendum No. 1.
   c. Replace Sheet 203, Traffic Signal Elevation Details, Marbach Rd at John Jay HS Faculty Exit and Sheet 204, Traffic Signal Elevation Details, Marbach Road at Meadow Way Dr. as revised by Addendum No. 1.
   d. Replace Sheet 216 (Sheet 3 of 3), Traffic Signal Support Structures, Dual Mast Arm Assembly (80 MPH Wind Zone), DMA-80 (3)-96, as revised by Addendum No. 1.

3. Bid Proposal
   a. Replace 025 Unit Pricing Form with the attached.

4. Addendum Acknowledgement Form
   a. Attached is the Addendum Acknowledgement Form. Please fill out and sign the form and include with the bid package to acknowledge receipt of addenda.

ATTACHMENTS

- Revised Project Quantity Summaries, Sheets 9 and 9A (2 pages)
- Revised Traffic Signal Layout, Sheet 196, Sheet 197, and Sheet 198 (3 Pages)
- Revised Traffic Signal Notes, Sheet 199, Sheet 200, and Sheet 201 (3 Pages)
- Revised Traffic Signal Elevation Details, Sheet 203 and Sheet 204 (2 Pages)
- Revised Traffic Signal Support Structures, Sheet 216 (Sheet 3 of 3) (1 Page)
- Revised 025 Unit Pricing Form
- Addendum Acknowledgement Form (1 Page)

P.E.

PRAKASH SHRESTHA, P.E.

12/20/2010
DATE

END OF ADDENDUM #1

BASE BID

ITEM	DESCRIPTION	UNIT	QUANTITY
100.1	Mobilization	LS	1
101.1	Preparing Right of Way	LS	1
103.1	Remove Concrete Curb	LF	6,248
103.3	Remove Concrete Sidewalks and Driveways	SF	46,671
103.4	Remove Miscellaneous Concrete - Combination Wall	SF	4,695
104.1	Street Excavation	CY	12,773
106.1	Box Culvert Excavation and Backfill	CY	22,582
108.1	Lime Treated Subgrade (6 inches compacted depth)	SY	26,749
108.2	Lime (Slurry)	TON	495
200.1	Flexible Base (4 inches compacted depth)	SY	674
203.1	Tack Coat	GAL	2,424
205.2	Hot Mix Asphaltic Pavement Type B (10 inches)	SY	26,854
205.2	Hot Mix Asphaltic Pavement Type B (6 inches)	SY	607
205.2	Hot Mix Asph Pav Type B (Temp Sidewalk)(3 inches)	SY	112
205.4	Hot Mix Asphaltic Pavement Type D (2 inches)	SY	25,180
208.1	Salvaging, Hauling, and Stockpiling R.A.P. (2 inches)	SY	2,536
209.1	Concrete Pavement (10" Deep)(Bus Pad)	SY	1,362
230.1	Flexible Pavement Structure Repair (1.5 inches)	SY	254
306.1	Structural Excavation (Driveway Retaining Wall)	CY	17
307.1	Concrete Structure (Driveway Retaining Wall)	CY	31
308.1	Drill Shafts (30")	LF	44
308.1	Drill Shafts (36")	LF	39
309.1	5'X5' Precast Reinforced Concrete Box Culvert	LF	385
309.1	6'x5' Precast Reinforced Concrete Box Culvert	LF	1,070
309.1	8'x5' Precast Reinforced Concrete Box Culvert	LF	1,860
309.1	Precast Reinforced Concrete Transition (6'x5' - 5'x5')	LF	6
309.1	Precast Reinforced Concrete Transition (8'x5' - 6'x5')	LF	8
309.1	Precast Reinforced Concrete Stub Out Cover (5'x5')	EA	1
401.1	Reinforced Concrete Pipe (Class III)(24 inch dia)(Laterals)	LF	1,541
403.1	Junction Box (Complete) 4'x4'	EA	1
403.6	Junction Box (Complete)(Special) 18'x6'	EA	1
403.8	Inlet Type C (Ty II)(Complete) 10'	EA	26
403.9	Inlet Type C Extension (10')	EA	11
403.11	Inlet Type C Extension (5')(TXDOT)	EA	8
403.13	Inlet Traffic Grate (Complete)(4'x2')	EA	16
403.15	Manhole Vertical Stack	EA	25
410.2	Gravel Subgrade Filler	CY	365
465-2104	Inlet Extension (10')(TxDOT)	EA	7
465-2405	Inlet (Compl)(Curb)(Ty C)(TxDOT)	EA	11
500.1	Concrete Curbing	LF	2,140
500.4	Concrete Curb and Gutter	LF	5,318
502.1	Concrete Sidewalks	SY	3,190
502.3	Sidewalk Drain	EA	4
503.2	Portland Cement Concrete Driveway (Commercial)	SY	1,863
503.4	Asphaltic Concrete Driveway	SY	1,165
504.1	Concrete Median (5 inches thick)	SY	674
505.1	Concrete Riprap (4 inches thick)	SY	68
506.1	Concrete Retaining Walls - Combination Type	CY	120
508.1	Relocating Metal Fence	LF	20
511.3	Replacing with Hot Mix Asphaltic Pavement Type B (12 in)	SY	14
515.1	Topsoil (4 inches)	CY	140
516.2	St Augustine Sodding	SY	1,239
522.1	Sidewalk Pipe Railing	LF	8
524.1	Concrete Steps	CY	2
525.1	Concrete Traffic Barrier (Portable)(Low Profile)(Ty 1)	LF	1,600
525.1	Concrete Traffic Barrier (Portable)(Low Profile)(Ty 2)	LF	640
530	Barricades, Signs and Traffic Handling	LS	1
531.2	D3 Metro Street Name, Block Numbers (VARx18")	EA	2
531.3	R1-1 Stop (30")	EA	1
531.6	R2-1 Speed Limit (24"x30")	EA	3
531.11	R3-5 Left Only (30"x36")	EA	1
531.13	R3-7L Left Lane Must Turn Left (30"x30")	EA	3
531.17	R4-7 Keep Right (24"x30")	EA	8
531.19	R6-1R One Way (36"x12")	EA	9

BASE BID, CONT.

ITEM	DESCRIPTION	UNIT	QUANTITY
531.24	R9-3A Pedestrian Crossing Prohibited (18"x18")	EA	2
531.34	S1-1 Advance School Crossing (36"x36")	EA	14
531.44	W16-7PL Diagonal Arrow Plaque (36"x18")	EA	6
531.55	OM-3 Type 3 Object Marker (12"x36")	EA	8
531.61	S5-1 School Speed Limit when Flashing (24"x38")	EA	4
531.62	W16-9P Ahead Plaque (36"x20")	EA	4
531.66	S5-2A End School Zone Plaque (24"x9")	EA	3
531.73	W11-1 Bike Warning (30"x30")	EA	5
531	W16-1 Share the Road Plaque (24"x30")	EA	5
531	S6-1 School Speed Limit (84"x36")(Overhead)	EA	2
531	S7-1T Cell Phone Use Prohibited(48"x36")(Overhead)	EA	2
535.1	4 inch wide Yellow Line	LF	24,006
535.2	4 inch wide White Line	LF	10,207
535.4	8 inch wide White Line	LF	490
535.7	24 inch wide White Line	LF	799
535.9	Left White Arrow	EA	31
535.12	Word "ONLY"	WORD	3
537.6	Pavement Marker (Type I-C)	EA	195
537.8	Pavement Marker (Type II-A-A)	EA	132
540.1	Rock Filter Dams (Install/Remove)(Type 2)	LF	20
540.6	Construction Exits (Install/Remove)(Type 1)	SY	312
540.10	Curb Inlet Gravel Filters	LF	1,695
550.1	Trench Excavation Safety Protection	LF	1,388
552.1	Removing and Relocating Irrigation System	LF	100
615.1	Traffic Signal Controller Assembly (Type 332 Cabinet)	EA	2
618.1	Conduit Trenched 2 inch PVC (Schedule 40)	LF	118
618.2	Conduit Trenched 3 inch PVC (Schedule 40)	LF	1,130
620.1	Electric Conductors (No. 6)(Bare)	LF	38
620.2	Electric Conductors (No. 8)(Bare)	LF	1,025
620.3	Electric Conductors (No. 6)(Insulated)	LF	76
624.3	Ground Boxes Type C (162911) w/Apron	EA	8
628.1	Electrical Services (Type T)(120/240V)	EA	2
633.1	Battery Backup System	EA	2
655.1	Type 332 Controller Foundation	EA	2
680.2	Installation of Highway Traffic Signals (System)	EA	2
681.1	Temporary Traffic Signal	EA	2
682.1	Install Vehicle Signal Section w/ Back Plate (12 in)(3 sec)	EA	16
682.4	Install Pedestrian Signal Section (12 in) LED (2 ind)	EA	14
684.1	Traffic Signal Cables (Type A)(14 AWG)(Conductor No. 4)	LF	1,060
684.1	Traffic Signal Cables (Type A)(14 AWG)(Conductor No. 9)	LF	2,140
685.1	Install Flashing Beacon Assembly	EA	4
685.3	Remove Flashing Beacon Assembly	EA	4
685.4	Solar Powered School Zone Flasher Assembly	EA	4
686.1	Install Traf Signal Pole Asm (Steel)(1 Arm 32') w/ILSN	EA	2
686.1	Install Traf Signal Pole Asm (Steel)(1 Arm 44') w/ILSN	EA	3
686.1	Install Traf Signal Pole Asm (Steel)(1 Arm 36') w/ILSN	EA	1
686.1	Install Traf Signal Pole Asm (Stl)(2 Arms 32' & 28') w/ILSN	EA	1
687.1	Pedestal Pole Assembly (10')	EA	2
688.2	Pedestrian Detectors (2 inch Push-Button)	EA	14
691.1	Spread Spectrum Radio	EA	2
691.2	Antenna	EA	2
691.3	Coaxial Cable	LF	85
693.1	Internally Lighted Street Name Signs (ILSN Sign 9' S)	EA	8
694.1	VIVDS Processor Unit	EA	14
694.2	VIVDS Camera Assembly	EA	14
694.4	VIVDS Set-up System	EA	2
694.5	VIVDS Temporary	EA	2
694.6	VIVDS Communications Cable (Coaxial)	LF	1,500
695.2	Emergency Preemption Phase Selector	EA	3
695.3	Emergency Preemption Detector	EA	4
695.4	Emergency Preemption Detector Cable	LF	740
801.3	Tree Protection Level IIB	LF	30
802.1	Tree Pruning	EA	14
SP1	VIA Bus Foundations (Complete)	EA	9

REV NO	DATE	DESCRIPTION	BY
1	12/17/2010	REVISE TRAFFIC SIGNAL ITEMS & QUANTITIES	BMB

BAIN MEDINA BAIN, INC.
ENGINEERS & SURVEYORS
TBPE F-001712
7073 San Pedro, San Antonio, Texas, 78216
Phone: 210-494-7223 Fax: 210-490-5120 WWW.BMBI.COM

CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

MARBACH RD (PHASE IIA)
FROM MILITARY TO WEST OF RAWHIDE

PROJECT QUANTITIES SUMMARY

SHEET 1 OF 2

FINAL SUBMITTAL	PROJECT NO: 40-00059	DATE: 12/17/2010
DRWN BY: CDA/RA/BO	DSGN BY: SS/CDA CHKD BY: PS	SHEET: 9

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ADDITIVE ALTERNATE 1

ITEM	DESCRIPTION	UNIT	QUANTITY
100.1	Mobilization	LS	1
101.1	Preparing Right of Way	LS	1
103.1	Remove Concrete Curb	LF	1,295
103.3	Remove Concrete Sidewalks and Driveways	SF	5,209
103.4	Remove Miscellaneous Concrete - Combination Wall	SF	225
104.1	Street Excavation	CY	2,228
106.1	Box Culvert Excavation and Backfill	CY	3,259
108.1	Lime Treated Subgrade (6 inches compacted depth)	SY	5,498
108.2	Lime (Slurry)	TON	102
200.1	Flexible Base (4 inches compacted depth)	SY	55
203.1	Tack Coat	GAL	434
205.2	Hot Mix Asphaltic Pavement Type B (10 inches)	SY	4,736
205.2	Hot Mix Asphaltic Pavement Type B (6 inches)	SY	402
205.4	Hot Mix Asphaltic Pavement Type D (2 inches)	SY	4,336
209.1	Concrete Pavement (10" Deep) (Bus Pad)	SY	227
230.1	Flexible Pavement Structure Repair (1.5 inches)	SY	64
306.1	Structural Excavation (Driveway Retaining Wall)	CY	1
307.1	Concrete Structure (Driveway Retaining Wall)	CY	2
309.1	5'X5' Precast Reinforced Concrete Box Culvert	LF	750
401.1	Reinforced Concrete Pipe (Class III) (24 inch dia) (Laterals)	LF	489
403.1	Junction Box (Complete) 4'x4'	EA	1
403.8	Inlet Type C (Ty II) (Complete) 10'	EA	8
403.9	Inlet Type C Extension (10')	EA	1
403.11	Inlet Type C Extension (5') (TXDOT)	EA	3
403.13	Inlet Traffic Grate (Complete) (4'x2')	EA	4
403.15	Manhole Vertical Stack	EA	9
410.2	Gravel Subgrade Filler	CY	63
465-2104	Inlet Extension (10') (TxDOT)	EA	4
465-2405	Inlet (Compl) (Curb) (Ty C) (TxDOT)	EA	6
500.1	Concrete Curbing	LF	324
500.4	Concrete Curb and Gutter	LF	897
502.1	Concrete Sidewalks	SY	673
503.2	Portland Cement Concrete Driveway (Commercial)	SY	315
503.4	Asphaltic Concrete Driveway	SY	119
504.1	Concrete Median (5 inches thick)	SY	55
505.1	Concrete Riprap (4 inches thick)	SY	12
506.1	Concrete Retaining Walls - Combination Type	CY	9
515.1	Topsoil (4 inches)	CY	37
516.2	St Augustine Sodding	SY	328
525.1	Concrete Traffic Barrier (Portable) (Low Profile) (Ty 1)	LF	140
525.1	Concrete Traffic Barrier (Portable) (Low Profile) (Ty 2)	LF	160
530	Barricades, Signs and Traffic Handling	LS	1
531.2	D3 Metro Street Name, Block Numbers (VARx18")	EA	2
531.3	R1-1 Stop (30")	EA	1
531.17	R4-7 Keep Right (24"x30")	EA	3
531.19	R6-1R One Way (36"x12")	EA	1
531.34	S1-1 Advance School Crossing (36"x36")	EA	2
531.44	W16-7PL Diagonal Arrow Plaque (36"x18")	EA	2
531.55	OM-3 Type 3 Object Marker (12"x36")	EA	2
531.73	W11-1 Bike Warning (30"x30")	EA	1
531	W16-1 Share the Road Plaque (24"x30")	EA	1
535.1	4 inch wide Yellow Line	LF	4,516
535.2	4 inch wide White Line	LF	1,850
535.4	8 inch wide White Line	LF	125
535.7	24 inch wide White Line	LF	126
535.9	Left White Arrow	EA	6
535.12	Word "ONLY"	WORD	1
535.A	24 inch wide Yellow Line	LF	60
535.B	Median Nose Yellow	EA	2
537.6	Pavement Marker (Type I-C)	EA	38
537.8	Pavement Marker (Type II-A-A)	EA	42
540.10	Curb Inlet Gravel Filters	LF	460
550.1	Trench Excavation Safety Protection	LF	445
SP1	VIA Bus Foundations (Complete)	EA	3

ADDITIVE ALTERNATE 2

ITEM	DESCRIPTION	UNIT	QUANTITY
100.1	Mobilization	LS	1
101.1	Preparing Right of Way	LS	1
103.1	Remove Concrete Curb	LF	1,245
103.3	Remove Concrete Sidewalks and Driveways	SF	8,385
103.4	Remove Miscellaneous Concrete - Combination Wall	SF	1,755
104.1	Street Excavation	CY	2,434
106.1	Box Culvert Excavation and Backfill	CY	3,316
108.1	Lime Treated Subgrade (6 inches compacted depth)	SY	5,586
108.2	Lime (Slurry)	TON	103
200.1	Flexible Base (4 inches compacted depth)	SY	794
203.1	Tack Coat	GAL	439
205.2	Hot Mix Asphaltic Pavement Type B (10 inches)	SY	5,342
205.2	Hot Mix Asphaltic Pavement Type B (6 inches)	SY	244
205.4	Hot Mix Asphaltic Pavement Type D (2 inches)	SY	4,390
208.1	Salvaging, Hauling, and Stockpiling R.A.P. (2 inches)	SY	108
209.1	Concrete Pavement (10" Deep) (Bus Pad)	SY	454
230.1	Flexible Pavement Structure Repair (1.5 inches)	SY	12
308.1	Drill Shafts (30")	LF	22
308.1	Drill Shafts (36")	LF	13
309.1	5'X5' Precast Reinforced Concrete Box Culvert	LF	585
401.1	Reinforced Concrete Pipe (Class III) (24 inch dia) (Laterals)	LF	249
403.8	Inlet Type C (Ty II) (Complete) 10'	EA	2
403.15	Manhole Vertical Stack	EA	4
410.2	Gravel Subgrade Filler	CY	58
465-2104	Inlet Extension (10') (TxDOT)	EA	2
465-2405	Inlet (Compl) (Curb) (Ty C) (TxDOT)	EA	5
500.1	Concrete Curbing	LF	1,579
500.4	Concrete Curb and Gutter	LF	1,055
502.1	Concrete Sidewalks	SY	852
503.2	Portland Cement Concrete Driveway (Commercial)	SY	88
503.4	Asphaltic Concrete Driveway	SY	98
504.1	Concrete Median (5 inches thick)	SY	794
506.1	Concrete Retaining Walls - Combination Type	CY	16
511.3	Replacing with Hot Mix Asphaltic Pavement Type B (12 in)	SY	14
515.1	Topsoil (4 inches)	CY	47
516.2	St Augustine Sodding	SY	412
525.1	Concrete Traffic Barrier (Portable) (Low Profile) (Ty 1)	LF	320
525.1	Concrete Traffic Barrier (Portable) (Low Profile) (Ty 2)	LF	120
530	Barricades, Signs and Traffic Handling	LS	1
531.6	R2-1 Speed Limit (24"x30")	EA	1
531.13	R3-7L Left Lane Must Turn Left (30"x30")	EA	1
531.14	R3-8LR Lane Use Control (24"x30")	EA	1
531.17	R4-7 Keep Right (24"x30")	EA	1
531.19	R6-1R One Way (36"x12")	EA	3
531.24	R9-3A Pedestrian Crossing Prohibited (18"x18")	EA	2
531.55	OM-3 Type 3 Object Marker (12"x36")	EA	2
531.69	R3-17A Ahead Plaque (30"x12")	EA	1
531.70	R3-17B End Plaque (30"x12")	EA	1
531.73	W11-1 Bike Warning (30"x30")	EA	4
531	W16-1 Share the Road Plaque (24"x30")	EA	2
535.1	4 inch wide Yellow Line	LF	3,142
535.2	4 inch wide White Line	LF	2,093
535.4	8 inch wide White Line	LF	235
535.7	24 inch wide White Line	LF	287
535.8	Right White Arrow	EA	2
535.9	Left White Arrow	EA	5
535.12	Word "ONLY"	WORD	3
537.6	Pavement Marker (Type I-C)	EA	43
537.8	Pavement Marker (Type II-A-A)	EA	26
540.10	Curb Inlet Gravel Filters	LF	295
550.1	Trench Excavation Safety Protection	LF	221
615.1	Traffic Signal Controller Assembly (Type 332 Cabinet)	EA	1
618.1	Conduit Trenched 2 inch PVC (Schedule 40)	LF	102
618.2	Conduit Trenched 3 inch PVC (Schedule 40)	LF	673

ADDITIVE ALTERNATE 2, CONT.

ITEM	DESCRIPTION	UNIT	QUANTITY
620.1	Electric Conductors (No. 6) (Bare)	LF	68
620.2	Electric Conductors (No. 8) (Bare)	LF	528
620.3	Electric Conductors (No. 6) (Insulated)	LF	136
624.3	Ground Boxes Type C (162911) w/Apron	EA	4
628.1	Electrical Services (Type T) (120/240V)	EA	1
633.1	Battery Backup System	EA	1
655.1	Type 332 Controller Foundation	EA	1
680.2	Installation of Highway Traffic Signals (System)	EA	1
681.1	Temporary Traffic Signal	EA	1
682.1	Install Vehicle Signal Section w/ Back Plate (12 in) (3 sec)	EA	5
682.2	Install Vehicle Signal Section w/ Back Plate (12 in) (4 sec)	EA	2
682.4	Install Pedestrian Signal Section (12 in) LED (2 ind)	EA	6
684.1	Traffic Signal Cables (Type A) (14 AWG) (Conductor No. 4)	LF	303
684.1	Traffic Signal Cables (Type A) (14 AWG) (Conductor No. 9)	LF	804
686.1	Install Traf Signal Pole Asm (Steel) (1 Arm 28') w/ILSN	EA	1
686.1	Install Traf Signal Pole Asm (Steel) (1 Arm 32') w/ILSN	EA	1
686.1	Install Traf Signal Pole Asm (Steel) (1 Arm 40') w/ILSN	EA	1
687.1	Pedestal Pole Assembly (10')	EA	1
688.2	Pedestrian Detectors (2 Inch Push-Button)	EA	4
691.1	Spread Spectrum Radio	EA	1
691.2	Antenna	EA	1
691.3	Coaxial Cable	LF	35
693.1	Internally Lighted Street Name Signs (ILSN Sign 9' S)	EA	3
694.1	VIVDS Processor Unit	EA	6
694.2	VIVDS Camera Assembly	EA	6
694.4	VIVDS Set-up System	EA	1
694.5	VIVDS Temporary	EA	1
694.6	VIVDS Communications Cable (Coaxial)	LF	650
695.2	Emergency Preemption Phase Selector	EA	1
695.3	Emergency Preemption Detector	EA	3
695.4	Emergency Preemption Detector Cable	LF	330
SP1	VIA Bus Foundations (Complete)	EA	1

REV NO	DATE	DESCRIPTION	BY
1	12/17/2010	REVISE TRAFFIC SIGNAL ITEMS & QUANTITIES	BMB

BAIN MEDINA BAIN, INC.
ENGINEERS & SURVEYORS
TBPE F-001712
7073 San Pedro, San Antonio, Texas, 78216
Phone: 210-494-7223 Fax: 210-490-5120 WWW.BMBI.COM

CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

MARBACH RD (PHASE IIA)
FROM MILITARY TO WEST OF RAWHIDE

PROJECT QUANTITIES SUMMARY

SHEET 2 OF 2

FINAL SUBMITTAL	PROJECT NO: 40-00059	DATE: 12/17/2010
DRWN BY: CDA/RA/BO	DSGN BY: SS/CDA CHKD BY: PS	SHEET: 9A

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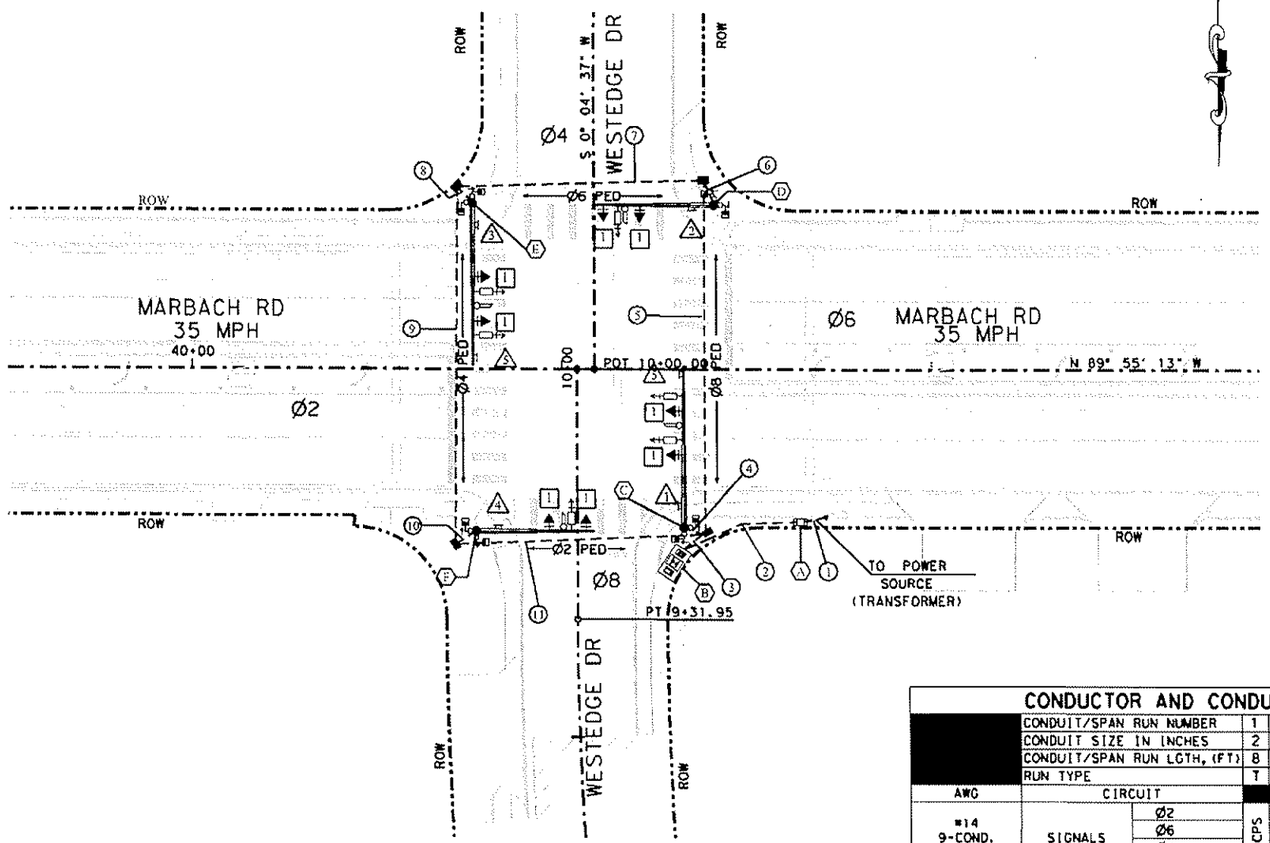


LEGEND

CONTROLLER ON FOUNDATION		ROW	
TYPE C GROUND BOX		GUY WIRE	
ELECTRICAL SERVICE PEDESTAL		OVERHEAD LINE	OT
WOOD POLE WITH METER		OVERHEAD ELECTRIC	OHE
PROPOSED PEDESTRIAN SIGNAL WITH PUSHBUTTOM		SANITARY SEWER	8"SS
		WATER LINE	8"W
EXIST PEDESTRIAN SIGNAL WITH PUSHBUTTON		GAS LINE	4"G
VIDEO IMAGING VEHICLE DETECTION SYSTEN CAMERA (VIVDS)		UNDERGROUND ELECTRIC	UE
STEEL MASK ARM		POLE IDENTIFIER TAG	A
TRAFFIC SIGNAL W/BACKPLATE		CONDUIT IDENTIFIER TAG	10
TRAFFIC SIGNAL HEAD		TRAFFIC SIGNAL HEAD IDENTIFIER TAG	4
LUMINAIRE		SIGN IDENTIFIER TAG	A
PROPOSED UNDERGROUND CONDUIT		EMERG PREEMP DETECTOR	

CONDUCTOR AND CONDUIT SCHEDULE

	CONDUIT/SPAN RUN NUMBER		1	2	3	4	5	6	7	8	9	10	11
	CONDUIT SIZE IN INCHES		2	2	2/3	2	2/3	2	2/3	2	2/3	2	2/3
	CONDUIT/SPAN RUN LGTH, (FT)		8	25	6	6	98	8	67	6	97	7	66
	RUN TYPE		T	T	T	T	T	T	T	T	T	T	T
AWG	CIRCUIT												
#14 9-COND. IMSA CABLE	SIGNALS	Ø2			1	1							
		Ø6			1		1		1	1			
		Ø4			1							1	1
		Ø8			1		1	1					
#14 9-COND. IMSA CABLE	PED. SIGNAL AND BUTTON	POLE C			1	1							
		POLE D			1		1	1					
		POLE E			1		1		1	1			
		POLE F			1							1	1
#14 4-COND. ISLN SIGN	ISLN SIGN	POLE C			1	1							
		POLE D			1		1	1					
		POLE E			1		1		1	1			
		POLE F			1							1	1
#6 THWN/THWN	120 POWER HOT		1	1									
	120 POWER COMMON		1	1									
#6 BARE	BARE BOND GROUND		1	1									
#8 BARE					2	1	2	1	2	1		1	2
TWO-IN-ONE (#18 3-COND. & RG-59 COMM. CABLE)*	VIVDS	Ø2			2	2							
		Ø6			2		2		2	2			
		Ø4			1							1	1
		Ø8			1		1	1					
EMERGENCY PREEMPTION 138 DETECTOR CABLE	EMERGENCY PREEMPTION	Ø2			1	1							
		Ø6			1		1		1	1			
		Ø4			1							1	1
		Ø8			1		1	1					
COAXIAL CABLE	SPREAD SPECTRUM RADIO	POLE C			1	1							

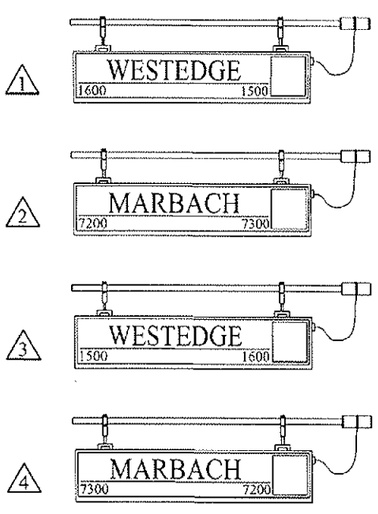
TO BE INSTALLED BY CPS

T = TRENCHED CONDUIT B = BORED CONDUIT E = EXISTING SPAN/CONDUIT
S = SPAN X/X = NUMBER OF CONDUITS OF X SIZE - = CABLE TRANSFER
* IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION

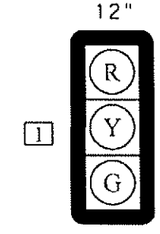
GRAPHIC SCALE
(IN FEET)

20 10 0 20 40

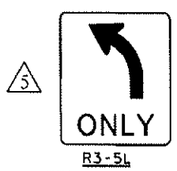
1"=40'



ILSN SIGNS



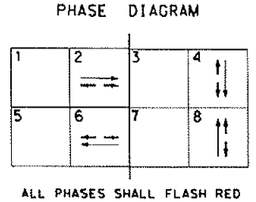
SIGNAL FACE



R3-5L
(LEFT TURN ONLY)

LED COUNTDOWN
PEDESTRIAN SIGNAL

PHASE DIAGRAM



ALL PHASES SHALL FLASH RED

PHASING PLAN

REV NO	DATE	DESCRIPTION	BY
1	12-16-10	REV PHASE DIAGRAM	WJW

GKW ENGINEERING
GONZALEZ, KYPUROS AND WHITE
3463 MAGIC DR., SUITE 250
SAN ANTONIO, TEXAS 78229
210-582-5670 FAX 210-582-5672
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Phone: 210-494-7223 Fax: 210-490-5120 WWW.BMBI.COM

STATE OF TEXAS
WILLIAM J. WHITE
84320
REGISTERED PROFESSIONAL ENGINEER

12-16-10
DATE

CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

MARBACH RD (PHASE II)
FROM MILITARY DR TO IH 410

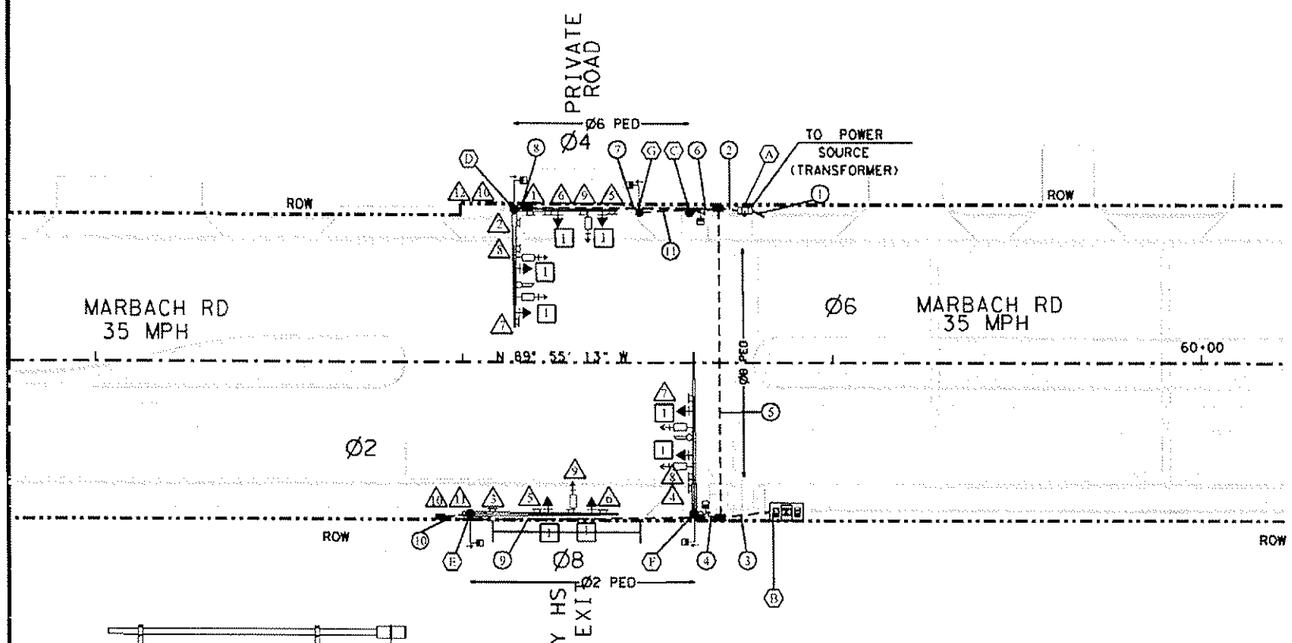
TRAFFIC SIGNAL LAYOUT

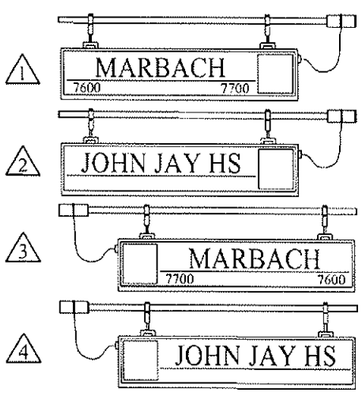
196

MARBACH RD AT WESTEDGE DR

100% SUBMITTAL	PROJECT NO: 40-00059		DATE: 10-3-10
DRAWN BY: JSS	DSGN BY: WJW	CHKD BY: WJW	SHEET: OF

SHEET 1





ILSN SIGNS

LED COUNTDOWN PEDESTRIAN SIGNAL

9 R5-1 (DO NOT ENTER)

10 R9-3o (NO PEDESTRIAN CROSSING)

11 R9-3bL (USE CROSSWALK LEFT)

12 R9-3bR (USE CROSSWALK RIGHT)

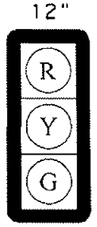
5 R3-5R (RIGHT TURN ONLY)

6 R3-5L (LEFT TURN ONLY)

7 R3-2 (NO LEFT TURN)

8 R3-1 (NO RIGHT TURN)

12"



1 SIGNAL FACE

LEGEND

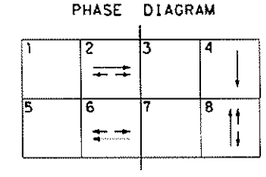
CONTROLLER ON FOUNDATION		RIGHT-OF-WAY	
TYPE C GROUND BOX		GUY WIRE	
ELECTRICAL SERVICE PEDESTAL		OVERHEAD LINE	OT
WOOD POLE WITH METER		OVERHEAD ELECTRIC	OHE
PROPOSED PEDESTRIAN SIGNAL WITH PUSHBUTTON		SANITARY SEWER	8"SS
EXIST PEDESTRIAN SIGNAL WITH PUSHBUTTON		WATER LINE	8"W
VIDEO IMAGING VEHICLE DETECTION CAMERA (VIVDS)		GAS LINE	4"G
STEEL MASK ARM		UNDERGROUND ELECTRIC	UE
TRAFFIC SIGNAL W/BACKPLATE		POLE IDENTIFIER TAG	A
TRAFFIC SIGNAL HEAD		CONDUIT IDENTIFIER TAG	10
LUMINAIRE		TRAFFIC SIGNAL HEAD IDENTIFIER TAG	1
PROPOSED UNDERGROUND CONDUIT		SIGN IDENTIFIER TAG	A
		EMERG PREEMP DETECTOR	

CONDUCTOR AND CONDUIT SCHEDULE

	CONDUIT/SPAN RUN NUMBER			1	2	3	4	5	6	7	8	9	10	11
	CONDUIT SIZE IN INCHES			2	2	2/3	2	2/3	2	2/3	2	2/3	2	2
	CONDUIT/SPAN RUN LGTH. (FT)				8	12	8	85	8	49	7	77	9	22
	RUN TYPE				T	T	T	T	T	T	T	T	T	T
AWG	CIRCUIT		TO BE INSTALLED BY CPS											
#14 9-COND. (MSA CABLE	SIGNALS	Ø2				1	1							
		Ø6				1		1		1	1			
		Ø4				1						1	1	
		Ø8				1		1		1	1			
#14 9-COND. (MSA CABLE	PED. SIGNAL AND BUTTON	POLE C				1		1	1					
		POLE D				1		1		1	1			
		POLE E				1						1	1	
		POLE F				1	1							
		POLE G				1		1						1
#14 4-COND. ISLN SIGN	ISLN SIGN	POLE D				2		2		2	2			
		POLE E				1						1	1	
		POLE F				1	1							
#6 THWN/THWN	120 POWER HOT				1	1		1						
	120 POWER COMMON				1	1		1						
#6 BARE	BARE BOND GROUND				1	1		1						
#8 BARE						2	1	2	1	2	1	2		1
TWO-IN-ONE (#18 3-COND. & RG-59 COMM. CABLE) *	VIVDS	Ø2				2	2							
		Ø6				2		2		2	2			
		Ø4				1						1	1	
		Ø8				1		1		1	1			
EMERGENCY PREEMPTION 138 DETECTOR CABLE	EMERGENCY PREEMPTION	Ø2				1	1							
		Ø6				1		1		1	1			
COAXIAL CABLE	SPREAD SPECTRUM RADIO	POLE F				1	1							

T = TRENCHED CONDUIT B = BORED CONDUIT E = EXISTING SPAN/CONDUIT
S = SPAN X/X = NUMBER OF CONDUITS OF X SIZE • = CABLE TRANSFER
* IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION

PHASE DIAGRAM



ALL PHASES SHALL FLASH RED

PHASING PLAN

GRAPHIC SCALE (IN FEET)

20 10 0 20 40

1"=40'

REV NO	DATE	DESCRIPTION	BY
1	12-16-10	ADD RUN 11, CORRECT PEDS & SCHED	WJW

GKW ENGINEERING
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3463 MAGIC DR., SUITE 250
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STATE OF TEXAS
WILLIAM J. WHITE
84320
REGISTERED PROFESSIONAL ENGINEER
12-16-10
DATE

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

MARBACH RD (PHASE II)
FROM MILITARY DR TO IH 410

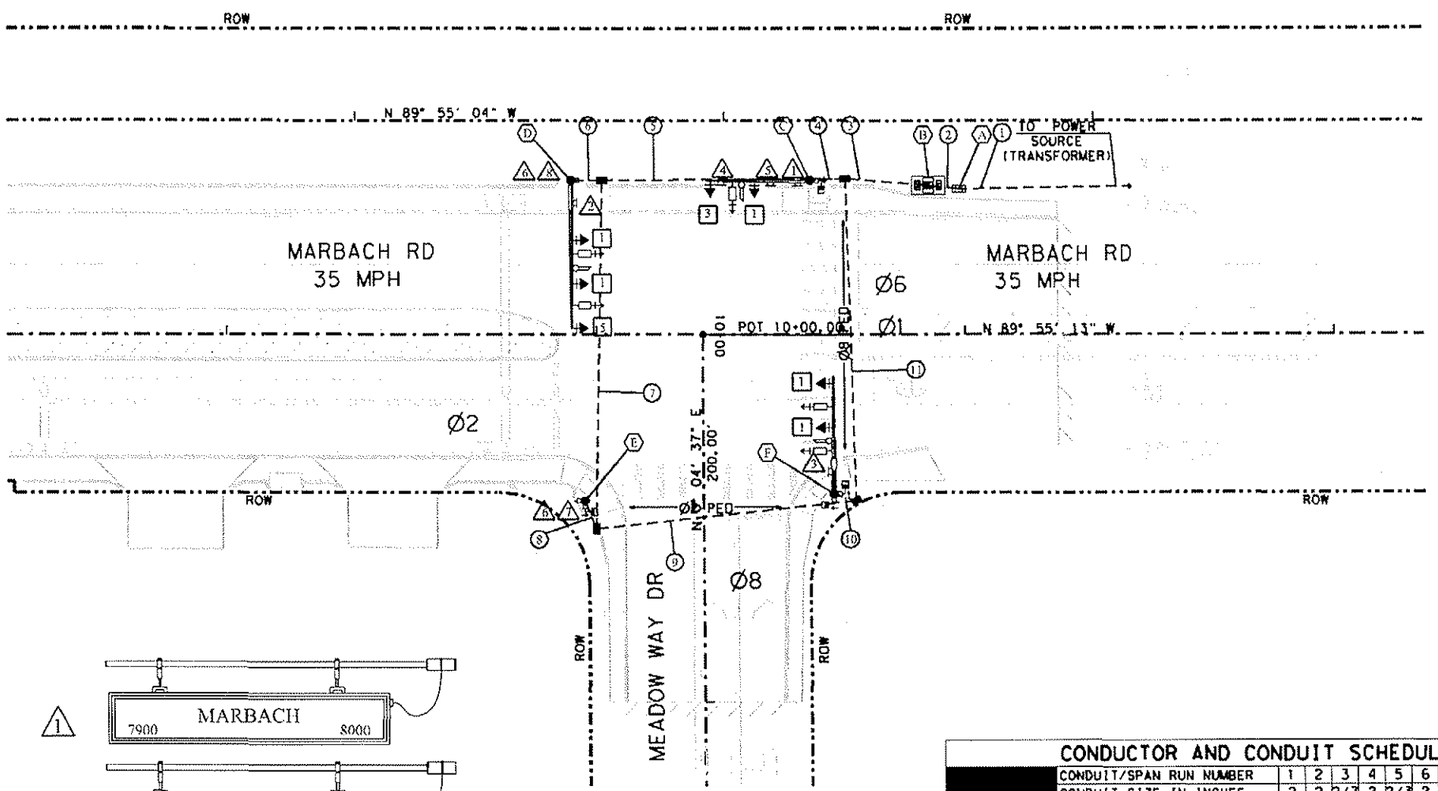
197

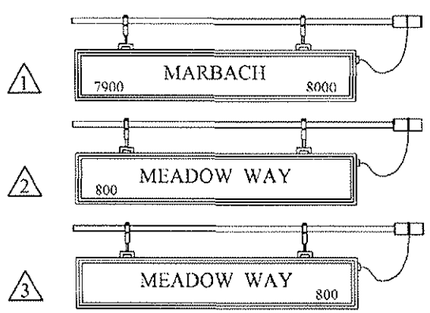
TRAFFIC SIGNAL LAYOUT

MARBACH RD AT JOHN JAY HS FACULTY EXIT

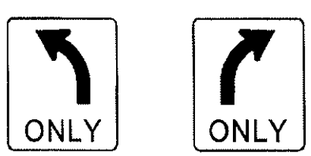
100% SUBMITTAL	PROJECT NO: 40-00059		DATE: 10-3-10
DRAWN BY: JSS	DSGN BY: WJW	CHKD BY: WJW	SHEET: OF

SHEET 4





ILSN SIGNS

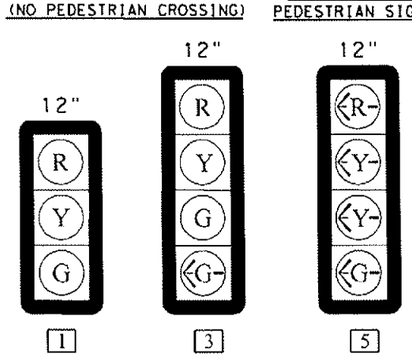


4 R3-5L (LEFT TURN ONLY)

5 R3-5R (RIGHT TURN ONLY)

6 R9-3a (NO PEDESTRIAN CROSSING)

LED COUNTDOWN PEDESTRIAN SIGNAL



SIGNAL FACE

USE CROSSWALK 7 R9-3b L (USE CROSSWALK LEFT)

USE CROSSWALK 8 R9-3b R (USE CROSSWALK RIGHT)

LEGEND

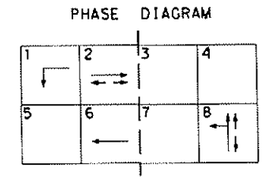
CONTROLLER ON FOUNDATION		RIGHT-OF-WAY	
TYPE C GROUND BOX		GUY WIRE	
ELECTRICAL SERVICE PEDESTAL		OVERHEAD LINE	OT
WOOD POLE WITH METER		OVERHEAD ELECTRIC	OHE
PROPOSED PEDESTRIAN SIGNAL WITH PUSHBUTTON		SANITARY SEWER	8"SS
		WATER LINE	8"W
EXIST PEDESTRIAN SIGNAL WITH PUSHBUTTON		GAS LINE	4"G
VIDEO IMAGING VEHICLE DETECTION CAMERA (VIVDS)		UNDERGROUND ELECTRIC	UE
STEEL MASK ARM		POLE IDENTIFIER TAG	A
TRAFFIC SIGNAL W/BACKPLATE		CONDUIT IDENTIFIER TAG	10
TRAFFIC SIGNAL HEAD		TRAFFIC SIGNAL HEAD IDENTIFIER TAG	1
LUMINAIRE		SIGN IDENTIFIER TAG	1
PROPOSED UNDERGROUND CONDUIT		EMERG PREEMP DETECTOR	

CONDUCTOR AND CONDUIT SCHEDULE

	CONDUIT/SPAN RUN NUMBER		1	2	3	4	5	6	7	8	9	10	11
	CONDUIT SIZE IN INCHES		2	2	2/3	2	2/3	2	2/3	2	2/3	2	2/3
	CONDUIT/SPAN RUN LGTH, (FT)		59	9	11	10	66	9	95	8	71	7	88
	RUN TYPE		T	T	T	T	T	T	T	T	T	T	T
AWG	CIRCUIT		TO BE INSTALLED BY CPS										
#14 9-COND. IMSA CABLE	SIGNALS	Ø2			1							1	1
		Ø6			1		1	1					
		Ø4											
		Ø8			1	1							
#14 9-COND. IMSA CABLE	PED. SIGNAL AND BUTTON	POLE C			1	1							
		POLE D											
		POLE E			1					1	1		1
		POLE F			1							1	1
#14 4-COND. ISLN SIGN	ISLN SIGN	POLE C			1	1							
		POLE D			1		1	1					
		POLE E											
		POLE F			1							1	1
#6 THWN/THWN	120 POWER HOT			1									
	120 POWER COMMON			1									
#6 BARE	BARE BOND GROUND			1									
#8 BARE					2	1	2	1		1	2	1	2
TWO-IN-ONE (#18 3-COND. & RG-59 COMM. CABLE) *	VIVDS	Ø2			2							2	2
		Ø6			2		2	2					
		Ø4											
		Ø8			1	1							
EMERGENCY PREEMPTION 138 DETECTOR CABLE	EMERGENCY PREEMPTION	Ø2			1							1	1
		Ø6			1		1	1					
		Ø4											
		Ø8			1	1							
COAXIAL CABLE	SPREAD SPECTRUM RADIO	POLE C			1	1							

T = TRENCHED CONDUIT B = BORED CONDUIT E = EXISTING SPAN/CONDUIT
S = SPAN X/X = NUMBER OF CONDUITS OF X SIZE • = CABLE TRANSFER
* IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION

PHASE DIAGRAM



ALL PHASES SHALL FLASH RED

PHASING PLAN

GRAPHIC SCALE (IN FEET)

20 10 0 20 40

1"=40'

REV NO	DATE	DESCRIPTION	BY
1	12-16-10	REV SIGNAL HEAD & PHASE	WJW

GKW ENGINEERING
GONZALEZ, KYPUROS AND WHITE
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SAN ANTONIO, TEXAS 78228
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STATE OF TEXAS
WILLIAM J. WHITE
84320
REGISTERED PROFESSIONAL ENGINEER

12-16-10
DATE

CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

MARBACH RD (PHASE II)
FROM MILITARY DR TO IH 410

198

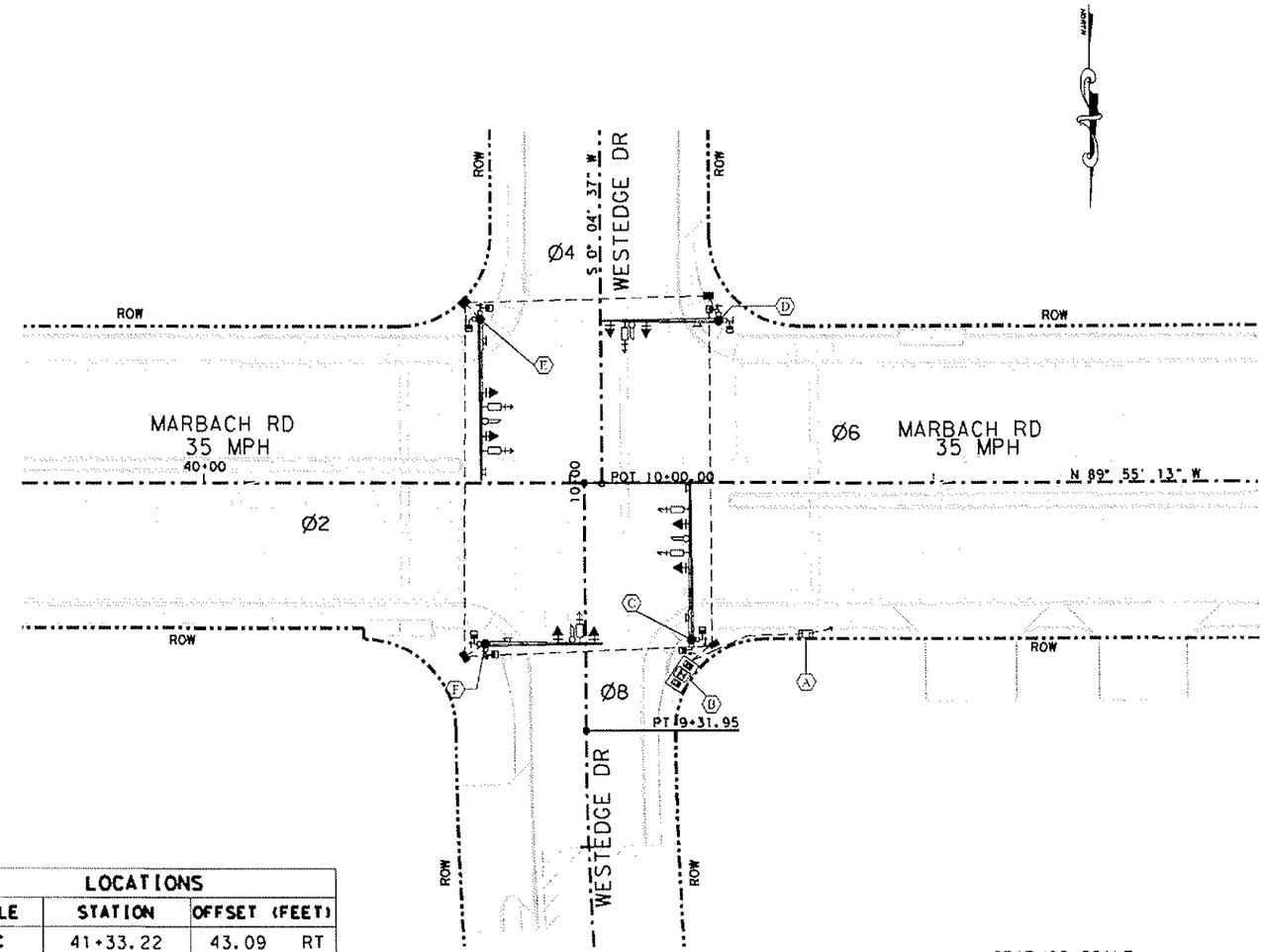
TRAFFIC SIGNAL LAYOUT

MARBACH RD AT MEADOW WAY DR

100% SUBMITTAL	PROJECT NO: 40-00059		DATE: 10-3-10
DRAWN BY: JSS	DSGN BY: WJW	CHKD BY: WJW	SHEET: OF

SHEET 7

ITEM	DESCRIPTION	UNIT	QTY
308.1	DRILLED SHAFTS (30")	LF	22
308.1	DRILLED SHAFTS (36")	LF	26
615.1	TRAFFIC SIGNAL CONTROLLER ASSEMBLY (TYPE 332 CABINET)	EA	1
618.1	CONDUIT TRENCHED 2 INCH PVC (SCHEDULE 40)	LF	56
618.2	CONDUIT TRENCHED 3 INCH PVC (SCHEDULE 40)	LF	680
620.1	ELECTRICAL CONDUCTORS (No. 6) (BARE)	LF	30
620.2	ELECTRICAL CONDUCTORS (No. 8) (BARE)	LF	525
620.3	ELECTRICAL CONDUCTORS (No.6) (INSULATED)	LF	80
624.3	GROUND BOXES TYPE C (162911) W/APRON	EA	4
628.1	ELECTRICAL SERVICES (TYPE TX120/240V)	EA	1
633.1	BATTERY BACKUP SYSTEM	EA	1
655.1	TYPE 332 CONTROLLER FOUNDATION	EA	1
680.2	INSTALLATION OF HIGHWAY TRAFFIC SIGNALS (SYSTEM)	EA	1
682.1	VEHICLE SIGNAL SECTION WITH BACK PLATE (12 INCH) (3 SEC)	EA	8
682.4	PEDESTRIAN SIGNAL SECTION (12 INCH) LED (2 IND)	EA	8
684.1	TRAFFIC SIGNAL CABLES (TYPE A) (14 AWG) (CONDUCTOR No.4)	LF	510
684.1	TRAFFIC SIGNAL CABLES (TYPE A) (14 AWG) (CONDUCTOR No.9)	LF	1040
686.1	TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL) (1 ARM 32') WITH ILSN	EA	2
686.1	TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL) (1 ARM 44') WITH ILSN	EA	2
688.2	PEDESTRIAN DETECTORS (2 INCH PUSH-BUTTON)	EA	8
691.1	SPREAD SPECTRUM RADIO	EA	1
691.2	ANTENNA (UNIDIRECTIONAL)	EA	1
691.3	COAXIAL CABLE	LF	35
693.1	INTERNALLY LIGHTED STREET NAME SIGNS (ILSN SIGN 9' S)	EA	4
694.1	VIVDS PROCESSOR UNIT	EA	7
694.2	VIVDS CAMERA ASSEMBLY	EA	7
694.4	VIVDS SET-UP SYSTEM	EA	1
694.6	VIVDS COMMUNICATIONS CABLE (COAXIAL)	LF	900
695.2	EMERGENCY PREEMPTION PHASE SELECTOR	EA	2
695.3	EMERGENCY PREEMPTION DETECTOR	EA	2
695.4	EMERGENCY PREEMPTION DETECTOR CABLE	LF	570



GRAPHIC SCALE
(IN FEET)
20 10 0 20 40
1"=40'

CONSTRUCTION NOTES

1. LOCATION OF TRAFFIC SIGNAL POLES, CONTROLLER ASSEMBLIES, AND ELECTRICAL SERVICE SHALL BE VERIFIED AND APPROVED BY COSA PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL SUPPLY AND INSTALL THE ADDRESS IN PERMANENT NUMBERS AND LETTERS TO THE STREET SIDE OF THE SERVICE ENCLOSURE. SAID ADDRESS SHALL ALSO BE RECORDED AND GIVEN TO THE CITY OF SAN ANTONIO INSPECTOR FOR THE CITY'S RECORDS.
2. SIDEWALK SHALL BE EXTENDED UP TO THE MAST ARM POLES, AS NEEDED, TO PROVIDE PEDESTRIAN ACCESS TO THE PEDESTRIAN PUSH BUTTONS
3. DETECTION SHALL BE PROVIDED USING A VIDEO IMAGING VEHICLE DETECTION SYSTEM (VIVDS). THE CAMERA ASSEMBLIES SHALL BE MOUNTED ABOVE THE ROADWAY ON THE MAST ARMS, AS SHOWN ON THE PLANS, CAMERA ASSEMBLY HEIGHT SHALL BE IN ACCORDANCE WITH MANUFACTURER RECOMMENDATION TO OBTAIN OPTIMUM DETECTION, ANY MOUNTING HARDWARE, INCLUDING EXTENSION RODS, NEEDED TO MEET THESE REQUIREMENTS SHALL BE PROVIDED BY THE CITY.
4. THE VIVDS PROCESSOR SYSTEM PROVIDED SHALL CONSIST OF UNITS THAT INSERT DIRECTLY INTO THE 2070 CONTROLLER INPUT FILE. THE CITY WILL PROVIDE ONE 2-CHANNEL VIVDS PROCESSOR UNIT PER CAMERA.
5. VIVDS CAMERAS SHALL BE WIRED WITH TWO-IN-ONE (RG-59 COMMUNICATION CABLE AND #18 AWG 3-CONDUCTOR POWER SUPPLY CABLE), AS RECOMMENDED BY MANUFACTURER.
6. ALL ILSN SIGNS SHALL BE INSTALLED ON THE ILSN MAST ARM AS DIRECTED BY THE ENGINEER.
7. AN ADDITIONAL 2 9 / 32 SCHEDULE 80 PVC SHALL BE INSTALLED AT EACH POLE FOUNDATION STUBBED OUT 1' FROM THE FACE OF THE FOUNDATION. STUB OUTS SHALL BE APPROPRIATELY CAPPED BELOW GRADE FOR FUTURE USE.
8. MINIMUM CLEARANCE OF 3' RADIUS FROM NEUTRAL AND 10' RADIUS FROM PRIMARY SHALL BE MAINTAINED BETWEEN PROPOSED TRAFFIC SIGNAL EQUIPMENT INCLUDING SPAN WIRE AND EXISTING OVERHEAD LINES.
9. UPON RECEIPT OF THE ELECTRICAL PERMIT, THE CONTRACTOR SHALL FAX A COPY TO THE CITY OF SAN ANTONIO TRAFFIC SIGNAL CONSTRUCTION SECTION AT (210) 224-5028, ATTN: THOMAS NEARY. THE CONTRACTOR SHALL SUPPLY AND INSTALL THE ADDRESS IN PERMANENT NUMBERS AND LETTERS TO THE STREET SIDE OF THE ENCLOSURE. SAID ADDRESS SHALL ALSO BE RECORDED AND GIVEN TO THE CITY OF SAN ANTONIO INSPECTOR FOR THE CITY'S RECORD.
10. SIGNAL IS HARDWIRE INTERCONNECTED WITH FIELD MASTER LOCATED AT MARBACH AND MILITARY. PROPOSED SIGNAL IS TO BE WIRELESS INTERCONNECTED. INTERCONNECT SHALL BE MAINTAINED DURING AND AFTER CONSTRUCTION.

LOCATIONS		
POLE	STATION	OFFSET (FEET)
C	41+33.22	43.09 RT
D	41+41.44	44.59 LT
E	40+75.90	45.00 LT
F	40+76.75	44.22 RT

EQUIPMENT SCHEDULE	
ID	CONSTRUCTION NOTES
A	INSTALL ELECTRICAL SERVICE PEDESTAL WITH METER.
B	INSTALL TYPE 332 CABINET & 2070 CONTROLLER ASSEMBLY ON CONCRETE FOUNDATION. INSTALL BATTERY BACKUP SYSTEM.
C	INSTALL 24' HIGH, SMA-80 STEEL POLE WITH 44' MA, 13.2' DEEP 36-A FOUNDATION, (2) LED COUNTDOWN PEDESTRIAN HEADS, (2) PEDESTRIAN PUSH BUTTONS WITH R-10-4b (L&R) SIGN, (1) 9' ILSN MAST ARM, (2) VIVDS CAMERA ASSEMBLIES, AND (1) EMERGENCY DETECTOR. INSTALL WIRELESS ANTENNA AND COAXIAL CABLE
D	INSTALL 24' HIGH, SMA-80 STEEL POLE WITH 32' MA, 11.3' DEEP 30-A FOUNDATION, (2) LED COUNTDOWN PEDESTRIAN HEADS, (2) PEDESTRIAN PUSH BUTTONS WITH R-10-4b (L&R) SIGN, (1) 9' ILSN MAST ARM, (1) VIVDS CAMERA ASSEMBLIES, AND (1) EMERGENCY DETECTOR.
E	INSTALL 24' HIGH, SMA-80 STEEL POLE WITH 44' MA, 13.2' DEEP 36-A FOUNDATION, (2) LED COUNTDOWN PEDESTRIAN HEADS, (2) PEDESTRIAN PUSH BUTTONS WITH R-10-4b (L&R) SIGN, (1) 9' ILSN MAST ARM, (2) VIVDS CAMERA ASSEMBLIES, AND (1) EMERGENCY DETECTOR.
F	INSTALL 24' HIGH, SMA-80 STEEL POLE WITH 32' MA, 11.3' DEEP 30-A FOUNDATION, 2) LED COUNTDOWN PEDESTRIAN HEADS, (2) PEDESTRIAN PUSH BUTTONS WITH R-10-4b (L&R) SIGN, (1) 9' ILSN MAST ARM, (1) VIVDS CAMERA ASSEMBLIES, AND (1) EMERGENCY DETECTOR.

STATE OF TEXAS
WILLIAM J. WHITE
84320
REGISTERED
PROFESSIONAL ENGINEER
12-16-10
DATE

REV NO	DATE	DESCRIPTION	BY
1	12-16-10	ADD BATT BACK, REV QUANT	WJW

GKW ENGINEERING
GONZALEZ, KYPUROS AND WHITE
3463 MAGIC DR., SUITE 250
SAN ANTONIO, TEXAS 78229
210-582-5870 FAX 210-582-5872
WWW.GKW-INC.COM FIRM No. TX - 4532

BAIN MEDINA BAIN, INC.
ENGINEERS & SURVEYORS
TBPE F-001712
7073 San Pedro, San Antonio, Texas. 78216
Phone: 210-404-7223 Fax: 210-490-5120 WWW.BMBI.COM

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

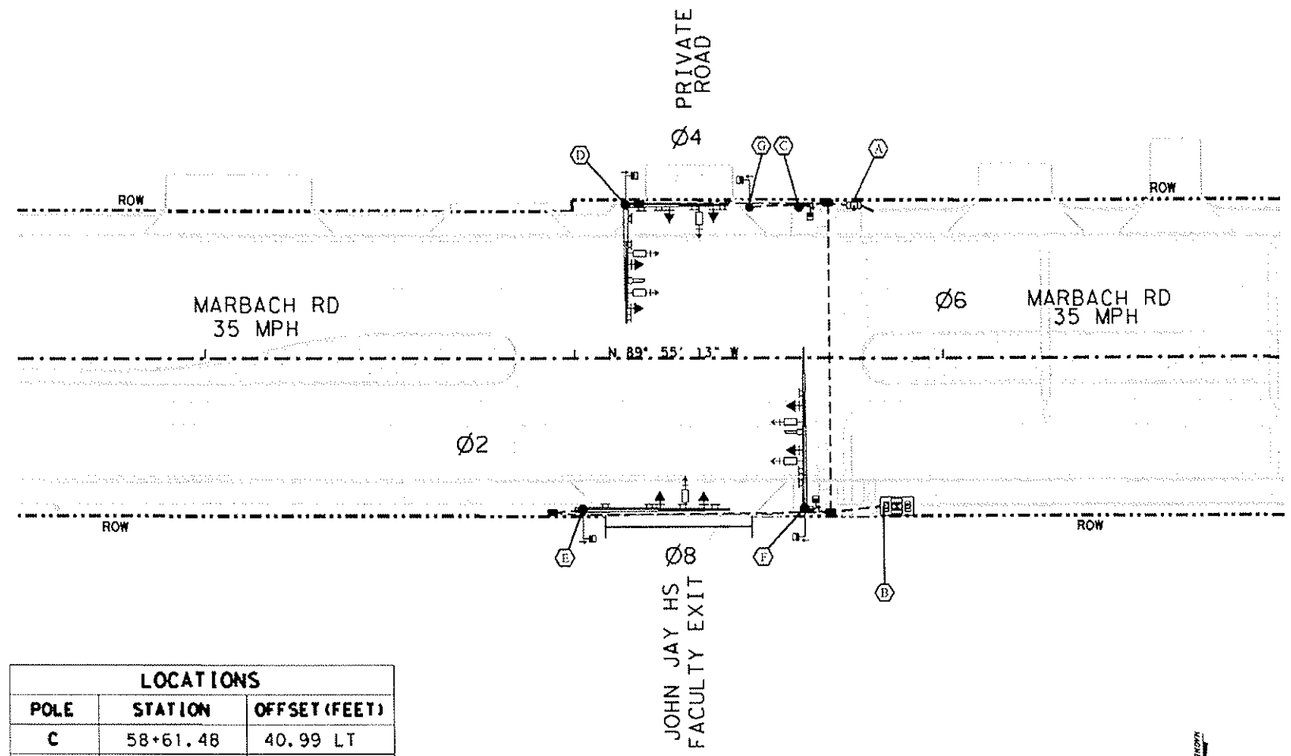
MARBACH RD (PHASE II)
FROM MILITARY DR TO IH 410
TRAFFIC SIGNAL NOTES
MARBACH RD AT WESTEDGE DR

199

100% SUBMITTAL	PROJECT NO: 40-00059		DATE: 10-3-10
DRAWN BY: JSS	DSGN BY: WJW	CHKD BY: WJW	SHEET: 200 OF

SHEET 3

ITEM	DESCRIPTION	UNIT	QTY
308.1	DRILLED SHAFTS (30")	LF	22
308.1	DRILLED SHAFTS (36")	LF	13
615.1	TRAFFIC SIGNAL CONTROLLER ASSEMBLY (TYPE 332 CABINET)	EA	1
618.1	CONDUIT TRENCHED 2 INCH PVC (SCHEDULE 40)	LF	62
618.2	CONDUIT TRENCHED 3 INCH PVC (SCHEDULE 40)	LF	450
620.1	ELECTRICAL CONDUCTORS (No. 6) (BARE)	LF	8
620.2	ELECTRICAL CONDUCTORS (No. 8) (BARE)	LF	500
620.3	ELECTRICAL CONDUCTORS (No.6) (INSULATED)	LF	16
624.3	GROUND BOXES TYPE C (162911) W/APRON	EA	4
628.1	ELECTRICAL SERVICES (TYPE T)(120/240V)	EA	1
633.1	BATTERY BACKUP SYSTEM	EA	1
655.1	TYPE 332 CONTROLLER FOUNDATION	EA	1
680.2	INSTALLATION OF HIGHWAY TRAFFIC SIGNALS (SYSTEM)	EA	1
682.1	VEHICLE SIGNAL SECTION WITH BACK PLATE (12 INCH) (3 SEC)	EA	8
682.4	PEDESTRIAN SIGNAL SECTION (12 INCH) LED (2 IND)	EA	6
684.1	TRAFFIC SIGNAL CABLES (TYPE A) (14 AWG) (CONDUCTOR No.4)	LF	550
684.1	TRAFFIC SIGNAL CABLES (TYPE A) (14 AWG) (CONDUCTOR No.9)	LF	1100
686.1	TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL) (SINGLE MA 36') WITH ILSN	EA	1
686.1	TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL) (SINGLE MA 44') WITH ILSN	EA	1
686.1	TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL) (DUAL MA 32' X 28') WITH ILSN	EA	1
687.1	PEDESTAL POLE ASSEMBLY (10')	EA	2
688.2	PEDESTRIAN DETECTORS (2 INCH PUSH-BUTTON)	EA	6
691.1	SPREAD SPECTRUM RADIO	EA	1
691.2	ANTENNA (UNIDIRECTIONAL)	EA	1
691.3	COAXIAL CABLE	LF	50
693.1	INTERNALLY LIGHTED STREET NAME SIGNS (ILSN SIGN 9' S)	EA	4
694.1	VIVDS PROCESSOR UNIT	EA	7
694.2	VIVDS CAMERA ASSEMBLY	EA	7
694.4	VIVDS SET-UP SYSTEM	EA	1
694.5	VIVDS TEMPORARY	EA	1
694.6	VIVDS COMMUNICATIONS CABLE (COAXIAL)	LF	600
695.2	EMERGENCY PREEMPTION PHASE SELECTOR	EA	1
695.3	EMERGENCY PREEMPTION DETECTOR	EA	2
695.4	EMERGENCY PREEMPTION DETECTOR CABLE	LF	170



CONSTRUCTION NOTES

1. LOCATION OF TRAFFIC SIGNAL POLES, CONTROLLER ASSEMBLIES, AND ELECTRICAL SERVICE SHALL BE VERIFIED AND APPROVED BY COSA PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL SUPPLY AND INSTALL THE ADDRESS IN PERMANENT NUMBERS AND LETTERS TO THE STREET SIDE OF THE SERVICE ENCLOSURE. SAID ADDRESS SHALL ALSO BE RECORDED AND GIVEN TO THE CITY OF SAN ANTONIO INSPECTOR FOR THE CITY'S RECORDS.

2. SIDEWALK SHALL BE EXTENDED UP TO THE MAST ARM POLES, AS NEEDED, TO PROVIDE PEDESTRIAN ACCESS TO THE PEDESTRIAN PUSH BUTTONS

3. DETECTION SHALL BE PROVIDED USING A VIDEO IMAGING VEHICLE DETECTION SYSTEM (VIVDS). THE CAMERA ASSEMBLIES SHALL BE MOUNTED ABOVE THE ROADWAY ON THE MAST ARMS, AS SHOWN ON THE PLANS, CAMERA ASSEMBLY HEIGHT SHALL BE IN ACCORDANCE WITH MANUFACTURER RECOMMENDATION TO OBTAIN OPTIMUM DETECTION, ANY MOUNTING HARDWARE, INCLUDING EXTENSION RODS, NEEDED TO MEET THESE REQUIREMENTS SHALL BE PROVIDED BY THE CITY.

4. THE VIVDS PROCESSOR SYSTEM PROVIDED SHALL CONSIST OF UNITS THAT INSERT DIRECTLY INTO THE 2070 CONTROLLER INPUT FILE. THE CITY WILL PROVIDE ONE 2-CHANNEL VIVDS PROCESSOR UNIT PER CAMERA.

5. VIVDS CAMERAS SHALL BE WIRED WITH TWO-IN-ONE (RG-59 COMMUNICATION CABLE AND #18 AWG 3-CONDUCTOR POWER SUPPLY CABLE), AS RECOMMENDED BY MANUFACTURER.

6. ALL ILSN SIGNS SHALL BE INSTALLED ON THE ILSN MAST ARM AS DIRECTED BY THE ENGINEER.

7. AN ADDITIONAL 2 9 / 32 SCHEDULE 80 PVC SHALL BE INSTALLED AT EACH POLE FOUNDATION STUBBED OUT 1' FROM THE FACE OF THE FOUNDATION. STUB OUTS SHALL BE APPROPRIATELY CAPPED BELOW GRADE FOR FUTURE USE.

8. MINIMUM CLEARANCE OF 3' RADIUS FROM NEUTRAL AND 10' RADIUS FROM PRIMARY SHALL BE MAINTAINED BETWEEN PROPOSED TRAFFIC SIGNAL EQUIPMENT INCLUDING SPAN WIRE AND EXISTING OVERHEAD LINES.

9. UPON RECEIPT OF THE ELECTRICAL PERMIT, THE CONTRACTOR SHALL FAX A COPY TO THE CITY OF SAN ANTONIO TRAFFIC SIGNAL CONSTRUCTION SECTION AT (210) 224-5028, ATTN: THOMAS NEARY. THE CONTRACTOR SHALL SUPPLY AND INSTALL THE ADDRESS IN PERMANENT NUMBERS AND LETTERS TO THE STREET SIDE OF THE ENCLOSURE. SAID ADDRESS SHALL ALSO BE RECORDED AND GIVEN TO THE CITY OF SAN ANTONIO INSPECTOR FOR THE CITY'S RECORD.

10. SIGNAL IS HARDWIRE INTERCONNECTED WITH FIELD MASTER LOCATED AT MARBACH AND MILITARY. PROPOSED SIGNAL IS TO BE WIRELESS INTERCONNECTED. INTERCONNECT SHALL BE MAINTAINED DURING AND AFTER CONSTRUCTION.

LOCATIONS		
POLE	STATION	OFFSET (FEET)
C	58+61.48	40.99 LT
D	58+14.11	41.59 LT
E	58+01.95	41.27 RT
F	58+62.39	41.02 RT
G	58+48.01	40.98 LT

EQUIPMENT SCHEDULE	
ID	CONSTRUCTION NOTES
A	INSTALL ELECTRICAL SERVICE PEDESTAL WITH METER.
B	INSTALL TYPE 332 CABINET & 2070 CONTROLLER ASSEMBLY ON CONCRETE FOUNDATION. INSTALL BATTERY BACKUP SYSTEM.
C	INSTALL 10' HIGH PED POLE WITH 5.7' DEEP 24-A FOUNDATION, (1) LED COUNTDOWN PEDESTRIAN HEAD AND (1) PEDESTRIAN PUSH BUTTON WITH R10-4b SIGN
D	INSTALL 24' HIGH, 32 X 28 DMA-80 STEEL POLE WITH 11.3' DEEP 30-A FOUNDATION, (1) LED COUNTDOWN PEDESTRIAN HEAD, (1) PEDESTRIAN PUSH BUTTON WITH R10-4b SIGN, (2) 9' ILSN MAST ARM, (3) VIVDS CAMERA ASSEMBLIES, AND (1) EMERGENCY DETECTOR.
E	INSTALL 24' HIGH, SMA-80 STEEL POLE WITH 44' MA, 13.2' DEEP 36-A FOUNDATION, (1) LED COUNTDOWN PEDESTRIAN HEAD, (1) PEDESTRIAN PUSH BUTTON WITH R10-4b SIGN, (1) 9' ILSN MAST ARM AND (1) VIVDS CAMERA ASSEMBLY.
F	INSTALL 24' HIGH, SMA-80 STEEL POLE WITH 36' MA, 11.3' DEEP 30-A FOUNDATION, (2) LED COUNTDOWN PEDESTRIAN HEAD, (2) PEDESTRIAN PUSH BUTTON WITH R-10-4b SIGN, (1) 9' ILSN MAST ARM, (2) VIVDS CAMERA ASSEMBLIES AND (1) EMERGENCY DETECTOR.
G	INSTALL 10' HIGH PED POLE WITH 5.7' DEEP 24-A FOUNDATION, (1) LED COUNTDOWN PEDESTRIAN HEAD AND (1) PEDESTRIAN PUSH BUTTON WITH R10-4b SIGN

GRAPHIC SCALE
(IN FEET)
20 10 0 20 40
1" = 40'

MAGNETIC

REV NO	DATE	DESCRIPTION	BY
1	12-16-10	REV SCHED & QUANTITIES	WJW

STATE OF TEXAS
WILLIAM J. WHITE
84320
REGISTERED PROFESSIONAL ENGINEER
DATE 12-16-10

GKW ENGINEERING
GONZALEZ, KYPUROS AND WHITE
3463 MAGIC DR., SUITE 250
SAN ANTONIO, TEXAS 78229
210-582-5870 FAX 210-582-5872
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CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

MARBACH RD (PHASE II)
FROM MILITARY DR TO IH 410

TRAFFIC SIGNAL NOTES

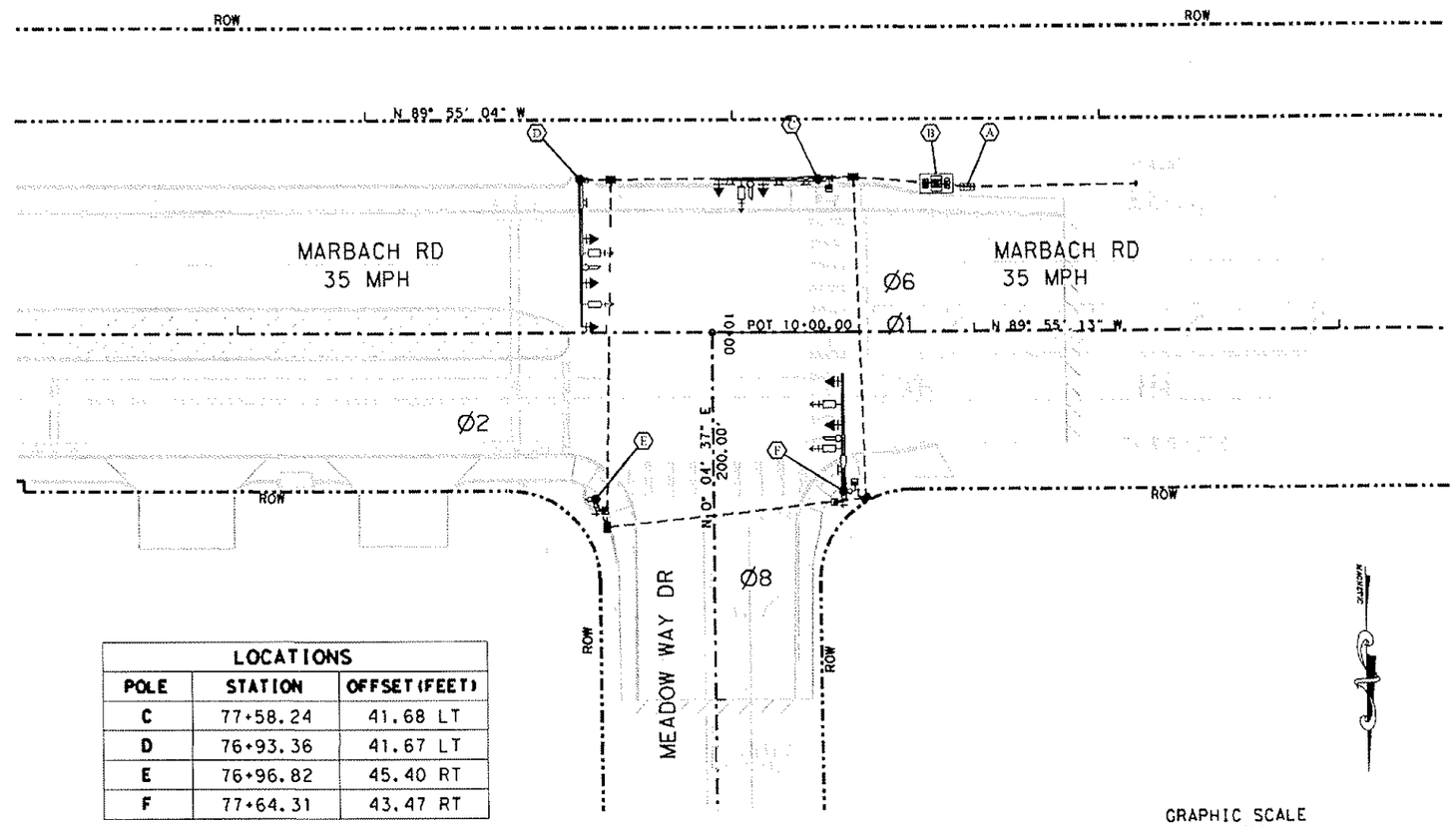
200

MARBACH RD AT JOHN JAY HS FACULTY EXIT

100% SUBMITTAL	PROJECT NO: 40-00059		DATE: 10-3-10
DRAWN BY: JSS	DSGN BY: WJW	CHKD BY: WJW	SHEET: OF

SHEET 8

ITEM	DESCRIPTION	UNIT	QTY
308.1	DRILLED SHAFTS (30")	LF	22
308.1	DRILLED SHAFTS (36")	LF	13
615.1	TRAFFIC SIGNAL CONTROLER ASSEMBLY (TYPE 332 CABINET)	EA	1
618.1	CONDUIT TRENCHED 2 INCH PVC (SCHEDULE 40)	LF	102
618.2	CONDUIT TRENCHED 3 INCH PVC (SCHEDULE 40)	LF	673
620.1	ELECTRICAL CONDUCTORS (No. 6) (BARE)	LF	68
620.2	ELECTRICAL CONDUCTORS (No. 8) (BARE)	LF	528
620.3	ELECTRICAL CONDUCTORS (No.6) (INSULATED)	LF	136
624.3	GROUND BOXES TYPE C (162911) W/APRON	EA	4
628.1	ELECTRICAL SERVICES (TYPE T)(120/240V)	EA	1
633.1	BATTERY BACKUP SYSTEM	EA	1
655.1	TYPE 332 CONTROLLER FOUNDATION	EA	1
680.2	INSTALLATION OF HIGHWAY TRAFFIC SIGNALS (SYSTEM)	EA	1
682.1	VEHICLE SIGNAL HEAD WITH BACK PLATE (3 SEC)	EA	5
682.2	VEHICLE SIGNAL SECTION WITH BACK PLATE (4 SEC)	EA	2
682.4	PEDESTRIAN SIGNAL SECTION (12 INCH) LED (2 IND)	EA	6
684.1	TRAFFIC SIGNAL CABLES (TYPE A) (14 AWG) (CONDUCTOR No.4)	LF	303
684.1	TRAFFIC SIGNAL CABLES (TYPE A) (14 AWG) (CONDUCTOR No.9)	LF	804
686.1	TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL) (1 ARM 28') WITH ILSN	EA	1
686.1	TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL) (1 ARM 32') WITH ILSN & LUM	EA	1
686.1	TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL) (1 ARM 40') WITH ILSN	EA	1
687.1	PEDESTAL POLE ASSEMBLY (10')	EA	1
688.2	PEDESTRIAN DETECTORS (2 INCH PUSH-BUTTON)	EA	4
691.1	SPREAD SPECTRUM RADIO	EA	1
691.2	ANTENNA (UNIDIRECTIONAL)	EA	1
691.3	COAXIAL CABLE	LF	35
693.1	INTERNALLY LIGHTED STREET NAME SIGNS (ILSN SIGN 9' S)	EA	3
694.1	VIVDS PROCESSOR UNIT	EA	6
694.2	VIVDS CAMERA ASSEMBLY	EA	6
694.4	VIVDS SET-UP SYSTEM	EA	1
694.5	VIVDS TEMPORARY	EA	1
694.6	VIVDS COMMUNICATIONS CABLE (COAXIAL)	LF	650
695.2	EMERGENCY PREEMPTION PHASE SELECTOR	EA	1
695.3	EMERGENCY PREEMPTION DETECTOR	EA	3
695.4	EMERGENCY PREEMPTION DETECTOR CABLE	LF	330



CONSTRUCTION NOTES

1. LOCATION OF TRAFFIC SIGNAL POLES, CONTROLLER ASSEMBLIES, AND ELECTRICAL SERVICE SHALL BE VERIFIED AND APPROVED BY COSA PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL SUPPLY AND INSTALL THE ADDRESS IN PERMANENT NUMBERS AND LETTERS TO THE STREET SIDE OF THE SERVICE ENCLOSURE. SAID ADDRESS SHALL ALSO BE RECORDED AND GIVEN TO THE CITY OF SAN ANTONIO INSPECTOR FOR THE CITY'S RECORDS.
2. SIDEWALK SHALL BE EXTENDED UP TO THE MAST ARM POLES, AS NEEDED, TO PROVIDE PEDESTRIAN ACCESS TO THE PEDESTRIAN PUSH BUTTONS
3. DETECTION SHALL BE PROVIDED USING A VIDEO IMAGING VEHICLE DETECTION SYSTEM (VIVDS). THE CAMERA ASSEMBLIES SHALL BE MOUNTED ABOVE THE ROADWAY ON THE MAST ARMS, AS SHOWN ON THE PLANS, CAMERA ASSEMBLY HEIGHT SHALL BE IN ACCORDANCE WITH MANUFACTURER RECOMMENDATION TO OBTAIN OPTIMUM DETECTION, ANY MOUNTING HARDWARE, INCLUDING EXTENSION RODS, NEEDED TO MEET THESE REQUIREMENTS SHALL BE PROVIDED BY THE CITY.
4. THE VIVDS PROCESSOR SYSTEM PROVIDED SHALL CONSIST OF UNITS THAT INSERT DIRECTLY INTO THE 2070 CONTROLLER INPUT FILE. THE CITY WILL PROVIDE ONE 2-CHANNEL VIVDS PROCESSOR UNIT PER CAMERA.
5. VIVDS CAMERAS SHALL BE WIRED WITH TWO-IN-ONE (RG-59 COMMUNICATION CABLE AND #18 AWG 3-CONDUCTOR POWER SUPPLY CABLE), AS RECOMMENDED BY MANUFACTURER.
6. ALL ILSN SIGNS SHALL BE INSTALLED ON THE ILSN MAST ARM AS DIRECTED BY THE ENGINEER.
7. AN ADDITIONAL 2 9 / 32 SCHEDULE 80 PVC SHALL BE INSTALLED AT EACH POLE FOUNDATION STUBBED OUT 1' FROM THE FACE OF THE FOUNDATION. STUB OUTS SHALL BE APPROPRIATELY CAPPED BELOW GRADE FOR FUTURE USE.
8. MINIMUM CLEARANCE OF 3' RADIUS FROM NEUTRAL AND 10' RADIUS FROM PRIMARY SHALL BE MAINTAINED BETWEEN PROPOSED TRAFFIC SIGNAL EQUIPMENT INCLUDING SPAN WIRE AND EXISTING OVERHEAD LINES.
9. UPON RECEIPT OF THE ELECTRICAL PERMIT, THE CONTRACTOR SHALL FAX A COPY TO THE CITY OF SAN ANTONIO TRAFFIC SIGNAL CONSTRUCTION SECTION AT (210) 224-5028, ATTN: THOMAS NEARY. THE CONTRACTOR SHALL SUPPLY AND INSTALL THE ADDRESS IN PERMANENT NUMBERS AND LETTERS TO THE STREET SIDE OF THE ENCLOSURE. SAID ADDRESS SHALL ALSO BE RECORDED AND GIVEN TO THE CITY OF SAN ANTONIO INSPECTOR FOR THE CITY'S RECORD.
10. SIGNAL IS HARDWIRE INTERCONNECTED WITH FIELD MASTER LOCATED AT MARBACH AND MILITARY. PROPOSED SIGNAL IS TO BE WIRELESS INTERCONNECTED. INTERCONNECT SHALL BE MAINTAINED DURING AND AFTER CONSTRUCTION.

SHEET 9

LOCATIONS		
POLE	STATION	OFFSET (FEET)
C	77+58.24	41.68 LT
D	76+93.36	41.67 LT
E	76+96.82	45.40 RT
F	77+64.31	43.47 RT

EQUIPMENT SCHEDULE	
ID	CONSTRUCTION NOTES
A	INSTALL ELECTRICAL SERVICE PEDESTAL AND METER.
B	INSTALL TYPE 332 CABINET & 2070 CONTROLLER ASSEMBLY ON CITY TYPE CONCRETE FOUNDATION. INSTALL BATTERY BACKUP SYSTEM.
C	INSTALL 24' HIGH, SMA-80 STEEL POLE WITH 28' MA, 11.3' DEEP 30-A FOUNDATION, (1) LED COUNTDOWN PEDESTRIAN HEAD, (1) PEDESTRIAN PUSH BUTTON WITH R-10-4b (R) SIGN, (1) 9' ILSN MAST ARM, (1) VIVDS CAMERA ASSEMBLIES, AND (1) EMERGENCY DETECTOR. INSTALL WIRELESS ANTENNA AND COAXIAL CABLE. INSTALL WIRELESS ANTENNA AND COAXIAL CABLE.
D	INSTALL 24' HIGH, SMA-80 STEEL POLE WITH 40' MA, 13.2' DEEP 36-A FOUNDATION, (1)LED COUNTDOWN PEDESTRIAN HEAD, (1) PEDESTRIAN PUSH BUTTON WITH R-10-4b(L) SIGN, (1) 9' ILSN MAST ARM, (2) VIVDS CAMERA ASSEMBLY, AND (1) EMERGENCY DETECTOR.
E	INSTALL TYPE I SIGNAL POLE (10 FEET). INSTALL (1) LED COUNTDOWN PEDESTRIAN SIGNAL HEADS, (1) PEDESTRIAN PUSH BUTTONS, AND R10-4B (L) SIGN ASSEMBLIES.
F	INSTALL 24' HIGH, SMA-80 STEEL POLE WITH 32' MA, 13.2' DEEP 36-A FOUNDATION, (2) LED COUNTDOWN PEDESTRIAN HEAD, (2) PEDESTRIAN PUSH BUTTON WITH R-10-4b (L&R) SIGN, 1) 9' ILSN MAST ARM, (1) VIVDS CAMERA ASSEMBLY, AND (1) EMERGENCY DETECTOR.

STATE OF TEXAS
WILLIAM J. WHITE
84320
REGISTERED PROFESSIONAL ENGINEER
12-16-10
DATE

GRAPHIC SCALE
(IN FEET)
20 10 0 20 40
1" = 40'

REV NO	DATE	DESCRIPTION	BY
1	12-16-10	REV QUANTITIES	WJW

GKW ENGINEERING
GONZALEZ, KYPUROS AND WHITE
3483 MAGIC DR., SUITE 250
SAN ANTONIO, TEXAS 78229
210-582-5870 FAX 210-582-5872
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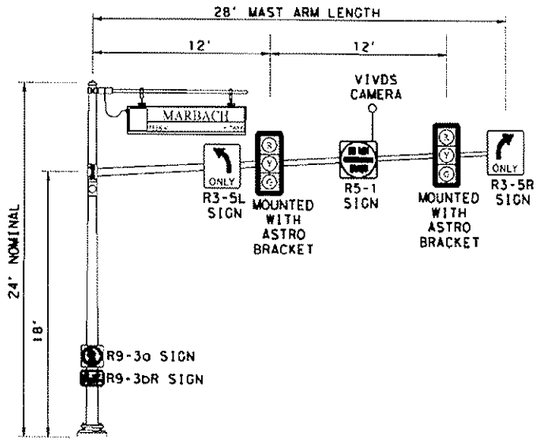
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

MARBACH RD (PHASE II)
FROM MILITARY DR TO IH 410

201

TRAFFIC SIGNAL NOTES
MARBACH RD AT MEADOW WAY DR

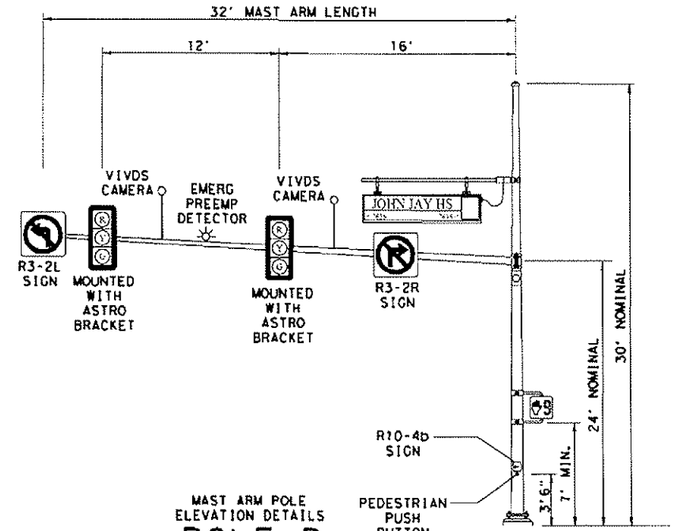
100% SUBMITTAL	PROJECT NO: 40-00059		DATE: 10-3-10
DRAWN BY: JSS	DSGN BY: WJW	CHKD BY: WJW	SHEET: OF



MAST ARM POLE ELEVATION DETAILS

POLE D SOUTHBOUND APPROACH

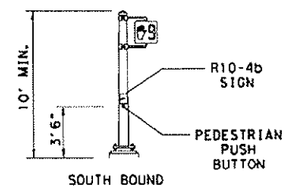
NTS



MAST ARM POLE ELEVATION DETAILS

POLE D EASTBOUND APPROACH

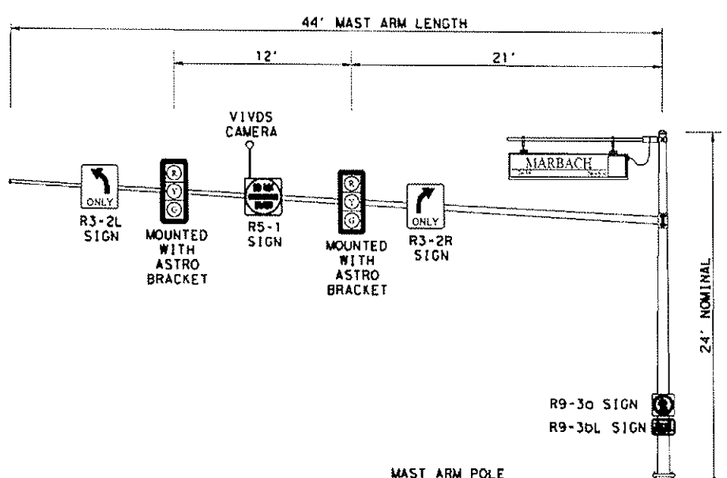
NTS



PED POLE ELEVATION DETAILS

POLE C

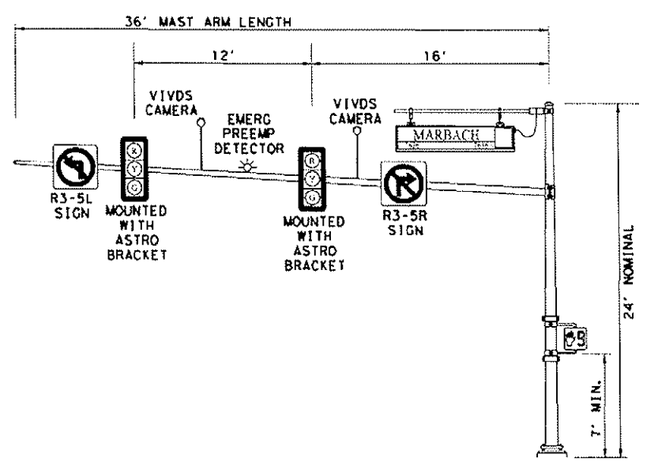
NTS



MAST ARM POLE ELEVATION DETAILS

POLE E NORTHBOUND APPROACH

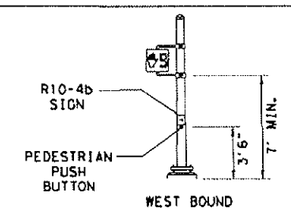
NTS



MAST ARM POLE ELEVATION DETAILS

POLE F WESTBOUND APPROACH

NTS



PED POLE ELEVATION DETAILS

POLE G

NTS

REV NO	DATE	DESCRIPTION	BY
1	12-16-10	ADD POLE 9, REM LUM	WJW

GKW ENGINEERING
GONZALEZ, KYPUROS AND WHITE
3463 MAGIC DR., SUITE 250
SAN ANTONIO, TEXAS 78229
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STATE OF TEXAS
WILLIAM J. WHITE
84320
REGISTERED PROFESSIONAL ENGINEER
12-16-10
DATE

CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

MARBACH RD (PHASE II)
FROM MILITARY DR TO IH 410

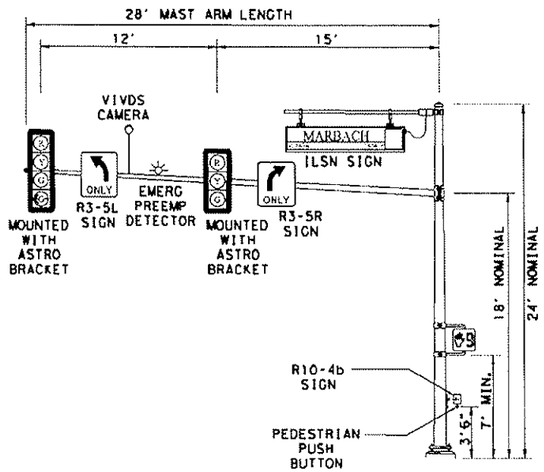
(203)

TRAFFIC SIGNAL ELEVATION DETAILS

MARBACH RD AT JOHN JAY HS FACULTY EXIT

100% SUBMITTAL	PROJECT NO: 40-00059		DATE: 10-3-10
DRAWN BY: JSS	DSGN BY: WJW	CHKD BY: WJW	SHEET: OF

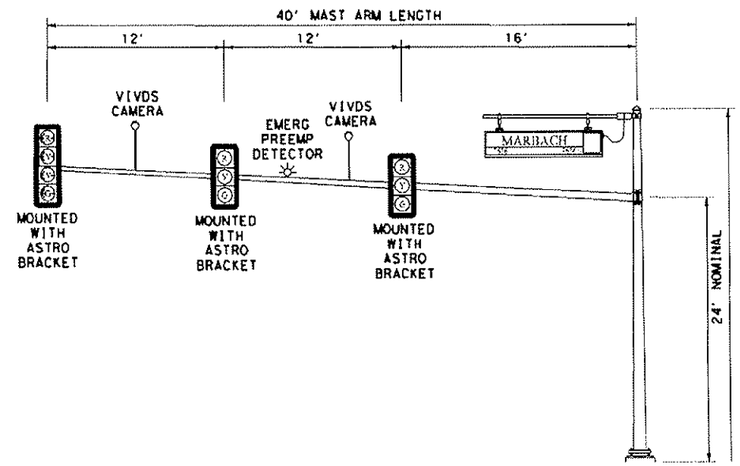
SHEET 5



MAST ARM POLE
ELEVATION DETAILS

POLE C
SOUTHBOUND APPROACH

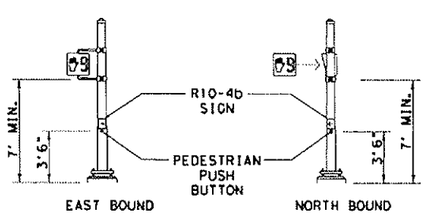
NTS



MAST ARM POLE
ELEVATION DETAILS

POLE D
EASTBOUND APPROACH

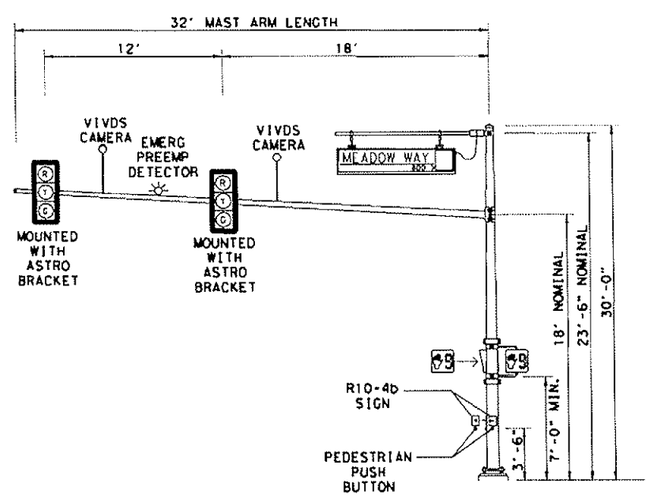
NTS



PED POLE
ELEVATION DETAILS

POLE E
NORTHBOUND APPROACH

NTS



MAST ARM POLE
ELEVATION DETAILS

POLE F
WESTBOUND APPROACH

NTS

STATE OF TEXAS
WILLIAM J. WHITE
84320
REGISTERED PROFESSIONAL ENGINEER

12-16-10
DATE

REV NO	DATE	DESCRIPTION	BY
1	12-16-10	REMOVE LUMINAIRE	WJW

GKW ENGINEERING
GONZALEZ, KYPUROS AND WHITE
3463 MAGIC DR., SUITE 250
SAN ANTONIO, TEXAS 78229
210-582-5670 FAX 210-582-5672
WWW.GKW-INC.COM FIRM No. TX - 4532

BAIN MEDINA BAIN, INC.
ENGINEERS & SURVEYORS
TBPE F-001712
7073 San Pedro, San Antonio, Texas, 78216
Phone: 210-404-7223 Fax: 210-490-5120 WWW.BMBI.COM

CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

MARBACH RD (PHASE II)
FROM MILITARY DR TO IH 410

(204)

TRAFFIC SIGNAL ELEVATION DETAILS

MARBACH RD AT MEADOW WAY DR

100% SUBMITTAL	PROJECT NO: 40-00059	DATE: 10-3-10
DRAWN BY: JSS	DSGN BY: WJW / CHKD BY: WJW	SHEET: OF

SHEET 8

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

SHIPPING PARTS LIST

Ship each pole with the following attached: enlarged hand hole, pole cap, fixed arm connection bolts and washers and any additional hardware listed in the table.

Nominal Arm Length		30' Poles With Luminaire		24' Poles With ILSN		19' Poles With no Luminaire and no ILSN	
		See note above plus: one (or two if ILSN attached) small hand hole, clamp-on simplex		See note above plus one small hand hole		See note above	
LF	Lc						
ft.	ft.	Designation	Quantity	Designation	Quantity	Designation	Quantity
20	20	2020L-80		2020S-80		2020-80	
24	20	2420L-80		2420S-80		2420-80	
	24	2424L-80		2424S-80		2424-80	
28	20	2820L-80		2820S-80		2820-80	
	24	2824L-80		2824S-80		2824-80	
	28	2828L-80		2828S-80		2828-80	
32	20	3220L-80		3220S-80		3220-80	
	24	3224L-80		3224S-80		3224-80	
	28	3228L-80		3228S-80	1	3228-80	
	32	3232L-80		3232S-80		3232-80	
36	20	3620L-80		3620S-80		3620-80	
	24	3624L-80		3624S-80		3624-80	
	28	3628L-80		3628S-80		3628-80	
	32	3632L-80		3632S-80		3632-80	
	36	3636L-80		3636S-80		3636-80	
40	20	4020L-80		4020S-80		4020-80	
	24	4024L-80		4024S-80		4024-80	
	28	4028L-80		4028S-80		4028-80	
	32	4032L-80		4032S-80		4032-80	
	36	4036L-80		4036S-80		4036-80	
44	20	4420L-80		4420S-80		4420-80	
	24	4424L-80		4424S-80		4424-80	
	28	4428L-80		4428S-80		4428-80	
	32	4432L-80		4432S-80		4432-80	
	36	4436L-80		4436S-80		4436-80	

Traffic Signal Arms (Fixed Mount) (1 per pole) Ship each arm w/ the listed equipment attached

Nominal Arm Length	Type I Arm (1 Signal)		Type II Arm (2 Signals)		Type III Arm (3 Signals)	
	1 CGB connector		1 Bracket Assembly ① and 2 CGB Connectors		2 Bracket Assemblies ① and 3 CGB Connectors	
ft.	Designation	Quantity	Designation	Quantity	Designation	Quantity
20	20I-80					
24	24I-80		24II-80			
28	28I-80		28II-80			
32			32II-80	1	32III-80	
36			36II-80		36III-80	
40					40III-80	
44					44III-80	

Traffic Signal Arms (Clamp-On Mount) (1 per pole) Ship each arm w/ the listed equipment attached

Nominal Arm Length	Type I Arm (1 Signal)		Type II Arm (2 Signals)		Type III Arm (3 Signals)	
	2 CGB connector and 1 clamp w/bolts and washers		1 Bracket Assembly ①, 3 CGB Connectors, and 1 clamp w/bolts and washers		2 Bracket Assemblies ①, 4 CGB Connectors, and 1 clamp w/bolts and washers	
ft.	Designation	Quantity	Designation	Quantity	Designation	Quantity
20	20I-80					
24	24I-80		24II-80			
28	28I-80		28II-80	1		
32			32II-80		32III-80	
36			36II-80		36III-80	

Luminaire Arms (1 per 30' pole)

Nominal Arm Length	Quantity
8' Arm	

ILSN Arm (1 or 2 per pole) ship with clamps, bolts and washers

Nominal Arm Length	Quantity
7' Arm	
9' Arm	2

Anchor Bolt Assemblies (1 per pole)

Anchor Bolt Diameter	Anchor Bolt Length	Quantity
1 ½"	3'-4"	1
1 ¾"	3'-10"	
2"	4'-3"	

Each anchor bolt assembly consists of the following: Top and Bottom templates, 4 anchor bolts, 8 nuts, 8 flat washers, 4 lock washers and 4 nut anchor devices (Type 2) per Standard Drawing "TS-FD".

Templates may be removed for shipment.

① Supply Option "A" unless otherwise noted

ARMS		ROUND POLES					POLYGONAL POLES					Foundation Type
LF	Lc	D_8	D_{19}	D_{24}	D_{30}	② thk	D_8	D_{19}	D_{24}	D_{30}	② thk	
ft.	ft.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	
20	20	11.5	8.8	8.1	7.3	.179	12.5	9.5	8.7	7.8	.179	30-A
24	20	12.0	9.3	8.6	7.8	.179	13.0	10.0	9.2	8.3	.179	30-A
	24	12.0	9.3	8.6	7.8	.179	13.0	10.0	9.2	8.3	.239	30-A
28	20	12.5	9.8	9.1	8.3	.179	12.0	9.0	8.2	7.3	.239	30-A
	24	12.5	9.8	9.1	8.3	.179	12.0	9.0	8.2	7.3	.239	30-A
	28	13.0	10.3	9.6	8.8	.179	12.5	9.5	8.7	7.8	.239	30-A
32	20	13.0	10.3	9.6	8.8	.179	12.5	9.5	8.7	7.8	.239	30-A
	24	13.0	10.3	9.6	8.8	.179	12.5	9.5	8.7	7.8	.239	30-A
	28	12.0	9.3	8.6	7.8	.239	13.0	10.0	9.2	8.3	.239	30-A
	32	12.0	9.3	8.6	7.8	.239	13.5	10.5	9.7	8.8	.239	36-A
36	20	12.0	9.3	8.6	7.8	.239	13.5	10.5	9.7	8.8	.239	36-A
	24	12.0	9.3	8.6	7.8	.239	13.5	10.5	9.7	8.8	.239	36-A
	28	12.5	9.8	9.1	8.3	.239	13.5	10.5	9.7	8.8	.239	36-A
	32	12.5	9.8	9.1	8.3	.239	13.5	10.5	9.7	8.8	.239	36-A
	36	12.5	9.8	9.1	8.3	.239	14.0	11.0	10.2	9.3	.239	36-A
40	20	12.5	9.8	9.1	8.3	.239	14.0	11.0	10.2	9.3	.239	36-A
	24	12.5	9.8	9.1	8.3	.239	14.0	11.0	10.2	9.3	.239	36-A
	28	13.0	10.3	9.6	8.8	.239	14.0	11.0	10.2	9.3	.239	36-A
	32	13.0	10.3	9.6	8.8	.239	15.0	12.0	11.2	10.3	.239	36-A
	36	13.5	10.8	10.1	9.3	.239	15.0	12.0	11.2	10.3	.239	36-A
44	20	13.5	10.8	10.1	9.3	.239	15.0	12.0	11.2	10.3	.239	36-A
	24	13.5	10.8	10.1	9.3	.239	15.0	12.0	11.2	10.3	.239	36-A
	28	13.5	10.8	10.1	9.3	.239	15.0	12.0	11.2	10.3	.239	36-A
	32	14.0	11.3	10.6	9.8	.239	15.5	12.5	11.7	10.8	.239	36-B
	36	14.0	11.3	10.6	9.8	.239	15.5	12.5	11.7	10.8	.239	36-B

Arm L_F or L_C	ROUND ARMS					POLYGONAL ARMS				
	L_1	D_1	D_2	② thk	Rise	L_1	D_1	③ D_2	② thk	Rise
ft.	ft.	in.	in.	in.		ft.	in.	in.	in.	
20	19.1	6.5	3.8	.179	1'-9"	19.1	7.0	3.5	.179	1'-8"
24	23.1	7.5	4.3	.179	1'-10"	23.1	7.5	3.5	.179	1'-9"
28	27.1	8.0	4.2	.179	1'-11"	27.1	8.0	3.5	.179	1'-10"
32	31.0	9.0	4.7	.179	2'-1"	31.0	9.0	3.5	.179	2'-0"
36	35.0	9.5	4.6	.179	2'-4"	35.0	10.0	3.5	.179	2'-1"
40	39.0	9.5	4.1	.239	2'-8"	39.0	9.5	3.5	.239	2'-3"
44	43.0	10.0	4.1	.239	2'-11"	43.0	10.0	3.5	.239	2'-6"

D_8 = Pole Base O.D.
D_{19} = Pole Top O.D. with no Luminaire and no ILSN
D_{24} = Pole Top O.D. with ILSN w/out Luminaire
D_{30} = Pole Top O.D. with Luminaire

D_1 = Arm Base O.D.
D_2 = Arm End O.D.
L_1 = Shaft Length
L_F = Fixed Arm Length
L_C = Clamp-on Arm Length (36' Max)

② Thickness shown are minimums, thicker materials may be used.

③ D_2 may be increased by up to 1.0" for polygonal arms.

216

SHEET 3 OF 3

REV NO	DATE	DESCRIPTION	BY
1	12-15-10	REMOVE LUM QUANT	WJW

Texas Department of Transportation
Traffic Operations Division

TRAFFIC SIGNAL SUPPORT STRUCTURES

DUAL MAST ARM ASSEMBLY

(80 MPH WIND ZONE)

DMA-80 (3)-96

© TxDOT August 1995

DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
CONT	SECT	JOB	HIGHWAY
DIST	COUNTY		SHEET NO.

REVISIONS
5-96

DATE:
FILE:

124C

Project Name: Marbach Road Drainage Phase IIA - Military to West of Rawhide

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
COSA Bid - Marbach Road Drainage Phase IIA - Military to West of Rawhide									
	100.1			Mobilization	LS	1			
	101.1			Preparing Right of Way	LS	1			
	103.1			Remove Concrete Curb	LF	6,248			
	103.3			Remove Concrete Sidewalks and Driveways	SF	46,671			
	103.4			Remove Miscellaneous Concrete - Combination Wall	SF	4,695			
	104.1			Street Excavation	CY	12,773			
	106.1			Box Culvert Excavation and Backfill	CY	22,582			
	108.1			Lime Treated Subgrade (6 inches compacted depth)	SY	26,749			
	108.2			Lime (Slurry)	TON	495			
	200.1			Flexible Base (4 inches compacted depth)	SY	674			
	203.1			Tack Coat	GAL	2,424			
	205.2			Hot Mix Asphaltic Pavement Type B (10 inches)	SY	26,854			
	205.2			Hot Mix Asphaltic Pavement Type B (6 inches)	SY	607			
	205.2			Hot Mix Asph Pav Type B (Temp Sidewalk)(3 inches)	SY	112			
	205.4			Hot Mix Asphaltic Pavement Type D (2 inches)	SY	25,180			
	208.1			Salvaging, Hauling, and Stockpiling R.A.P. (2 inches)	SY	2,536			
	209.1			Concrete Pavement (10" Deep)(Bus Pad)	SY	1,362			
	230.1			Flexible Pavement Structure Repair (1.5 inches)	SY	254			
	306.1			Structural Excavation (Driveway Retaining Wall)	CY	17			
	307.1			Concrete Structure (Driveway Retaining Wall)	CY	31			
	308.1			Drill Shafts (30")	LF	44			
	308.1			Drill Shafts (36")	LF	39			
	309.1			5'X5' Precast Reinforced Concrete Box Culvert	LF	385			
	309.1			6'x5' Precast Reinforced Concrete Box Culvert	LF	1,070			
	309.1			8'x5' Precast Reinforced Concrete Box Culvert	LF	1,860			
	309.1			Precast Reinforced Concrete Transition (6'x5' - 5'x5')	LF	6			
	309.1			Precast Reinforced Concrete Transition (8'x5' - 6'x5')	LF	8			
	309.1			Precast Reinforced Concrete Stub Out Cover (5'x5')	EA	1			
	401.1			Reinforced Concrete Pipe (Class III)(24 inch dia)(Laterals)	LF	1,541			
	403.1			Junction Box (Complete) 4'x4'	EA	1			
	403.6			Junction Box (Complete)(Special) 18'x6'	EA	1			
	403.8			Inlet Type C (Ty II)(Complete) 10'	EA	26			
	403.9			Inlet Type C Extension (10')	EA	11			
	403.11			Inlet Type C Extension (5')(TXDOT)	EA	8			
	403.13			Inlet Traffic Grate (Complete)(4'x2')	EA	16			

CITY OF SAN ANTONIO
025 UNIT PRICING FORM

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
	403.15			Manhole Vertical Stack	EA	25			
	410.2			Gravel Subgrade Filler	CY	365			
	465-2104			Inlet Extension (10')(TxDOT)	EA	7			
	465-2405			Inlet (Compl)(Curb)(Ty C)(TxDOT)	EA	11			
	500.1			Concrete Curbing	LF	2,140			
	500.4			Concrete Curb and Gutter	LF	5,318			
	502.1			Concrete Sidewalks	SY	3,190			
	502.3			Sidewalk Drain	EA	4			
	503.2			Portland Cement Concrete Driveway (Commercial)	SY	1,863			
	503.4			Asphaltic Concrete Driveway	SY	1,165			
	504.1			Concrete Median (5 inches thick)	SY	674			
	505.1			Concrete Riprap (4 inches thick)	SY	68			
	506.1			Concrete Retaining Walls - Combination Type	CY	120			
	508.1			Relocating Metal Fence	LF	20			
	511.3			Replacing with Hot Mix Asphaltic Pavement Type B (12 in)	SY	14			
	515.1			Topsoil (4 inches)	CY	140			
	516.2			St Augustine Sodding	SY	1,239			
	522.1			Sidewalk Pipe Railing	LF	8			
	524.1			Concrete Steps	CY	2			
	525.1			Concrete Traffic Barrier (Portable)(Low Profile)(Ty 1)	LF	1,600			
	525.1			Concrete Traffic Barrier (Portable)(Low Profile)(Ty 2)	LF	640			
	530			Barricades, Signs and Traffic Handling	LS	1			
	531.2			D3 Metro Street Name, Block Numbers (VARx18")	EA	2			
	531.3			R1-1 Stop (30")	EA	1			
	531.6			R2-1 Speed Limit (24"x30")	EA	3			
	531.11			R3-5 Left Only (30"x36")	EA	1			
	531.13			R3-7L Left Lane Must Turn Left (30"x30")	EA	3			
	531.17			R4-7 Keep Right (24"x30")	EA	8			
	531.19			R6-1R One Way (36"x12")	EA	9			
	531.24			R9-3A Pedestrian Crossing Prohibited (18"x18")	EA	2			
	531.34			S1-1 Advance School Crossing (36"x36")	EA	14			
	531.44			W16-7PL Diagonal Arrow Plaque (36"x18")	EA	6			
	531.55			OM-3 Type 3 Object Marker (12"x36")	EA	8			
	531.61			S5-1 School Speed Limit when Flashing (24" x 38")	EA	4			
	531.62			W16-9P Ahead Plaque (36"x20")	EA	4			
	531.66			S5-2A End School Zone Plaque (24"x9")	EA	3			
	531.73			W11-1 Bike Warning (30"x30")	EA	5			
	531			W16-1 Share the Road Plaque (24"x30")	EA	5			
	531			S6-1 School Speed Limit (84"x36")(Overhead)	EA	2			
	531			S7-1T Cell Phone Use Prohibited (48"x36")(Overhead)	EA	2			
	535.1			4 inch wide Yellow Line	LF	24,006			
	535.2			4 inch wide White Line	LF	10,207			

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
	535.4			8 inch wide White Line	LF	490			
	535.7			24 inch wide White Line	LF	799			
	535.9			Left White Arrow	EA	31			
	535.12			Word "ONLY"	WORD	3			
	537.6			Pavement Marker (Type I-C)	EA	195			
	537.8			Pavement Marker (Type II-A-A)	EA	132			
	540.1			Rock Filter Dams (Install/Remove)(Type 2)	LF	20			
	540.6			Construction Exits (Install/Remove)(Type 1)	SY	312			
	540.1			Curb Inlet Gravel Filters	LF	1,695			
	550.1			Trench Excavation Safety Protection	LF	1,388			
	552.1			Removing and Relocating Irrigation System	LF	100			
	615.1			Traffic Signal Controller Assembly (Type 332 Cabinet)	EA	2			
	618.1			Conduit Trenched 2 inch PVC (Schedule 40)	LF	118			
	618.2			Conduit Trenched 3 inch PVC (Schedule 40)	LF	1,130			
	620.1			Electric Conductors (No. 6)(Bare)	LF	38			
	620.2			Electric Conductors (No. 8)(Bare)	LF	1,025			
	620.3			Electric Conductors (No.6)(Insulated)	LF	76			
	624.3			Ground Boxes Type C (162911) w/Apron	EA	8			
	628.1			Electrical Services (Type T)(120/240V)	EA	2			
	633.1			Battery Backup System	EA	2			
	655.1			Type 332 Controller Foundation	EA	2			
	680.2			Installation of Highway Traffic Signals (System)	EA	2			
	681.1			Temporary Traffic Signal	EA	2			
	682.1			Install Vehicle Signal Section w/ Back Plate (12 in)(3 sec)	EA	16			
	682.4			Install Pedestrian Signal Section (12 in) LED (2 ind)	EA	14			
	684.1			Traffic Signal Cables (Type A)(14 AWG)(Conductor No. 4)	LF	1,060			
	684.1			Traffic Signal Cables (Type A)(14 AWG)(Conductor No. 9)	LF	2,140			
	685.1			Install Flashing Beacon Assembly	EA	4			
	685.3			Remove Flashing Beacon Assembly	EA	4			
	685.4			Solar Powered School Zone Flasher Assembly	EA	4			
	686.1			Install Traf Signal Pole Asm (Steel)(1 Arm 32') w/LSN	EA	2			
	686.1			Install Traf Signal Pole Asm (Steel)(1 Arm 44') w/ILSN	EA	3			
	686.1			Install Traf Signal Pole Asm (Steel)(1 Arm 36') w/ILSN	EA	1			
	686.1			Install Traf Signal Pole Asm (Stl)(2 Arms 32' & 28') w/ILSN	EA	1			
	687.1			Pedestal Pole Assembly (10')	EA	2			
	688.2			Pedestrian Detectors (2 inch Push-Button)	EA	14			
	691.1			Spread Spectrum Radio	EA	2			
	691.2			Antenna	EA	2			

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
	691.3			Coaxial Cable	LF	85			
	693.1			Internally Lighted Street Name Signs (ILSN Sign 9' S)	EA	8			
	694.1			VIVDS Processor Unit	EA	14			
	694.2			VIVDS Camera Assembly	EA	14			
	694.4			VIVDS Set-up System	EA	2			
	694.5			VIVDS Temporary	EA	2			
	694.6			VIVDS Communications Cable (Coaxial)	LF	1,500			
	695.2			Emergency Preemption Phase Selector	EA	3			
	695.3			Emergency Preemption Detector	EA	4			
	695.4			Emergency Preemption Detector Cable	LF	740			
	801.3			Tree Protection Level IIB	LF	30			
	802.1			Tree Pruning	EA	14			
	SP1			VIA Bus Foundations (Complete)	EA	9			
							Total COSA Base Bid Amount:		
SAWS Sanitary Sewer Base Bid - Marbach Road, Phase IIA (From Military to West of Rawhide)									
	100			Mobilization	LS	1			
	101			Preparation of Right-of-Way	LS	1			
	511.3			Replacing w/ A.T.B. and Pvmt (12" Comp. Depth)	SY	16			
	550			Trench Excavation Safety Protection	LF	2,225.27			
	848			8" PVC Gravity Sanitary Sewer Pipe SDR 26 2241 (0'-6')	LF	637			
	848			10" PVC Gravity Sanitary Sewer Pipe SDR 26 2241 (0'-6')	LF	649.58			
	848			10" PVC Gravity Sanitary Sewer Pipe SDR 26 2241 (6'-10')	LF	938.69			
	851			Adjusting Existing Manholes (Watertight Ring and Cover)	EA	2			
	852.1			Sanitary Sewer Manhole (0'-6')	EA	10			
	852.2			Sanitary Sewer Drop Manhole (0'-6')	EA	1			
	852.3			Extra Depth Manholes (>6')	VF	8.12			
	854			Sanitary Sewer Laterals	LF	181			
	854.1			One-Way Sanitary Sewer Cleanout	EA	12			
	858			Concrete Encasement, Cradles, Saddles and Collars	CY	91.6			
	860			Vertical Stacks	VF	1.33			
	862			Abandonment of Sanitary Sewer Main and Manholes	LF	52			
	864			Bypass Pumping	LS	1			
	866			Sewer Main Television Inspection (Post-Inspection)	LF	2,175			
	866			Sewer Main Television Inspection (Pre-Inspection)	LF	1,585			
	1010			Flowable Fill	CY	356			
							Total SAWS San. Sewer Base Bid Amount:		

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
SAWS Water Base Bid - Marbach Road, Phase IIA (From Military to West of Rawhide)									
	100			Mobilization	LS	1			
	101			Preparation of Right-of-Way	LS	1			
	511.3			Replacing w/ A.T.B.& Pvmt. (12" Comp. Depth)	SY	170			
	550			Trench Excavation Safety Protection	LF	6,519			
	814			6" DI Waterline (Restrained)	LF	235			
	818			6" PVC Waterline (Restrained)	LF	20			
	818			8" PVC Waterline (Restrained)	LF	235			
	818			10" PVC Waterline (Restrained)	LF	10			
	818			12" PVC Waterline (Restrained)	LF	3,835			
	820			36" C.S.C. C-301 Waterline (Restrained)	LF	2,154			
	824			Relay 3/4" Short Service	EA	3			
	824			Relay 3/4" Long Service	EA	11			
	824			Relay 1" Short Service	EA	1			
	824			Relay 1" Long Service	EA	6			
	824			Relay 1 1/2" Short Service	EA	4			
	824			Relay 1 1/2" Long Service	EA	4			
	824			New 1 1/2" Long Unmetered Service	EA	2			
	826			Valve Box Adjustment	EA	2			
	828			6" Gate Valve & Box Complete	EA	5			
	828			8" Gate Valve & Box Complete	EA	1			
	828			12" Gate Valve & Box Complete	EA	11			
	830			36" Butterfly Valves	EA	3			
	831			8"x12" Cut-in Tee	EA	1			
	833			Existing Meter and Meter Box Relocation	EA	5			
	833			Existing Meter and New Meter Box Relocation	EA	29			
	833			Meter Box Type 2	EA	5			
	834			Fire Hydrant	EA	10			
	836			Pipe Fittings, All Sizes and Types	TON	7			
	840			6" Water Tie-Ins	EA	7			
	840			8" Water Tie-Ins	EA	1			
	840			10" Water Tie-Ins	EA	1			
	840			36" Water Tie-Ins	EA	2			
	841			Hydrostatic Testing	EA	5			
	844			2" Blowoff, Temporary	EA	12			
	844			4" Blowoff, Temporary	EA	1			
	856.2			12" Carrier Pipe by Open Cut	LF	30			
	856.3			24" Steel Casing by Open Cut	LF	30			
	862			Abandon 36" Pipe & Grout	LF	1,898			
	1010			Flowable Fill	CY	60			
	3000.14			Removal, Transportation and Disposal of AC Pipe	LS	1			
	3000.15			Asbestos Abatement Work Plan	LS	1			
							Total SAWS Water Base Bid Amount:		

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
CPS Energy Gas Bid - Marbach Road, Phase IIA (From Military to West of Rawhide)									
	1			Rerun and Lower Gas Service off New Main (Main to 1 ft. inside property line), Sizes 1" thru 4" (including replacing riser if necessary). Long Side	EA	5			
	2.1			Rerun and Lower Gas Service off New Main to Meter, Sizes 1" thru 4" (including replacing riser if necessary). Short Side	EA	1			
	2.2			Rerun and Lower Gas Service off New Main to Meter, Sizes 1" thru 4" (including replacing riser if necessary). Long Side	EA	3			
	3			Cut Back, Pump Test and Tie Existing Service to New Main, Sizes 1" thru 4"	EA	1			
	4.1			Install Gas Main or Casing (Distance as Measured along the Top of Trench) 2" Plastic Pipe and Tracer Wire	FT	181			
	4.2			Install Gas Main or Casing (Distance as Measured along the Top of Trench) 12" Steel	FT	1411			
The COST to abandon the existing main(s) is not an ADDITIONAL item and is to be included in the Unit Price(s) for this item.									
	5.1			Install Gas Mains Joint Trench (Distance as measured along the Top of Trench) 2" Plastic Pipe with Tracer Wire & 12" Steel	FT	1221			
	5.2			Install Gas Mains Joint Trench (Distance as measured along the Top of Trench) 4" Plastic Pipe with Tracer Wire & 12" Steel	FT	916			
The COST to abandon the existing main(s) is not an ADDITIONAL item and is to be included in the Unit Price(s) for this item.									
	6.1			Street Restoration Adjustment, when required. To be used as directed by the CPS Energy Representative. Flowable Fill	CY	106			
	6.2			Street Restoration Adjustment, when required. To be used as directed by the CPS Energy Representative. Asphalt	SY	953			
	7			Hire TDW to purchase, install and perform stopple operations.	EA	2			
							Total CPS Energy Gas Base Bid Amount:		
							Total Project Base Bid Amount:		

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
COSA Bid - Marbach Road Drainage Phase IIA - Additive Alternate 1									
	100.1			Mobilization	LS	1			
	101.1			Preparing Right of Way	LS	1			
	103.1			Remove Concrete Curb	LF	1,295			
	103.3			Remove Concrete Sidewalks and Driveways	SF	5,209			
	103.4			Remove Miscellaneous Concrete - Combination Wall	SF	225			
	104.1			Street Excavation	CY	2,228			
	106.1			Box Culvert Excavation and Backfill	CY	3,259			
	108.1			Lime Treated Subgrade (6 inches compacted depth)	SY	5,498			
	108.2			Lime (Slurry)	TON	102			
	200.1			Flexible Base (4 inches compacted depth)	SY	55			
	203.1			Tack Coat	GAL	434			
	205.2			Hot Mix Asphaltic Pavement Type B (10 inches)	SY	4,736			
	205.2			Hot Mix Asphaltic Pavement Type B (6 inches)	SY	402			
	205.4			Hot Mix Asphaltic Pavement Type D (2 inches)	SY	4,336			
	209.1			Concrete Pavement (10" Deep)(Bus Pad)	SY	227			
	230.1			Flexible Pavement Structure Repair (1.5 inches)	SY	64			
	306.1			Structural Excavation (Driveway Retaining Wall)	CY	1			
	307.1			Concrete Structure (Driveway Retaining Wall)	CY	2			
	309.1			5'X5' Precast Reinforced Concrete Box Culvert	LF	750			
	401.1			Reinforced Concrete Pipe (Class III)(24 inch dia)(Laterals)	LF	489			
	403.1			Junction Box (Complete) 4'x4'	EA	1			
	403.8			Inlet Type C (Ty II)(Complete) 10'	EA	8			
	403.9			Inlet Type C Extension (10')	EA	1			
	403.11			Inlet Type C Extension (5')(TXDOT)	EA	3			
	403.13			Inlet Traffic Grate (Complete)(4'x2')	EA	4			
	403.15			Manhole Vertical Stack	EA	9			
	410.2			Gravel Subgrade Filler	CY	63			
	465-2104			Inlet Extension (10')(TxDOT)	EA	4			
	465-2405			Inlet (Compl)(Curb)(Ty C)(TxDOT)	EA	6			
	500.1			Concrete Curbing	LF	324			
	500.4			Concrete Curb and Gutter	LF	897			
	502.1			Concrete Sidewalks	SY	673			
	503.2			Portland Cement Concrete Driveway (Commercial)	SY	315			
	503.4			Asphaltic Concrete Driveway	SY	119			
	504.1			Concrete Median (5 inches thick)	SY	55			
	505.1			Concrete Riprap (4 inches thick)	SY	12			
	506.1			Concrete Retaining Walls - Combination Type	CY	9			
	515.1			Topsoil (4 inches)	CY	37			
	516.2			St Augustine Sodding	SY	328			
	525.1			Concrete Traffic Barrier (Portable)(Low Profile)(Ty 1)	LF	140			
	525.1			Concrete Traffic Barrier (Portable)(Low Profile)(Ty 2)	LF	160			
	530			Barricades, Signs and Traffic Handling	LS	1			
	531.2			D3 Metro Street Name, Block Numbers (VARx18")	EA	2			

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
	531.3			R1-1 Stop (30")	EA	1			
	531.17			R4-7 Keep Right (24"x30")	EA	3			
	531.19			R6-1R One Way (36"x12")	EA	1			
	531.34			S1-1 Advance School Crossing (36"x36")	EA	2			
	531.44			W16-7PL Diagonal Arrow Plaque (36"x18")	EA	2			
	531.55			OM-3 Type 3 Object Marker (12"x36")	EA	2			
	531.73			W11-1 Bike Warning (30"x30")	EA	1			
	531			W16-1 Share the Road Plaque (24"x30")	EA	1			
	535.1			4 inch wide Yellow Line	LF	4,516			
	535.2			4 inch wide White Line	LF	1,850			
	535.4			8 inch wide White Line	LF	125			
	535.7			24 inch wide White Line	LF	126			
	535.9			Left White Arrow	EA	6			
	535.12			Word "ONLY"	WORD	1			
	535.A			24 inch wide Yellow Line	LF	60			
	535.B			Median Nose Yellow	EA	2			
	537.6			Pavement Marker (Type I-C)	EA	38			
	537.8			Pavement Marker (Type II-A-A)	EA	42			
	540.1			Curb Inlet Gravel Filters	LF	460			
	550.1			Trench Excavation Safety Protection	LF	445			
	SP1			VIA Bus Foundations (Complete)	EA	3			
							Total COSA Additive Alternate 1 Bid Amount:		
SAWS Sanitary Sewer Bid - Marbach Road, Phase IIA (From Military to West of Rawhide) - Additive Alternate 1									
	100			Mobilization	LS	1			
	101			Preparation of Right-of-Way	LS	1			
	550			Trench Excavation Safety Protection	LF	735.49			
	848			8" PVC Gravity Sanitary Sewer Pipe SDR 26 2241 (0'-6')	LF	19.15			
	848			10" PVC Gravity Sanitary Sewer Pipe SDR 26 2241 (0'-6')	LF	285			
	848			10" PVC Gravity Sanitary Sewer Pipe SDR 26 2241 (6'-10')	LF	431.34			
	852.1			Sanitary Sewer Manhole (0'-6')	EA	4			
	852.3			Extra Depth Manholes (>6')	VF	2.76			
	854			Sanitary Sewer Laterals	LF	49			
	854.1			One-Way Sanitary Sewer Cleanout	EA	3			
	858			Concrete Encasement, Cradles, Saddles and Collars	CY	30.5			
	864			Bypass Pumping	LS	1			
	866			Sewer Main Television Inspection (Post-Inspection)	LF	735.49			
	866			Sewer Main Television Inspection (Pre-Inspection)	LF	432			
	1010			Flowable Fill	CY	75			
							Total SAWS San. Sewer Add. Alt. 1 Bid Amount:		

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
SAWS Water Bid - Marbach Road, Phase IIA (From Military to West of Rawhide) - Additive Alternate 1									
	100			Mobilization	LS	1			
	101			Preparation of Right-of-Way	LS	1			
	511.3			Replacing w/ A.T.B.& Pvmt. (12" Comp. Depth)	SY	52			
	550			Trench Excavation Safety Protection	LF	1,387			
	814			8" DI Waterline (Restrained)	LF	50			
	818			6" PVC Waterline (Restrained)	LF	10			
	818			8" PVC Waterline (Restrained)	LF	200			
	818			12" PVC Waterline (Restrained)	LF	700			
	820			36" C.S.C. C-301 Waterline (Restrained)	LF	427			
	824			Relay 3/4" Short Service	EA	3			
	824			Relay 3/4" Long Service	EA	2			
	824			Relay 1" Short Service	EA	1			
	824			Relay 1" Long Service	EA	2			
	828			8" Gate Valve & Box Complete	EA	5			
	828			12" Gate Valve & Box Complete	EA	2			
	830			36" Butterfly Valves	EA	1			
	833			Existing Meter and New Meter Box Relocation	EA	8			
	834			Fire Hydrant	EA	3			
	836			Pipe Fittings, All Sizes and Types	TON	2.1			
	840			6" Water Tie-Ins	EA	1			
	840			8" Water Tie-Ins	EA	3			
	840			36" Water Tie-Ins	EA	2			
	841			Hydrostatic Testing	EA	2			
	844			2" Blowoff, Temporary	EA	3			
	844			4" Blowoff, Temporary	EA	1			
	862			Abandon 36" Pipe & Grout	LF	330			
	3000.14			Removal, Transportation and Disposal of AC Pipe	LS	1			
							Total SAWS Water Add. Alt. 1 Bid Amount:		

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
CPS Energy Gas - Additive Alternate 1									
	1			Rerun and Lower Gas Service off New Main (Main to 1 ft. inside property line), Sizes 1" thru 4" (including replacing riser if necessary). Long Side	EA	1			
	2.1			Install Gas Main or Casing (Distance as Measured along the Top of Trench) 4" Steel	FT	22			
	2.2			Install Gas Main or Casing (Distance as Measured along the Top of Trench) 6" Plastic Pipe and Tracer Wire	FT	16			
The COST to abandon the existing main(s) is not an ADDITIONAL item and is to be included in the Unit Price(s) for this item.									
	3.1			Install Gas Mains Joint Trench (Distance as measured along the Top of Trench) 4" Plastic Pipe with Tracer Wire & 12" Steel	FT	481			
	3.2			Install Gas Mains Joint Trench (Distance as measured along the Top of Trench) 6" Plastic Pipe with Tracer Wire & 12" Steel	FT	171			
	3.3			Install Gas Mains Joint Trench (Distance as measured along the Top of Trench) 6" Plastic Pipe with Tracer Wire & 4" Steel	FT	139			
The COST to abandon the existing main(s) is not an ADDITIONAL item and is to be included in the Unit Price(s) for this item.									
	4.1			Street Restoration Adjustment, when required. To be used as directed by the CPS Energy Representative. Flowable Fill	CY	16			
	4.2			Street Restoration Adjustment, when required. To be used as directed by the CPS Energy Representative. Asphalt	SY	46			
					Total CPS Energy Gas Add. Alternate 1 Bid Amount:				
				Total Project Additive Alternate 1 Bid Amount:					

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
COSA Bid - Marbach Road Drainage Phase IIA - Additive Alternate 2									
	100.1			Mobilization	LS	1			
	101.1			Preparing Right of Way	LS	1			
	103.1			Remove Concrete Curb	LF	1,245			
	103.3			Remove Concrete Sidewalks and Driveways	SF	8,385			
	103.4			Remove Miscellaneous Concrete - Combination Wall	SF	1,755			
	104.1			Street Excavation	CY	2,434			
	106.1			Box Culvert Excavation and Backfill	CY	3,316			
	108.1			Lime Treated Subgrade (6 inches compacted depth)	SY	5,586			
	108.2			Lime (Slurry)	TON	103			
	200.1			Flexible Base (4 inches compacted depth)	SY	794			
	203.1			Tack Coat	GAL	439			
	205.2			Hot Mix Asphaltic Pavement Type B (10 inches)	SY	5,342			
	205.2			Hot Mix Asphaltic Pavement Type B (6 inches)	SY	244			
	205.4			Hot Mix Asphaltic Pavement Type D (2 inches)	SY	4,390			
	208.1			Salvaging, Hauling, and Stockpiling R.A.P. (2 inches)	SY	108			
	209.1			Concrete Pavement (10" Deep)(Bus Pad)	SY	454			
	230.1			Flexible Pavement Structure Repair (1.5 inches)	SY	12			
	308.1			Drill Shafts (30")	LF	22			
	308.1			Drill Shafts (36")	LF	13			
	309.1			5'X5' Precast Reinforced Concrete Box Culvert	LF	585			
	401.1			Reinforced Concrete Pipe (Class III)(24 inch dia)(Laterals)	LF	249			
	403.8			Inlet Type C (Ty II)(Complete) 10'	EA	2			
	403.15			Manhole Vertical Stack	EA	4			
	410.2			Gravel Subgrade Filler	CY	58			
	465-2104			Inlet Extension (10')(TxDOT)	EA	2			
	465-2405			Inlet (Compl)(Curb)(Ty C)(TxDOT)	EA	5			
	500.1			Concrete Curbing	LF	1,579			
	500.4			Concrete Curb and Gutter	LF	1,055			
	502.1			Concrete Sidewalks	SY	852			
	503.2			Portland Cement Concrete Driveway (Commercial)	SY	88			
	503.4			Asphaltic Concrete Driveway	SY	98			
	504.1			Concrete Median (5 inches thick)	SY	794			
	506.1			Concrete Retaining Walls - Combination Type	CY	16			
	511.3			Replacing with Hot Mix Asphaltic Pavement Type B (12 in)	SY	14			
	515.1			Topsoil (4 inches)	CY	47			
	516.2			St Augustine Sodding	SY	412			
	525.1			Concrete Traffic Barrier (Portable)(Low Profile)(Ty 1)	LF	320			
	525.1			Concrete Traffic Barrier (Portable)(Low Profile)(Ty 2)	LF	120			
	530			Barricades, Signs and Traffic Handling	LS	1			
	531.6			R2-1 Speed Limit (24"x30")	EA	1			

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
	531.13			R3-7L Left Lane Must Turn Left (30"x30")	EA	1			
	531.14			R3-8LR Lane Use Control (24"x30")	EA	1			
	531.17			R4-7 Keep Right (24"x30")	EA	1			
	531.19			R6-1R One Way (36"x12")	EA	3			
	531.24			R9-3A Pedestrian Crossing Prohibited (18"x18")	EA	2			
	531.55			OM-3 Type 3 Object Marker (12"x36")	EA	2			
	531.69			R3-17A Ahead Plaque (30"x12")	EA	1			
	531.7			R3-17B End Plaque (30"x12")	EA	1			
	531.73			W11-1 Bike Warning (30"x30")	EA	4			
	531			W16-1 Share the Road Plaque (24"x30")	EA	2			
	535.1			4 inch wide Yellow Line	LF	3,142			
	535.2			4 inch wide White Line	LF	2,093			
	535.4			8 inch wide White Line	LF	235			
	535.7			24 inch wide White Line	LF	287			
	535.8			Right White Arrow	EA	2			
	535.9			Left White Arrow	EA	5			
	535.12			Word "ONLY"	WORD	3			
	537.6			Pavement Marker (Type I-C)	EA	43			
	537.8			Pavement Marker (Type II-A-A)	EA	26			
	540.1			Curb Inlet Gravel Filters	LF	295			
	550.1			Trench Excavation Safety Protection	LF	221			
	615.1			Traffic Signal Controller Assembly (Type 332 Cabinet)	EA	1			
	618.1			Conduit Trenched 2 inch PVC (Schedule 40)	LF	102			
	618.2			Conduit Trenched 3 inch PVC (Schedule 40)	LF	673			
	620.1			Electric Conductors (No. 6)(Bare)	LF	68			
	620.2			Electric Conductors (No. 8)(Bare)	LF	528			
	620.3			Electric Conductors (No. 6)(Insulated)	LF	136			
	624.3			Ground Boxes Type C (162911) w/Apron	EA	4			
	628.1			Electrical Services (Type T)(120/240V)	EA	1			
	633.1			Battery Backup System	EA	1			
	655.1			Type 332 Controller Foundation	EA	1			
	680.2			Installation of Highway Traffic Signals (System)	EA	1			
	681.1			Temporary Traffic Signal	EA	1			
	682.1			Install Vehicle Signal Section w/ Back Plate (12 in)(3 sec)	EA	5			
	682.2			Install Vehicle Signal Section w/ Back Plate (12 in)(4 sec)	EA	2			
	682.4			Install Pedestrian Signal Section (12 in) LED (2 ind)	EA	6			
	684.1			Traffic Signal Cables (Type A)(14 AWG)(Conductor No. 4)	LF	303			
	684.1			Traffic Signal Cables (Type A)(14 AWG)(Conductor No. 9)	LF	804			
	686.1			Install Traf Signal Pole Asm (Steel)(1 Arm 28') w/ILSN	EA	1			
	686.1			Install Traf Signal Pole Asm (Steel)(1 Arm 32') w/ILSN	EA	1			
	687.1			Pedestal Pole Assembly (10')	EA	1			

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
	688.2			Pedestrian Detectors (2 inch Push-Button)	EA	4			
	691.1			Spread Sprectrum Radio	EA	1			
	691.2			Antenna	EA	1			
	691.3			Coaxial Cable	LF	35			
	693.1			Internally Lighted Street Name Signs (ILSN Sign 9' S)	EA	3			
	694.1			VIVDS Processor Unit	EA	6			
	694.2			VIVDS Camera Assembly	EA	6			
	694.4			VIVDS Set-up System	EA	1			
	694.5			VIVDS Temporary	EA	1			
	694.6			VIVDS Communications Cable (Coaxial)	LF	650			
	695.2			Emergency Preemption Phase Selector	EA	1			
	695.3			Emergency Preemption Detector	EA	3			
	695.4			Emergency Preemption Detector Cable	LF	330			
	SP1			VIA Bus Foundations (Complete)	EA	1			
							Total COSA Additive Alternate 2 Bid Amount:		
SAWS Water Bid - Marbach Road, Phase IIA (From Military to West of Rawhide) - Additive Alternate 2									
	100			Mobilization	LS	1			
	101			Preparation of Right-of-Way	LS	1			
	511.3			Replacing w/ A.T.B.& Pvmt. (12" Comp. Depth)	SY	48			
	550			Trench Excavation Safety Protection	LF	1,559			
	818			12" PVC Waterline (Restrained)	LF	840			
	820			36" C.S.C. C-301 Waterline (Restrained)	LF	719			
	824			Relay 1" Short Service	EA	1			
	828			12" Gate Valve & Box Complete	EA	3			
	830			36" Butterfly Valves	EA	1			
	833			Existing Meter and New Meter Box Relocation	EA	1			
	834			Fire Hydrant	EA	1			
	836			Pipe Fittings, All Sizes and Types	TON	0.7			
	840			12" Water Tie-Ins	EA	2			
	840			36" Water Tie-Ins	EA	1			
	844			2" Blowoff, Temporary	EA	1			
	844			4" Blowoff, Temporary	EA	1			
	844			2" Blowoff, Permanent	EA	1			
	862			Abandon 36" Pipe & Grout	LF	636			
	3000.14			Removal, Transportation and Disposal of AC Pipe	LS	1			
							Total SAWS Water Add. Alt. 2 Bid Amount:		

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
CPS Energy Gas - Additive Alternate 2									
	1.1			Rerun and Lower Gas Service off New Main (Main to 1 ft. inside property line), Sizes 1" thru 4" (including replacing riser if necessary). Short Side	EA	1			
	1.2			Rerun and Lower Gas Service off New Main (Main to 1 ft. inside property line), Sizes 1" thru 4" (including replacing riser if necessary). Long Side	EA	1			
	2.1			Install Gas Main or Casing (Distance as Measured along the Top of Trench) 6" Plastic Pipe and Tracer Wire	FT	60			
	2.2			Install Gas Main or Casing (Distance as Measured along the Top of Trench) 12" Steel	FT	107			
The COST to abandon the existing main(s) is not an ADDITIONAL item and is to be included in the Unit Price(s) for this item.									
	3			Install Gas Mains Joint Trench (Distance as measured along the Top of Trench) 6" Plastic Pipe with Tracer Wire & 12" Steel	FT	608			
The COST to abandon the existing main(s) is not an ADDITIONAL item and is to be included in the Unit Price(s) for this item.									
	4.1			Street Restoration Adjustment, when required. To be used as directed by the CPS Energy Representative. Flowable Fill	CY	8			
	4.2			Street Restoration Adjustment, when required. To be used as directed by the CPS Energy Representative. Asphalt	SY	24			
					Total CPS Energy Gas Additive Alternate 2 Bid Amount:				
				Total Project Additive Alternative 2 Bid Amount:					
_____certifies that the unit prices shown on this complete computer print-out for all of the bid items and the alternates contained in									
this proposal are the unit prices intended and that its bid will be tabulated using these unit prices and no other information from this print-out.									
_____Acknowleged and agrees that the total bid amount shown will be read as its total bid and further agrees that the official total bid									
amount will be determined by multiplying the unit bid prices shown in this print-out by the respective estimated quantities shown in the proposal and then									
totaling all of the extended amounts. _____ agrees to the terms, conditions, and requirements of the bidder's bid proposal.									
Signed: _____ Date: _____									
Title: _____									

CITY OF SAN ANTONIO
DEPARTMENT OF CAPITAL IMPROVEMENTS MANAGEMENT SERVICES
CONTRACT SERVICES DIVISION

RECEIPT OF ADDENDUM NUMBER(S) __1__ IS HEREBY ACKNOWLEDGED FOR PLANS AND

SPECIFICATIONS FOR CONSTRUCTION OF **MARBACH DRAINAGE PHASE IIA (MILITARY TO WEST OF RAWHIDE)**

FOR WHICH BIDS WILL BE OPENED ON **JANUARY 19, 2011**

THIS ACKNOWLEDGEMENT MUST BE SIGNED AND RETURNED WITH THE BID PACKAGE.

Company Name: _____

Address: _____

City/State/Zip Code: _____

Date: _____

_____
Signature

_____
Print Name/Title