ADDENDUM NO. 3

CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

PROJECT NAME: **REDLAND ROAD SOUTH (1604 TO JONES MALTSBERGER)**
DATE: 11/25/2015

ADDENDUM NO. 3

This addendum should be included in and be considered part of the plans and specifications for the name of the project. The contractor shall be required to sign an acknowledgement of the receipt of this addendum and submit with their bid. Where provisions of the following supplementary data differ from those of the original Construction Documents, the Addendum shall govern and take precedence.

TCI PROJECT NO.: **40-00313**

CHANGES TO BID DOCUMENTS:

1. Substitute and utilize the revised "025 UNIT PRICING FORM"
    a. Deleted line item for Item 530.1 PORTLAND CEMENT CONCRETE DRIVEWAYS
    b. Revised APPROX. QUANTITIES for Item 530.2 PORTLAND CEMENT CONCRETE DRIVEWAYS – COMMERCIAL
2. Substitute and utilize the revised "SPECIAL SPECIFICATION 4000 STORMWATER TREATMENT UNIT – MEMBRANE FILTER"
    a. Amended Section 5. SPARE PARTS
3. Utilize "CPS ENERGY REQUIREMENTS AND SPECIFICATIONS FOR CONSTRUCTION OF NATURAL GAS DISTRIBUTION FACILITIES"
4. Utilize "LARGE COMMERCIAL SERVICES & DEVELOPMENTS ELECTRIC AND GAS SERVICE PACKAGE"

CHANGES TO PLANS:

1. Substitute and utilize "SUPPLEMENTAL GENERAL NOTES" (Sheet No. 11)
    a. Amended ADDITIONAL NOTES with Note 10
2. Substitute and utilize "PROPOSED TRAFFIC SIGNAL REDLAND RD AND LOOP 1604 SOUTH" (Sheet No. 300)
    a. Revised Note 18 under CONSTRUCTION NOTES
3. Utilize "CPS ENERGY REDLAND RD & JONES MALTSBERGER" plan sheets
    a. These eighteen (18) plan sheets are included in "CPS ENERGY REQUIREMENTS AND SPECIFICATIONS FOR CONSTRUCTION

OF NATURAL GAS DISTRIBUTION FACILITIES" as Contract Exhibit GAS-6

Note: Addenda Acknowledge Form for Addendum No. 3 is attached herein. This form must be signed and submitted with the bid package.

CITY OF SAN ANTONIO
025 UNIT PRICING FORM

PROJECT NAME: REDLAND RD SOUTH (1604 TO JONES MALTSBERGER RD)
PROJECT NO. 40-00313

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO.	BID ITEM DESCRIPTION **The City only will accept bid pricing to the hundredths. Any pricing extended out to three decimal points will be truncated to two decimal points in the City's favor.**	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
				CoSA - Redland Road South					
	100.1			MOBILIZATION	LS	1			1
	100.2			INSURANCE AND BOND	LS	1			2
	101.1			PREPARING RIGHT-OF-WAY	LS	1			3
	103.XX			REMOVE CONCRETE DRIVEWAYS	SF	907			4
	103.4			REMOVE MISCELLANEOUS CONCRETE	SF	885			5
	104.1			STREET EXCAVATION	CY	8321			6
	107.1			EMBANKMENT (FINAL) (DENS CONT) (TY B)	CY	24265			7
	108.1			LIME TREAT SUBGRADE (6" COMPACTED DEPTH)	SY	32180			8
	108.2			LIME	TON	240			9
	200.1			FLEXIBLE BASE (6" COMPACTED DEPTH)	SY	213			10
	202.1			PRIME COAT	GAL	3219			11
	203.1			TACK COAT	GAL	1461			12
	204.1			ONE COURSE SURFACE TREATMENT	SY	1140			13
	205.2			HOT MIX ASPHALTIC PAVEMENT, TYPE B (6" COMP. DEPTH)	SY	35589			14
	205.3			HOT MIX ASPHALTIC PAVEMENT, TYPE C (LEVEL UP) (2" COMP. DEPTH)	SY	29647			15
	205.4			HOT MIX ASPHALTIC PAVEMENT, TYPE D (SURF) (2" COMP. DEPTH)	SY	30747			16
	208.1			SALVAGING, HAULING, & STOCKPILING RECLAIMABLE ASPHALTIC PAVEMENT (2" DEPTH)	SY	1100			17
	307.1			CONCRETE STRUCTURE (RETAINING WALLS)	CY	3			18
	307.1			CONCRETE STRUCTURE (DRIVEWAY RETAINING WALLS)	CY	3			19
	308.1			DRILLED SHAFTS (24")	LF	57			20
	308.1			DRILLED SHAFTS (36")	LF	106			21
	401.1		401	REINFORCED CONCRETE PIPE (CLASS III) (24" DIA)	LF	1039			22
	401.1		401	REINFORCED CONCRETE PIPE (CLASS III) (30" DIA)	LF	774			23
	401.1		401	REINFORCED CONCRETE PIPE (CLASS III) (36" DIA)	LF	1532			24
	401.1		401	REINFORCED CONCRETE PIPE (CLASS III) (42" DIA)	LF	270			25
	401.1		401	REINFORCED CONCRETE PIPE (CLASS III) (48" DIA)	LF	379			26
	401.1		401	REINFORCED CONCRETE PIPE (CLASS III) (54" DIA)	LF	38			27
	403.1		403	JUNCTION BOX 4'X4'X4'	EA	7			28
	403.2		403	JUNCTION BOX 5'X5'X5'	EA	12			29
	403.3		403	JUNCTION BOX 6'X6'X6'	EA	16			30
	403.4		403	JUNCTION BOX 7'X7'X7'	EA	2			31
	403.5		403	JUNCTION BOX 8'X8'X8'	EA	2			32
	403.7		403	INLET TYPE 1 (COMPLETE) (10FT)	EA	27			33
	403.12		403	SPECIAL INLET (4-WAY)	EA	5			34
	403.XX		403	DROP INLET TYPE IA	EA	1			35
	404.4			CORRUGATED METAL PIPE (24" DIA)	LF	9			36
	407.1			CONCRETE ENCASEMENT	CY	9			37
	410.2			GRAVEL SUBGRADE FILLER	CY	399			38
	500.1			CONCRETE CURBING	LF	11973			39
	502.1		502	CONCRETE SIDEWALKS	SY	4079			40
	503.2		503	PORTLAND CEMENT CONCRETE DRIVEWAYS - COMMERCIAL	SY	634			41
	503.4		503	ASPHALTIC CONCRETE DRIVEWAY	SY	1018			42
	504.1			CONCRETE MEDIAN	SY	381			43
	505.1			CONCRETE RIPRAP (4" THICK)	SY	58			44
	505.1			CONCRETE RIPRAP (5" THICK)	SY	88			45
	506.1			CONCRETE RETAINING WALLS - COMBINATION TYPE	CY	33			46
	507.2			CHAIN LINK WIRE FENCE (6' HIGH)	LF	1909			47
	507.5			GATES - VEHICULAR (12")	OPENING	1			48
	507.6			GATES - VEHICULAR (20")	OPENING	2			49
	511.3			REPLACING HOT MIX ASPHALTIC CONCRETE PAVEMENT TYPE B (8" COMPACTED DEPTH)	SY	416			50
	513.1			REMOVING & RELOCATING MAILBOXES	EA	1			51
	515.1			TOPSOIL	CY	2000			52
	516.1			BERMUDA SODDING	SY	8820			53
	516.2			ST. AUGUSTINE SODDING	SY	8820			54
	522.1			SIDEWALK PIPE RAILING	LF	32			55
	525.1			CONCRETE TRAFFIC BARRIER (PORTABLE)	LF	6380			56
	530.1		530	BARRICADES, SIGNS AND TRAFFIC HANDLING	LS	1			57
	531.18			R5-1 DO NOT ENTER (30"X30")(HIGH DENSITY)	EA	2			58
	531.19			R6-1 ONE WAY (36"X12")(HIGH DENSITY)	EA	1			59
	531.27			R10-12 LEFT TURN YIELD ON "GREEN BALL" (HIGH INTENSITY)	EA	2			60
	531.3			R1-1 STOP (30")(HIGH DENSITY)	EA	3			61
	531.4			R1-2 YIELD (36")(HIGH DENSITY)	EA	1			62
	531.46			W3-3 SIGNAL AHEAD (36"X36")(HIGH DENSITY)	EA	2			63
	531.59			W3-3 SPECIAL SIGN CHURCH (30"X30")(HIGH DENSITY)	EA	1			64
	531.71			R4-4 (BEGIN RIGHT TURN LANE YIELD TO BIKE) (36"X30")(HIGH DENSITY)	EA	1			65
	531.8			R3-2 NO LEFT TURN (24"X24")(HIGH DENSITY)	EA	2			66
	531.XX			METRO STREET NAME, BLOCK NUMBERS (HIGH DENSITY)(VARIES X 9")	EA	1			67
	531.XX			R2-1 SPEED LIMIT (30"X36")(HIGH DENSITY)	EA	2			68
	531.XX			R3-17a AHEAD	EA	2			69
	531.XX			R3-17b BIKE LANE (PLAQUES)	EA	2			70
	531.XX			R3-8 LLS LANE USE CONTROL (38"X30")	EA	1			71
	531.XX			R3-17 BIKE LANE (PLAQUES)	EA	16			72
	531.XX			R10-4b	EA	20			73
	531.XX			R10-17T FLASHING YELLOW (HIGH INTENSITY)	EA	6			74
	531.XX			M1-6L LOOP 1604 (24"X24")	EA	4			75
	531.XX			M2-1 JUNCTION (21"X15")	EA	1			76
	531.XX			M3-2B EAST (24"X12")	EA	1			77
	531.XX			M3-4B EAST (24"X12")	EA	2			78
	531.XX			M6-1BL DIRECTIONAL ARROW (24"X12")	EA	1			79
	531.XX			M6-1BR DIRECTIONAL ARROW (24"X12")	EA	1			80
	531.XX			M6-3B DIRECTIONAL ARROW (24"X12")	EA	1			81
	531.XX			R5-1 DO NOT ENTER (36"X36")	EA	1			82
	531.XX			W2-2 INTERSECTION WARNING (24"X24")	EA	1			83
	532.XX			W2-6D HIGHWAY INTERSECTION AHEAD (36"X36")	EA	1			84
	535.1			4 INCH WIDE YELLOW LINE	LF	736			85
	535.2			4 INCH WIDE WHITE LINE	LF	2000			86
	535.3			8 INCH WIDE YELLOW LINE	LF	53			87
	535.4			8 INCH WIDE WHITE LINE	LF	10854			88
	535.5			12 INCH WIDE WHITE LINE	LF	662			89
	535.7			24 INCH WIDE WHITE LINE	LF	1158			90
	535.8			RIGHT WHITE ARROW	EA	1			91
	535.9			LEFT WHITE ARROW	EA	36			92
	535.11			COMBINATION THRU/LEFT WHITE ARROW	EA	8			93
	535.12			WORD "ONLY"	WORD	3			94
	535.16			STRAIGHT WHITE ARROW BICYCLE FACILITY	EA	16			95
	535.17			BICYCLE RIDER SYMBOL	EA	16			96
	535.XX			6" BROKEN WHITE LINE	LF	94			97
	535.XX			8" BROKEN WHITE LINE	LF	186			98

CITY OF SAN ANTONIO
025 UNIT PRICING FORM

PROJECT NAME: REDLAND RD SOUTH (1604 TO JONES MALTSBERGER RD)
PROJECT NO. 40-00313

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.XX			12 INCH WIDE YELLOW LINE	LF	22			99
	535.XX			SOLID WHITE YIELD LINES (12"X18")	EA	13			100
	537.1			TRAFFIC BUTTON (TYPE W)	EA	4401			101
	537.2			TRAFFIC BUTTON (TYPE Y)	EA	4839			102
	537.6			TRAFFIC BUTTON (TYPE I-C)	EA	143			103
	537.8			TRAFFIC BUTTON (TYPE II A-A)	EA	1679			104
	537.9			TRAFFIC BUTTON (TYPE II C-R)	EA	1651			105
	537.XX			TRAFFIC BUTTON (TYPE II C-C)	EA	87			106
	540.1			ROCK FILTER DAMS (INSTALL/REMOVE) (TYPE 2)	LF	253			107
	540.6			CONSTRUCTION EXITS (INSTALL/REMOVE)	SY	234			108
	540.9			TEMPORARY SEDIMENT CONTROL FENCE	LF	3242			109
	540.1			CURB INLET GRAVEL FILTERS	LF	1056			110
	550.1			TRENCH EXCAVATION SAFETY PROTECTION	LF	4028			111
	552.1			REMOVING AND RELOCATING IRRIGATION SYSTEMS	LF	590			112
	554.1			EROSION CONTROL MATTING	SY	1037			113
	618.1			CONDUIT (2 INCH / PVC SCHEDULE 40)	LF	510			114
	618.2			CONDUIT (3 INCH / PVC SCHEDULE 40)	LF	1830			115
	618.2			CONDUIT (3 INCH / PVC SCHEDULE 40) (BORE)	LF	770			116
	620.1			ELECTRICAL CONDUCTORS (NO. 6) (BARE)	LF	959			117
	620.2			ELECTRICAL CONDUCTORS (NO. 8) (BARE)	LF	2922			118
	620.3			ELECTRICAL CONDUCTORS (NO. 6) (INSULATED)	LF	1661			119
	624.8			GROUND BOXES TY D (162922) WITH APRON	EA	14			120
	628.1			ELECTRICAL SERVICES	EA	2			121
	636.1			ALUMINUM SIGNS (TY A)	SF	11			122
	680.2			INSTALLATION OF HIGHWAY TRAFFIC SIGNALS (SYSTEM)	EA	2			123
	681.1			TEMPORARY TRAFFIC SIGNALS (PER INTERSECTION)	EA	2			124
	682.1			INS VEH SIG SECTION W/ BACK PLATE (12 INCH) (3 SECONDS)	EA	21			125
	682.2			INS VEH SIG SECTION W/ BACK PLATE (12 INCH) (4 SECONDS)	EA	8			126
	682.3			INS VEH SIG SECTION W/ BACK PLATE (12 INCH) (5 SECONDS)	EA	2			127
	682.4			INSTALL PEDESTRIAN SIGNAL SECTION (12 INCH) LED (2 IND)	EA	20			128
	684.1			TRAFFIC SIGNAL CABLES (TYPE A) (14 AWG) (CONDUCTOR NO. 4)	LF	1519			129
	684.1			TRAFFIC SIGNAL CABLES (TYPE A) (12 AWG) (CONDUCTOR NO. 4)	LF	3198			130
	684.1			TRAFFIC SIGNAL CABLES (TYPE A) (14 AWG) (CONDUCTOR NO. 9)	LF	9415			131
	686.32C			INSTALL TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL) (1 ARM 32') (LUM)	EA	1			132
	686.40A			INSTALL TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL) (1 ARM 40')	EA	6			133
	686.40B			INSTALL TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL) (1 ARM 40') (ILSN)	EA	4			134
	686.40C			INSTALL TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL) (1 ARM 48') (LUM)	EA	1			135
	687.1			PEDESTAL POLE ASSEMBLY	EA	14			136
	688.2			PEDESTRIAN DETECTORS (2 INCH PUSH BUTTON)	EA	20			137
	688.3			AUDIBLE PEDESTRIAN SIGNAL UNITS [TYPE]	EA	20			138
	693.1			ILSN SIGN (LED) (8 FT) (DOUBLE SIDED)	EA	4			139
	695.2			EMERGENCY PREEMPTION PHASE SELECTOR	EA	8			140
	695.3			EMERGENCY PREEMPTION DETECTOR	EA	10			141
	695.4			EMERGENCY PREEMPTION DETECTOR CABLE	LF	3198			142
	696.01			RADAR PRESENCE DETECTION DEVICE (RPDD)	EA	10			143
	696.03			RADAR PRESENCE DETECTION DEVICE (RADD)	EA	8			144
	696.06			RVDD INTERFACE MODULE (2-CHANNEL) (RADD)	EA	8			145
	696.08			RVDD INTERFACE MODULE (4-CHANNEL) (RPDD)	EA	10			146
	696.1			RVDD SETUP SYSTEM	EA	2			147
	696.16			RVDD COMMUNICATION CABLE & POWER CABLE (TYPE)	LF	6024			148
	801.1			LEVEL I PROTECTIVE FENCING	LF	1530			149
	801.2			LEVEL IIA PROTECTIVE FENCING	LF	1224			150
	801.3			LEVEL IIB PROTECTIVE FENCING (TRUNK PROTECTION)	EA	30			151
	802.1			LEVEL I PRUNING, SOIL, AMENDMENT, AND FERTILIZATION	EA	50			152
	4000.1			JELLYFISH WQ UNIT FJ6-4-1	EA	1			153
	4000.1			JELLYFISH WQ UNIT FJ8-7-2	EA	1			154
	5080.1			RELOCATING PRECAST CONCRETE FENCE	LS	1			155
	6004			UTILITY POLE BRACING	EA	1			156
	9000.1			PLANTING AREA PREPARATION	SF	4861			157
	9000.2			SOIL MIX AT PLANTING AREAS - 12" DEPTH	CY	183			158
	9000.3			PLANT MATERIAL (4" POT)	EA	140			159
	9000.4			PLANT MATERIAL - 1 GAL	EA	575			160
	9000.5			PLANT MATERIAL - 3 GAL	EA	97			161
	9000.6			MULCH - 4" DEPTH	CY	62			162
	9002.1			TOPSOIL AT GRASS AREAS - 4" DEPTH	CY	10			163
	9002.2			TURF GRASS - SOD	SY	71			164
	9003.1			LANDSCAPE MAINTENANCE (90 DAY)	LS	1			165
	9004.1			COBBLE A	CY	377			166
	9004.2			COBBLE B	CY	84			167
	9004.3			COBBLE C	CY	540			168
	9004.4			COBBLE D	CY	623			169
	9005.1			BOULDER A	EA	27			170
	9005.2			BOULDER B	EA	45			171
	9005.3			BOULDER C	EA	24			172
	9006.1			WEED CONTROL/FILTER FABRIC	SY	6424			173
	1100.5.1			SEPTIC SYSTEM INSTALLATION	LS	1			174
				TXDOT ITEMS					
	531.201			CURB RAMPS (TY 7)	EA	4			175
	531.2017			CURB RAMPS (TY 21)	EA	1			176
	644.206			REMOVE SM RD SN SUP & AM	EA	7			177
	662.2064			WK ZN PAV MRK REMOV (W) 4" (BRK)	LF	170			178
	662.2067			WK ZN PAV MRK REMOV (W) 4" (SLD)	LF	28945			179
	662.2072			WK ZN PAV MRK REMOV (W) 8" (BRK)	LF	48			180
	662.2075			WK ZN PAV MRK REMOV (W) 8" (SLD)	LF	62			181
	662.2079			WK ZN PAV MRK REMOV (W) 24" (SLD)	LF	100			182
	662.2099			WK ZN PAV MRK REMOV (Y) 4" (SLD)	LF	32044			183
	677.2001			ELIM EXT PAV MRK & MRKS (4")	LF	86			184
	677.2003			ELIM EXT PAV MRK & MRKS (8")	LF	1455			185
	677.2007			ELIM EXT PAV MRK & MRKS (24")	LF	801			186
	677.2008			ELIM EXT PAV MRK & MRKS (ARROWS)	EA	11			187
	677.2018			ELIM EXT PAV MRK &MRKS (WORDS)	EA	4			188
	772.2003			POST AND CABLE FENCE (NEW INSTALLATION)	LF	280			189
	6000.6024			REPLACE ROADWAY ILLUM ASSEMBLY (LED)	EA	1			190
							Total CoSA (Redland Road South) Bid Amount:		
CoSA - Jones Maltsberger Road									
	100.1			MOBILIZATION	LS	1			1
	100.2			INSURANCE & BOND	LS	1			2
	101.1			PREPARING RIGHT OF WAY	LS	1			3
	104.1			STREET EXCAVATION	CY	241			4
	106.1			BOX CULVERT EXCAVATION & BACKFILL	CY	427			5
	107.1			EMBANKMENT (FINAL)(DENS CONT)(TY B)	CY	2842			6

CITY OF SAN ANTONIO
025 UNIT PRICING FORM

PROJECT NAME: REDLAND RD SOUTH (1604 TO JONES MALTSBERGER RD)
PROJECT NO. 40-00313

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO.	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
	108.1			LIME TREAT. SUBGRADE (6" COMPACTED DEPTH)	SY	2019			7
	108.2			LIME	TON	15			8
	202.1			PRIME COAT	GAL	202			9
	203.1			TACK COAT	GAL	181			10
	205.2			HMAC PAVMT, TY B (6" COMP DEPTH)	SY	2019			11
	205.3			HMAC PAVMT, TY C (SURF)(3" COMP DEPTH)	SY	1803			12
	306.1			STRUCTURAL EXCAVATION (WINGWALLS)	CY	45			13
	307.1			CONCRETE STRUCTURE (HEADWALLS OR OUTFALL STRUCTURES)	CY	11			14
	307.1			CONCRETE STRUCTURE (ABUTMENTS & WINGWALLS)	CY	121			15
	307.5			CONCRETE STRUCTURE (MISCELLANEOUS)(SIDEWALK BRIDGE)	EA	1			16
	309.1			PRECAST REINFORCED CONCRETE CULVERT (10' x 7')	LF	305			17
	500.1			CONCRETE CURBING	LF	1116			18
	502.1			CONCRETE SIDEWALKS	SY	346			19
	505.1			CONCRETE RIPRAP (5" THICK)	SY	435			20
	508.1			RELOCATING WIRE FENCE	LF	135			21
	515.1			TOPSOIL	CY	313			22
	517.1			COMBINATION RAIL TYPE C223	LF	171			23
	516.1			BERMUDA SODDING	SY	1426			24
	516.1			ST AUGUSTINE SODDING	SY	1426			25
	530.1			BARRICADES, SIGNS AND TRAFFIC HANDLING	LS	1			26
	531.XX			R2-1 SPEED LIMIT (30"X36")(HIGH DENSITY)	EA	1			27
	531.XX			S1-1 ADVANCE SCHOOL CROSSING (36"X36")	EA	1			28
	535.XX			W8-15 WATCH FOR WATER ON ROAD (36" X 36")	EA	2			29
	535.1			4 INCH WIDE YELLOW LINE	LF	1470			30
	535.2			4 INCH WIDE WHITE LINE	LF	203			31
	535.4			8 INCH WIDE WHITE LINE	LF	352			32
	535.7			24 INCH WIDE WHITE LINE	LF	249			33
	535.8			RIGHT WHITE ARROW	EA	2			34
	535.9			LEFT WHITE ARROW	EA	2			35
	535.12			WORD "ONLY"	EA	2			36
	535.22			MEDIAN NOSE YELLOW	EA	1			37
	535.XX			24 INCH WIDE YELLOW LINE	LF	6			38
	537.6			TRAFFIC BUTTON (TYPE I-C)	EA	22			39
	537.8			TRAFFIC BUTTON (TYPE II A-A)	EA	88			40
	537.9			TRAFFIC BUTTON (TYPE II C-R)	EA	3			41
	540.1			ROCK FILTER DAMS (INSTALL/REMOVE) (TYPE 3)	LF	120			42
	540.1			CURB INLET GRAVEL FILTERS	LF	40			43
	550.1			TRENCH EXCAVATION SAFETY PROTECTION	LF	76			44
	554.1			EROSION CONTROL MATTING	SY	139			45
	801.1			LEVEL I PROTECTIVE FENCING	LF	170			46
	801.2		503	LEVEL II A PROTECTIVE FENCING	LF	136			47
	801.3		503	LEVEL II B PROTECTIVE FENCING (TRUNK PROTECTION)	EA	4			48
	802.1		503	LEVEL I PRUNING, SOIL AMENDMENT, AND FERTILIZATION	EA	5			49
				TXDOT ITEMS					
	465.211			INLET (COMPL)(ARMOR CURB SLOT)	EA	2			50
	644.206			REMOVE SM RD SN SUP & AM	EA	1			51
	677.2001			ELIM EXT PAV MRK & MRKS (4")	LF	340			52
	677.2003			ELIM EXT PAV MRK & MRKS (8")	LF	120			53
	677.2007			ELIM EXT PAV MRK & MRKS (24")	LF	152			54
	677.2008			ELIM EXT PAV MRK & MRKS (ARROWS)	EA	3			55
	677.2018			ELIM EXT PAV MRK & MRKS (WORDS)	EA	2			56
							Total CoSA (Jones Maltsberger Road) Bid Amount:		
				SAWS Water Items					
	100.1			MOBILIZATION	LS	1			1
	101.1			PREPARATION OF RIGHT OF WAY	LS	1			2
	550			TRENCH EXCAVATION SAFETY PROTECTION	LF	593			3
	814			8" DUCTILE IRON PIPE	LF	214			4
	814			12" DUCTILE IRON PIPE	LF	319			5
	822			CUSTOMER YARD PIPING	LF	90			6
	824			RELAY 1" SHORT SERVICE	EA	4			7
	824			RELAY 1 1/2" SHORT SERVICE	EA	3			8
	824			RELAY 2" SHORT SERVICE	EA	1			9
	824			RELAY 4" SHORT SERVICE	EA	1			10
	824			RELAY 8" FIRE LINE	EA	2			11
	824.5			CUSTOMER SHUT-OFF VALVE	EA	9			12
	826			VALVE BOX ADJUSTMENT	EA	10			13
	828			12" GATE VALVES	EA	3			14
	833			EXISTING METER AND NEW METER BOX RELOCATION	EA	8			15
	833			METER BOX (NON-STANDARD METER BOX)	EA	6			16
	834.1			FIRE HYDRANT	EA	4			17
	834.2			TAPPED FIRE HYDRANT	EA	2			18
	836			PIPE FITTINGS, ALL SIZES AND TYPES	TON	3			19
	840			8" WATER TIE-INS	EA	2			20
	840			12" WATER TIE-INS	EA	4			21
	841			HYDROSTATIC TESTING	EA	3			22
	844			2" BLOWOFF, TEMPORARY	EA	3			23
	846			1" AIR RELEASE ASSEMBLIES	EA	1			24
	856.2			12" CARRIER PIPE (OPEN CUT)(DUCTILE IRON)	LF	60			25
	856.3			24" CASING OR LINER	LF	60			26
	858			CONCRETE ENCASEMENT, CRADDLES, SADDLES AND COLLARS	CY	24			27
	2000			12" TEMPORARY WATER MAIN	LS	1			28
	3000			REMOVAL, TRANSPORT, AND DISPOSAL OF AC PIPE	LF	39			29
							Total SAWS Water Bid Amount:		
				SAWS Sewer Items					
	100.1			MOBILIZATION	LS	1			1
	101.1			PREPARATION OF RIGHT OF WAY	LS	1			2
	550			TRENCH EXCAVATION SAFETY PROTECTION	LF	200			3
	848			10" PVC SANITARY SEWER LINE (10'-14')	LF	30			4
	851			ADJUST EXISTING MANHOLES	EA	2			5
	852.1			SANITARY SEWER MANHOLES (0'-6')	EA	5			6
	852.3			EXTRA DEPTH MANHOLES (>6')	VF	17			7
	855			RECONSTRUCTION OF EXISTING MANHOLES	EA	7			8
	856.2			10" CARRIER PIPE (OPEN CUT)	LF	60			9
	856.3			STEEL CASING 24"	LF	60			10
	864			BYPASS PUMPING	LS	1			11
	866			SEWER MAIN POST-TELEVISING INSPECTION (8"-15")	LF	90			12
							Total SAWS Sewer Bid Amount:		
				CPS Energy Gas					
	1			Install Gas Main or Casing (Distance As Measured Along the Top of Trench)					
				2" PLASTIC PIPE AND TRACER WIRE	1 FT	10			1
				4" PLASTIC PIPE AND TRACER WIRE	1 FT	130			2

CITY OF SAN ANTONIO
025 UNIT PRICING FORM

PROJECT NAME: REDLAND RD SOUTH (1604 TO JONES MALTSBERGER RD)
PROJECT NO. 40-00313

ALT. NO.	ITEM NO.	DESC. CODE	S.P. NO.	BID ITEM DESCRIPTION	UNIT OF MEASURE	APPROX. QUANTITIES	UNIT BID PRICE	AMOUNT	ITEM SEQUENCE NO.
				8" PLASTIC PIPE AND TRACER WIRE	1 FT	4374			3
	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:								
	2			Temporary Street Restoration Asphalt - 6" H.M.A.C.	1 SY	17			4
	3			Permanent Street Restoration Asphalt - 10" A.T.B., 2" H.M.A.C.	1 SY	90			5
							Total CPS Gas Bid Amount:		
NOTE A:	For each of the items below, the Contractor's work is to include: trenching, joining, testing, coating steel, connecting new pipe to existing pipe and all necessary fittings for tie-ins such as, stopper fittings and 3-way stopper tees, sand padding, backfilling and compacting to consistency of original soil, installing all necessary cathodic protection devices such as CPTLB's and anodes, replacing paving, curbs, and sidewalks removed or damaged during construction, and cleanup as may be necessary in each instance.								
NOTE B:	Trenching is considered to be the normal method of service installation and is required on all service adjustments. A gas service can be rerun by INSERTION, when the old service is PULLED from the riser to one foot inside the property line, ONLY at the discretion of the CPS Inspector.								
NOTE C:	Bid quantities shown are estimates by CPS. Per foot prices shall be applied to the actual distance measured along the top of the trench or the actual length of the bore, as applicable.								
NOTE D:	Unit prices shall include insurance costs. CPS' insurance requirements are specified in Exhibit GAS-1.								
							Total (CoSA + SAWS + CPS Gas) Base Bid Amount:		
				CoSA - Add Alt 1 (Jones Maltsberger Road)					
1	104.1			STREET EXCAVATION	CY	32			1
1	108.1			LIME TREAT. SUBGRADE (6" COMPACTED DEPTH)	SY	1665			2
1	108.2			LIME	TON	13			3
1	202.1			PRIME COAT	GAL	166			4
1	203.1			TACK COAT	GAL	166			5
1	205.2			HMAC PAVMT, TY B (6" COMP DEPTH)	SY	1665			6
1	205.3			HMAC PAVMT, TY C (SURF)(3" COMP DEPTH)	SY	1661			7
1	306.1			STRUCTURAL EXCAVATION (WINGWALLS)	CY	38			8
1	307.1			CONCRETE STRUCTURE (ABUTMENTS & WINGWALLS)	CY	16			9
1	307.1			CONCRETE STRUCTURE (RETAINING WALL)	CY	91			10
1	401.1			REINFORCED CONCRETE PIPE (CLASS III)(24" DIA)	LF	55			11
1	401.1			REINFORCED CONCRETE PIPE (CLASS III)(48" DIA)	LF	287			12
1	403.1			JUNCTION BOX 6'X6'X6'	EA	4			13
1	403.7			INLET TYPE I (COMPLETE)(10FT)	EA	2			14
1	410.2			GRAVEL SUBGRADE FILLER	CY	41			15
1	502.1			CONCRETE SIDEWALKS	SY	228			16
1	517.1			COMBINATION RAIL TYPE C223	LF	12			17
1	531.XX			W9-2L LANE ENDS MERGE LEFT (36" X 36")	EA	1			18
1	535.1			4 INCH WIDE YELLOW LINE	LF	429			19
1	535.2			4 INCH WIDE WHITE LINE	LF	32			20
1	535.4			8 INCH WIDE WHITE LINE	LF	617			21
1	535.7			24 INCH WIDE WHITE LINE	LF	44			22
1	535.9			LEFT WHITE ARROW	EA	2			23
1	535.XX			24 INCH WIDE YELLOW LINE	LF	94			24
1	537.8			TRAFFIC BUTTON (TYPE II A-A)	EA	10			25
1	537.9			TRAFFIC BUTTON (TYPE II C-R)	EA	21			26
1	550.1			TRENCH EXCAVATION SAFETY PROTECTION	LF	342			27
							Total CoSA Add Alt 1 (Jones Maltsberger Road) Bid Amount:		
Notes:	1. Add Alt 1 are the additional items needed to construct Jones Maltsberger Road to the ultimate width.								
	2. The Total Amount of Add Alt 1 is the added cost to the Base Bid to construct Jones Maltsberger Road to the ultimate width.								

_____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
_____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: _____

Special Specification 4000
Stormwater Treatment Unit – Membrane Filter

1. DESCRIPTION

The Contractor shall furnish and install the stormwater treatment system, complete and operable as shown and as specified herein, in accordance with the requirements of the plans and contract documents. The stormwater treatment system shall consist of an underground precast structure that houses a filter treatment device that removes pollutants from stormwater runoff through the unit operations of sedimentation, floatation, and membrane filtration. Design of stormwater treatment units shall be in accordance with the Texas Commission on Environmental Quality manual "RG-348: Complying with the Edwards Aquifer Rules Technical Guidance on Best Management Practices" and included in the overall hydraulic model for the project.

2. MATERIALS

Provide new materials that comply with the details shown on the plans and in accordance with the following:

A. Item 300, "Concrete",
B. Item 301, "Reinforcing Steel",
C. Item 302, "Metal for Structures",
D. Item 307, "Concrete Structures",
E. Item 409, "Cast Iron Castings",

Materials used for storm water treatment units and appurtenances must be capable of withstanding aggressive biological, chemical and loading environments, typical of the geographic area in which the units are being installed, including freeze-thaw weather cycles, earth pressure and hydrostatic pressures. Concrete shall achieve a minimum 28-day compressive strength of 4,000 pounds per square inch (psi).

2.1. Precast Structure - Furnish Class C (HPC) concrete for storm water treatment structure unless otherwise shown on the plans. Construct precast storm water treatment structure in accordance with Item 307, "Concrete Structures" or ASTM C 478. Air entrained concrete will not be required in precast concrete members. Use Type II Portland cement conforming to ASTM C 150.

2.2. Mortar - Furnish mortar composed of 1 part hydraulic cement and 2 parts clean sand, hydrated lime, or lime putty may be added to the mix to a maximum of 10% by weight of the total dry mix.

2.3. Traffic load - Provide concrete box and riser that meet HL93 AASHTO LRFD live loading requirements.

2.4. Sealing - Apply Conseal CS-101 or approved equal sealant as shown on the information plans, as recommended by the manufacturer, or as directed by the Engineer.

2.5. Frames, Grates, Rings, and Covers - Furnish materials as shown on the plans and in accordance with Item 409, "Cast Iron Castings".

2.6. Treatment Unit - The device shall be cylindrical or rectangular and constructed from precast concrete riser and slab components or monolithic precast structure(s), installed to conform to ASTM C 891 and to any required state highway, municipal or local specifications.

2.6.1. Cartridge Deck - The cylindrical concrete device shall include a fiberglass insert. The rectangular concrete device shall include a coated aluminum insert. In either instance, the insert shall be bolted and sealed watertight inside the precast concrete chamber. The insert shall serve as: (a) a horizontal divider between the lower treatment zone and the upper treated effluent zone; (b) a deck for attachment of filter cartridges such that the membrane filter elements of each cartridge extend into the lower treatment zone; (c) a platform for maintenance workers to service the filter cartridges; (d) a conduit for conveyance of treated water to the effluent pipe.

2.6.2. Membrane Filter Cartridges - Filter cartridges shall be comprised of cylindrical membrane filter elements connected to a perforated head plate. The number of membrane filter elements per cartridge shall be eleven 2.75-inch (70-mm) diameter elements. The length of each filter element shall be a minimum 15 inches (381 mm). Each cartridge shall be fitted into the cartridge deck by insertion into a cartridge receptacle that is permanently mounted into the cartridge deck. Each cartridge shall be secured by a cartridge lid that is threaded onto the receptacle. The maximum treatment flow rate of a filter cartridge shall be controlled by an orifice in the cartridge lid and based on a design flux rate (surface loading rate) determined by the maximum treatment flow rate per unit of filtration membrane surface area. The maximum flux rate shall be 0.21 gpm/ft2 (0.142 lps/m2). Each lightweight membrane filter cartridge shall allow for manual installation and removal. Each filter cartridge shall have filtration membrane surface area and dry installation weight as follows:

Filter Cartridge Length (in	Filtration Membrane Surface Area	Filter Cartridge Dry Weight (lbs
15 / 381	106 / 9.8	10 / 4.5
27 / 685.8	190 / 17.7	14.5 / 6.6
40 / 1016	282 / 26.2	19.5 / 8.9
54 / 1371.6	381 / 35.4	25 / 11.4

2.6.3. Backwashing Cartridges - The filter device shall have a weir extending above the cartridge deck that encloses the high flow rate filter cartridges when placed in their respective cartridge receptacles within the cartridge deck. The weir shall collect a pool of filtered water during inflow events that subsequently automatically backwashes the high flow rate cartridges when the inflow event subsides. All filter cartridges shall allow for use of a manual backwashing or filtration membrane rinsing procedure to restore flow capacity and sediment capacity and extend cartridge service life.

2.6.4. Maintenance Access to Captured Pollutants - The filter device shall contain an opening(s) that provides suitable maintenance access for removal of accumulated floatable pollutants and sediment.

2.6.5. Bend Structure - The device shall be able to be used as a bend structure with minimum angles between inlet and outlet pipes of 90-degrees or less in the stormwater conveyance system.

2.6.6. Double-Wall Containment of Hydrocarbons - The cylindrical precast concrete device shall provide double- wall containment for hydrocarbon spill capture by a combined means of an inner wall of fiberglass, to a minimum depth of 12 inches (305 mm) below the cartridge deck, and the precast vessel wall. Alternatively, a cylindrical device constructed of fiberglass (FRP) does not require double-wall containment as fiberglass is resistant to hydrocarbon penetration.

2.6.7. Baffle - The filter device shall provide a baffle that extends from the underside of the cartridge deck to a minimum length equal to the length of the membrane filter elements. The baffle shall serve to protect the membrane filter elements from contamination by floatables and coarse sediment. The baffle shall be a flexible continuous skirt in the cylindrical device. The baffle shall be a straight concrete or aluminum wall in the rectangular device.

2.6.8. Sump - The device shall include a minimum 24 inches (610 mm) of sump below the bottom of the cartridges for sediment accumulation, unless otherwise specified by the design engineer.

3. PERFORMANCE

3.1. An approved Water Pollution Abatement Plan (WPAP) shall be provided wherein the design of stormwater treatment units shall be shown to be in accordance with the Texas Commission on Environmental Quality manual “RG-348: Complying with the Edwards Aquifer Rules Technical Guidance on Best Management Practices” and be listed in the July 2012 Addendum or later as showing an 86% removal efficiency or greater. In addition, in order to substantiate removal rates, the contractor must submit full scale third-party field testing data in accordance with the Technology Acceptance Reciprocity Protocols Tier II certification, to the Engineer of Record for approval.

3.2. Each stormwater treatment unit shall maintain the peak capacity of the network through an internal pressure relief mechanism or an external bypass. The affect the stormwater treatment unit and bypass has on the hydraulic model of the hydraulic grade line must be clearly calculated and shown. The stormwater treatment unit shall not allow surcharge of the upstream piping network during dry weather conditions and handle an associated peak treatment flow greater than or equal to the design treatment flow as designated on the plans while retaining the trapped floatables and sediment up to and including the peak treatment flow rates.

3.3. Each stormwater treatment unit shall contain a pretreatment grit chamber for sediment removal and a floatable chamber with mechanisms for oils, organic debris, and trash removal. The stormwater treatment unit shall provide direct access to the sediment and floatable containment storage chambers to facilitate maintenance. There shall be no internal components that obstruct maintenance access to the contaminant storage chambers.

3.4. Each stormwater treatment unit shall provide a means of preventing the introduction of trapped oil and floatable contaminants to the downstream piping during routine maintenance; a means to ensure that no oil escapes the system during the ensuing rain event.

4. CONSTRUCTION

4.1. The manufacturer shall submit shop drawings detailing the structure, filters cartridges, and accessory equipment. Drawings shall include principal dimensions, filter placement, location of piping, and unit foundation. The manufacturer shall submit a maintenance manual, and provide proof of at least 5 years of satisfactory experience with stormwater treatment structures on prior projects. In order further substantiate removal rates, the contractor must submit full scale third-party field testing data in accordance with the Technology Acceptance Reciprocity Protocols Tier II certification, to the Engineer of Record for approval. Submittals shall be signed and sealed by a professional engineer licensed in the State of Texas and include detailed hydraulic analysis calculating any

affect the stormwater treatment unit has on the hydraulic model as well as approved TCEQ calculations to the Engineer of Record and the Texas Department of Transportation a minimum of two weeks prior to the scheduled letting date.

4.2. Prior to installation, all precast stormwater treatment units will be inspected for general appearance, dimensions, soundness, etc. The concrete surface shall be dense, close textured, and free of blisters, cracks, roughness, and exposure of reinforcement. Remove and replace any damaged stormwater treatment system beyond repair, as directed by the Engineer of Record, at no extra cost. Complete stormwater treatment system installation in accordance with the plans and specifications. For ground systems, place the base unit on the granular subbase of minimum thickness of 6 inches after compaction. The granular subbase shall be checked for level prior to setting and the base section of the unit shall be checked for level at all four corners after it is set. If the slope from any corner to any other corner exceeds 0.5%, the base section shall be removed and granular subbase material re-leveled, also for ground systems, backfill to original ground elevation is accordance with Item 306, "Structural Excavation."

4.3. Maintain the stormwater treatment system until the project is accepted by providing monthly routine inspection sand scheduling cleaning before the system is activated. Inspection of the stormwater treatment units is required at least twice a year. Cleaning with the use of a vactor truck or pump is to occur when 6 inches of sediment has accumulated on the vault or manhole floor or when a known hazardous spill has occurred or as directed by the Engineer of Record. A vacuum truck company, licensed for solid wastes disposal, should be contracted to clean out the unit.

5. SPARE PARTS

One complete set of replacement filters shall be provided for each unit. Replacement filters shall be suitably packaged, with labels indicating the contents of each package and project name. Replacement filters shall be delivered to City as directed. Replacement parts shall include as a minimum head plates, rim gasket, locking nuts, O-rings and tentacles.

6. TRAINING

6.1 The Equipment Manufacturer shall provide a minimum of 8 hours of training in San Antonio for operation and maintenance of the membrane filter units. All costs associated with this training shall be included in the contract price.

6.2 Three (3) Operation and Maintenance Manuals shall be provided to owner for each unit installed.

7. MAINTENANCE

The Contractor shall provide one year of maintenance for each membrane filter unit. Maintenance shall commence when the project is accepted by the City.

Maintenance shall be performed on a quarterly basis or after every major storm event by a qualified maintenance company approved by the Equipment Manufacturer. Maintenance logs shall be provided to the City detailing date of maintenance, description of maintenance performed, repairs performed and whether the filters were cleaned or replaced.

Cost of the maintenance contract shall be included in the contract price of the equipment. Cost shall include all labor, equipment, parts and replacement filters.

8. MEASUREMENT

Stormwater Treatment units, satisfactorily completed in accordance with the plans and specifications, will be measured by each, of the type specified, complete in place. A minimum of four (4) maintenance cycles is required for each unit installed in the first year of operation.

9. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for as follows:

8.1. Stormwater Treatment Unit: Payment for complete Stormwater Treatment Unit will be made at the unit price bid for "Jellyfish Filter" of the type specified. These prices are full compensation for furnishing concrete, reinforcing steel, grout, aluminum and castings, frames grates, rings and covers, treatment units, replacement filters, training, connection pipes, excavation, and backfill and for all other materials, tools, equipment, labor, incidentals, cleaning, and maintenance as necessary to install stormwater treatment units, complete in place, in accordance with the plans and specifications.

CPS ENERGY
REQUIREMENTS AND SPECIFICATIONS
FOR CONSTRUCTION OF
NATURAL GAS DISTRIBUTION FACILITIES

REDLAND ROAD & JONES MALTSBERGER

CPS Energy

TABLE OF CONTENTS

CPS ENERGY
EXHIBIT GAS-1

ADDITIONS TO THE PROJECT BID DOCUMENTS

1. MINIMUM REQUIREMENTS FOR BIDDING ON CPS WORK

A. Contractor used for the gas pipeline work must have performed utility gas pipeline work within the past (3) three years of similar technical scope and magnitude as the services to be performed under this contract. With their bid, Contractor shall provide evidence of qualifications in this regard and of any licenses, permits or registrations possessed that pertain to the services or are required in the specifications. Contractor may contact CPS Energy prior to the letting of this project to determine if their previous experience meets this requirement.

B. The Contractor shall have a program complying with 49 CFR Part 199, "Control of Drug Use in Natural Gas, Liquified Natural Gas, and Hazardous Liquid Pipeline Operations" and 49 CFR Part 40, "Procedures for Transportation Workplace Drug and Alcohol Testing Programs" to test employees for the presence of prohibited drugs as prescribed and to provide an employee assistance program. The Contractor agrees to provide CPS Energy with an affidavit prior to the date of execution of the Contract which states that Contractor and its employees have complied with all applicable laws, statutes, and regulations pertaining to ensuring a drug free workplace including, but not limited to, the requirements of Part 199 and Part 40. Furthermore, the Contractor agrees to allow CPS Energy Human Resources personnel periodic on-site access to Contractor's records documenting compliance with Part 199 and Part 40. Contractor will provide the name and contact person for the agency or consortium used by the Contractor to comply with this requirement prior to the date of execution of the Contract.

C. The Contractor agrees to provide CPS Energy with an affidavit prior to the date of execution of the contract which states that Contractor and its employees have complied with all applicable laws, statutes, and regulations pertaining to ensuring a drug free workplace including, but not limited to, the requirements of 49 CFR as amended by the Research and Special Programs Administration (RSPA).

D. CPS Energy requires the following to verify Contractor and Sub-Contractor compliance with all applicable laws, statutes and regulations pertaining to the qualification of pipeline personnel including, but not limited to the applicable requirements of 49 CFR Part 192 – Subpart N -"Qualification of Pipeline Personnel" as adopted by the Railroad Commission of Texas (RCC) within the Pipeline Safety Rules.

1. ***A Notarized Affidavit*** **that states the company placing the bid and its sub-contractors are in compliance with 49 CFR 192 and RRC Pipeline Safety Rules pertaining to the qualification of pipeline personnel.**

2. **A current copy of its Operator Qualification Plan, unless currently on file, and approval of its plan by a CPS Energy Gas Operation's Representative. A copy of CPS Energy Covered Tasks is shown in Exhibit Gas-7 - CPS Energy Covered Tasks Regulated by 49 CFR Part 192.**

3. **Current listing of employees and qualifications.**

E. The Contractor shall submit a copy of SMWBA Form 101 to CPS Energy prior to date of execution of the contract.

F. Prospective Contractors bidding on the Project shall submit to CPS Energy through Bexar County a properly executed Certificate of Insurance from its insurance agent or carrier of such insurance coverages as required and set forth in the Project Contract Documents prior to award of the contract. Failure to provide proof of insurance will result in the Contractor not being approved for award of the CPS Energy utility work on the Project.

ADDITIONS TO THE PROJECT CONTRACT DOCUMENTS

1. DEFINITION OF TERMS

Add to the City of San Antonio Article I. Contract Definitions: 49. CPS – CPS Energy Board, a municipal agency of the City of San Antonio.

2. LAWS TO BE OBSERVED

The Contractor shall make himself familiar with and at all times shall observe and comply with all Federal, State, and local laws, ordinances, and regulations which in any manner affect the conduct of the work and shall indemnify and save harmless CPS Energy and its representatives against any claim arising from the violation of any such law, ordinance, or regulation, whether by himself or by his employees.

3. PERMITS, LICENSES AND TAXES

The Contractor and his subcontractors shall procure all permits and licenses, pay all charges, fees, and taxes, and give all notices necessary and incident to the due and lawful prosecution of the work and upon request by the City Engineer give evidence of the same.

4. RESPONSIBILITY FOR DAMAGE CLAIMS

The Contractor agrees to indemnify and save harmless CPS Energy, its agents, and employees from all suits, action or claims and from all liability and damages for any and all injuries or damages sustained by any person or property of any character in consequence of any neglect in the performance of the contract by the Contractor and from any claims or amounts arising or recovered under the "Workers' Compensation Laws"; Chapter 101, Texas Civil Practice and Remedies Code (Texas Tort Claims Act), or any other laws. He shall further so indemnify and be responsible for all damages or injury to property of any character occurring during the prosecution of the work to the extent resulting in whole or in part from any act, omission, neglect or misconduct on his part in the manner or method of executing the work; or from failure to properly execute the work; or from defective work or materials purchased by Contractor, except those claims for damages caused solely by the negligence of CPS Energy. Contractor shall not be released from these responsibilities until all claims have been settled and suitable evidence to the effect furnished to CPS Energy. The indemnification provided herein shall survive the termination of this Contract.

5. CONTRACTOR REQUIREMENT

A. The Contractor shall abide by the regulations promulgated in 49 Code of Federal Regulations Part 40 and 49 Code of Federal Regulations Part 199 and any modifications thereto listed below in this Article. CPS Energy will require such compliance to be a part of this Contract and will immediately terminate this Contract if Contractor is found to not be in compliance with said regulations. Contractor shall indemnify CPS Energy against any fines, penalties, damages, costs or attorney fees based upon any violation by Contractor of the same.

B. The Contractor shall abide by the regulations promulgated by the Federal Highway Administration (FHWA) which states that contractors subject to FHWA mandates shall be in compliance with those parts of 49 Code of Federal Regulations (CFR) which relate to the illegal use of alcohol and controlled substances.

6. PROSECUTION AND PROGRESS

All workers or subcontractors employed by the Contractor shall have such skill and experience as will enable them to properly perform the duties assigned them.

7. WARRANTY

The Contractor shall warrant all components, materials and workmanship for a period of at the least one (1) year from the date of final completion of gas pipeline work by Contractor. The Contractor warrants the title and guarantees the equipment, materials and workmanship furnished under this Contract to be specified and to be free from defects in design, workmanship and materials. If within the warranty period the work fails to meet the provisions of this guarantee, CPS Energy shall notify the Contractor thereof immediately and the Contractor shall promptly correct any defects, including nonconformance with the Contract Documents, by adjustment, repair or replacement F.O.B. the Project site of all defective work at its sole costs.

8. INSURANCE

The Contractor agrees to keep in full force during the performance of services hereunder insurance sufficient to fully protect CPS Energy from all damages, claims, suits and/or judgements, caused or claimed to have been caused by or in connection with the performance or failure to perform any services undertaken by Contractor, his subcontractor, or their agents, or employees.

9. COORDINATION

All questions about the gas construction shall be addressed to Brad Carr, CPS Energy Gas Construction, at (210) 353-4251. Design and engineering questions may be addressed to the CPS Energy Gas Engineering Division, Civic Improvements Section, at (210) 353-2430.

CPS ENERGY
EXHIBIT GAS-2
SPECIFICATIONS FOR CONSTRUCTION OF NATURAL GAS DISTRIBUTION FACILITIES

1. GENERAL

The work to be done includes mobilization and clearing right-of-way where necessary; receiving, transporting and unloading all materials from a designated CPS Energy center; stringing pipe, welding steel pipe and pipe fittings, and fusing high density polyethylene gas pipe and pipe fittings; excavating trenches and ditching for the burial of the gas piping facilities; installation of gas piping into the excavation along with required appurtenances such as anodes, anodes lead wires, and tracer wires; backfilling of ditches, repair of damage to any street, road, highway, sidewalk, drainage structures, driveways, signs, other utilities, fencing, or other existing structures; clean-up of right-of-way and any other item enumerated in these specifications.

The work shall conform with Title 49 of the Code of Federal Regulations, Part 192, "Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards" and to the CPS Energy design standards attached to this document as Exhibits GAS-3 and GAS-4, as applicable.

2. ROUTE OF THE GAS LINE

Construction of the gas line will, in general, follow the route shown on Exhibit GAS-6 (CPS Energy Job Sketch). Gas services to be installed, relocated or adjusted are also indicated on Exhibit GAS-6, as applicable.

CPS Energy reserves the right to make any changes in the routing which may be deemed necessary and such changes shall in no manner alter the terms or compensations payable under this contract except as they are affected by linear measurements of work completed.

All gas lines shall be installed in a separate trench apart from any other utility lines unless joint trenching with other utilities is specifically required on the CPS Energy Job Sketch or prior written approval is obtained from the CPS Energy representative allowing joint trench construction.

3. RIGHT-OF-WAY

The CPS Energy Job Sketch will indicate the planned route of the gas lines to be installed. The construction plans will show as much information as can be reasonably obtained by CPS Energy regarding the location of other existing buried utilities and structures in/or crossing the rights-of-way, but CPS Energy assumes no responsibility for the correctness or completeness of this information. Contractor will be held responsible for locating all such utilities and structures and for avoiding damage to them and for making repairs or paying for any damage thereto. CPS Energy will provide and furnish all necessary right-of-way, federal, state, county and city roadway crossing permits, which shall be necessary for the construction.

Most of CPS Energy's gas facilities are constructed within public rights-of-way; however, CPS Energy may acquire easements on private property for construction of gas distribution facilities when public rights-of-way are not available or unusable. When gas facilities are planned for construction within easements on private property, the exact boundaries of such easements will be shown on the CPS Energy Job Sketch, and CPS Energy will survey and stake the easement boundaries in the field. Contractor shall preserve such field staking of easement boundaries. If the Contractor's construction activities disturb the field survey stakes, then the Contractor shall be responsible for resurveying the easement boundary when necessary. Contractor shall comply with all reasonable requirements of landowners, tenants or lessees which are designed to reduce interference of construction. It will be the Contractor's responsibility to limit traffic on the right-of-way to only such vehicles as may be necessary for construction. Contractor will be held liable for damage claims arising from grass and brush fires that may be set during his operations.

In addition, the term "right-of-way" shall also apply to those portions of public streets, roads or highways in which sections of the utility lines will be constructed. The Contractor working in any public right-of-way is responsible for the safe movement of traffic (pedestrian and/or vehicular) through the construction area. The Contractor shall meet all requirements for barricading and traffic control as specified in the Texas Manual on Uniform Traffic Control Devices (TMUTCD).

4. MATERIALS TO BE FURNISHED BY CPS

CPS Energy agrees to furnish all steel pipe, polyethylene (plastic) gas pipe, casing pipe, valves, valve boxes, stop cocks, service risers, couplings, casing insulators, casing end seals, steel pipe insulating joints, miscellaneous pipe fittings, anodes, cathodic protection test lead boxes, pipeline warning signs, gas pipe tracer wire, tracer wire clamps, pipe coating primer, and pipe coating tape and/or shrink sleeves necessary to complete the job except when these materials are to be specifically provided by the Contractor in accordance with written requirements of the Compensation Schedule (Exhibit GAS-5) or CPS Energy Job Sketch (Exhibit GAS-6).

5. CLEARING, GRADING AND PREPARATION OF RIGHT-OF-WAY

The Contractor shall clear and grade right-of-way sufficiently for his need and for hauling and stringing pipe and other material but not to exceed the width of right-of-way. Contractor shall be responsible for any damages outside of right-of-way limits. Contractor shall perform all necessary grading and compaction at road, stream, and gully crossings and at other locations where needed to permit the passage of equipment, cars, and trucks. Before any brush or timber is cut to clear right-of-way, approval from CPS Energy in writing must be obtained. All brush and timber cut to clear right-of-way must be removed from the right-of-way and disposed of to the satisfaction of the CPS Energy representative. Any trimming of an oak tree will require the contractor to follow **oak wilt suppression procedures:**

- Avoid pruning or wounding any oaks unless absolutely necessary.
- If pruning is required, request assistance as soon as possible from the CPS Energy Tree & ROW Maintenance Section or one of the Inspectors listed below.

- Any pruning wounds or damage caused by equipment (trucks, diggers, trenchers, backhoes, etc.) must be painted immediately, within a minimum of one hour. This includes any cracked or ripped limbs and wounds to trunks, limbs or root flares which may have been damaged by passing equipment.
- Within a known infection center, all tools must be disinfected with a 10% clorox and water solution or Lysol spray before using these tools on any other oak tree.

Requests for Assistance From the Tree & ROW Maintenance Section
When assistance is required, please provide as much notice as possible or call as soon as damage occurs. Contact names and numbers are listed below:

	Office	Radio#	Cellular	Pager#
Section Office	353-3593	2400		
James F. Koenig	353-3798	2401	844-5457	1336
Terri Minnia	353-5218	2405	394-3580	2241
Margie Regalado	353-5243	2403	394-3579	2428
Clyde Stroud	353-5218	2404	394-3578	2301
Ed Scott	353-5243	2402	275-6935	2852

The Contractor shall promptly repair all bridges, private roads, fences, buildings or other property damaged by him in the progress of the work. Permission must be secured from owner before private roads or bridges are used or blocked.

The Contractor will be notified prior to construction of all known requirements or restrictions of right-of-way by CPS Energy.

The Contractor will be responsible for all preparation of right-of-way. This will include construction operations by removing and disposing of all obstructions from the right-of-way and/or gas easement where removal of such obstructions is not otherwise provided for in the plans and specifications.

Such obstructions shall be considered to include, but not be limited to, remains of houses not completely removed by others, foundations, floor slabs, concrete, brick, lumber, plaster, cisterns, septic tanks, basements, abandoned utility pipes or conduits, equipment or other foundations, fences, retaining walls, outhouses, shacks, and all other debris, as well as buried concrete slabs, curbs, driveways and sidewalks.

This item shall also include the removal of trees, stumps, bushes, shrubs, brush, roots, vegetation, logs, rubbish, paved parking areas, miscellaneous stone, brick, drainage structures, manholes, inlets, abandoned railroad tracks, scrap iron and all debris, whetherabove or below ground, except live utility facilities.

It is the intent of this specification to provide for the removal and disposal of all obstructions to the new construction, together with other objectionable materials, not specifically provided elsewhere by the plans and specifications.

Unless otherwise shown on the plans, all fences along the right-of-way and/or easement which are damaged or temporarily removed by the Contractor shall be replaced by the Contractor to an equal or better condition at no additional cost to CPS Energy.

Unless otherwise indicated on the plans, all underground obstructions shall be removed to in areas to be excavated to 2 feet below the lowest elevation of the excavation.

Holes remaining after removal of all obstructions, objectionable material, vegetation, etc., shall be backfilled and tamped as directed by the inspector, and the entire area shall be bladed to prevent ponding of water and to provide drainage.

All asphaltic material shall be deposited of or recycled at a facility authorized to accept the asphalt for such purposes.

If the contractor encounters hazardous substances, industrial waste, other environmental pollutants, underground storage tanks, or conditions conducive to environmental damage, Contractor shall immediately stop work in the areaaffected and report the condition to the Owner's representative in writing. Contractor shall not be responsible for or required to conduct any investigation, site monitoring, containment, cleanup, removal, restoration or other remedial work of any kind or nature (the "remedial work") under any applicable level, state or federal law, regulation or ordinance, or anyjudicial order. If the contractor agrees in writing to commence and/or prosecute some or all of the remedial work, all costs and expenses, to include any extention of the contract time, of such remedial work shall be paid by Owner to Contractor as additional compensation.

6. UNLOADING, HAULING, AND STRINGING MATERIALS

The Contractor shall unload from trucks and string on the right-of-way, as needed, all gas pipe and other materials in such manner as to prevent damage to same. Pipe shall be unloaded with proper equipment, and not dropped from trucks.

When materials in storage are issued to the Contractor, such materials shall become the responsibility of the Contractor, and adequate methods of inventory and material transfer will be set up by the Contractor. The Contractor and CPS Energy jointly shall inspect materials, which have been stockpiled by CPS Energy prior to hauling. After this inspection, the Contractor shall pay CPS Energy delivered cost of any materials lost or damaged beyond use during the construction operation.

Under no circumstances shall pipe be strung in advance of right-of-way clearing operations.

Stringing of pipe on right-of-way shall be done in such a manner as to cause minimum interference with the normal use of driveways, streets, roads, highways, and land crossed. The Contractor shall prevent entrance of dirt or debris into pipe during stringing.

7. LOCATING EXISTING CPS GAS FACILITIES

The Contractor shall be required to locate all existing gas facilities as needed for the construction and installation of new gas facilities. Upon request by the Contractor, the

CPS Energy inspector will provide copies of the appropriate gas maps to facilitate locating activities for the existing gas facilities at the job site, however; CPS Energy does not guarantee the accuracy of such gas facilities map information. The Contractor shall use conventional pipe locating equipment and techniques in conjunction with information from the gas facilities maps to determine the actual location of existing gas facilities. The Contractor shall be solely liable for any damages to existing gas facilities and any damages to other infrastructure such as the street, drainage structures or other utilities, that are incurred by the Contractor.

8. TRENCHING (CONVENTIONAL OPEN EXCAVATION)

A. Equipment and General Methods - Contractor shall use such equipment and methods that may be required to excavate the trench or ditch along the route specified on the CPS Energy Job Sketch, regardless of the type of soil or rock encountered and regardless of the depth of excavation necessary. Contractor shall furnish all equipment, materials and supplies that may be necessary for the completion and maintenance of the trench or ditch, including water control, shoring, coffer dams and sheet piling.

B. Survey Stakes - Contractor shall carefully preserve all survey stakes set by CPS Energy, CPS Energy representatives, or consulting engineers and shall be liable for any extra expense due to Contractor's failure to maintain such stakes.

C. Trench Specifications - The trench or ditch shall have sufficient width and be of such depth to allow installation of piping and valves at depths specified on the CPS Energy Job Sketch and/or the CPS Energy Design Standards. When surfaced streets are cut, the paving shall be cut in neat lines defining the width of the trench to be excavated. The cut shall extend entirely through the asphaltic surfacing and shall break the base material to a sufficient depth to assure the removal of the surfacing and base without breaking beyond the lines of the trench. Concrete saws, pneumatic paving chisels, or mechanically operated drop blades may be used for asphalt surface cutting as approved by the governmental authority exercising jurisdiction. A concrete saw must be used to cut concrete driveways, streets, or other concrete surfaces.

D. Blasting - No blasting will be permitted by CPS Energy.

E. Hand Ditch Requirement - In all cases where shrubbery, trees, or valuable growing timber is encountered in the right-of-way, and in any location where, in the opinion of the CPS Energy representative, the use of ditching equipment may result in unnecessary damage or injury to property crossed by the right-of-way, CPS Energy may require the Contractor to excavate the trench or ditch by hand or other approved method.

F. Temporary Bridges - When the trench or ditch is excavated where it is desirable for a property owner, tenant or other pedestrians to have a passageway across the excavation, the Contractor shall provide safe, temporary bridges or provide other safe means of crossing the ditch.

No streets or driveways shall be blocked at night, except with owner's permission, and any street or driveway opened shall be provided with a strong temporary bridge to allow

traffic to move safely. Open trenches and test holes shall be properly marked by means of barricades and warning lights.

G. Additional Depth of Trench - Where trenching across or adjacent to, or within the right-of-way of roads or highways, railroads, drainage ditches, creeks, ravines, and other water courses and also at points where the contour of the earth may require extra depth, Contractor shall excavate to such additional depth as may be necessary to meet the requirements of CPS Energy and any public or private authority having jurisdiction over same.

H. Dust Suppression - Whenever trenching activities create significant amounts of dust or other undesirable emissions into the atmosphere, then the Contractor may be required, at the sole discretion of the CPS Energy inspector, to take necessary action to reduce such emissions.

I. Trench Excavation Safety - The Contractor must comply with 29 CFR Part 1926, Occupational Safety and Health Standards; Subpart P - Excavations. Contractor and/or Contractor's independently retained employee or safety consultant, if any, shall review the construction plans and any available geotechnical information and the anticipated installation sites within the project work area in order to develop the Contractor's trench excavation safety plan and procedures. The plans and procedures shall, at a minimum, comply with OSHA's standards for trench excavations. Specifically, the Contractor and/or the Contractor's independently retained employee or safety consultant shall develop and implement a trench safety program in accordance with OSHA's standards governing the presence and activities of individuals working in and around trench excavation.

9. TRENCHLESS CONSTRUCTION METHODS

The use of guided or directional boring equipment to install new gas distribution facilities is acceptable to CPS Energy provided that the Contractor demonstrates to the satisfaction of the CPS Energy representative that such equipment is capable of installing the gas pipe along a controlled and relatively constant horizontal and vertical alignment for the specific soil conditions that are encountered at each job site. Special provisions must be made to insure that the gas pipe is not damaged as it is pulled or otherwise inserted into the bored hole. The bored hole must be at least one nominal pipe size larger than the gas pipe that is to be installed (i.e. a 4-inch gas pipe requires at least a 6-inch bored hole). When the bored hole is known to have significant deflections, the bored hole must then be at least two nominal pipe sizes larger than the gas pipe.

When such equipment is used to install polyethylene gas pipe, a fusible link shall be used between the pull head and the gas pipe at all times to prevent damage to the gas pipe during the pull-back operation. The fusible link shall be at least 2 feet in length and it shall be a section of CPS Energy polyethylene pipe that is one nominal pipe size smaller than the gas main being installed. The CPS Energy representative shall inspect the fusible link and the leading edge of the installed gas pipe for any significant gouges or scrapes in the outside wall of the pipe or excessive change in length of the fusible link. If such damages to the fusible link or pipe are found to exist, then the Contractor shall remove and replace all of the damaged pipe at the

Contractor's expense, and the Contractor shall reimburse CPS Energy for the cost of the damaged pipe (including CPS Energy inventory and handling expenses).

When such equipment is used to install steel gas pipe, the CPS Energy representative shall inspect the installed gas pipe for any significant gouges or scrapes in the protective coating on the outside wall of the steel pipe. If such damages to the coating are found to exist, then the Contractor shall repair all of the damaged coating at the Contractor's sole expense.

Whenever gas service lines are planned for installation along a section of gas main that is being installed with guided or directional boring equipment, the Contractor shall excavate at least one service tap location prior to pulling the gas main into the bored hole. The purpose of this excavation is to provide the CPS Energy representative with an intermediate inspection hole where the gas pipe can be inspected during the pipe insertion process. Preferably, the intermediate inspection hole shall be located near the middle of the directionally bored section. If several gas service connections are planned along the insertion route, then the CPS Energy representative shall select the location of the service tap that the Contractor must excavate for the intermediate inspection hole before the gas pipe insertion process.

Gas mains and services that are installed by guided or directional boring equipment shall not be routinely installed at depths greater than seven (7) feet unless one of the following conditions apply:

1) The CPS Energy Job Sketch (Exhibit Gas - 6) specifically requires installation depths in excess of seven (7) feet.
2) Installation depths in excess of seven (7) feet are the shallowest depths necessary to achieve acceptable clearance between the gas pipe and another buried utility or structure while maintaining the minimum burial depth requirements for the gas pipe.
3) The CPS Energy representative approves such installations even though conditions described in Items 1) and 2) above are not applicable.

When guided or directional boring equipment is used to install gas distribution facilities special provisions (if any) in the Compensation Schedule (Exhibit Gas-5) for additional compensation due to extra depth of cover shall not apply.

The method of gas service replacement by Insertion involves sliding a new polyethylene service pipe of smaller diameter into the existing steel service pipe. This is an acceptable method of installation provided that the ends of the existing steel pipe are reamed and fitted with bushings for the pipe to be inserted without damage, and a shrink sleeve is applied to keep components in place and prevent damage thereafter. In order to reduce stress on the service line being inserted from the main, the horizontal distance between the end point of the new service alignment and the point of insertion should be, at least, twice the perpendicular distance between the lines (See Insertion Detail, page 19 of 20, exhibit Gas-3). Tracer wires will be inserted through the existing service along with the new pipe. An electrical continuity test will be conducted on each installed tracer wire to verify that the tracer wire has not been “shorted” against the existing steel service during the installation procedure.

10. STORM WATER POLLUTION PREVENTION PLAN

The gas utility construction work shall be performed in accordance with the City of San Antonio Storm Water Pollution Prevention Plan (SWPPP).

11. PROTECTION OF GAS PIPE ENDS

During the course of construction, diligent care shall be exercised to keep the gas pipelines clean. At the end of each day's work and at the other times that the ends of the installed pipe are left unattended, the pipe ends shall be securely closed to prevent the entrance of water, animals, trash or any other obstructions, and shall not be opened until work is resumed.

If there is reasonable cause to believe that water, trash or other obstruction is in a portion of the lines, the Contractor shall take whatever steps are necessary to assure CPS Energy that there is no water, trash or other obstruction in the line or to remove the water or other foreign matter if it is in the lines. Any and all work required to assure CPS Energy that the gas pipes are clear of debris and other such matter or to remove such obstructions shall be at the Contractor's expense.

12. WELDING

Welding shall be in accordance with API Standard 1104, 17th Edition, dated September, 1994.

Welds shall be made the "shielded metal-arc" process. All equipment and welding rods will be furnished by the Contractor. Brand of welding rods proposed to be used by the Contractor shall be approved by CPS Energy prior to use.

Where determined by the CPS Energy representative to be necessary, back-welding or inside-welding of all tube turns, ells, etc., in the pipe lines shall be required by the Contractor as part of the work covered by the Contract. Back-welding shall be performed at the sole expense of the Contractor.

All welds shall be made with not less than three (3) beads. The second or "Hot Pass Bead", should be run on the full circumference of the pipe as soon as practical. The intent of the above is that the Hot Pass or second bead shall be run before the Stringer Bead has cooled.

Prior to being permitted to weld on the line, each welder shall qualify in accordance with Section 3.0 of API Standard 1104 referred to previously and shall pass the tests listed in paragraph 3.4 of the API Standard. The Contractor will conduct, or make arrangements for, and stand the expense of the qualification tests of the welders. The qualifying tests will be conducted in the presence of the CPS Energy representative.

Each welder will be assigned a specific number and it shall be his duty to personally affix such number in crayon on each weld for future identification. Steel die stamping shall not be used.

CPS Energy rights of welding inspection shall be as given in Section 5.1 of API Standard 1104. Unless otherwise directed, the Contractor will test all welds with soapsuds while subjected to an internal air pressure of 90 psig prior to field coating the joints.

Pin holes, leaks, cold laps, rivers, undercutting or any defects whatsoever occurring in any weld shall, at the discretion of the CPS Energy representative, be repaired by cutting out the entire weld and completely rewelding at no additional expense to CPS Energy. Whenever it thus becomes necessary to remove a weld from the completed line, replacement shall be made, at the sole expense of the Contractor, by welding into the line a pup joint having a minimum length of ten (10) feet.

13. RADIOGRAPHIC INSPECTION

This Section applies when radiographic inspection is specified in the contract documents.

A. Standards and Codes - The latest available edition of the following referenced documents shall be applied when required:

1. Department of Transportation, Title 49, Part 192 - "Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards."

2. Recommended Practice No. SNT-TC-1A, Supplement A - "Radiographic Testing Method."

3. ANSI B31.8, "Gas Transmission and Distribution Piping Systems."

4. ASME Code Section V, "Nondestructive Examination."

5. United States Nuclear Regulatory Commission, Title 10, Chapter 1, CFR - Energy and other federal, state and local regulations for protection against radiation hazards.

B. Radiographic Procedure - All radiographic inspections shall be performed in accordance with written procedures per Section 8.2 of API Standard 1104. Contractor shall provide a copy of the written procedure to the CPS Energy representative who shall determine the acceptance of the procedure.

C. Personnel Qualifications - Radiographic certification shall be the result of a qualification and certification program that incorporates the requirements of Recommended Practice SNT-TC-1A, Supplement A in accordance with Section 8.7 of API Standard 1104.

D. Equipment and Material - Contractor shall furnish all equipment and materials necessary for the performance of the radiographic inspection. Such materials and equipment include all film and supplies for the processing, film identification, recording, filing and storage of same. Also, Contractor shall provide all barriers, warning systems, film badges, documentation and records as is necessary for the protection and personnel monitoring of every person near a radiation source.

E. Production Radiography Procedures - Contractor will notify the CPS Energy representative if any welds fail to meet the specification. All repaired welds or welded joints, which have been completely replaced, shall be radiographed.

F. Film Identification Procedure - Film identification shall be in accordance with Section 8.6 of API Standard 1104. The exact method of identification will be approved by the CPS Energy representative prior to the start of radiographic inspection.

G. Radiographic Reports and File - Contractor shall be responsible for furnishing the CPS Energy representative with a report for each calendar day the unit is on the project. All radiographs made by Contractor shall be delivered to the CPS Energy representative and shall become the property of CPS Energy.

14. PRESSURE TESTING

A. General - The Contractor shall demonstrate to the satisfaction of the CPS Energy representative, by performing a pressure test, that the mains and/or services installed do not leak and that they will operate safely at the desired maximum allowable operating pressure. Pressure tests are performed to verify satisfactory workmanship and the strength of materials. To the extent practical, the test shall be conducted to the entire pipeline so as to minimize the number of untested tie-in connections. All joints used to tie-in a test segment of pipeline after the test shall be soap bubble tested at not less than its operating pressure. The Contractor shall be responsible for locating and repairing any leaks or failures, which are revealed by the test.

The Contractor shall furnish all supervision, labor, materials and equipment to perform the pressure test required, including but not limited to, pumps, compressors, pigs, test instrumentation and water. Pressure test specifications will be indicated on the CPS Energy Job Sketch (Exhibit GAS-6). The specifications will indicate the minimum and maximum test pressure, test fluid and test duration, as appropriate. The Contractor shall conduct the test in accordance with the applicable requirements of Title 49 CFR 192 and shall take all necessary safety precautions to protect construction personnel and the general public during the course of the test. The Contractor shall be responsible for obtaining all permits necessary to conduct the test except for the Railroad Commission of Texas test water discharge permit that is required for hydrostatic pressure tests.

B. Standard Air Test - A standard air test will generally be specified for gas mains and services to be operated at pressures of 60 psig or less. This test will be indicated on the CPS Energy Job Sketch without a test duration period. The minimum test pressure shall be 90 psig and shall not exceed 120 psig. The test duration shall be a time sufficient to insure discovery of all potentially hazardous leaks. At the minimum, each weld, butt fusion and any other fitting and connection shall be soap bubble tested at the specified test pressure. The test pressure shall be measured with a dial type gauge and shall be monitored during the course of the test to detect leakage. Upon completion of the test(s), the Contractor shall sign and date, in the appropriate location, the "as built" job sketch to indicate successful completion of the test. Pending acceptance by the CPS Energy representative, the CPS Energy representative shall also sign the "as built" job sketch at the appropriate location.

C. High Pressure Test - When the CPS Energy Job Sketch specifies a test pressure greater than 90 psig or if a specific test duration period is specified, then the following requirements for a High Pressure Test shall also apply.

Prior to initiating any work required for a High Pressure Test, the Contractor must hold a pre-test meeting with the CPS Energy representative and a CPS Energy engineer from the Gas Engineering Division. At this meeting, the Contractor will be required to discuss all aspects of plans for conducting the High Pressure Test. The key points of discussion for hydrostatic pressure tests will include the following: 1) optimum direction and injection rate for filling the pipe section with water while minimizing air entrapment; 2) optimum direction and discharge location for safely and completely draining the pipe section; 3) the type, quantity and condition of pipeline pigs; 4) installation and use of temporary pig launchers and/or receivers; 5) capacities of water pumping equipment; 6) pressurization procedures; 7) written test documentation; 8) limitations on refilling and/or discharging test water during the pressure test without invalidating the test and causing the test to be restarted; 9) test water stabilization period after filling the pipe section; 10) appropriate procedure for dewatering the pipe section to minimize the amount of water that remains in the pipe; 11) any other critical aspects of the High Pressure Test.

The test medium may be either air or water and will be specified on the CPS Energy Job Sketch. A hydrostatic test shall be conducted in general conformance with API Recommended Practice 1110. Air tests shall also be conducted in conformance with API RP 1110 with regard to safety and instrumentation.

All filling and pressurization procedures are subject to the approval of the CPS Energy representative. When a hydrostatic test is to be performed, the Contractor shall fill the pipeline in such a manner that no air is entrapped, making use of pipeline pigs as necessary. The Contractor shall be required to furnish all pipeline pigging equipment, including appropriate styles and types of pipeline pigs and temporary pig traps and launchers. The CPS Energy representative must inspect all pigging equipment, and such equipment must be acceptable to the CPS Energy representative prior to use by the Contractor.

The Contractor shall allow a suitable time for temperature stabilization of the test fluid. The stabilization period shall be a minimum of twenty-four (24) hours after the filling operation is complete for a hydrostatic test, and the stabilization period shall be a minimum of eight (8) hours after the pipeline is pressurized to the minimum test pressure for all High Pressure Tests performed with air or other compressed gases. At the sole discretion of the CPS Energy representative, the stabilization period may be reduced for short sections of pipe such as offsets and valve complexes.

The Contractor shall note each significant step or event during the filling, pressurization and testing operation and comments shall be added for any incidents which may affect the results of the tests. Where the specified test duration is two hours or less, deadweight pressure, pipe temperature and ambient temperature measurements shall be recorded at 15 minute intervals. Where the specified test duration is greater than two hours, these measurements shall be recorded at 30 minute intervals.

Upon completion of the test, the Contractor shall obtain the approval of the CPS Energy representative prior to depressurizing the pipeline. The Contractor shall then depressurize, dewater, clean and dry the pipeline to the satisfaction of the CPS Energy

representative. Water shall be disposed of in the manner required by any permits and to the satisfaction of the CPS Energy representative.

D. Test Records - The Contractor shall submit to the CPS Energy representative all documentation associated with the test, including a completed Form I, "Hydrostatic Test Record and Certification" of Appendix I, API RP 1110, (or substantially similar documentation), testing logs and all recorder charts. All documentation shall be labeled to identify the pipeline section that was tested, and it must be signed and dated by the Contractor and approved by the CPS Energy representative.

15. COATING OF PIPE

The Contractor will be furnished coated and wrapped pipe in accordance with such specifications as CPS Energy may in its sole discretion determine. The Contractor will be responsible for coating all field joints and repairing damaged and defective coating on the pipe regardless of the nature, extent or cause of such damage or defect in the coating. However, if the damaged or defective coating is of such magnitude as requires an extra or additional charge by the Contractor, then the Contractor shall first refer such matter to the CPS Energy representative and not proceed until the Contractor has obtained prior written authorization from CPS Energy to do so, in which event the provisions of the Contract relating to extra or additional work shall be applicable.

Coating materials for coating field joints and repairing damaged or defective coating will be furnished by CPS Energy.

For coating field joints, the coating on the pipe must be cut back a distance of 8" to 12" from the joint. The edge of the enamel and felt wrapping shall be feathered at these points to assure a firm bond between the original coating and the field coating. After the joints are welded and tested, and the welds cleaned and brushed, the bare ends of the pipe shall be thoroughly cleaned, then immediately given a hand-brushed coat of primer to dry surfaces. Care shall be exercised to prevent primer from being applied too heavily, especially at the base of the welds; any runs or sags which have dried or dead primer shall be scraped off and the pipe reprimed. After the tape primer has dried to a tacky consistency, apply cold wrap tape with a 30 percent overlap taking care not to create any voids between the pipe and tap coating. No primer or coating will be applied to wet or damp pipe.

After the field joints have been coated and immediately before the pipe is lowered into the ditch, the entire coating will be tested to locate breaks or pinholes and other flaws in the enamel with an approved "holiday" detector in good working condition capable of producing the testing voltage in pulsating cycles at very low amperage. The voltage used shall not exceed 14,000 volts for pipe coatings of 3/32. All defective places will be plainly marked immediately after they are detected. The Contractor will furnish the holiday detector, and will check the coating for holidays in the presence of the CPS Energy representative.

All repairs to damaged coating which exceeds 2 square inches will be made by breaking out the old coating, scraping the pipe to bare metal, feathering the edges to assure a firm bond and repriming. After the primer has dried to a tacky consistency, apply cold wrap tape taking care not to create any voids between the pipe and the tape coating. For repairs less than 2 square

inches, the pipe need not be scraped to bare metal and primed; however, the good enamel around the damaged portion shall be feathered before the cold wrap is applied.

Compression type couplings, valves, welded fittings, etc., will receive a cold applied mastic after the pipe is in the ditch and they have been tested for leaks. A plastic wrap supplied by CPS Energy will be placed over the mastic to protect the coating during backfilling.

Handling of Coated Pipe - Coated pipe shall be handled only with suitable equipment in such a manner as to prevent damage to the coating. The coated pipe shall be placed on skids alongside the ditch until it is to be welded and lowered into the ditch. The skids shall be of sufficient width or padded with sandbags or resilient pads to prevent the skid edges from cutting the coating and wrapping. The skids shall be arranged to permit the coated pipe to bear on the full width of the skid.

At all times, coated and wrapped pipe shall be carefully handled with wide rubber, leather, composition, or canvas slings or belts containing no protruding rivets or belts that may injure the coating. Wire rope, tongs, chairs, hooks, and bare cables shall not be permitted to come into contact with the coating. Coated pipe shall not be handled when the temperature is low enough to cause cracking of the enamel.

16. CATHODIC PROTECTION

The Contractor shall install packaged anodes, insulating joints and insulating flange sets as provided for in the exhibits. Welding machines will not be used to test insulation or otherwise be grounded across insulating devices. Insulation will be checked by the CPS Energy representative and declared acceptable only after testing establishes satisfactory performance.

17. POLYETHYLENE GAS PIPE

Polyethylene pipe, which is commonly referred to as plastic, PE or HDPE pipe, shall be handled only with suitable equipment in such a manner as to prevent damage to the pipe such as fracture, kinking, deep gouges or cuts. The polyethylene pipe shall not be subjected to abuse by dropping, throwing or dragging except over smooth non-scratching terrain or surface.

An insulated copper wire shall be installed with all polyethylene pipe for the purpose of locating the pipe after backfilling. This wire shall be installed with 2 to 6 inches separation between the tracer wire and the polyethylene pipe. Under no circumstances shall the tracer wire be taped or otherwise secured against the outside wall of the polyethylene pipe or spirally wrapped around the pipe.

Fusion of polyethylene pipe joints shall be done by the Contractor in accordance with requirements of D.O.T., Title 49, Part 192 - Transportation of Natural Gas by Pipeline: Minimum Federal Safety Standards, Paragraphs 192.281, 192.283, 192.285, 192.287.

Prior to starting production fusing under this contract each Contractor employee that will be making polyethylene fusion joints shall qualify according to Paragraph 192.285 of the D.O.T. code using a CPS Energy approved procedure. Qualifying tests will be conducted in the presence of the CPS Energy representative.

The Contractor shall furnish all specialty tools and equipment that are required to handle, install, butt fuse and squeeze-off polyethylene pipe. The Contractor shall insure that all specialty tools and equipment are specifically designed for use on polyethylene piping systems and are in good working condition. The CPS Energy representative shall be allowed to inspect all specialty tools and equipment furnished by the Contractor. The CPS Energy representative may disallow the use of any specialty tools or equipment that are not specifically designed for use on high density polyethylene piping systems or are deemed to not be in good working condition. CPS Energy routinely uses the Steve Vick 6" Mark II Coil Trailer for handling large diameter coiled pipe, McElroy equipment for making butt fusions on polyethylene pipe and Mustang squeeze-off tools for stopping the flow of gas in existing polyethylene piping systems. The Contractor shall be required to provide copies of the original manufacturer's literature for all comparable equipment from other manufacturers. At the sole discretion of CPS Energy, comparable equipment from other manufacturers may be approved for use by the Contractor.

All polyethylene pipe joints shall be tested with soap and water with the line having an internal pressure of between 90 and 120 psig. All pressure tests on polyethylene pipe must be observed and approved by the CPS Energy representative. It shall be the Contractor's responsibility to coordinate pressure tests on polyethylene pipe so that such test can be performed with a CPS Energy representative present.

18. LOWERING IN AND BACKFILLING

The ditch shall be free of rocks and clods before the pipe is lowered into the ditch. No pipe will be lowered into the ditch until the ditch has been inspected and approved by the CPS Energy representative.

All stumps and roots found in the ditch line shall be cut so that they will not come in contact with the pipe. All loose rocks, stones, blocks, skids, chocks, tools, heavy clods, tree limbs, and other items, which may damage the pipe, shall be removed from the bottom of the ditch before the pipe is lowered in.

The ditch shall be excavated with sufficient depth to allow for a minimum thickness of four (4) inches of pit run sand to be placed in the ditch below the pipe. Pit run sand placed in the ditch to cushion the pipe shall be leveled and tamped so that the weight of the pipe is as evenly distributed as possible on solid ground.

Backfilling shall be so conducted that the ditch shall be neatly backfilled and compacted. Rock, gravel or like materials shall not be backfilled directly onto the pipe. The Contractor shall provide and shall haul sufficient pit run sand to be backfilled around and over the pipe to form a protective padding or cushion between the pipe and the rock, gravel and other such unexcavated materials. After the pipe has a six (6) inch minimum cover of pit run sand, the remaining backfill may contain rocks and gravel, except that large rocks in excess of four (4) inches in diameter, width or length, shall not be backfilled into the ditch. Such rocks shall be removed from the right-of-way and disposed of to the satisfaction of the landowner, tenant, and/or CPS Energy representative. Care shall be exercised to prevent hand shovels and tampers from damaging the pipe.

Trenches in public roadways will be backfilled and paved in accordance with the requirements of the governmental authority having jurisdiction over the street or road.

Where paving is cut, backfilling and finishing of the top of the trench will be in accordance with the requirements of the authority having jurisdiction over the pavement. On state highways, U.S. highways, expressways and freeways and their frontage roads, and any streets or roadways that are being maintained or rebuilt by the Texas Department of Transportation (TxDOT), the TxDOT specifications and requirements for backfilling trenches will apply. On county roads, private roads, streets in incorporated townships, driveways or paved parkways the backfill will be a mixture of concrete or other material mixtures with depths as required by the authority having jurisdiction and shall be placed in trench to within one and one-half (1-1/2) inches of the surface of the existing pavement. The Contractor shall apply final and finishing topping to cuts in paving with hot mix, hot lay asphalt. Inspection and approval by the authority having jurisdiction over the pavement shall be obtained by the Contractor before the job will be accepted as completed by CPS Energy.

Backfill in public and private thoroughfares shall be hydra-tamped with special care to prevent settlement or damage to other buried utilities.

The Contractor shall not use soil from the right-of-way except from the spoil bank. Any surplus soil shall be disposed of by the Contractor.

When crossing drainage ditches and minor streams, the Contractor shall furnish and install all materials necessary for bank reinforcement. Such backfill must be properly maintained by the Contractor until the entire job has been completed and accepted by an authorized representative of CPS Energy. No reimbursement will be made for repairing of backfill due to floods and/or other conditions occurring before final acceptance.

The Contractor shall control the ditching and backfilling so as to have a minimum amount of open ditch commensurate with good construction practices.

As soon as backfill is completed on a section of line, Contractor shall immediately clean up the right-of-way, removing all surplus and defective materials to CPS Energy-designated locations. Disposal of all refuse such as brush, broken skids, rock, etc., shall be to the satisfaction of the CPS Energy representative. Insofar as possible, the earth on both sides of the line ditch which has been disturbed during the construction of the line shall be leveled, and the ditch line shall be left in a condition satisfactory to the CPS Energy representative. All temporary fills and bridges shall be removed and the area cleaned to the satisfaction of the CPS Energy representative. The Contractor shall, at his expense, furnish, haul and install black top soil on the ditch line and right-of-way area where necessary in the opinion of the CPS Energy representative to leave such area in the same condition as existed prior to the commencement of the work and/or to obtain the minimum required cover for the utility lines as specified.

Upon completion of all backfilling and cleaning of the right-of-way, permanent repairs shall be made to all fences by using equivalent or new fencing materials. All fence repairs must be satisfactory to CPS Energy representative. These repairs are to be made by Contractor at no extra compensation.

19. FINAL PIPING CONNECTIONS AND/OR TIE-INS

The Contractor will make all connections of new gas lines to existing gas lines. This includes all necessary preparations for tie-ins and purging for all sections of gas lines installed by the Contractor. The Contractor will be required to weld short stop fittings and other necessary fittings on existing steel gas lines that will be used by CPS Energy personnel to control the flow of gas into the new gas lines. CPS Energy personnel will control the flow of gas on all operative gas facilities while the Contractor is making final piping connections and/or tie-ins.

The Contractor shall be responsible for insuring that all tie-ins between new and existing gas mains are performed in a safe manner. The Contractor shall furnish all necessary equipment and instrumentation that is required to insure that the final tie-in welds and/or fusions between new and existing gas facilities are performed in a safe manner. Such equipment and instrumentation may include pneumatic air movers, combustible gas indicators (CGI's), oxygen monitors, self-contained breathing apparatus and fire retardant clothing for construction personnel, and fire extinguishers.

20. REMOVAL OF EXISTING PIPE

The asphaltic wrap on pipe removed under this contract may contain asbestos. In handling the pipe (including the excavation, cutting, removal, loading and unloading of such pipe), Contractor shall observe all State and Federal worker protection regulations and standards, and all environmental and public safety standards that are applicable to such work, including the OSHA standard found at 29 CFR Section 1926.1101, and following, that relates to the occupational exposure standard to asbestos for the construction industry.

The Contractor will indicate in its bid the manner in which the pipe shall be managed after removal. For example, Contractor shall indicate whether the pipe will be disposed at a licensed landfill facility, will be recycled as pipe by Contractor, will be sold to and recycled as pipe by a third party, will be recycled by a third party as scrap metal, etc. If dealing with a third party, Contractor shall identify the various third parties Contractor will rely upon to provide the indicated services.

For all pipe removed from the ground under the terms of this contract, Contractor shall place the following notice, beginning approximately two (2), feet from each end of the pipe, in stenciled or comparable lettering, i.e. not attached labels, of not less than 3 inches in height;

PIPE WRAP MAY CONTAIN ASBESTOS

Upon removal of the pipe from the ground, ownership of the pipe is transferred to the Contractor.

21. PURGING NEW GAS FACILITIES

CPS Energy personnel will purge the new gas mains, and the Contractor will purge all new gas service lines or existing gas service lines that have been tied-over to the new gas mains or otherwise adjusted.

22. GOODWILL OF GAS CUSTOMERS & RESIDENTS IN THE WORK AREA

The Contractor shall make reasonable efforts to create goodwill among the property owners, tenants and lessees along the right-of-way of the gas construction project.

For this reason, no gas service shall be cut-off after 2:30 p.m. each day. All gas services that have been cut-off during the day must be restored before 4:00 p.m. that same day. If the Contractor is consistantly late in restoring gas service by 4:00 p.m., the contract may, at CPS Energy's discretion, be adjusted to reflect an earlier cut-off time.

When customer gas service is to be interrupted, the Contractor must use CPS Energy approved door-hangers to inform the customers of the impending construction activity. The door-hangers must be placed on the front door of each residence at least 48 hours prior to construction, and the Contractor must contact each customer by telephone or in person before the gas service is cut off.

The Contractor shall provide approved sanitary facilities in sufficient quantities and at such locations as may be needed for workers on the job.

24. WORKDAYS, WORKING HOURS AND HOLIDAYS

Normal working hours for this contract shall be from 7:30 a.m. to 4:00 p.m. Work days shall include Monday through Friday, except for holidays. Holidays shall include the following days: New Year's Day, San Jacinto Day (observed on Friday of Fiesta Week), Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, and Christmas Day. If the holiday falls on a Saturday, it will be observed on the preceding Friday. If the holiday falls on a Sunday, it will be observed on the following Monday. Christmas Eve and New Year's Eve will be observed as holidays when Christmas Day and New Year's Day fall on Tuesday through Friday. Exceptions to these working hours and work days will be allowed by CPS Energy when required by the governing entity, mutually agreed upon by both Contractor and CPS Energy or the customer approves or requests work to be performed outside of these established times. **At the sole discretion of CPS Energy, service renewal work can be suspended during periods of extremely cold weather.**

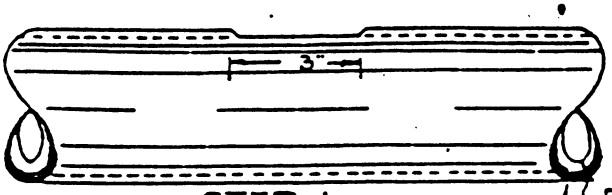
25. ACCEPTANCE

The CPS Energy representative will make all inspections and final acceptance of the work performed by the Contractor for CPS Energy.

As required by CPS Energy, Contractor shall maintain and provide a copy of the "as-built" job sketch and all associated documents once the work is completed.

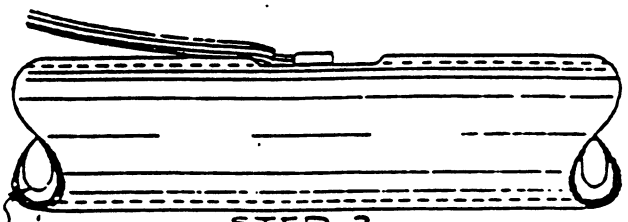
CPS
Design Standards
(Steel Gas Pipe)
Exhibit GAS-3

Remove a section of coating 3" long and file pipe bright so that a space 1" wide and 2" long is clean and dry.



STEP. 1

Strip 1½" of insulation from wire and place copper sleeve on #10 and smaller wire.



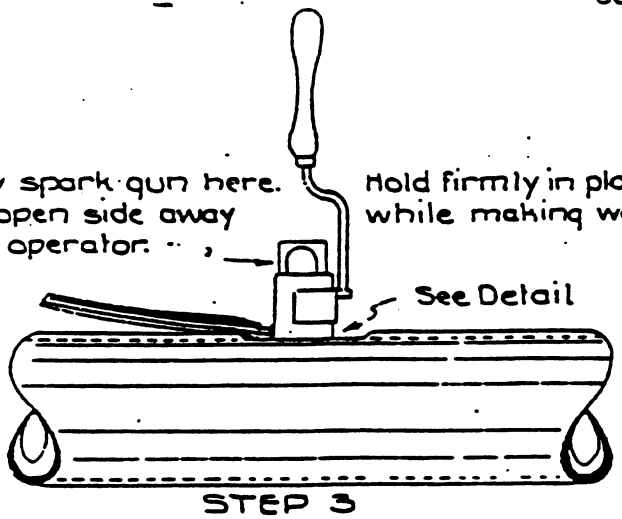
STEP 2

Pipe Coating

Apply spark gun here. Keep open side away from operator.

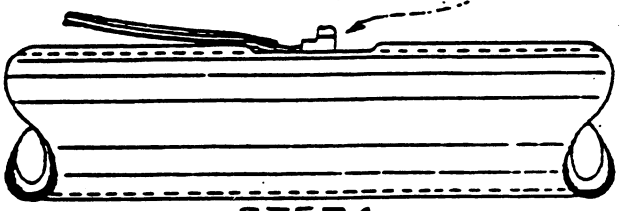
Hold firmly in place while making weld.

See Detail



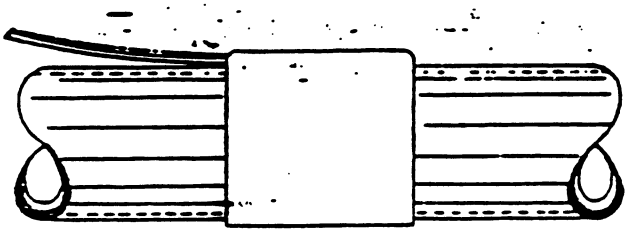
STEP 3

Remove slag with hammer and paint thoroughly with primer.

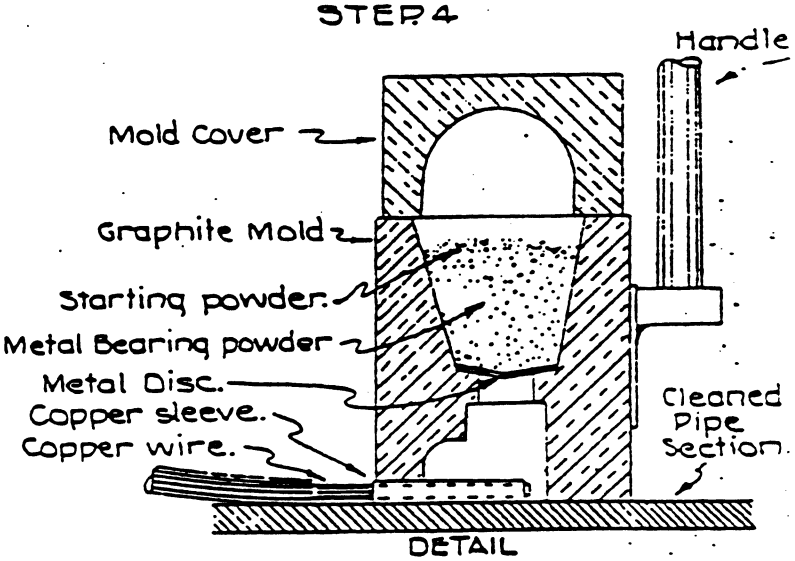


STEP 4

Repair pipe coating with care Cover entire weld.



STEP 5



DETAIL

IMPORTANT

1. REMOVE RED CAP OF CADWELL CARTRIDGE AND DUMP ALL OF CONTENTS INTO MOLD. THE CHARGE WILL NOT IGNITE WITHOUT THE FINE STARTING POWDER ON TOP.
2. THE CARTRIDGES MUST BE KEPT DRY AT ALL TIMES.

Cadweld mold with sleeve for #10 wire and smaller.

CITY PUBLIC SERVICE BOARD
SAN ANTONIO, TEXAS
GAS DEPARTMENT

COPPER WIRE CONNECTION TO PIPE USING CADWELD.

SCALE 2" = 1"	APPROVED	FIG.
DRAWN C.W.T.	BY W.D.B.	64
CHECKED	DATE 4-13-54	

DRAWING DS- 32

INSTRUCTION SHEET - TYPE TB-3 WELDER

PREPARATION OF SURFACE:

To obtain a good weld, surface must be bright clean and dry.

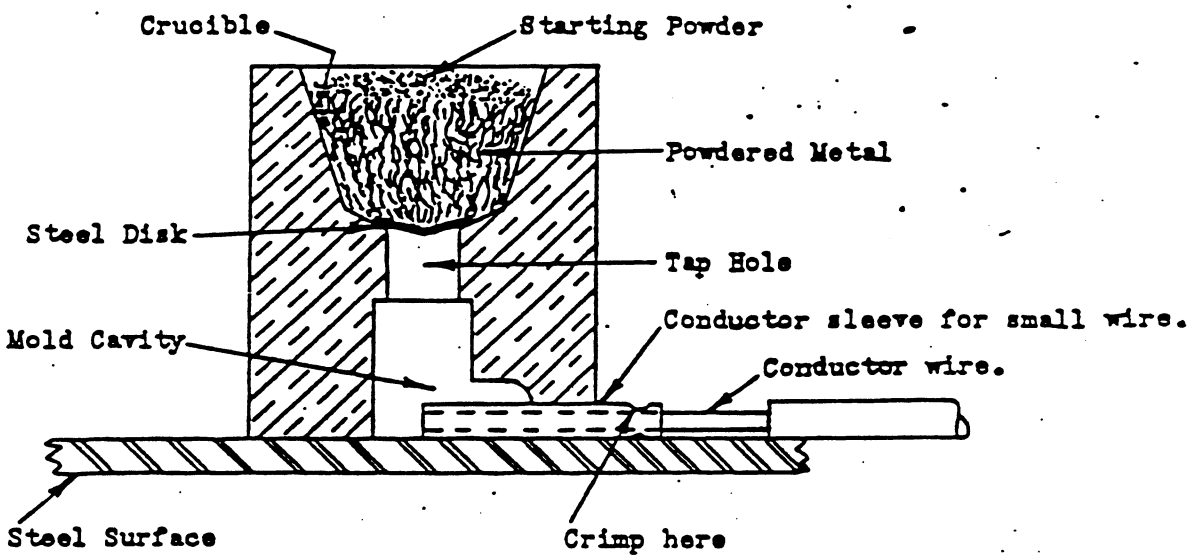
Steel surface should be ground or filed to remove all scale, rust, grease and dirt.

Galvenized steel must be cleaned with emery cloth to remove oxide.

PREPARATION OF WIRE:

Strip the insulation from the conductor and scrape until wire is bright and clean.

For #10 and smaller sizes, place the wire in a copper sleeve, ends flush, and crimp the sleeve tightly to the wire at the insulation to provide additional mechanical strength at the weld.



WELDING PROCEDURE:

(1) PLACE WELDER OVER CLEAN STEEL SURFACE and insert the wire until it is under the CENTER of the tap hole.

(2) COVER TAP HOLE WITH STEEL DISK.

(3) DUMP CARTRIDGE IN CRUCIBLE AND CLOSE COVER. (Tap bottom of cartridge to be sure starting powder is emptied). Replace empty cartridge in box to keep remaining cartridges in an upright position.

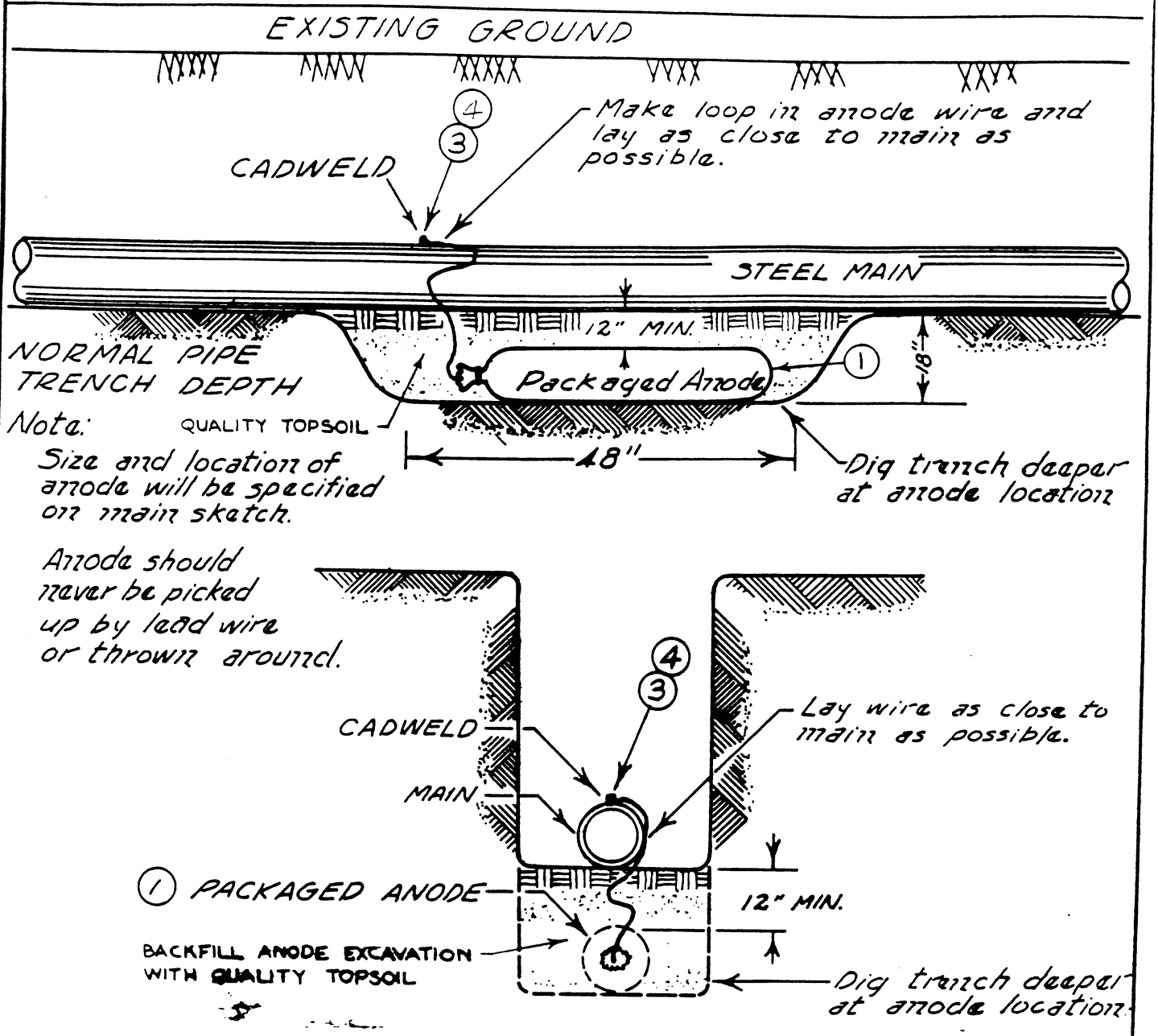
(4) HOLD DOWN ON WELDER TO PREVENT LEAKS AND IGNITE WITH FLINT GUN. Jerk gun away to prevent fouling. Should gun become fouled, soak in Spirits of Ammonia.

(5) DO NOT REMOVE WELDER UNTIL METAL HAS SOLIDIFIED.

(6) ALL SLAG MUST BE CLEANED FROM MOLD BEFORE MAKING NEXT WELD.

Note: Wet or damp molds produce porous welds. Mold can be dried out by firing a charge before making the desired weld.

4.5	PACKAGED ANODES	



NOTES:

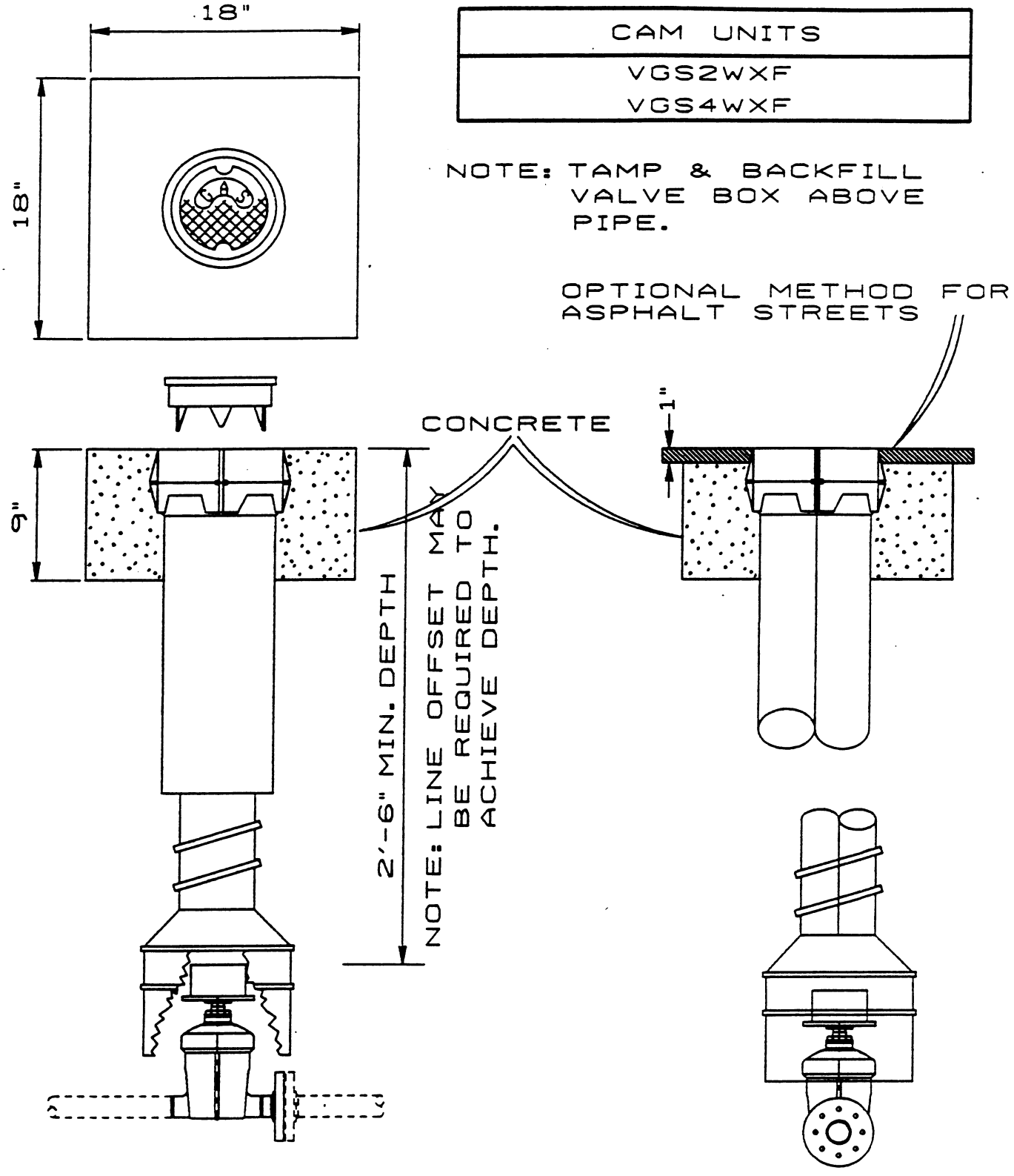
a. Cadweld connection to be primed and coated carefully.
b. Packaged anode should be covered with fine soil containing no rocks, clods, or sand.
c. Pour 5 gallons of water over anode location and tamp thoroughly.
d. Provide test leads when specified. (See test lead standard)
e. Anode specification sheet will be attached to main order, and is to be completed by the main construction foreman.

	DATE	APPROVED	CITY PUBLIC SERVICE BOARD	DRAWING DS-33
ISSUED	9-1-70	CJH	CONSTRUCTION STANDARD (GAS)	G-S-171-1-2
REVISED	[illegible]	[illegible]		

VALVE, STEEL (WELD x FLANGE)

CAM UNITS
VGS2WXF
VGS4WXF

NOTE: TAMP & BACKFILL VALVE BOX ABOVE PIPE.

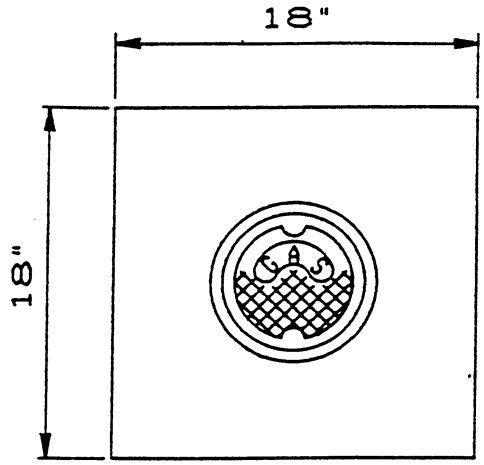


NOTE: COAT VALVE UP TO TOP OF PACKING GLAND.

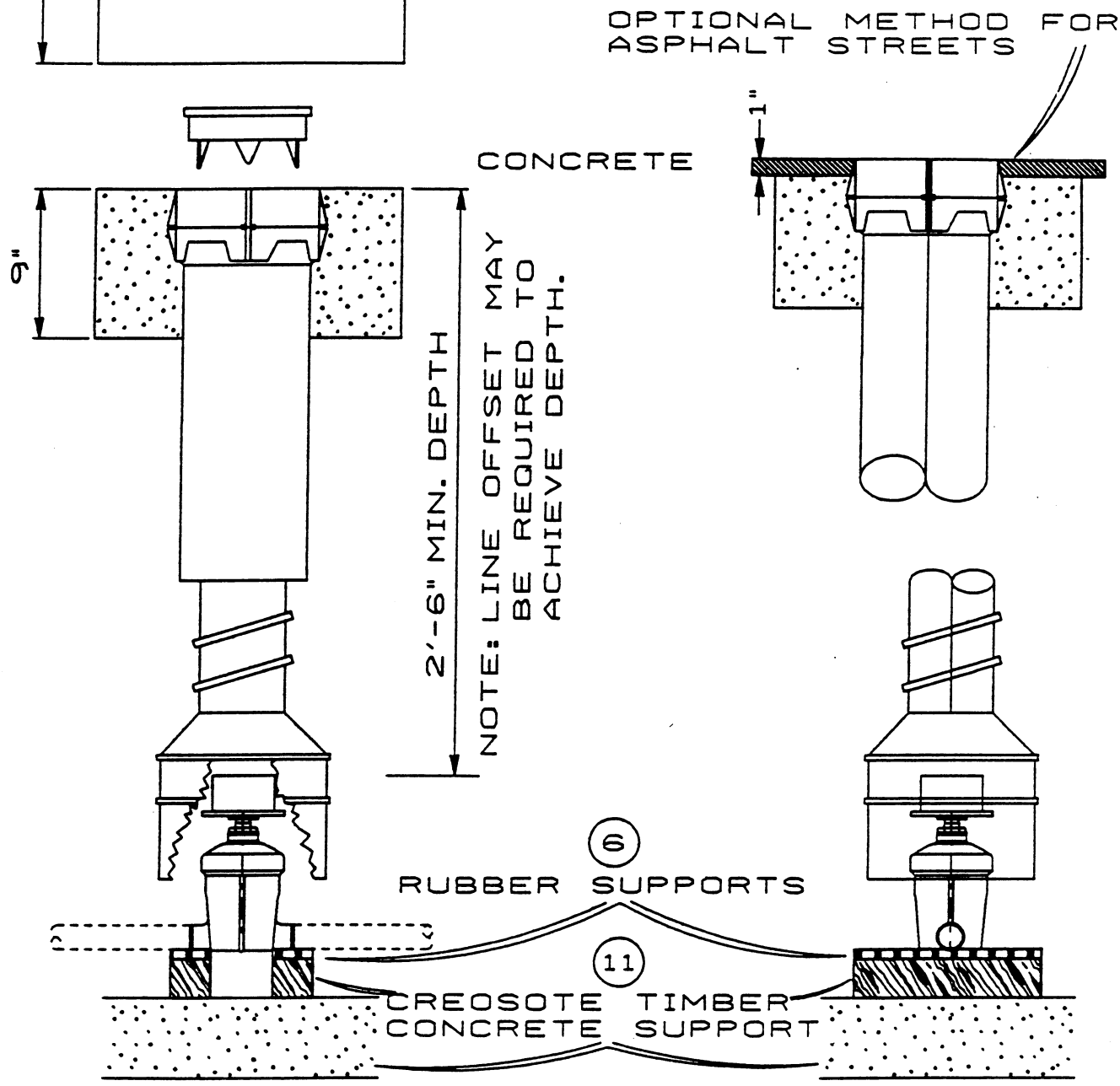
AVAILABLE SIZES: 2, 4

	DATE	APPROVED	CITY PUBLIC SERVICE CONSTRUCTION STANDARD (GAS)	G - S - 127 - 1 - 0
ISSUED				DRAWING DS-36
REVISED				

VALVE, STEEL
(WELD x WELD)



CAM UNITS	
VGS2WE	VGS8WE
VGS4WE	VGS12WE
VGS6X8WE	VGS16WE



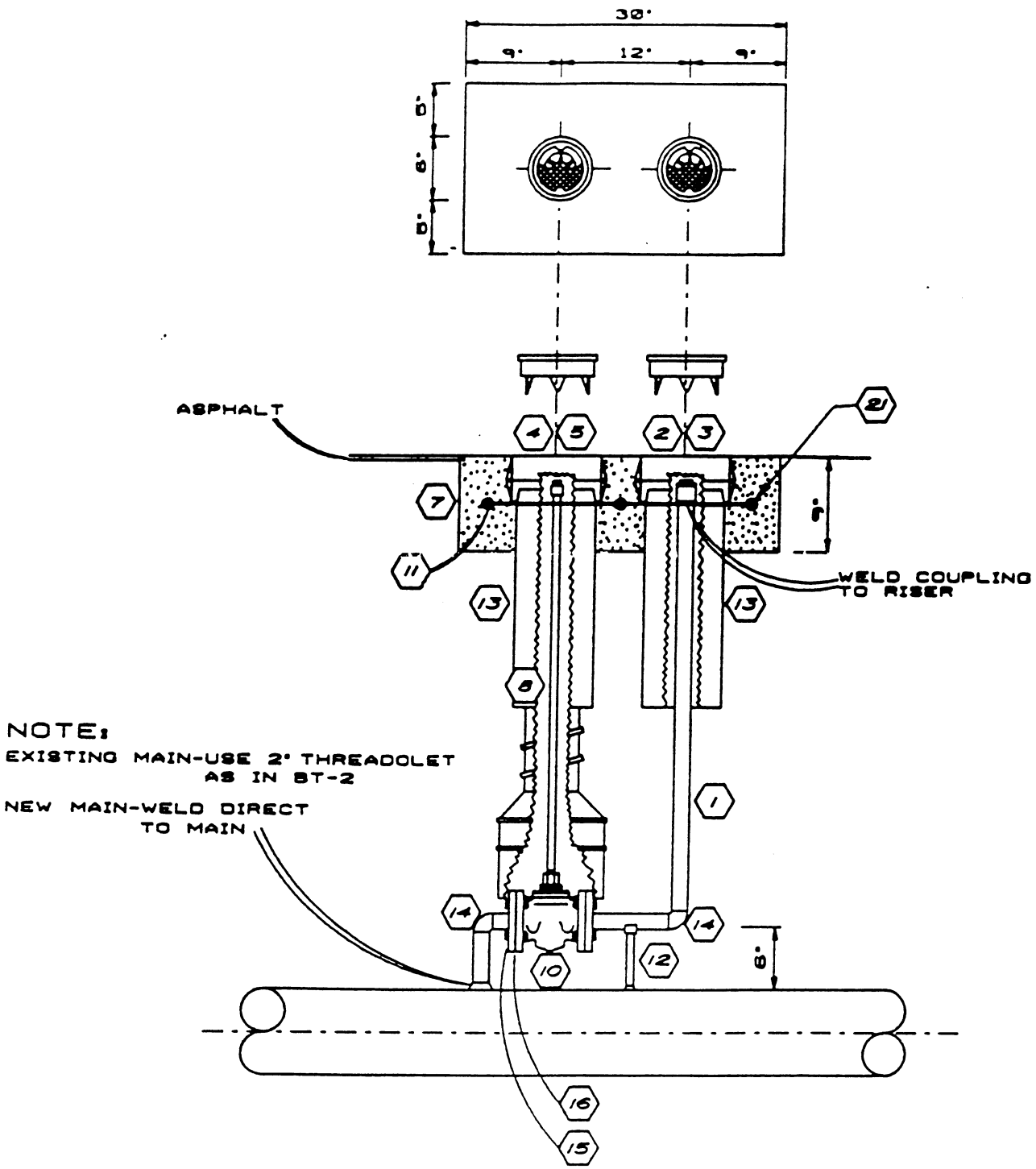
NOTE: ITEMS 6 AND 11 ARE TO BE INSTALLED FOR 12" VALVES, OR LARGER. COAT VALVE UP TO TOP OF PACKING GLAND.

AVAILABLE SIZES: 2, 4, 8x6, 8, 12

	DATE	APPROVED	CITY PUBLIC SERVICE CONSTRUCTION STANDARD (GAS)	G - S - 127 - 2 - 0
ISSUED				DRAWING DS-37
REVISED				

TEST RISER 2 IN.

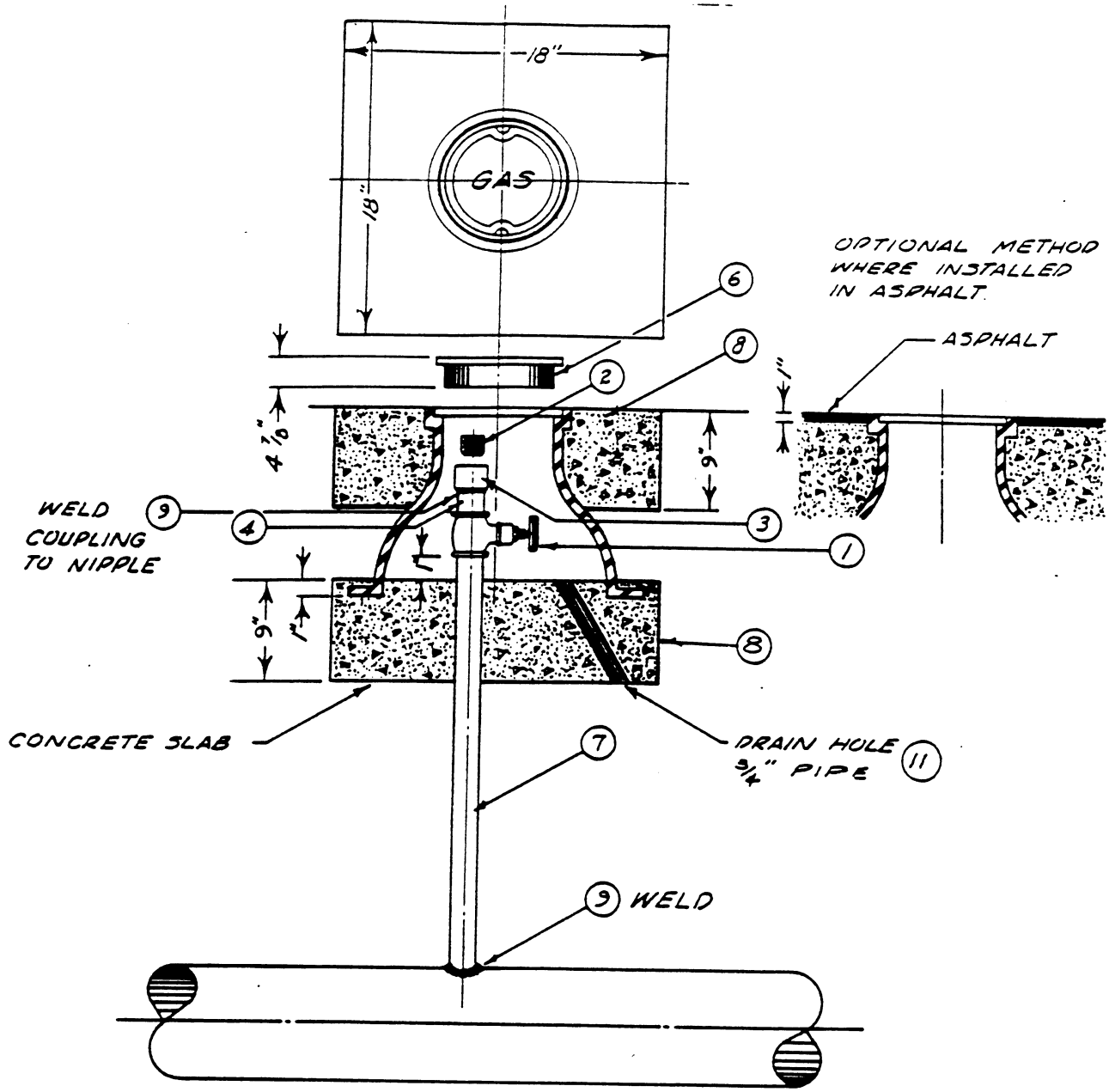
EXHIBIT DST-3



DRAWING DS-38

	DATE	APPROVED		
ISSUED	9/2/92	D. Voges	CITY PUBLIC SERVICE	O - S - 142 - 1 - 1
REVISED			CONSTRUCTION STANDARD (GAS)	PLANNER: M. BLYTHE

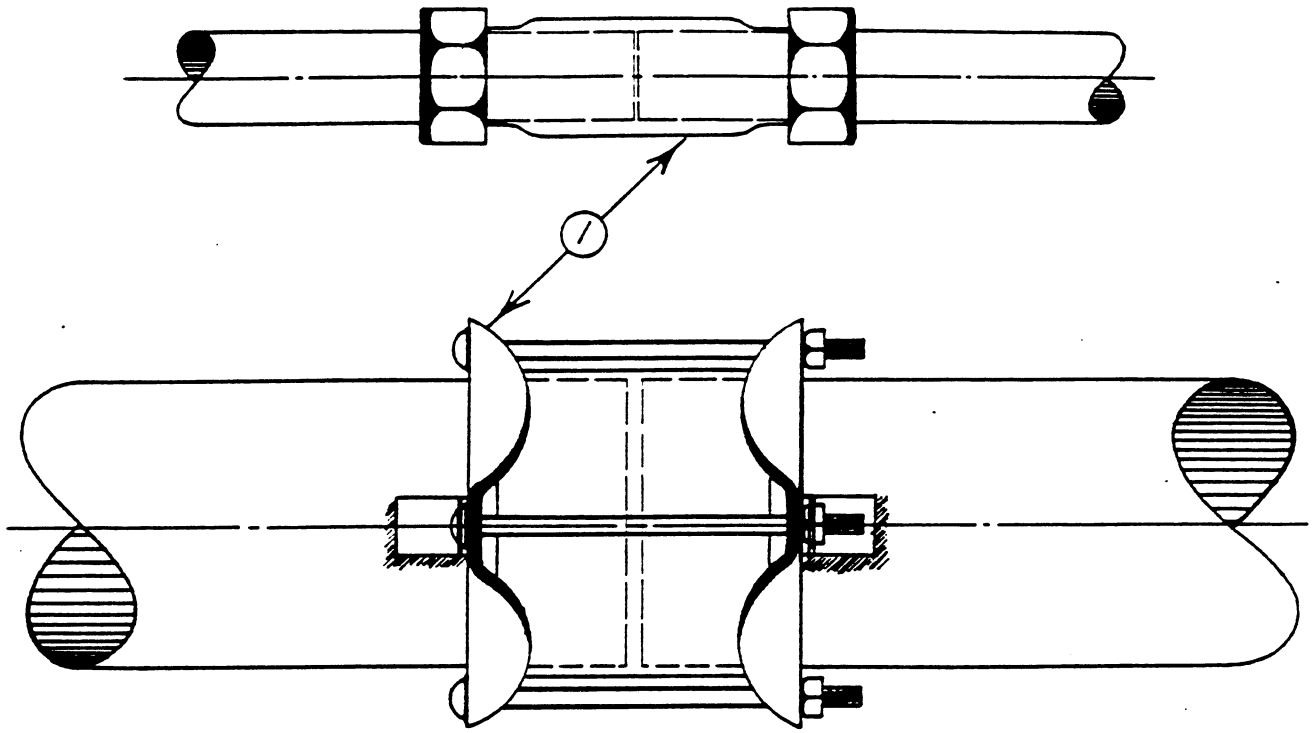
4.5	TEST RISER, 1 IN.	



	DATE	APPROVED	CITY PUBLIC SERVICE BOARD	DRAWING DS-39
ISSUED	9-1-70	WH	CONSTRUCTION STANDARD (GAS)	G-S-141-1-0
REVISED				

4.5	COUPLING, BONDED	

WITH WELD LUGS

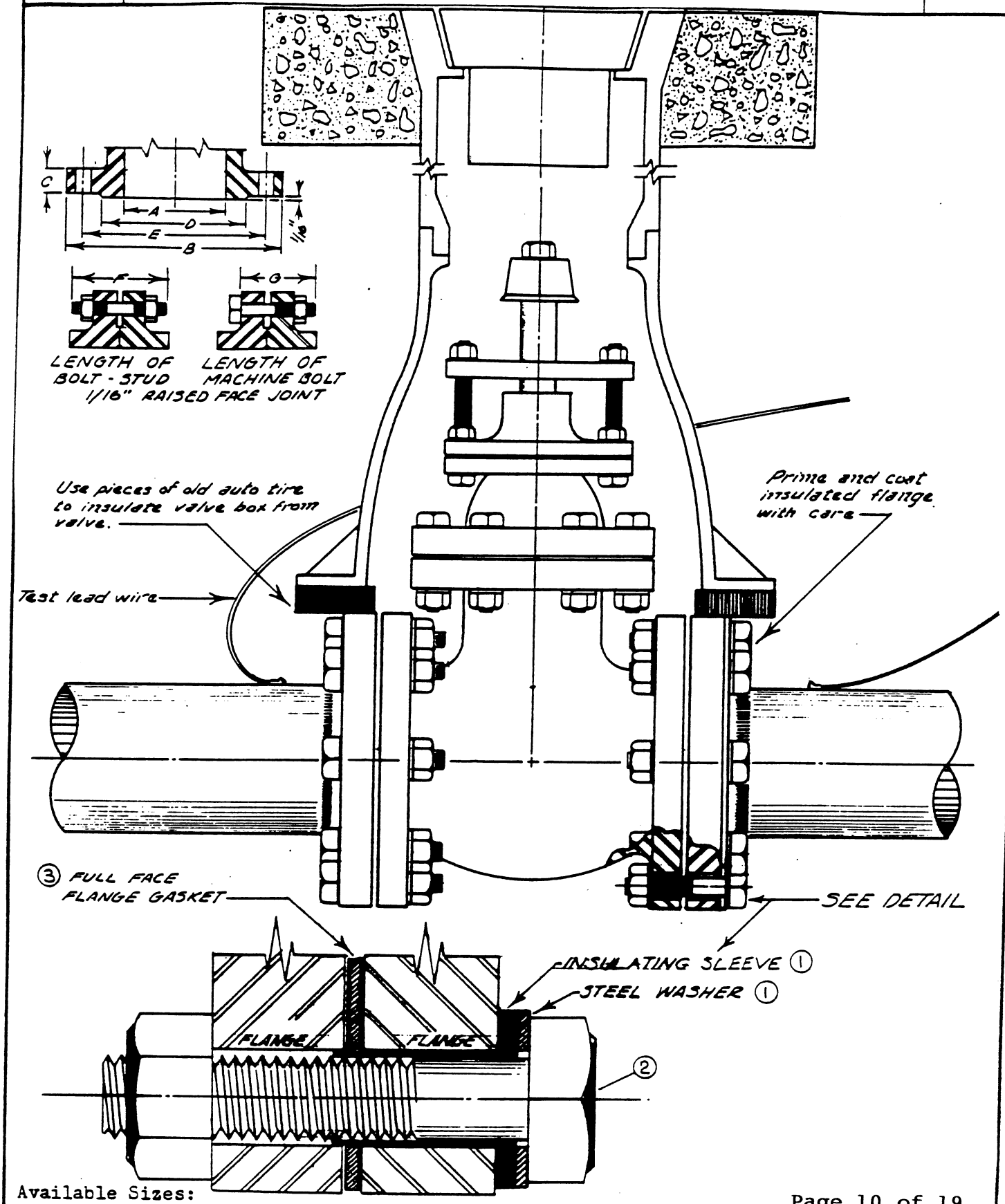


NOTE: 1 All couplings to be centered over pipe joint with minimum spacing between pipe ends. Spacing shall not exceed 1".
2 File pipe to bright finish over areas covered by bonding gaskets. Area should be a minimum of 2-1/2" wide.
3 Lubricate gaskets with soap water before installing.
4 Tighten all bolts on coupling uniformly.

AVAILABLE SIZES: 3/4" , 1" , 1-1/4" , 1-1/2"
2" , 4" , 8" , 12" , 16" , 18" , 20" , 24" , 30"

	DATE	APPROVED	CITY PUBLIC SERVICE BOARD	DRAWING DS-40
ISSUED	9-1-70	CJH	CONSTRUCTION STANDARD (GAS)	G-S-051-1-1
REVISED				

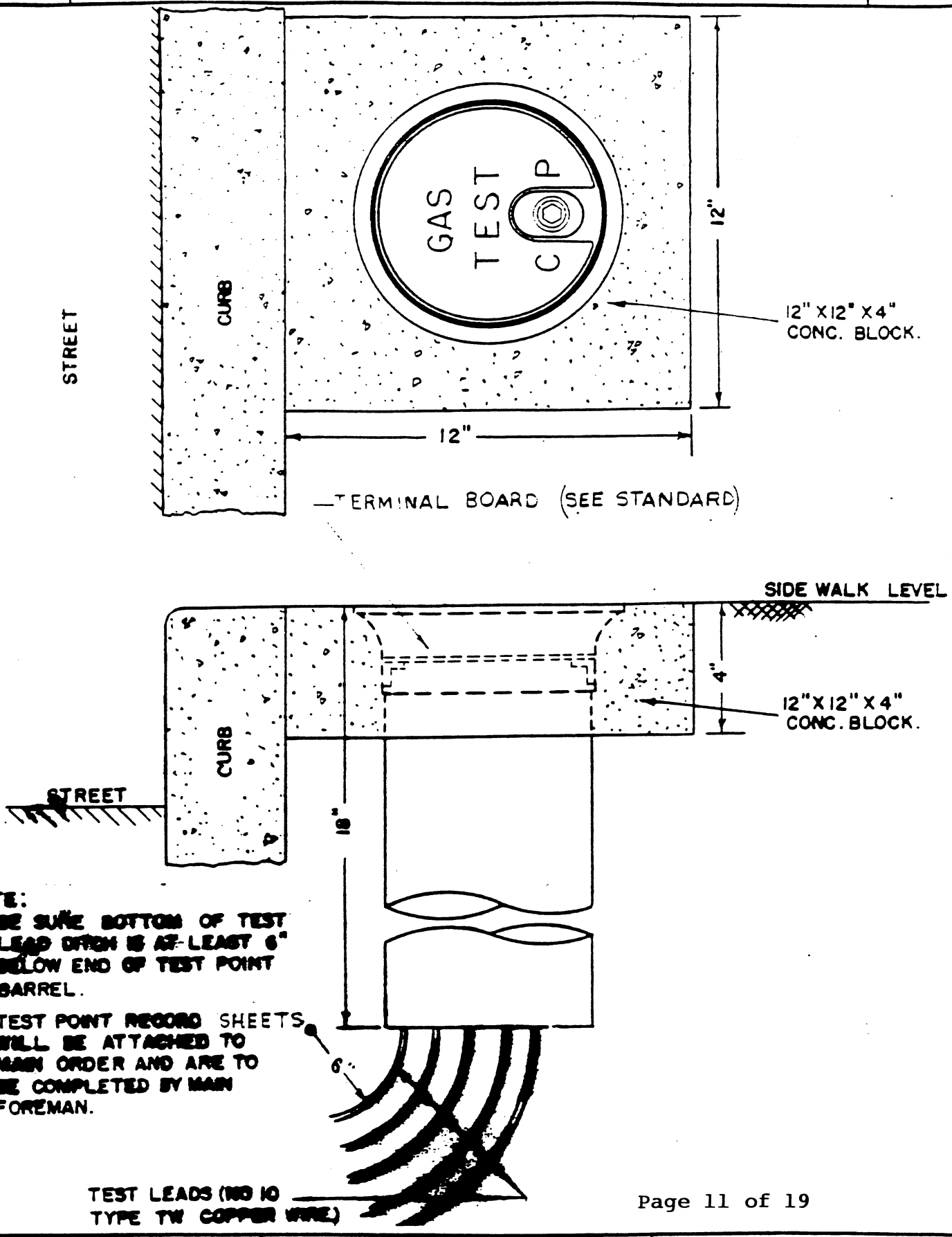
4.5 INSULATE FLANGE



Available Sizes:
150# Flg (2, 4, 8, 12, 16); 150# Exist Flg (2, 4, 8, 12, 16); 300# Flg (8, 12, 16, 20)

	DATE	APPROVED	CITY PUBLIC SERVICE BOARD	DRAWING DS-41
ISSUED	9-1-70	CJH	CONSTRUCTION STANDARD (GAS)	G-S-118-1-1
REVISED				

4.5	CATHODIC PROTECTION TEST POINT	

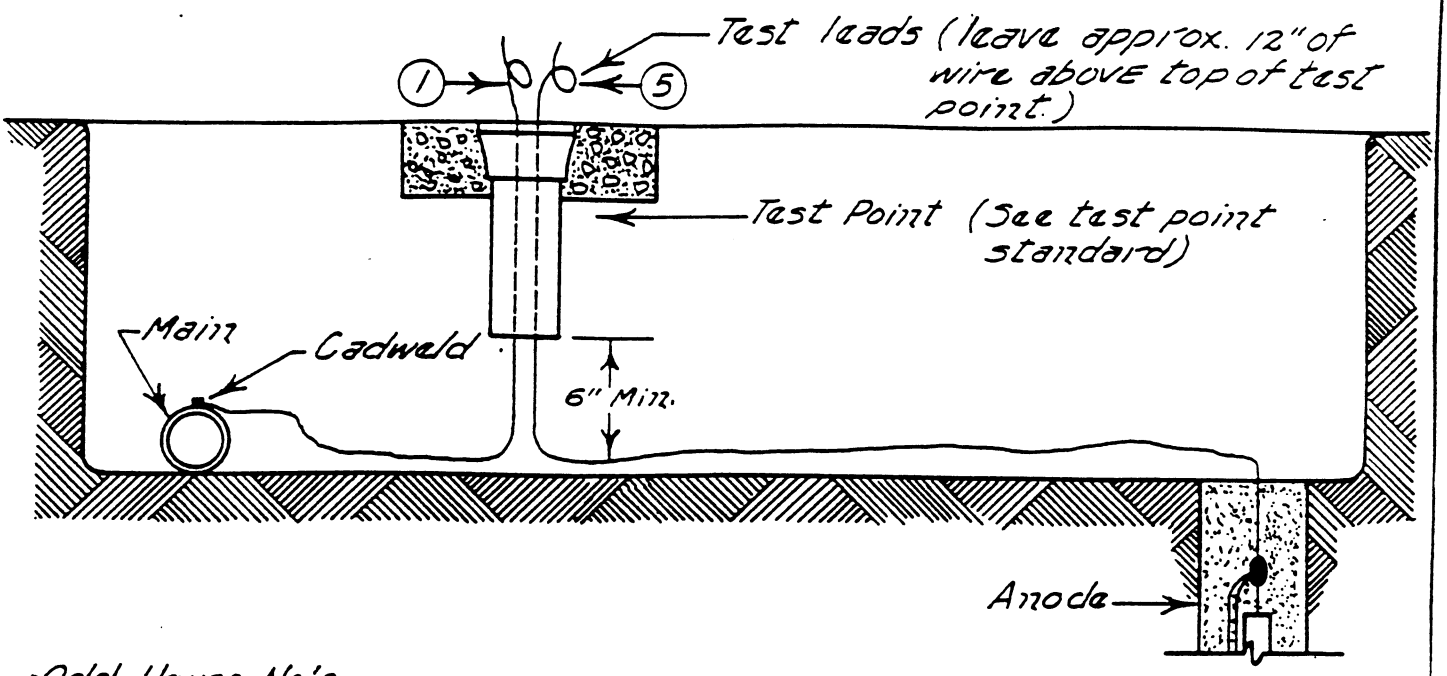


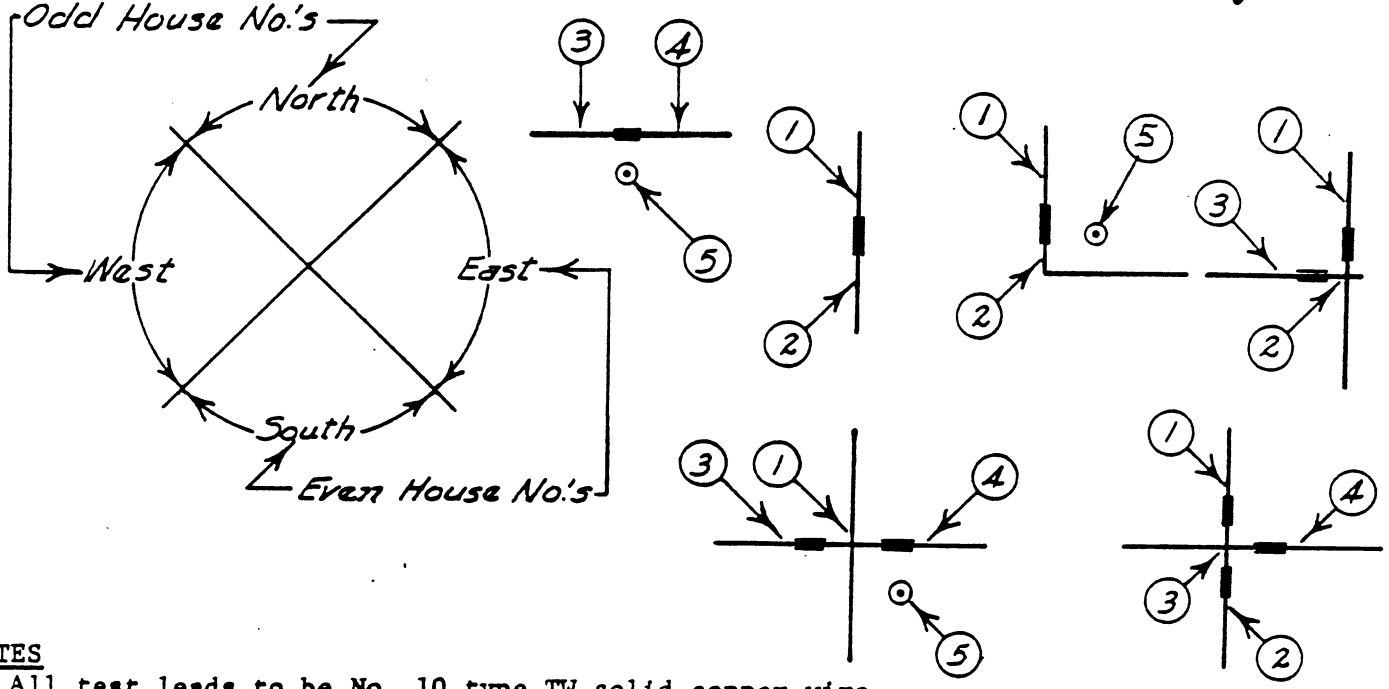
NOTE:

1. BE SURE BOTTOM OF TEST LEAD DITCH IS AT LEAST 6" BELOW END OF TEST POINT BARREL.
2. TEST POINT RECORD SHEETS WILL BE ATTACHED TO MAIN ORDER AND ARE TO BE COMPLETED BY MAIN FOREMAN.

	DATE	APPROVED	CITY PUBLIC SERVICE BOARD	DRAWING DS-42
ISSUED	9-1-70	CJH		G-S-182-2-0
REVISED				

4.5	CATHODIC PROTECTION TEST LEAD CONNECTION TO MAIN	

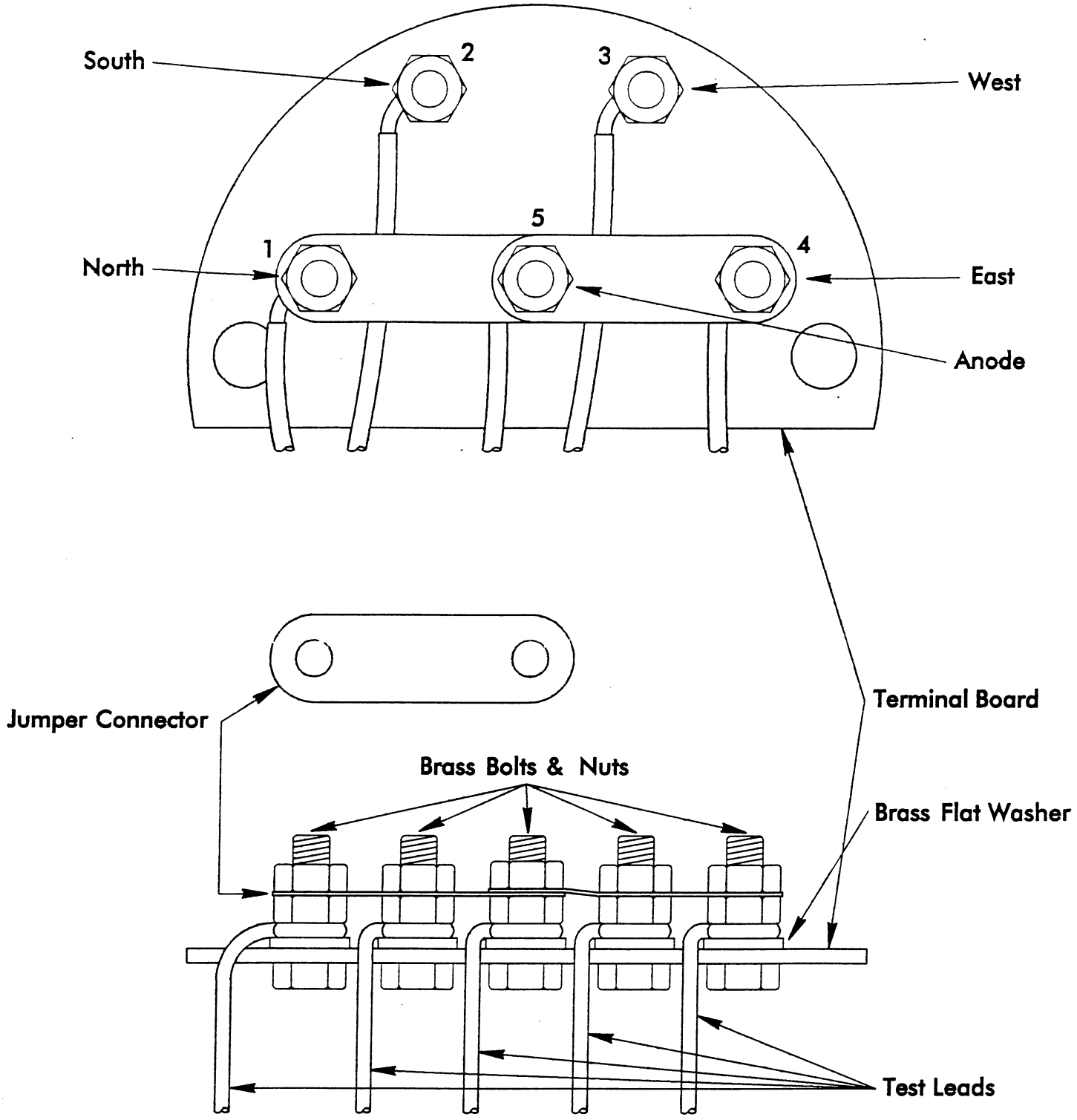




NOTES

1. All test leads to be No. 10 type TW solid copper wire.
2. Test point record cards will be attached to main order, and are to be completed by the main foreman.
3. All test leads should be tagged with a metal tag about 6" from end of lead according to the following numbering code:
   - 1 North
   - 2 South
   - 3 West
   - 4 East
   - 5 Anode

	DATE	APPROVED	CITY PUBLIC SERVICE BOARD	DRAWING DS-43
ISSUED	9-1-70	CJH		G-S-182-1-0
REVISED				



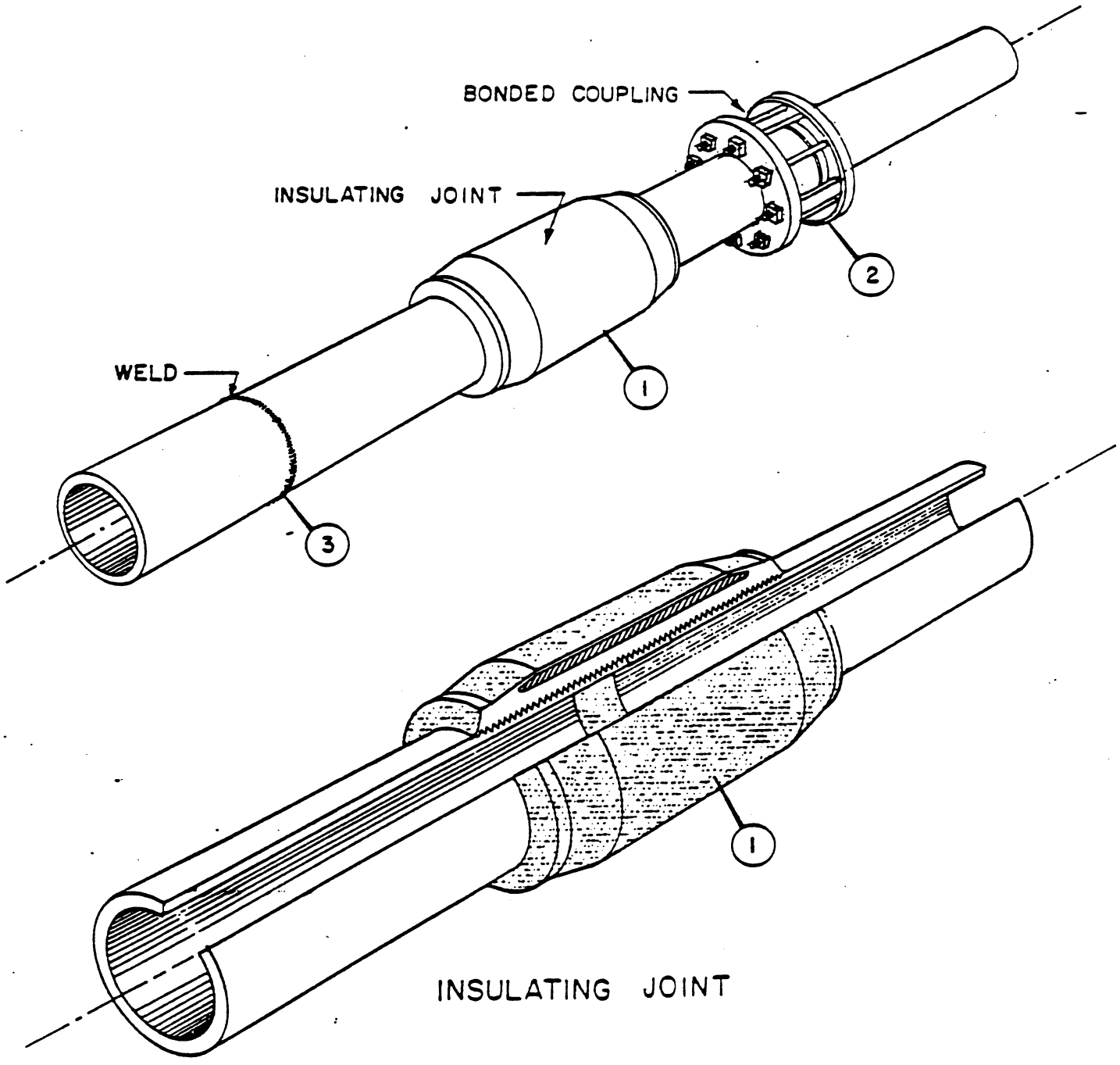
Note:
Connect test leads on top side of terminal board

	Date	Approved
Issued	11-28-94	M. Kotara
Revised		

City Public Service
Gas Construction Standard

DRAWING DS-44
G - S - 182 - 3 - 0

4.5	INSULATING JOINT 8" & 12"	

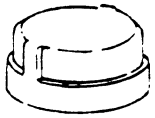


INSULATING JOINT

AVAILABLE SIZES: 8" & 12"

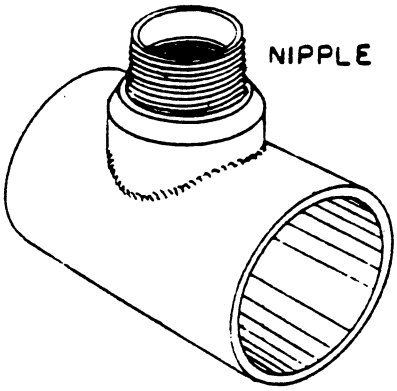
	DATE	APPROVED	CITY PUBLIC SERVICE BOARD	DRAWING DS-45
ISSUED	6/5/80	R.R.L	CONSTRUCTION DRAWING (GAS)	

PLUGGING EQUIPMENT FITTINGS



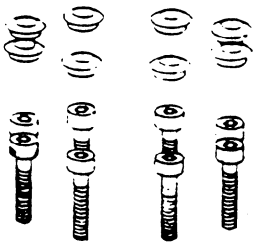
CAP

COMPLETION PLUG



NIPPLE

Plug 2



CAPLUGS

SOCKET HEAD SCREWS

COVER

TEFLON GASKET

COMPLETION PLUG

TYPE II SHORTSTOPP FITTING

Plug 4, 8 & 12

NOTE:
4" YELLOW BALL MARKERS (PASSIVE ANTENNA) TO BE BURIED DIRECTLY ABOVE 8" and 12" SHORTSTOP FITTINGS AT A MAXIMUM DEPTH OF 4 FEET.

G-S-094-1-2

APPROVED	WRG	ERS									CITY PUBLIC SERVICE BOARD
DATE	10/83	10/83	9/90								CONSTRUCTION STANDARD

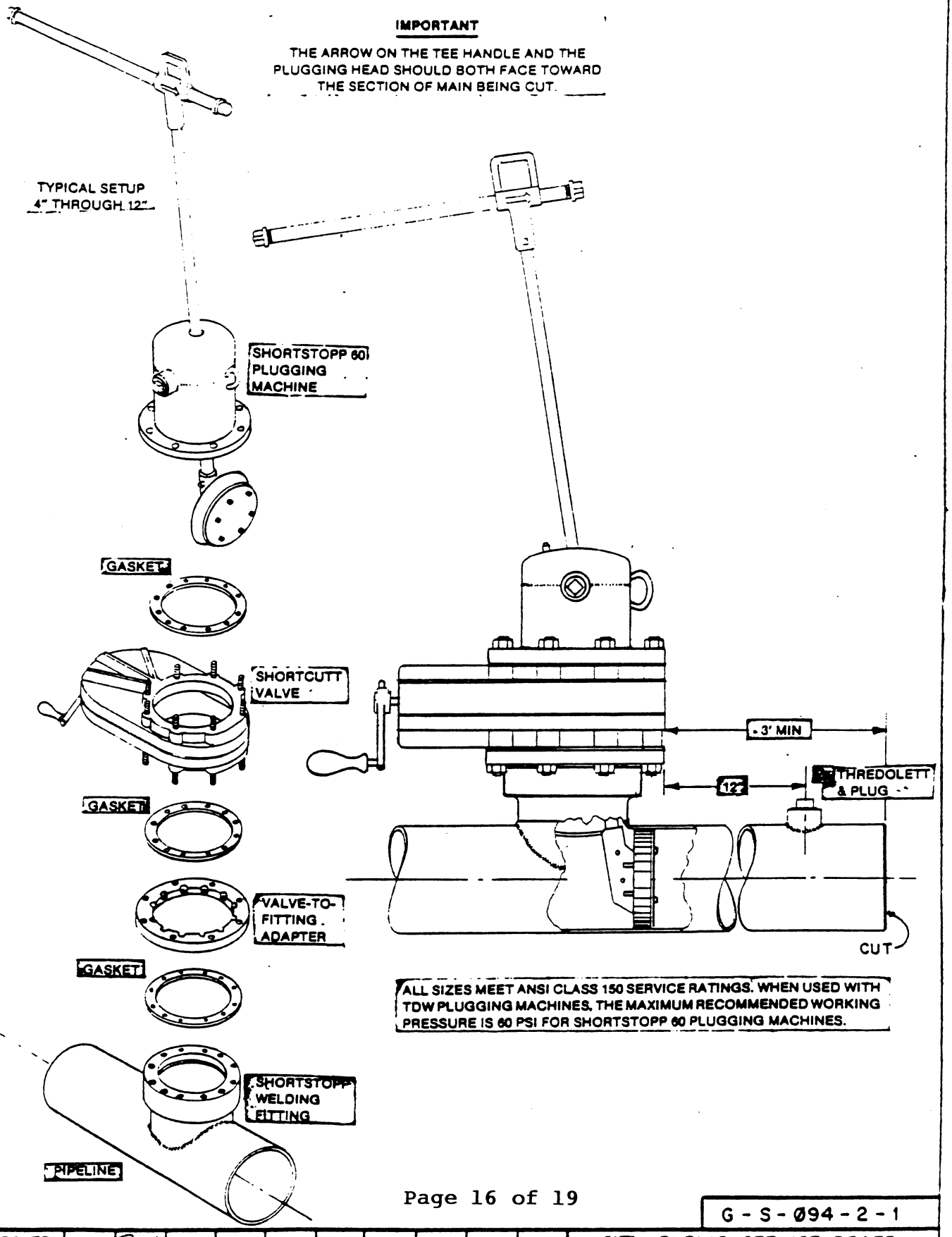
DRAWING DS-47

EXHIBIT DST-3

PLUGGING EQUIPMENT INSTALLATION

IMPORTANT

THE ARROW ON THE TEE HANDLE AND THE PLUGGING HEAD SHOULD BOTH FACE TOWARD THE SECTION OF MAIN BEING CUT.



ALL SIZES MEET ANSI CLASS 150 SERVICE RATINGS. WHEN USED WITH TDW PLUGGING MACHINES, THE MAXIMUM RECOMMENDED WORKING PRESSURE IS 60 PSI FOR SHORTSTOPP 60 PLUGGING MACHINES.

G-S-094-2-1

APPROVED	WRG	FRL									CITY PUBLIC SERVICE BOARD
DATE	10/87	10/87									CONSTRUCTION STANDARD

INSTALLATION INSTRUCTIONS TYPE II SHORTSTOPP® FITTING

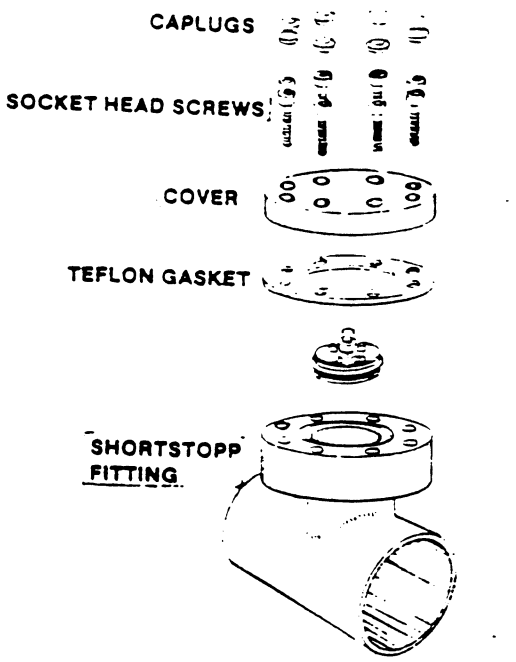
1. Remove completion plug from inside fitting before welding.
2. Clean all weld edges thoroughly — remove all paint, dirt, rust, oil, etc.
3. Apply grease to machined surface inside fitting to protect machined surface from weld spatter.
4. Center and level fitting. Flange centerline should intersect centerline of pipe, and flange gasket surface parallel to pipe.
5. Maintain 1/16" to 1/8" gap between fitting and pipe surface for proper penetration. DO NOT WELD INSIDE of fitting to avoid tapping problems.
6. Place white Teflon gasket on face of fitting.
7. Position reusable valve adapter flange on fitting so that the flow arrow stamped on flange adapter is in line with the pipe. Be sure that fitting and valve adapter flange bores are concentric.
8. Attach valve adapter flange to face of fitting; use socket head screws furnished with the fitting. A minimum torque on socket head screws assures a leak-tight joint.

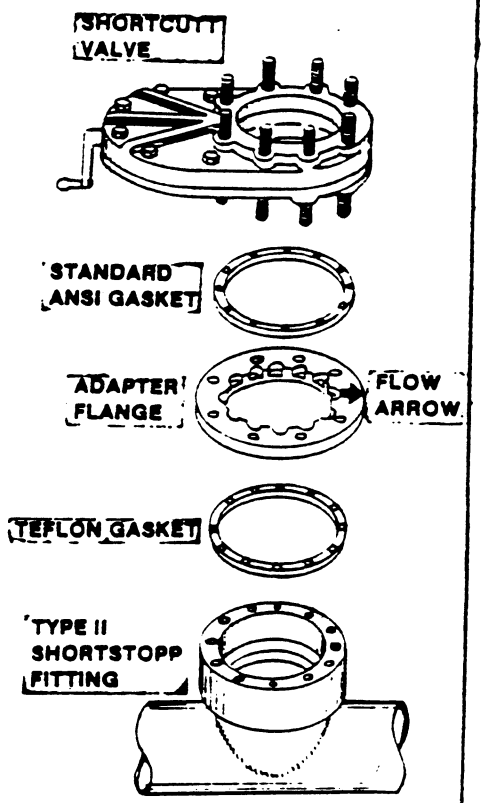
   4" fitting...40 to 60 ft. lbs.
   8" fitting...60 to 90 ft. lbs.
   12" fitting...60 to 90 ft. lbs.

CAUTION

Excessive overtorquing can break socket head screws. Broken socket head screws can be difficult to remove and could allow gasket to leak.

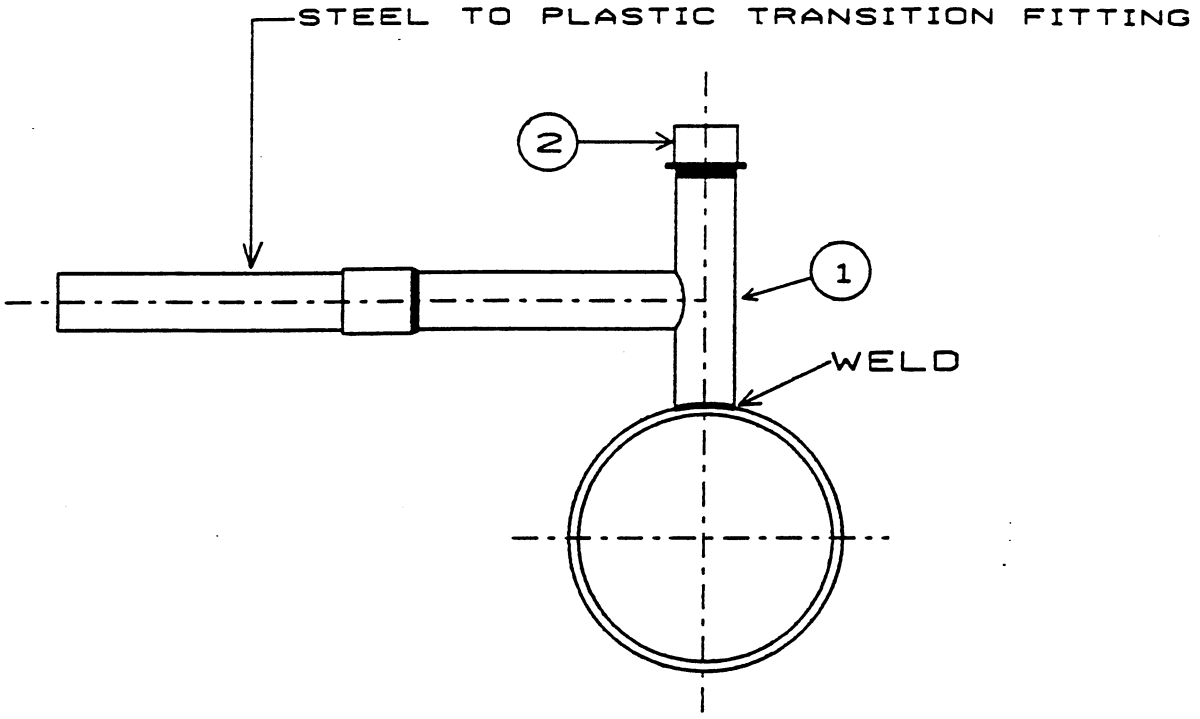
9. Place a standard ANSI flange gasket on face valve adapter flange. Then install T.D.W. Shortcutt® Valve on the valve adapter flange.
10. Proceed and use standard T.D.W. Shortstopp equipment.
11. After completion plug has been set and Shortcutt Valve has been removed, remove reusable valve adapter flange.
12. Install cover (blind flange) on fitting with use of socket head screws and Teflon gasket. Use minimum torque values as shown in Item 8.
13. Insert plastic Caplugs into hex holes of socket head screws on cover. Caplugs help protect fitting from dirt and other foreign matter.





APPROVED	WRS E-Ed									G-S-094-3-0	
DATE	12/13/87 10/87									CITY PUBLIC SERVICE BOARD	
										CONSTRUCTION STANDARD	

TEE SERVICE WELDED TRANSITION STEEL TO PLASTIC



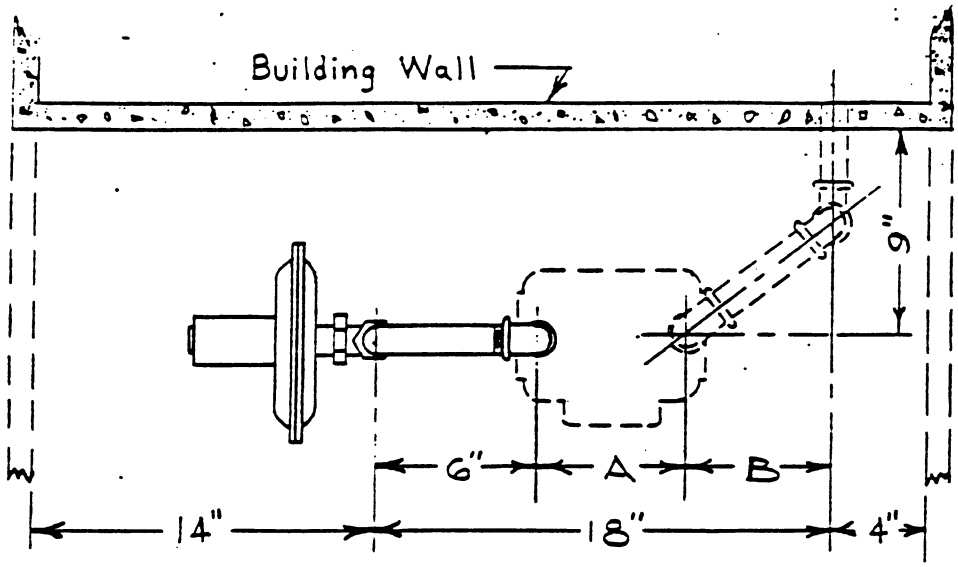
SIZE SERVICE	DRILL SIZE
1"	7/8"
1-1/4"	1-1/8"

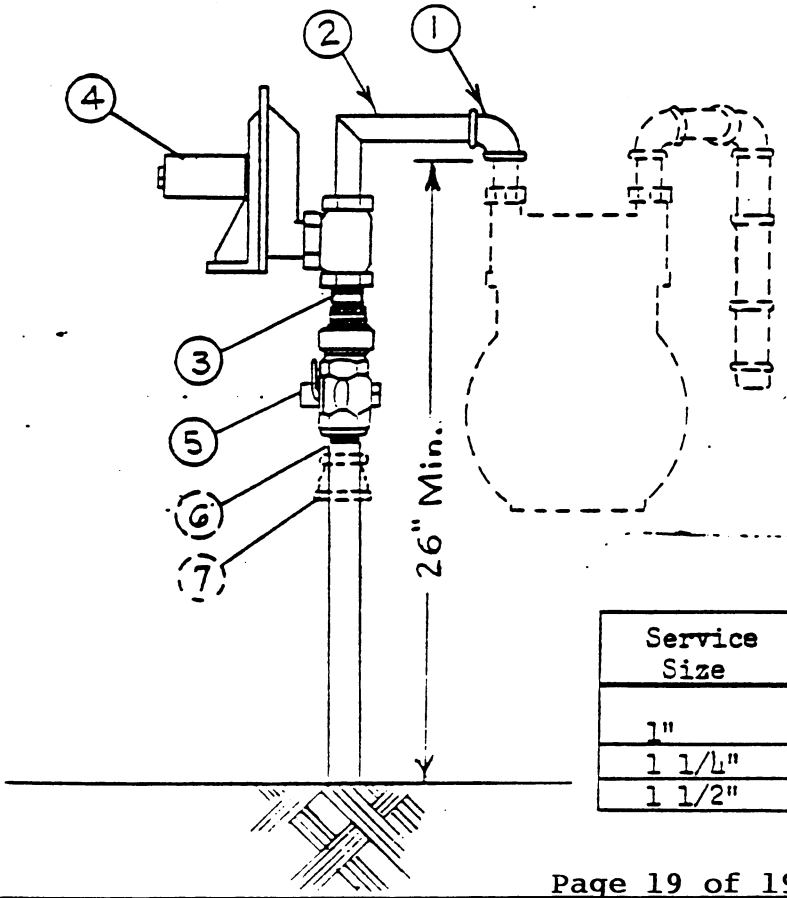
TEE SERVICE WELDED TRANSITION STEEL TO PLASTIC 1"
C.P.S. STOCK #520700204
TEE SERVICE WELDED TRANSITION STEEL TO PLASTIC 1¼"
C.P.S. STOCK #520700220

	DATE	APPROVED	CITY PUBLIC SERVICE	G - S - 127 - 2 - 0
ISSUED			CONSTRUCTION STANDARD (GAS)	DRAWING DS-49
REVISED				

4.5	RISER AND REGULATOR FOR 5,10,30&35 LT. METERS	

NOTE: FOR DIMENSIONS OF METERS REFER TO EXHIBIT 8-1 IN THE PLANNING INSTRUCTIONS.





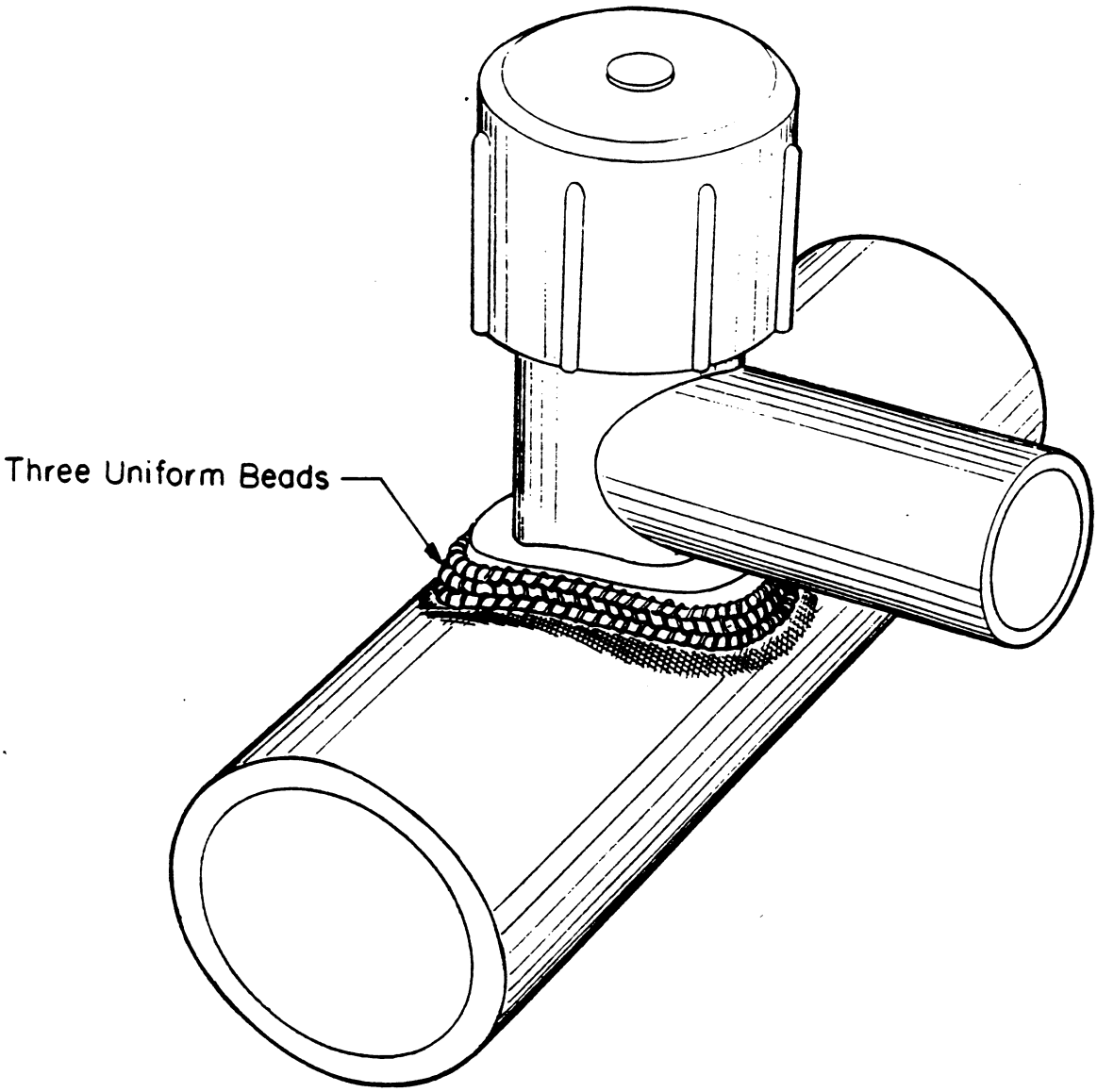
Available Sizes: ●

Service Size	Size of Meter Connection		
	1"	1 1/4"	1 1/2"
1"	●	●	●
1 1/4"	●	●	●
1 1/2"			●

	DATE	APPROVED	CITY PUBLIC SERVICE BOARD	DRAWING DS-50
ISSUED			CONSTRUCTION STANDARD (GAS)	G-S-222-1-1
REVISED				

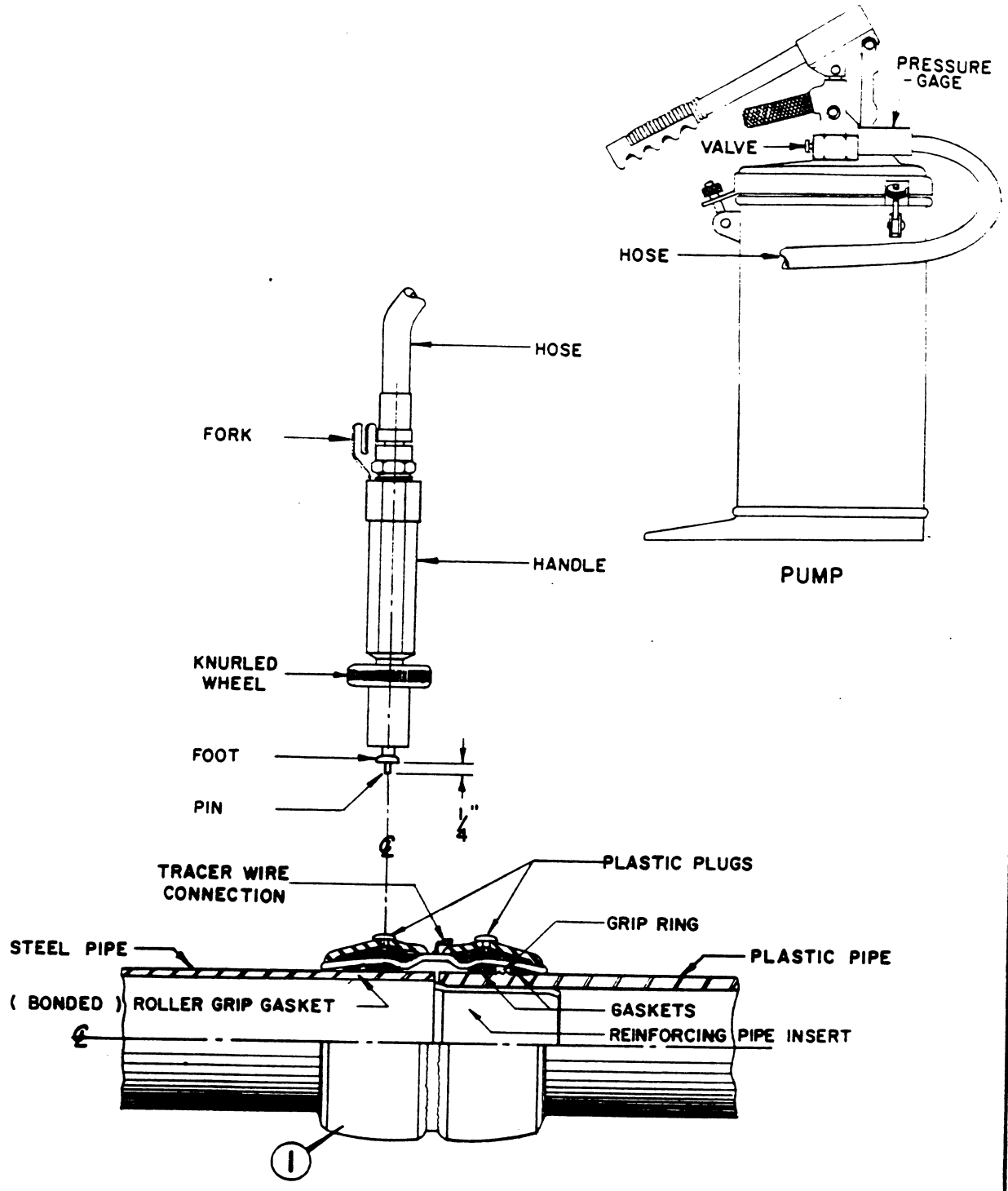
CPS
Design Standards
(Plastic Gas Pipe)
Exhibit GAS-4

4.5	PLASTIC PIPE, TAPPING TEE	



	DATE	APPROVED	CITY PUBLIC SERVICE BOARD	DRAWING DS-21
ISSUED	3/[illegible]	[illegible]	CONSTRUCTION STANDARD (GAS)	G-S-505-6-0
REVISED				

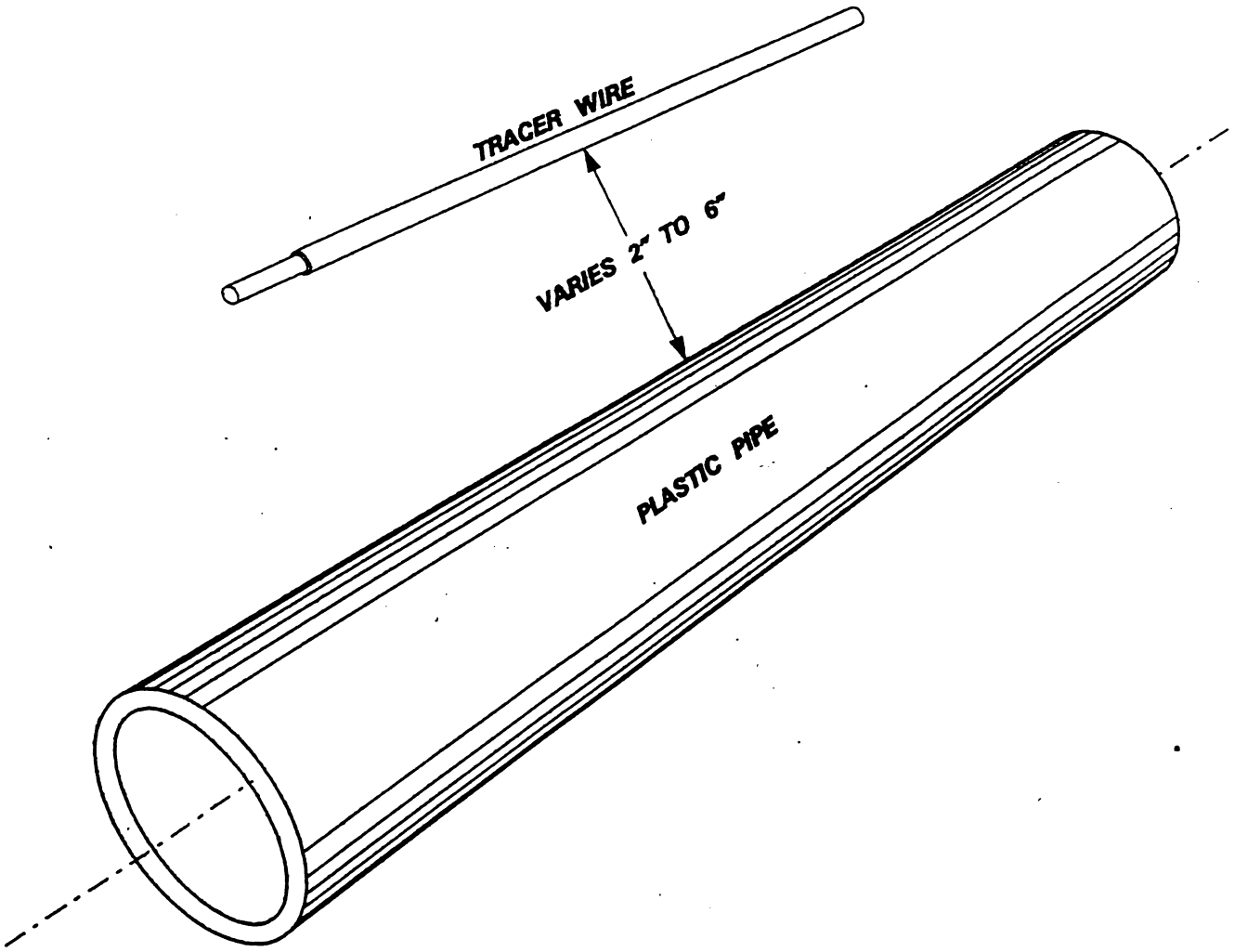
4.5	POSI-HOLD COUPLING INSTALLATION	



STEEL TO PLASTIC

	DATE	APPROVED	CITY PUBLIC SERVICE BOARD	DRAWING DS-24
ISSUED	5/00	DAL	CONSTRUCTION DRAWING (GAS)	G-S-507-8-Ø
REVISED				

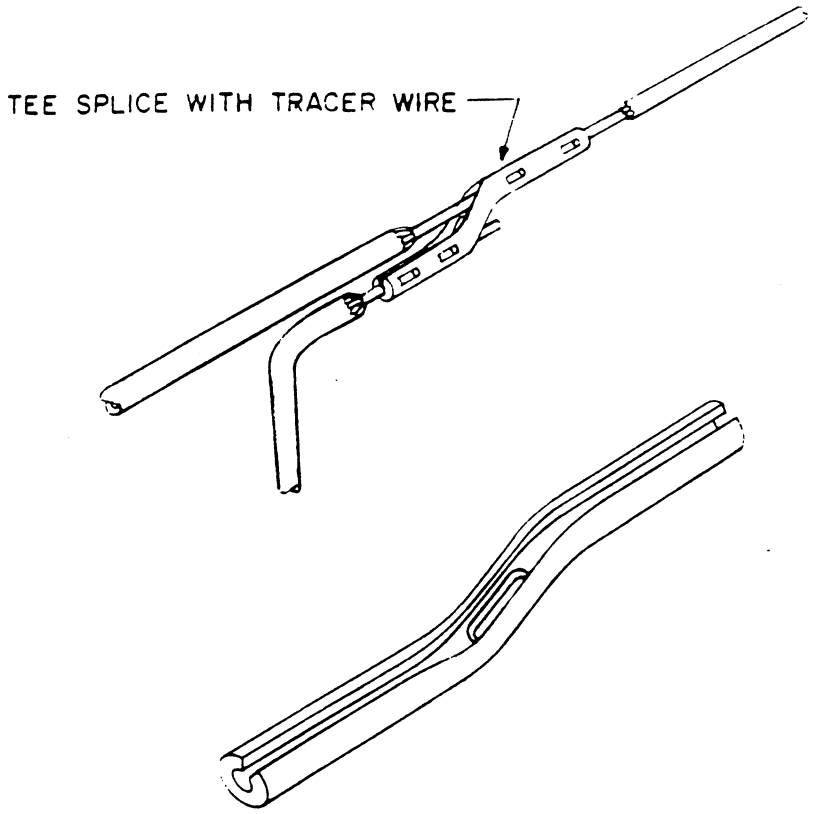
4.5	PLASTIC PIPE & TRACER WIRE	



NOTE: THERE IS TO BE 2" TO 6" OF SEPARATION BETWEEN PIPE AND TRACER WIRE.

	DATE	APPROVED	CITY PUBLIC SERVICE	G-S-501-2-1
ISSUED	6-6-80	D.R.S.	CONSTRUCTION STANDARD	
REVISED				DATE: 18-Dec-92 12:47

4.5	TEE SPLICE ·	



TEE SPLICE

NOTE:

1. APPLY PIPELINE TAPE WRAP PRIMER (ALLOW TO DRY UNTIL TACKY)
2. USE PIPELINE TAPE WRAP ONLY (CIGARETTE WRAP)

	DATE	APPROVED	CITY PUBLIC SERVICE BOARD	DRAWING DS-27
ISSUED	6/80	R.L.S.	CONSTRUCTION DRAWING (GAS)	G-S-541-1-0
REVISED				

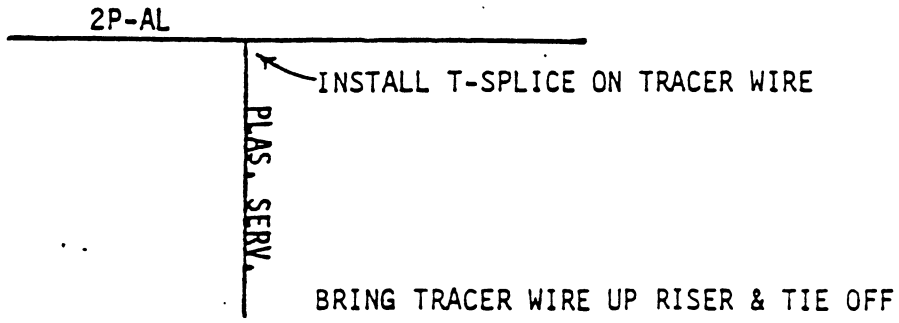
966292005

EXHIBIT DST-2

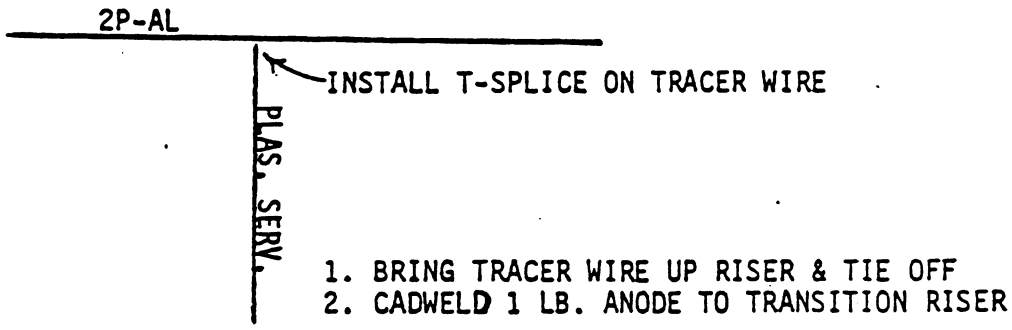
4/1/05

DRAWING DS-28
EXAMPLES FOR ANODELESS RISERS
(Page 1 of 2)

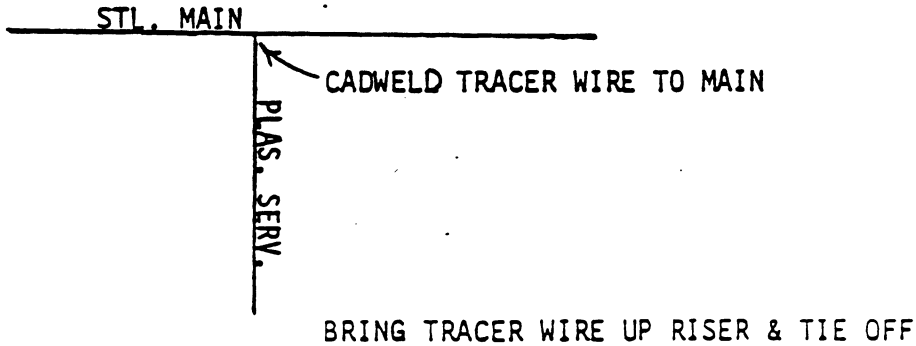
(1) ANODELESS TRACER WIRE ON PLASTIC MAIN - PLASTIC SERVICE WITH ANODELESS RISER



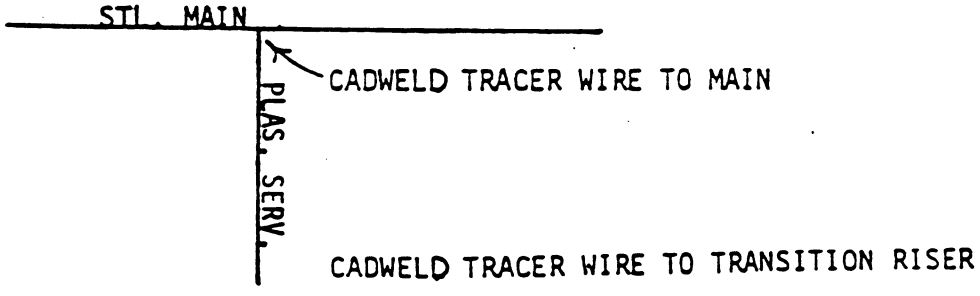
(2) ANODELESS TRACER WIRE ON PLASTIC MAIN - PLASTIC SERVICE WITH STEEL TRANSITION RISER



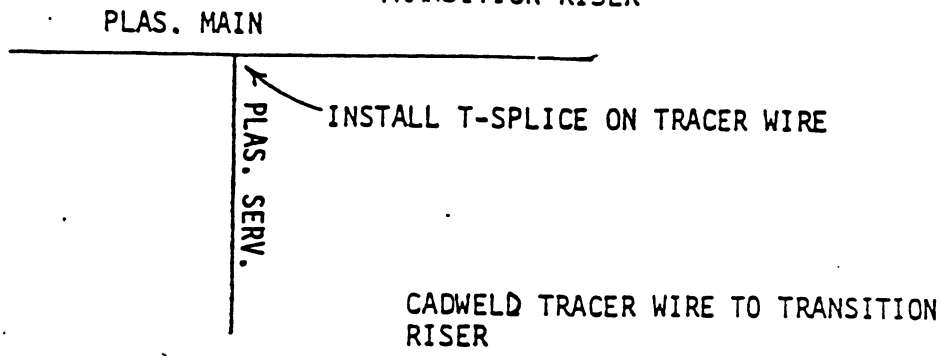
(3) STEEL MAIN - PLASTIC SERVICE WITH ANODELESS RISER - ALSO RERUNS



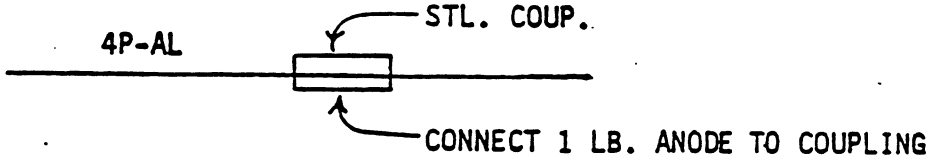
(4) STEEL MAIN - PLASTIC SERVICE WITH STEEL TRANSITION RISER



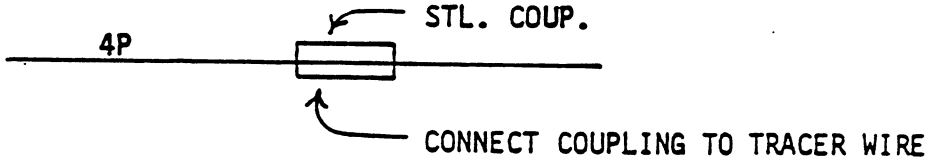
(5) PROTECTED TRACER WIRE ON PLASTIC MAIN - 2" OR 4" PLASTIC SERVICE WITH STEEL TRANSITION RISER



(6) ANODELESS TRACER WIRE ON PLASTIC MAIN OR SERVICE WITH STEEL REPAIR COUPLING

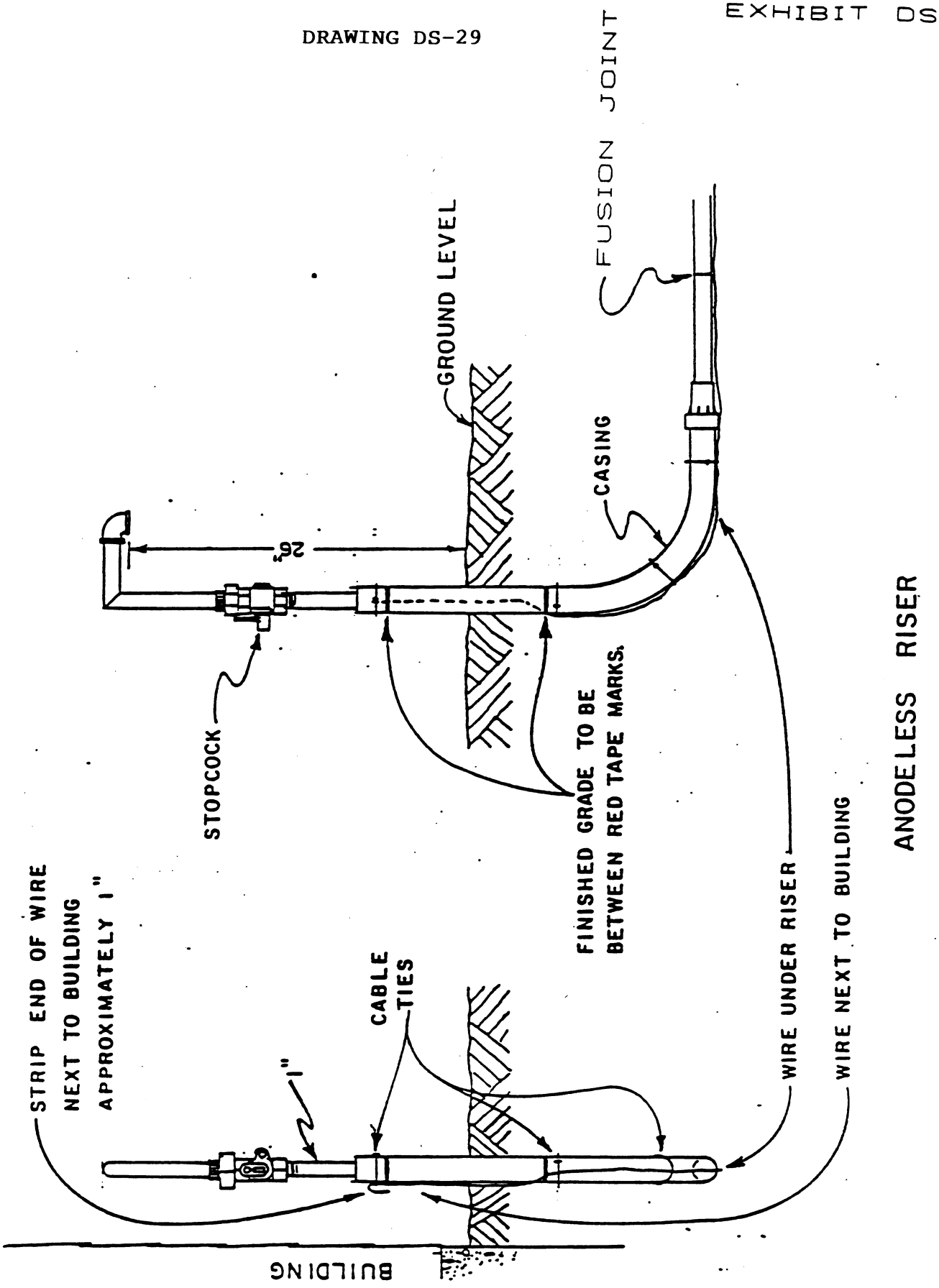


(7) PROTECTED TRACER WIRE ON PLASTIC MAIN OR SERVICE WITH STEEL REPAIR COUPLING

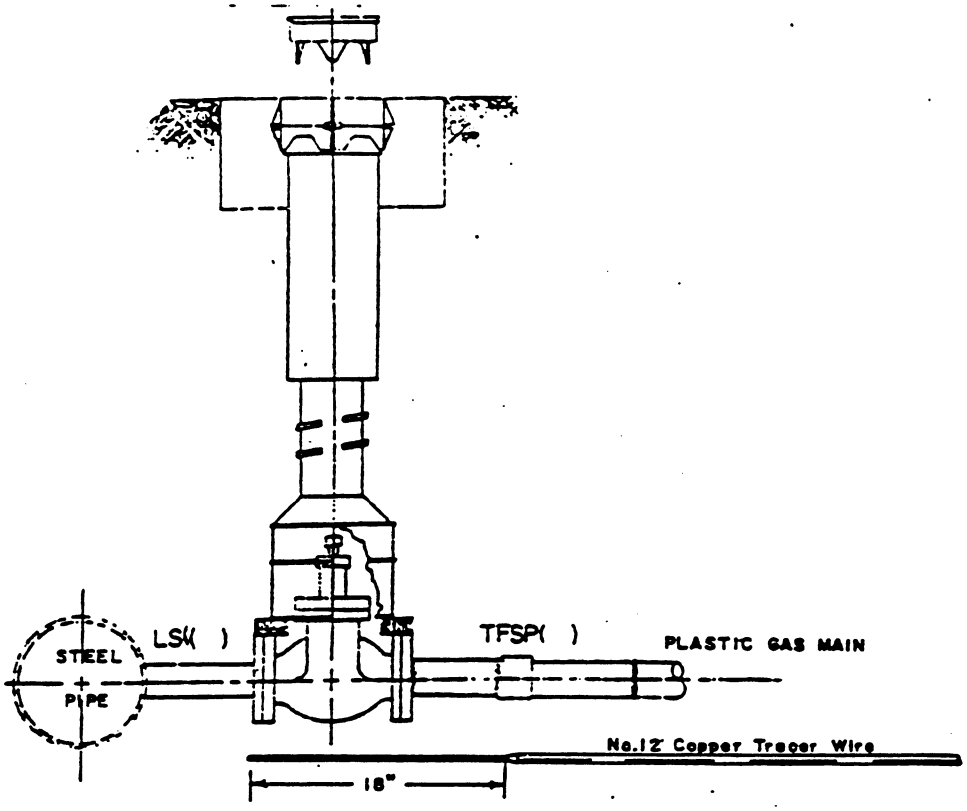


NOTE - NEVER CADWELD TRACER WIRE TO THE NEW ANODELESS SERVICE RISER

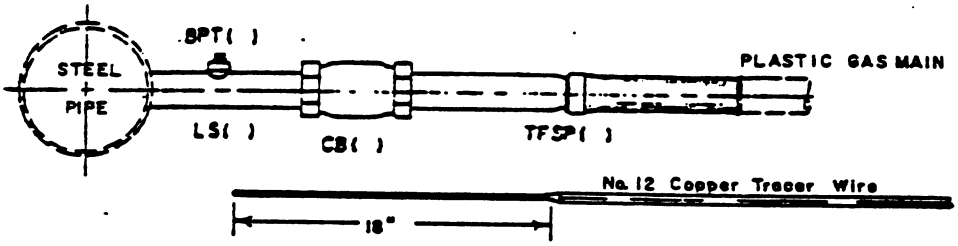
DRAWING DS-29



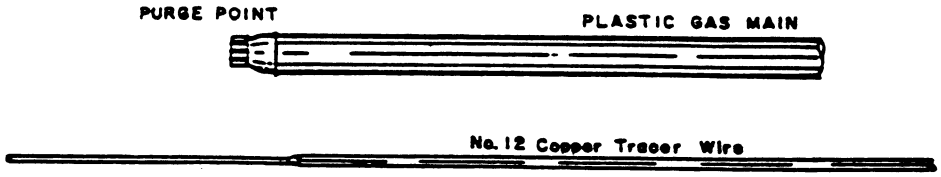
TERMINATION OF TRACER WIRE ON ANODELESS SYSTEMS



REMOVE 18" OF INSULATION AT END OF TRACER WIRE – LEAVE WIRE BARE
DO NOT LET WIRE TOUCH STEEL MAIN OR FITTINGS



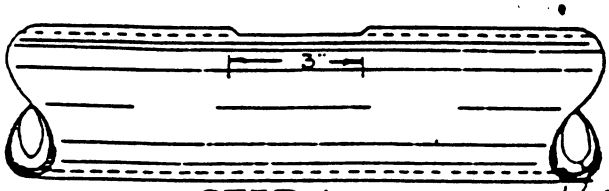
REMOVE 18" OF INSULATION AT END OF TRACER WIRE – LEAVE WIRE BARE
DO NOT LET WIRE TOUCH STEEL MAIN OR FITTINGS



REMOVE 18" OF INSULATION AT END OF TRACER WIRE – LEAVE WIRE BARE

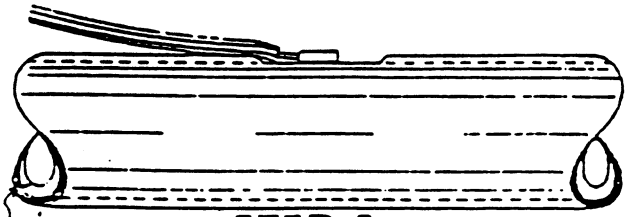
APPROVED		DRAWING DS-30	
DATE	2-83	CITY PUBLIC SERVICE BOARD	
		CONSTRUCTION STANDARD	

Remove a section of coating 3" long and file pipe bright so that a space 1" wide and 2" long is clean and dry.



STEP. 1

Strip 1½" of insulation from wire and place copper sleeve on #10 and smaller wire.

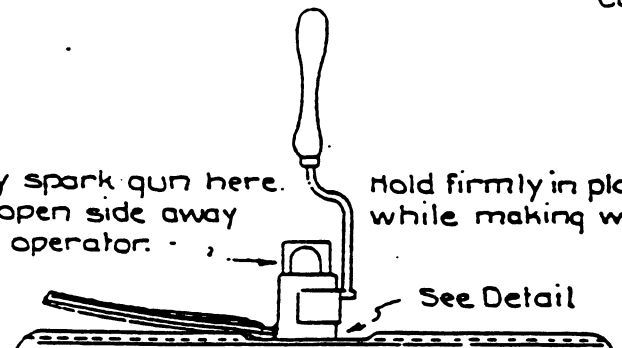


STEP 2

Pipe Coating

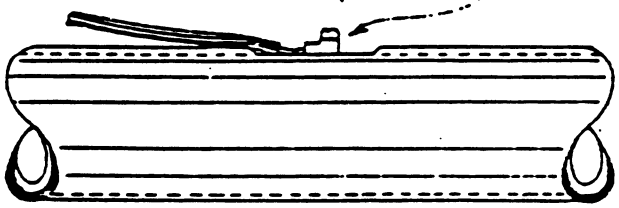
Apply spark gun here. Keep open side away from operator.

Hold firmly in place while making weld.



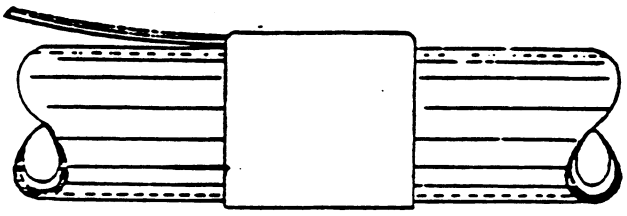
STEP 3

Remove slag with hammer and paint thoroughly with primer.

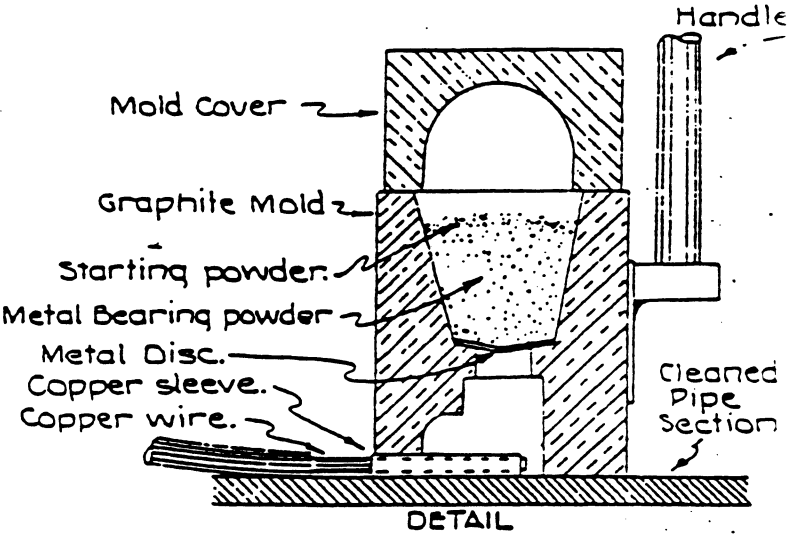


STEP 4

Repair pipe coating with care Cover entire weld.



STEP 5



DETAIL

IMPORTANT

1. REMOVE RED CAP OF CADWELL CARTRIDGE AND DUMP ALL OF CONTENTS INTO MOLD. THE CHARGE WILL NOT IGNITE WITHOUT THE FINE STARTING POWDER ON TOP.
2. THE CARTRIDGES MUST BE KEPT DRY AT ALL TIMES.

Cadweld mold with sleeve for #10 wire and smaller.

CITY PUBLIC SERVICE BOARD
SAN ANTONIO TEXAS
GAS DEPARTMENT

COPPER WIRE CONNECTION TO PIPE USING CADWELD.

SCALE 2" = 1"	APPROVED	FIG.
DRAWN C.W.T.	BY W.D.B.	6

INSTRUCTION SHEET - TYPE TB-3 WELDER

PREPARATION OF SURFACE:

To obtain a good weld, surface must be bright clean and dry.

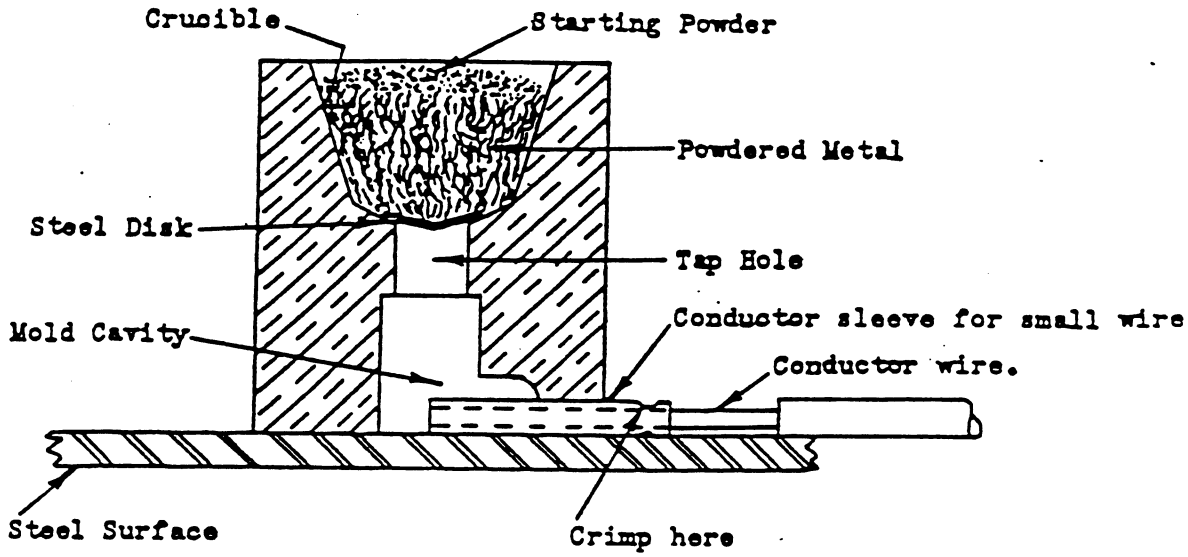
Steel surface should be ground or filed to remove all scale, rust, grease and dirt.

Galvenized steel must be cleaned with emery cloth to remove oxide.

PREPARATION OF WIRE:

Strip the insulation from the conductor and scrape until wire is bright and clean.

For #10 and smaller sizes, place the wire in a copper sleeve, ends flush, and crimp the sleeve tightly to the wire at the insulation to provide additional mechanical strength at the weld.



WELDING PROCEDURE:

(1) PLACE WELDER OVER CLEAN STEEL SURFACE and insert the wire until it is under the CENTER of the tap hole.

(2) COVER TAP HOLE WITH STEEL DISK.

(3) DUMP CARTRIDGE IN CRUCIBLE AND CLOSE COVER. (Tap bottom of cartridge to be sure starting powder is emptied). Replace empty cartridge in box to keep remaining cartridges in an upright position.

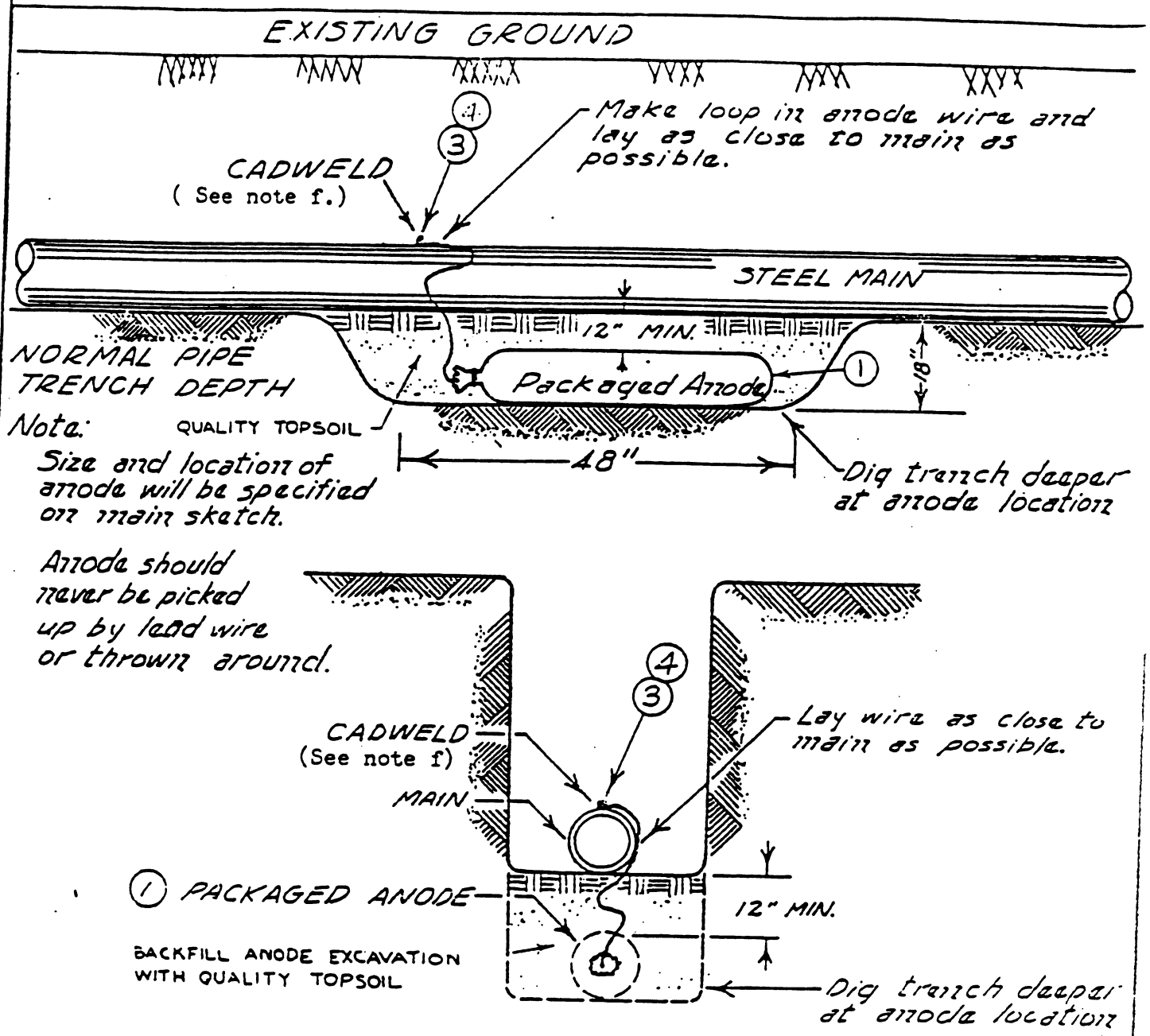
(4) HOLD DOWN ON WELDER TO PREVENT LEAKS AND IGNITE WITH FLINT GUN. Jerk gun away to prevent fouling. Should gun become fouled, soak in Spirits of Ammonia.

(5) DO NOT REMOVE WELDER UNTIL METAL HAS SOLIDIFIED.

(6) ALL SLAG MUST BE CLEANED FROM MOLD BEFORE MAKING NEXT WELD.

Note: Wet or damp molds produce porous welds. Mold can be dried out by firing a charge before making the desired weld.

4.5 PACKAGED ANODES

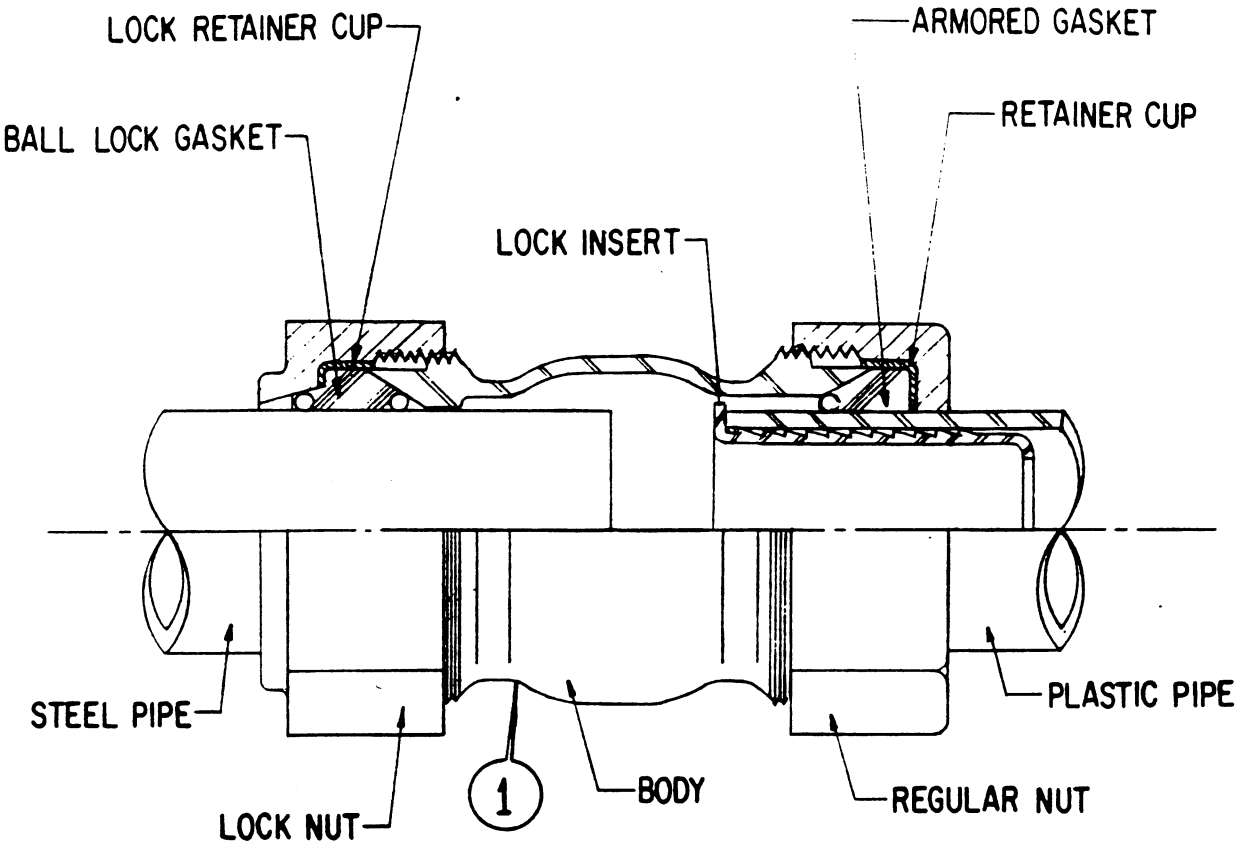


NOTES:

a. Cadweld connection to be primed and coated carefully.
b. Packaged anode should be covered with fine soil containing no rocks, clods, or sand.
c. Pour 5 gallons of water over anode location and tamp thoroughly.
d. Provide test leads when specified. (See test lead standard)
e. Anode specification sheet will be attached to main order, and is to be completed by the main construction foreman..
f. Where plastic main is installed in place of steel, use tee splice to connect anode wire to tracer wire.

	DATE	APPROVED	CITY PUBLIC SERVICE BOARD	DRAWING DS-33
ISSUED	[illegible]	[illegible]	CONSTRUCTION STANDARD (GAS)	G-S-171-1-2
REVISED	12-14-77	[illegible]		

4.5	PLASTI-LOK TRANSITION COUPLING INSTALLED	



STEEL TO PLASTIC

AVAILABLE SIZES: 1", 1¼", 2"

	DATE	APPROVED	CITY PUBLIC SERVICE BOARD	DRAWING DS-34
ISSUED	9/81	GRS	CONSTRUCTION DRAWING (GAS)	G-S-507-4-Ø
REVISED				

CPS ENERGY
EXHIBIT GAS-5
COMPENSATION SCHEDULE
CONSTRUCTION OF NATURAL GAS DISTRIBUTION FACILITIES

PROJECT NAME: Redland Road and Jones Maltsberger – Base Bid W.R. #: 1881223

NOTE A: For each of the items below, the Contractor's work is to include: trenching, joining, testing, coating steel, connecting new pipe to existing pipe and all necessary fittings for tie-ins such as, stopper fittings and 3-way stopper tees, sand padding, backfilling and compacting to consistency of original soil, Installing all necessary cathodic protection devices such as CPTLB's and anodes, removing and replacing paving, curbs, and sidewalks removed or damaged during construction, and cleanup as may be necessary in each instance.

NOTE B: Trenching is considered to be the normal method of service installation and is required on all service adjustments. A gas service can be rerun by INSERTION, when the old service is PULLED from the riser to one foot inside the property line, ONLY at the discretion of the CPS Inspector.

NOTE C: Bid quantities shown are estimates by CPS. Per foot prices shall be applied to the actual distance measured along the top of the trench or the actual length of the bore, as applicable.

NOTE D: Unit prices shall include insurance costs. CPS' insurance requirements are specified in Exhibit GAS-1.

ITEM NO.	DESCRIPTION	UNIT	UNIT PRICE	BID QUANTITY	TOTAL PRICE
1.	Install Gas Main or Casing (Distance As Measured Along the Top of Trench)				
	2" Plastic Pipe and Tracer Wire	1 ft.	$_____	X 10'	= $_____
	4" Plastic Pipe and Tracer Wire	1 ft.	$_____	X 130'	= $_____
	8" Plastic Pipe and Tracer Wire	1 ft.	$_____	X 4,374'	= $_____

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. \

2.	Temporary Street Restoration Asphalt – 6" H.M.A.C.	1 S.Y.	$_____	X 17	= $_____
3.	Permanent Street Restoration Asphalt – 10" A.T.B., 2" H.M.A.C.	1 S.Y.	$_____	X 90	= $_____

TOTAL BASE BID COST: $_____

COMPANY: _____

PREPARED BY: _____

TITLE: _____

DATE: _____

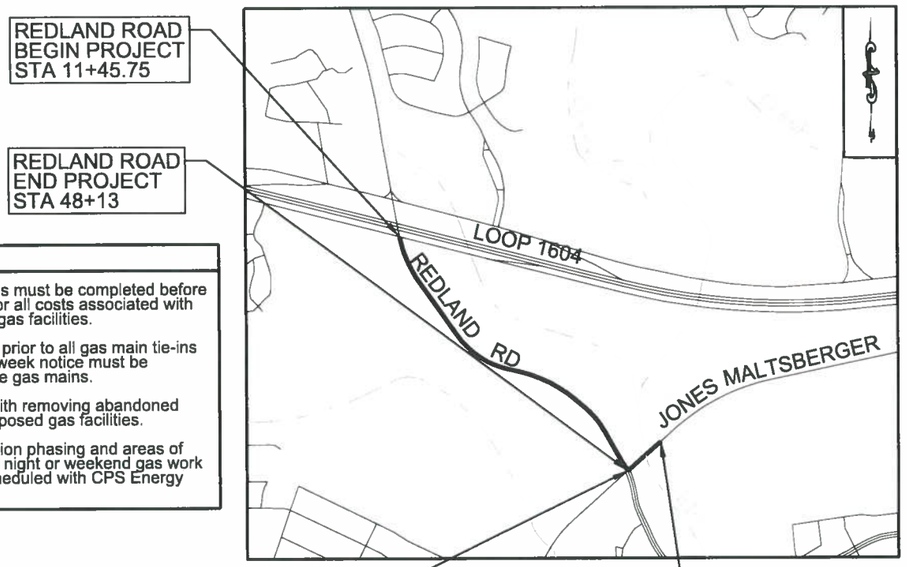
Civic Improvement Project

(Contract Exhibit GAS–6)

General Notes

1. All proposed gas mains are to be installed at 5'-0" of cover unless otherwise noted on the sketch, indicated on the Location Data Table, or as directed by the CPS Inspector or Field Representative. All proposed gas services are to be installed at the elevations indicated on the Location Data Table or as directed by the CPS Inspector or Field Representative.
2. Gas main is to be abandoned in sections no longer than 300 feet. Each section is to be purged of gas with compressed air, and then the ends are to be sealed with concrete. All abandoned services are to be plugged. All valve boxes on abandoned mains are to be removed.
3. If the general contractor requires temporary tie-ins that are not shown on the CPS Energy sketch due to project phasing or to accommodate this project in any way, this work will be done at the general contractor's expense. General Contractor will also be responsible for all costs associated with power pole bracing whenever bracing is required for the installation of proposed gas facilities.
4. The locations of underground utilities indicated on the job sketch are taken from the best records available and are not guaranteed to be accurate. Foreman shall verify location and depth of all existing utilities, whether shown on the plans or not, and shall be responsible for the protection of existing utilities during construction.
5. Gas valves and underground gas facility access points should remain accessible at all times. Contractor must notify John Offer with CPS Energy at (210) 353-2012 at least 48 hours prior to construction in order to adjust existing valve covers or access points within the proposed area of construction.
6. 48 hours before excavating, notify One-Call at 1-800-545-6005. This number should notify all utilities of locates. For Emergency gas locates call 210-353-HELP.
7. In accordance with the Texas Administrative Code Title 16, Part 1, Ch. 3 Rule 3.30 and in compliance with the Clean Water Act, 33 U.S.C. 1251, for projects that will disturb 1 or more acres of land or will disturb less than 1 acre of land but is part of a common plan of development that will ultimately disturb 1 or more acres the General Contractor is responsible for submitting the Notice of Intent (NOI) through the Electronic Notice of Intent Online System (eNOI) at the following web address: www.epa.gov/npdes/stormwater/cgpenoi . The General Contractor will need to ensure Sub-Contractor compliance under EPA Construction General Permit requirements. NOI must be certified 14 days prior to earth disturbing activities, in accordance with National Pollutant Discharge Elimination System (NPDES) EPA Construction General Permit.
8. All gas facilities will require proper connection for cathodic protection and locating purposes as indicated by CPS. Call Corrosion Control at 353-3237 prior to installing, adjusting, or abandoning gas lines and before connecting or disconnecting wires to any CPTLB.
9. All new polyethylene gas services and mains are to be joined by butt fusion. Compression couplings must not be used on new gas line construction.
10. TRENCH EXCAVATION PROTECTION: Contractor and/or Contractor's independently retained employee or structural design/geotechnical/ safety/equipment consultant, if any, shall review these plans and any available geotechnical information and the anticipated installation site(s) in order to develop the Contractor's plans to implement the project described in the Contract Documents. The Contractor's plans shall provide for adequate trench safety systems that comply with, as a minimum, OSHA standards for trench safety consultant shall develop and implement a trench safety program in accordance with OSHA standards governing the presence and activities of individuals working in and around trench excavation.

Construction Points		Install		Abandon	
From	To	Pipe Size	Length	Pipe Size	Length
1	2	8PA	421'	12	429'
2	3	4PA	99'	4PA	61'
2	4	8PA	3,252'	12	3,251'
4	5	8PA	26'	12	33'
5	6	4PA	31'	4PA	24'
5	7	8PA	96'	12	90'
4	8	8PA	333'	12	328'
8	9	2PA	10'	2PA	26'
8	10	8PA	246'	12	224'
		Total 2PA	10'	Total 2PA	26'
		Total 4PA	130'	Total 4PA	85'
		Total 8PA	4,374	Total 12	4,355'



Location Map
NTS

Project Notes

1. All R.O.W. acquisition/clearing and OHE pole relocations must be completed before gas adjustments. General Contractor will be responsible for all costs associated with power pole bracing where necessary for the installation of gas facilities.
2. Contact Doug Erickson (CPS Energy) at least 48-hours prior to all gas main tie-ins to coordinate pressure control operation. A minimum two-week notice must be submitted prior to performing tie-ins on any supply-pressure gas mains.
3. Contractor will be responsible for all costs associated with removing abandoned utilities or structures that conflict with the installation of proposed gas facilities.
4. Contractor must refer to traffic control plan for construction phasing and areas of gas installation that will require night or weekend work. All night or weekend gas work requiring an inspector or other CPS personnel must be scheduled with CPS Energy at least one week in advance.

Legend

- Center Line
- Existing Property Line
- Proposed Property Line
- Easement Line
- Existing Gas Service
- Existing Gas Main
- Install Gas Service
- Install Gas Main
- Abandon Gas
- Cable TV
- Telephone
- Sanitary Sewer
- Proposed Drainage
- Existing Drainage
- Electric
- Water

STATE OF TEXAS
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The 90 PSIG pressure test applies to all lines with an MAOP of 59 and below.

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FAX: (210) 641-6440
REGISTRATION #F-2214

Pressure Test		Construction	
Minimum Test	90 PSIG	Contractor	
Tested To	PSIG	Center	
By		By	
Date		Start Date	
		Comp. Date	

No.	Drawing Revision	Date
0	Planning Completed	8-31-15

Checked By: DE — Date Approved: 11/19/15
Approved By: — Date Approved: 11/19/15
Designed By: John T. Mooneyham, P.E. (CEC)
Map Quadrant: 176 – 642
X=2147932 Y=13764258
Project No.: G-0272
Job Title: REDLAND RD & JONES MALTSBERGER
CPS ENERGY
P.O. BOX 1771
SAN ANTONIO, TX 78296
Job No.: 1881223

All proposed gas mains and services are to be installed at the planned Gas Top of Pipe Elevation indicated on the Location Data Table.

Contract Exhibit GAS-6

	POINT SPAN	PIPE PRINT LINE DATA (EXAMPLE SHOWN)
		IPS DR GAS PE3408/PE100 CEE ASTM D2513
		IPS DR GAS PE3408/PE100 CEE ASTM D2513
		IPS DR GAS PE3408/PE100 CEE ASTM D2513
		IPS DR GAS PE3408/PE100 CEE ASTM D2513
		IPS DR GAS PE3408/PE100 CEE ASTM D2513
		IPS DR GAS PE3408/PE100 CEE ASTM D2513
		IPS DR GAS PE3408/PE100 CEE ASTM D2513
		IPS DR GAS PE3408/PE100 CEE ASTM D2513
		IPS DR GAS PE3408/PE100 CEE ASTM D2513
		IPS DR GAS PE3408/PE100 CEE ASTM D2513
		IPS DR GAS PE3408/PE100 CEE ASTM D2513
		IPS DR GAS PE3408/PE100 CEE ASTM D2513
		IPS DR GAS PE3408/PE100 CEE ASTM D2513
		IPS DR GAS PE3408/PE100 CEE ASTM D2513
		IPS DR GAS PE3408/PE100 CEE ASTM D2513
		IPS DR GAS PE3408/PE100 CEE ASTM D2513
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		IPS DR GAS PE3408/PE100 CEE ASTM D2513
		IPS DR GAS PE3408/PE100 CEE ASTM D2513
		IPS DR GAS PE3408/PE100 CEE ASTM D2513
		IPS DR GAS PE3408/PE100 CEE ASTM D2513
		IPS DR GAS PE3408/PE100 CEE ASTM D2513
		IPS DR GAS PE3408/PE100 CEE ASTM D2513
EXAMPLE:	*1 to 2*	*2"* IPS DR *11 DRISCOPIPE 8100* GAS PE3408/PE100 CEE ASTM D2513 *WTR015 R NR 0356 A1-043 072706 COIL 0152*

STATE OF TEXAS
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Design Note:
Cathodic Protection
Design by CPS-Gas

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REGISTRATION #F-2214

No.	Drawing Revision	Date
0	Planning Completed	8-31-15

Checked By: RE — Date Approved: 11/19/15
Approved By: [signature] — Date Approved: 11/19/15

Designed By: John T. Mooneyham, P.E. (CEC)

Map Quadrant: 176 – 642, X=2147932 Y=13764258

Project No.: G-0272

Job Title: REDLAND RD & JONES MALTSBERGER

CPS ENERGY
P.O. BOX 1771
SAN ANTONIO, TX 78296

Job No.: 1881223

All proposed gas mains and services are to be installed at the planned Gas Top of Pipe Elevation indicated on the Location Data Table.

Location Data Table Page 07 of 18

CS4 Item #	Location		Station Marker	Grade Elevations			Gas Requirements		Planned Depth of Gas			Potential Conflicting Facility			Clearance	
	Address	Location # / Street Name		Existing Grade	Proposed Final Grade	Estimated Subgrade	Gas Pipe Size	Planned Gas T.O.P. Elevation	From Existing Grade	From Final Grade	From Estimated Subgrade	Proposed Facility Description	Top Elevation	Bottom Elevation	Above Prop. Facility	Below Prop. Facility
		11	15+94	909.3	911.1	909.8	4.0" P	902.5	6.8	8.6	7.3	24" RCP	907.0	904.5		2.0
		12	15+94	912.5	911.6	910.3	4.0" P	907.2	5.3	4.4	3.1	36" RCP	904.8	901.0	2.0	
		13	16+26	908.4	910.7	909.4	8.0" P	903.4	5.0	7.3	6.0	24" RCP	908.4	905.9		2.5

Location Data Table Page 09 of 18

CS4 Item #	Location		Station Marker	Grade Elevations			Gas Requirements		Planned Depth of Gas			Potential Conflicting Facility			Clearance	
	Address	Location # / Street Name		Existing Grade	Proposed Final Grade	Estimated Subgrade	Gas Pipe Size	Planned Gas T.O.P. Elevation	From Existing Grade	From Final Grade	From Estimated Subgrade	Proposed Facility Description	Top Elevation	Bottom Elevation	Above Prop. Facility	Below Prop. Facility
		14	23+45	904.1	906.5	905.1	8" P	895.4	8.7	11.1	9.7	ATT	898.6	897.4		2.0
		15	23+45	898.6	904.1	902.8	8" P	893.6	5.0	10.5	9.2	36" RCP	902.8	899.0		5.4
		16	24+49	892.6	905.0	903.7	8" P	886.2	6.4	18.8	17.5	48" RCP	893.3	888.2		2.0
		17	25+84	903.2	908.6	907.3	8" P	895.9	7.3	12.7	11.4	ATT	899.2	897.9		2.0

Location Data Table Page 14 of 18

CS4 Item #	Location		Station Marker	Grade Elevations			Gas Requirements		Planned Depth of Gas			Potential Conflicting Facility			Clearance	
	Address	Location # / Street Name		Existing Grade	Proposed Final Grade	Estimated Subgrade	Gas Pipe Size	Planned Gas T.O.P. Elevation	From Existing Grade	From Final Grade	From Estimated Subgrade	Proposed Facility Description	Top Elevation	Bottom Elevation	Above Prop. Facility	Below Prop. Facility
		18	42+82	848.4	850.4	849.1	8" P	845.0	3.4	5.4	4.1	ATT	842.2	840.9	2.0	
		19	45+45	837.9	839.0	837.7	8" P	830.2	7.7	8.8	7.5	24" RCP	834.7	832.2		2.0

Location Data Table Page 15 of 18

CS4 Item #	Location		Station Marker	Grade Elevations			Gas Requirements		Planned Depth of Gas			Potential Conflicting Facility			Clearance	
	Address	Location # / Street Name		Existing Grade	Proposed Final Grade	Estimated Subgrade	Gas Pipe Size	Planned Gas T.O.P. Elevation	From Existing Grade	From Final Grade	From Estimated Subgrade	Proposed Facility Description	Top Elevation	Bottom Elevation	Above Prop. Facility	Below Prop. Facility
		20	47+59	833.5	834.1	832.8	8" P	828.6	4.9	5.5	4.2	24" RCP	825.8	823.3	2.0	
		21	47+91	832.8	833.5	832.2	8" P	829.4	3.4	4.1	2.8	8" SS	826.7	826.0	2.0	
		22	47+90	832.9	833.2	831.9	8" P	829.4	3.5	3.8	2.5	ATT	824.0	822.4	4.7	
		23	47+90	832.8	832.6	831.3	8" P	829.4	3.4	3.2	1.9	ATT	825.7	824.6	3.0	
		24	48+11	832.7	832.6	831.3	8" P	827.7	5.0	4.9	3.6	24" RCP	823.6	821.1	3.4	
		25	48+22	832.7	832.5	831.2	8" P	827.7	5.0	4.8	3.5	48" RCP	823.8	819.0	3.2	
		26	48+45	833.0	833.1	831.8	8" P	828.1	4.9	5.0	3.7	ATT	825.4	824.3	2.0	
		27	48+59	832.7	832.5	831.2	4.0" P	825.7	7.0	6.8	5.5	PROP WTR	828.7	827.7		2.0
		28	48+44	831.7	831.7	830.4	8" P	824.7	7.0	7.0	5.7	PROP WTR	827.7	826.7		2.0

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Design Note:
Cathodic Protection
Design by CPS-Gas

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0	Planning Completed	8-31-15

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Map Quadrant: 176 – 642
X=2147932 Y=13764258
Project No.: G–0272
Job Title: REDLAND RD & JONES MALTSBERGER
CPS ENERGY
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Job No.: 1881223

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DON DURDEN, INC.
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REGISTRATION #F-2214

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Location Data Table Page 16 of 18

CS4 Item #	Location		Station Marker	Grade Elevations			Gas Requirements		Planned Depth of Gas			Potential Conflicting Facility			Clearance	
	Address	Location # / Street Name		Existing Grade	Proposed Final Grade	Estimated Subgrade	Gas Pipe Size	Planned Gas T.O.P. Elevation	From Existing Grade	From Final Grade	From Estimated Subgrade	Proposed Facility Description	Top Elevation	Bottom Elevation	Above Prop. Facility	Below Prop. Facility
		20	47+59	833.5	834.1	832.8	8" P	828.6	4.9	5.5	4.2	24" RCP	825.8	823.3	2.0	
		21	47+91	832.8	833.5	832.2	8" P	829.3	3.5	4.2	2.9	8" SS	826.6	826.0	2.0	
		22	47+90	832.9	833.2	831.9	8" P	827.9	5.0	5.3	4.0	ATT	823.7	822.4	3.4	
		23	47+90	832.8	832.6	831.3	8" P	827.8	5.0	4.8	3.5	ATT				
		24	48+11	832.7	832.6	831.3	8" P	827.7	5.0	4.9	3.6	24" RCP	823.6	821.1	3.4	
		25	48+22	832.7	832.5	831.2	8" P	827.7	5.0	4.8	3.5	48" RCP	823.8	819.0	3.2	
		26	48+45	833.0	833.1	831.8	8" P	828.0	5.0	5.1	3.8	ATT				
		27	48+59	832.7	832.5	831.2	4.0" P	825.7	7.0	6.8	5.5	PROP WTR	828.7	827.7		2.0
		28	48+44	831.7	831.7	830.4	8" P	824.7	7.0	7.0	5.7	PROP WTR	827.7	826.7		2.0
		29	170+92	819.0	827.4	826.1	8" P	814.7	4.3	12.7	11.4	24"SS	811.9	809.9	2.0	
		30	170+92	818.7	826.6	825.3	8" P	813.6	5.1	13.0	11.7	48" RCP	820.4	815.6		2.0

Location Data Table Page 17 of 18

CS4 Item #	Location		Station Marker	Grade Elevations			Gas Requirements		Planned Depth of Gas			Potential Conflicting Facility			Clearance	
	Address	Location # / Street Name		Existing Grade	Proposed Final Grade	Estimated Subgrade	Gas Pipe Size	Planned Gas T.O.P. Elevation	From Existing Grade	From Final Grade	From Estimated Subgrade	Proposed Facility Description	Top Elevation	Bottom Elevation	Above Prop. Facility	Below Prop. Facility
		31	171+21	815.1	825.8	824.5	8" P	810.1	5.0	15.7	14.4	10'x7' box	821.9	813.9		3.8
		32	171+50	817.4	825.2	823.9	8" P	812.4	5.0	12.8	11.5	48" RCP	821.9	817.1		4.7
		33	172+42	822.4	824.4	823.1	8" P	817.4	5.0	7.0	5.7	inlet box	826.0	820.0		2.6
		34	172+91	826.1	824.7	823.7	8" P	819.7	6.4	5.0	4.0	ATT	815.2	813.7	3.8	

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Design Note:
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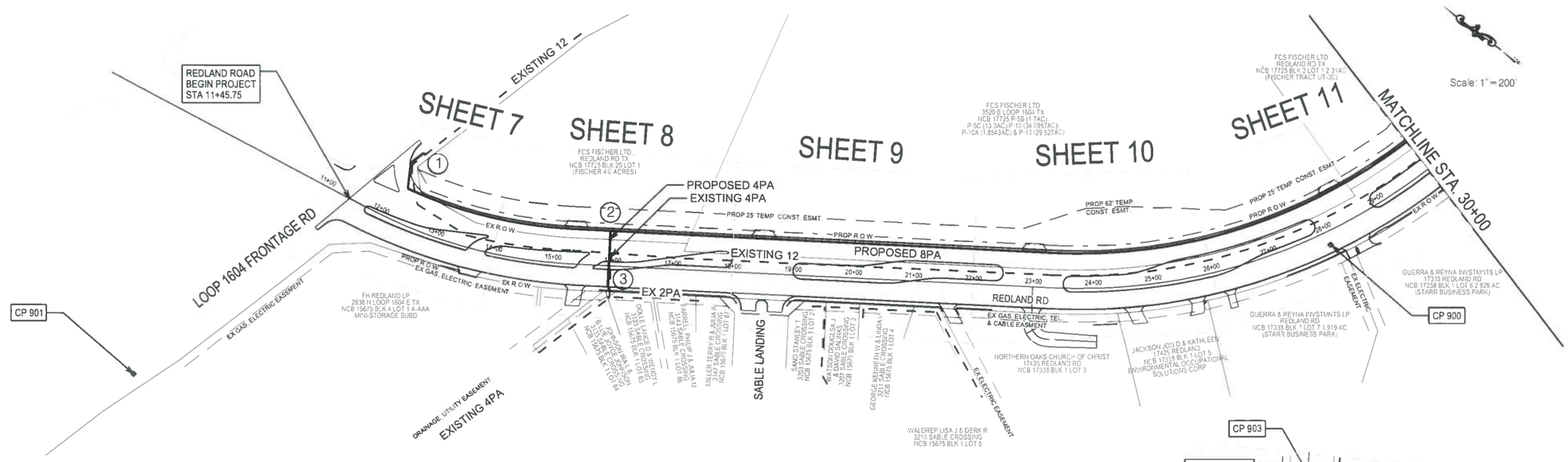
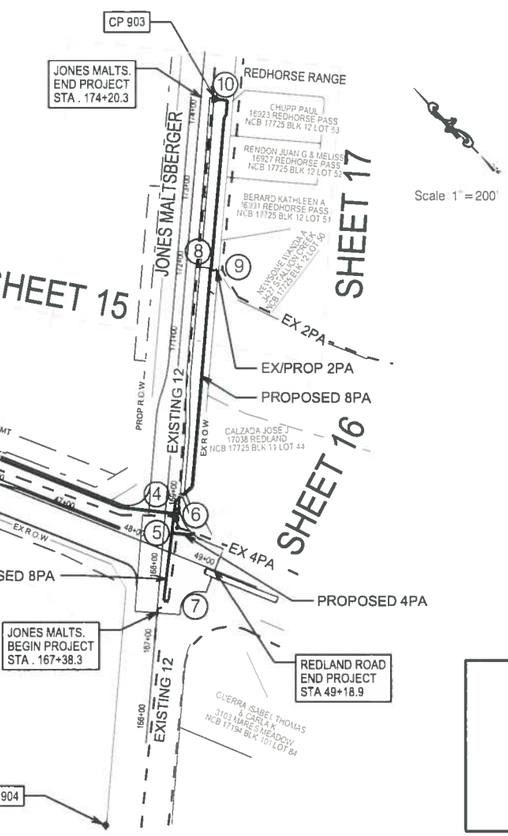
Contract Exhibit GAS–6





CONTROL POINT DATA

Pt #	Northing	Easting	Elevation	Description
900	13765485.65	2146414.33	918.34	COSA DISC MONUMENT WITH "CP 900" STAMPED
901	13766937.71	2145037.98	931.10	COSA DISC MONUMENT WITH "CP 901" STAMPED
902	13766534.40	2146706.51	882.59	COSA DISC MONUMENT WITH "CP 902" STAMPED
903	13764068.66	2147624.69	835.70	COSA DISC MONUMENT WITH "CP 903" STAMPED
904	13764648.73	2148399.91	824.81	COSA DISC MONUMENT WITH "CP 904" STAMPED
150	13764646.58	2147726.42	844.70	COSA DISC MONUMENT WITH "COSA 150" STAMPED

GENERAL CONSTRUCTION PHASING NOTES

1. COOPERATE IN THE USE OF THE RIGHT OF WAY WITH THE COSA AND VARIOUS PUBLIC UTILITIES AND THEIR CONTRACTORS AS MAY BE REQUIRED TO ALLOW ADJUSTMENTS TO BE MADE BY OTHERS.
2. TRAFFIC MUST BE HANDLED OVER EACH SEGMENT DURING CONSTRUCTION.
3. PROVIDE A MINIMUM OF 14 DAYS PRIOR NOTICE OF INTERSECTING STREET CLOSURES SO APPROPRIATE AUTHORITIES CAN BE NOTIFIED. NO FULL ROAD CLOSURES OF REDLAND RD ARE PLANNED FOR THIS PROJECT.
4. ALTERNATING ONE WAY TRAFFIC WILL BE ALLOWED ON REDLAND RD DURING THE PRE-CONSTRUCTION PHASE. ALTERNATING ONE WAY TRAFFIC WILL BE PERMITTED BETWEEN THE HOURS OF 9:00 AM AND 3:00 PM, MONDAY THROUGH FRIDAY. ALTERNATING ONE WAY TRAFFIC WILL NOT BE ALLOWED ON OBSERVED CITY HOLIDAYS AD THE DAYS IMMEDIATELY BEFORE AND AFTER SAID HOLIDAYS. CONTRACTOR SHALL UTILIZE FLAGGERS. BY 3:30 PM OF EACH DAY, THE TRENCH MUST EITHER BE RESTORED OR PLATED AND TWO WAY TRAFFIC MUST BE RESTORED TO EXISTING CONDITIONS.
5. PROVIDE ACCESS TO ALL ADJACENT PROPERTY THROUGHOUT ALL PHASES OF CONSTRUCTION. ADEQUACY OF ACCESS WILL BE AT THE DISCRETION OF THE ENGINEER.
6. RESTORE TO ORIGINAL OR BETTER CONDITION ALL DAMAGE DONE TO EXISTING FENCES AND DECORATIVE WALLS.
7. REGULATE ALL CONSTRUCTION TRAFFIC TO MINIMIZE INCONVENIENCE TO THE TRAVELING PUBLIC. AT POINTS WHERE IT IS NECESSARY FOR TRUCKS TO STOP AND UNLOAD, PROVIDE WARNING SIGNS AND/OR FLAGGERS.
8. A STORM WATER POLLUTION PREVENTION PLAN (SW3P) IS INCLUDED IN THE STREET AND DRAINAGE CONSTRUCTION DOCUMENTS. COORDINATE WITH THE GENERAL CONTRACTOR TO INCORPORATE THIS PLAN INTO THE SEQUENCE OF WORK AS NEEDED WITH THE SCHEDULE OF IMPLEMENTATION OF THESE SW3P MEASURES BEING BASED ON THE SEQUENCE OF SOIL DISTURBING ACTIVITIES. WHEREVER POSSIBLE PRESERVE THE EXISTING VEGETATION. MINIMIZE THE AMOUNT OF DISTURBED GROUND ON THE ENTIRE PROJECT.
9. BACKFILL ALL OPEN TRENCHES OR PLACE STEEL PLATES OVER OPENED TRENCH AT THE END OF EACH WORK DAY.
10. COORDINATE WITH THE GENERAL CONTRACTOR PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES TO PLACE SIGNS AND BARRICADES IN LOCATIONS THAT ARE EASILY VISIBLE AND DO NOT OBSTRUCT LINE OF SIGHT FOR DRIVERS ON BOTH REDLAND RD AND ALL INTERSECTING STREETS.

CPS GAS CONSTRUCTION PHASING NOTES-PRE-CONSTRUCTION PHASE

1. CONSTRUCT ALL PROPOSED GAS MAINS, SERVICES AND TIE-INS ON REDLAND ROAD AND JONES MALTSBERGER WHILE KEEPING THE EXISTING GAS MAINS AND SERVICES ACTIVE. REFERENCE GENERAL CONSTRUCTION PHASING NOTE # 4 FOR ALLOWABLE TRAFFIC HANDLING WITHIN RIGHT OF WAY.
2. AFTER CROSSING EXISTING PAVEMENT ON REDLAND ROAD, CONSTRUCT TEMPORARY PAVEMENT IN ACCORDANCE WITH THE TRENCH AND BACKFILL TEMPORARY PAVEMENT DETAIL SHOWN IN THE GAS PLANS.
3. AFTER CROSSING THE EXISTING PAVEMENT AT INTERSECTION OF REDLAND ROAD AND JONES MALTSBERGER, CONSTRUCT PAVEMENT IN ACCORDANCE WITH THE TRENCH AND BACKFILL UNDER PAVEMENT DETAIL SHOWN IN THE GAS PLANS. REFERENCE GENERAL CONSTRUCTION PHASING NOTE # 4 FOR ALLOWABLE TRAFFIC HANDLING WITHIN RIGHT OF WAY. CONTRACTOR WILL NOT BE ALLOWED TO CLOSE DOWN INTERSECTION AND WILL BE REQUIRED TO MAINTAIN TRAFFIC FLOW AT A MINIMUM OF ONE LANE EACH WAY DURING CONSTRUCTION OF PROPOSED GAS FACILITIES.
4. SAWCUT, REMOVE AND REPLACE EXISTING SIDEWALKS IN ACCORDANCE WITH TRENCH AND BACKFILL TEMPORARY PAVEMENT DETAIL SHOWN IN THE GAS PLANS. NO SEPARATE PAYMENT WILL BE MADE FOR THE SAWCUT AND REMOVAL OF EXISTING CONCRETE CURBS, SIDWALKS OR DRAINAGE STRUCTURES.

STATE OF TEXAS
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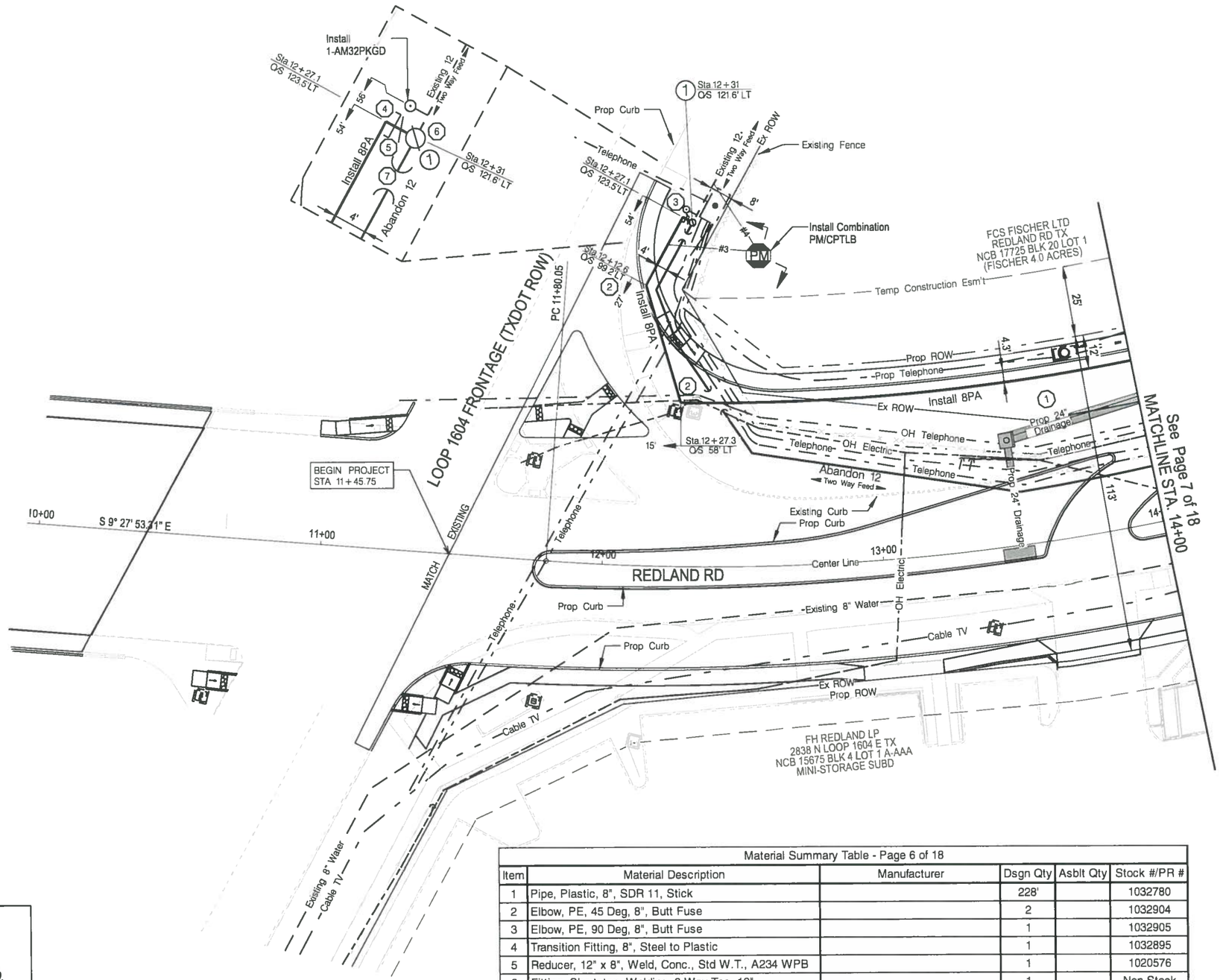
Contract Exhibit GAS–6

Scale: 1" = 40'



Material Summary Table - Page 6 of 18

Item	Material Description	Manufacturer	Dsgn Qty	Asblt Qty	Stock #/PR #
1	Pipe, Plastic, 8", SDR 11, Stick		228'		1032780
2	Elbow, PE, 45 Deg, 8", Butt Fuse		2		1032904
3	Elbow, PE, 90 Deg, 8", Butt Fuse		1		1032905
4	Transition Fitting, 8", Steel to Plastic		1		1032895
5	Reducer, 12" x 8", Weld, Conc., Std W.T., A234 WPB		1		1020576
6	Fitting, Shortstop, Welding, 3-Way Tee, 12"		1		Non-Stock
7	Cap, 12" Pipe End, Weld, CS, 0.375" W.T.		1		1016664

STATE OF TEXAS
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PROFESSIONAL ENGINEER
11/16/2015

Design Note:
Cathodic Protection
Design by CPS-Gas

No.	Drawing Revision	Date
0	Planning Completed	8-31-15

Checked By: DE — Date Approved: 11/19/15

Approved By: — Date Approved: 11/19/15

Designed By: John T. Mooneyham, P.E. (CEC)

Map Quadrant: 176 – 642
X=2147932 Y=13764258

Project No.: G–0272

Job Title: REDLAND RD & JONES MALTSBERGER

CPS ENERGY
P.O. BOX 1771
SAN ANTONIO, TX 78296

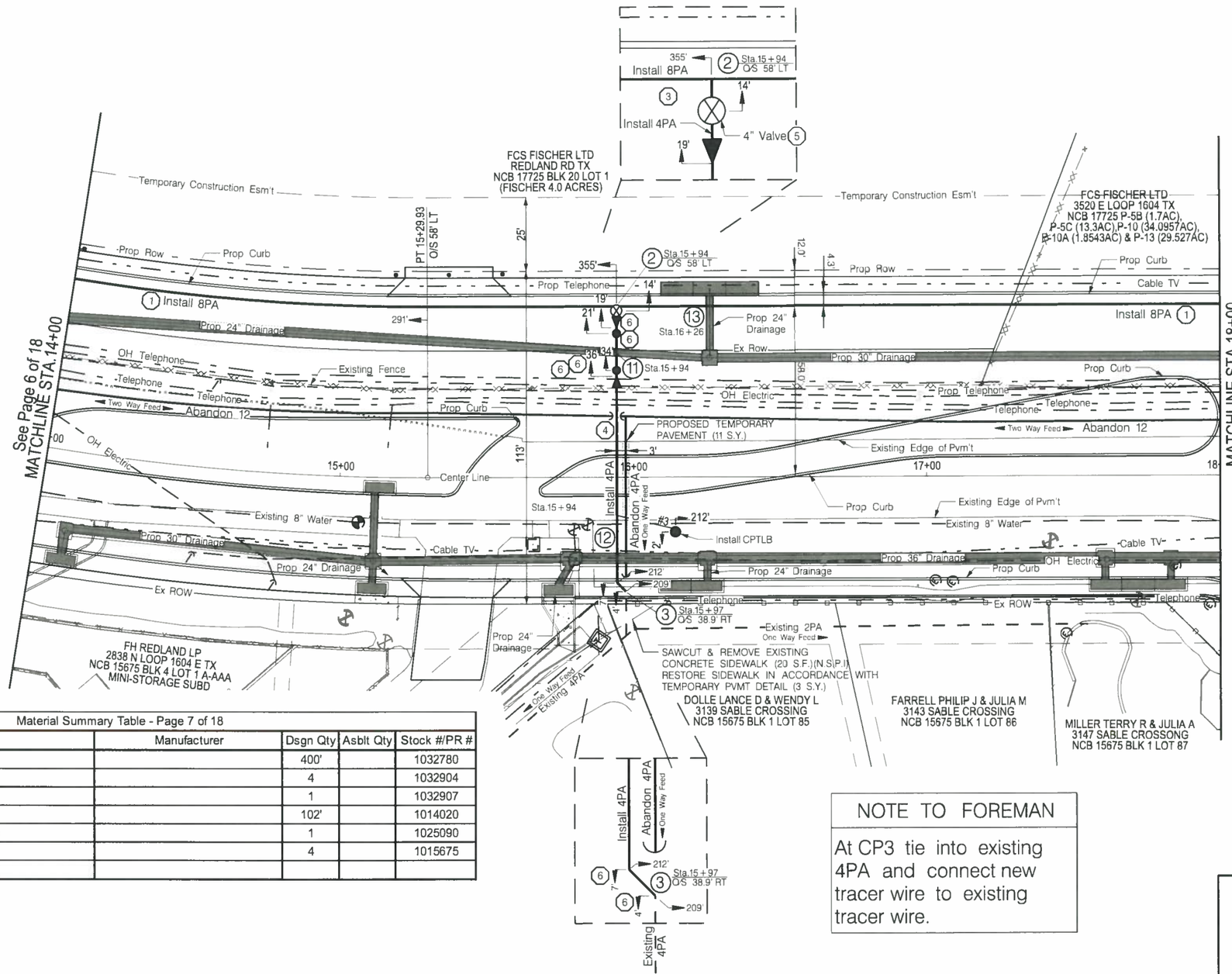
Job No.: 1881223

DON DURDEN, INC.
d.b.a. CIVIL ENGINEERING CONSULTANTS
11550 IH 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214

All proposed gas mains and services are to be installed at the planned Gas Top of Pipe Elevation indicated on the Location Data Table.

Contract Exhibit GAS–6

Scale: 1" = 40'



Material Summary Table - Page 7 of 18					
Item	Material Description	Manufacturer	Dsgn Qty	Asblt Qty	Stock #/PR #
1	Pipe, Plastic, 8", SDR 11, Stick		400'		1032780
2	Elbow, PE, 45 Deg, 8", Butt Fuse		4		1032904
3	Saddle Branch, PE, 8" x 4", Butt Fuse		1		1032907
4	Pipe, Plastic, 4", SDR 11, Coil		102'		1014020
5	Valve, Plastic, 4", Ball/Plug, Butt Fuse		1		1025090
6	Elbow, PE, 45 Deg, 4", Butt Fuse		4		1015675

NOTE TO FOREMAN

At CP3 tie into existing 4PA and connect new tracer wire to existing tracer wire.

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Project No.: G–0272
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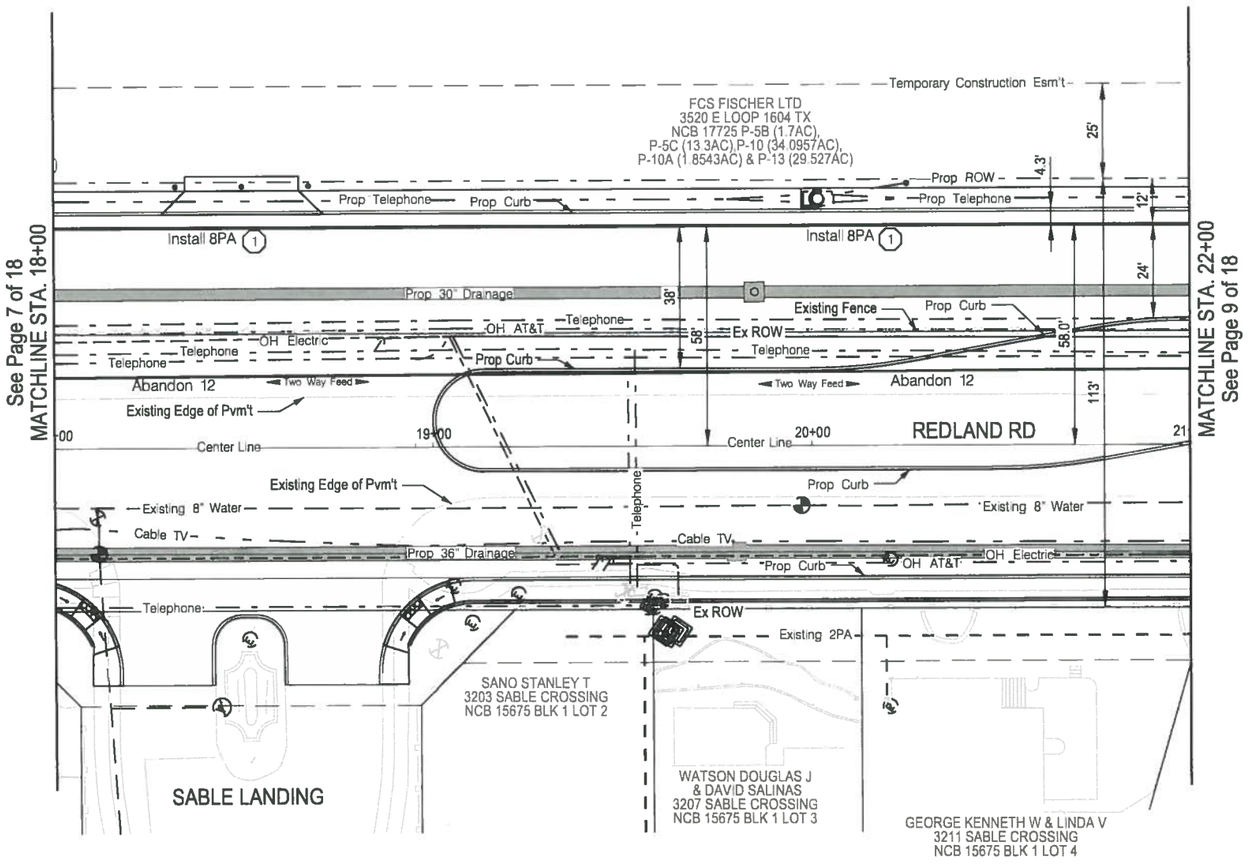
Contract Exhibit GAS–6

Scale: 1" = 40'



Material Summary Table - Page 8 of 18					
Item	Material Description	Manufacturer	Dsgn Qty	Asblt Qty	Stock #/PR #
1	Pipe, Plastic, 8", SDR 11, Stick		400'		1032780

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REGISTRATION #F-2214

Designed By: John T. Mooneyham, P.E. (CEC)
Map Quadrant: 176 – 642
X=2147932 Y=13764258
Project No.: G–0272

Job Title: REDLAND RD & JONES MALTSBERGER

CPS ENERGY
P.O. BOX 1771
SAN ANTONIO, TX 78296

Job No.: 1881223

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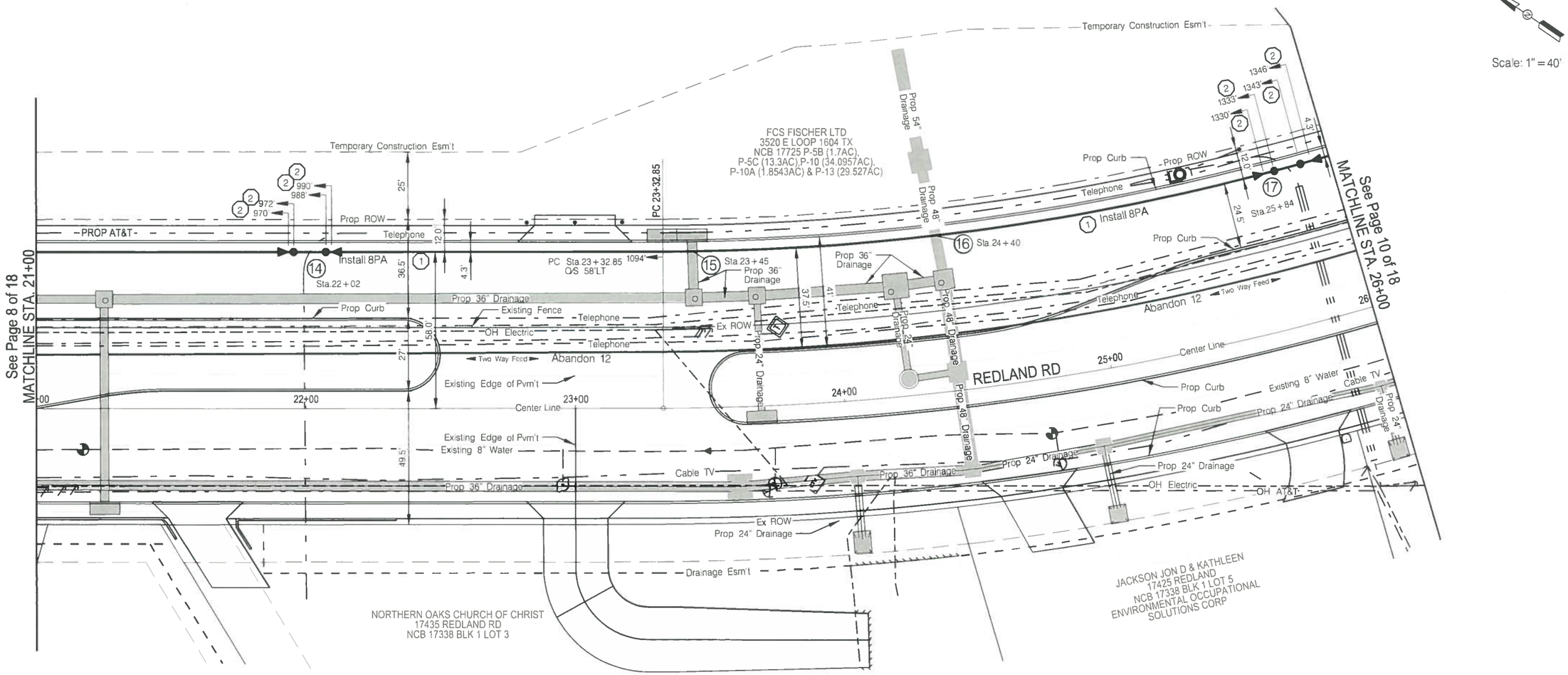
Contract Exhibit GAS-6

Scale: 1" = 40'



Material Summary Table - Page 9 of 18					
Item	Material Description	Manufacturer	Dsgn Qty	Asblt Qty	Stock #/PR #
1	Pipe, Plastic, 8", SDR 11, Stick		400'		1032780
2	Elbow, PE, 45 Deg, 8", Butt Fuse		8		1032904

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Map Quadrant: 176 – 642
X=2147932 Y=13764258

Project No.: G-0272

Job Title: REDLAND RD & JONES MALTSBERGER

CPS ENERGY
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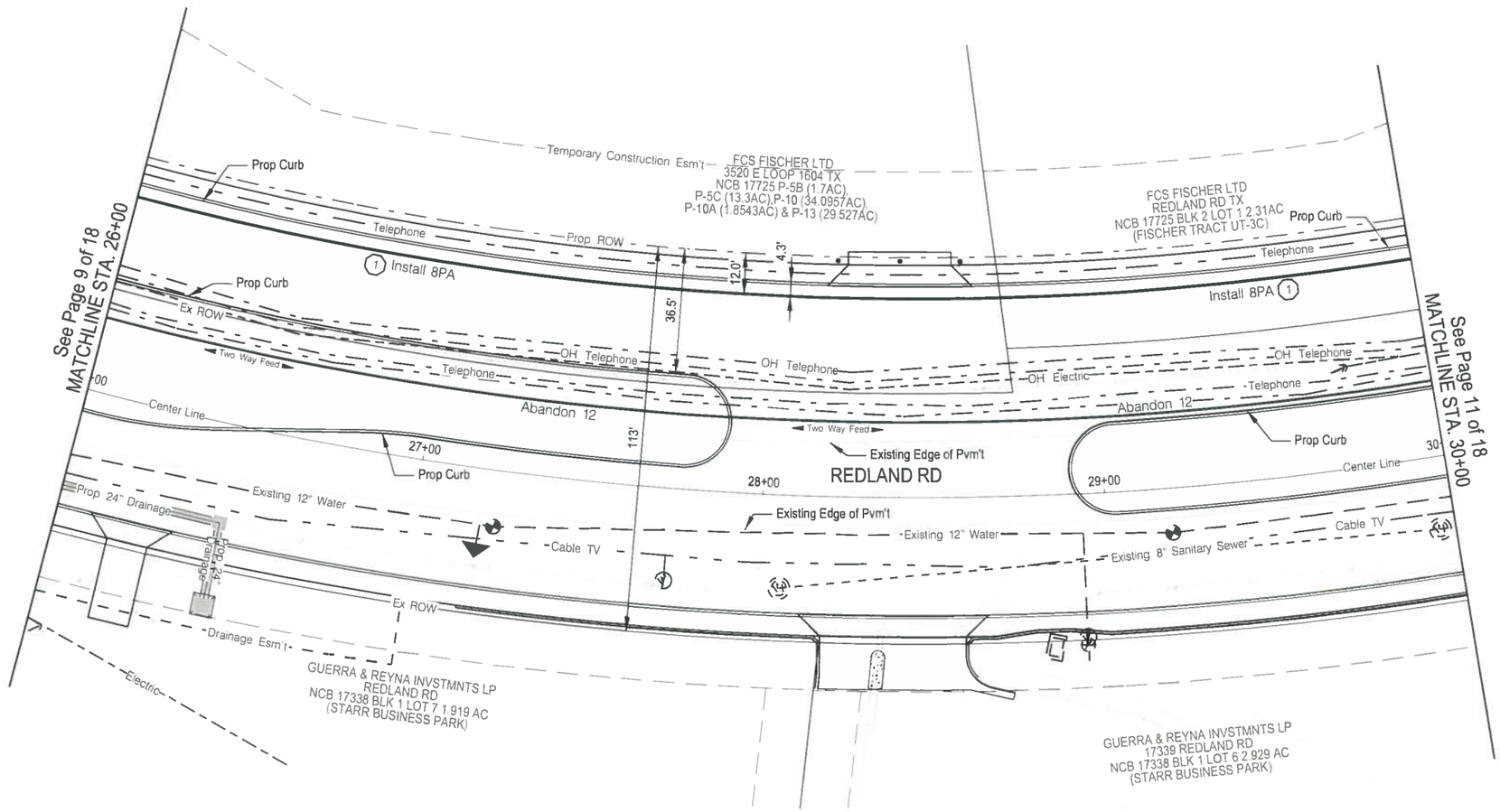
Contract Exhibit GAS–6



Material Summary Table - Page 10 of 18					
Item	Material Description	Manufacturer	Dsgn Qty	Asblt Qty	Stock #/PR #
1	Pipe, Plastic, 8", SDR 11, Stick		400'		1032780

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Map Quadrant: 176 – 642
X=2147932 Y=13764258

Project No.: G-0272

Job Title: REDLAND RD & JONES MALTSBERGER

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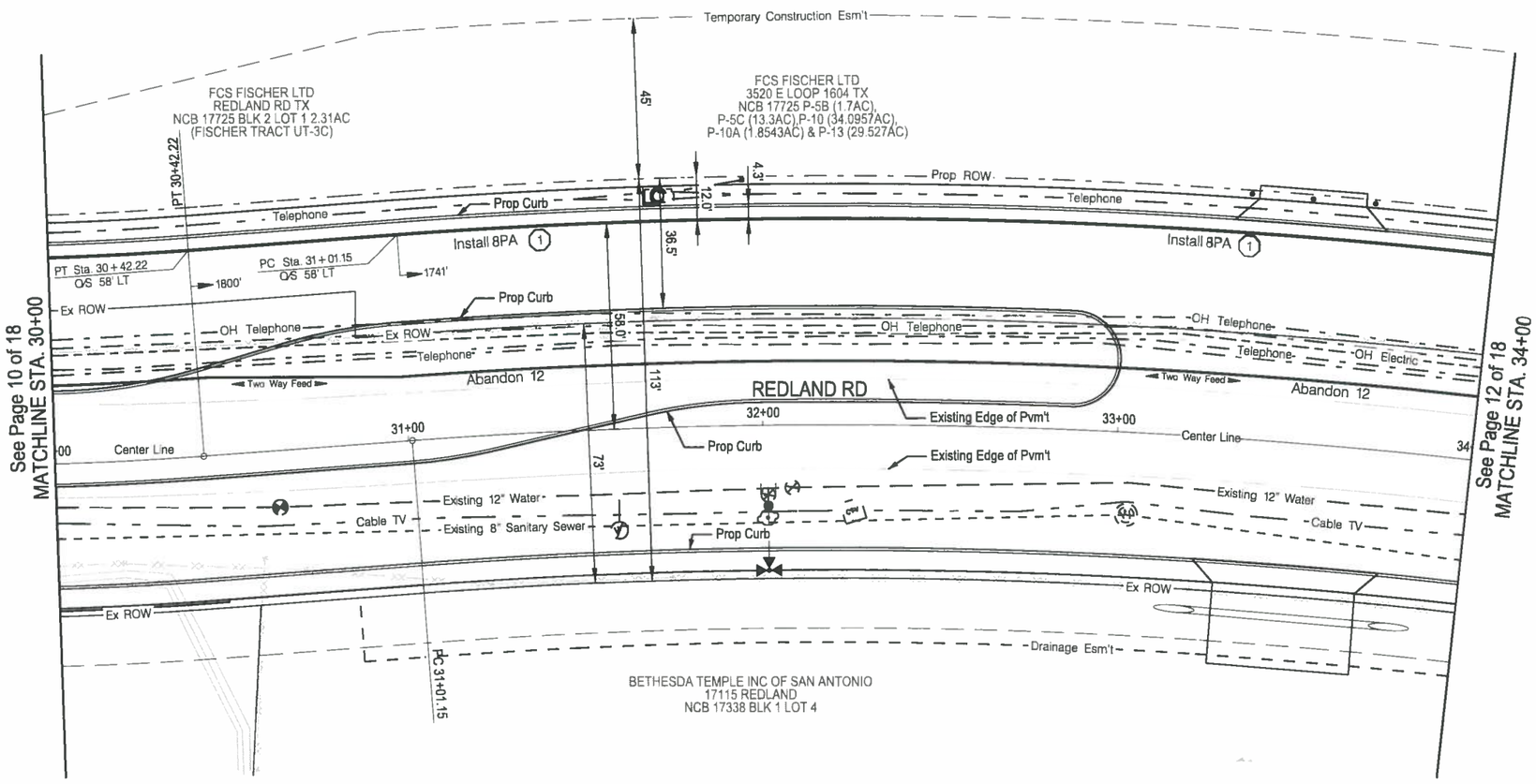

Scale: 1" = 40'

Material Summary Table - Page 11 of 18					
Item	Material Description	Manufacturer	Dsgn Qty	Asblt Qty	Stock #/PR #
1	Pipe, Plastic, 8", SDR 11, Stick		400'		1032780

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Map Quadrant: 176 – 642
X=2147932 Y=13764258
Project No.: G-0272
Job Title: REDLAND RD & JONES MALTSBERGER
CPS ENERGY
P.O. BOX 1771
SAN ANTONIO, TX 78296
Job No.: 1881223
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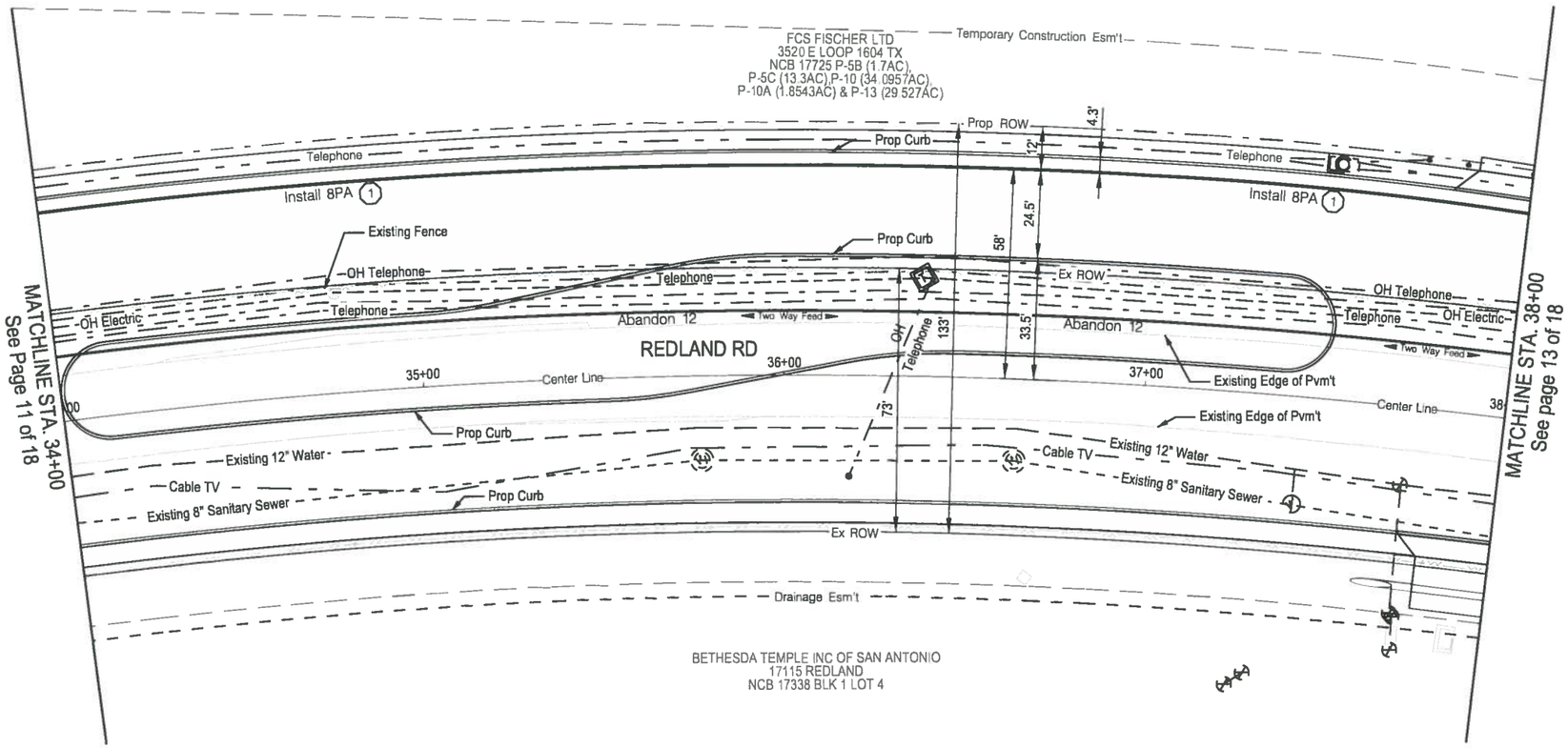
Contract Exhibit GAS–6

Scale: 1" = 40'



Material Summary Table - Page 12 of 18					
Item	Material Description	Manufacturer	Dsgn Qty	Asblt Qty	Stock #/PR #
1	Pipe, Plastic, 8", SDR 11, Stick		400'		1032780

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Approved By: Date Approved: 11/19/15
Designed By: John T. Mooneyham, P.E. (CEC)
Map Quadrant: 176 – 642
X=2147932 Y=13764258
Project No.: G–0272
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CPS ENERGY
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Page 12 of 18

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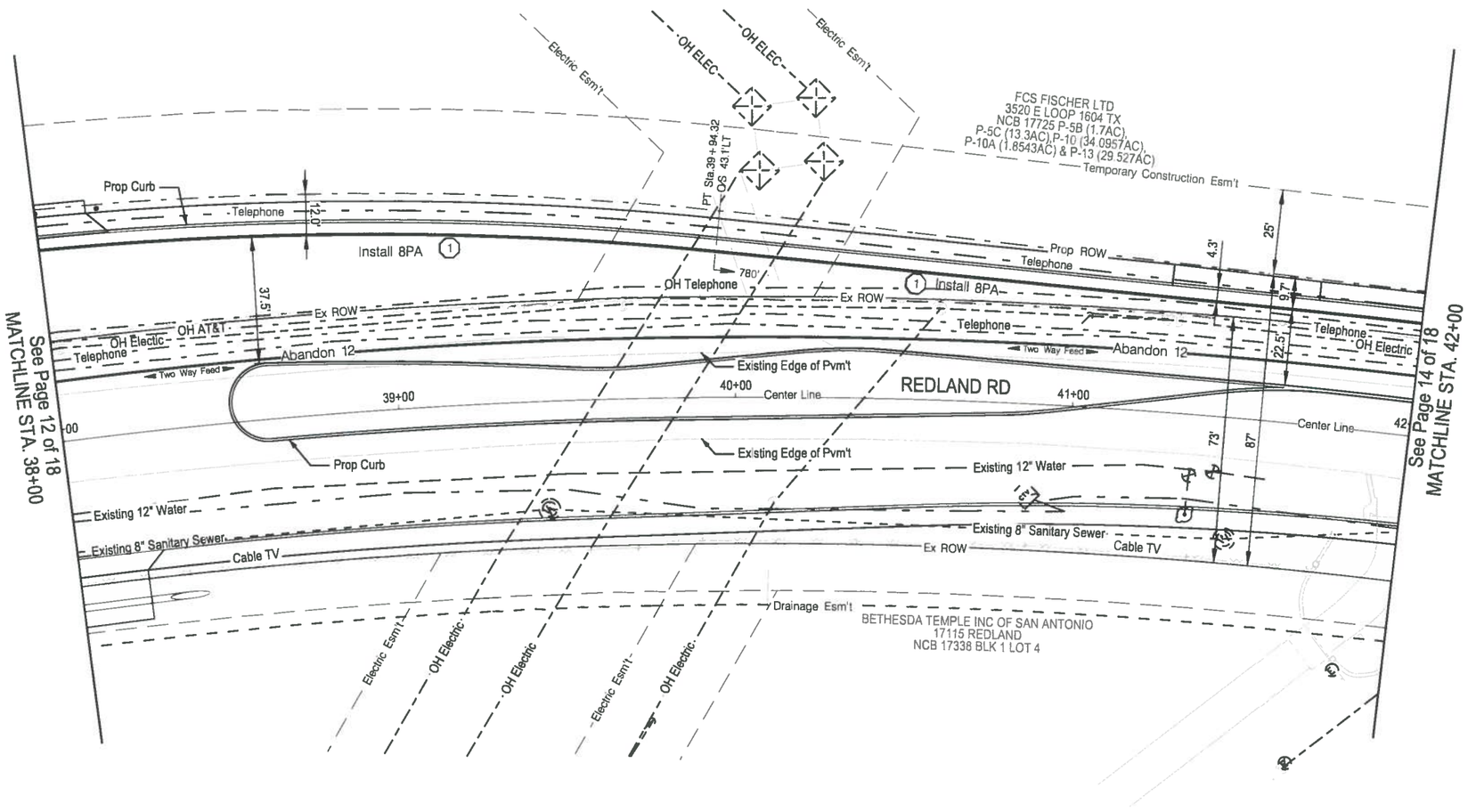
Contract Exhibit GAS-6



Material Summary Table - Page 13 of 18					
Item	Material Description	Manufacturer	Dsgn Qty	Asblt Qty	Stock #/PR #
1	Pipe, Plastic, 8", SDR 11, Stick		400'		1032780

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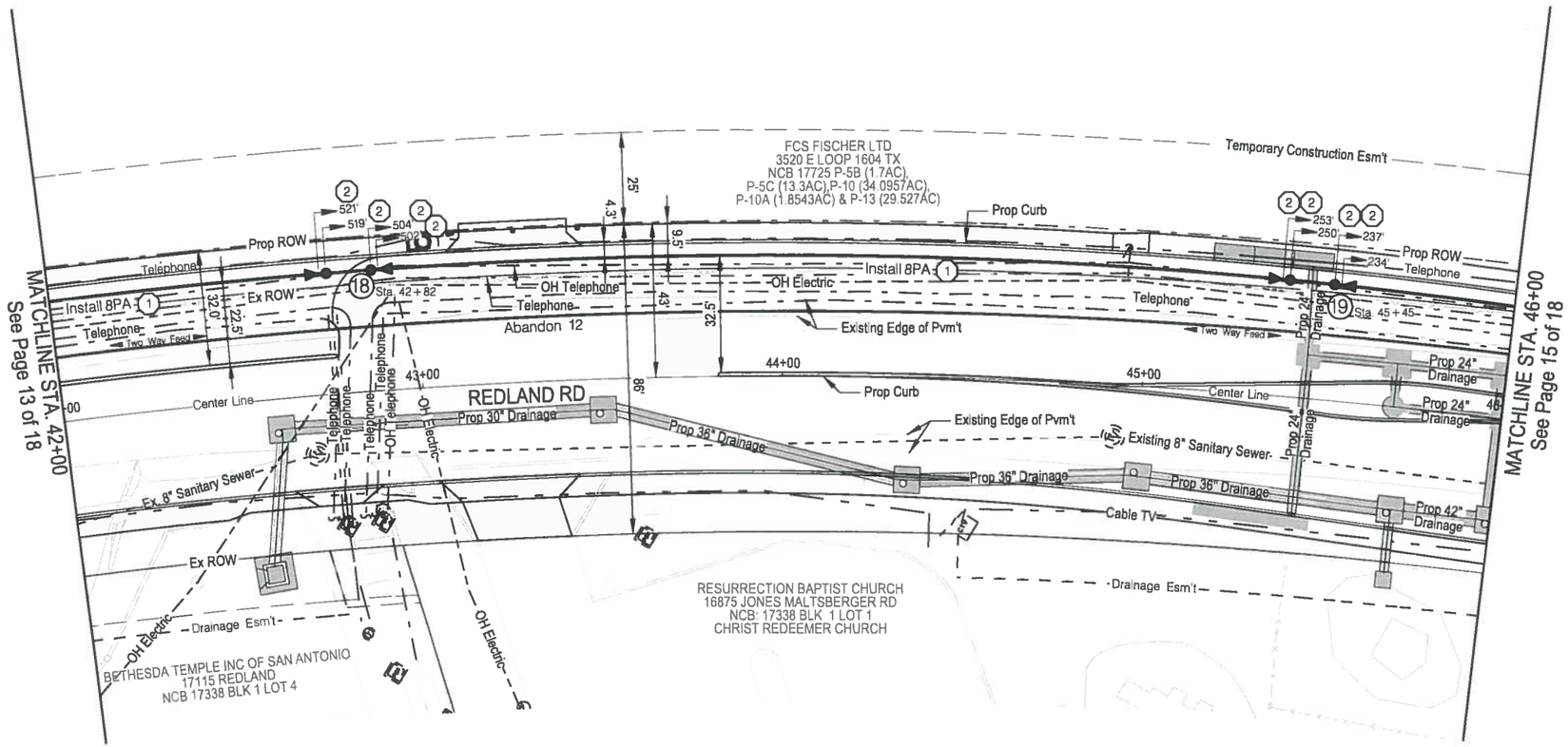
Designed By: John T. Mooneyham, P.E. (CEC)
Map Quadrant: 176 – 642
X=2147932 Y=13764258
Project No: G-0272
Job Title: REDLAND RD & JONES MALTSBERGER
CPS ENERGY
P.O. BOX 1771
SAN ANTONIO, TX 78296
Job No: 1881223

All proposed gas mains and services are to be installed at the planned Gas Top of Pipe Elevation indicated on the Location Data Table.

Contract Exhibit GAS–6

Scale: 1" = 40'



Material Summary Table - Page 14 of 18					
Item	Material Description	Manufacturer	Dsgn Qty	Asblt Qty	Stock #/PR #
1	Pipe, Plastic, 8", SDR 11, Stick		400'		1032780
2	Elbow, PE, 45 Deg, 8", Butt Fuse		8		1032904

STATE OF TEXAS
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Map Quadrant: 176 – 642
X=2147932 Y=13764258
Project No.: G–0272
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CPS ENERGY
P.O. BOX 1771
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Job No.: 1881223
Page 14 of 18

DON DURDEN, INC.
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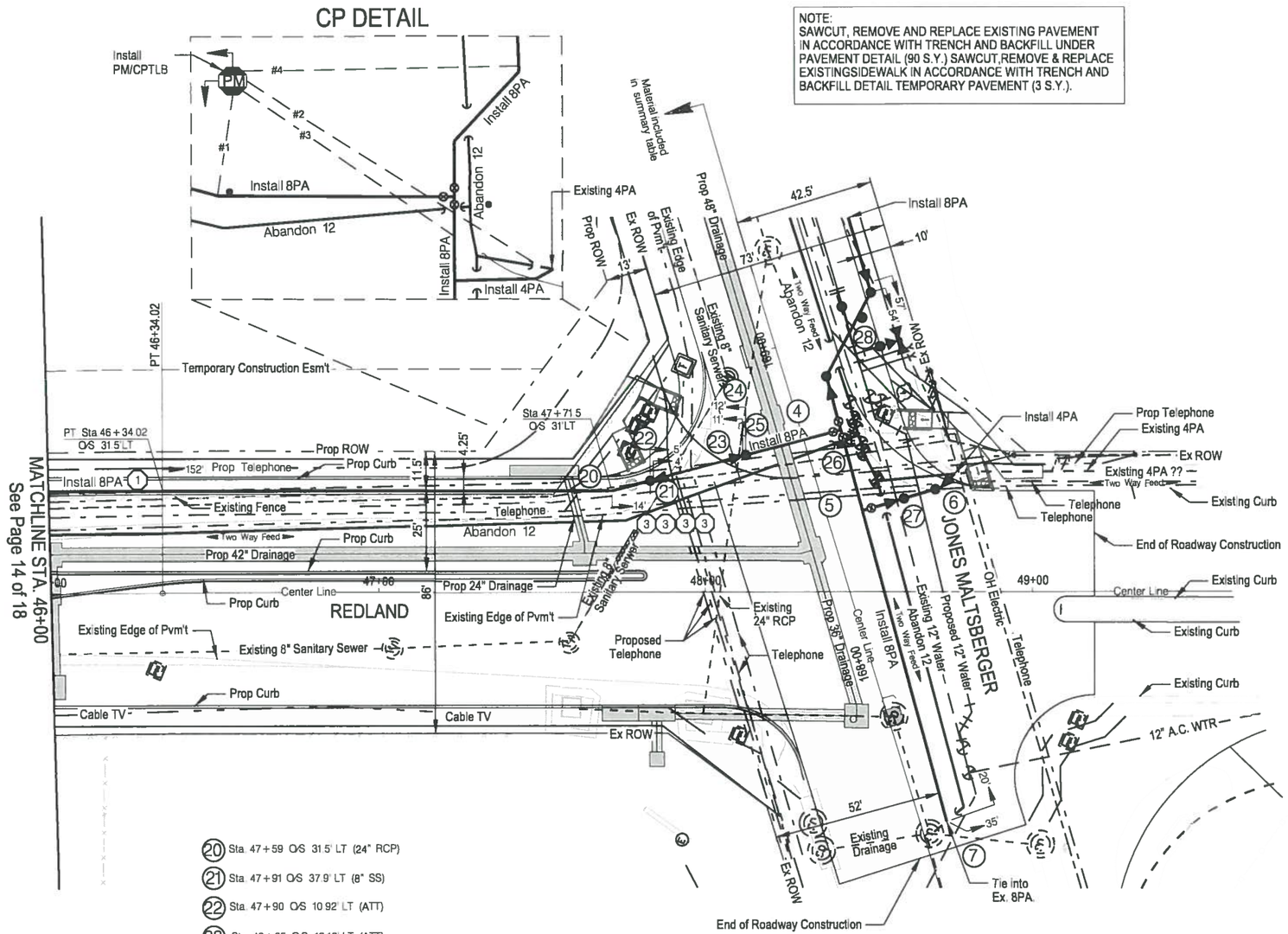
Contract Exhibit GAS-6

Scale: 1" = 40'



20 Sta. 47+59 O/S 31.5' LT (24" RCP)
21 Sta. 47+91 O/S 37.9' LT (8" SS)
22 Sta. 47+90 O/S 10.92' LT (ATT)
23 Sta. 48+05 O/S 12.16' LT (ATT)
24 Sta. 48+11 O/S 69' LT (24" RCP)
25 Sta. 48+23 O/S 45' LT (48" RCP)
26 Sta. 48+45 O/S 11' LT (ATT)
27 Sta. 48+59 O/S 8' LT (PROP WATER)
28 Sta. 48+44 O/S 24' LT (PROP WATER)

Material Summary Table - Page 15 of 18

Item	Material Description	Manufacturer	Dsgn Qty	Asblt Qty	Stock #/PR #
1	Pipe, Plastic, 8", SDR 11, Stick		243'		1032780
2	Elbow, PE, 45 Deg, 8", Butt Fuse		4		1032904

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SAN ANTONIO, TX 78296
Job No.: 1881223

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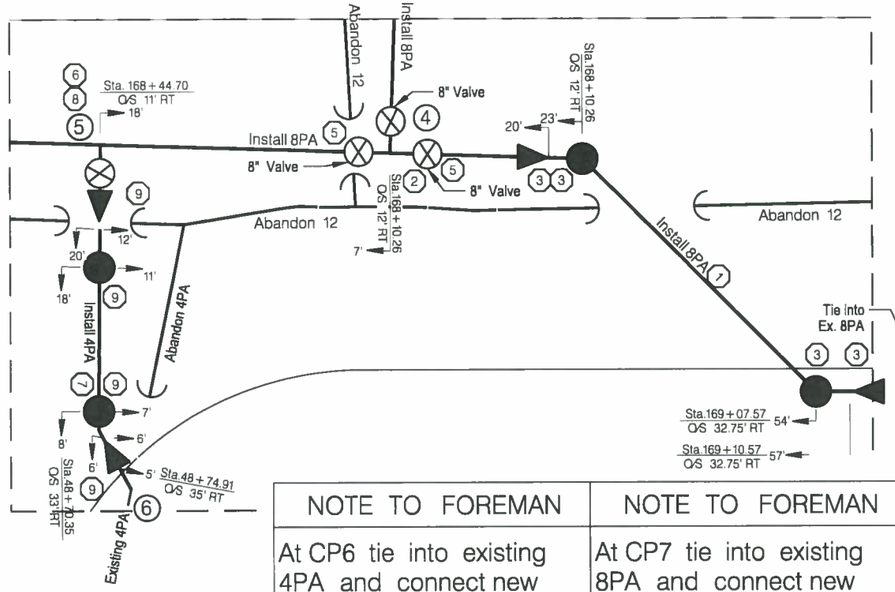
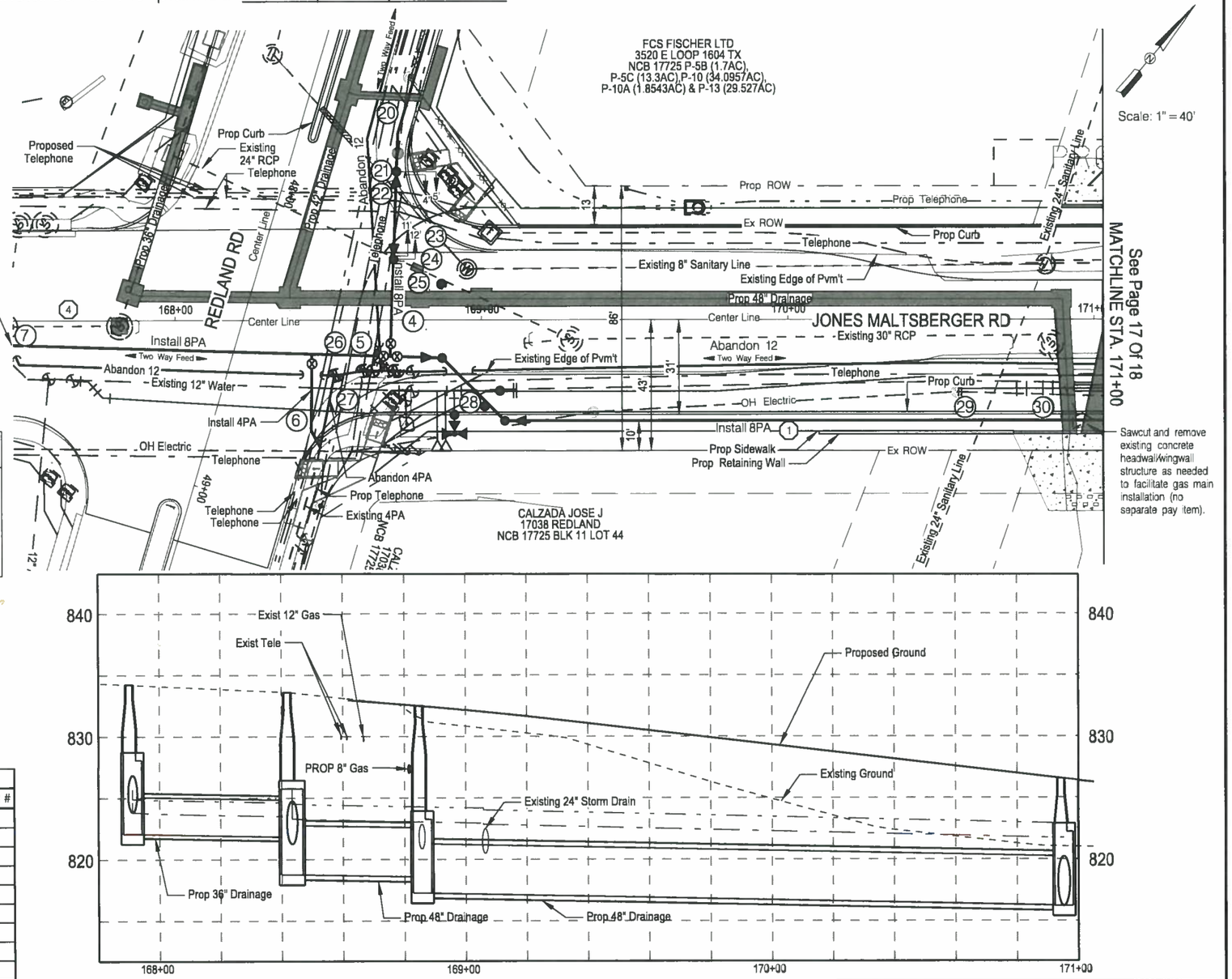
Contract Exhibit GAS-6



NOTE TO FOREMAN	NOTE TO FOREMAN
At CP6 tie into existing 4PA and connect new tracer wire to existing tracer wire.	At CP7 tie into existing 8PA and connect new tracer wire to existing tracer wire.



(20) Sta. 47+59 O/S 31.5' LT (24" RCP)
(21) Sta. 47+91 O/S 37.9' LT (8" SS)
(22) Sta. 168+72 O/S 12.7' RT (ATT)
(23) Sta. 168+71 O/S 7.8' LT (ATT)
(24) Sta. 168+71 O/S 6.2' LT (24" RCP)
(25) Sta. 170+71 O/S 2.2' RT (48" RCP)
(26) Sta. 168+56 O/S 3.5' RT (ATT)
(27) Sta. 168+44 O/S 6.7' RT (PROP WATER)
(28) Sta. 169+97 O/S 6.93' RT (PROP WATER)
(29) Sta. 170+92 O/S 32.75' RT (24" SS)
(30) Sta. 170+92 O/S 32.75' RT (48")

Material Summary Table - Page 16 of 18

Item	Material Description	Manufacturer	Dsgn Qty	Asblt Qty	Stock #/PR #
1	Pipe, Plastic, 8", SDR 11, Stick		334'		1032780
2	Tee, PE Pipe, 8", Butt Fuse		1		1032900
3	Elbow, PE, 45 Deg, 8", Butt Fuse		4		1032904
4	Elbow, PE, 90 Deg, 8", Butt Fuse		2		1032905
5	Valve, Plastic, 8", Ball/Plug, Butt Fuse		1		1033267
6	Saddle Branch, PE, 8" x 4", Butt Fuse		1		1032907
7	Pipe, Plastic, 4", SDR 11, Coil		22'		1014020
8	Valve, Plastic, 4", Ball/Plug, Butt Fuse		1		1025090
9	Elbow, PE, 45 Deg, 4", Butt Fuse		2		1015675

STATE OF TEXAS
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11/19/2015

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TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214

No.	Drawing Revision	Date
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Checked By: JC — Date Approved: 11/19/15
Approved By: — Date Approved: 11/19/15
Designed By: John T. Mooneyham, P.E. (CEC)
Map Quadrant:
Project No.: G-0272
Job Title: REDLAND RD & JONES MALTSBERGER
CPS ENERGY
P.O. BOX 1771
SAN ANTONIO, TX 78296
Job No.: 1881223

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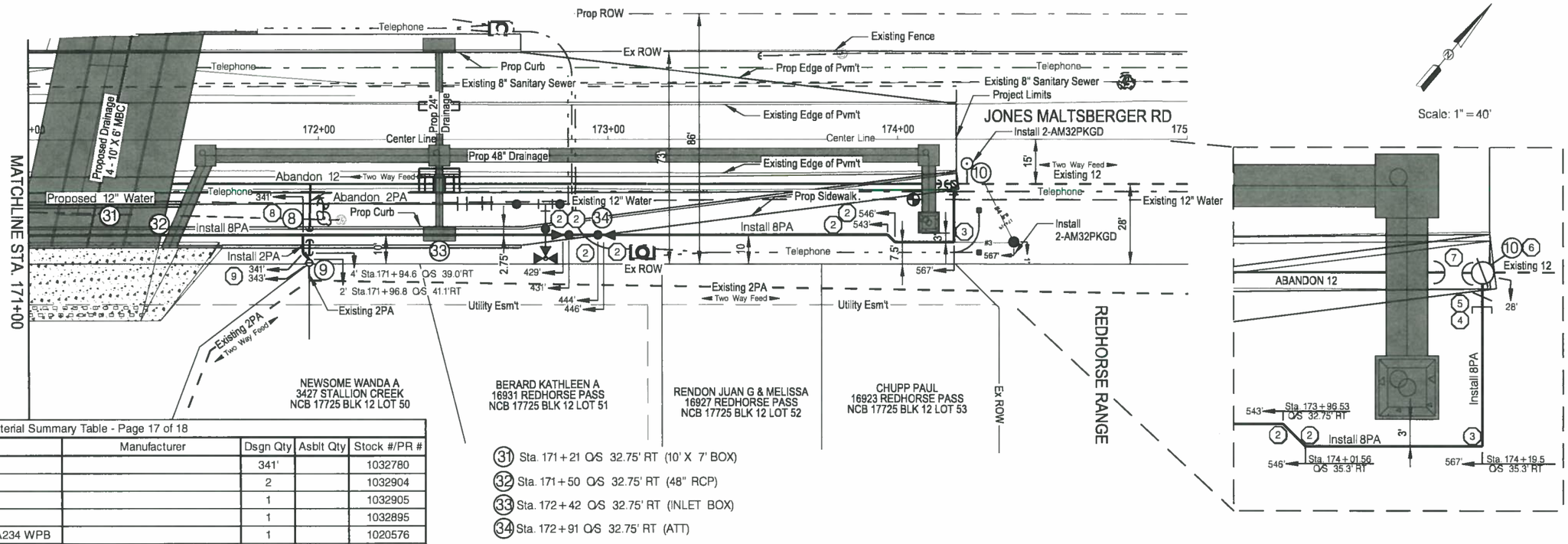
Contract Exhibit GAS–6

NOTE TO FOREMAN

At CP9 tie into existing 2PA and connect new tracer wire to existing tracer wire.



(31) Sta. 171+21 O/S 32.75' RT (10' X 7' BOX)

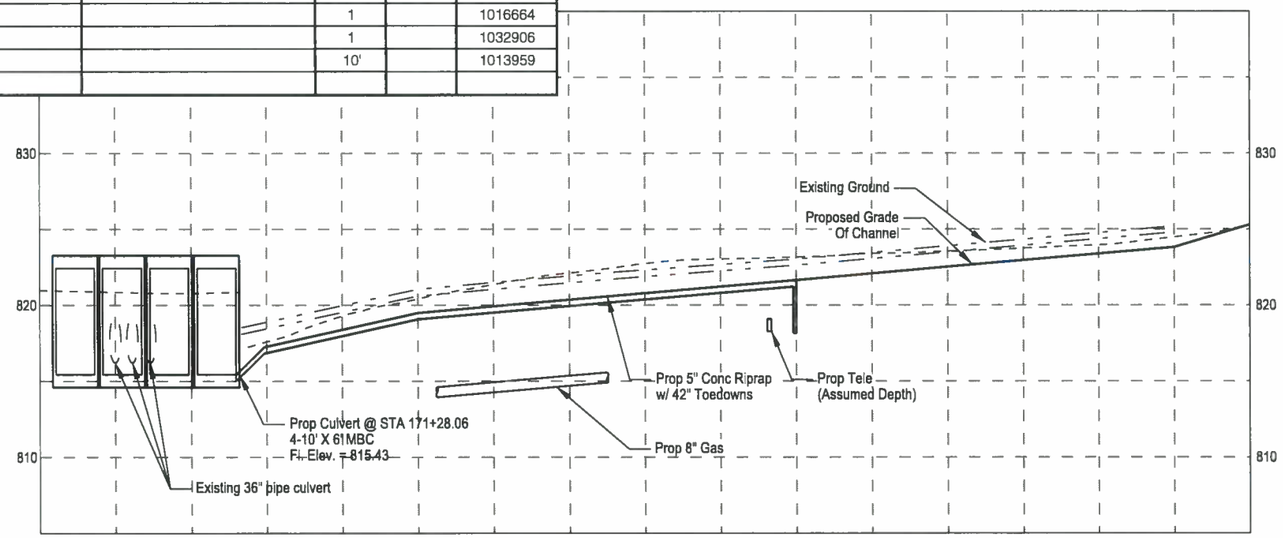
(32) Sta. 171+50 O/S 32.75' RT (48" RCP)

(33) Sta. 172+42 O/S 32.75' RT (INLET BOX)

(34) Sta. 172+91 O/S 32.75' RT (ATT)

Material Summary Table - Page 17 of 18

Item	Material Description	Manufacturer	Dsgn Qty	Asblt Qty	Stock #/PR #
1	Pipe, Plastic, 8", SDR 11, Stick		341'		1032780
2	Elbow, PE, 45 Deg, 8", Butt Fuse		2		1032904
3	Elbow, PE, 90 Deg, 8", Butt Fuse		1		1032905
4	Transition Fitting, 8", Steel to Plastic		1		1032895
5	Reducer, 12" x 8", Weld, Conc., Std W.T., A234 WPB		1		1020576
6	Fitting, Shortstop, Welding, 3-Way Tee, 12"		1		Non-Stock
7	Cap, 12" Pipe End, Weld, CS, 0.375" W.T.		1		1016664
8	Saddle Branch, PE, 8" x 2", Butt Fuse		1		1032906
9	Pipe, Plastic, 2", SDR 11, Coil		10'		1013959



NOTE TO FOREMAN:
Install Propsed 8PA Gas Main at Minimum 7ft Depth From Existing Ground Between Stations 171+50 To 174+20 Unless Otherwise Shown In Data Tables.

STATE OF TEXAS
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11/19/2015

Design Note:
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Approved By: — Date Approved: 11/19/15

Designed By: John T. Mooneyham, P.E. (CEC)

Map Quadrant:

Project No.: G–0272

Job Title: REDLAND RD & JONES MALTSBERGER

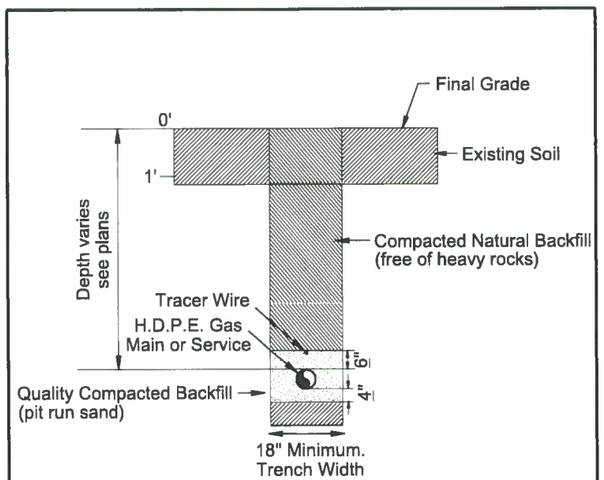
CPS ENERGY
P.O. BOX 1771
SAN ANTONIO, TX 78296

Job No.: 1881223

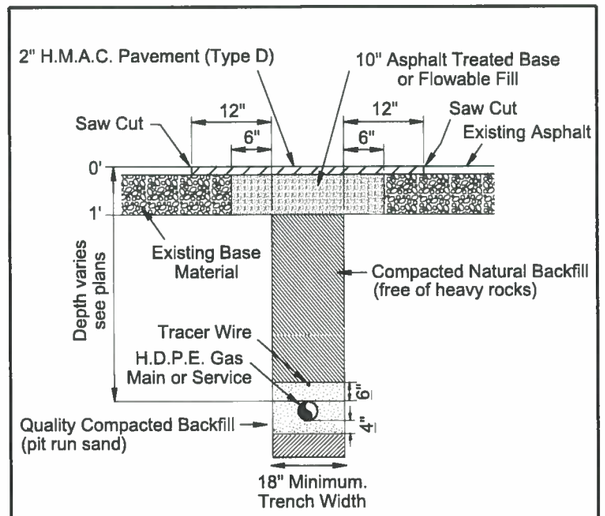
DON DURDEN, INC.
d.b.a. CIVIL ENGINEERING CONSULTANTS
11550 IH 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214

All proposed gas mains and services are to be installed at the planned Gas Top of Pipe Elevation indicated on the Location Data Table.

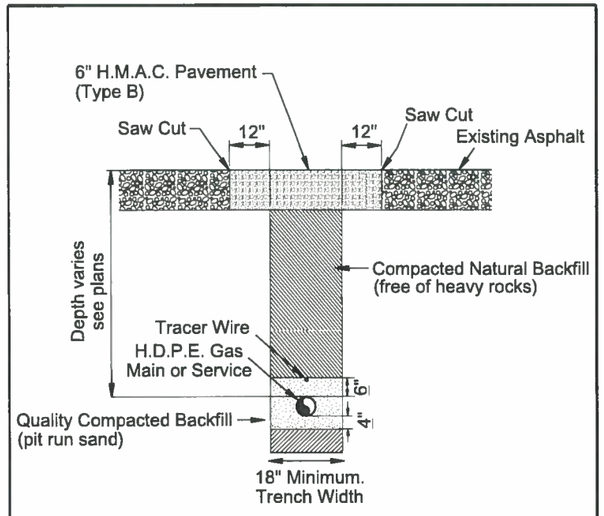
Contract Exhibit GAS-6



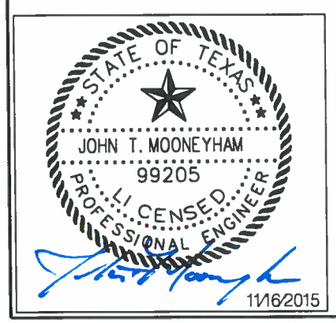
Trench For Earth Excavation Only Detail



Trench & Backfill Under Pavement Detail



Trench & Backfill Temporary Pavement Detail



Design Note:
Cathodic Protection
Design by CPS-Gas

No.	Drawing Revision	Date
0	Planning Completed	8-31-15

Checked By: DE — Date Approved: 11/19/15

Approved By: — Date Approved: 11/19/15

Designed By: John T. Mooneyham, P.E. (CEC)

Map Quadrant: 176 – 642
X=2147932 Y=13764258

Project No.: G-0272

Job Title: REDLAND RD & JONES MALTSBERGER

CPS ENERGY
P.O. BOX 1771
SAN ANTONIO, TX 78296

Job No.: 1881223

DON DURDEN, INC.
d.b.a. CIVIL ENGINEERING CONSULTANTS
11550 IH 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
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REGISTRATION #F-2214

EXHIBIT GAS-7

CPS Energy Covered Tasks Regulated by 49 CFR Part 192

Tasks Regulated By 49 CFR Part 192	CFR 192	ReQual Interval	Tasks Regulated By 49 CFR Part 192	CFR 192	ReQual Interval
Examining PE pipe for defects	192.59	3 year		192.287	3 year
Visually inspecting metallic components for defects	192.144	3 year		192.305	3 year
Welding	192.225	6 month		192.307	3 year
	192.225	--------		192.309 192.713	3 year
	192.241	3 year		192.311	3 year
	192.243	3 year	Installation of pipe in a ditch	192.319	3 year
	192.243	3 year	Inserting PE pipe into a casing	192.321	3 year
Repair or removal of weld defects	192.245 192.715	6 month	Installing customer meters and regulators	192.357	3 year
Making welded joints	192.273	6 month	Installation of service lines	192.361	3 year
Inspecting welded joints	192.273	3 year	Installation and maintenance of cathodic protection systems	192.453	3 year
Joining PE pipe by heat fusion or mechanical joint	192.281	1 year [1]		192.457	--------
Qualifying PE pipe joining procedures	192.283	1 time		192.457	3 year
	192.285	--------	Inspecting pipe coating	192.459 192.461	3 year
	192.285	--------		192.465	3 year
Testing cathodic protection system with pipe-to-soil reads	192.465	3 year	Line locating and marking pipelines	192.614	3 year
Inspect interference bonds, diodes & reverse current switches	192.465	3 year		192.615	--------
Remedial actions to correct cathodic protection deficiencies	192.465	3 year		192.615	3 year
Connecting test lead wires to the pipeline [1,2]	192.471	--------	Making safe a pipeline emergency	192.615	3 year
Taking action to minimize the effect of stray currents	192.473	3 year		192.615	--------
	192.475	3 year		192.619 192.621	3 year
Cleaning and coating pipe for control of atmospheric corrosion	192.479	3 year		192.625	3 year
	192.479	3 year		192.625	3 year
	192.479 192.483	3 year	Tapping pipelines under pressure	192.627	3 year

Covered Tasks (cont)

Pipeline pressure testing	192.503	3 year	Purging of pipelines	192.629	3 year
	192.605	3 year			
	192.605	--------			
[2]	192.605	--------	Abandoning or deactivating pipeline facilities	192.727	3 year
Starting up and shutting down any part of a pipeline	192.605	3 year			3 year
Taking precautions against hazardous atmospheres in trenches [2,3]	192.605	--------			3 year
Recognizing safety-related conditions that require reporting	192.605	3 year			3 year
	192.605	3 year			3 year
	192.605	3 year	Prevention of accidental ignition	192.751	3 year
	192.613	3 year			

[1] Not an operations or maintenance task

[2] Does not affect the operation or integrity of the pipeline

[3] Not an activity performed on the pipeline

[4] Not required by CFR Part 192

Any Contractor employed by CPS Energy to perform a covered task will have their employees qualified by an approved consortium or training provider. CPS Energy will require Contractor to supply a list of all qualified personnel and may require the Contractor to supply the qualified employee with a qualification card stating tasks that employee is qualified for, the qualification date, qualification method and the name of the qualifier.

CPS Energy will accept qualification of Contractor employees by any approved combination of the following methods:

(a) approved qualification and training program (i.e. TEEX/TGA)

(b) approved certifications (i.e. AWS Certified Welding Inspector, ASNT)

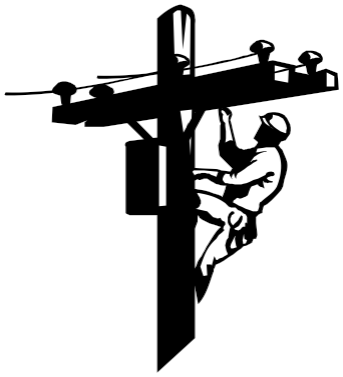
(c) field evaluation

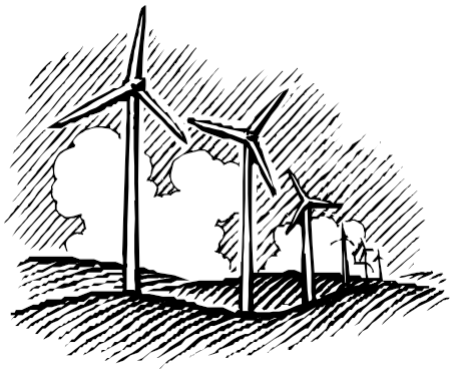
(d) work performance history (See Note); and

(e) other forms of assessment approved by CPS Energy

Contractor employee will be subject, at a minimum, to the same requalification intervals as CPS Energy employees. CPS Energy shall have the right to require removal of any employee of Contractor, or of Subcontractors, who in the CPS Energy representative's opinion, may be incompetent or unqualified to perform work.

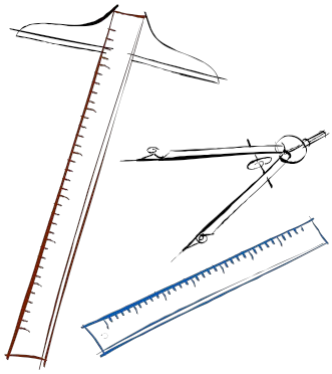
Note: Work performance history cannot be the sole method for qualifying an employee after October 28, 2002.





Large Commercial Services & Developments

Electric and Gas Service Package



Contents:

The 15-Week Large Commercial Electric Service Process

(For All Pad-Mounted Transformer Services)

Customer's Steps To get your service in the minimum time, please keep these steps on schedule.	Step	Typical Elapsed Time [c]	CPS Energy (CPSE) Steps
Deliver essential documents to CPS Energy[b] • Application • Sealed site plan drawings, sealed loads, and sealed one line	**A**	Clock is not started	• Collect information from customer.
Attend a pre-design meeting[b]	**B**	Clock is not started	• Engineer discusses needs with customer and review drawings.
For new construction, please view the CPSE Web Portal to monitor the project schedule and the transactions between CPSE and you. (The Portal is not available for remodeling jobs.)	**0**	Clock Starts	• Pre-design meeting has been completed. • A complete customer package has been received: Application, sealed site drawings, sealed electric loads, sealed one-line.
Host a site visit[b]	**1**	Week #1	• Evaluate site layout, utility coordination, customer construction coordination, construction access.
Receive and comply with CPSE construction drawings[b]	**2**	Week #2-5	• Design electric service; coordinate with the electric system (circuit capacity, fuses). • Create a cost estimate and bill the customer.
Expedite payment to CPSE [a][b] **Provide third party easements [b][d]**	**3**	Week #6-7	• Receive customer payment.
Form up ductbanks and pads and schedule CPSE inspection. • Call 353-3373. A 24-hr notice is required **Pour concrete and schedule CPSE inspection.** • This might be delayed until early in the next step to coordinate with CPSE construction • A 3-day cure is required to set pad mounted transformers on slabs	**4**	Week #8	• Prep for CPSE construction • Check materials. • Receive dig permits. • Schedule crews. • Inspect the forms for slabs and ductbank. • Inspect concrete.
CPSE crews will leave the site if the following conditions are not satisfactory. • Maintain stakes and visible street address. • Remove debris and maintain construction access to site for CPSE crews. **Notify CPSE[b] that site is ready to install meter** • "Site ready" includes completed installation of meter loop, transformers, conduits, and power cables on the CPSE side of the meter.	**5**	Week #9-13	• Construct CPSE facilities. • Install transformer.
	6	Week #14-15	• Set meter, initiate electric service.

a. If a Customer Step is late, the Clock stops. Please stay on top of payments and meter loop completion.

b. Please view the web portal to determine your CPS Energy representative. You may also call Commercial Services with your **Work Request #** to identify your CPS Energy representative. (210.353.4639 Option 2)

c. Elapsed times are not a guarantee. More than fifteen weeks will probably be needed for long ductbanks or upgrades to CPS Energy's infrastructure.

d. Customer is required to provide CPS Energy with the required easements prior to being energized.

.

Documents Required for CPS Energy Pad-Mounted Transformer Service

Documents must be SEALED ENGINEERED DRAWINGS

Utility Site Plan – Hard Copy/PDF and in AutoCAD 2000 format

- Desired Route of Overhead Primary
- Riser Pole Location (inline risers typically not allowed)
- Desired Route of Underground Primary ductbank & manholes
- Detailed transformer location
  - Show Perimeter Clearance
  - Dimension from building/structures
  - Show side the transformer doors will open
- Meter Location (dimension if other than side of transformer)
- Location of main distribution switch and/or tap-box and secondary routes from transformer

Electrical One-line Diagram – Hard Copy/PDF and in AutoCAD 2000 format

- Secondary Cable
  - Size, Number per phase, Total Number of Secondary Cables, Type (Cu or Al), Neutral Size

Secondary exiting transformer by:

  - Conduit (number & size), number of spares
  - Wireway Size
- Cable Tap-Box (Customer to provide cut sheet)
- Auto Throwover Switch for Generator Installation (Customer to provide cut sheet)
- Meter Location (If meter modules are used customer to provide cut sheet and voltage drop calculations from transformer to meter modules)

Electrical Load Summary – Hard Copy/PDF and in AutoCAD 2000 format

- Building Square Footage
- Hours and days of operation
- Customer's Service Voltage
- Connected Load in kVA (Reference Load Information Sheet for Break Down)
  - Existing Load if applicable, A/C & Heat, Lighting, Motor Load, Receptacles, Other, Total
  - Unusual loads require discussion

Electrical Load Panels – Hard Copy/PDF and in AutoCAD 2000 format

Documents must be SEALED ENGINEERED DRAWINGS

Please submit to:
Commercial Services
P.O. Box 1771
Mail Drop # 410101
San Antonio, TX 78296
210-353-4639 Option 2

Commercial Electric/Gas Service Application

Application must be completed and accompanied by the following:
Site Plan, Electric and Gas Load Information, Building Square Footage, Service Voltage, Meter Loop Diagram, Gas Pressure
(Please print or type)

* REQUIRED TO INITIATE WORK REQUEST

* **Date** ____ * **Project Name:** ____

* **Project Address:** ____

* **Electrical Contractor** ____ * **Phone #** ____

* **Email** ____

* **Developer Contact** ____ * **Phone #** ____

* **Email** ____

* **General Contractor Contact** ____ * **Phone #** ____

* **Email** ____

* **Engineer Contact** ____ * **Phone #** ____

* **E-mail** ____

Business Type

Bank	☐	Hospital	☐	Retail Center	☐
Church	☐	Hotel ☐ # of rooms	____	Retirement Center	☐
Comml Office	☐	Industrial/Manufacturing	☐	School	☐
Department Store	☐	*(Specify Type)*	____	Warehouse	☐
Grocery Store	☐	Restaurant	☐	Other ☐ *(Specify Type)*	____

Service Type

Overhead Service	☐	Gas	☐	* **Service Required Date**	____
Underground Service	☐	Meter Only	☐	* **Building Square Footage**	____
3ph Pad Mount Service	☐	Remodel/Upgrade	☐		

(NOTE: 300kva demand load required to qualify for 3ph padmount transformer)

***Remodel/Upgrade Meter Number** ____

* REQUIRED TO INITIATE WORK REQUEST

Customer Information

* Customer of Record ____ Open Charge Yes ☐ No ☐
* Billing Address ____ * Phone # ____
____ * Fax # ____
* Tax ID# ____

Associated WR #'s (CPS Energy Use Only)

Engineer	____	Phone	____		
IDS	____	Designer	____	Phone	____
UG	____	Gas	____	Other	____
OH	____			Other	____

Comments:

Developer/Representative Signature

CPS Energy Representative Signature

Print Name

LOAD INFORMATION

*****LOAD INFORMATION MUST BE SIGNED/SEALED BY A PROFESSIONAL ENGINEER*****

Project\Business: _____

Address: _____

Power Requirements:

Voltage: □ 120/240 1-Phase □ 120/208Y 3-Phase

□ 277/480Y 3-Phase □ Other: _____

ELECTRICAL EQUIPMENT

	kVA
A/C	
LIGHTING	
RECEPTACLES	
HEATING	
WATER HEATER	
COMPUTERS	
REFRIGERATION	
ELEVATORS	
MOTORS	
OTHER	
TOTAL	

GAS EQUIPMENT

Pressure Required _____	**BTU**
FURNACE	
BOILER	
COOKING	
WATER HEATER	
POOL\SPA HEATER	
GAS LIGHTING	
OTHER EQUIPMENT	
TOTAL	

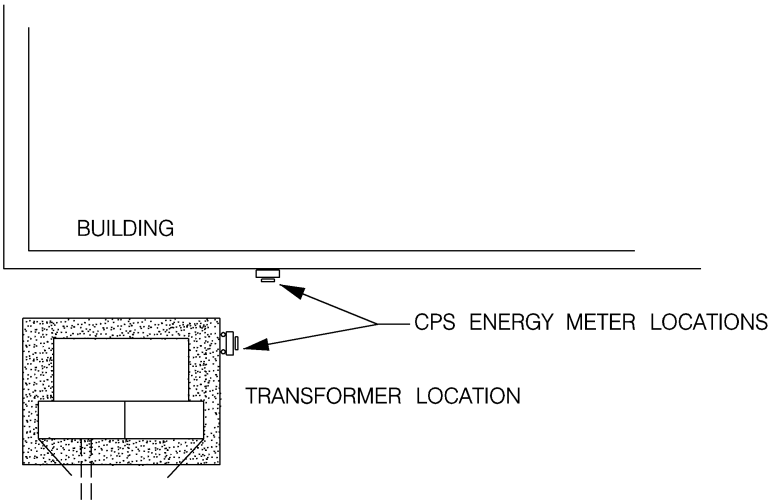
CPS ENERGY

NOTE: FOR INFORMATION ONLY NOT FOR CONSTRUCTION

PADMOUNT TRANSFORMER INSTALLATION, UNDERGROUND SERVICE

ITEMS NEEDED ON UTILITY SITE PLAN:

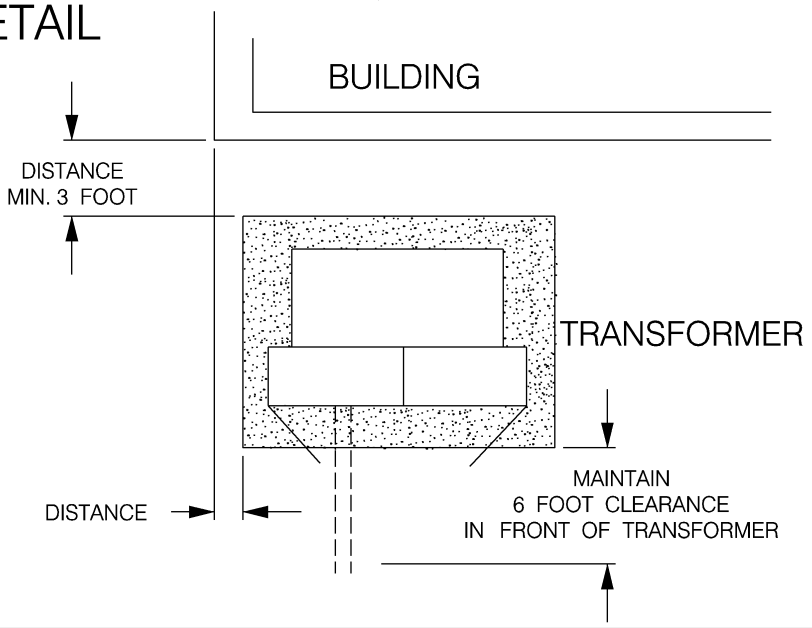
* RISER POLE LOCATION
* TRANSFORMER LOCATION
* CPS ENERGY METER LOCATION
* DUCTBANK ROUTE
* EXISTING UTILITIES



SCALE (Customer to provide documents to engineer scale)

PADMOUNT TRANSFORMER INSTALLATION, DISTANCE DETAIL

PROVIDE DISTANCE FROM FIXED STRUCTURE



NOTE:

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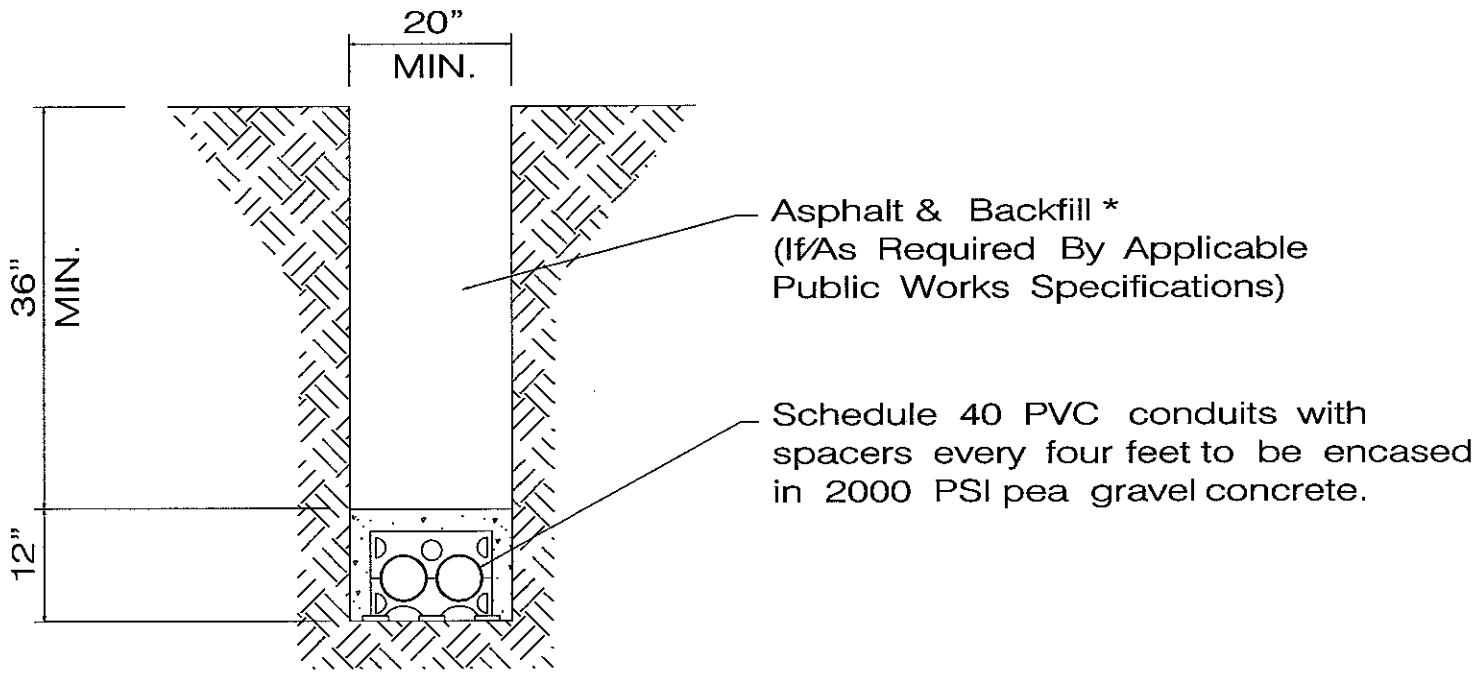


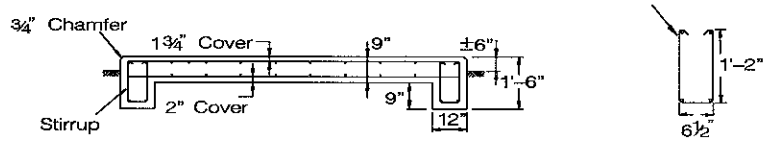
2–4" DUCTLINE DETAIL

NOTE:

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

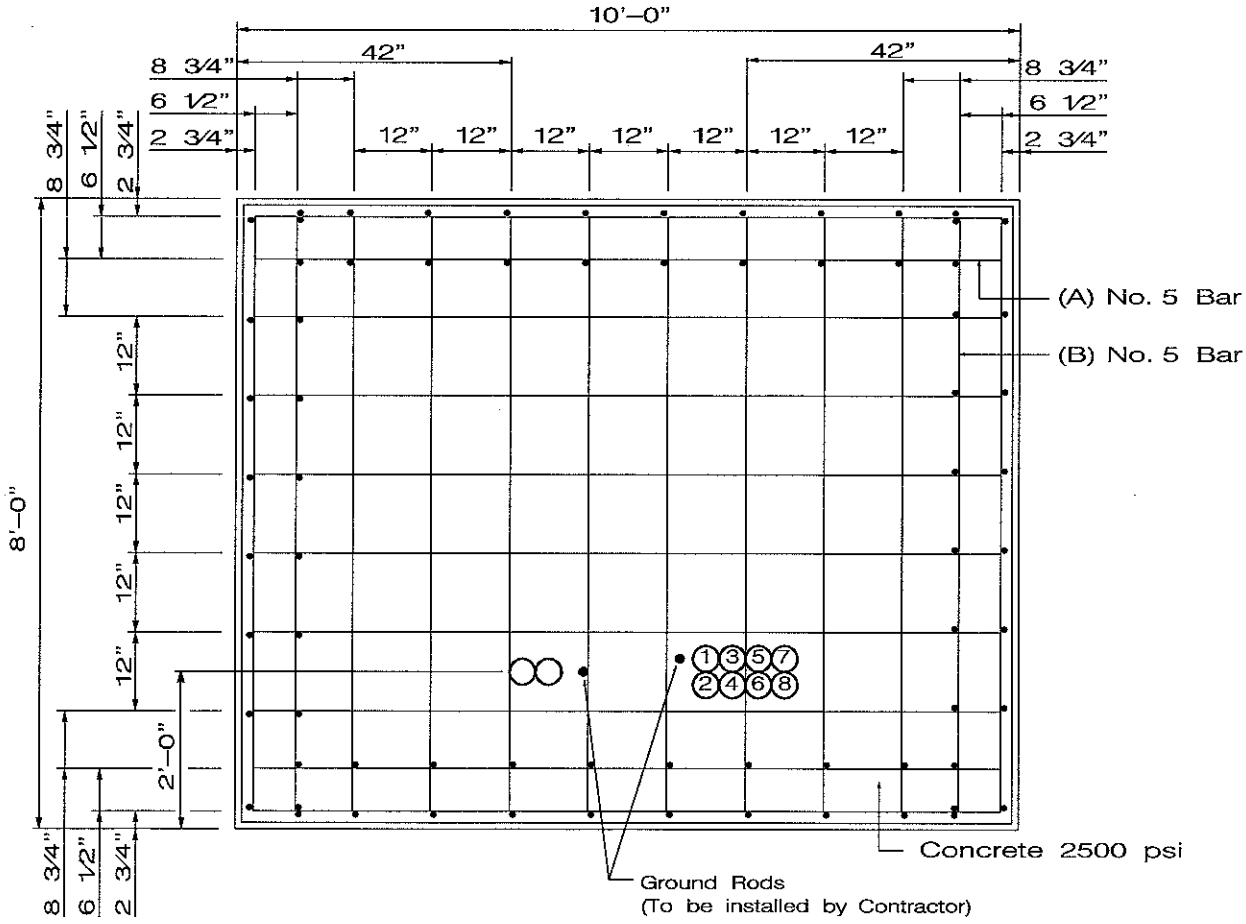
Reinforcing Steel

(A) 20 No. 5 Bars 9'– 8" Long Grade 60
(B) 24 No. 5 Bars 7'– 8" Long Grade 60
(C) 36 No. 3 Bars 3'– 4" Long Grade 60



Stirrup Detail
(C) No. 3 Bar
w /135° Hook

8' X 10' PAD–MOUNT TRANSFORMER SLAB DETAIL (SIDE VIEW) – NTS



THERE SHALL BE NO PIPES, CONDUIT, ETC. UNDER THE SLAB EXCEPT THOSE NECESSARY TO SUPPLY PRIMARY TO THE TRANSFORMER AND THOSE TO SUPPLY THE ELECTRIC LOAD

NOTE:

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

TRANSFORMER SLAB REQUIREMENTS FOR WIREWAY APPLICATIONS:

CUSTOMER'S EQUIPMENT SLAB SHALL INTERFACE WITH THE CPS ENERGY TRANSFORMER SLAB UTILIZING ONE OF THE FOLLOWING OPTIONS TO PREVENT DIFFERENTIAL MOVEMENT:

1. TOP AND BOTTOM SLAB REINFORCEMENT INSTALLED BY CUSTOMER MUST BE LAP SPLICED TO THE No.5 STEEL REINFORCING BARS OF THE CPS ENERGY TRANSFORMER SLAB. THE LAP SPLICES SHALL BE A MINIMUM OF 31 INCHES IN LENGTH.

OR

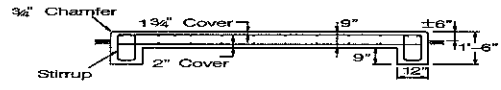
2. TOP AND BOTTOM No.5 STEEL REINFORCING BARS OF THE CPS ENERGY TRANSFORMER SLAB MAY BE INSTALLED OF SUCH LENGTH TO PROVIDE CONTINUOUS REINFORCEMENT ACROSS BOTH SLABS.

CPS ENERGY RECOMMENDS THAT THE CUSTOMER EQUIPMENT SLAB BE SUPPORTED BY A PERIMETER BEAM THAT MATCHES THE DEPTH AND WIDTH OF THE CPS ENERGY TRANSFORMER SLAB BEAM. IF PROVIDED, ALL CUSTOMER PERIMETER BEAM REINFORCING STEEL SHALL BE LAP SPLICED TO THE CPS ENERGY TRANSFORMER SLAB PERIMETER BEAM REINFORCING STEEL A MINIMUM OF 31 INCHES IN LENGTH.

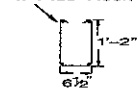
THE CPS ENERGY TRANSFORMER SLAB AND CUSTOMER EQUIPMENT SLAB SHALL BE POURED MONOLITHICALLY.

Reinforcing Steel

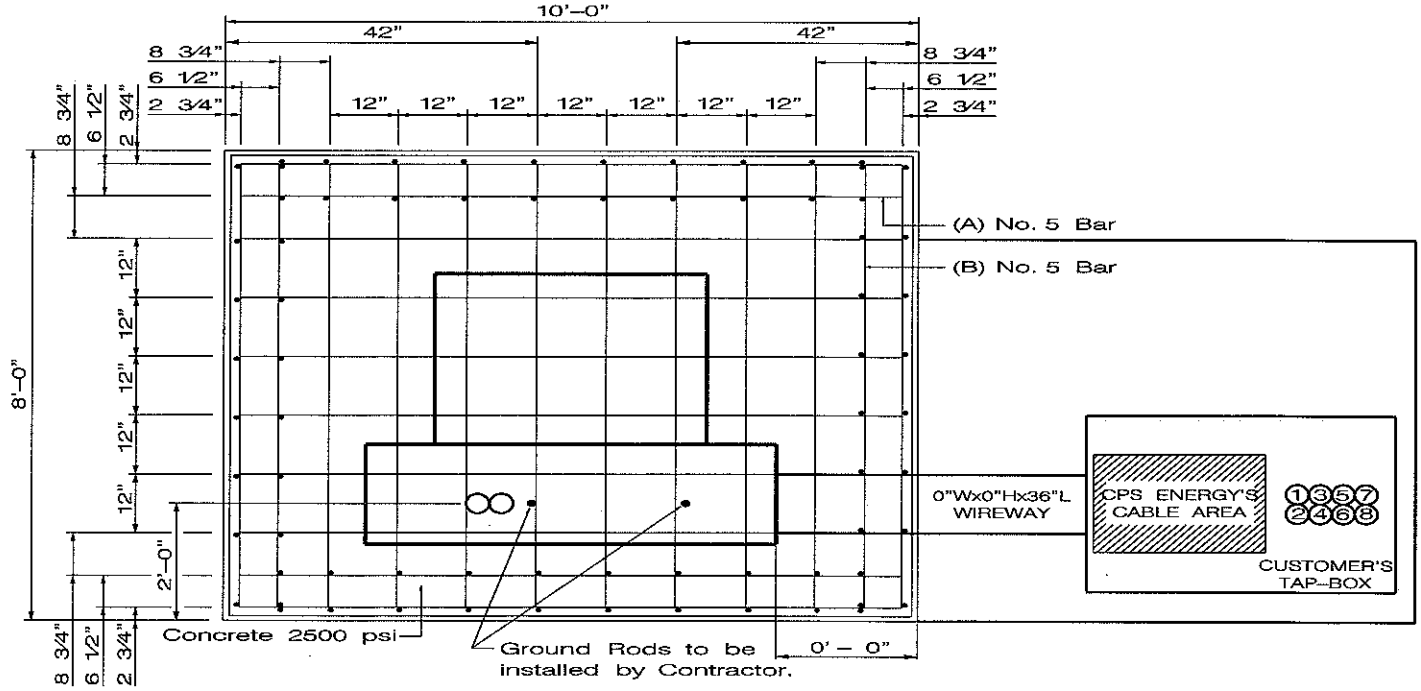
(A) 20 No. 5 Bars 9' – 8" Long Grade 60
(B) 24 No. 5 Bars 7' – 8" Long Grade 60
(C) 36 No. 3 Bars 3' – 4" Long Grade 60



Stirrup Detail
(C) No. 3 Bar w /135° Hook



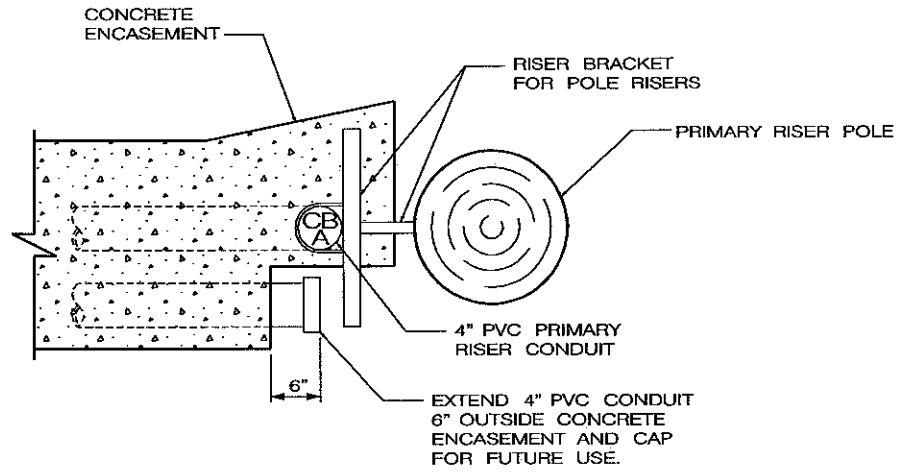
8' X 10' PAD–MOUNT TRANSFORMER SLAB DETAIL (SIDE VIEW) – NTS



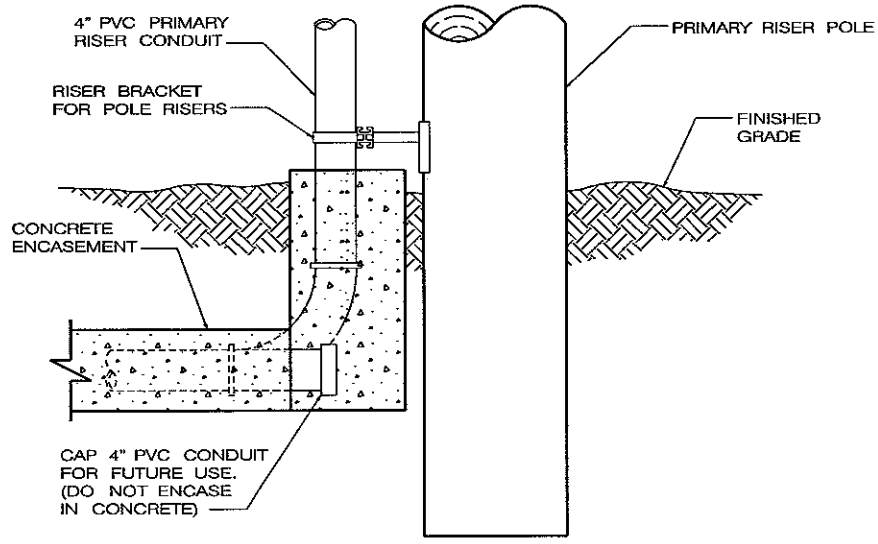
THERE SHALL BE NO PIPES, CONDUIT, ETC. UNDER THE SLAB EXCEPT THOSE NECESSARY TO SUPPLY PRIMARY TO THE TRANSFORMER AND THOSE TO SUPPLY THE ELECTRIC LOAD

NOTE:

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION



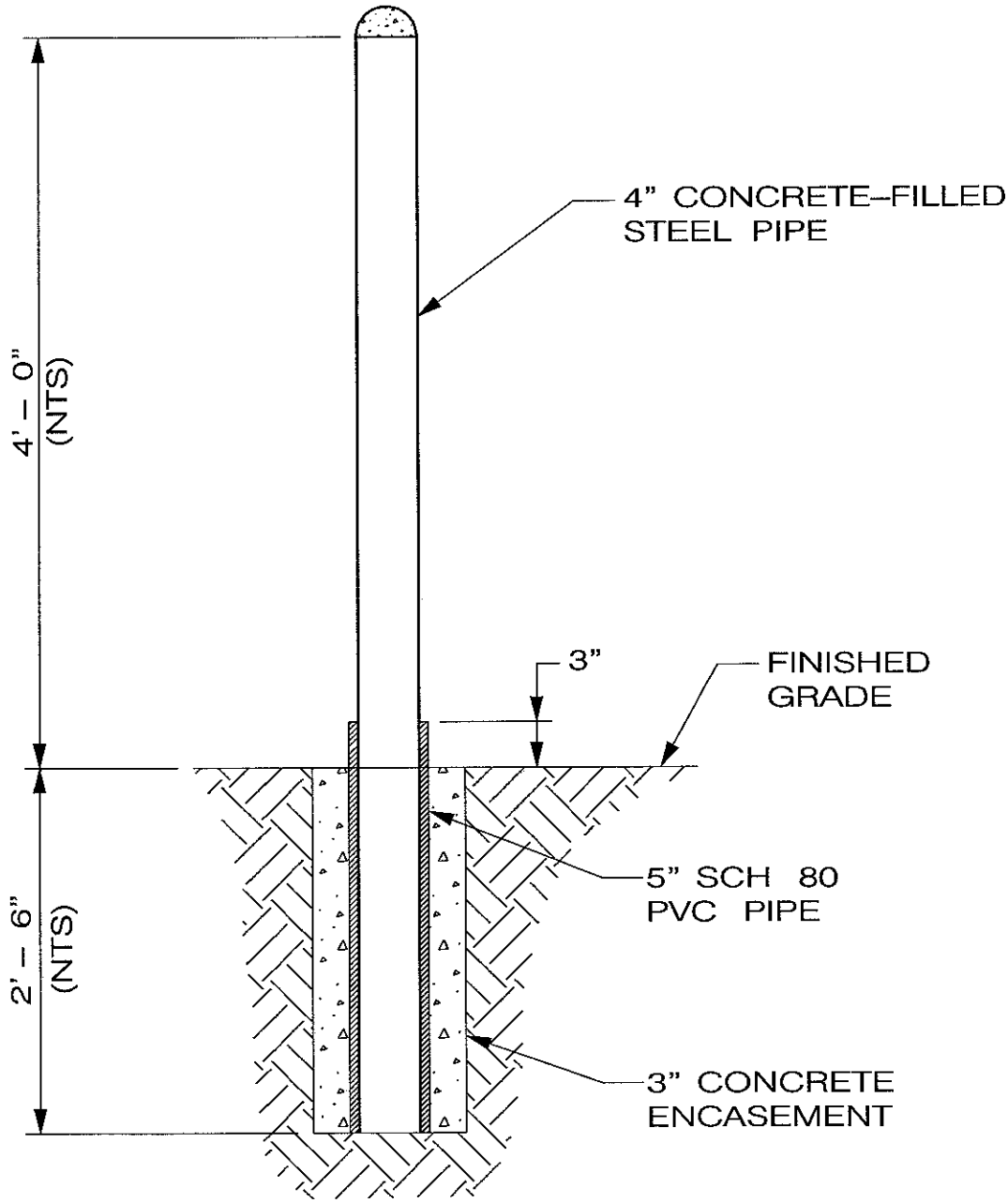
RISER POLE AND CONDUIT ENCASEMENT DETAIL – TOP VIEW
NOT TO SCALE



RISER POLE AND CONDUIT ENCASEMENT DETAIL – SIDE VIEW
NOT TO SCALE

NOTE:

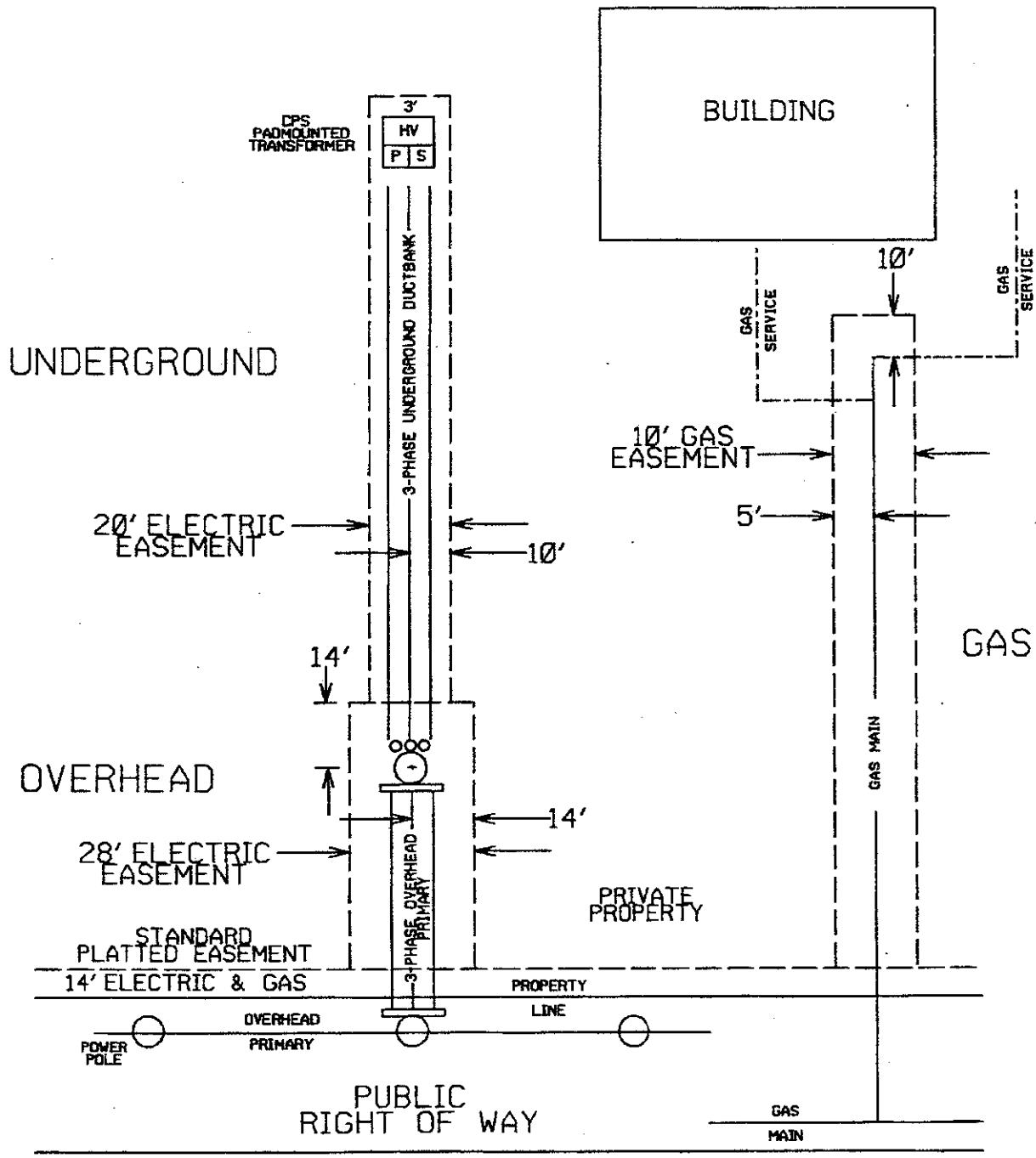
FOR INFORMATION ONLY
NOT FOR CONSTRUCTION



4" REMOVABLE BOLLARD SPECIFICATION

PROFILE VIEW – NOT TO SCALE

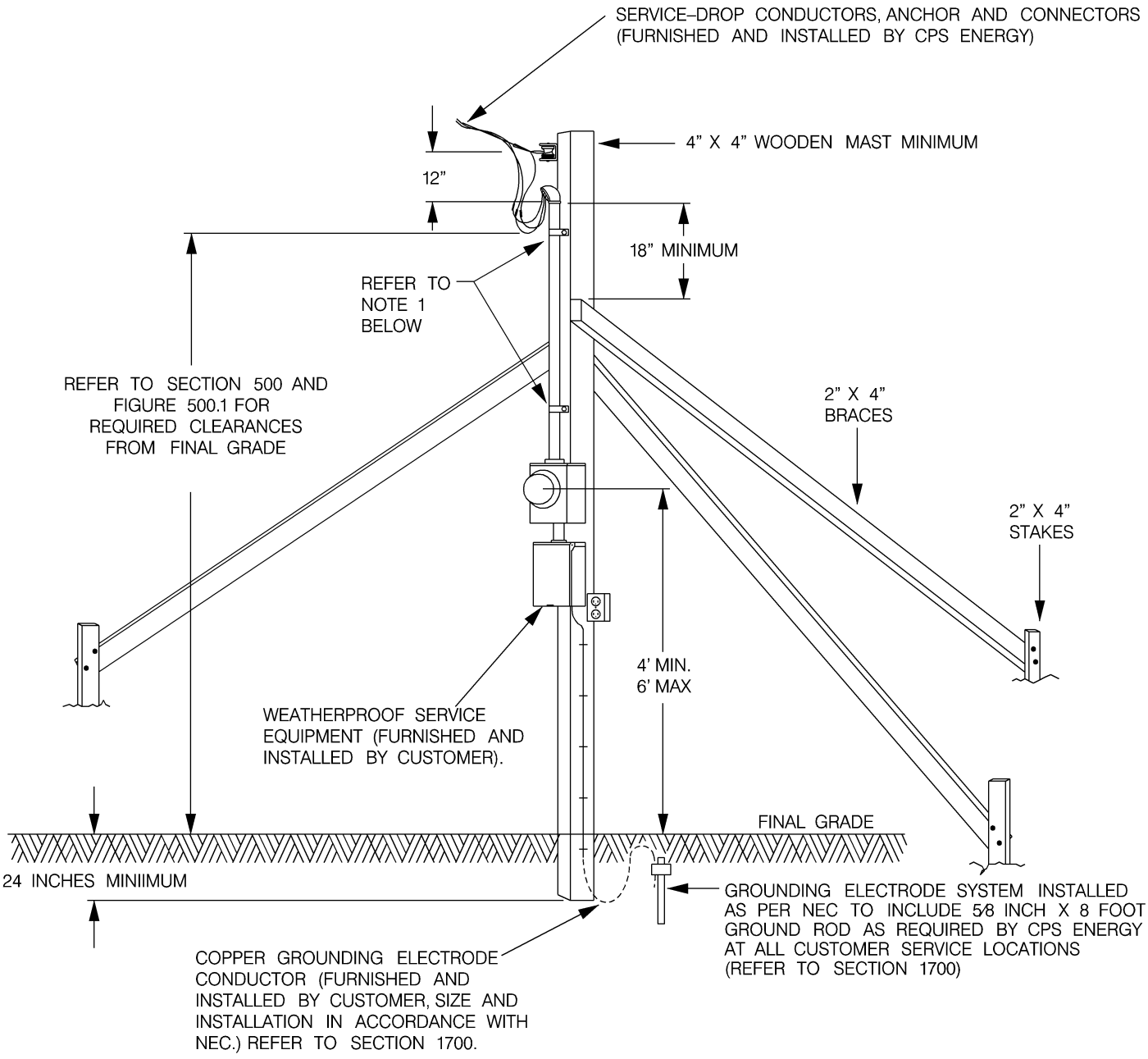
CITY PUBLIC SERVICE
REQUIRED EASEMENTS
(NOT TO SCALE)



CPS ENERGY

NOTE: FOR INFORMATION ONLY NOT FOR CONSTRUCTION

TEMPORARY METER INSTALLATION, OVERHEAD SERVICE



NOTES: (SEE CPS ENERGY ELECTRIC SERVICE STANDARDS BOOK)

1. SERVICE RACEWAY SHALL BE SUPPORTED WITH 2– HOLE STRAPS ATTACHED WITH SCREWS AND INSTALLED WITHIN 6 – 12 INCHES OF SERVICE HEAD AND OF METER ENCLOSURE.
2. 125– AMPERE METER SOCKET WITH 1 1⁄4 INCH HUB FURNISHED, INSTALLED AND WIRED BY CUSTOMER. REFER TO FIGURE 1800.1.
3. SERVICE OUTLET SHALL BE FURNISHED AND INSTALLED BY CUSTOMER. RACEWAY SHALL BE EMT, RMC OR IMC. MINIMUM SIZE OF SERVICE RACEWAY IS 1 1⁄4 INCH.
4. CUSTOMER SHALL CONSTRUCT THE TEMPORARY SERVICE INSTALLATION AS SHOWN ABOVE AND MAINTAIN IT IN A SAFE CONDITION THROUGHOUT ITS PERIOD OF USE. CPS ENERGY RESERVES THE RIGHT TO DISCONNECT DAMAGED OR UNSAFE TML'S.
5. THE TEMPORARY SERVICE INSTALLATION MUST BE IDENTIFIED WITH A PROPER SERVICE ADDRESS BEFORE CPS WILL CONNECT AND INSTALL A METER.


cps
ENERGY

THE FOLLOWING CHANGES ARE MADE TO THE CITY OF SAN ANTONIO'S GENERAL NOTES:

ADDITIONAL NOTES

1. IF ANY SENSITIVE FEATURE (CAVES, SUBSURFACE VOIDS, ETC) IS DISCOVERED DURING CONSTRUCTION, ALL CONSTRUCTION ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE ENGINEER SHOULD BE IMMEDIATELY NOTIFIED OF ANY SENSITIVE FEATURES ENCOUNTERED DURING CONSTRUCTION. THE CONSTRUCTION ACTIVITIES NEAR THE SENSITIVE FEATURE MAY NOT PROCEED UNTIL A US FISH AND WILDLIFE SERVICE (USFWS) PERMITTED BIOLOGIST HAS ASSESSED THE SITE FOR EVIDENCE OF HABITAT OR LISTED ENDANGERED SPECIES. IF IT IS DETERMINED THAT ENDANGEREDSPECIES OR THEIR HABITAT IS PRESENT WITHIN THE VOID SPACE, CONSULTATIONS WITH THE USFWS WILL COMMENCE AND WORK WITHIN THE IMMEDIATE VICINITY OF THE SENSITIVE FEATURE WILL NOT BE ALLOWED TO PROCEED UNTIL ALL PARTIES ARE IN AGREEMENT REGARDING NECESSARY PERMITTING.

2. CONTRACTOR SHOULD BE AWARE THAT THE EXISTING TREES SHOWN IN THE PLANS HAVE BEEN REMOVED BY OTHERS IN ACCORDANCE WITH THE TREE PRESERVATION PLAN PRIOR TO THE ADVERTISING AND BIDDING OF THIS PROJECT. AS SUCH, REMOVAL OF TREES ARE NOT REQUIRED FOR THIS PROJECT AND COSTS ASSOCIATED WITH THE REMOVAL OF TREES THAT ARE TYPICALLY PERFORMED AS PART OF ITEM 100 "PREPARING ROW" SHALL BE OFFSET FROM THE COST FOR PREPARING ROW FOR THIS PROJECT.

3. CONTRACTOR SHOULD BE AWARE THAT PLACEMENT OF LEVEL I AND II TREE PROTECTION FENCING AS REQUIRED BY THE TREE PRESERVATION PLANS HAS BEEN INSTALLED BY OTHERS PRIOR TO THE ADVERTISING AND BIDDING OF THIS PROJECT. CONTRACTOR SHALL MAINTAIN AND/OR REINSTALL TREE PROTECTION DEVICES AS NEEDED FOR THE DURATION OF THE PROJECT IN ACCORDANCE WITH THE TREE PRESERVATION PLANS AND FOR COMPLIANCE WITH TREE PERMITTING REQUIREMENTS.

4. CONTRACTOR SHOULD BE AWARE THAT EXISTING FENCES AS SHOWN IN THE PLANS HAVE BEEN REMOVED BY OTHERS PRIOR TO THE ADVERTISING AND BIDDING OF THIS PROJECT AND THAT TEMPORARY FENCING WAS INSTALLED ALONG THE LIMITS OF THE TEMPORARY CONSTRUCTION AND DRAINAGE EASEMENTS. CONTRACTOR SHALL REMOVE THE TEMPORARY FENCING PRIOR TO INSTALLING PERMANENT FENCING ALONG THE FINAL ROW AS PART OF CONSTRUCTION OF THIS PROJECT. REMOVAL OF TEMPORARY FENCING SHALL BE PAID FOR UNDER ITEM 100, PREPARING ROW.

5. IF ANY SENSITIVE FEATURE (CAVES, SUBSURFACE VOIDS, ETC) IS DISCOVERED DURING CONSTRUCTION, ALL CONSTRUCTION ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE ENGINEER SHOULD BE IMMEDIATELY NOTIFIED OF ANY SENSITIVE FEATURES ENCOUNTERED DURING CONSTRUCTION. THE CONSTRUCTION ACTIVITIES NEAR THE SENSITIVE FEATURE MAY NOT PROCEED UNTIL A US FISH AND WILDLIFE SERVICE (USFWS) PERMITTED BIOLOGIST HAS ASSESSED THE SITE FOR EVIDENCE OF HABITAT OR LISTED ENDANGERED SPECIES. IF IT IS DETERMINED THAT ENDANGEREDSPECIES OR THEIR HABITAT IS PRESENT WITHIN THE VOID SPACE, CONSULTATIONS WITH THE USFWS WILL COMMENCE AND WORK WITHIN THE IMMEDIATE VICINITY OF THE SENSITIVE FEATURE WILL NOT BE ALLOWED TO PROCEED UNTIL ALL PARTIES ARE IN AGREEMENT REGARDING NECESSARY PERMITTING.

6. EXCESS SOIL DISPOSAL. CONTRACTOR SHALL PROVIDE A SUBMITTAL REGARDING DISPOSALL SITE TO THE CITY 45 DAYS PRIOR TO COMMENCEMENT OF HAULING OFF ANY EXCAVATED AND/OR EXCESS FILL MATERIAL. THE CONDITIONS SET FORTH HEREIN ARE SOLELY DUE TO A DESIRE BY THE CITY TO MANAGE AND DOCUMENT THE DISPOSAL OF SOILS FROM THIS SITE, NOT DUE TO ANY ENVIRONMENTAL CONCERNS RELATIVE TO THE MATERIAL BEING DISPOSED OF. ACCORDINGLY, IN THE SOIL DISPOSAL CONTRACTOR SUBMITTAL:

a. CONTRCTOR SHALL CERTIFICATE AND ASSURE THAT THE NUMBER OF SOIL DISPOSAL SITE DOES NOT EXCEED THREE (3) SITES.

b. CONTRACTOR SHALL CERTIFY THAT NO DISOSAL AREAS ARE WITHIN THE FLOODPLAIN AND KNOWN SUPERFUND OR ENVIRONMENTAL ISSUE AREA, AND PROVIDE OWNER EVIDENCE TO THAT EFFECT.

c. CONTRACTOR SHALL INCLUDE PROVISIONS IN LANDOWNER AGREEMENTS THAT THE CITY RESERVES THE RIGHT TO CONDUCT INDEPENDENT VISUAL INSPECTIONS AND SOIL TESTING ON LISTED PROPERTIES PRIOR TO DISPOSAL OF PROJECT EXCESS SOILS TO DETERMINE BACKGROUND LEVELS OF VARIOUS ELEMENTS AS IDENTIFIED BY THE CITY. SAID LANDOWNER AGREEMENTS WILL PROVIDE ELEMENTS AS IDENTIFIED BY THE CITY. SAID LANDOWNER AGREEMENTS WILL PROVIDE AN EFFECTIVE RIGHT OF ENTRY THAT WILL EXPIRE UPON SUBSTANTIAL COMPLETION OF THE PROJECT.

d. CONTRACTOR AGREES TO ABIDE BY THE LANDOWNERS WRITTEN CONDITIONS IN LANDOWNER AGREEMENTS INCLUDING THOSE RELATED TO FOR PLACING, COMPACTING, RESTORATION, AND EROSION CONTROL OF THE SITE(S), AND THAT THE LANDOWNER'S WILL BE REQUESTED TO PROVIDE FINAL WRITTEN APPROVAL BEFORE PRIOR TO SUBSTANTIAL COMPLETION, AND THAT ANY COSTS THE CITY INCURS TO ADDRESS LEGITIMATE LANDOWNER CONCERNS WILL BE CONSIDERED AND MAY BE DEDUCTED FROM THE CONTRACTOR'S FINAL PAYMENT AS DETERMINED BY THE CITY.

e. ACCORDINGLY, LANDOWNERS SHALL PROVIDE CERTIFICATION TO THE CONTRACTOR AND THE CONTRACTOR SHALL INCLUDE SAID CERTIFICATION IN HIS SUBMITTAL THAT EXCESS SOILS SHALL NOT BE HAULED TO RESIDENTIAL PROPERTIES. EVERY ATTEMPT WILL BE MADE TO DISPOSE OF EXCESS SOILS AT EITHER COMMERCIAL OR INDUSTRIAL PROPERTIES.

f. CONTRACTOR AGREES TO COMPLY WITH OTHER REGULATORY AGENCIES REQUIREMENTS FOR PROPER AND LEGAL IMPLEMENTATION OF THE REUSE PLAN PRIOR TO SOIL TRANSPORT, AS APPLICABLE. CONRACTOR SHALL ENSURE AN APPROPRIATE STORM WATER POLLUTION PREVENTION PLAN IS DEVELOPED AND IMPLEMENTED IN ACCORDANCE WITH TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM REQUIREMENTS, AS APPLICABLE.

g. CONTRACTOR SHALL BE RESPONSIBLE FOR TRACKING EXCESS SOIL DISPOSAL OF AT APPROVED DESIGNATED AREAS. CONRACTOR SHALL TRACK LOADS AND PROVIDE DOCUMENTATION, SUCH AS TRIP TICKETS OR "BILL OF LAND" FOR ALL TRANSPORTED SOIL TO EACH APPROVED SITE.

h. CONTRACTOR SHALL NOT BEGIN HAULING ACTIVITIES OF EXCAVATED OR EXCESS SOILS TO THE DESIGNATED DISPOSAL SITES UNTIL CITY'S ENGINEER OR HIS/HER DESIGNEE PROVIDES WRITTEN AUTHORIZATION.

i. IN THE EVENT CONTRACTOR ONLY PROVIDES ONE DISPOSAL LOCATION TO CITY AND AN ADDITIONAL DISPOSAL LOCATION IS NEEDED, CONTRACTOR IS REQUIRED TO NOTIFY CITY IN WRITING OF ITS NEW DISPOSAL LOCATION AND PROVIDE WRITTEN DOCUMENTATION TO CITY'S ENGINER AT MINIMUM 72 HOURS IN ADVANCE OF UTILIZING THE ADDITIONAL DISPOSAL LOCATION SO CITY MAY REVIEW AND APPROVE THE ADDITIONAL DISPOSAL LOCATION, PRIOR TO HAULING ACTIVITIES.

7. CONTRACTOR SHOULD BE AWARE OF THE ROCKY SUBTERRAIN AND GEOTECHNICAL CONDITIONS OF THE PROJECT AREA. GEOTECHNICAL INVESTIGATIONS WERE PERFORMED FOR REDLAND ROAD AND JONES MALTSBERGER ROAD. COPIES OF THESE GEOTECHNICAL INVESTIGATION REPORTS ARE INCLUDED IN THE PROJECT MANUAL.

8. CONTRACTOR SHALL PROVIDE A LICENSED POLICE OFFICER AT THE ENTRANCE OF REDLAND ESTATES SUBDIVISION (SABLE LANDING) AS DEEMED NECESSARY BY OWNER TO ASSIST WITH SAFE INGRESS AND EGRESS DURING CONSTRUCTION ACTIVITY IN THIS AREA. CONTRACTOR SHALL COORDINATE CLOSELY WITH OWNER AT LEAST SEVEN (7) DAYS PRIOR TO BEGINNING CONSTRUCTION ACTIVITY NEAR SABLE LANDING TO DETERMINE THE NEED FOR POLICE OFFICER'S ASSISTANCE. CONTRACTOR SHALL PROVIDE OWNER WITH DOCUMENTATION INCLUDING ORIGINAL INVOICE, AND POLICE OFFICER'S TIME RECORDS SHOWING DATES AND HOURS WORKED FOR THE PURPOSE OF REIMBURSEMENT.

9. CONTRACTOR SHOULD CONTACT THE DESIGNATED REPRESENTATIVE OF THE REDLAND ESTATES HOME OWNERS' ASSOCIATION CONCERNING QUESTIONS THAT MAY IMPACT PROPERTY OWNED BY OR LOCATED WITHIN THE REDLAND ESTATES SUBDIVISION AS FOLLOWS:
NAME: STEPHEN KALE, 210) 499-1365; EMAIL Stephen.kale@sbcglobal.net
NAME: kENNETH GARCIA (210) 414-8159; EMAIL ADDRESS: Kgman@prodigy.net
IN ADDITION, CONTRACTOR SHALL CONTACT THE REDLAND ESTATES HOA REPRESENTATIVE AT LEAST 48 HOURS IN ADVANCE TO COORDINATE ANY TEMPORARY SHUT DOWNS OF UTILITIES DURING CONSTRUCTION.

10. ABANDONED UTILITIES SUCH AS WATER MAINS, GAS MAINS AND COMMUNICATION CABLES THAT ARE IN CONFLICT WITH PROPOSED ITEMS WILL NEED TO BE REMOVED BY THE CONTRACTOR EVEN IF THE ABANDONED UTILITY IS CALLED OUT TO BE REMOVED BY OTHERS. NO SEPARATE PAY WILL BE PROVIDED FOR REMOVAL OF EXISTING UTILITIES AND SHOULD BE CONSIDERED SUBSIDIARY TO THE PERTINENT BID ITEMS.

CPS GENERAL NOTES

1. THE CONTRACTOR SHALL BE AWARE OF EXISTING OVERHEAD LINES FOR CONSTRUCTION ACTIVITIES. SLEEVING OF OVERHEAD PRIMARY LINES WILL BE TO THE SHIELDING/SLEEVING OF LINES IS FOR REFERENCE, NOT FOR PROTECTION FROM ELECTRICAL SHOCK.
2. DE-ENERGIZING OF PRIMARY LINES OR TRANSMISSION LINES FOR CONSTRUCTION PURPOSES WILL BE A COST TO THE CONTRACTOR DE-ENERGIZING MAY NOT BE POSSIBLE IN ALL INSTANCES.
3. TEMPORARY RELOCATION OF POLES DURING CONSTRUCTION WILL BE AT THE COST TO THE CONTRACTOR.
4. THE LOCATION OF EXISTING GUY WIRES AND PROPOSED NEW GUY WIRES COULD CAUSE UNFORSEEN CONSTRUCTION INTERFERENCE. ANY TEMPORARY BRACING NEEDED WILL BE A COST TO THE CONTRACTOR.
5. WIDTH, DEPTH, AND LOCATION OF TENCHING OR EXCAVATION MUST BE CONSIDERED AROUND UTILITY POLES, TENCHING COULD NECESSITATE BRACING/SHORING DURING CONSTRUCTION AT A COST TO THE CONTRACTOR.
6. CONTRACTORS ARE RESPONSIBLE FOR REQUESTING A GAS LEAK SUREVEY. ALLOW 10 WORKING DAYS TO SURVEY AND 10 WORKING DAYS TO ADJUST GAS VALVES. ALL REQUESTS NEED TO BE COORDINATED THROUGH THE AGENCY INSPECTORS.
7. GAS SUBCONTRACTORS ARE RESPONSIBLE FOR ADJUSTMENT GAS VALVES THAT ARE WITHIN THE PROJECT AREA. AGENCY INSPECTORS MUST NOTIFY THEIR COORINDINATORS TO REQUEST ADJUSTMENTS NEEDED FOR VALVES THAT ARE INSIDE THE PROJECT WORK AREA BUT NOT PART OF THE JOINT BID.
8. INCULDE UTILITY INSPECTIONS AND TIME NEEDED WHERE NECESSARY IN SCHEDULES.
9. CALL TEXAS STATE WIDE ONE LOCATOR NUMBER 1-800-344-8377, 48 HOURS BEFORE BEGINNING EXCAVATION.

DELETED NOTES – N/A

NOTE MODIFICATION – N/A

ADDENDUM NO. 3

ADDED NOTE 10 TO ADDITIONAL NOTES

DON DURDEN, INC.
d.b.a. CIVIL ENGINEERING CONSULTANTS
11550 IH 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214
CEC PROJECT NUMBER: E0419900

CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

REDLAND ROAD

SUPPLEMENTAL GENERAL NOTES

ADDENDUM NO. 3

SHEET 1 OF 1

SUBMITTAL	PROJECT NUMBER		DATE
100% PS&E	E0419900		11/24/2015
DRWN BY:	DSGN BY:	CHKD BY:	SHEET NO.
			11

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CONSTRUCTION NOTES:

1. CONTRACTOR SHALL NOT BEGIN CONSTRUCTION WITHOUT WRITTEN AUTHORIZATION ISSUED BY THE CITY TRAFFIC ENGINEER (THE ENGINEER).
2. CONTRACTOR SHALL FURNISH ALL INSURANCE DOCUMENTATION TO THE ENGINEER IN ACCORDANCE WITH SPECIAL SPECIFICATION ITEM 600 - TRAFFIC SIGNAL GENERAL CONDITIONS INSURANCE.
3. CONTRACTOR SHALL ATTEND PRE-CONSTRUCTION MEETING WITH THE ENGINEER PRIOR TO INITIATING ANY TRAFFIC SIGNAL RELATED WORK.
4. CONTRACTOR SHALL CONTACT THE ENGINEER AT LEAST SEVEN (7) DAYS PRIOR TO BEGINNING ANY CONSTRUCTION. THE CITY WILL PROVIDE ALL ON-SITE INSPECTION OF CONSTRUCTION AND SHALL BE THE SOLE AUTHORITY TO DETERMINE THE ADEQUACY OF MATERIALS AND CONSTRUCTION.
5. CONTRACTOR SHALL UNCOVER AND LOCATE ALL MARKED UNDERGROUND FACILITIES PRIOR TO EXCAVATING FOR DRILLED SHAFT FOUNDATIONS. UTILITIES SHOWN ARE BASED ON INFORMATION PROVIDED BY UTILITY AGENCIES AND VISUAL FIELD OBSERVATION.
6. CONTRACTOR SHALL PROVIDE RED-LINE MARKUPS OF CONSTRUCTION TO THE ENGINEER WITHIN SEVEN (7) WORKING DAYS OF PROJECT ACCEPTANCE.
7. CONTRACTOR SHALL INSTALL TRAFFIC SIGNALS CENTERED OVER LANES WHEN POSSIBLE (MINIMUM 8' APART) UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
8. CONTRACTOR SHALL INSTALL PHASING/TIMINGS AND CHANNELIZATION AS DIRECTED BY THE ENGINEER.
9. CONTRACTOR SHALL INSTALL ONE ADDITIONAL 2 INCH CONDUIT STUBBED OUT 2 FEET FROM EACH FOUNDATION AND CAPPED. FURNISHING AND INSTALLATION OF THIS CONDUIT SHALL BE SUBSIDIARY TO THE POLE FOUNDATION.
10. ALL SIGNS MOUNTED ON TRAFFIC SIGNAL EQUIPMENT SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AS SHOWN ON THE PLANS.
11. SALVAGE MATERIAL SHALL BE DETERMINED BY THE CITY INSPECTOR AND DELIVERED TO THE CITY OF SAN ANTONIO TRAFFIC OPERATIONS FACILITY LOCATED AT 223 SOUTH CHERRY, SAN ANTONIO, TEXAS 78203. THE CONTRACTOR SHALL CONTACT THE CITY SERVICES & SUPPLY SUPERINTENDENT, AT (210) 207-7771 SEVEN (7) DAYS PRIOR TO DELIVERY OF THE SALVAGED MATERIAL. THE CONTRACTOR SHALL BECOME THE OWNER AND DISPOSE OF UNSALVAGED MATERIAL IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.
12. THE CONTRACTOR SHALL PROVIDE THE EQUIPMENT FOR COMMUNICATION TO THE SIGNAL AS PER SIGNAL COMMUNICATION TABLE
13. THE CONTRACTOR SHALL FURNISH AND INSTALL AN ENCLOSED PHOTOCELL IN THE ELECTRICAL SERVICE TO POWER THE ILSN SIGNS. FURNISHING AND INSTALLATION OF THE PHOTOCELL SHALL BE SUBSIDIARY TO ITEM 632.01 "ELECTRICAL SERVICE PEDESTAL"
14. TRAFFIC SIGNAL TO REMAIN IN OPERATION AT ALL TIMES, EXCEPT AS COORDINATED WITH THE CITY TRAFFIC SIGNAL ENGINEER
15. IF WIRELESS COMMUNICATION EQUIPMENT IS PROVIDED BY THE CONTRACTOR, THE EQUIPMENT SHALL BE DELIVERED TO COSA SIGNAL SHOP FOUR (4) WEEKS IN ADVANCE OF TRAFFIC SIGNAL OPERATION FOR TESTING AND PROGRAMMING.
16. THE CONTRACTOR SHALL INSTALL WIRELESS COMMUNICATION EQUIPMENT IN THE FIELD AS NOTED IN THE PLANS AND AS DIRECTED BY COSA INFORMATION TECHNOLOGY SERVICES DEPARTMENT (ITSD). FINAL LOCATION OF THE WIRELESS COMMUNICATION EQUIPMENT SHALL BE APPROVED BY ITSD BEFORE INSTALLATION. THE CONTRACTOR SHALL COORDINATE WITH ITSD TO PREPARE SIGNAL STRENGTH SURVEY AND DETERMINE LOCATION FOR BRIDGE, IF SPECIFIED, AND ACCESS POINT. ALL WIRELESS MESH COMMUNICATION EQUIPMENT AND INSTALLATION SHALL BE SUBSIDIARY TO ITEM 680.
17. POWER POLES TO BE RELOCATED BY CPS. LOCATION SHOWN APPROXIMATE. CONDUIT RUN #1'S LENGTH IS VARIABLE DEPENDENT ON RELOCATED POSITION BY CPS
18. THE CONTRACTOR WILL SUBMIT THE CPS APPLICATION FOR THE RELOCATION OF THE EXISTING ELECTRICAL SERVICE METER. A PERMIT MUST ALSO BE OBTAINED BY THE CONTRACTOR FROM THE DEVELOPMENT SERVICES DEPARTMENT (DSD). THE CPS APPLICATION PERMIT AND DSD PERMIT ARE ALL REQUIREMENTS NECESSARY AND THERE ARE NO SEPARATE PAY ITEMS FOR THE APPLICATION, PERMIT AND NECESSARY COORDINATION TO GET THE ELECTRIC SERVICE METER RELOCATED.
19. REFER TO TRAFFIC SIGNAL FOUNDATION STANDARD (TSFD) FOR FOUNDATION TYPE AND DEPTH

WIRELESS COMMUNICATION EQUIPMENT SHALL BE SUBSIDIARY TO ITEM 680

Component	Part No.	Item Description	Unit	Quantity
Wireless Access Point	AIR-LAP1522AG-AK9	802.11a, b/g Outdoor Mesh AP, FCC Cfg	EA	1
	AIR-ANT2480V-N	2400-2483.5 MHz, 8.0 dBi Omni Ant, with N Conne	EA	3
	AIR-CORD-R3P-40NA	Aironet 1520 Series AC Power Cord, 40 ft, N	EA	1
	AIR-ANT5180V-N	4900-5850 MHz, 8.0Dbi OMNI with N Connec	EA	1
	AIR-ACCPMK1520	1520 Series Pole Mount Kit	EA	1
	SMARTNET 8X5XNB	802.11a, b/g Outdoor Mesh AP, FCC Cfg	EA	1
	UK 6-FSI/C	Fuse Holder	EA	1
	TCP 3, OA	3 Amp Fuse Breaker	EA	1
	TCP 5, OA	5 Amp Fuse Breaker	EA	1
Ethernet Switch	WS-C2955S-12	2955 12 TX W/SM UPLINKS	EA	1
	CISCO STK-RACKMNT-	19 IN RACK MOUNT KIT	EA	1
	PWR-2955-AC	CISCO, AC TO 24 V DC DIN RAIL PW	EA	1
	CON-SNTWSC2955S	SMARTNET 8X5XNBD 2955 12 TX w/Single Mod	EA	1
	UK 6-FSI/C	Fuse Holder	EA	1
	TCP 3, OA	3 Amp Fuse Breaker	EA	1
	TCP 5, OA	5 Amp Fuse Breaker	EA	1

NOTE: QUANTITIES OF WIRELESS COMMUNICATION EQUIPMENT SUBSIDIARY TO ITEM 680

Component	Part No.	Item Description	Unit	Quantity
Wireless Access	VNTC 16-3-R10K-BED	27331A 01010000 BELDEN (Power Cable)	LF	300
	7919A 01001000	IND ETH 5E4P24 HLD (Ethernet Cable)	LF	300

NOTE: QUANTITIES OF WIRELESS COMMUNICATION EQUIPMENT SUBSIDIARY TO ITEM 680

LOOP 1604 S1A

18000 REDLAND ROAD 17900 S2A

8'

LOOP 1604 S1B

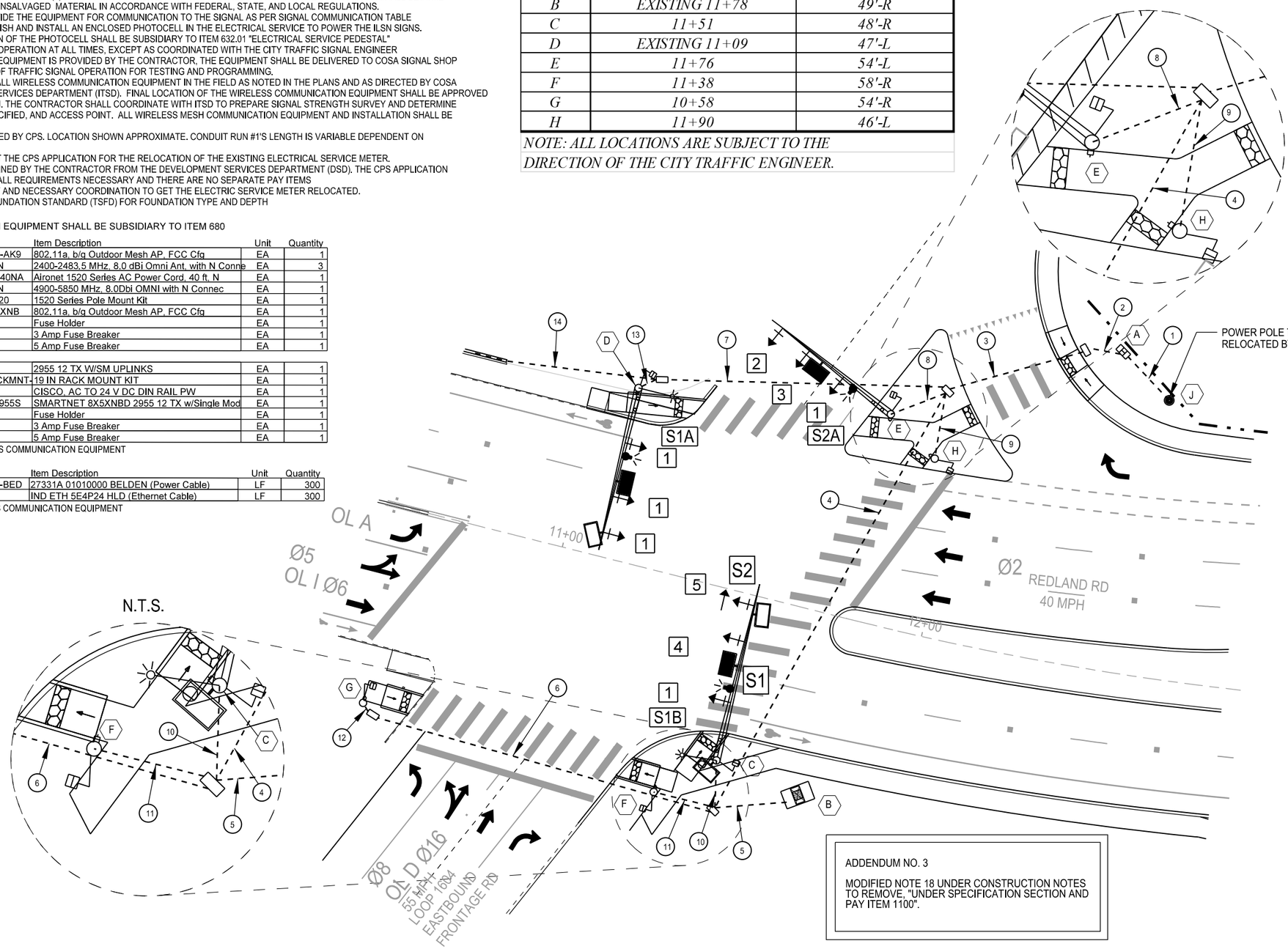
TRAFFIC SIGNAL ITEM LOCATIONS

ITEM	*REDLAND & LOOP 1604 S*	*OFFSET*
A	*12+41*	*86'-L*
B	*EXISTING 11+78*	*49'-R*
C	*11+51*	*48'-R*
D	*EXISTING 11+09*	*47'-L*
E	*11+76*	*54'-L*
F	*11+38*	*58'-R*
G	*10+58*	*54'-R*
H	*11+90*	*46'-L*

NOTE: ALL LOCATIONS ARE SUBJECT TO THE DIRECTION OF THE CITY TRAFFIC ENGINEER.

TRAFFIC SIGNAL LEGEND

- PROP. GROUND BOX
- PROP. STEEL POLE W/MAST ARM
- PROP. ILSN SIGN
- PROP. SERVICE PEDESTAL W/METER
- PROP. SIGNAL CONDUIT
- PROP. CONTROLLER CABINET
- PROP. PED. BUTTON ON SIGNAL POLE
- PROP. PEDESTRIAN SIGNAL
- PROP. OPTICOM DETECTOR
- PROP. WIRELESS AP
- CONTROLLER/POLE IDENTIFIER (A)
- CABLE RUN IDENTIFIER (1)
- SIGNAL HEAD IDENTIFIER 1
- SIGN IDENTIFIER S1
- STREET C STATION 100+00
- LUMINAIRE
- PROP. LED SIGNAL W/BACK PLATE
- PROP. RVDD
- PROP. RVDS STOP BAR
- PROP. LANE DESIGNATION



GRAPHIC SCALE (IN FEET)

15 7.5 0 15 30 45

1" = 30'

STATE OF TEXAS
JULIO RAMOS
107672
LICENSED PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY JULIO RAMOS, P.E. 107672

11/24/2015

DON DURDEN, INC.
d.b.a. CIVIL ENGINEERING CONSULTANTS
11550 IH 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
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REGISTRATION #F-2214

CEC PROJECT NUMBER: E0419900

CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

REDLAND ROAD

PROPOSED TRAFFIC SIGNAL REDLAND RD AND LOOP 1604 SOUTH

ADDENDUM NO. 3

SHEET 2 OF 3

SUBMITTAL	PROJECT NUMBER	DATE
100% PS&E	E0419900	11/24/2015

DRWN BY:	DSGN BY:	CHKD BY:	SHEET NO.
			300

ADDENDUM NO. 3

MODIFIED NOTE 18 UNDER CONSTRUCTION NOTES TO REMOVE, "UNDER SPECIFICATION SECTION AND PAY ITEM 1100".

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CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS

RECEIPT OF ADDENDUM NUMBER(S) **3** IS HEREBY ACKNOWLEDGED FOR PLANS AND SPECIFICATIONS FOR CONSTRUCTION OF **REDLAND ROAD SOUTH (1604 TO JONES MALTSBERGER) – 40-00313**

FOR WHICH BIDS WILL BE OPENED ON **TUESDAY, DECEMBER 15, 2015 AT 2:00 PM**

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

Company Name: _____

Address: _____

City/State/Zip Code: _____

Date: _____

_____
Signature

_____
Print Name/Title