VENTANAS SUBDIVISION
UNIT SEVEN

A PORTION OF TRACT 1,
SECTION 46, BLOCK 79, TOWNSHIP 2,
TEXAS AND PACIFIC RAILWAY COMPANY SURVEYS,
CITY OF EL PASO, EL PASO COUNTY, TEXAS
CONTAINING 25.149 ACRES ±

SHEET 2 OF 2

CURVE TABLE

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	20.00'	31.42'	20.00'	28.28'	S44°57'39"W	090°00'00"
C2	604.08'	279.63'	142.36'	277.14'	N16°15'30"E	026°31'19"
C3	20.00'	32.92'	21.57'	29.33'	N42°52'54"W	094°18'55"
C4	761.08'	6.24'	3.12'	6.24'	N04°02'32"E	000°28'10"
C5	20.00'	30.43'	19.04'	27.58'	S47°24'07"W	087°11'20"
C6	2468.00'	172.37'	86.22'	172.33'	N87°00'10"W	004°00'06"
C7	20.00'	30.95'	19.54'	27.95'	N40°40'12"W	088°39'51"
C8	972.00'	3.50'	1.75'	3.50'	N03°45'55"E	000°12'24"
C9	20.00'	32.55'	21.16'	29.07'	S50°29'14"W	093°14'16"
C10	2468.00'	173.16'	86.62'	173.13'	N80°53'02"W	004°01'12"
C11	20.00'	29.14'	17.85'	26.63'	N37°07'53"W	083°29'04"
C12	1233.00'	11.32'	5.66'	11.32'	N04°52'26"E	000°31'34"
C13	20.00'	34.25'	23.05'	30.21'	S54°11'37"W	098°06'47"
C14	2468.00'	73.69'	36.85'	73.69'	N75°53'40"W	001°42'39"
C15	20.00'	29.62'	18.28'	26.99'	N32°36'50"W	084°51'02"
C16	375.00'	9.99'	4.99'	9.98'	S09°02'55"W	001°31'32"
C17	20.00'	33.75'	22.48'	29.88'	S56°37'24"W	096°40'30"
C18	1651.00'	374.99'	188.31'	374.19'	N12°59'22"E	013°00'49"
C19	349.00'	36.13'	18.08'	36.11'	S87°04'25"E	005°55'52"
C20	401.00'	24.27'	12.14'	24.27'	S82°22'27"E	003°28'04"
C21	20.00'	26.58'	15.66'	24.66'	S61°17'25"W	076°08'19"
C22	1546.00'	176.88'	88.53'	176.78'	N26°29'55"E	006°33'19"
C23	20.00'	35.67'	24.78'	31.13'	S21°19'00"E	102°11'10"
C24	401.00'	21.57'	10.79'	21.56'	S70°52'08"E	003°04'54"
C25	20.00'	27.04'	16.04'	25.02'	S71°56'48"W	077°27'01"
C26	1546.00'	85.52'	42.77'	85.51'	N34°48'23"E	003°10'10"
C27	324.00'	147.71'	75.16'	146.43'	S23°19'51"W	026°07'13"
C28	20.00'	35.01'	23.97'	30.71'	S39°53'03"E	100°18'36"
C29	375.00'	360.37'	195.46'	346.66'	S27°29'28"W	055°03'37"
C30	735.08'	270.94'	137.02'	269.41'	N44°27'44"E	021°07'05"
C31	735.08'	270.94'	137.02'	269.41'	N23°20'38"E	021°07'05"

CURVE TABLE

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C32	600.00'	72.78'	36.44'	72.74'	N09°18'35"E	006°57'01"
C33	736.08'	20.02'	10.01'	20.01'	N05°03'20"E	001°33'29"
C34	997.00'	322.34'	162.59'	320.94'	N13°07'51"E	018°31'28"
C35	997.00'	322.34'	162.59'	320.94'	N31°39'19"E	018°31'28"
C36	56.00'	84.99'	53.10'	77.06'	S02°33'31"E	086°57'08"
C37	350.00'	72.19'	36.22'	72.06'	S51°56'38"E	011°49'05"
C38	375.00'	39.31'	19.67'	39.29'	S35°04'51"W	006°00'23"
C39	500.00'	21.25'	10.63'	21.25'	N36°52'00"E	002°26'05"
C40	1258.00'	334.97'	168.48'	333.98'	N28°01'16"E	015°15'22"
C41	1258.00'	334.97'	168.48'	333.98'	N12°45'54"E	015°15'22"
C42	350.00'	7.83'	3.92'	7.83'	S07°38'41"W	001°16'55"
C43	1520.00'	392.52'	197.36'	391.43'	N14°24'06"E	014°47'45"
C44	375.00'	58.83'	29.48'	58.77'	S79°36'49"E	008°59'21"
C45	1520.00'	264.36'	132.51'	264.02'	N26°46'56"E	009°57'53"
C46	375.00'	57.21'	28.66'	57.16'	S68°02'21"E	008°44'29"
C47	1520.00'	122.74'	61.40'	122.70'	N34°04'40"E	004°37'35"
C48	350.00'	214.13'	110.54'	210.81'	S18°51'51"W	035°03'13"
C49	375.00'	210.20'	107.94'	207.46'	S16°01'09"W	032°07'01"
C50	20.00'	31.42'	20.00'	28.28'	N44°57'39"E	090°00'00"
C51	401.00'	40.24'	20.14'	40.22'	S02°50'09"W	005°44'59"
C52	401.00'	48.42'	24.24'	48.39'	S09°10'11"W	006°55'05"
C53	401.00'	48.42'	24.24'	48.39'	S16°05'16"W	006°55'05"
C54	401.00'	48.42'	24.24'	48.39'	S23°00'21"W	006°55'05"
C55	401.00'	48.42'	24.24'	48.39'	S29°55'26"W	006°55'05"
C56	401.00'	48.42'	24.24'	48.39'	S36°50'31"W	006°55'05"
C57	401.00'	48.42'	24.24'	48.39'	S43°45'36"W	006°55'05"
C58	401.00'	48.27'	24.16'	48.24'	S50°40'03"W	006°53'49"
C59	401.00'	6.34'	3.17'	6.34'	S54°34'07"W	000°54'19"
C60	709.08'	1.66'	0.83'	1.66'	N54°57'14"E	000°08'04"
C61	709.08'	61.03'	30.54'	61.02'	N52°25'15"E	004°55'54"
C62	709.08'	57.99'	29.01'	57.97'	N47°36'44"E	004°41'09"

CURVE TABLE

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C63	709.08'	58.49'	29.26'	58.47'	N42°54'23"E	004°43'34"
C64	709.08'	58.20'	29.12'	58.18'	N38°11'30"E	004°42'10"
C65	709.08'	57.15'	28.59'	57.13'	N33°31'54"E	004°37'03"
C66	709.08'	56.79'	28.41'	56.77'	N28°55'43"E	004°35'18"
C67	604.08'	30.42'	15.21'	30.41'	N28°04'37"E	002°53'06"
C68	604.08'	48.67'	24.35'	48.66'	N24°19'34"E	004°36'59"
C69	709.08'	57.13'	28.58'	57.12'	N24°19'34"E	004°36'59"
C70	709.08'	57.13'	28.58'	57.12'	N19°42'35"E	004°36'59"
C71	604.08'	48.67'	24.35'	48.66'	N19°42'35"E	004°36'59"
C72	604.08'	48.67'	24.35'	48.66'	N15°05'35"E	004°36'59"
C73	709.08'	57.13'	28.58'	57.12'	N15°05'35"E	004°36'59"
C74	604.08'	48.67'	24.35'	48.66'	N10°28'36"E	004°36'59"
C75	575.00'	40.79'	20.40'	40.78'	N10°45'10"E	004°03'52"
C76	604.08'	54.52'	27.28'	54.50'	N05°34'58"E	005°10'15"
C77	575.00'	28.96'	14.48'	28.96'	N07°16'39"E	002°53'10"
C78	711.08'	19.34'	9.67'	19.34'	N05°03'20"E	001°33'29"
C79	625.00'	10.54'	5.27'	10.54'	N06°19'04"E	000°58'00"
C80	761.08'	20.70'	10.35'	20.69'	N05°03'20"E	001°33'29"
C81	2468.00'	86.65'	43.33'	86.65'	N87°59'52"W	002°00'42"
C82	867.00'	65.39'	32.71'	65.38'	N04°28'03"E	004°19'17"
C83	867.00'	59.39'	29.70'	59.37'	N08°35'26"E	003°55'28"
C84	625.00'	52.12'	26.07'	52.10'	N09°11'24"E	004°46'41"
C85	625.00'	13.15'	6.58'	13.15'	N12°10'55"E	001°12'21"
C86	761.08'	22.48'	11.24'	22.48'	N13°37'52"E	001°41'33"
C87	867.00'	59.39'	29.70'	59.37'	N12°30'54"E	003°55'28"
C88	867.00'	59.39'	29.70'	59.37'	N16°26'23"E	003°55'28"
C89	761.08'	52.13'	26.08'	52.12'	N16°26'23"E	003°55'28"
C90	761.08'	52.13'	26.08'	52.12'	N20°21'51"E	003°55'28"
C91	867.00'	59.39'	29.70'	59.37'	N20°21'51"E	003°55'28"
C92	867.00'	59.39'	29.70'	59.37'	N24°17'19"E	003°55'28"
C93	761.08'	52.13'	26.08'	52.12'	N24°17'19"E	003°55'28"

CURVE TABLE

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C94	761.08'	52.13'	26.08'	52.12'	N28°12'48"E	003°55'28"
C95	867.00'	59.39'	29.70'	59.37'	N28°12'48"E	003°55'28"
C96	761.08'	52.13'	26.08'	52.12'	N32°08'16"E	003°55'28"
C97	867.00'	59.39'	29.70'	59.37'	N32°08'16"E	003°55'28"
C98	761.08'	52.13'	26.08'	52.12'	N36°03'44"E	003°55'28"
C99	867.00'	59.39'	29.70'	59.37'	N36°03'44"E	003°55'28"
C100	867.00'	59.39'	29.70'	59.37'	N39°59'13"E	003°55'28"
C101	761.08'	52.13'	26.08'	52.12'	N39°59'13"E	003°55'28"
C102	761.08'	52.80'	26.41'	52.79'	N43°56'11"E	003°58'29"
C103	867.00'	56.52'	28.27'	56.51'	N43°49'00"E	003°44'07"
C104	70.00'	70.95'	38.86'	67.95'	S13°38'08"W	058°04'14"
C105	70.00'	26.98'	13.66'	26.82'	S53°42'50"W	022°05'11"
C106	40.00'	17.67'	8.98'	17.52'	N52°06'16"E	025°18'20"
C107	971.00'	12.92'	6.46'	12.92'	N39°04'13"E	000°45'45"
C108	867.00'	49.33'	24.67'	49.32'	N40°19'09"E	003°15'36"
C109	867.00'	49.58'	24.79'	49.57'	N37°03'04"E	003°16'34"
C110	971.00'	55.52'	27.77'	55.51'	N37°03'04"E	003°16'34"
C111	971.00'	55.52'	27.77'	55.51'	N33°46'30"E	003°16'34"
C112	867.00'	49.58'	24.79'	49.57'	N33°46'30"E	003°16'34"
C113	867.00'	49.58'	24.79'	49.57'	N30°29'55"E	003°16'34"
C114	971.00'	55.52'	27.77'	55.51'	N30°29'55"E	003°16'34"
C115	971.00'	55.52'	27.77'	55.51'	N27°13'21"E	003°16'34"
C116	867.00'	49.58'	24.79'	49.57'	N27°13'21"E	003°16'34"
C117	971.00'	55.21'	27.61'	55.21'	N23°57'19"E	003°15'29"
C118	867.00'	49.30'	24.66'	49.29'	N23°57'19"E	003°15'29"
C119	867.00'	49.85'	24.93'	49.85'	N20°40'45"E	003°17'40"
C120	971.00'	55.83'	27.92'	55.82'	N20°40'45"E	003°17'40"
C121	971.00'	55.52'	27.77'	55.51'	N17°23'38"E	003°16'34"
C122	867.00'	49.58'	24.79'	49.57'	N17°23'38"E	003°16'34"
C123	867.00'	49.58'	24.79'	49.57'	N14°07'03"E	003°16'34"
C124	971.00'	55.52'	27.77'	55.51'	N14°07'03"E	003°16'34"

CURVE TABLE

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C125	971.00'	55.52'	27.77'	55.51'	N10°50'29"E	003°16'34"
C126	867.00'	49.58'	24.79'	49.57'	N10°50'29"E	003°16'34"
C127	867.00'	49.58'	24.79'	49.57'	N07°33'55"E	003°16'34"
C128	971.00'	9.40'	4.70'	9.40'	N08°55'33"E	000°33'17"
C129	972.00'	34.92'	17.46'	34.92'	N04°53'52"E	002°03'31"
C130	867.00'	54.78'	27.40'	54.77'	N04°07'01"E	003°37'13"
C131	2468.00'	85.71'	42.86'	85.71'	N85°59'49"W	001°59'24"
C132	70.00'	67.15'	36.41'	64.61'	S42°52'57"E	054°57'56"
C133	40.00'	16.99'	8.62'	16.86'	N58°12'00"W	024°19'50"
C134	376.00'	77.56'	38.92'	77.42'	S51°56'38"E	011°49'05"
C135	20.00'	29.20'	17.90'	26.68'	N16°01'13"W	083°39'53"
C136	401.00'	171.41'	87.03'	170.11'	S13°33'58"W	024°29'30"
C137	20.00'	30.94'	19.53'	27.95'	N45°38'26"E	088°38'26"
C138	20.00'	31.42'	20.00'	28.28'	S45°02'21"E	090°00'00"
C139	349.00'	335.38'	181.91'	322.63'	S27°29'28"W	055°03'37"
C140	761.08'	120.84'	60.55'	120.72'	N50°28'21"E	009°05'51"
C141	1022.00'	35.28'	17.64'	35.27'	N04°51'26"E	001°58'39"
C142	2468.00'	85.02'	42.52'	85.02'	N81°54'25"W	001°58'26"
C143	1128.00'	52.64'	26.32'	52.63'	N04°30'33"E	002°40'26"
C144	1022.00'	1.44'	0.72'	1.44'	N05°53'12"E	000°04'51"
C145	1128.00'	55.17'	27.59'	55.17'	N07°14'50"E	002°48'09"
C146	1023.00'	50.04'	25.02'	50.03'	N10°02'59"E	002°48'09"
C147	1128.00'	55.17'	27.59'	55.17'	N10°02'59"E	002°48'09"
C148	1128.00'	55.17'	27.59'	55.17'	N12°51'08"E	002°48'09"
C149	1023.00'	50.04'	25.02'	50.03'	N12°51'08"E	002°48'09"
C150	1023.00'	50.04'	25.02'	50.03'	N15°39'16"E	002°48'09"
C151	1128.00'	55.17'	27.59'	55.17'	N15°39'16"E	002°48'09"
C152	1128.00'	55.17'	27.59'	55.17'	N18°27'25"E	002°48'09"
C153	1023.00'	50.04'	25.02'	50.03'	N18°27'25"E	002°48'09"
C154	1023.00'	50.04'	25.02'	50.03'	N21°15'34"E	002°48'09"
C155	1128.00'	55.17'	27.59'	55.17'	N21°15'34"E	002°48'09"

CURVE TABLE

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C156	1128.00'	55.17'	27.59'	55.17'	N24°03'42"E	002°48'09"
C157	1023.00'	50.04'	25.02'	50.03'	N24°03'42"E	002°48'09"
C158	1023.00'	50.04'	25.02'	50.03'	N26°51'51"E	002°48'09"
C159	1128.00'	55.17'	27.59'	55.17'	N26°51'51"E	002°48'09"
C160	1128.00'	55.17'	27.59'	55.17'	N29°40'00"E	002°48'09"
C161	1023.00'	50.04'	25.02'	50.03'	N29°40'00"E	002°48'09"
C162	1023.00'	50.04'	25.02'	50.03'	N32°28'09"E	002°48'09"
C163	1128.00'	55.17'	27.59'	55.17'	N32°28'09"E	002°48'09"
C164	1128.00'	55.17'	27.59'	55.17'	N35°16'17"E	002°48'09"
C165	1023.00'	50.04'	25.02'	50.03'	N35°16'17"E	002°48'09"
C166	1023.00'	50.04'	25.02'	50.03'	N38°04'26"E	002°48'09"
C167	1128.00'	55.17'	27.59'	55.17'	N38°04'26"E	002°48'09"
C168	1128.00'	62.41'	31.21'	62.40'	N41°03'36"E	003°10'12"
C169	1023.00'	25.75'	12.88'	25.75'	N40°11'46"E	001°26'32"
C170	30.00'	45.53'	28.45'	41.28'	S02°33'31"E	086°57'08"
C171	324.00'	66.72'	33.48'	66.60'	S51°56'02"E	011°47'54"
C172	20.00'	29.35'	18.03'	26.79'	N80°07'32"E	084°04'59"
C173	1128.00'	55.01'	27.51'	55.00'	N41°14'53"E	002°47'38"
C174	1128.00'	50.00'	25.01'	50.00'	N38°34'52"E	002°32'24"
C175	1128.00'	51.00'	25.50'	50.99'	N36°00'58"E	002°35'25"
C176	1232.00'	19.90'	9.95'	19.90'	N35°11'12"E	000°55'32"
C177	474.00'	20.14'	10.07'	20.14'	N36°52'00"E	002°26'05"
C178	1232.00'	55.89'	27.95'	55.89'	N33°25'27"E	002°35'58"
C179	1128.00'	51.17'	25.59'	51.17'	N33°25'16"E	002°35'57"
C180	1128.00'	51.17'	25.59'	51.17'	N30°49'19"E	002°35'57"
C181	1232.00'	55.89'	27.95'	55.89'	N30°49'29"E	002°35'58"
C182	1232.00'	55.89'	27.95'	55.89'	N28°13'31"E	002°35'58"
C183	1128.00'	51.17'	25.59'	51.17'	N28°13'22"E	002°35'57"
C184	1128.00'	51.17'	25.59'	51.17'	N25°37'25"E	002°35'57"
C185	1232.00'	55.89'	27.95'	55.89'	N25°37'34"E	002°35'58"
C186	1232.00'	55.89'	27.95'	55.89'	N23°01'36"E	002°35'58"

CURVE TABLE

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C187	1128.00'	51.17'	25.59'	51.17'	N23°01'28"E	002°35'57"
C188	1128.00'	51.17'	25.59'	51.17'	N20°25'31"E	002°35'57"
C189	1232.00'	55.89'	27.95'	55.89'	N20°25'38"E	002°35'58"
C190	1232.00'	55.89'	27.95'	55.89'	N17°49'40"E	002°35'58"
C191	1128.00'	51.17'	25.59'	51.17'	N17°49'34"E	002°35'57"
C192	1128.00'	51.17'	25.59'	51.17'	N15°13'37"E	002°35'57"
C193	1232.00'	55.89'	27.95'	55.89'	N15°13'42"E	002°35'58"
C194	1232.00'	55.89'	27.95'	55.89'	N12°37'44"E	002°35'58"
C195	1128.00'	51.17'	25.59'	51.17'	N12°37'40"E	002°35'57"
C196	1128.00'	51.17'	25.59'	51.17'	N10°01'43"E	002°35'57"
C197	1232.00'	55.89'	27.95'	55.89'	N10°01'47"E	002°35'58"
C198	1233.00'	21.39'	10.70'	21.39'	N06°37'39"E	000°59'39"
C199	1128.00'	51.17'	25.59'	51.17'	N07°25'46"E	002°35'57"
C200	1128.00'	58.23'	29.12'	58.22'	N04°39'04"E	002°57'27"
C201	2468.00'	88.14'	44.07'	88.13'	N79°53'49"W	002°02'46"
C202	1233.00'	21.38'	10.69'	21.38'	N05°38'01"E	000°59'37"
C203	1283.00'	44.51'	22.26'	44.51'	N06°07'51"E	001°59'16"
C204	1389.00'	54.70'	27.36'	54.70'	N05°59'47"E	002°15'24"
C205	1284.00'	13.16'	6.58'	13.16'	N09°01'24"E	000°35'14"
C206	1389.00'	53.15'	26.58'	53.14'	N08°13'15"E	002°11'32"
C207	1389.00'	53.15'	26.58'	53.14'	N10°24'47"E	002°11'32"
C208	1284.00'	49.13'	24.57'	49.13'	N10°24'47"E	002°11'32"
C209	1284.00'	49.13'	24.57'	49.13'	N12°36'20"E	002°11'32"
C210	1389.00'	53.15'	26.58'	53.14'	N12°36'20"E	002°11'32"
C211	1389.00'	53.15'	26.58'	53.14'	N14°47'52"E	002°11'32"
C212	1284.00'	49.13'	24.57'	49.13'	N14°47'52"E	002°11'32"
C213	1284.00'	49.13'	24.57'	49.13'	N16°59'24"E	002°11'32"
C214	1389.00'	53.15'	26.58'	53.14'	N16°59'24"E	002°11'32"
C215	1389.00'	53.15'	26.58'	53.14'	N19°10'57"E	002°11'32"
C216	1284.00'	49.13'	24.57'	49.13'	N19°10'57"E	002°11'32"
C217	1284.00'	49.13'	24.57'	49.13'	N21°22'29"E	002°11'32"

CURVE TABLE

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C218	1389.00'	53.15'	26.58'	53.14'	N21°22'29"E	002°11'32"
C219	1389.00'	53.15'	26.58'	53.14'	N23°34'01"E	002°11'32"
C220	1284.00'	49.13'	24.57'	49.13'	N23°34'01"E	002°11'32"
C221	1284.00'	49.13'	24.57'	49.13'	N25°45'34"E	002°11'32"
C222	1389.00'	53.15'	26.58'	53.14'	N25°45'34"E	002°11'32"
C223	1389.00'	52.76'	26.38'	52.75'	N27°56'37"E	002°10'35"
C224	1284.00'	48.77'	24.39'	48.77'	N27°56'37"E	002°10'35"
C225	1389.00'	53.54'	26.77'	53.53'	N30°08'09"E	002°12'30"
C226	1284.00'	49.49'	24.75'	49.49'	N30°08'09"E	002°12'30"
C227	1284.00'	49.13'	24.57'	49.13'	N32°20'11"E	002°11'32"
C228	1389.00'	53.15'	26.58'	53.14'	N32°20'11"E	002°11'32"
C229	1389.00'	53.15'	26.58'	53.14'	N34°31'43"E	002°11'32"
C230	1284.00'	49.68'	24.84'	49.68'	N34°32'27"E	002°13'00"
C231	526.00'	22.35'	11.18'	22.35'	N36°52'00"E	002°26'05"
C232	1389.00'	53.15'	26.58'	53.14'	N36°43'15"E	002°11'32"
C233	1389.00'	53.15'	26.58'	53.14'	N38°54'48"E	002°11'32"
C234	349.00'	31.86'	15.94'	31.85'	S35°28'09"W	005°13'48"
C235	1389.00'	16.40'	8.20'	16.40'	N40°20'51"E	000°40'35"
C236	245.00'	33.49'	16.77'	33.46'	S36°46'12"W	007°49'54"
C237	245.00'	48.43'	24.29'	48.35'	S27°11'29"W	011°19'32"
C238	349.00'	68.99'	34.61'	68.87'	S27°11'29"W	011°19'32"
C239	349.00'	68.99'	34.61'	68.87'	S15°51'56"W	011°19'32"
C240	245.00'	48.43'	24.29'	48.35'	S15°51'56"W	011°19'32"
C241	245.00'	53.81'	27.01'	53.70'	S03°54'39"W	012°35'02"
C242	349.00'	51.79'	25.94'	51.74'	S05°57'06"W	008°30'08"
C243	20.00'	32.02'	20.62'	28.71'	S44°10'09"E	091°44'23"
C244	20.00'	28.66'	17.42'	26.27'	N48°54'34"E	082°06'11"
C245	376.00'	33.48'	16.75'	33.47'	S10°24'31"W	005°06'07"
C246	245.00'	82.22'	41.50'	81.83'	S07°13'57"W	019°13'37"
C247	245.00'	65.43'	32.91'	65.23'	S24°29'47"W	015°18'03"
C248	376.00'	47.73'	23.90'	47.70'	S16°35'46"W	007°16'23"

CURVE TABLE

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C249	376.00'	47.73'	23.90'	47.70'	S23°52'10"W	007°16'23"
C250	245.00'	36.51'	18.29'	36.48'	S36°24'58"W	008°32'21"
C251	1389.00'	28.56'	14.28'	28.56'	N40°05'48"E	001°10'42"
C252	376.00'	47.73'	23.90'	47.70'	S31°08'33"W	007°16'23"
C253	1389.00'	62.01'	31.01'	62.01'	N38°13'43"E	002°33'29"
C254	1389.00'	50.29'	25.15'	50.29'	N35°54'44"E	002°04'28"
C255	376.00'	10.58'	5.29'	10.58'	S35°35'06"W	001°36'43"
C256	1494.00'	39.53'	19.77'	39.53'	N35°37'59"E	001°30'58"
C257	1494.00'	50.79'	25.40'	50.78'	N33°54'04"E	001°56'52"
C258	1389.00'	47.22'	23.61'	47.22'	N33°54'04"E	001°56'52"
C259	1389.00'	47.22'	23.61'	47.22'	N31°57'12"E	001°56'52"
C260	1494.00'	50.79'	25.40'	50.78'	N31°57'12"E	001°56'52"
C261	1494.00'	50.79'	25.40'	50.78'	N30°00'20"E	001°56'52"
C262	1389.00'	47.22'	23.61'	47.22'	N30°00'20"E	001°56'52"
C263	1389.00'	47.22'	23.61'	47.22'	N28°03'28"E	001°56'52"
C264	1494.00'	50.79'	25.40'	50.78'	N28°03'28"E	001°56'52"
C265	1494.00'	50.79'	25.40'	50.78'	N26°06'37"E	001°56'52"
C266	1389.00'	47.22'	23.61'	47.22'	N26°06'37"E	001°56'52"
C267	1389.00'	47.22'	23.61'	47.22'	N24°09'45"E	001°56'52"
C268	1494.00'	50.79'	25.40'	50.78'	N24°09'45"E	001°56'52"
C269	1494.00'	50.79'	25.40'	50.78'	N22°12'53"E	001°56'52"
C270	1389.00'	47.22'	23.61'	47.22'	N22°12'53"E	001°56'52"
C271	1389.00'	47.22'	23.61'	47.22'	N20°16'01"E	001°56'52"
C272	1494.00'	50.79'	25.40'	50.78'	N20°16'01"E	001°56'52"
C273	1494.00'	50.79'	25.40'	50.78'	N18°19'09"E	001°56'52"
C274	1389.00'	47.22'	23.61'	47.22'	N18°19'09"E	001°56'52"
C275	1389.00'	47.22'	23.61'	47.22'	N16°22'18"E	001°56'52"
C276	1494.00'	50.79'	25.40'	50.78'	N16°22'18"E	001°56'52"
C277	1494.00'	50.79'	25.40'	50.78'	N14°25'26"E	001°56'52"
C278	1389.00'	47.22'	23.61'	47.22'	N14°25'26"E	001°56'52"
C279	1389.00'	47.05'	23.53'	47.04'	N12°28'47"E	001°56'26"

CURVE TABLE

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C280	1494.00'	50.79'	25.40'	50.78'	N12°28'34"E	001°56'52"
C281	1494.00'	50.79'	25.40'	50.78'	N10°31'42"E	001°56'52"
C282	1389.00'	47.39'	23.70'	47.39'	N10°31'55"E	001°57'17"
C283	1389.00'	47.22'	23.61'	47.22'	N08°34'50"E	001°56'52"
C284	1495.00'	20.34'	10.17'	20.34'	N07°59'48"E	000°46'46"
C285	1495.00'	15.73'	7.87'	15.73'	N07°18'19"E	000°36'11"
C286	375.00'	8.39'	4.20'	8.39'	S07°38'41"W	001°16'55"
C287	1389.00'	66.39'	33.20'	66.39'	N06°14'15"E	002°44'19"
C288	1545.00'	37.28'	18.64'	37.28'	N07°41'42"E	001°22'57"
C289	325.00'	7.27'	3.64'	7.27'	S07°38'41"W	001°16'55"
C290	1651.00'	54.85'	27.43'	54.85'	N07°26'04"E	001°54'13"
C291	1651.00'	52.81'	26.41'	52.81'	N09°18'10"E	001°49'58"
C292	1546.00'	275.24'	137.99'	274.88'	N14°39'17"E	010°12'02"
C293	1546.00'	275.24'	137.99'	274.88'	N14°39'17"E	010°12'02"
C294	1651.00'	52.81'	26.41'	52.81'	N11°08'08"E	001°49'58"
C295	1651.00'	52.81'	26.41'	52.81'	N12°58'06"E	001°49'58"
C296	1546.00'	275.24'	137.99'	274.88'	N14°39'17"E	010°12'02"
C297	1546.00'	275.24'	137.99'	274.88'	N14°39'17"E	010°12'02"
C298	1651.00'	52.81'	26.41'	52.81'	N14°48'04"E	001°49'58"
C299	1651.00'	52.81'	26.41'	52.81'	N16°38'02"E	001°49'58"
C300	1546.00'	275.24'	137.99'	274.88'	N14°39'17"E	010°12'02"
C301	1546.00'	275.24'	137.99'	274.88'	N14°39'17"E	010°12'02"
C302	20.00'	36.26'	25.54'	31.49'	S32°10'35"E	103°51'48"
C303	1651.00'	56.07'	28.04'	56.07'	N18°31'24"E	001°56'45"
C304	736.08'	55.44'	27.73'	55.43'	N02°07'07"E	004°18'56"

LOT AREAS

BLOCK NO.	LOT NO.	AREA
23	36	6553 sq.ft.
23	37	5628 sq.ft.
23	38	5555 sq.ft.
23	39	5555 sq.ft.
23	40	5555 sq.ft.
23	41	5556 sq.ft.
23	42	5934 sq.ft.
23	43	6308 sq.ft.
23	44	6410 sq.ft.
23	45	6233 sq.ft.
23	46	6241 sq.ft.
23	47	5651 sq.ft.
23	48	5767 sq.ft.
23	49	6346 sq.ft.
23	50	7038 sq.ft.
23	51	6686 sq.ft.
23	52	6108 sq.ft.
23	53	5968 sq.ft.
23	54	5686 sq.ft.
23	55	5306 sq.ft.
23	56	5306 sq.ft.
23	57	5742 sq.ft.

LOT AREAS

BLOCK NO.	LOT NO.	AREA
44	1	6414 sq.ft.
44	2	5918 sq.ft.
44	3	5922 sq.ft.
44	4	5906 sq.ft.
44	5	5906 sq.ft.
44	6	5906 sq.ft.
44	7	5906 sq.ft.
44	8	5906 sq.ft.
44	9	5906 sq.ft.
44	10	5906 sq.ft.
44	11	5790 sq.ft.
44	12	6022 sq.ft.
44	13	5287 sq.ft.
44	14	5465 sq.ft.
44	15	5465 sq.ft.
44	16	5465 sq.ft.
44	17	5465 sq.ft.
44	18	5435 sq.ft.
44	19	5496 sq.ft.
44	20	5465 sq.ft.
44	21	5465 sq.ft.
44	22	5465 sq.ft.
44	23	5480 sq.ft.
44	24	5875 sq.ft.
44	25	220463 sq.ft.

LOT AREA	
TRACT 1F (FUTURE PARK-NOT PART OF THIS SUBDIVISION)	220463 sq.ft.

LOT AREAS

BLOCK NO.	LOT NO.	AREA
45	1	5719 sq.ft.
45	2	5559 sq.ft.
45	3	5523 sq.ft.
45	4	5523 sq.ft.
45	5	5523 sq.ft.
45	6	5523 sq.ft.
45	7	5523 sq.ft.
45	8	5523 sq.ft.
45	9	5523 sq.ft.
45	10	5523 sq.ft.
45	11	5523 sq.ft.
45	12	5523 sq.ft.
45	13	5523 sq.ft.
45	14	5947 sq.ft.
45	15	5824 sq.ft.

LOT AREAS

BLOCK NO.	LOT NO.	AREA
45	16	5415 sq.ft.
45	17	5545 sq.ft.
45	18	5572 sq.ft.
45	19	5572 sq.ft.
45	20	5572 sq.ft.
45	21	5572 sq.ft.
45	22	5573 sq.ft.
45	23	5573 sq.ft.
45	24	5573 sq.ft.
45	25	5573 sq.ft.
45	26	5573 sq.ft.
45	27	5573 sq.ft.
45	28	5609 sq.ft.
45	29	5689 sq.ft.

LOT AREAS

BLOCK NO.	LOT NO.	AREA
46	1	6397 sq.ft.
46	2	5391 sq.ft.
46	3	5370 sq.ft.
46	4	5370 sq.ft.
46	5	5370 sq.ft.
46	6	5370 sq.ft.
46	7	5370 sq.ft.
46	8	5370 sq.ft.
46	9	5370 sq.ft.
46	10	5370 sq.ft.
46	11	5330 sq.ft.
46	12	5409 sq.ft.
46	13	5370 sq.ft.
46	14	5398 sq.ft.
46	15	5357 sq.ft.
46	16	5393 sq.ft.
46	17	5876 sq.ft.
46	18	6106 sq.ft.
46	19	6106 sq.ft.
46	20	6475 sq.ft.

LOT AREAS

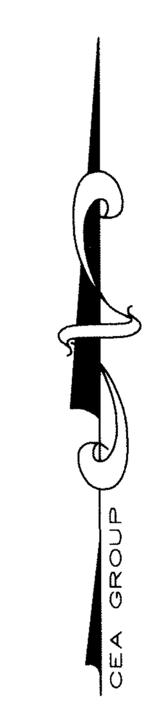
BLOCK NO.	LOT NO.	AREA
46	21	9133 sq.ft.
46	22	7543 sq.ft.
46	23	6700 sq.ft.
46	24	5907 sq.ft.
46	26	5145 sq.ft.
46	27	5145 sq.ft.
46	28	5145 sq.ft.
46	29	5145 sq.ft.
46	30	5145 sq.ft.
46	31	5145 sq.ft.
46	32	5145 sq.ft.
46	33	5145 sq.ft.
46	34	5145 sq.ft.
46	35	5145 sq.ft.
46	36	5145 sq.ft.
46	37	5127 sq.ft.
46	38	5164 sq.ft.
46	39	5179 sq.ft.
46	40	6262 sq.ft.

LOT AREAS

BLOCK NO.	LOT NO.	AREA
47	1	5929 sq.ft.
47	2	5324 sq.ft.
47	3	5324 sq.ft.
47	4	5324 sq.ft.
47	5	5324 sq.ft.
47	6	5324 sq.ft.
47	7	5324 sq.ft.
47	8	5324 sq.ft.
47	9	5324 sq.ft.
47	10	5324 sq.ft.
47	11	5324 sq.ft.
47	12	5324 sq.ft.
47	13	5324 sq.ft.
47	14	5324 sq.ft.
47	15	5324 sq.ft.
47	16	5324 sq.ft.
47	17	5324 sq.ft.
47	18	5324 sq.ft.
47	19	5324 sq.ft.
47	20	5324 sq.ft.
47	21	5324 sq.ft.
47	22	5324 sq.ft.
47	23	5324 sq.ft.

LOT AREAS

BLOCK NO.	LOT NO.	AREA
48	1	6343 sq.ft.
48	2	5386 sq.ft.
48	3	5369 sq.ft.
48	4	5369 sq.ft.
48	5	5369 sq.ft.
48	6	5369 sq.ft.
48	7	7404 sq.ft.



FINAL PLAT
SCALE: 1" = 100'

SCHOOL DISTRICT
SOCORRO INDEPENDENT SCHOOL DISTRIC
12300 EASTLAKE DRIVE, EL PASO TEXAS 79928

BENCHMARK:
BENCHMARK IS CITY MONUMENT AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE ELEVATION = 3970.52 (CITY DATUM).

GRAPHIC SCALE
100 0 50 100 200
(IN FEET)
1 inch = 100 ft.

This plat represents a survey made on the ground by me or under my supervision and complies with the current Texas Board of Professional Land Survey Professional and Technical Standards.

Benito Barragan TX, R.P.L.S. No. 5615

ENGINEER

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5232 Fax: 915.544.5233 www.ceagroup.net
CONTACT: JORGE L. AZCARATE, P.E.

SURVEYOR

Barragan & Associates Inc.
LAND PLANNING & LAND SURVEYING
10950 Pellicano Dr. Bldg. F – El Paso TX 79935
Phone (915) 591–5709 Fax (915) 591–5706
CONTACT: BENITO BARRAGAN, R.P.L.S.

DATE OF PREPARATION: AUGUST 2014

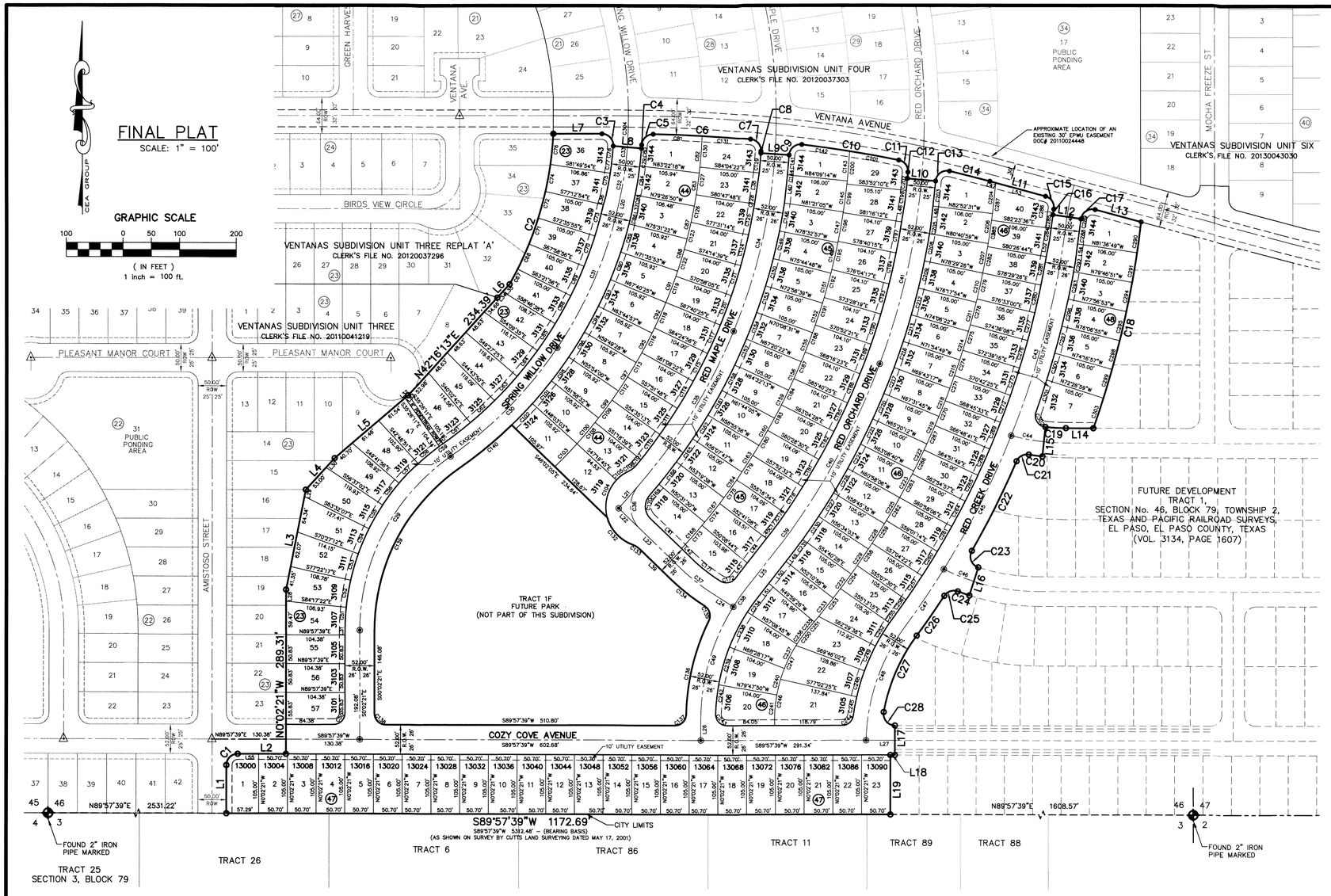
VENTANAS SUBDIVISION UNIT SEVEN

A PORTION OF TRACT 1,
SECTION 46, BLOCK 79, TOWNSHIP 2,
TEXAS AND PACIFIC RAILWAY COMPANY SURVEYS,
CITY OF EL PASO, EL PASO COUNTY, TEXAS
CONTAINING 25.149 ACRES ±

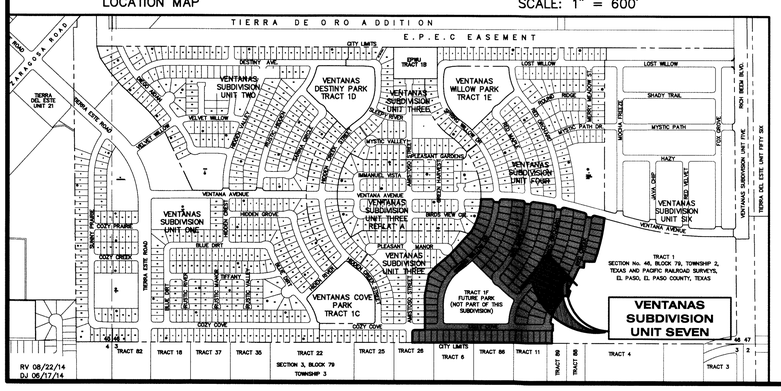
SHEET 1 OF 2

FINAL PLAT
SCALE: 1" = 100'

GRAPHIC SCALE
100 0 50 100 200
(IN FEET)
1 inch = 100 ft.



LOCATION MAP
SCALE: 1" = 600'



RV 08/22/14
DJ 08/27/14

LINE TABLE		
LINE	BEARING	LENGTH
L1	S00°02'21"E	85.00'
L2	S89°57'39"W	85.38'
L3	S11°07'56"W	179.96'
L4	S42°20'08"W	75.57'
L5	S49°22'23"W	170.90'
L6	S42°16'13"W	32.27'
L7	N89°57'39"E	85.89'
L8	S85°42'41"E	50.00'
L9	N86°07'53"W	50.00'
L10	N84°51'47"W	50.00'
L11	S75°02'21"E	101.61'
L12	N81°42'51"W	50.00'
L13	S75°02'21"E	83.89'
L14	S89°57'39"W	48.49'
L15	S05°53'31"W	52.00'
L16	S17°35'25"W	52.00'
L17	S00°02'21"E	52.00'
L18	S89°57'39"W	7.89'
L19	N00°02'21"W	105.00'

LINE TABLE		
LINE	BEARING	LENGTH
L20	S12°47'06"W	16.47'
L21	N40°55'03"E	53.10'
L22	S46°02'05"E	53.10'
L23	N46°02'05"W	98.74'
L24	N57°51'10"W	43.43'
L25	S38°05'03"W	106.37'
L26	S00°02'21"E	36.01'
L27	S89°57'39"W	50.81'
L28	N00°02'21"W	20.34'
L29	N11°07'56"E	12.20'
L30	N42°20'08"E	22.57'
L31	S00°02'21"E	8.58'
L32	N49°22'23"E	7.20'
L33	N42°16'13"E	0.84'
L34	N42°16'13"E	13.97'
L35	N42°16'13"E	18.30'
L36	N16°15'36"E	16.50'
L37	N09°18'35"E	16.50'
L38	N08°31'45"E	46.15'

LINE TABLE		
LINE	BEARING	LENGTH
L39	N46°02'05"W	73.98'
L40	S06°06'31"W	48.57'
L41	N46°02'05"W	76.19'
L42	N46°02'05"W	22.55'
L43	S38°05'03"W	34.10'
L44	S38°05'03"W	54.60'
L45	S38°05'03"W	15.66'
L46	N09°35'10"E	34.54'
L47	S75°02'21"E	10.53'
L48	S06°20'04"W	35.97'
L49	S38°05'03"W	26.22'
L50	S38°05'03"W	49.12'
L51	S38°05'03"W	31.03'
L52	N10°51'00"E	30.49'
L53	S75°02'21"E	91.08'
L54	N07°09'10"E	31.53'
L55	N89°57'39"E	37.29'

NOTES:

1. THIS IS TO CERTIFY THAT WATER AND SEWER SERVICES WILL BE PROVIDED TO VENTANAS SUBDIVISION UNIT SEVEN BY THE EL PASO WATER UTILITIES/PUBLIC SERVICE BOARD IN ACCORDANCE WITH THEIR RULES AND REGULATIONS AND WITH SECTION 16.343 OF THE TEXAS WATER CODE. WATER AND SEWER SERVICES WILL BE EXTENDED TO THE SUBDIVISION FROM EXISTING FACILITIES LOCATED ON VENTANA AVENUE AND COZY COVE AVENUE AND WILL BE CONSTRUCTED TO SERVE THE SUBDIVISION.
2. TAX CERTIFICATE(S) FOR THIS SUBDIVISION ARE FILED IN THE OFFICE OF THE COUNTY CLERK, DEED AND RECORD SECTION, INSTRUMENT No. 20140072343, DATE 11/10/14.
3. RESTRICTIVE COVENANTS FOR THIS SUBDIVISION ARE FILED IN THE OFFICE OF THE COUNTY CLERK, DEED AND RECORD SECTION. INSTRUMENT No. 20140072344, DATE 11/10/14.
4. SUBDIVISION IMPROVEMENTS AGREEMENT & GUARANTEE FOR THIS SUBDIVISION IS FILED IN THE OFFICE OF THE COUNTY CLERK, DEED AND RECORD SECTION. INSTRUMENT No. _____, DATE _____.
5. INTERIOR LOT CORNERS WILL BE SET UPON COMPLETION OF CONSTRUCTION OF ROADWAYS AND UTILITIES. (BY OTHERS) SET 1/2" REBAR WITH CAP STAMPED "B&A INC" AT ALL EXTERIOR BOUNDARY CORNERS UNLESS OTHERWISE SHOWN.
6. "U.S.POSTAL SERVICE DELIVERY WILL BE PROVIDED THROUGH NEIGHBORHOOD DELIVERY AND COLLECTION BOX UNITS."
7. THIS SUBDIVISION LIES WITH IN ZONE "X" AS DESIGNATED IN PANEL NO. 480212 0175B, DATED SEPTEMBER 4, 1991, OF THE FLOOD INSURANCE RATE MAPS, EL PASO COUNTY, TEXAS. ZONE "X" INDICATES AREAS DETERMINED TO BE OUTSIDE 500-YEAR FLOODPLAIN.
8. DEED REFERENCE: VOL. 3134, PG. 1607, REAL PROPERTY RECORDS OF EL PASO COUNTY, TEXAS.
9. △ DENOTES EXISTING MONUMENT.
10. ◉ DENOTES PROPOSED CITY MONUMENT AS PER VENTANAS SUBDIVISION UNIT SEVEN. (NOT IN PLACE AS OF DATE OF PREPARATION). MAY BE SUBJECT TO RELOCATION AT TIME OF CONSTRUCTION. FOR EXACT LOCATION PLEASE CONTACT THE CITY OF EL PASO.

DEDICATION

GFA, LLC the owners of this land, do hereby present this map and dedicate their respective portions of property to the use of the public, the streets, pedestrian right-of-way & utility easements as hereon laid down and designated, including easements for overhang of service wires for pole type utilities and the right for installation of service poles alongside lot lines as may be required, easements for buried service wires, conduits and pipes for underground utilities, and the right to ingress and egress for service and construction, and the right to trim interfering trees and shrubs.

Witness my signature this 10th day of October 2014.

ALBERT GAMBOA, President

ACKNOWLEDGEMENT

STATE OF TEXAS
COUNTY OF EL PASO

Before me, the undersigned authority, on this day personally appeared Albert Gamboa, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same as the act and deed for the purpose and consideration herein expressed.

Given under my hand and seal of office this 10th day of October 2014.

Notary Public in and for El Paso County — My Commission Expires

CITY PLANNING COMMISSION

This subdivision is hereby approved as to the platting and as to the condition of the dedication in accordance with Chapter 212 of the Local Government Code of Texas this 23rd day of October, 2014.

Chairperson — Executive Secretary

Approved for filing this 23rd day of October, 2014.

City Development Director

FILING

Filed and recorded in the office of the County Clerk of El Paso County, Texas, this 10th day of November 2014, in File No. 20140072342 of the Plat Records.

County Clerk — Diego Lopez, by Deputy

Subdivision improvement plans prepared by and under the supervision of CEA Group.

JORGE L. AZCARATE, P.E.
Licensed Professional Engineer
Texas License No. 85075

This plat represents a survey made on the ground by me or under my supervision and complies with the current Texas Board of Professional Land Survey Professional and Technical Standards.

Benito Barragan TX. R.P.L.S. No. 5615

ENGINEER

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5232 Fax: 915.544.5233 www.ceagroup.net
CONTACT: JORGE L. AZCARATE, P.E.

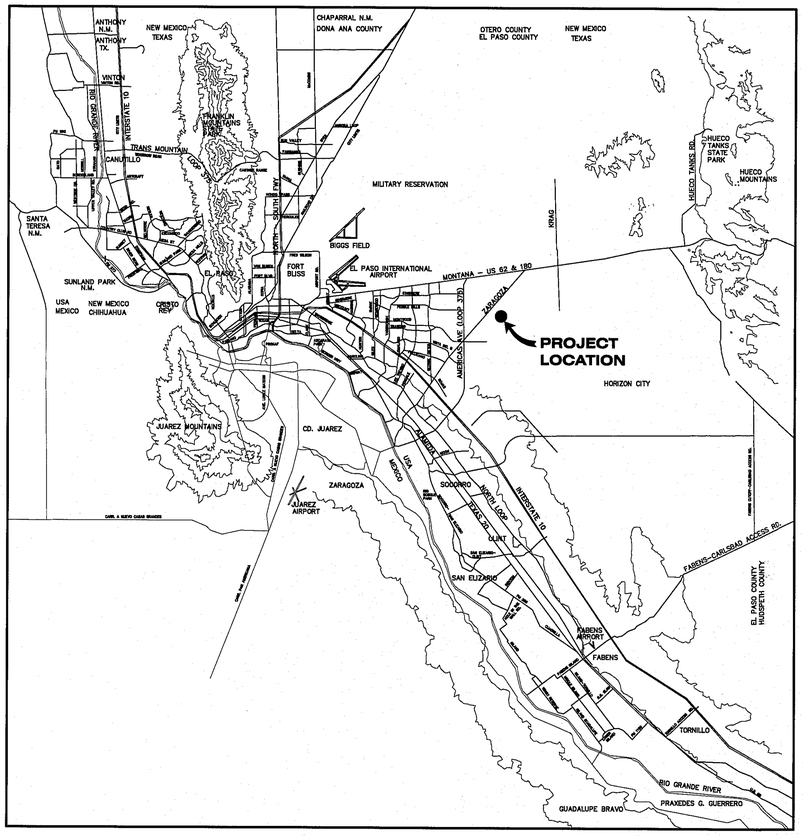
SURVEYOR

Barragan & Associates Inc.
LAND PLANNING & LAND SURVEYING
10950 Pellicano Dr. Bldg. F – El Paso TX 79935
Phone (915) 591-5709 Fax (915) 591-5706
CONTACT: BENITO BARRAGAN, R.P.L.S.

DATE OF PREPARATION: AUGUST 2014

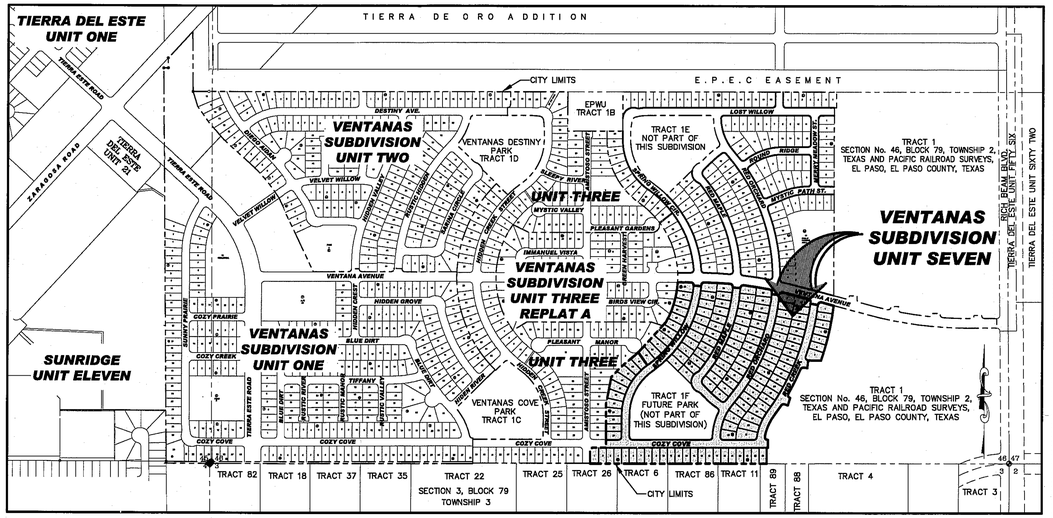
VENTANAS SUBDIVISION UNIT SEVEN
SUBDIVISION IMPROVEMENTS

A PORTION OF TRACT 1 AND ALL OF TRACT 1F, SECTION 46, BLOCK 79, TOWNSHIP 2, TEXAS AND PACIFIC RAILWAY COMPANY SURVEYS EL PASO, EL PASO COUNTY, TEXAS CONTAINING 25.149 ACRES ±



VICINITY MAP
APPROXIMATE SCALE:
1" = 2 MILES

SHEET NUMBER	SHEET TITLE
CVR	COVER SHEET
C1.1	GENERAL INFORMATION
C2.1, C2.2	FINAL PLAT
C3.1	GRADING PLAN
C4.1	DRAINAGE PLAN
C4.2	OFF SITE DRAINAGE PLAN
C5.1	GRADING SECTIONS
C6.1–C6.10	STREET PLAN & PROFILES
C7.1	STORM SEWER PLAN & PROFILES
C8.1–C8.3	STANDARD DETAILS
C9.1–C9.3	DRAINAGE DETAILS
C10.1	ILLUMINATION PLAN
C11.1	WATER INDEX / GENERAL INFORMATION
C12.1–C12.5	WATER DETAILS
C13.1	SANITARY SEWER INDEX / GENERAL INFORMATION
C14.1–C14.5	SANITARY SEWER PLAN & PROFILES
C15.1–15.3	SANITARY SEWER DETAILS
C16.1–C16.3	STORM WATER POLLUTION PREVENTION PLANS



LOCATION MAP
APPROXIMATE SCALE: 1" = 600'

STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER

7-16-14
JORGE L. AZCARATE, P.E. PROJECT MANAGER

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5232 Fax: 915.544.5233 www.ceagroup.net

CITY DEVELOPMENT DEPARTMENT

Reviewed For Conformance For Condition Related To:

- Sidewalks
- Grading & Drainage
- Wheelchair Ramps
- On Site Parking Layout
- Driveways
- Retaining Rock Walls
- On Site Ponding of Storm Waters

Contractor Must Call 24 Hours Prior To Construction for Inspections

By JAVIER GUTIERREZ JULY 30, 2014 Date

PRINCIPAL CONTACTS:

	NAME	ADDRESS	CITY & ZIP	PHONE	FAX
OWNER:	GFA, LLC.	1525 GOODYEAR DRIVE	EL PASO, TX 79936	(915) 598–1105	(915) 591–4985
ENGINEER:	CEA GROUP	4712 WOODROW BEAN DR. STE. F	EL PASO, TX 79924	(915) 544–5232	(915) 544–5233
SURVEYOR:	BARRAGAN & ASSOCIATES	10950 PELLICANO DR. BUILDING F	EL PASO, TX 79936	(915) 591–5709	(915) 591–5706

S:\2260\2260-017LD-Ventanas Unit Seven\DWGS\Construction Drawings\Improvement Plans\2260-017-C0.0-Cover Sheet.dwg, Model, 7/15/2014 9:41:24 AM

GENERAL NOTES

1. THE CONTRACTOR SHALL VISIT AND FAMILIARIZE HIMSELF WITH THE PROJECT SITE PRIOR TO SUBMITTING BIDS.
2. CONTRACTOR SHALL WATER CONSTRUCTION AREA A MINIMUM OF TWICE A DAY TO KEEP DUST TO A MINIMUM – ONCE IN THE MORNING AND BEFORE QUITTING TIME. THIS SHALL ALSO BE DONE DURING WEEKENDS AND HOLIDAYS.
3. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE, PROTECT, AND REPLACE ALL UNDERGROUND UTILITY LINES AT NO EXTRA COST TO THE OWNER WHEN LINES ARE DISTURBED AS A RESULT OF THE WORK.
4. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SCHEDULE AND PERFORM HIS WORK SO AS TO ASSURE PROPER PASSAGE OF STORM RUNOFF DURING THE COURSE OF HIS OPERATIONS. ALL LABOR, TOOLS, EQUIPMENT, AND SUPERVISION REQUIRED TO ASSURE SUCH PROPER PASSAGE OF RUNOFF WATER AND ANY REMOVAL OR HANDLING OF WATER IN ORDER TO MAINTAIN DRY CONDITIONS SHALL BE CONSIDERED INCIDENTAL TO THE WORK, AND SHALL BE AT THE EXPENSE OF THE CONTRACTOR.
5. THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION SCHEDULE WITH THE USER, ALL UTILITIES, AND ALL OTHER AGENCIES WITH JURISDICTION OVER THE PROJECT.
6. ALL EXISTING PAVEMENT, ADJACENT UTILITIES, STRUCTURES, ETC., DISTURBED AS A RESULT OF THE NEW CONSTRUCTION, SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
7. THE OWNER WILL FURNISH HORIZONTAL AND VERTICAL CONTROL REFERENCED POINTS ONLY. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES BEFORE PROCEEDING WITH THE WORK. ANY DISCREPANCIES FOUND SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER, OTHERWISE THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THEIR CORRECTNESS.
8. SEE REFERENCED BENCHMARK ON TITLE BLOCK FOR DATUM ELEVATIONS.
9. VIBRATORY ROLLERS WILL NOT BE PERMITTED ON ANY PHASE OF THIS PROJECT, UNLESS APPROVED IN WRITING BY THE ENGINEER.
10. ALL WORK REQUIRED BY THESE PLANS SHALL BE CONDUCTED IN CONFORMANCE WITH CURRENT SAFETY CODES AND STANDARDS WITH JURISDICTION OVER THE PROJECT.
11. THE LOCATION OF THE INLETS SHALL BE AT THE FIELD LOW POINT AND APPROVED BY THE ENGINEER.

LEGEND

- SUBDIVISION BOUNDARY
- ROW LINE
- CURB LINE
- PROPERTY LINE
- STREET CENTERLINE
- EASEMENT LINE
- MATCH LINE
- STORM SEWER LINE
- HIGH WATER MARK
- CURB AND GUTTER DROP INLET
- STORM SEWER MANHOLE
- 4000 — FINISHED GROUND CONTOUR ELEVATION (INDEX)
- FINISHED GROUND CONTOUR ELEVATION (INTERMEDIATE)
- 4000 — EXISTING GROUND CONTOUR ELEVATION (INDEX)
- EXISTING GROUND CONTOUR ELEVATION (INTERMEDIATE)
- NEW RETAINING ROCKWALL (2'–3' IN HEIGHT)
- NEW RETAINING ROCKWALL (3'–9' IN HEIGHT)
- X / X — STANDARD DETAIL/SECTION NUMBER; SHEET NUMBER WHERE STANDARD/ SECTION DETAIL IS LOCATED
- 4000.00 — FINISHED SPOT ELEVATION
- FG. 56.00 — LOT FINISHED GROUND ELEVATION
- TC 4000.00 — TOP OF CURB ELEVATION
- TP 4000.00 — TOP OF PAVEMENT ELEVATION
- 1 (2) — SUBDIVISION LOT AND BLOCK NUMBER
- DRAINAGE FLOW
- HIGH POINT
- LOW POINT
- EXISTING HIGH POINT
- EXISTING LOW POINT
- HEADWALL WITH WINGWALLS
- DA–4 — DRAINAGE AREA
- 3:1 SLOPE — HORIZONTAL: VERTICAL SLOPE RATIO
- WHEELCHAIR RAMP

GRADING SPECIFICATIONS

1. CLEARING AND GRUBBING: CLEAR SITE OF TREES, SHRUBS AND OTHER VEGETATION; COMPLETELY REMOVE STUMPS, ROOTS AND OTHER DEBRIS PROTUDING THROUGH GROUND SURFACE; FILL DEPPRESIONS CAUSED BY CLEARING AND GRUBBING OPERATIONS WITH SATISFACTORY FILL MATERIAL, UNLESS FURTHER EXCAVATION OF EARTHWORK IS INDICATED; REMOVE EXISTING ABOVE–GRADE AND BELOW–GRADE IMPROVEMENTS AS INDICATED AND AS NECCESSARY TO FACILITATE NEW CONSTRUCTION. BURNING IS NOT PERMITED ON OWNER'S PROPERTY. REMOVE WASTE MATERIALS FROM OWNER'S PROPERTY.
2. SATISFACTORY FILL MATERIALS: FILL MATERIALS SHALL BE FREE OF ANY ORGANIC OR DELETERIOUS SUBSTANCE AND SHALL NOT CONTAIN ROCKS OR LUMPS OVER 3 INCHES IN GREATEST DIMENSION AND SHALL BE DEFINED AS THOSE COMPLYING WITH ASTM D2487 SOIL CLASSIFICATION GROUPS GW, GP,GM, GC, SM, SP, SM, AND SC.
3. UNSATISFACTORY FILL MATERIAL: ARE DEFINED AS THOSE COMPLYING WITH ASTM D2487 SOIL CLASSIFICATION GROUPS ML, MH, CL, CH, OL, OH, AND PT, OR WHERE THE PLASTICITY INDEX EXCEEDS 12, UNLESS OTHERWISE APPROVED BY ENGINEER, OR CITY ENGINEER.
4. EXCAVATION: IS UNCLASSIFIED AND INCLUDES EXCAVATION TO ELEVATIONS INDICATED, REGARDLESS OF CHARACTER OF MATERIAL AND OBSTRUCTIONS ENCOUNTERED.
5. GROUND SURFACE PREPARATION FOR FILL: REMOVE VEGETATION, DEBRIS, UNSATISFACTORY SOIL MATERIAL, OBSTRUCTIONS, AND DELETERIOUS MATERIAL FROM GROUND SURFACE UPON WHICH THE FILL IS TO BE PLACED. THE SURFACE SHALL THEN BE SCARIFIED TO A DEPTH OF AT LEAST 6–INCHES, AND UNTIL THE SURFACE IS FREE FROM RUTS, HUMMOCKS OR OTHER UNEVEN FEATURES WHICH WOULD PREVENT UNIFORM COMPACTION. PLOW STRIP, OR BREAK UP SLOPED SURFACES STEEPER THAN 1 VERTICAL TO 4 HORIZONTAL SO THAT FILL MATERIAL WILL BOND WITH 1 VERTICAL TO 4 HORIZONTAL SO THAT FILL MATERIAL WILL BOND WITH EXISTING SURFACE. AFTER PLOWING AND SCARIFYING FILL AREA, IT SHALL THEN BE DISCED OR BLADED UNTIL IT IS UNIFORM AND FREE FROM LARGE CLODS, BROUGHT TO OPTIMUM MOISTURE, AND COMPACTED TO 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D–1557.
6. PLACEMENT OF FILL: PLACE BACKFILL AND FILL MATERIALS IN LAYERS NOT MORE THAN 8 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 4 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HAND–OPERATED TAMPERS. BEFORE COMPACTION, MOISTEN OR AERATE EACH LAYER AS NECESSARY TO PROVIDE OPTIMUM MOISTURE CONTENT. PLACE FILL MATERIALS EVENLY ADJACENT TO SITE APPURTENANCES, PIPING, OR CONDUIT TO REQUIRED ELEVATIONS. PREVENT WEDGING ACTION OF BACKFILL AGAINST SITE APPURTENANCES OR DISPLACEMENT OF PIPING OR CONDUIT BY CARRYING MATERIAL UNIFORMLY AROUND SITE APPURTENANCES, PIPING, OR CONDUIT TO APPROXIMATELY SAME ELEVATION IN EACH LIFT. COMPACT SOIL TO NOT LESS THAN 95% OF MAXIMUM DENSITY, IN ACCORDANCE WITH ASTM D–1557.
7. MOISTURE CONTROL: WHERE SUBGRADE OR LAYER OF SOIL MATERIAL MUST BE CONDITIONED FOR OPTIMUM MOISTURE BEFORE COMPACTION, UNIFORMLY APPLY WATER TO SURFACE OF SUBGRADE OR LAYER OF SOIL MATERIAL. APPLY WATER IN MINIMUM QUANTITY AS NECESSARY TO PREVENT FREE WATER FROM APPEARING ON SURFACE DURING OR SUBSEQUENT TO COMPACTION OPERATIONS. WATER CONTENT SHALL BE WITHIN 2 PERCENTAGE POINTS OF OPTIMUM MOISTURE CONTENT. REMOVE AND REPLACE, OR SCARIFY AND AIR DRY SOIL MATERIAL THAT IS TOO WET TO PERMIT COMPACTION TO SPECIFIED DENSITY.
8. QUALITY CONTROL: THE OWNER SHALL PROVIDE A GEOTECHNICAL ENGINEER TO PERFORM FIELD DENSITY TEST OF THE COMPACTION OF EACH LAYER OF FILL. DENSITY TESTS SHALL BE TAKEN IN THE COMPACTED MATERIAL BELOW THE DISTURBED SURFACE. WHEN THESE TESTS INDICATE THAT THE DENSITY OF ANY LAYER OF FILL OR PORTION THEREOF IS BELOW THE REQUIRED DENSITY, THE PARTICULAR LAYER OR PORTION SHALL BE REWORKED UNTIL THE REQUIRED DENSITY HAS BEEN OBTAINED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ADDITIONAL TESTING AND WHEN REQUIRED DENSITIES ARE NOT MET, SUPERVISION BY THE GEOTECHNICAL ENGINEER DURING THE GRADING OPERATIONS TO ENSURE GRADING WORK IN ACCORDANCE WITH THIS PLAN AND SPECIFICATIONS.

ABBREVIATIONS

LP	LOW POINT
HP	HIGH POINT
ELEV	ELEVATION
STA	STATION
VCS	VERTICAL CURVE STATION
VCE	VERTICAL CURVE ELEVATION
TC	TOP OF CURB
TM	TOP OF MEDIAN
TP	TOP OF PAVEMENT
TYP	TYPICAL
PVC	POINT OF VERTICAL CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENT
AD	ALGEBRAIC DIFFERENCE
CR	CURVE RETURN
ROW	RIGHT OF WAY
CL	CENTER LINE
PL	PROPERTY LINE
FG	FINISH GRADE
FF	FINISH FLOOR
EG	EXISTING GRADE
MIN.	MINIMUM
MAX.	MAXIMUM
RCP	REINFORCED CONCRETE PIPE
Q	QUANTITY
CAP	CAPACITY
EXP	EXPECTED
INV	INVERT
CFS	CUBIC FEET PER SECOND
A	AREA
DA	DRAINAGE AREA
LF	LINEAR FEET
STD	STANDARD
CONC	CONCRETE
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
PT	POINT OF TANGENT
L	LENGTH
R	RADIUS
T	TANGENT
Δ	DELTA ANGLE
S	SLOPE
TEMP	TEMPORARY
V	VELOCITY IN FEET PER SECOND
HGL	HYDRAULIC GRADE LINE
HWE	HIGH WATER ELEVATION

INDEX OF DRAWINGS

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PLAT (SHEET 2 OF 2)	C2.2
GRADING PLAN	C3.1
DRAINAGE PLAN	C4.1
OFF– SITE DRAINAGE PLAN	C4.2
GRADING SECTIONS	C5.1
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SPRING WILLOW DRIVE STREET PLAN & PROFILE FROM STA. 6+50.00 TO STA. 12+03.59	C6.2
RED MAPLE DRIVE STREET PLAN & PROFILE FROM STA. 0+00.00 TO STA. 4+50.00	C6.3
RED MAPLE DRIVE STREET PLAN & PROFILE FROM STA. 4+50.00 TO STA. 9+44.03	C6.4
RED ORCHARD DRIVE STREET PLAN & PROFILE FROM STA. 0+00.00 TO STA. 5+50.00	C6.5
RED ORCHARD DRIVE STREET PLAN & PROFILE FROM STA. 5+50.00 TO STA. 10+83.06	C6.6
RED CREEK DRIVE STREET PLAN & PROFILE FROM STA. 0+00.00 TO STA. 5+00.00	C6.7
RED CREEK DRIVE STREET PLAN & PROFILE FROM STA. 5+00.00 TO STA. 10+01.57	C6.8
COZY COVE AVENUE STREET PLAN & PROFILE FROM STA. 23+59.61 TO STA. 29+00.00	C6.9
COZY COVE AVENUE STREET PLAN & PROFILE FROM STA. 29+00.00 TO STA. 34+34.81	C6.10
LINE H PLAN & PROFILE FROM STA. 0+00.00 TO STA. 0+43.66 LINE I PLAN & PROFILE FROM STA. 0+00.00 TO STA. 2+30.41	C7.1
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STANDARD DETAILS (SHEET 2 OF 3)	C8.2
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UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543–5720
EL PASO ENERGY CORPORATION	(915) 496–5244
EL PASO WATER UTILITIES	(915) 594–5500
MCI SURVEILLANCE	(800) MCI–WORK
TIME WARNER COMMUNICATIONS	(915) 772–1123
TEXAS GAS SERVICE	(915) 680–7200
SBC	(800) 545–6005
AT&T	(800) 852–3786
U.S. SPRINT TELECOMM	(800) 521–0579
CITY OF EL PASO DEPARTMENT OF TRANSPORTATION (EPDoT)	(915) 621–6750
(AFTER HOURS)	(915) 240–3220

WARNING ! BEFORE YOU DIG
CALL
1–800–DIG–TESS
1–800–344–8377
FOR FIELD LOCATING EXISTING UTILITIES

Final Approval

SPECIAL CONDITIONS

1. CONTRACTOR SHALL HAVE A QUALIFIED PROJECT SUPERINTENDENT AT THE PROJECT SITE AT ALL TIMES DURING THE CONSTRUCTION DURATION.
2. CONTRACTOR SHALL PREPARE CURB GRADES WITHIN 0.10–FEET.
3. CONTRACTOR TO INSTALL AND MAINTAIN SW3P BEST MANAGEMENT PRACTICES AS INDICATED ON THE PLANS. CONTRACTOR SHALL COMPLY WITH THE SW3P SPECIFICATIONS, AND TCEQ RULES AND REGULATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMING TO ALL SWP3 REGULATIONS.
4. CONTRACTOR SHALL CONSTRUCT TEMPORARY SLOPES BETWEEN LOTS THAT HAVE A VERTICAL GRADE DIFFERENTIAL OF OVER 4–FEET.

REFERENCES – BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.

ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

cea
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4604
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5232 Fax: 915.544.5233 www.ceagroup.net

ENGINEER'S SEAL
THE STATE OF TEXAS — JORGE L. AZCARATE — 85075 — LICENSED PROFESSIONAL ENGINEER

SCALE	
Horizontal:	N/A
Vertical:	N/A
Contour Interval:	N/A
DATE:	MAY 2014
DESIGN BY:	F.Z./J.M.
DRAWN BY:	J.M.
CHKD. BY:	J.L.A.
APPVD. BY:	J.L.A.
JOB No.	2260–017–LD

PROJECT TITLE

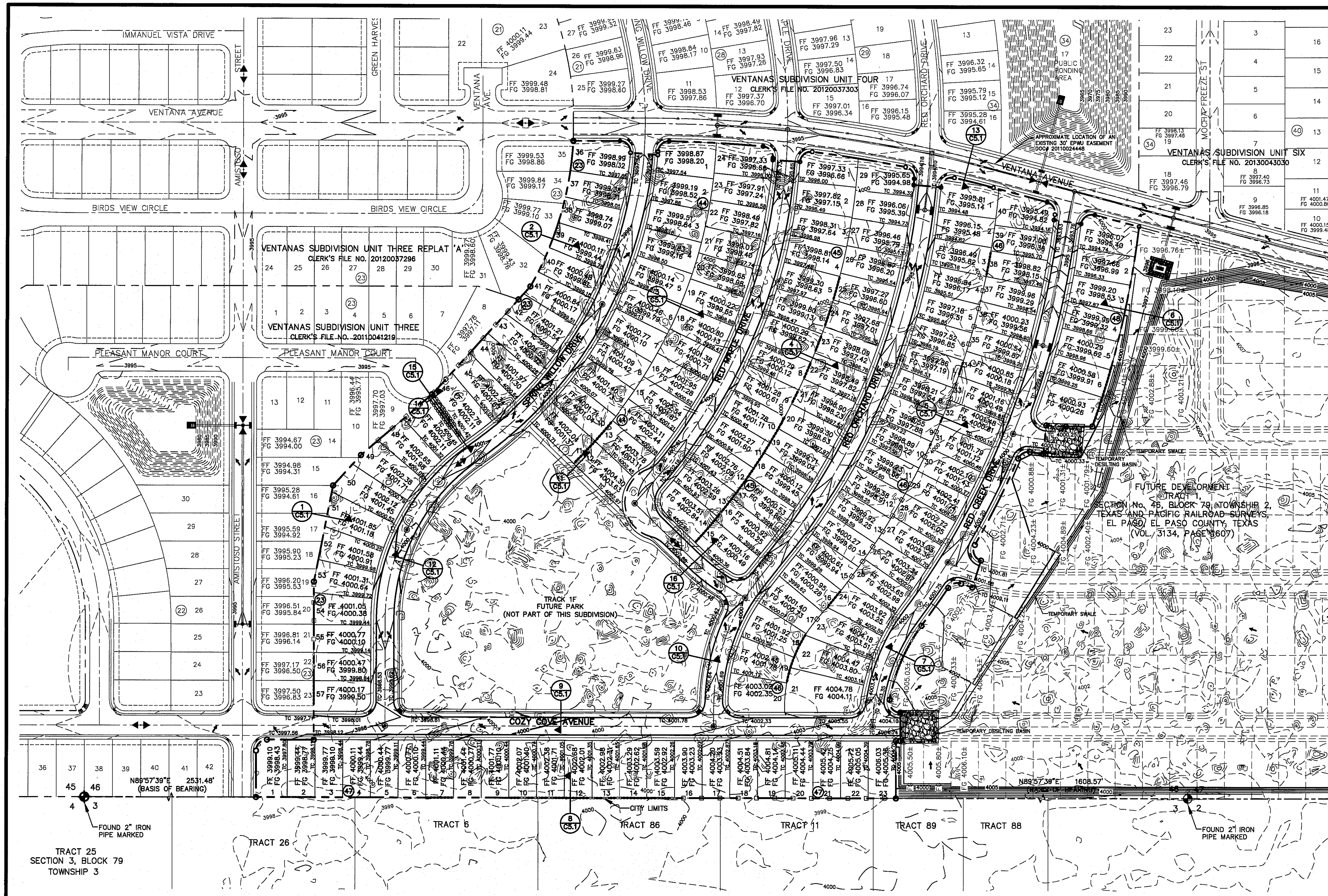
VENTANAS SUBDIVISION UNIT SEVEN SUBDIVISION IMPROVEMENTS

SHEET TITLE

GENERAL INFORMATION

SHEET NO.

C1.1



GRADING PLAN

SCALE: 1" = 100'

GRAPHIC SCALE

100 0 50 100 200

(IN FEET)
1 inch = 100 ft.

NOTES:

1. RETAINING WALLS SHALL BE CONSTRUCTED FOR VERTICAL GRADES GREATER THAN 2-FEET.
2. SLOPED AREAS SHALL BE MAINTAINED BY THE PROPERTY OWNERS.
3. ALL RETAINING WALLS NOT SPECIFIED TO BE CONSTRUCTED BY DEVELOPER, SHALL BE BUILT BY BUILDER.
4. RETAINING ROCKWALLS (RETAINING PORTIONS ONLY) IN EXCESS OF 4' HIGH TO BE BUILT BY DEVELOPER,
5. DEVELOPER SHALL COMPLY WITH SECTION 13.08.070 (EXCESSIVE PAVING CUTS) OF THE EL PASO MUNICIPAL CODE.
6. IMPROVEMENTS SHALL NOT BE PLACED ON SIDEWALK (NDBCU's, SIGNS, POLES, FIRE HYDRANTS, ETC.) REFER TO STANDARD DETAIL SHEETS.
7. IMPROVEMENTS SHALL COMPLY WITH T.A.S./A.D.A.
8. WHEELCHAIR RAMPS WILL BE CONSTRUCTED BY DEVELOPER AS PART OF SUBDIVISION IMPROVEMENTS.

BENCHMARK

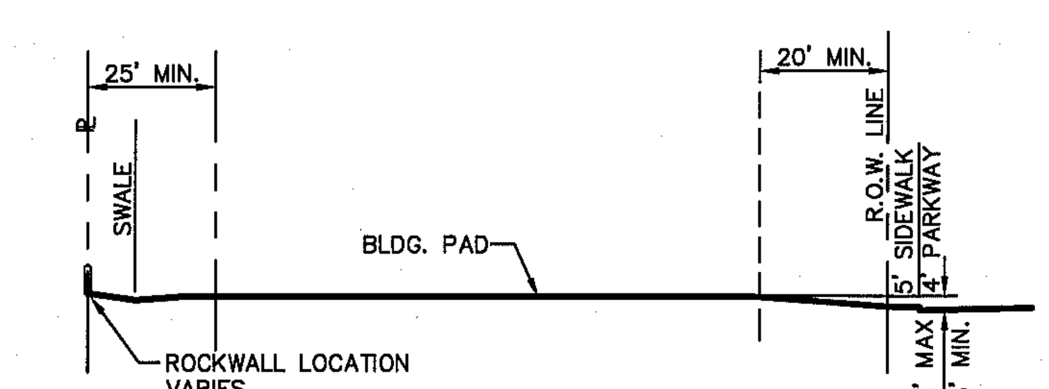
BENCHMARK IS CITY MONUMENT AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE ELEVATION = 3970.52 (CITY DATUM).

FLOOD ZONE:

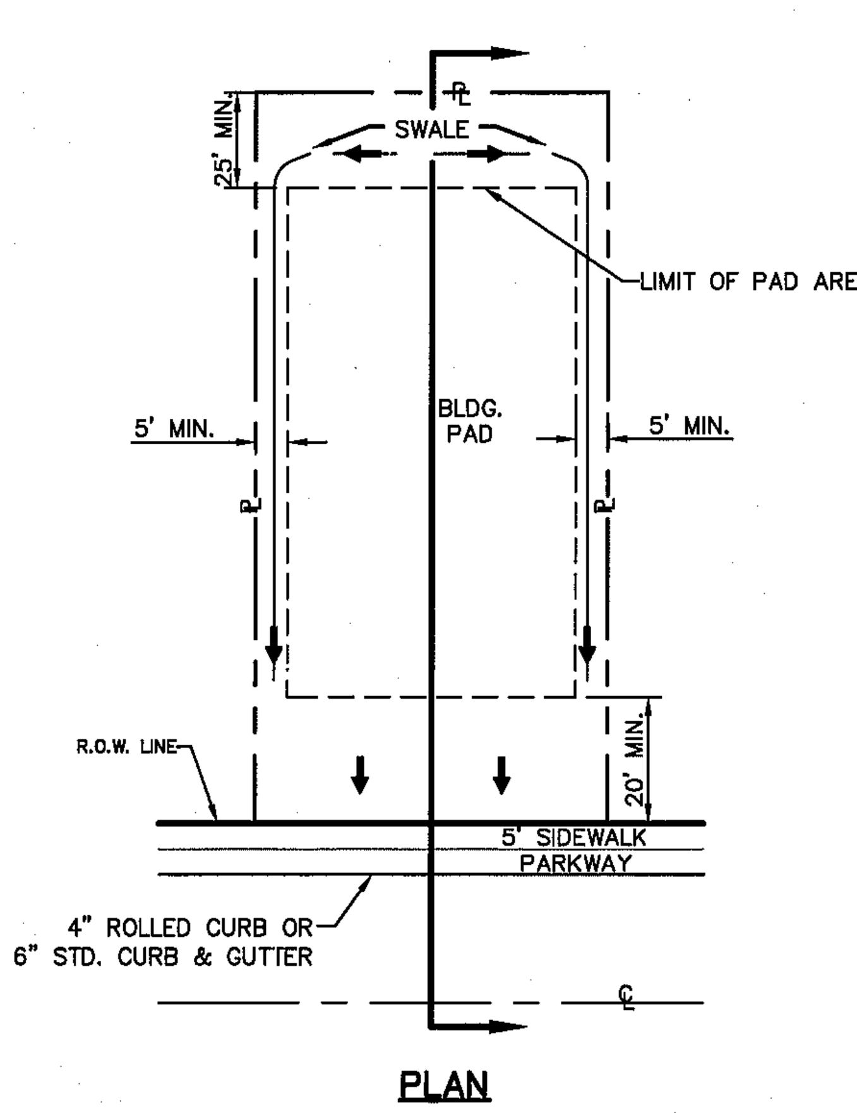
THIS SUBDIVISION LIES WITH IN ZONE "X" AS DESIGNATED IN PANEL NO. 48012 0175 B, DATED SEPTEMBER 4, 1991, OF THE FLOOD INSURANCE RATE MAPS, EL PASO COUNTY, TEXAS. ZONE "X" INDICATES AREAS DETERMINED TO BE OUTSIDE 500-YEAR FLOODPLAIN.

LEGEND:

Symbol	Description
ooooooooooooo	NEW 6' HIGH RETAINING ROCKWALL (2'-3' RETAINING HEIGHT)
—□—□—□-	NEW 6' HIGH RETAINING ROCKWALL (3'-9' RETAINING HEIGHT)
ooooooooooooo	EXISTING 6' HIGH RETAINING ROCKWALL (2'-3' RETAINING HEIGHT)
—□—□—□-	EXISTING 6' HIGH RETAINING ROCKWALL (3'-9' RETAINING HEIGHT)
4000	PROPOSED MAJOR CONTOURS
	PROPOSED MINOR CONTOURS
4000	EXISTING MAJOR CONTOURS
	EXISTING MINOR CONTOURS
TC 4075.00	TOP OF CURB ELEVATION
FG 4075.00	FINISH GROUND ELEVATION
FF 4075.00	FINISH FLOOR ELEVATION
FG 4075.00	EXISTING FINISH GROUND ELEVATION
FF 4075.00	EXISTING FINISH FLOOR ELEVATION
FG 4075.00±	FUTURE FINISH GROUND ELEVATION
	DRAINAGE FLOW
	HIGH POINT
	LOW POINT
	CITY MONUMENT
	PROPOSED TEMPORARY DESILTING BASIN



SECTION



PLAN

TYPICAL LOT PLAN
SCALE: N.T.S.

Final Approval

REFERENCES – BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.

ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5232 Fax: 915.544.5233 www.ceagroup.net

ENGINEERS SEAL

STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER
7-15-14

SCALE
Horizontal: 1"=100'
Vertical: N/A
Contour Interval: N/A

DATE: MAY 2014
DESIGN BY: F.Z./J.M
DRAWN BY: J.M.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260-017-LD

PROJECT TITLE

VENTANAS SUBDIVISION
UNIT SEVEN
SUBDIVISION IMPROVEMENTS

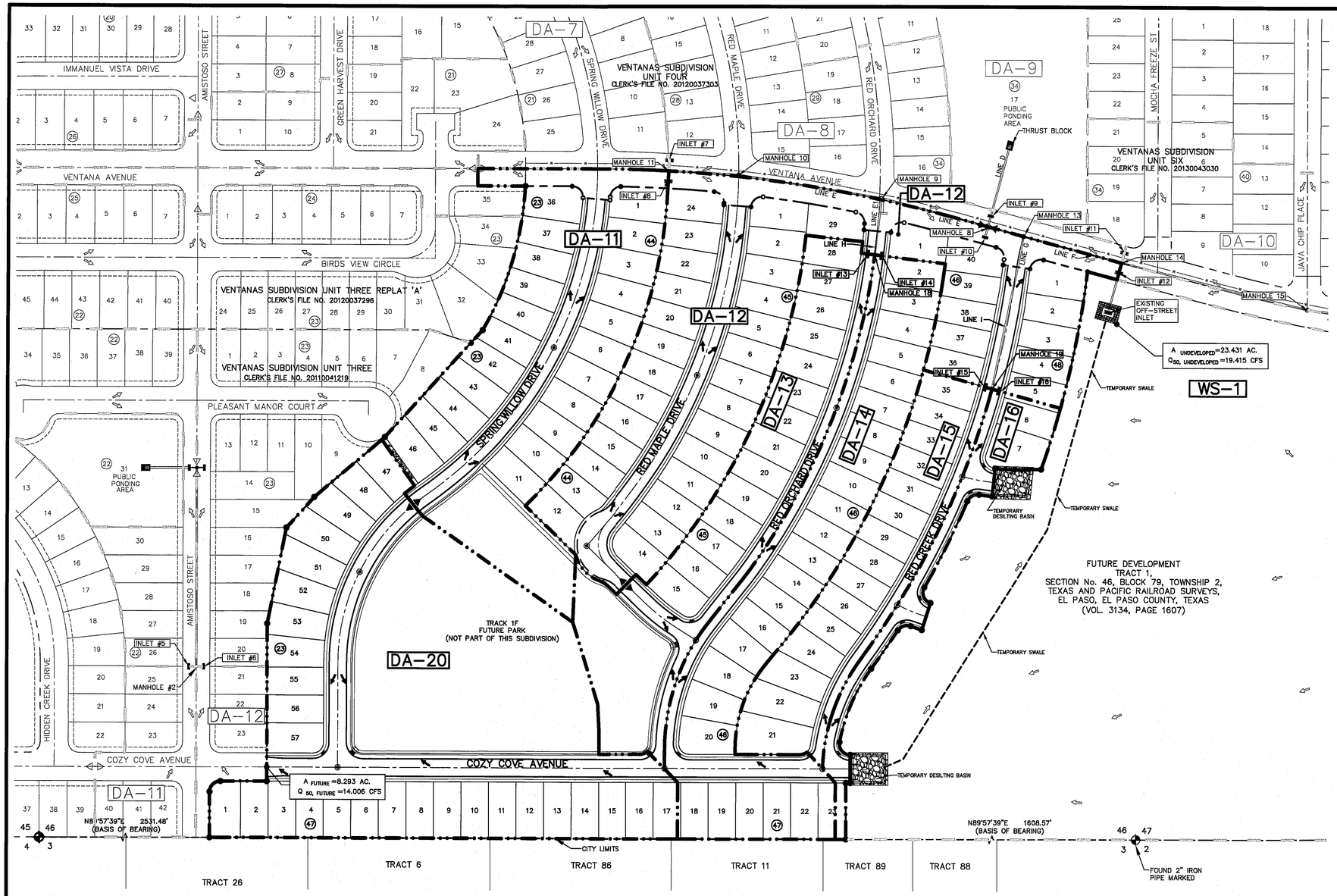
SHEET TITLE

GRADING PLAN

SHEET NO.

C3.1

S:\2260\2260-017LD-Ventanas Unit Seven\DWGS\Construction Drawings\Improvement Plans\2260-017-C3.1-Grading Plan.dwg, GRADING PLAN, 7/15/2014 9:42:21 AM



UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579
CITY OF EL PASO DEPARTMENT OF TRANSPORTATION (EPDoT)	(915) 621-6750
(AFTER HOURS)	(915) 240-3220

WARNING ! BEFORE YOU DIG
CALL
1-800-DIG-TESS
1-800-344-8377
FOR FIELD LOCATING EXISTING UTILITIES

REFERENCES – BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.
ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

LEGEND:

- DRAINAGE AREA BOUNDARY
- EXISTING DRAINAGE AREA BOUNDARY
- DRAINAGE FLOW
- EXISTING DRAINAGE FLOW
- HIGH POINT
- LOW POINT
- PROPOSED DROP INLET
- PROPOSED STORM SEWER MANHOLE
- PROPOSED RCP
- EXISTING DROP INLET
- EXISTING STORM SEWER MANHOLE
- EXISTING RCP
- PROPOSED CURB & GUTTER
- PROPOSED ROLLED CURB
- PROPOSED DRAINAGE SWALE
- DA-10 DRAINAGE AREA
- DA-10 EXISTING DRAINAGE AREA
- WS-1 EXISTING UNDEVELOPED DRAINAGE AREA
- PROPOSED TEMPORARY DESILTING BASIN

cad engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office 915.544.5232 Fax 915.544.5233 www.cagroup.net

ENGINEER'S SEAL
THE STATE OF TEXAS
JORGE L. ACOSTA
85075
LICENSED
PROFESSIONAL
ENGINEER

SCALE
Horizontal: 1"=100'
Vertical: N/A
Contour Interval: N/A
DATE: MAY 2014
DESIGN BY: F.Z./J.M.
DRAWN BY: J.M.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260-017-LD

PROJECT TITLE
VENTANAS SUBDIVISION
UNIT SEVEN
SUBDIVISION IMPROVEMENTS

SHEET TITLE
DRAINAGE PLAN

SHEET NO.
C4.1

PROPOSED 50 YEAR STORM CALCULATIONS FOR WATERSHED AREAS					
DRAINAGE AREA NO. (1)	DRAINAGE AREA (AC) (2)	DESIGN STORM INTENSITY (I50) (3)	TIME OF CONCENTRATION (4)	RUNOFF COEFF. (C) (5)	Q50 (CFS) (6)
DA-11	4.687	3.587	23.88	0.600	10.087
DA-12	6.926	3.217	28.58	0.600	13.368
DA-13	4.163	3.534	24.48	0.580	8.532
DA-14	4.099	3.433	25.68	0.600	8.443
DA-15	2.429	3.473	25.20	0.655	5.525
*DA-16	6.563	3.700	22.67	0.600	14.569
**DA-20	9.243	2.887	24.57	0.585	15.610

*WATERSHED CALCULATIONS INCLUDE RUNOFF FROM FUTURE VENTANAS UNIT 8 DEVELOPMENT
**WATERSHED CALCULATIONS ARE BASED ON EXISTING VENTANAS UNIT THREE DRAINAGE AREA 12 AND PROPOSED VENTANAS UNIT SEVEN DRAINAGE AREA 20.

(D) DEVELOPED RUN-OFF THAT WILL BE CAPTURED BY SEPARATE STORM SYSTEM
(U) UNDEVELOPED RUN-OFF

REFERENCE: CITY OF EL PASO SUBDIVISION STANDARDS (3-11-97)

(1) WATERSHED AREA IDENTIFICATION
(2) AREA FROM DRAINAGE PLAN
(3) RAINFALL INTENSITY, 50 YEAR STORM => PLATE NO. 2-14
(4) TIME OF CONCENTRATION: TC= T (OVERLAND) + T (GUTTER)
(5) RUNOFF COEFFICIENT => PLATE NO. 2-10 TABLE A
RESIDENTIAL AREA = 0.60
PAVEMENT AREA = 0.90
(6) $Q_{50} = C \times A \times I_{50}$

THE CITY OF EL PASO TEXAS
Final Approval

EXISTING POND #1 CALCULATIONS	
QT = (ARC)/12	SILT VOLUME = 1.542
QT = 26.982 AC-FT	0.012 AC-FT/AC
A = 128.685*	33.727 + 1.542 = 35.269 AC-FT
R = 4"	TOTAL req= 35.269 AC-FT
Cw = 0.63	
QT X 25% = 6.745	
26.982 + 6.745 = 33.727	

Cw= WEIGHTED COEFICIENT INCLUDES ALL WATERSHEDS AS INDICATED AND D-17 AND D-18.
*INCLUDES ALL FUTURE RUNOFF TOTAL AREA.

EXISTING POND #1								
BASIN NO.	REQUIRED CAPACITY (AC.-FT.)	AVAILABLE CAPACITY (AC.-FT.)	PEAK INFLOW (CFS)	OUTLET TOWER FLOW (CFS)	HIGH WATER SURFACE ELEV. (FT.)	BOTTOM ELEVATION	FREE BOARD (FT.)	TOP ELEVATION
1	35.269	40.309	333.99	0	3991.08	3964	1.71	3993

NOTE:
1. THE HWSE REFLECTS THE ELEVATION AS REQUIRED BY THE CITY OF EL PASO. THE HWSE DOES NOT INCLUDE 25% FREEBOARD. HOWEVER, THE TOTAL POND CAPACITY SHALL HOLD TOTAL REQUIRED STORM WATER RUNOFF.

HWSE 1 = QT+SILT VOLUME
HWSE 1 = 26.982+1.542=28.524 AC-FT
CONTOUR 3988, ACCUMULATED VOLUME=27.955 AC-FT
CONTOUR 3989, ACCUMULATED VOLUME=30.228 AC-FT
HIGH WATER SURFACE ELEVATION=3988.25

HWSE 2 = QT+SILT VOLUME+25% EMERGENCY
HWSE 2 = 26.982+1.542+6.745=35.269 AC-FT
CONTOUR 3991, ACCUMULATED VOLUME=35.067 AC-FT
CONTOUR 3992, ACCUMULATED VOLUME=37.637 AC-FT
HIGH WATER SURFACE ELEVATION=3991.08

EXISTING POND#1 AREAS	
CONTOUR	ACCUMULATED VOLUME (AC-FT.)
3993	40.309
3992	37.637
3991	35.067
3990	32.598
3989	30.228
3988	27.955
3987	25.778
3986	23.695
3985	21.705
3984	19.804
3983	17.993
3982	16.270
3981	14.631
3980	13.077
3979	11.672
3978	10.411
3977	9.227
3976	8.118
3975	7.081
3974	6.115
3973	5.219
3972	4.391
3971	3.628
3970	2.930
3969	2.295
3968	1.721
3967	1.205
3966	0.749
3965	0.347
3964	0.000

VENTANAS UNIT THREE EXISTING DROP INLETS							
INLET #	REQ. FLOW CAPACITY Q REQ (CFS)	AVAIL. FLOW CAPACITY Q AVAIL. (CFS)	ADDITIONAL FLOW (CFS)	FLOW BYPASS (CFS)	# OF GRATES	TYPE OF INLET	INLET LOCATION
5	2.420	12.650	6.595	0	2	I	ON-GRADE
6	15.610	12.650	0	6.595	2	I	ON-GRADE

VENTANAS UNIT FOUR EXISTING DROP INLETS							
INLET #	REQ. FLOW CAPACITY Q REQ (CFS)	AVAIL. FLOW CAPACITY Q AVAIL. (CFS)	ADDITIONAL FLOW (CFS)	FLOW BYPASS (CFS)	# OF GRATES	TYPE OF INLET	INLET LOCATION
7	11.032	15.020	0	0	3	I	ON-GRADE
8	10.087	11.031	0	0	2	I	ON-GRADE
9	11.242	19.267	0	0	2	I	SUMP
*10	13.368	19.267	2.709	0	2	I	SUMP
11	11.240	11.824	0	1.009	2	I	ON-GRADE
12	14.060	13.286	0	0.774	2	I	ON-GRADE
OFF-STREET	19.415	31.439	0	0	3	OFF-ST	SUMP

THESE CAPACITIES CORRESPOND TO A CLOGGIN FACTOR OF 0.5
AVAILABLE FLOW CAPACITIES SHOWN AT ON-GRADE INLETS
REFLECTS CAPACITIES WITH INLET GRATE EFFICIENCIES.
* INLET INCLUDES 13.368 CFS FROM PROPOSED DRAINAGE AREA 12, 1.935 CFS BY PASS FROM PROPOSED INLET 13 AND 0.774 CFS FROM EXISTING INLET 12.

VENTANAS UNIT THREE (EXISTING) 50 YEAR STORM CALCULATIONS FOR WATERSHED AREAS					
DRAINAGE AREA NO. (1)	DRAINAGE AREA (AC) (2)	DESIGN STORM INTENSITY (I50) (3)	TIME OF CONCENTRATION (4)	RUNOFF COEFF. (C) (5)	Q50 (CFS) (6)
DA-11	1.153	3.003	22.90	0.699	2.420
*DA-12	9.243	2.887	24.57	0.585	15.610

* WATERSHED INCLUDES FUTURE DRAINAGE AREA 20

VENTANAS UNIT FOUR (EXISTING) 50 YEAR STORM CALCULATIONS FOR WATERSHED AREAS					
DRAINAGE AREA NO. (1)	DRAINAGE AREA (AC) (2)	DESIGN STORM INTENSITY (I50) (3)	TIME OF CONCENTRATION (4)	RUNOFF COEFF. (C) (5)	Q50 (CFS) (6)
DA-7	5.707	3.222	28.44	0.600	11.032
DA-8	5.625	3.331	26.95	0.600	11.242
DA-9	3.305	5.573	10.00	0.330	6.078

DRAINAGE PLAN
SCALE: 1" = 100'
GRAPHIC SCALE
100 0 50 100 200
(IN FEET)
1 inch = 100 ft.

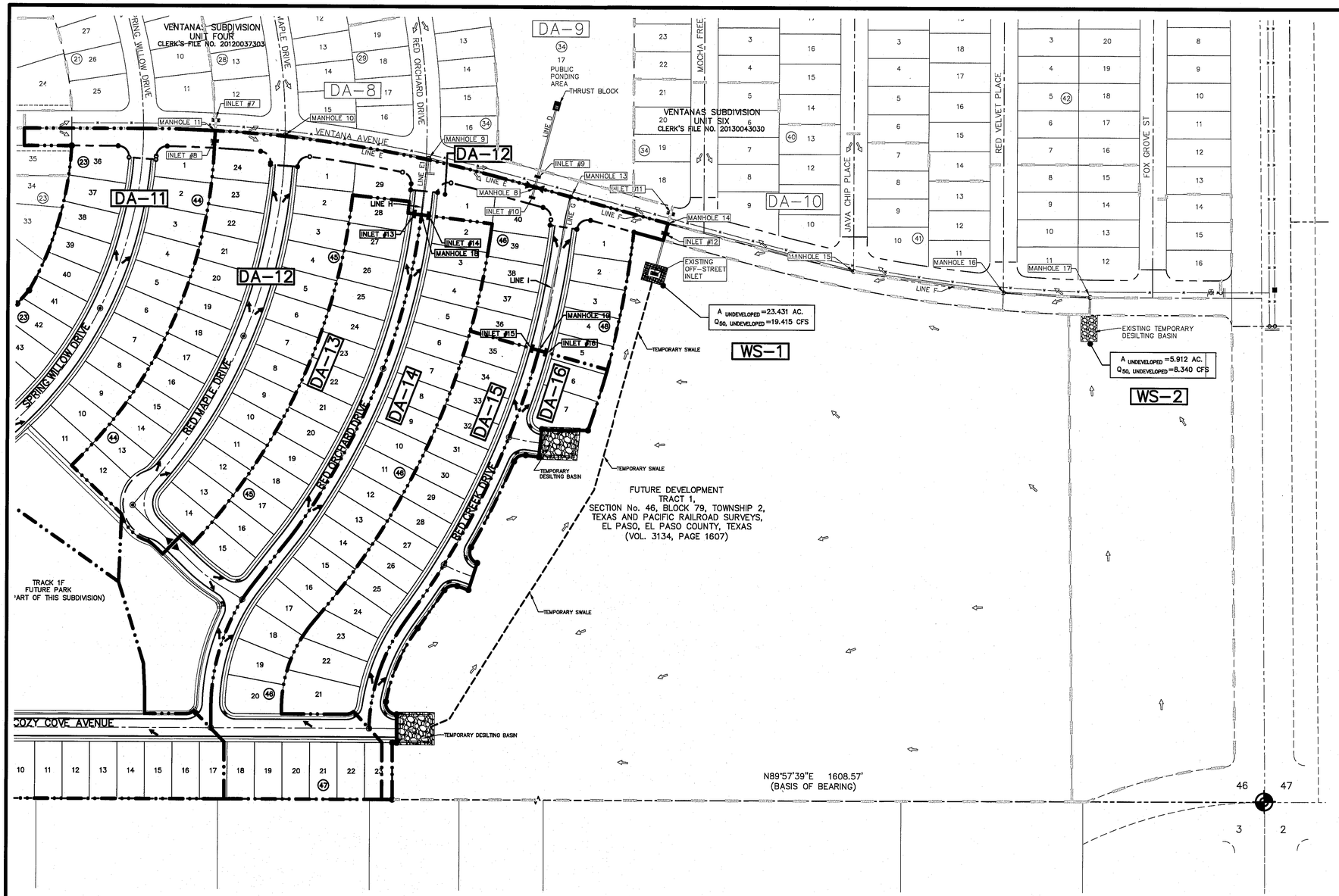
PROPOSED DROP INLETS							
INLET #	REQ. FLOW CAPACITY Q REQ (CFS)	AVAIL. FLOW CAPACITY Q AVAIL. (CFS)	ADDITIONAL FLOW (CFS)	FLOW BYPASS (CFS)	# OF GRATES	TYPE OF INLET	INLET LOCATION
13	8.532	6.597	0	1.935	4	III	ON-GRADE
14	8.443	9.881	0	0	3	I	ON-GRADE
15	10.047	10.933	0	0	3	I	ON-GRADE
16	10.047	10.933	0	0	3	I	ON-GRADE

THESE CAPACITIES CORRESPOND TO A CLOGGIN FACTOR OF 0.5
AVAILABLE FLOW CAPACITIES SHOWN AT ON-GRADE INLETS
REFLECTS CAPACITIES WITH INLET GRATE EFFICIENCIES.

MOMENTUM COMPUTATION			
LOCATION @ INLET (1)	DEPTH (2)	VELOCITY (3)	PRODUCT NUMBER (4)
13	0.318	2.787	0.886
14	0.316	2.780	0.878
15	0.349	2.726	0.951
16	0.349	2.726	0.951

(1) LOCATION
(2) DEPTH
(3) VELOCITY
(4) PRODUCT NUMBER = DEPTH X VELOCITY

S:\2260\2260-017D-Ventanas Unit Seven\DWGS\Construction Drawings\Improvement Plans\2260-017-C4.1-Drainage Plan.dwg, Drainage Plan Sheet 1, 7/15/2014 9:43:10 AM



UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
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TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579
CITY OF EL PASO DEPARTMENT OF TRANSPORTATION (CPDoT)	(915) 621-6750
(AFTER HOURS)	(915) 240-3220

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1-800-344-8377
FOR FIELD LOCATING EXISTING UTILITIES

REFERENCES - BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.
ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

LEGEND:

- DRAINAGE AREA BOUNDARY
- EXISTING DRAINAGE AREA BOUNDARY
- DRAINAGE FLOW
- EXISTING DRAINAGE FLOW
- HIGH POINT
- LOW POINT
- PROPOSED DROP INLET
- PROPOSED STORM SEWER MANHOLE
- PROPOSED RCP
- EXISTING DROP INLET
- EXISTING STORM SEWER MANHOLE
- EXISTING RCP
- PROPOSED CURB & GUTTER
- PROPOSED ROLLED CURB
- PROPOSED DRAINAGE SWALE
- DA-10 — DRAINAGE AREA
- DA-10 — EXISTING DRAINAGE AREA
- WS-1 — EXISTING UNDEVELOPED DRAINAGE AREA
- PROPOSED TEMPORARY DESILTING BASIN

eca group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office 915.544.3232 Fax 915.544.3283 www.ecagroup.net

ENGINEER'S SEAL
STATE OF TEXAS — MICHAEL L. MCKINNEY — 85075 — LICENSED PROFESSIONAL ENGINEER

SCALE	
Horizontal:	1"=100'
Vertical:	N/A
Contour Interval:	N/A
DATE:	MAY 2014
DESIGN BY:	F.Z./J.M.
DRAWN BY:	J.M.
CHKD. BY:	J.L.A.
APPVD. BY:	J.L.A.
JOB No.	2260-017-LD

PROJECT TITLE

VENTANAS SUBDIVISION UNIT SEVEN SUBDIVISION IMPROVEMENTS

SHEET TITLE

OFF-SITE DRAINAGE PLAN

SHEET NO.

C4.2

PROPOSED
50 YEAR STORM CALCULATIONS FOR WATERSHED AREAS

DRAINAGE AREA NO. (1)	DRAINAGE AREA (AC) (2)	DESIGN STORM INTENSITY (I50) (3)	TIME OF CONCENTRATION (4)	RUNOFF COEFF. (C) (5)	Q50 (CFS) (6)
DA-11	4.687	3.587	23.88	0.600	10.087
DA-12	6.926	3.217	28.58	0.600	13.368
DA-13	4.163	3.534	24.48	0.580	8.532
DA-14	4.099	3.433	25.68	0.600	8.443
DA-15	2.429	3.473	25.20	0.655	5.525
*DA-16	6.563	3.700	22.67	0.600	14.569
**DA-20	9.243	2.887	24.57	0.585	15.610

*WATERSHED CALCULATIONS INCLUDE RUNOFF FROM FUTURE VENTANAS UNIT 8 DEVELOPMENT
**WATERSHED CALCULATIONS ARE BASED ON EXISTING VENTANAS UNIT THREE DRAINAGE AREA 12 AND PROPOSED VENTANAS UNIT SEVEN DRAINAGE AREA 20.

(D) DEVELOPED RUN-OFF THAT WILL BE CAPTURED BY SEPARATE STORM SYSTEM
(U) UNDEVELOPED RUN-OFF

REFERENCE: CITY OF EL PASO SUBDIVISION STANDARDS (3-11-97)

(1) WATERSHED AREA IDENTIFICATION
(2) AREA FROM DRAINAGE PLAN
(3) RAINFALL INTENSITY, 50 YEAR STORM => PLATE NO. 2-14 .
(4) TIME OF CONCENTRATION: TC= T (OVERLAND) + T (GUTTER)
(5) RUNOFF COEFFICIENT => PLATE NO. 2-10 TABLE A
RESIDENTIAL AREA = 0.60
PAVEMENT AREA = 0.90
(6) $Q_{50} = C \times A \times I_{50}$

CITY OF EL PASO TEXAS — Final Approval

PROPOSED DROP INLETS

INLET #	REQ. FLOW CAPACITY Q REQ (CFS)	AVAIL. FLOW CAPACITY Q AVAIL. (CFS)	ADDITIONAL FLOW (CFS)	FLOW BYPASS (CFS)	# OF GRATES	TYPE OF INLET	INLET LOCATION
13	8.532	6.597	0	1.935	4	III	ON-GRADE
14	8.443	9.881	0	0	3	I	ON-GRADE
15	10.047	10.933	0	0	3	I	ON-GRADE
16	10.047	10.933	0	0	3	I	ON-GRADE

THESE CAPACITIES CORRESPOND TO A CLOGGIN FACTOR OF 0.5
AVAILABLE FLOW CAPACITIES SHOWN AT ON-GRADE INLETS
REFLECTS CAPACITIES WITH INLET GRATE EFFICIENCIES.

MOMENTUM COMPUTATION

LOCATION @ INLET (1)	DEPTH (2)	VELOCITY (3)	PRODUCT NUMBER (4)
13	0.318	2.787	0.886
14	0.316	2.780	0.878
15	0.349	2.726	0.951
16	0.349	2.726	0.951

(1) LOCATION
(2) DEPTH
(3) VELOCITY
(4) PRODUCT NUMBER = DEPTH X VELOCITY

EXISTING POND #1 CALCULATIONS

QT = (ARC)/12
QT = 26.982 AC-FT
A = 128.485*
R = 4"
Cw = 0.63
QT X 25% = 6.745
26.982 + 6.745 = 33.727

SILT VOLUME = 1.542
0.012 AC-FT/AC
33.727 + 1.542 = 35.269 AC-FT
TOTAL req= 35.269 AC-FT

Cw= WEIGHTED COEFICIENT INCLUDES ALL WATERSHEDS AS INDICATED AND D-17 AND D-18.
*INCLUDES ALL FUTURE RUNOFF TOTAL AREA.

EXISTING POND #1

BASIN NO.	REQUIRED CAPACITY (AC.-FT.)	AVAILABLE CAPACITY (AC.-FT.)	PEAK INFLOW (CFS)	OUTLET TOWER FLOW (CFS)	HIGH WATER SURFACE ELEV. (FT.)	BOTTOM ELEVATION	FREE BOARD (FT.)	TOP ELEVATION
1	35.269	40.309	333.99	0	3991.08	3964	1.71	3993

NOTE:
1. THE HWSE REFLECTS THE ELEVATION AS REQUIRED BY THE CITY OF EL PASO. THE HWSE DOES NOT INCLUDE 25% FREEBOARD. HOWEVER, THE TOTAL POND CAPACITY SHALL HOLD TOTAL REQUIRED STORM WATER RUNOFF.

HWSE 1 = QT+SILT VOLUME
HWSE 1 = 26.982+1.542=28.524 AC-FT
CONTOUR 3988, ACCUMULATED VOLUME=27.955 AC-FT
CONTOUR 3989, ACCUMULATED VOLUME=30.228 AC-FT
HIGH WATER SURFACE ELEVATION=3988.25

HWSE 2 = QT+SILT VOLUME+25% EMERGENCY
HWSE 2 = 26.982+1.542+6.745=35.269 AC-FT
CONTOUR 3991, ACCUMULATED VOLUME=35.067 AC-FT
CONTOUR 3992, ACCUMULATED VOLUME=37.637 AC-FT
HIGH WATER SURFACE ELEVATION=3991.08

EXISTING POND#1 AREAS

CONTOUR	ACCUMULATED VOLUME (AC-FT.)
3993	40.309
3992	37.637
3991	35.067
3990	32.598
3989	30.228
3988	27.955
3987	25.778
3986	23.695
3985	21.705
3984	19.804
3983	17.993
3982	16.270
3981	14.631
3980	13.077
3979	11.672
3978	10.411
3977	9.227
3976	8.118
3975	7.081
3974	6.115
3973	5.219
3972	4.391
3971	3.628
3970	2.930
3969	2.295
3968	1.721
3967	1.206
3966	0.749
3965	0.347
3964	0.000

VENTANAS UNIT THREE EXISTING DROP INLETS

INLET #	REQ. FLOW CAPACITY Q REQ (CFS)	AVAIL. FLOW CAPACITY Q AVAIL. (CFS)	ADDITIONAL FLOW (CFS)	FLOW BYPASS (CFS)	# OF GRATES	TYPE OF INLET	INLET LOCATION
5	2.420	12.650	6.595	0	2	I	ON-GRADE
6	15.610	12.650	0	6.595	2	I	ON-GRADE

VENTANAS UNIT FOUR EXISTING DROP INLETS

INLET #	REQ. FLOW CAPACITY Q REQ (CFS)	AVAIL. FLOW CAPACITY Q AVAIL. (CFS)	ADDITIONAL FLOW (CFS)	FLOW BYPASS (CFS)	# OF GRATES	TYPE OF INLET	INLET LOCATION
7	11.032	15.020	0	0	3	I	ON-GRADE
8	10.087	11.031	0	0	2	I	ON-GRADE
9	11.242	19.267	0	0	2	I	SUMP
*10	13.368	19.267	2.709	0	2	I	SUMP
11	11.240	11.824	0	1.009	2	I	ON-GRADE
12	14.060	13.286	0	0.774	2	I	ON-GRADE
OFF-STREET	19.415	31.439	0	0	3	OFF-ST	SUMP

THESE CAPACITIES CORRESPOND TO A CLOGGIN FACTOR OF 0.5
AVAILABLE FLOW CAPACITIES SHOWN AT ON-GRADE INLETS
REFLECTS CAPACITIES WITH INLET GRATE EFFICIENCIES.
* INLET INCLUDES 13.368 CFS FROM PROPOSED DRAINAGE AREA 12, 1.935 CFS BY PASS FROM PROPOSED INLET 13 AND 0.774 CFS FROM EXISTING INLET 12.

50 YEAR STORM CALCULATIONS FOR EXISTING WATERSHED AREAS

DRAINAGE AREA NO. (1)	DRAINAGE AREA (AC) (2)	DESIGN STORM INTENSITY (I50) (3)	TIME OF CONCENTRATION (4)	RUNOFF COEFF. (C) (5)	Q50 (CFS) (6)
WS-1	23.431	5.511	41.342	0.330	19.415
WS-2	5.912	4.275	17.534	0.330	8.340

VENTANAS UNIT THREE (EXISTING)
50 YEAR STORM CALCULATIONS FOR WATERSHED AREAS

DRAINAGE AREA NO. (1)	DRAINAGE AREA (AC) (2)	DESIGN STORM INTENSITY (I50) (3)	TIME OF CONCENTRATION (4)	RUNOFF COEFF. (C) (5)	Q50 (CFS) (6)
DA-11	1.153	3.003	22.90	0.699	2.420
*DA-12	9.243	2.887	24.57	0.585	15.610

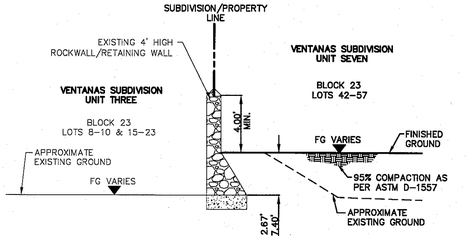
* WATERSHED INCLUDES FUTURE DRAINAGE AREA 20

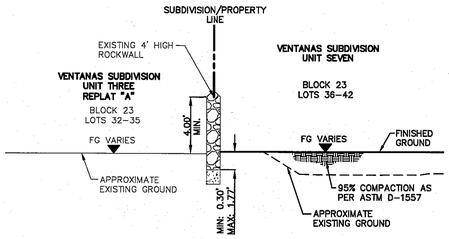
VENTANAS UNIT FOUR (EXISTING)
50 YEAR STORM CALCULATIONS FOR WATERSHED AREAS

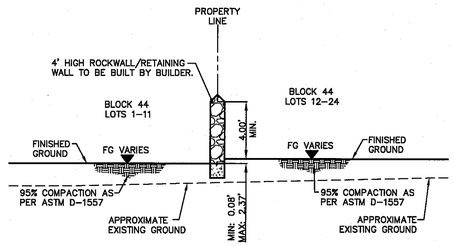
DRAINAGE AREA NO. (1)	DRAINAGE AREA (AC) (2)	DESIGN STORM INTENSITY (I50) (3)	TIME OF CONCENTRATION (4)	RUNOFF COEFF. (C) (5)	Q50 (CFS) (6)
DA-7	5.707	3.222	28.44	0.600	11.032
DA-8	5.625	3.331	26.95	0.600	11.242
DA-9	3.305	5.573	10.00	0.330	6.078

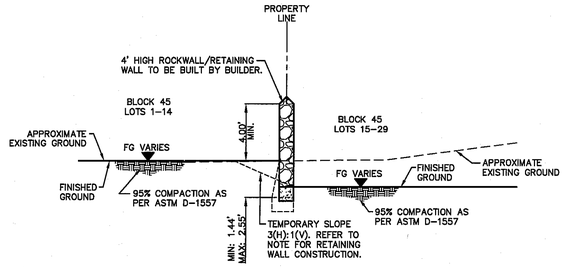
DRAINAGE PLAN
SCALE: 1" = 100'

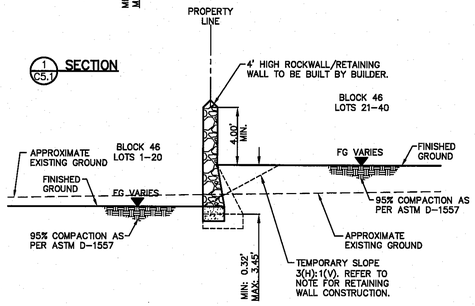
GRAPHIC SCALE
100 0 50 100 200
(IN FEET)
1 inch = 100 ft

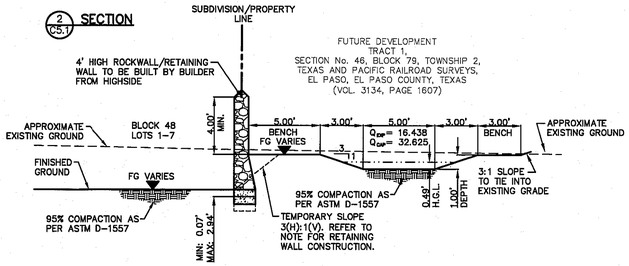


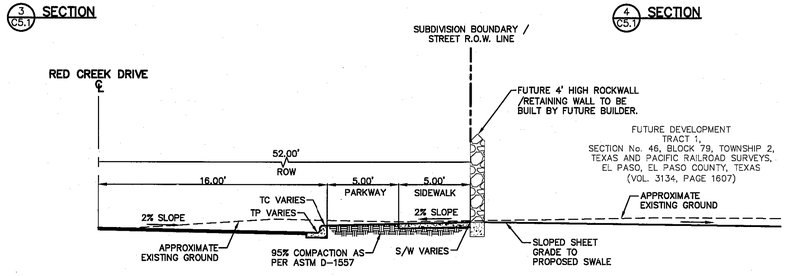


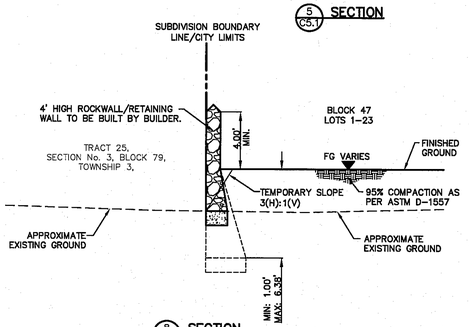


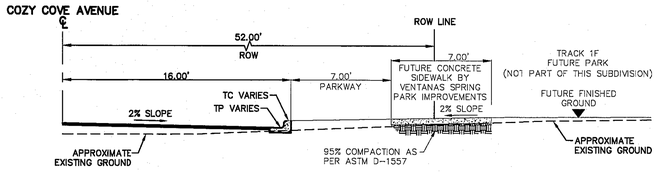


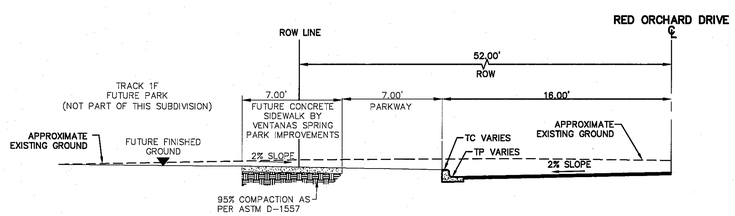


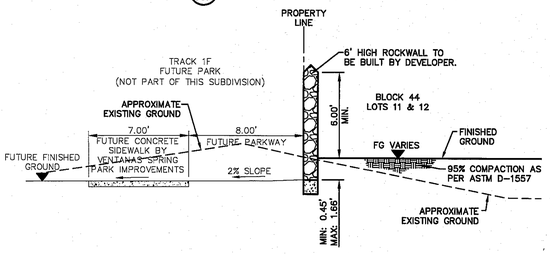


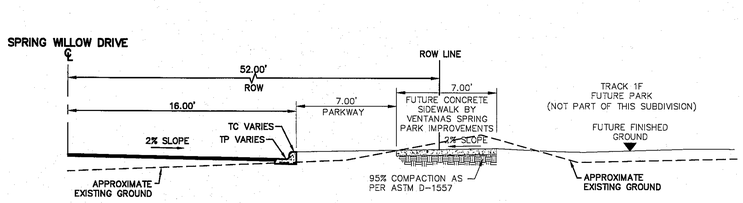


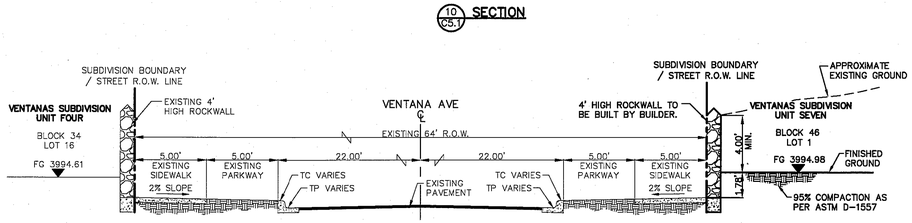


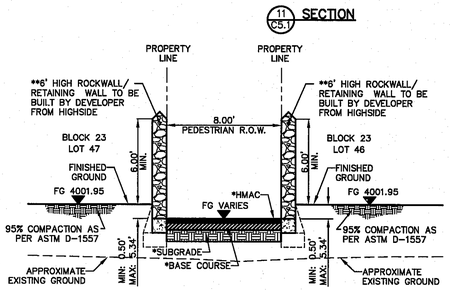


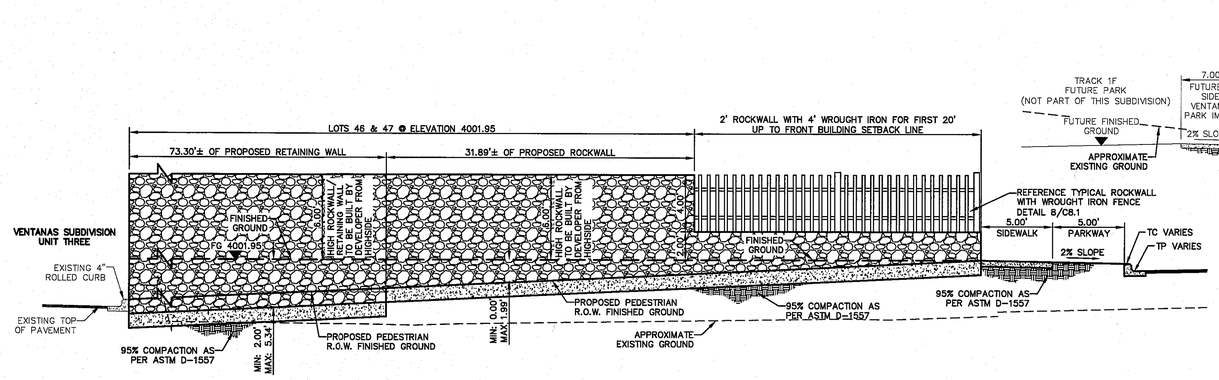


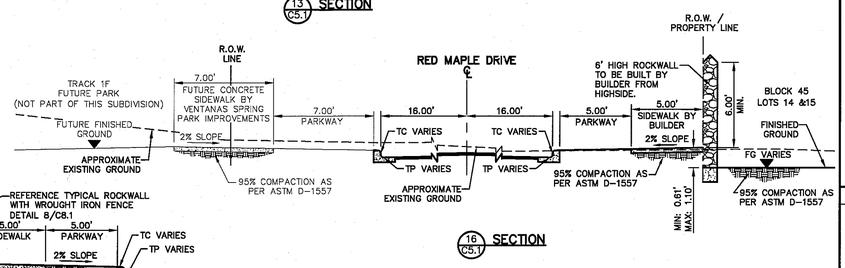












16 C5.1 SECTION

14 C5.1 SECTION

15 C5.1 SECTION

**NOTE:
1 1/2" HMAC TYPE D SEAL COATED (2 COATS)
6" CSBC 100% COMPACTED AS PER ASTM D-1557
6" SCARIFIED SUBGRADE 95% COMPACTED AS PER ASTM D-1557

**NOTE:
2' ROCKWALL WITH WROUGHT IRON FOR FIRST 20' UP TO FRONT BUILDING SETBACK LINE. 6' MINIMUM ROCKWALL FOR REMAINDER OF PROPERTY LINE.

GENERAL NOTES:

1. WHENEVER THE RETAINING HEIGHT OF A ROCKWALL/RETAINING WALL EXCEEDS FOUR (4') FEET OR MORE, THE DEVELOPER SHALL BUILD THE RETAINING PORTION OF THE WALL (INCLUDING NECESSARY REINFORCED CONCRETE FOOTING) TO HIGHEST FINISHED GROUND. THE BUILDER SHALL FINISH THE REMAINING OF THE STEM WALL. IF THE RETAINING HEIGHT DOES NOT EXCEED THE FOUR (4') FEET, THEN THE DEVELOPER MUST BUILD A TEMPORARY SLOPE AT 3(H):1(V).

THE CITY OF EL PASO TEXAS
Final Approval

REFERENCES – BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.

ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

cea
civil engineering associates
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4864
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office 915.544.3232 Fax 915.544.3233 www.ceagroup.net

ENGINEER'S SEAL

JORGE L. ACEVEDO 85075 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS

SCALE
Horizontal: 1"=5'
Vertical: N/A
Contour Interval: N/A

DATE: MAY 2014
DESIGN BY: F.Z./J.M.
DRAWN BY: J.M.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260-017-LD

PROJECT TITLE

VENTANAS SUBDIVISION UNIT SEVEN SUBDIVISION IMPROVEMENTS

SHEET TITLE

GRADING SECTIONS

SHEET NO.

C5.1

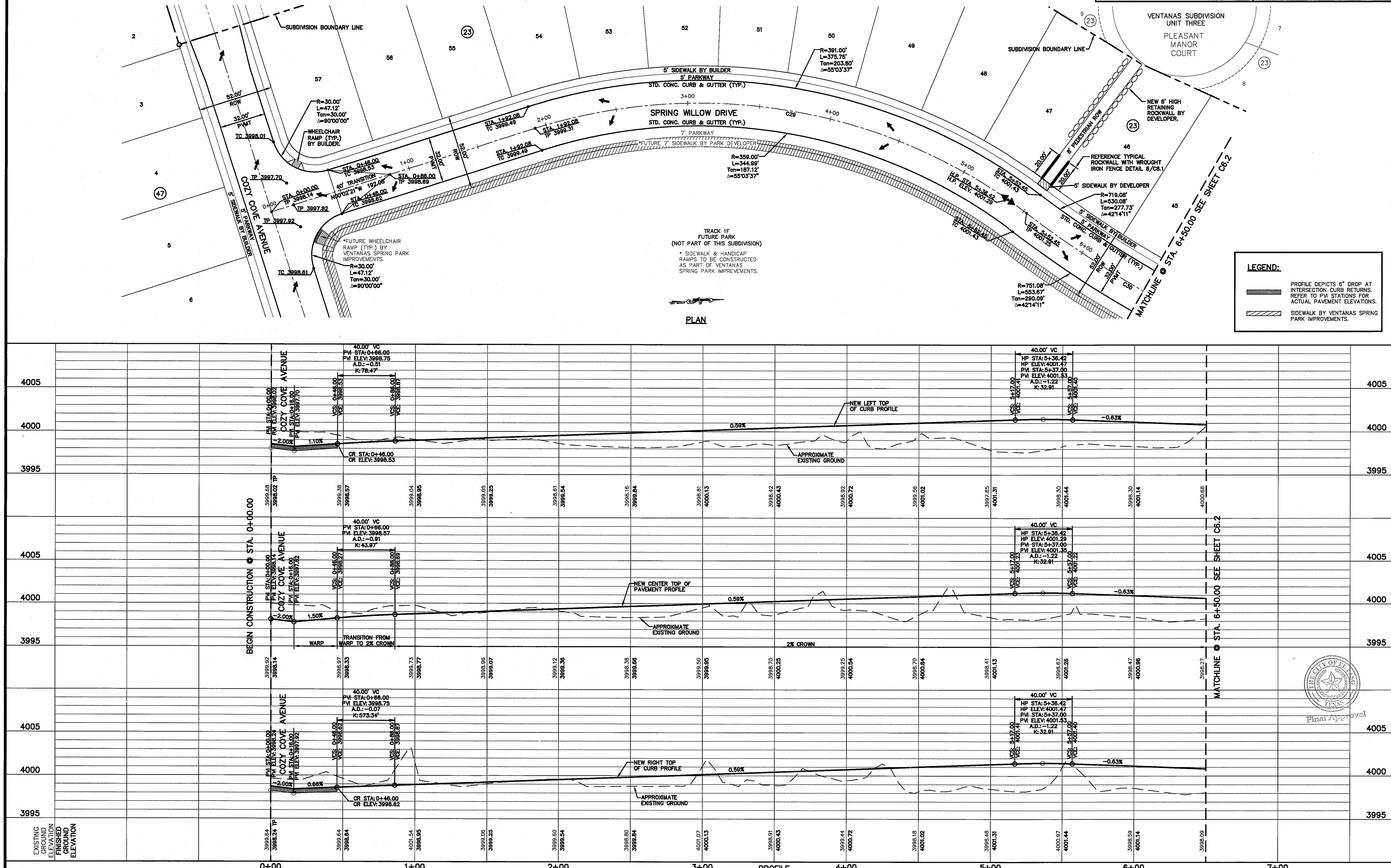
S:\2260\2260-017\D-Ventanas Unit Seven\UWGS\Construction Drawings\Improvement Plans\2260-017-C5.1-Cross Sections.dwg, Grading Sections, 7/15/2014 9:48:18 AM

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C29	375.00'	360.37'	195.46'	346.66'	N27°29'28"E	055°03'37"
C30	735.08'	541.87'	283.91'	529.69'	N33°54'11"E	042°14'11"
C32	600.00'	72.78'	36.44'	72.74'	N09°18'35"E	006°57'01"
C33	736.08'	20.02'	10.01'	20.01'	N05°03'20"E	001°33'29"

UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579
CITY OF EL PASO DEPARTMENT OF TRANSPORTATION (EPDoT)	(915) 621-6750
(AFTER HOURS)	(915) 240-3220

WARNING ! BEFORE YOU DIG

CALL
1-800-DIG-TESS
1-800-344-8377
FOR FIELD LOCATING EXISTING UTILITIES



REFERENCES – BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.

ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

cea group
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4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5232 Fax: 915.544.5233 www.ceagroup.net

ENGINEER'S SEAL
STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER
7-16-14

SCALE
Horizontal: 1"=30'
Vertical: 1"=5'
Contour Interval: N/A

DATE: MAY 2014
DESIGN BY: F.Z./J.M
DRAWN BY: J.M.
CHKD. BY: J.L.A.
APP'D. BY: J.L.A.
JOB No. 2260-017-LD

PROJECT TITLE

VENTANAS SUBDIVISION UNIT SEVEN SUBDIVISION IMPROVEMENTS

Final Approval

SHEET TITLE

SPRING WILLOW DR. PLAN & PROFILE FROM STA. 0+00.00 TO STA. 6+50.00

SHEET NO.

C6.1

S:\2260\2260-017LD-Ventanos Unit Seven\DWGS\Construction Drawings\Improvement Plans\2260-017-C6.1-C6.2-Spring Willow P&P.dwg, Spring Willow Sheet 1, 7/15/2014 9:49:25 AM

UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579
CITY OF EL PASO DEPARTMENT OF TRANSPORTATION (EPDoT)	(915) 621-6750
(AFTER HOURS)	(915) 240-3220

WARNING!
BEFORE YOU DIG
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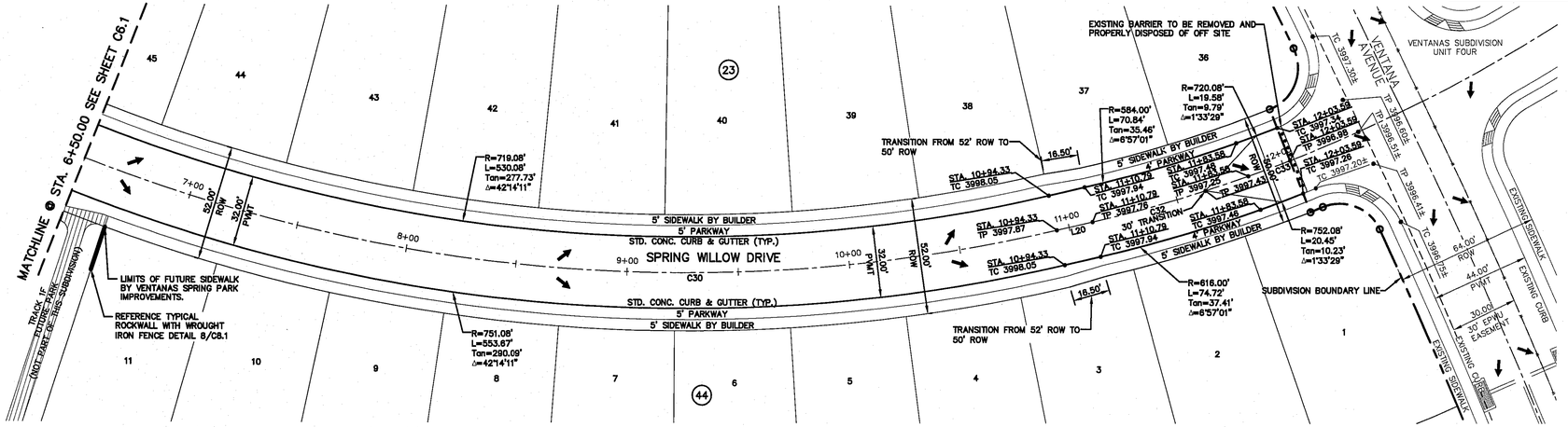
1-800-344-8377
FOR FIELD LOCATING EXISTING UTILITIES

REFERENCES - BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.

ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY



PLAN

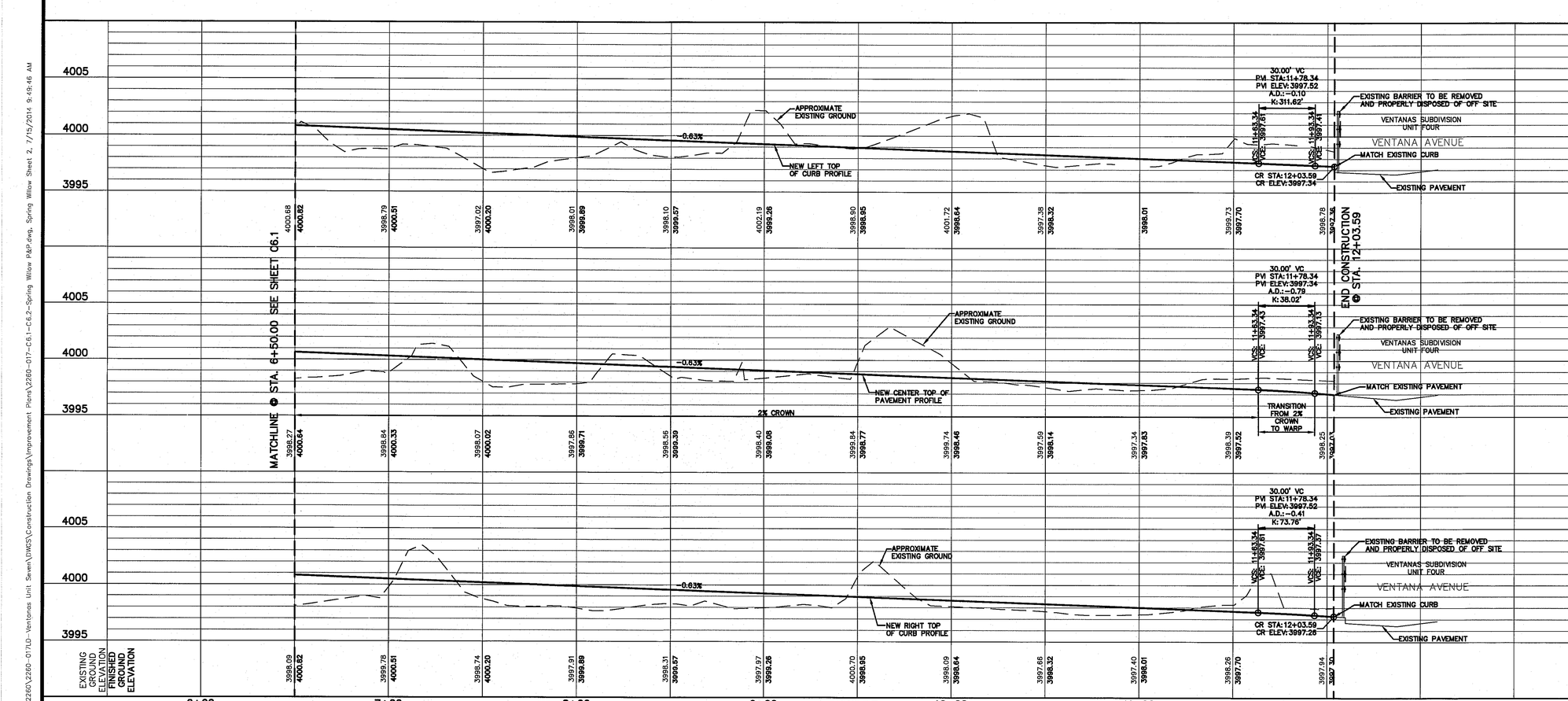
LINE TABLE		
LINE	BEARING	LENGTH
L20	N12°47'06"E	16.47'

CURVE TABLE					
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C29	375.00'	360.37'	195.46'	346.66'	N27°29'28"E	055°03'37"
C30	735.08'	541.87'	283.91'	529.69'	N33°54'11"E	042°14'11"
C32	600.00'	72.78'	36.44'	72.74'	N09°18'35"E	006°57'01"
C33	736.08'	20.02'	10.01'	20.01'	N05°03'20"E	001°33'29"

LEGEND:

PROFILE DEPICTS 6" DROP AT INTERSECTION CURB RETURNS. REFER TO PVI STATIONS FOR ACTUAL PAVEMENT ELEVATIONS.

SIDEWALK BY VENTANAS SPRING PARK IMPROVEMENTS.



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4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5222 Fax: 915.544.5233 www.ceagroup.net

ENGINEER'S SEAL

STATE OF TEXAS — JORGE L. AZCARATE — 85075 — LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE

VENTANAS SUBDIVISION
UNIT SEVEN
SUBDIVISION IMPROVEMENTS

SHEET TITLE

SPRING WILLOW DR.
PLAN & PROFILE
FROM STA. 6+50.00
TO STA. 12+03.59

SHEET NO.

C6.2

SCALE	
Horizontal:	1"=30'
Vertical:	1"=5'
Contour Interval:	N/A

DATE:	MAY 2014
DESIGN BY:	F.Z./J.M.
DRAWN BY:	J.M.
CHKD. BY:	J.L.A.
APPVD. BY:	J.L.A.
JOB No.	2260-017-LD

CITY OF EL PASO — Final Approval

S:\2260\2260-017LD-Ventanas Unit Seven\PWCS\Construction Drawings\Improvement Plans\2260-017-C6.1-C6.2-Spring Willow P&P.dwg, Spring Willow Sheet 2, 7/15/2014 9:49:46 AM

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EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579
CITY OF EL PASO DEPARTMENT OF TRANSPORTATION (EPDoT)	(915) 621-6750
(AFTER HOURS)	(915) 240-3220

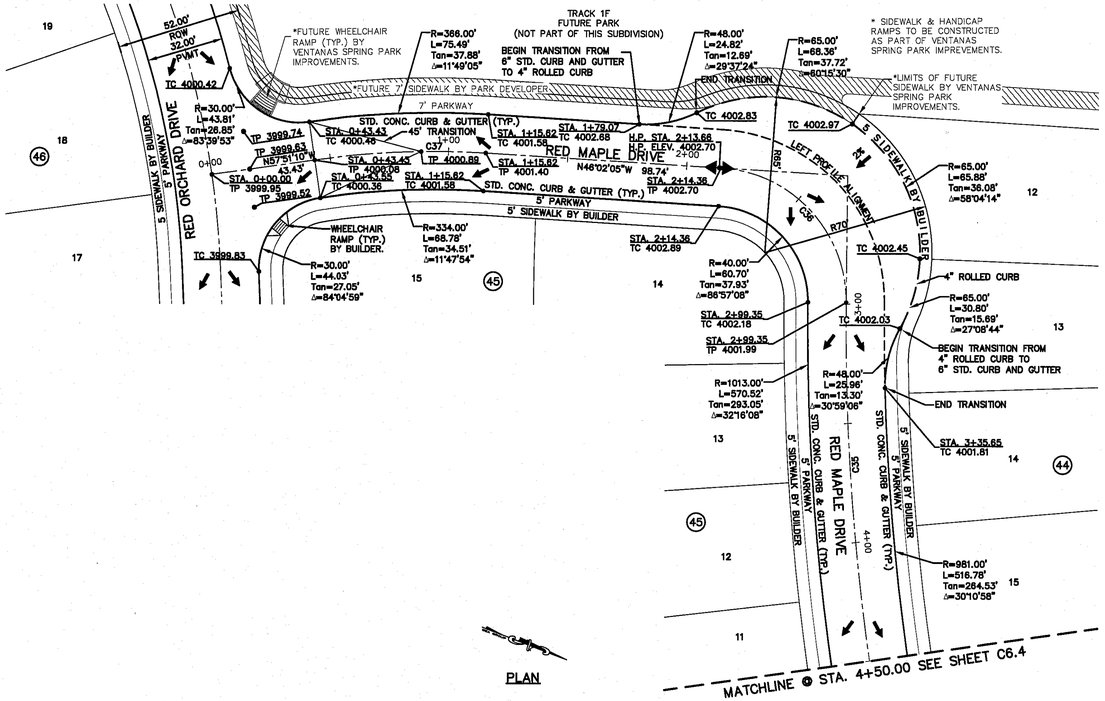
WARNING ! BEFORE YOU DIG
CALL
1-800-DIG-TESS
1-800-344-8377
FOR FIELD LOCATING EXISTING UTILITIES

REFERENCES - BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.

ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY



CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C34	997.00'	322.34'	162.59'	320.94'	N13°07'51"E	018°31'28"
C35	997.00'	322.34'	162.59'	320.94'	N31°39'19"E	018°31'28"
C36	56.00'	84.99'	53.10'	77.06'	S02°33'31"E	086°57'08"
C37	350.00'	72.19'	36.22'	72.06'	S51°56'38"E	011°49'05"

LEGEND:
- PROFILE DEPICTS 6" DROP AT INTERSECTION CURB RETURNS. REFER TO PVI STATIONS FOR ACTUAL PAVEMENT ELEVATIONS.
- SIDEWALK BY VENTANAS SPRING PARK IMPROVEMENTS.

engineers • architects • planners
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4712 Woodrow Bean, Stn. F El Paso, TX. 79924
Office: 915.544.5232 Fax: 915.544.5233 www.cagroup.net

ENGINEER'S SEAL
STATE OF TEXAS · JAMES L. ACHABAL · 85075 · LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE
VENTANAS SUBDIVISION
UNIT SEVEN
SUBDIVISION IMPROVEMENTS

SCALE
Horizontal: 1"=30'
Vertical: 1"=5'
Contour Interval: N/A

DATE: MAY 2014
DESIGN BY: F.Z./J.M.
DRAWN BY: J.M.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260-017-LD

Final Approval

SHEET TITLE
RED MAPLE DRIVE PLAN & PROFILE FROM STA. 0+00.00 TO STA. 4+50.00

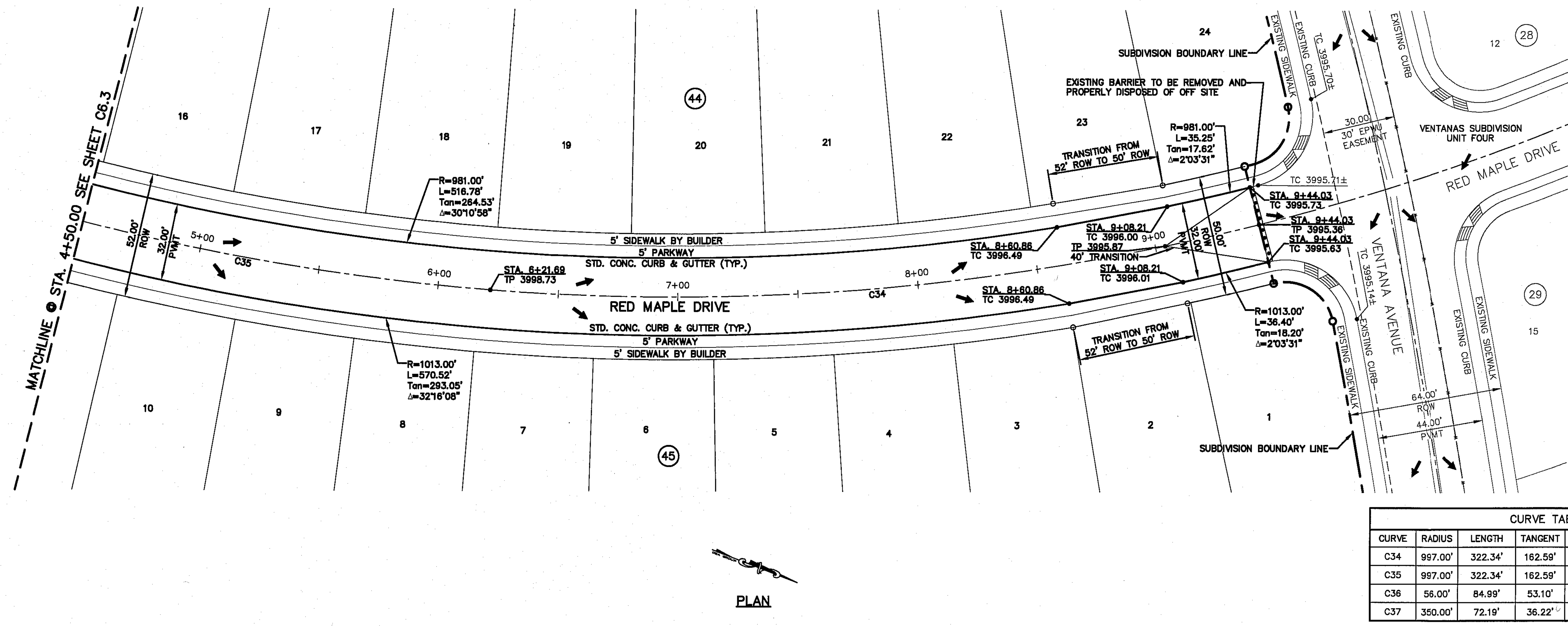
SHEET NO.
C6.3

S:\2260\2260-017LD-Ventanas Unit Seven\DWGS\Construction Drawings\Improvement Plans\2260-017-C6.3-C6.4-Red Maple P&P.dwg, Red Maple Sheet 1, 7/15/2014 10:01:47 AM

UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579
CITY OF EL PASO DEPARTMENT OF TRANSPORTATION (EPDoT)	(915) 621-6750
(AFTER HOURS)	(915) 240-3220

WARNING ! BEFORE YOU DIG

CALL
1-800-DIG-TESS
1-800-344-8377
FOR FIELD LOCATING EXISTING UTILITIES



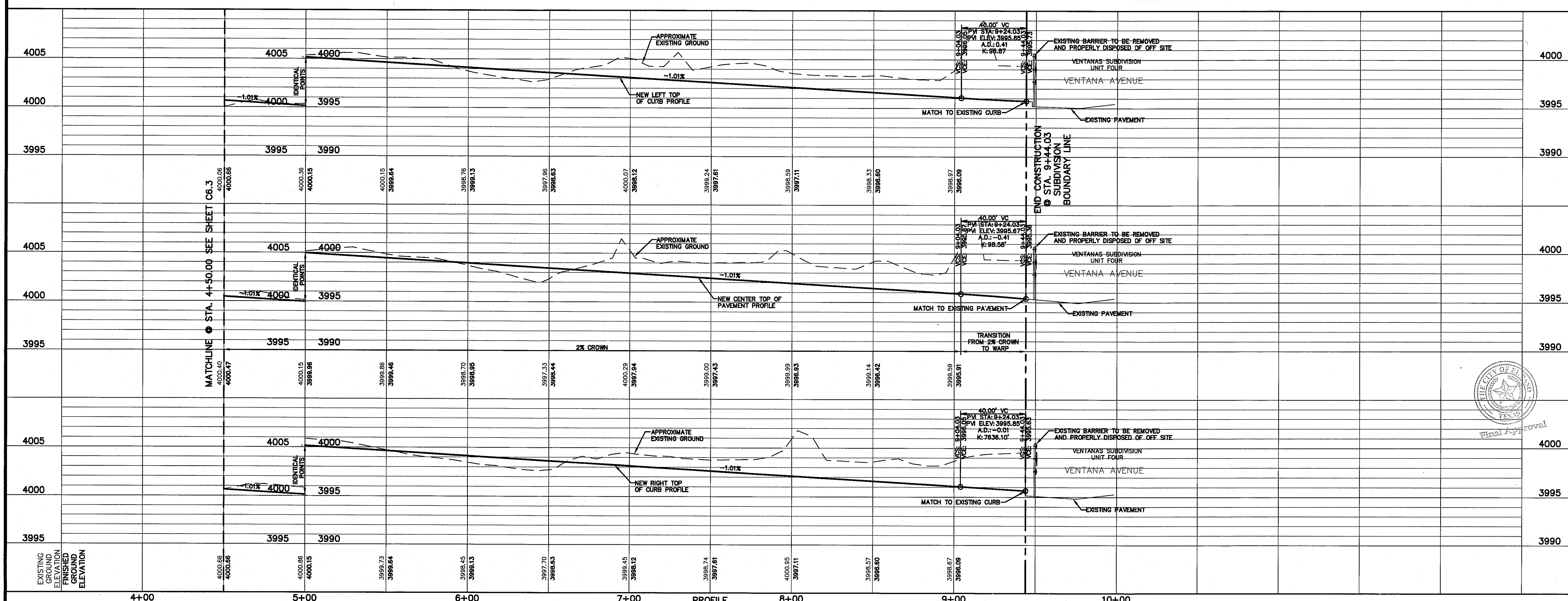
MATCHLINE @ STA. 4+50.00 SEE SHEET C6.3
SUBDIVISION BOUNDARY LINE
EXISTING BARRIER TO BE REMOVED AND PROPERLY DISPOSED OF OFF SITE
R=981.00' L=516.78' Tan=264.53' Δ=30°10'58"
R=1013.00' L=570.52' Tan=293.05' Δ=32°16'08"
R=981.00' L=35.25' Tan=17.62' Δ=2°03'31"
R=1013.00' L=36.40' Tan=18.20' Δ=2°03'31"
TRANSITION FROM 52' ROW TO 50' ROW
5' SIDEWALK BY BUILDER
5' PARKWAY
STD. CONC. CURB & GUTTER (TYP.)
RED MAPLE DRIVE
VENTANA AVENUE
VENTANAS SUBDIVISION UNIT FOUR
30.00' EPWU EASEMENT
EXISTING CURB
EXISTING SIDEWALK
STA. 6+21.69 TP 3998.73
STA. 8+60.86 TC 3996.49
STA. 9+08.21 TC 3996.00
TP 3995.87 40' TRANSITION
STA. 9+08.21 TC 3996.01
STA. 9+44.03 TC 3995.73
STA. 9+44.03 TP 3995.36
STA. 9+44.03 TC 3995.63
TC 3995.71±
64.00' ROW
44.00' PVMT
52.00' ROW
32.00' PVMT
PLAN

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C34	997.00'	322.34'	162.59'	320.94'	N13°07'51"E	018°31'28"
C35	997.00'	322.34'	162.59'	320.94'	N31°39'19"E	018°31'28"
C36	56.00'	84.99'	53.10'	77.06'	S02°33'31"E	086°57'08"
C37	350.00'	72.19'	36.22'	72.06'	S51°56'38"E	011°49'05"

LEGEND:

PROFILE DEPICTS 6" DROP AT INTERSECTION CURB RETURNS. REFER TO PVI STATIONS FOR ACTUAL PAVEMENT ELEVATIONS.

SIDEWALK BY VENTANAS SPRING PARK IMPROVEMENTS.



MATCHLINE @ STA. 4+50.00 SEE SHEET C6.3
APPROXIMATE EXISTING GROUND
NEW LEFT TOP OF CURB PROFILE
NEW CENTER TOP OF PAVEMENT PROFILE
NEW RIGHT TOP OF CURB PROFILE
IDENTICAL POINTS
-1.01%
2% CROWN
MATCH TO EXISTING CURB
MATCH TO EXISTING PAVEMENT
EXISTING PAVEMENT
EXISTING BARRIER TO BE REMOVED AND PROPERLY DISPOSED OF OFF SITE
VENTANAS SUBDIVISION UNIT FOUR
VENTANA AVENUE
TRANSITION FROM 2% CROWN TO WARP
END CONSTRUCTION @ STA. 9+44.03 SUBDIVISION BOUNDARY LINE
40.00' VC
PVI STA: 9+24.03
EXISTING GROUND ELEVATION
FINISHED GROUND ELEVATION
4+00
5+00
6+00
7+00
8+00
9+00
10+00
PROFILE

REFERENCES – BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.

ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5232 Fax: 915.544.5233 www.ceagroup.net

ENGINEER'S SEAL
STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER
7-10-14

SCALE
Horizontal: 1"=30'
Vertical: 1"=5'
Contour Interval: N/A

DATE: MAY 2014
DESIGN BY: F.Z./J.M
DRAWN BY: J.M.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260-017-LD

PROJECT TITLE

VENTANAS SUBDIVISION UNIT SEVEN
SUBDIVISION IMPROVEMENTS

SHEET TITLE

RED MAPLE DRIVE PLAN & PROFILE FROM STA. 4+50.00 TO STA. 9+44.03

SHEET NO.

C6.4

THE CITY OF EL PASO TEXAS
Final Approval

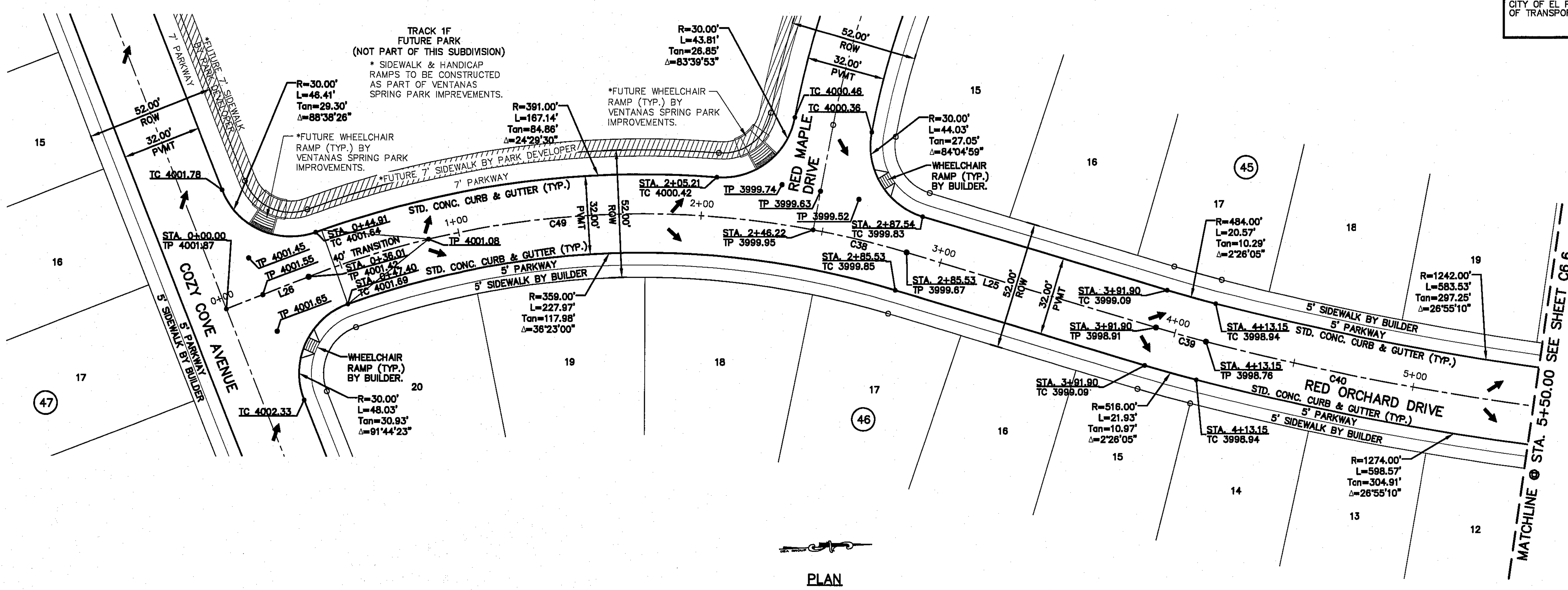
S:\2260\2260-017\D-Ventanas Unit Seven\DWGS\Construction Drawings\Improvement Plans\2260-017-C6.3-C6.4-Red Maple P&P.dwg, Red Maple Sheet 2, 7/10/2014 4:09:02 PM

UTILITY LOCATOR SERVICES

EL PASO ELECTRIC COMPANY	(915) 543–5720
EL PASO ENERGY CORPORATION	(915) 496–5244
EL PASO WATER UTILITIES	(915) 594–5500
MCI SURVEILLANCE	(800) MCI–WORK
TIME WARNER COMMUNICATIONS	(915) 772–1123
TEXAS GAS SERVICE	(915) 680–7200
SBC	(800) 545–6005
AT&T	(800) 852–3786
U.S. SPRINT TELECOMM	(800) 521–0579
CITY OF EL PASO DEPARTMENT OF TRANSPORTATION (EPDoT)	(915) 621–6750
(AFTER HOURS)	(915) 240–3220

WARNING ! BEFORE YOU DIG

CALL
1–800–DIG–TESS
1–800–344–8377
FOR FIELD LOCATING EXISTING UTILITIES



LINE TABLE

LINE	BEARING	LENGTH
L25	S38°05'03"W	106.37'
L26	S00°02'21"E	36.01'

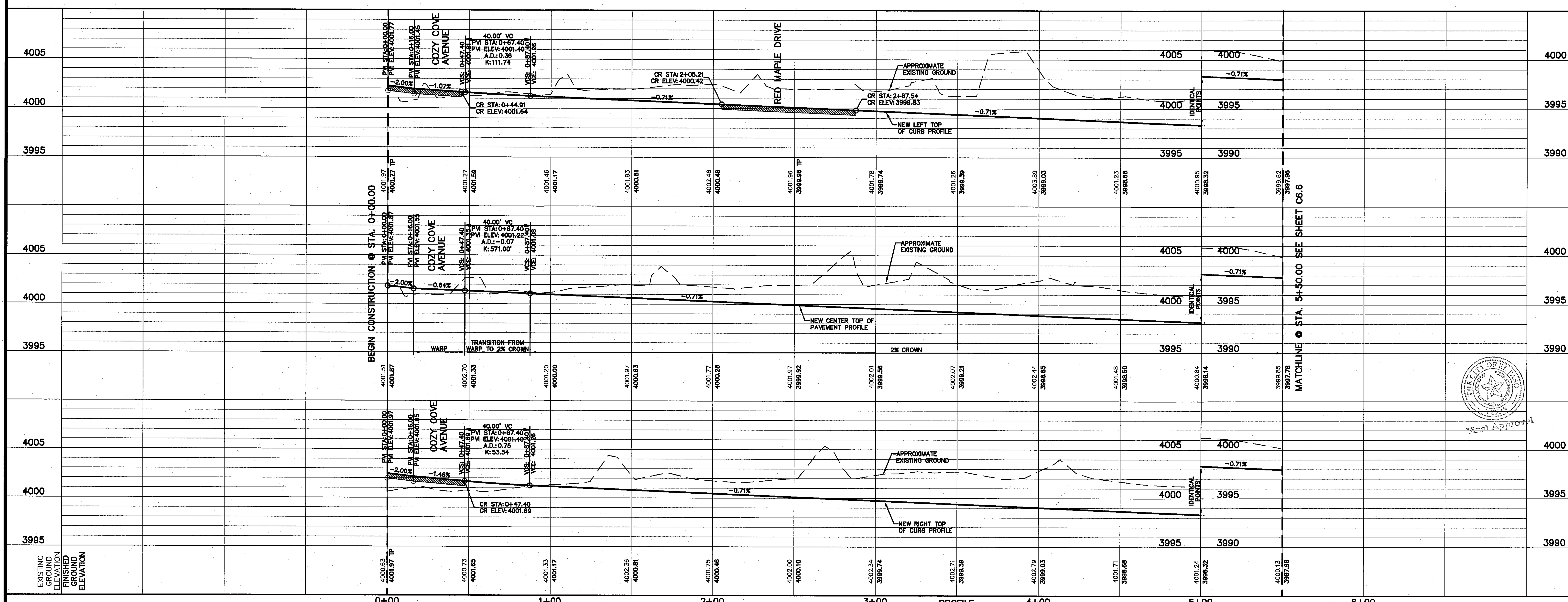
CURVE TABLE

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C38	375.00'	39.31'	19.67'	39.29'	S35°04'51"W	006°00'23"
C39	500.00'	21.25'	10.63'	21.25'	N36°52'00"E	002°26'05"
C40	1258.00'	334.97'	168.48'	333.98'	N28°01'16"E	015°15'22"
C41	1258.00'	334.97'	168.48'	333.98'	N12°45'54"E	015°15'22"
C49	375.00'	210.20'	107.94'	207.46'	S16°01'09"W	032°07'01"

LEGEND:

PROFILE DEPICTS 6" DROP AT INTERSECTION CURB RETURNS. REFER TO PVI STATIONS FOR ACTUAL PAVEMENT ELEVATIONS.

SIDEWALK BY VENTANAS SPRING PARK IMPROVEMENTS.



REFERENCES – BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.

ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5232 Fax: 915.544.5233 www.ceagroup.net

ENGINEER'S SEAL
STATE OF TEXAS — JORGE L. AZCARATE — 85075 — LICENSED PROFESSIONAL ENGINEER 7-16-14

SCALE
Horizontal: 1"=30'
Vertical: 1"=5'
Contour Interval: N/A

DATE: MAY 2014
DESIGN BY: F.Z./J.M
DRAWN BY: J.M.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260–017–LD

PROJECT TITLE

VENTANAS SUBDIVISION UNIT SEVEN SUBDIVISION IMPROVEMENTS

THE CITY OF EL PASO — Final Approval

SHEET TITLE

RED ORCHARD DRIVE PLAN & PROFILE FROM STA. 0+00.00 TO STA. 5+50.00

SHEET NO.

C6.5

S:\2260\2260-017LD-Ventanas Unit Seven\DWGS\Construction Drawings\Improvement Plans\2260-017-C6.5-C6.6-Red Orchard P&P.dwg, Red Orchard Sheet 1, 7/15/2014 10:02:59 AM

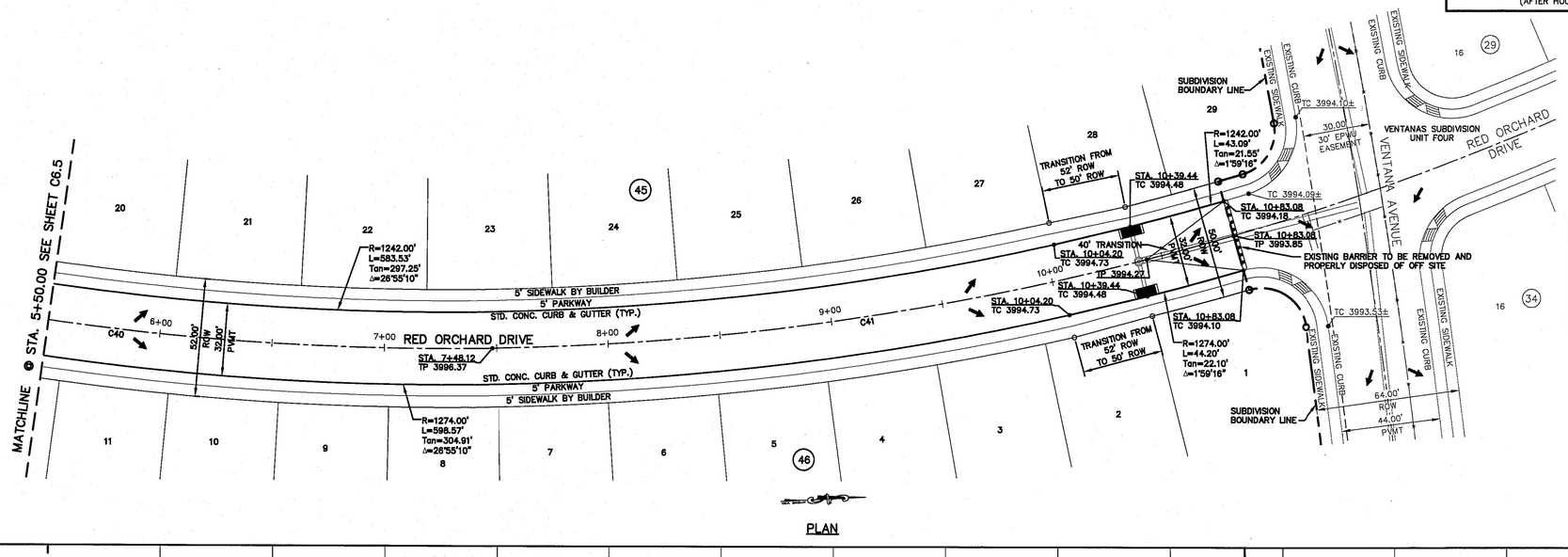
UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579
CITY OF EL PASO DEPARTMENT OF TRANSPORTATION (EPDoT)	(915) 621-6750
(AFTER HOURS)	(915) 240-3220

WARNING ! BEFORE YOU DIG
CALL
1-800-DIG-TESS
1-800-344-8377
FOR FIELD LOCATING EXISTING UTILITIES

REFERENCES - BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.
ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY



PLAN

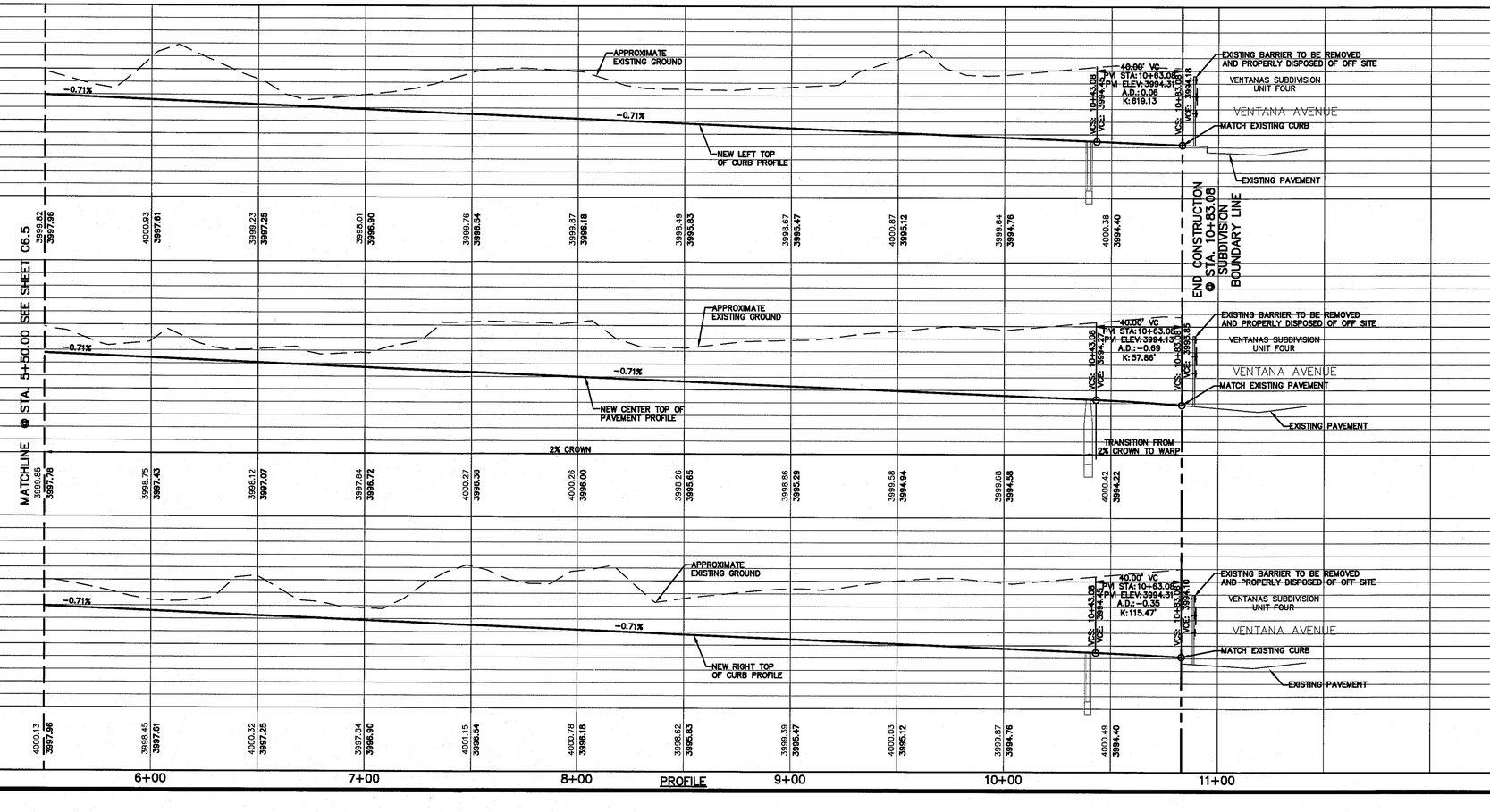
LINE TABLE		
LINE	BEARING	LENGTH
L25	S38°05'03"W	106.37'
L26	S00°02'21"E	36.01'

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C38	375.00'	39.31'	19.67'	39.29'	S35°04'51"W	006°00'23"
C39	500.00'	21.25'	10.63'	21.25'	N36°52'00"E	002°26'05"
C40	1258.00'	334.97'	168.48'	333.98'	N28°01'16"E	015°15'22"
C41	1258.00'	334.97'	168.48'	333.98'	N12°45'54"E	015°15'22"
C49	375.00'	210.20'	107.94'	207.46'	S16°01'09"W	032°07'01"

LEGEND:

PROFILE DEPICTS 6" DROP AT INTERSECTION CURB RETURNS. REFER TO PVI STATIONS FOR ACTUAL PAVEMENT ELEVATIONS.

SIDEWALK BY VENTANAS SPRING PARK IMPROVEMENTS.



PROFILE

THE CITY OF EL PASO TEXAS
Final Approval

ENGINEER'S SEAL
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS

caa
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.3232 Fax: 915.544.3283 www.caagroup.net

SCALE
Horizontal: 1"=30'
Vertical: 1"=5'
Contour Interval: N/A

DATE: MAY 2014
DESIGN BY: F.Z./J.M.
DRAWN BY: J.M.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260-017-LD

PROJECT TITLE
VENTANAS SUBDIVISION UNIT SEVEN
SUBDIVISION IMPROVEMENTS

SHEET TITLE
RED ORCHARD DRIVE PLAN & PROFILE FROM STA. 5+50.00 TO STA. 10+83.08

SHEET NO.
C6.6

S:\2260\2260-017LD-Ventanas Unit Seven\DWGS\Construction Drawings\Improvement Plans\2260-017-C6.5-C6.6-Red Orchard P&P.dwg, Red Orchard Sheet 2, 7/10/2014 4:10:01 PM

UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579
CITY OF EL PASO DEPARTMENT OF TRANSPORTATION (CPDoT)	(915) 621-6750
(AFTER HOURS)	(915) 240-3220

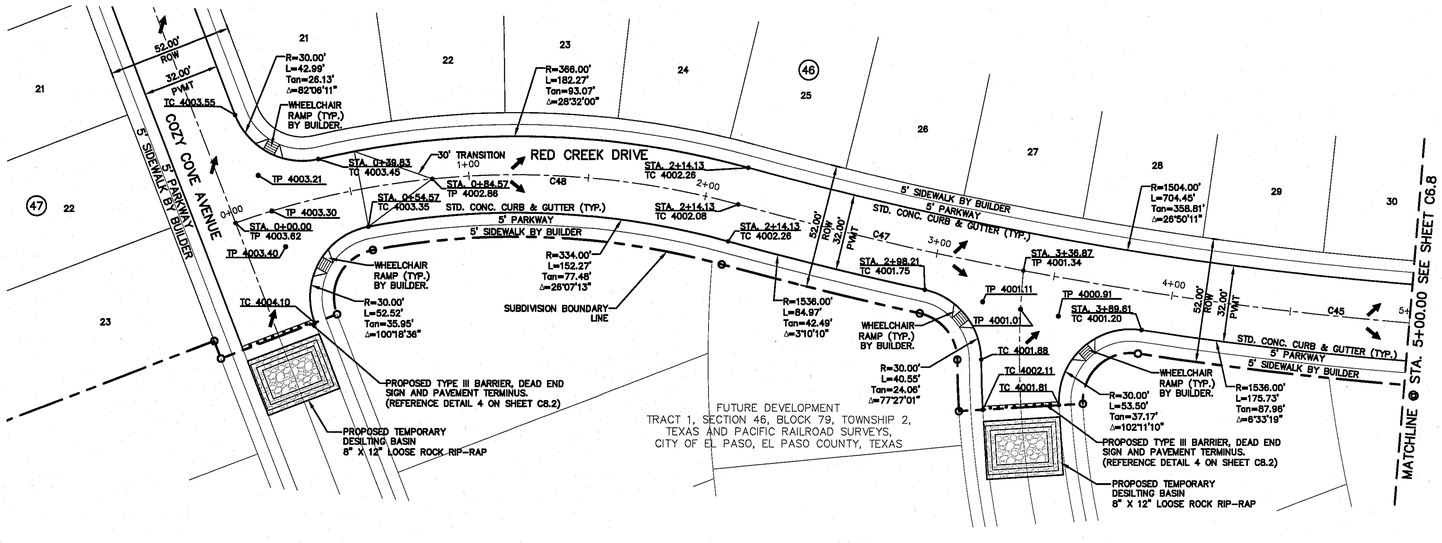
WARNING !
BEFORE YOU DIG
CALL
1-800-DIG-TESS
1-800-344-8377
FOR FIELD LOCATING EXISTING UTILITIES

REFERENCES - BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.

ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY



PLAN

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C42	350.00'	7.83'	3.92'	7.83'	N07°38'41"E	001°16'55"
C43	1520.00'	392.52'	197.36'	391.43'	N14°24'06"E	014°47'45"
C45	1520.00'	264.36'	132.51'	264.02'	N26°46'56"E	009°57'53"
C47	1520.00'	122.74'	61.40'	122.70'	N34°04'40"E	004°37'35"
C48	350.00'	214.13'	110.54'	210.81'	N18°51'51"E	035°03'13"

LEGEND:

PROFILE DEPICTS 6" DROP AT INTERSECTION CURB RETURNS. REFER TO PVI STATIONS FOR ACTUAL PAVEMENT ELEVATIONS.

PROFILE

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engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.2232 Fax: 915.544.6233 www.casgroup.net

ENGINEERS SEAL

THE STATE OF TEXAS — JAMES L. AZCARATE — 85075 — LICENSED PROFESSIONAL ENGINEER

SCALE
Horizontal: 1"=30'
Vertical: 1"=5'
Contour Interval: N/A

DATE: MAY 2014
DESIGN BY: F.Z./J.M.
DRAWN BY: J.M.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260-017-LD

PROJECT TITLE

VENTANAS SUBDIVISION UNIT SEVEN

SUBDIVISION IMPROVEMENTS

THE CITY OF EL PASO TEXAS — Final Approval

SHEET TITLE

RED CREEK DRIVE PLAN & PROFILE FROM STA. 0+00.00 TO STA. 5+00.00

SHEET NO.

C6.7

S:\2260\2260-017LD-Ventanas Unit Seven\DWGS\Construction Drawings\Improvement Plans\2260-017-C6.7-C6.8-Red Creek P&P.dwg, Red Creek Sheet 1, 7/10/2014 4:10:39 PM

UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579
CITY OF EL PASO DEPARTMENT OF TRANSPORTATION (EPDoT)	(915) 621-6750
(AFTER HOURS)	(915) 240-3220

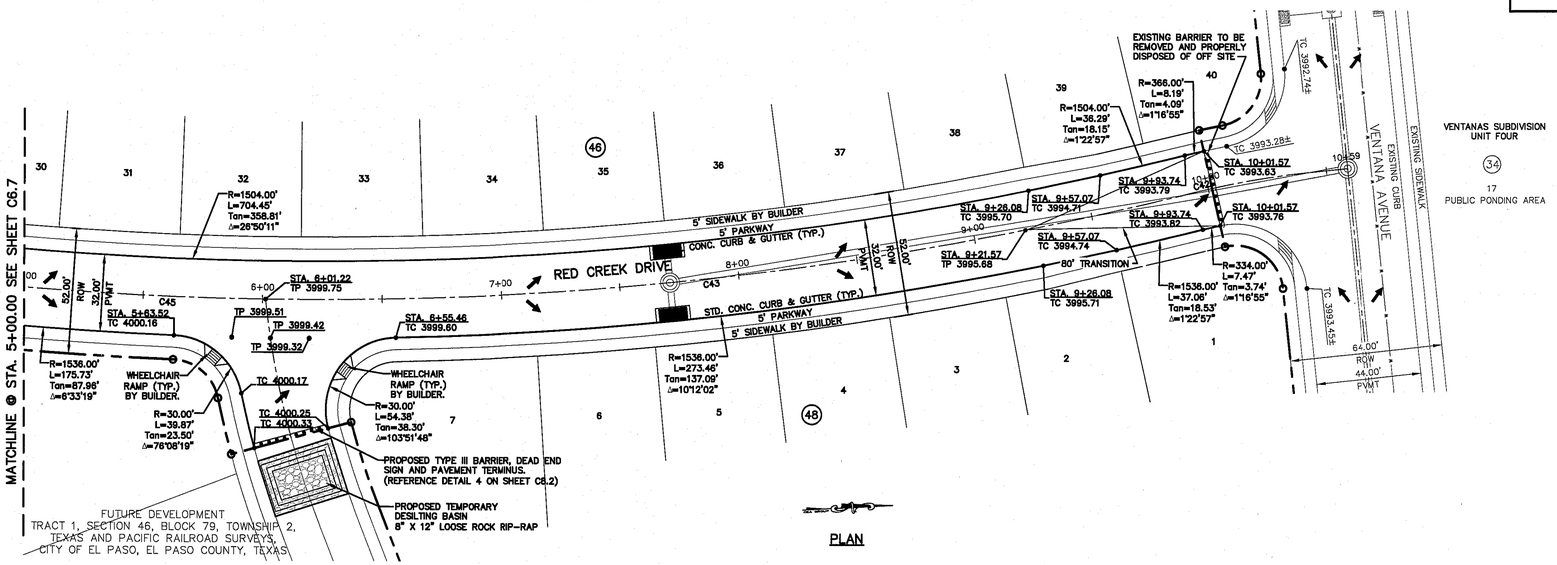
WARNING ! BEFORE YOU DIG
CALL
1-800-DIG-TESS
1-800-344-8377
FOR FIELD LOCATING EXISTING UTILITIES

REFERENCES - BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.

ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY



PLAN

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C42	350.00'	7.83'	3.92'	7.83'	N07°38'41"E	001°16'55"
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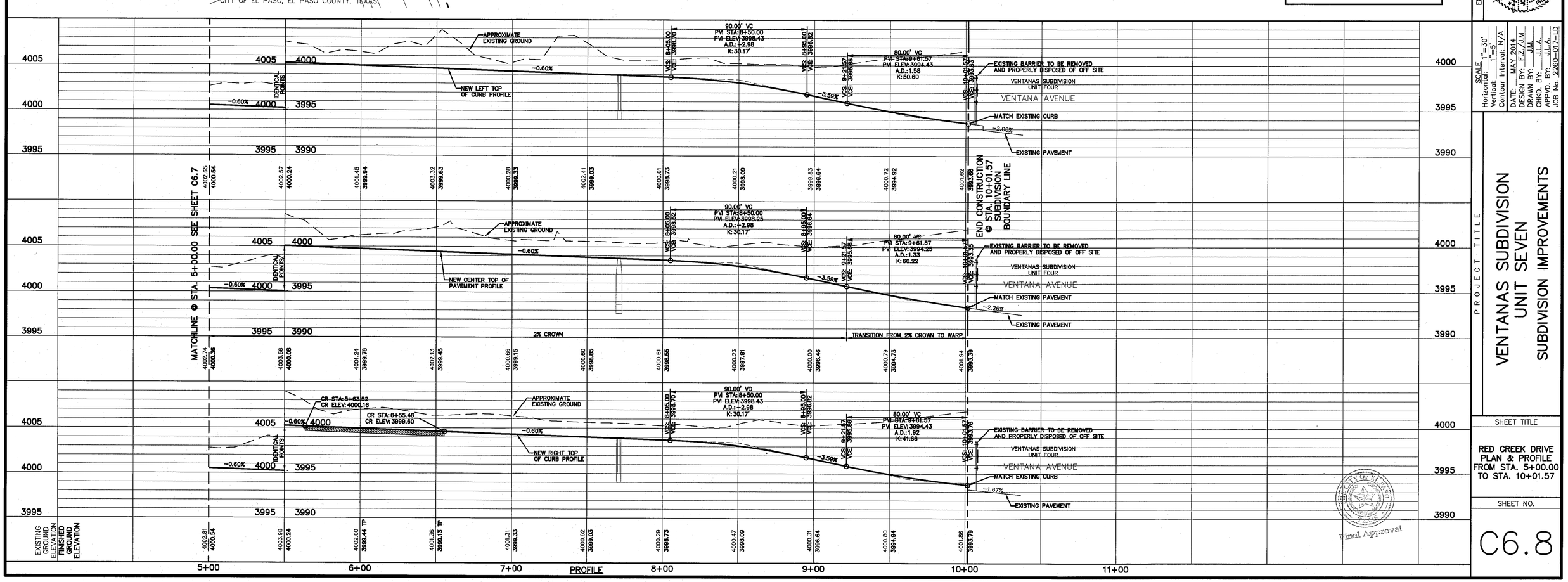
C45	1520.00'	264.36'	132.51'	264.02'	N26°46'56"E	009°57'53"
C47	1520.00'	122.74'	61.40'	122.70'	N34°04'40"E	004°37'35"
C48	350.00'	214.13'	110.54'	210.81'	N18°51'51"E	035°03'13"

LEGEND:

PROFILE DEPICTS 6" DROP AT INTERSECTION CURB RETURNS. REFER TO PVI STATIONS FOR ACTUAL PAVEMENT ELEVATIONS.



ENGINEER'S SEAL

JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office 915.544.0232 Fax 915.544.0293 www.ceagroup.net

SCALE
Horizontal: 1"=30'
Vertical: 1"=5'
Contour Intervol: N/A

DATE: MAY 2014
DESIGN BY: F.E./J.M.
DRAWN BY: J.L.A.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260-017-LD

PROJECT TITLE

VENTANAS SUBDIVISION UNIT SEVEN
SUBDIVISION IMPROVEMENTS

SHEET TITLE

RED CREEK DRIVE PLAN & PROFILE FROM STA. 5+00.00 TO STA. 10+01.57

SHEET NO.

C6.8

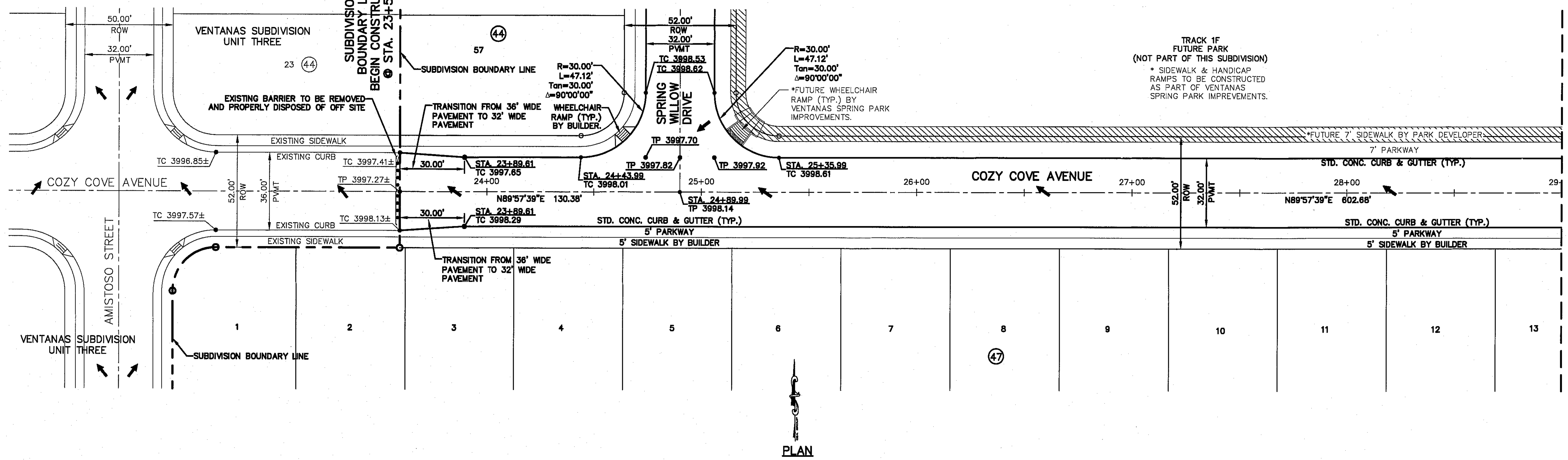
Final Approval

S:\2260\2260-017LD-Ventanas Unit Seven\DWGS\Construction Drawings\Improvement Plans\2260-017-C6.7-C6.8-Red Creek P&P.dwg, Red Creek Sheet 2, 7/10/2014 4:10:58 PM

UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579
CITY OF EL PASO DEPARTMENT OF TRANSPORTATION (EPDoT)	(915) 621-6750
(AFTER HOURS)	(915) 240-3220

WARNING ! BEFORE YOU DIG

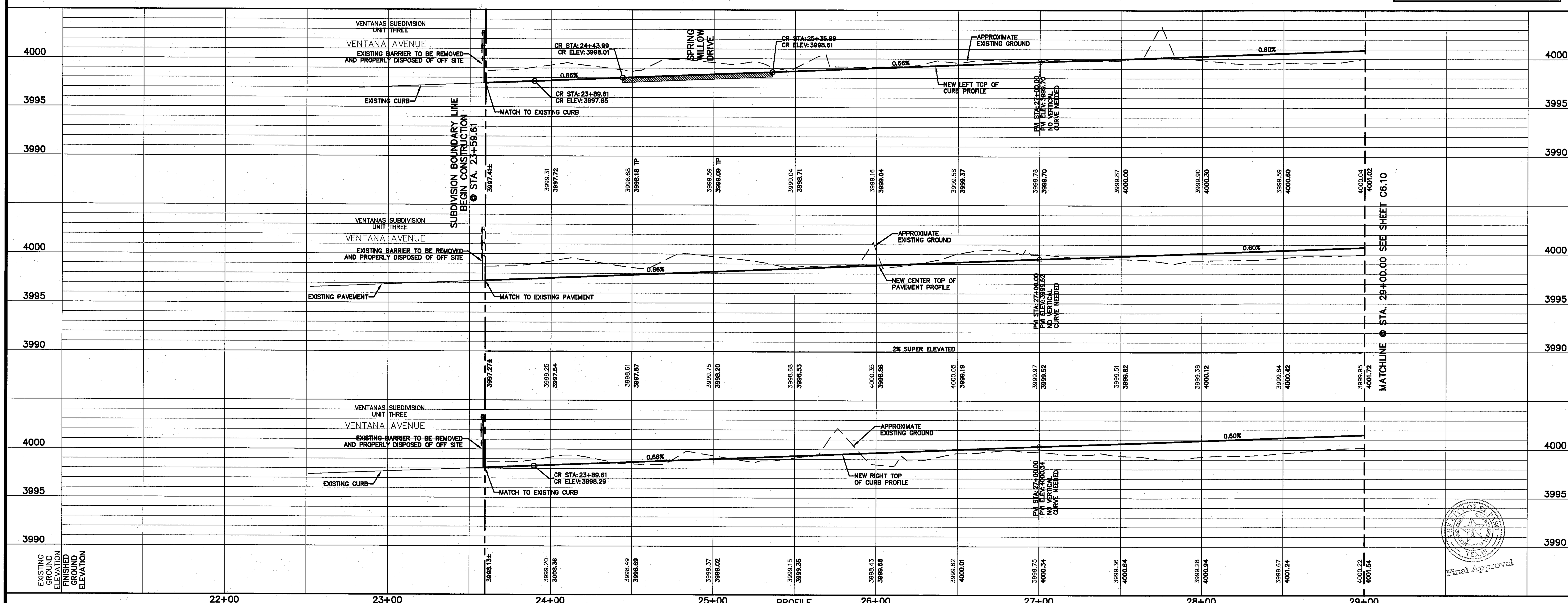
CALL
1-800-DIG-TESS
1-800-344-8377
FOR FIELD LOCATING EXISTING UTILITIES



LEGEND:

PROFILE DEPICTS 6" DROP AT INTERSECTION CURB RETURNS. REFER TO PVI STATIONS FOR ACTUAL PAVEMENT ELEVATIONS.

SIDEWALK BY VENTANAS SPRING PARK IMPROVEMENTS.



REFERENCES - BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.

ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5232 Fax: 915.544.5233 www.ceagroup.net

ENGINEER'S SEAL
STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER
7-16-14

SCALE
Horizontal: 1"=30'
Vertical: 1"=5'
Contour Interval: N/A

DATE: MAY 2014
DESIGN BY: F.Z./J.M
DRAWN BY: J.M.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260-017-LD

PROJECT TITLE

VENTANAS SUBDIVISION UNIT SEVEN SUBDIVISION IMPROVEMENTS

SHEET TITLE

COZY COVE AVENUE PLAN & PROFILE FROM STA. 23+59.61 TO STA. 29+00.00

SHEET NO.

C6.9

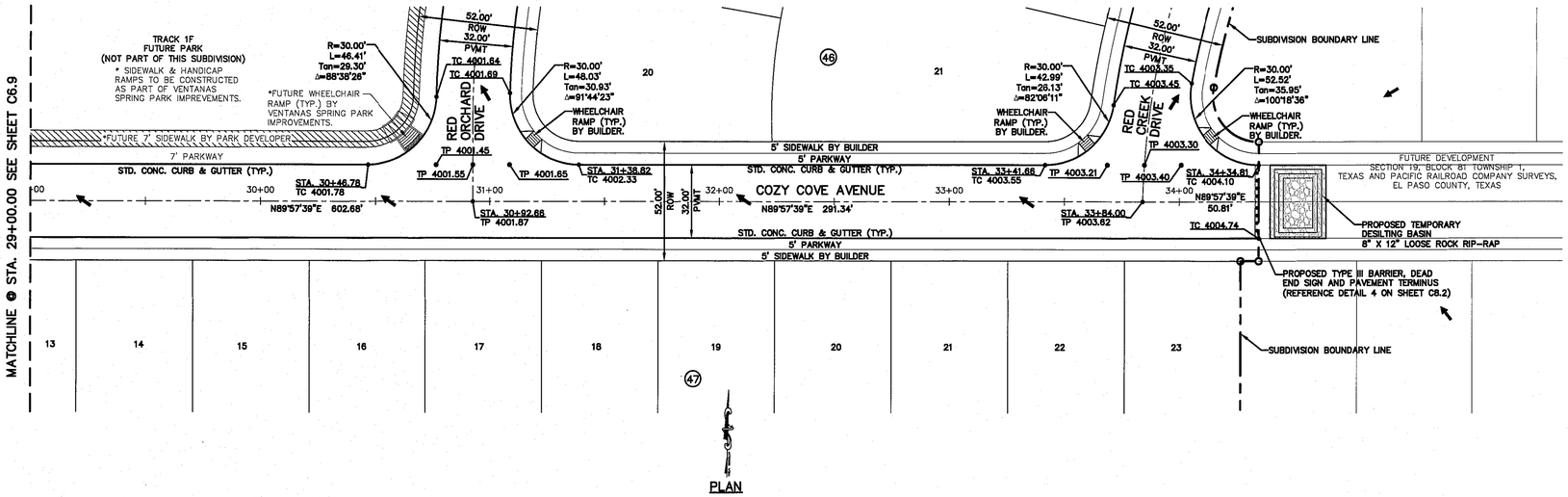
Final Approval

S:\2260\2260-017LD-Ventanas Unit Seven\DWGS\Construction Drawings\Improvement Plans\2260-017-C6.9-C6.10-Cozy Cove P&P.dwg, Cozy Cove Sheet 1, 7/15/2014 9:55:30 AM

UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 880-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579
CITY OF EL PASO DEPARTMENT OF TRANSPORTATION (EPDoT)	(915) 621-6750
(AFTER HOURS)	(915) 240-3220

WARNING ! BEFORE YOU DIG

CALL
1-800-DIG-TESS
1-800-344-8377
FOR FIELD LOCATING EXISTING UTILITIES

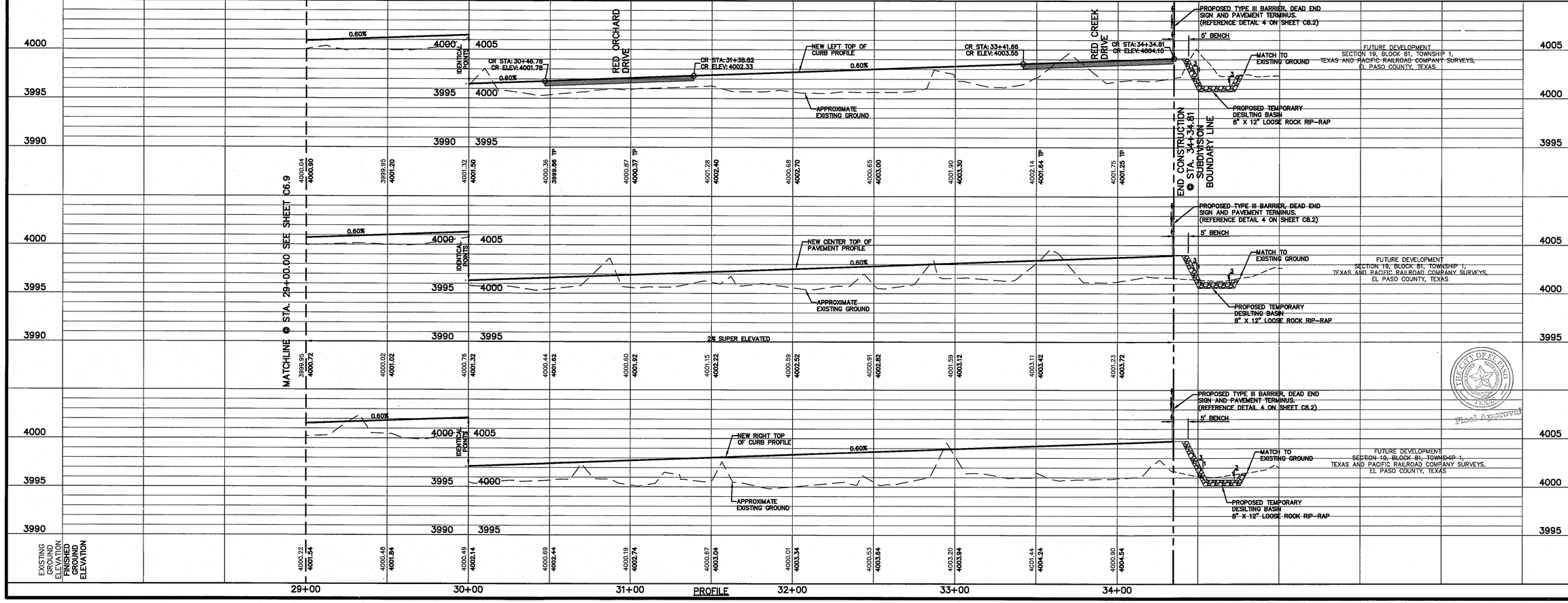


PLAN

LEGEND:

PROFILE DEPICTS 6" DROP AT INTERSECTION CURB RETURNS. REFER TO PVI STATIONS FOR ACTUAL PAVEMENT ELEVATIONS.

SIDEWALK BY VENTANAS SPRING PARK IMPROVEMENTS.



PROFILE

REFERENCES - BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.

ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

eda
engineering • planning • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4694
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5232 Fax: 915.544.5233 www.cssgroup.net

ENGINEER'S SEAL

STATE OF TEXAS · JORGE L. ACUÑA · 85075 · LICENSED PROFESSIONAL ENGINEER

SCALE
Horizontal: 1"=30'
Vertical: 1"=5'
Contour Interval: N/A

DATE: MAY 2014
DESIGN BY: F.Z./J.M.
DRAWN BY: J.M.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260-017-LD

PROJECT TITLE

VENTANAS SUBDIVISION
UNIT SEVEN
SUBDIVISION IMPROVEMENTS

THE CITY OF EL PASO TEXAS — Final Approval

SHEET TITLE

COZY COVE AVENUE
PLAN & PROFILE
FROM STA. 29+00.00
TO STA. 34+34.81

SHEET NO.

C6.10

S:\2260\2260-017LD-Ventanas Unit Seven\DWGS\Construction Drawings\Improvement Plans\2260-017-C6.8-C6.10-Cozy Cove P&P.dwg, Cozy Cove Sheet 2, 7/15/2014 9:56:03 AM

STORM PIPE LINE H OUTPUT INFORMATION						
PIPE	DOWNSTREAM INVERT ELEVATION (ft)	UPSTREAM INVERT ELEVATION (ft)	HYDRAULIC GRADE DOWNSTREAM (ft)	HYDRAULIC GRADE UPSTREAM (ft)	Q(50) Expected (cfs)	Q(50) Capacity (cfs)
P-1	3987.70	3988.74	3990.79	3990.90	14.962 CFS	40.911 CFS
P-2	3988.74	3988.98	3991.04	3991.05	6.597 CFS	27.705 CFS
P-3	3988.74	3989.48	3991.04	3991.00	8.443 CFS	48.649 CFS

STORM PIPE LINE I OUTPUT INFORMATION						
PIPE	DOWNSTREAM INVERT ELEVATION (ft)	UPSTREAM INVERT ELEVATION (ft)	HYDRAULIC GRADE DOWNSTREAM (ft)	HYDRAULIC GRADE UPSTREAM (ft)	Q(50) Expected (cfs)	Q(50) Capacity (cfs)
P-1	3987.00	3994.05	3990.71	3995.58	18.110 CFS	35.419 CFS
P-2	3994.05	3994.50	3996.28	3996.42	10.047 CFS	17.615 CFS
P-3	3994.05	3994.50	3996.28	3996.43	10.047 CFS	17.615 CFS

UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579
CITY OF EL PASO DEPARTMENT OF TRANSPORTATION (EPDoT)	(915) 621-6750
(AFTER HOURS)	(915) 240-3220

WARNING ! BEFORE YOU DIG

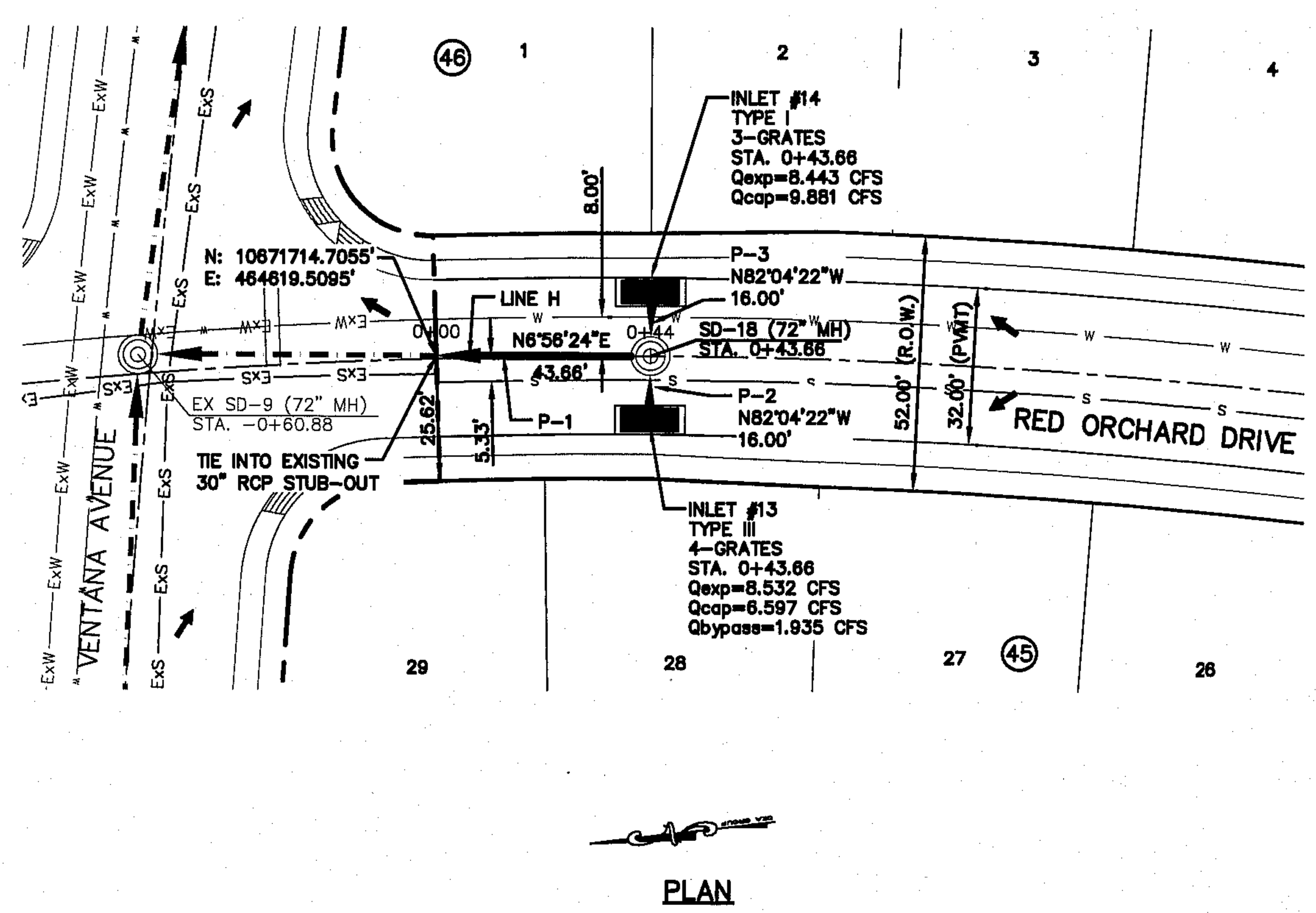
CALL
1-800-DIG-TESS
1-800-344-8377
FOR FIELD LOCATING EXISTING UTILITIES

REFERENCES – BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.
ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

LINE H



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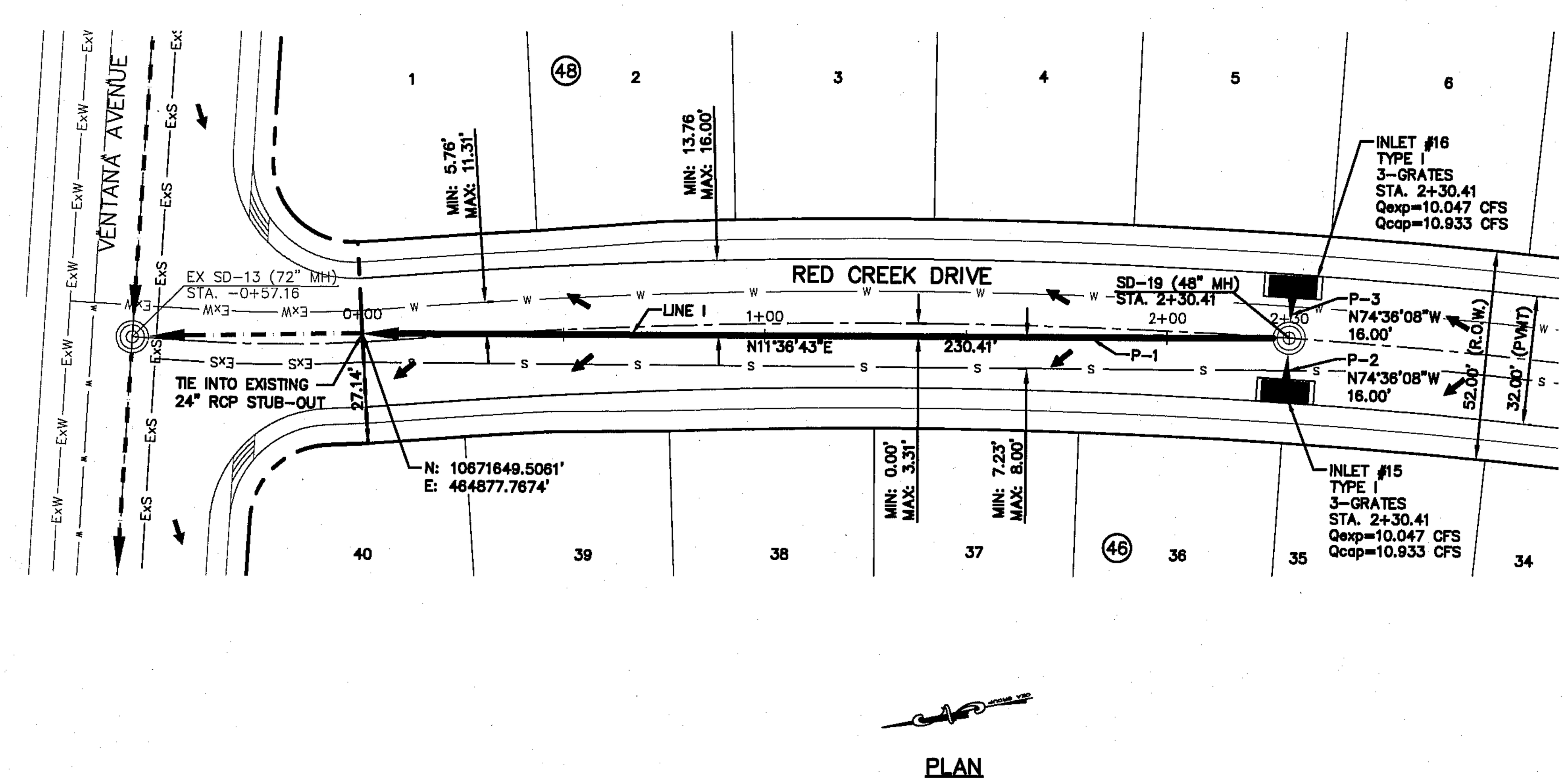

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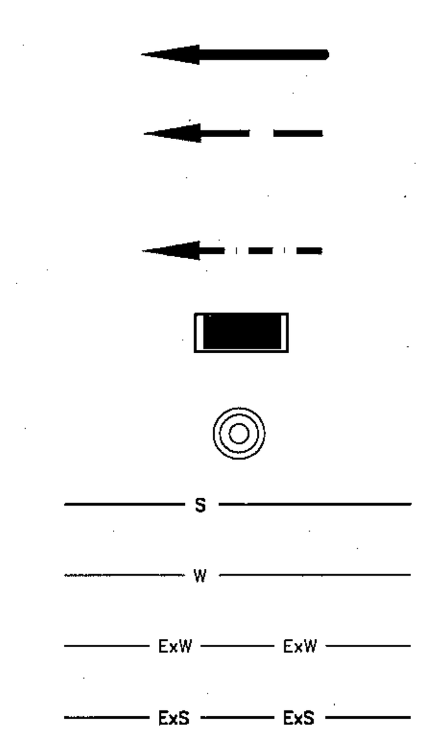

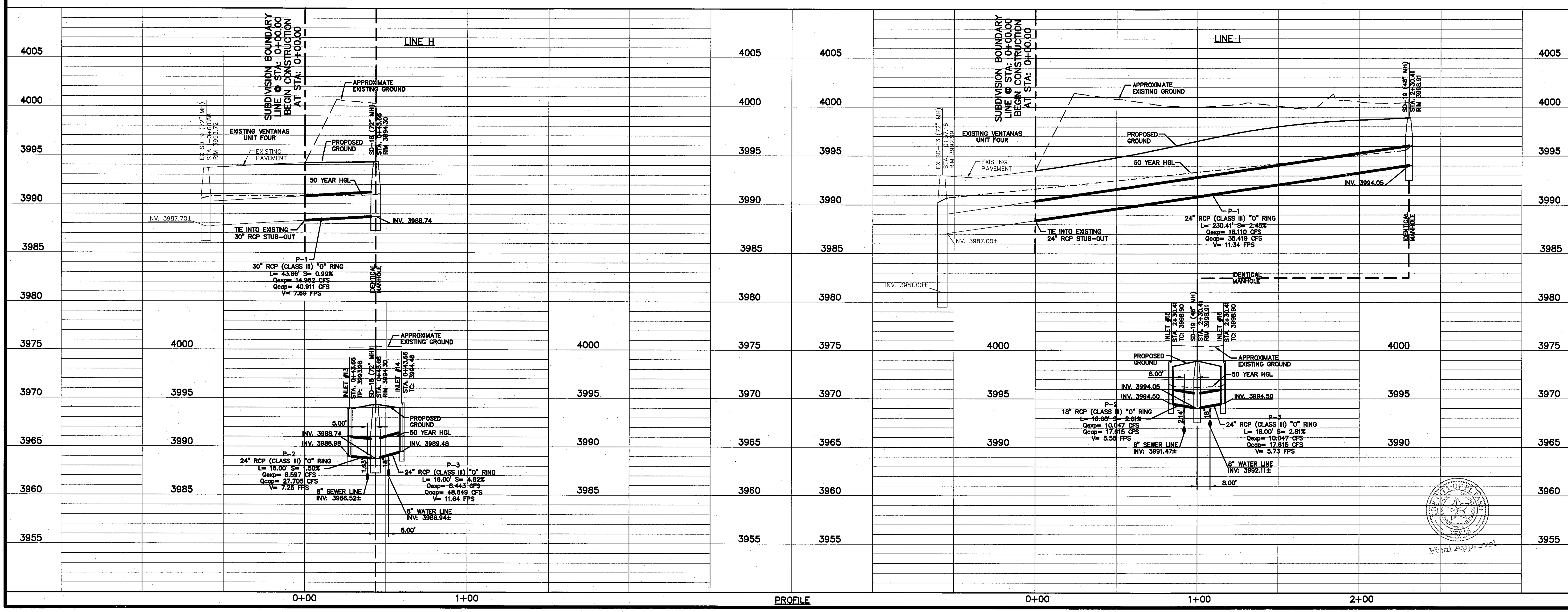

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Vertical: 1"=5'
Contour Interval: N/A

DATE: MAY 2014
DESIGN BY: F.Z./J.M.
DRAWN BY: J.M.
CHKD. BY: J.L.A.
APPD. BY: J.L.A.
JOB No. 2260-017-LD

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924

ENGINEER'S SEAL

PROJECT TITLE

VENTANAS SUBDIVISION UNIT SEVEN
SUBDIVISION IMPROVEMENTS

SHEET TITLE

LINE H
PLAN & PROFILE
FROM STA. 0+00.00
TO STA. 0+43.66

LINE I
PLAN & PROFILE
FROM STA. 0+00.00
TO STA. 2+30.41

SHEET NO.

C7.1

Final Approval

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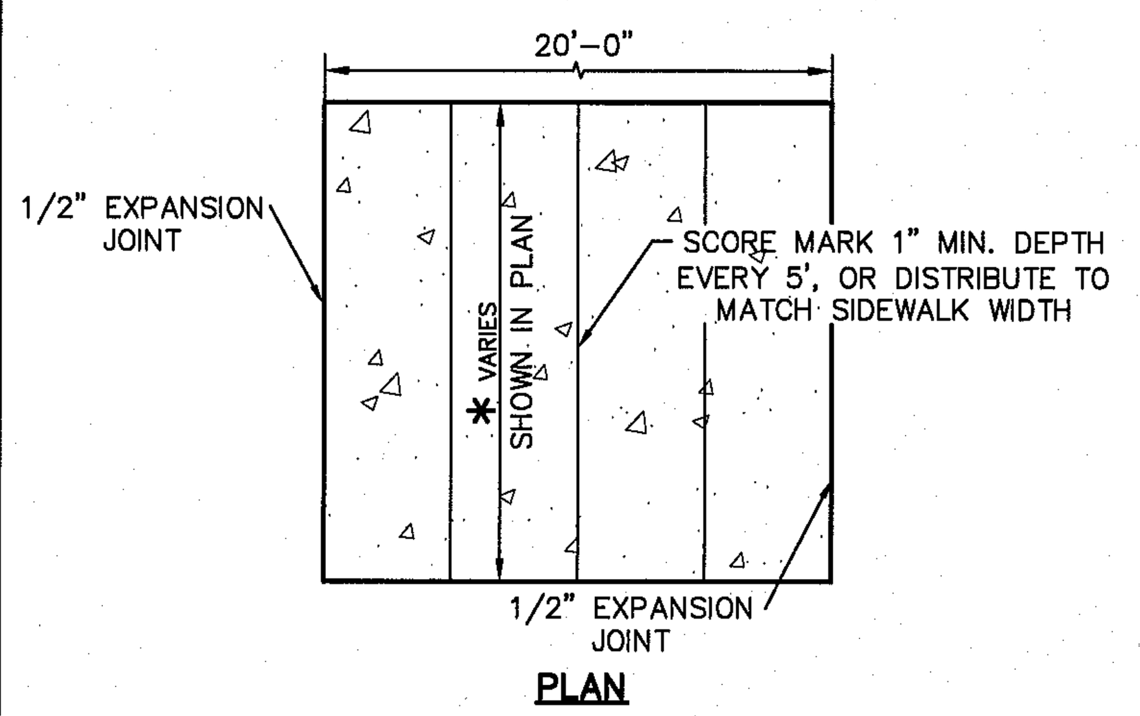

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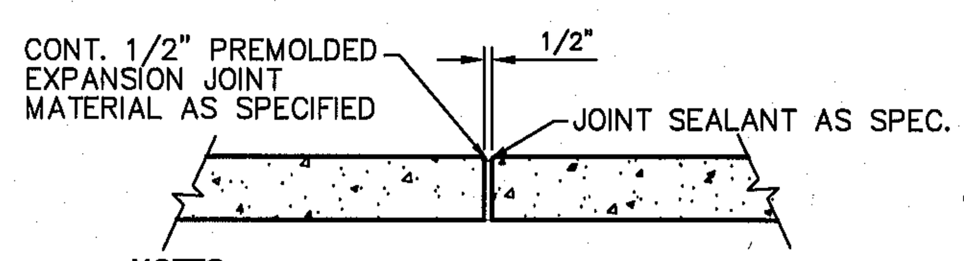


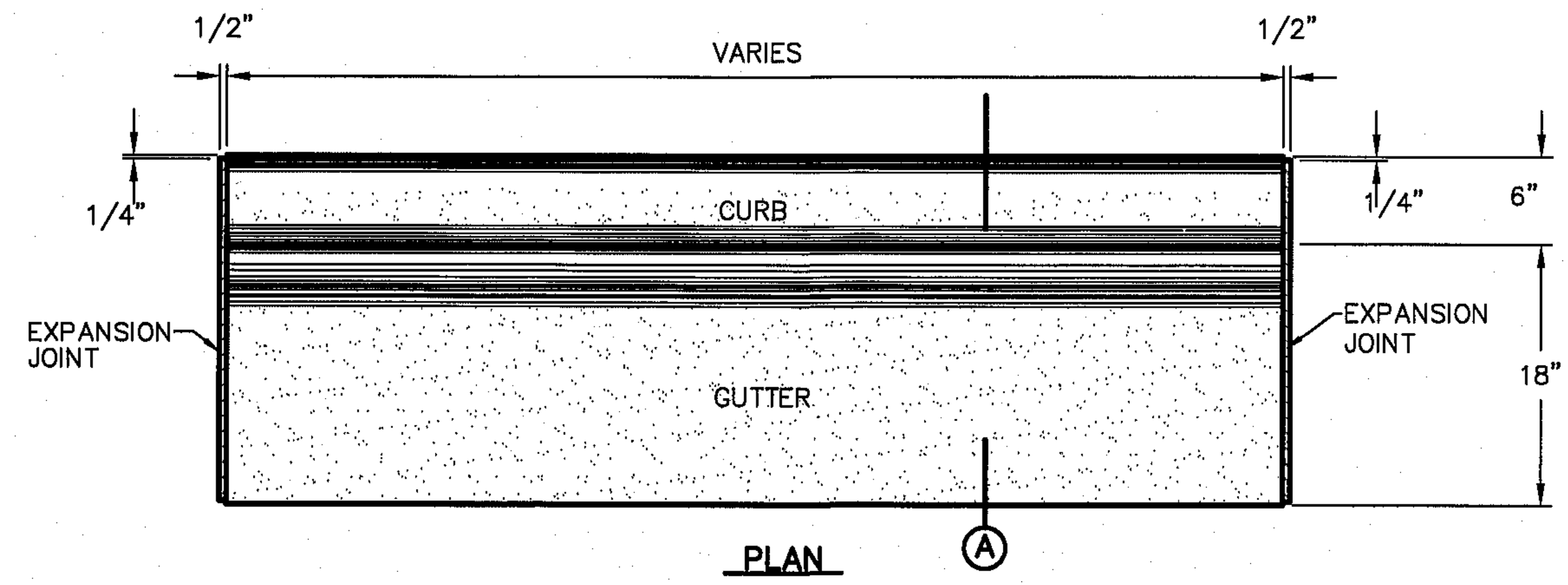
NOTES:
1. EXPANSION JOINT FILLER SHALL BE 1/2" BITUMINOUS TYPE PREFORMED JOINT FILLER (AASHTO M-33)
2. EXPANSION JOINTS SHALL BE SPACED AT 20'-0" MAX.
3. WHEREVER SIDEWALK ABUTS ROCK OR MASONRY STRUCTURES SUCH AS CURBS OR BUILDINGS, EXPANSION JOINTS FILLER SHALL BE PLACED IN ACCORDANCE WITH STANDARD SPECIFICATIONS.

EXPANSION JOINT SECTION
SCALE: N.T.S.

SIDEWALK NOTES:
1. CONCRETE SIDEWALK SHALL BE 3,000 P.S.I.
2. DUMMY JOINTS REQUIRED AT 5' O.C.
3. EXPANSION JOINTS SHALL BE AT 20' O.C. MAXIMUM, USE 1/2" PREMOLDED BITUMINOUS EXPANSION JOINTS (AASHTO M-33)
4. EXPANSION JOINT FILLER SHALL BE PLACED WHEREVER SIDEWALK ABUTS ROCK OR MASONRY STRUCTURES SUCH AS CURBS OR BUILDINGS.
5. SUBGRADE TO BE COMPACTED TO 95% AS PER ASTM D1557.
6. REINFORCEMENT (6X6-10/10 W.W.F.) SHALL BE PLACED WHEREVER SIDEWALK ABUTS A PEDESTRIAN WALKWAY AND/OR PARK.

* SIDEWALK SHALL BE SEVEN (7') FEET WHEN ABUTTING PARKS. IT SHALL ALSO BE 4" CONCRETE REINFORCED WITH 6X6-10/10 W.W.F.

(1 / C8.1) SECTION-SIDEWALK/SLAB
SCALE: 1" = 2'-0"



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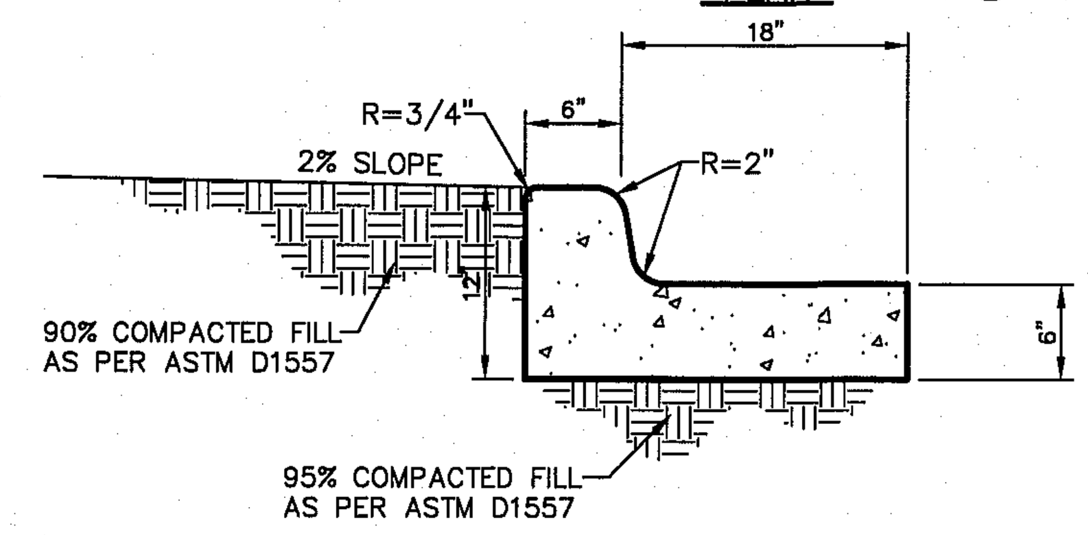
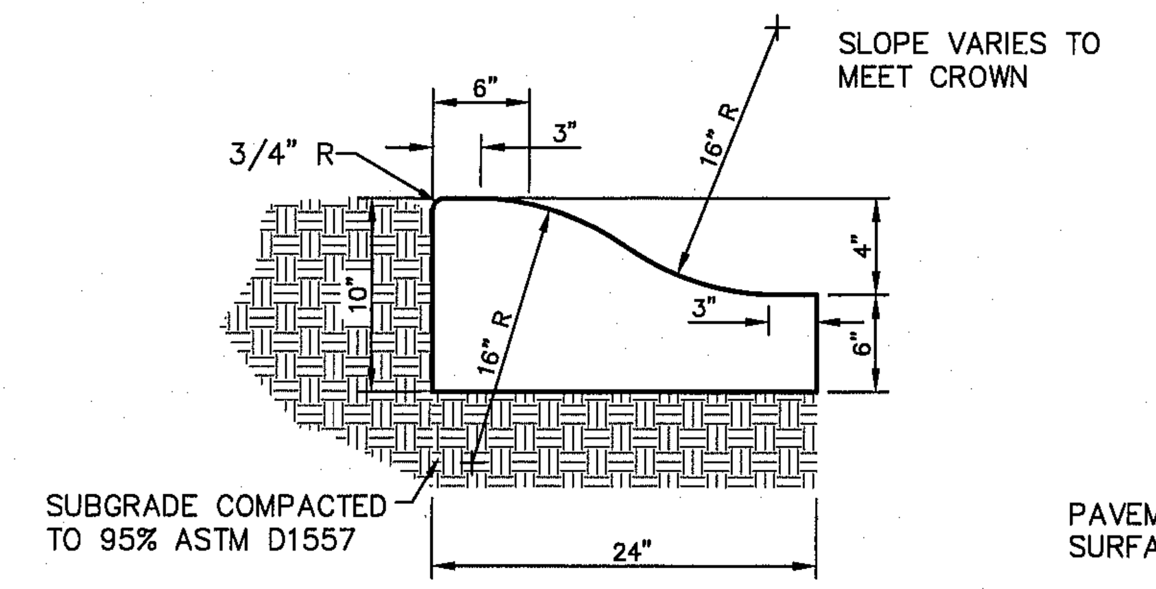


(A) SECTION

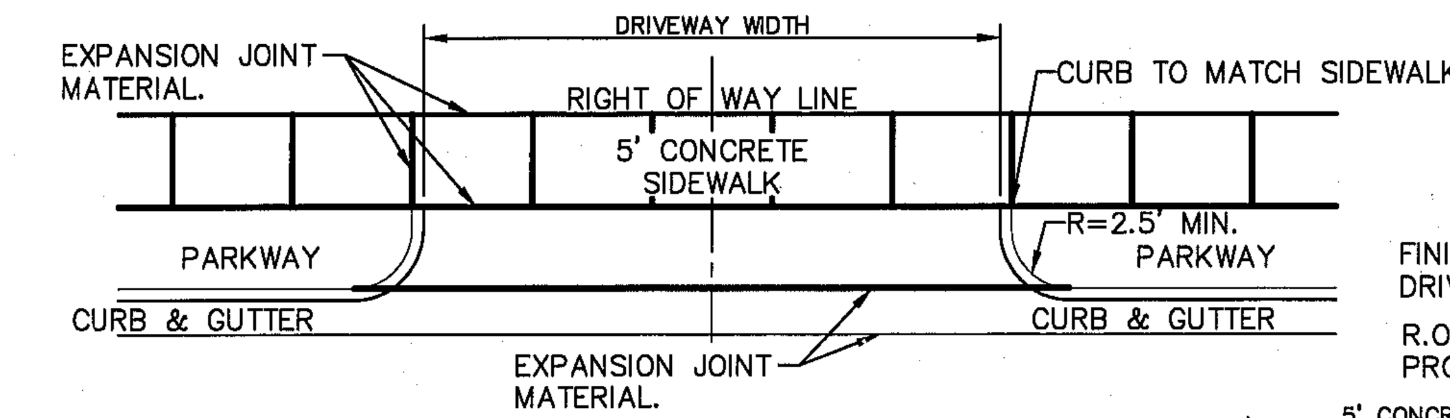
NOTES:
1. CONCRETE SHALL BE 3,000 P.S.I. MIN.
2. DUMMY JOINT REQUIRED AT 10' O.C. FOR CURB & GUTTER, AND 5' O.C. FOR SIDEWALK
3. EXPANSION MATERIAL REQUIRED AT CURB RETURNS AND AT 20' ON CENTER FOR SIDEWALKS WITH 1/2" PREMOLDED ASPHALT IMPREGNATED EXPANSION MATERIAL OR EQUAL.
4. EXPANSION JOINTS REQUIRED AT 50' O.C. WHEN FORMING FOR CURBS.

(2 / C8.1) CURB & GUTTER DETAIL
SCALE: 1"=1'-0"

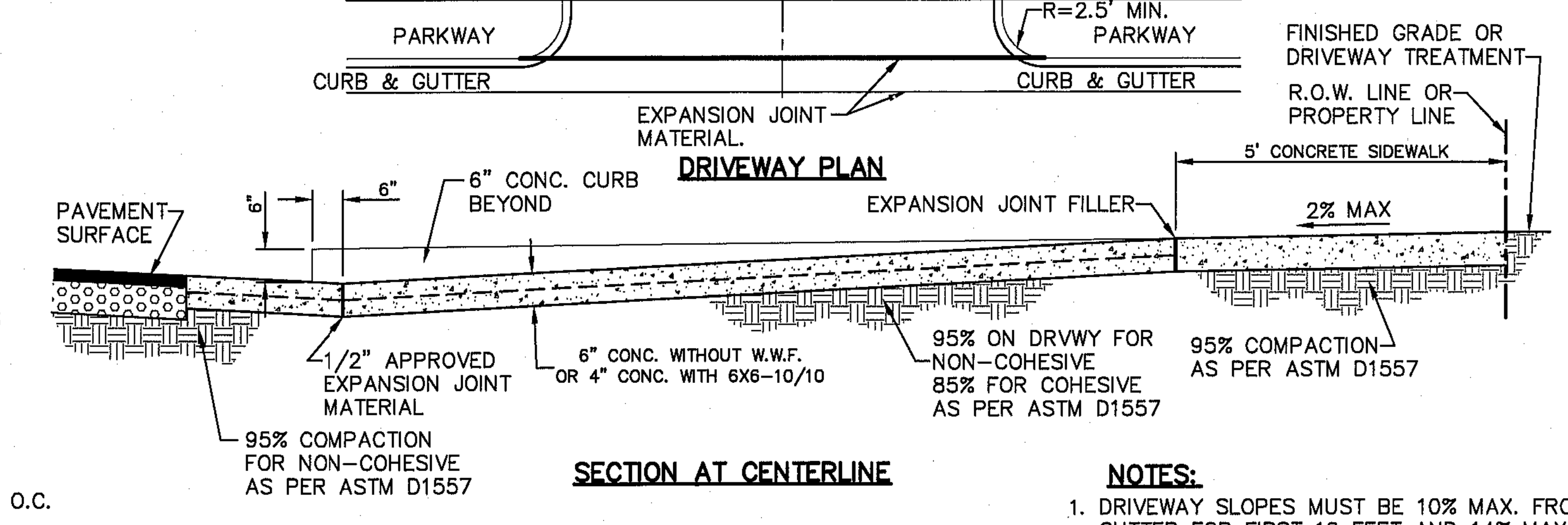


1. CONCRETE TO BE 3000 PSI MIN.
2. DUMMY JOINTS REQUIRED AT 10' O.C. FOR HEADERS AND 5' O.C. FOR SIDEWALK
3. EXPANSION MATERIAL REQUIRED AT CURB RETURNS WITH 1/2" PREMOLDED ASPHALT IMPREGNATED EXPANSION MATERIAL OR EQUAL.
4. EXPANSION JOINTS REQUIRED AT 50' O.C. WHEN FORMING FOR HEADERS.
5. EXPANSION JOINTS REQUIRED FOR SIDEWALK AT 20' O.C.
6. * FOR CUL-DE-SAC AND HEEL ONLY.

(3 / C8.1) 4" CONCRETE ROLLED CURB DETAIL
SCALE: 1"=1'-0"



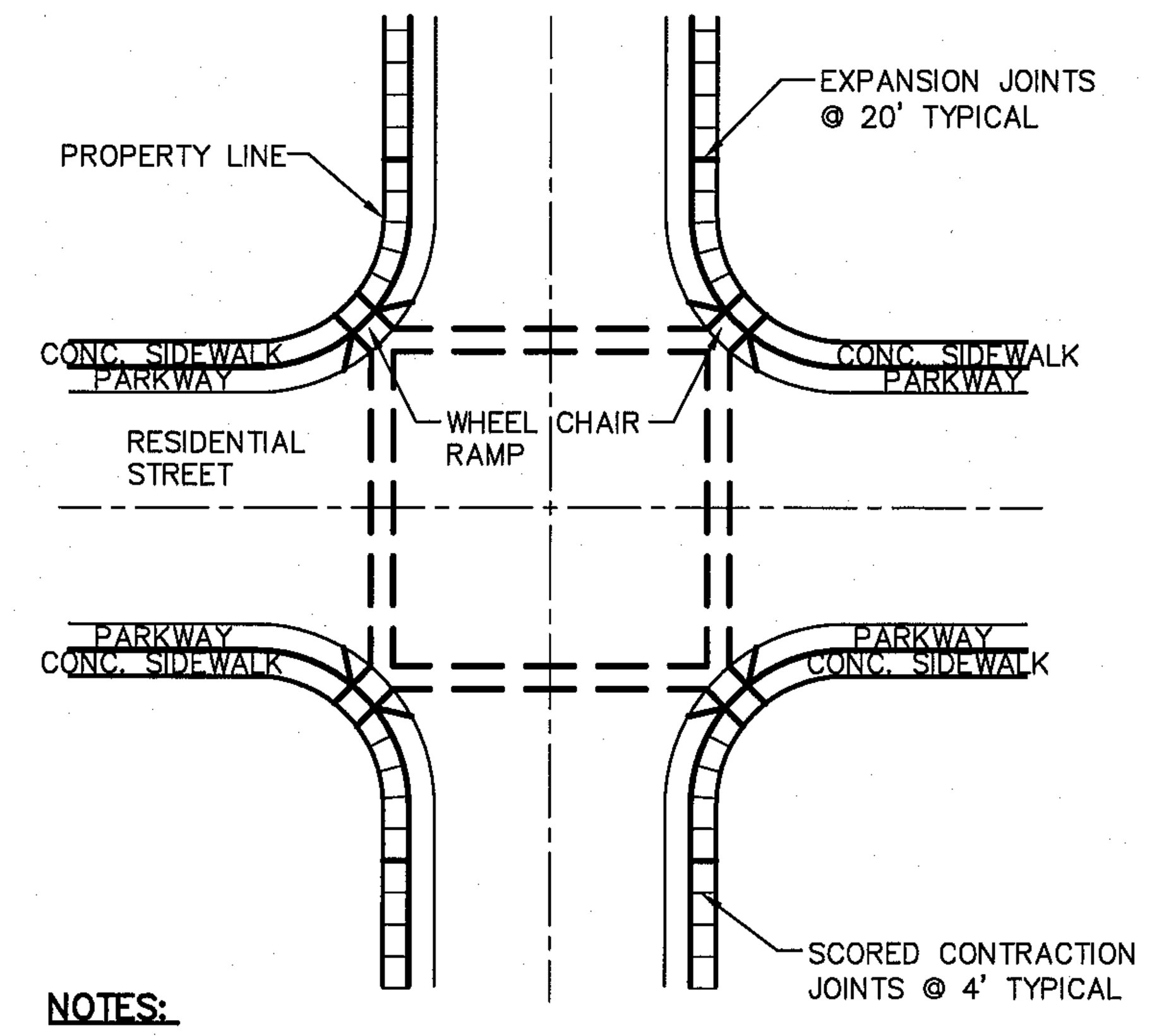
DRIVEWAY PLAN



SECTION AT CENTERLINE

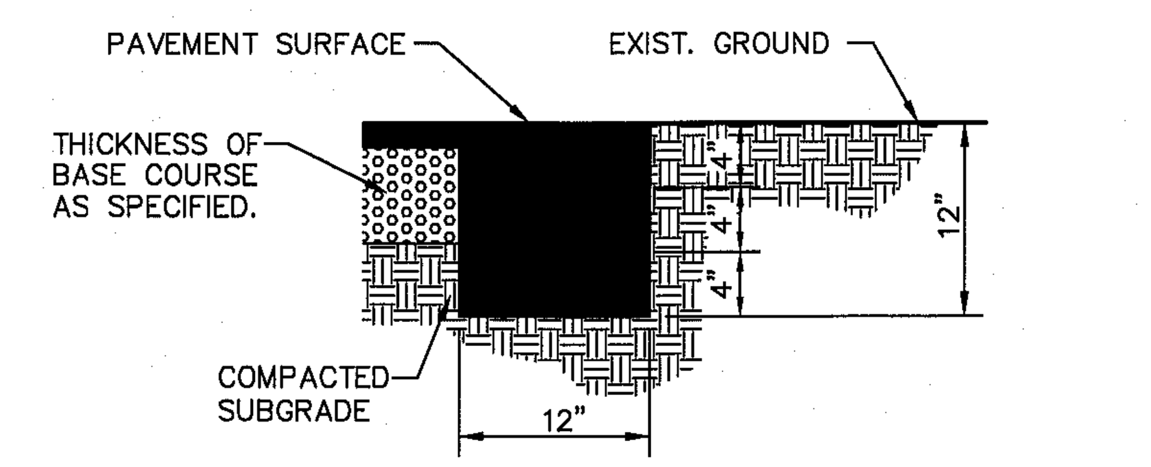
NOTES:
1. DRIVEWAY SLOPES MUST BE 10% MAX. FROM GUTTER FOR FIRST 12 FEET AND 14% MAX. THEREAFTER (DRIVEWAY SHALL BE LOCATED @ HIGH SIDE OF LOT UNLESS OTHERWISE COORDINATED WITH CITY OF EL PASO)
2. RESIDENTIAL
6" CONCRETE WITHOUT W.W.F.
4" CONCRETE WITH 6X6-10/10
3. COMMERCIAL
6" CONCRETE WITH 6X6-6/6 W.W.F.

(4 / C8.1) TYPICAL DRIVEWAY DETAIL
SCALE: N.T.S.



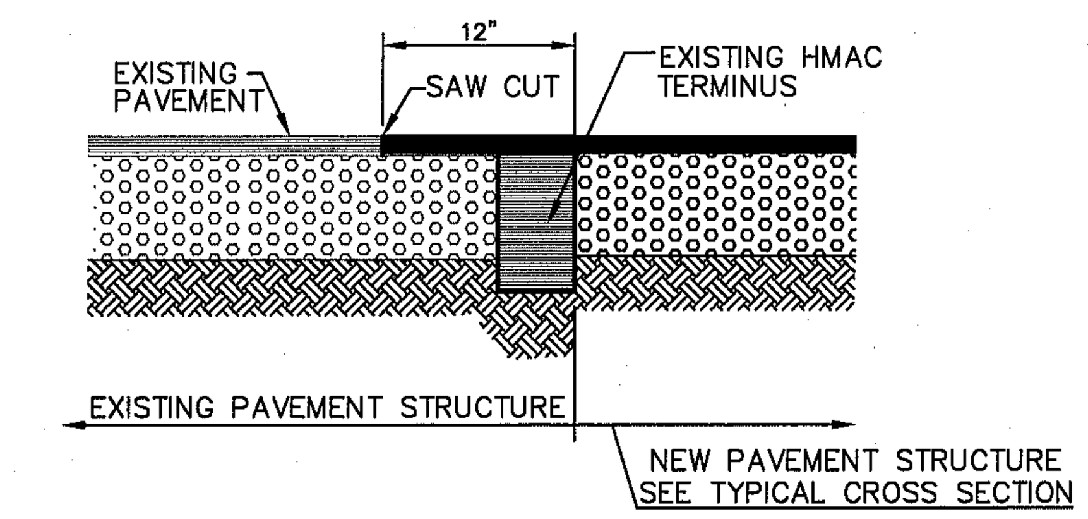
NOTES:
1. RAMPS MAY BE PLACED AS SUGGESTED, HOWEVER EXISTING LIGHT POLES, FIREHYDRANTS, DROP INLETS, ETC., MAY AFFECT PLACEMENT.
2. THE CONCRETE SURFACE SHALL HAVE A ROUGH, NONSKID TYPE FINISH.
3. CONSTRUCTION METHODS SHALL CONFORM WITH THE CITY OF EL PASO SPECIFICATIONS.
4. ALL PARKING AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH CURRENT CITY OF EL PASO STANDARDS.

(5 / C8.1) WHEELCHAIR RAMP STREET PLAN
SCALE: 1" = 30'-0"

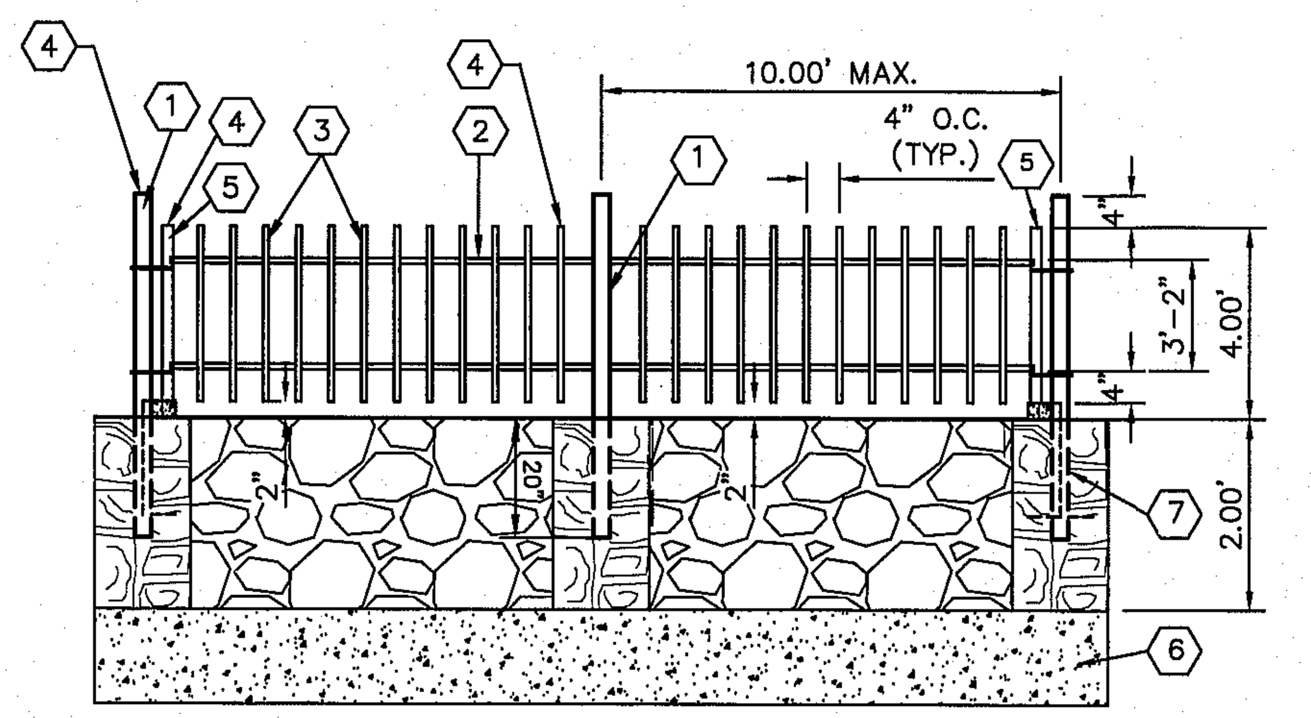


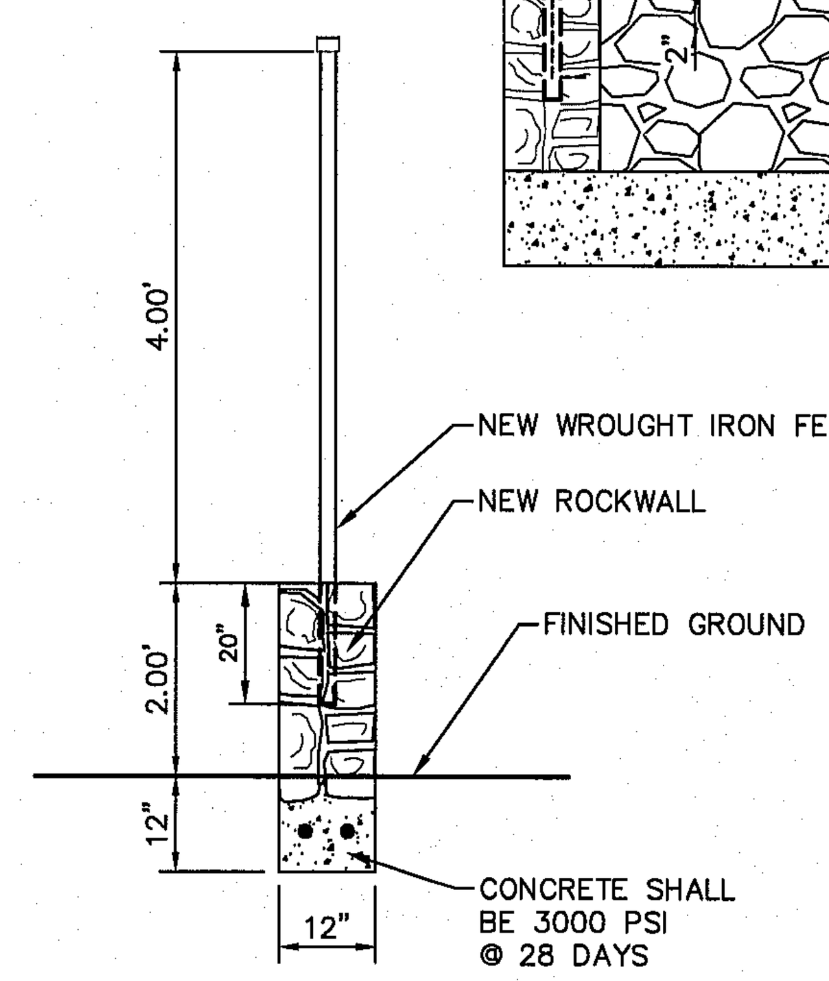
NOTE :
TERMINUS MUST BE CONSTRUCTED IN 4" LIFTS.
FINAL LIFT MUST BE PLACED WITH FINAL PAVEMENT COURSE.

(6 / C8.1) TERMINUS OF STREET
SCALE: 1"=1'-0"



(7 / C8.1) TYPICAL PAVEMENT JOINT SECTION
SCALE: N.T.S.



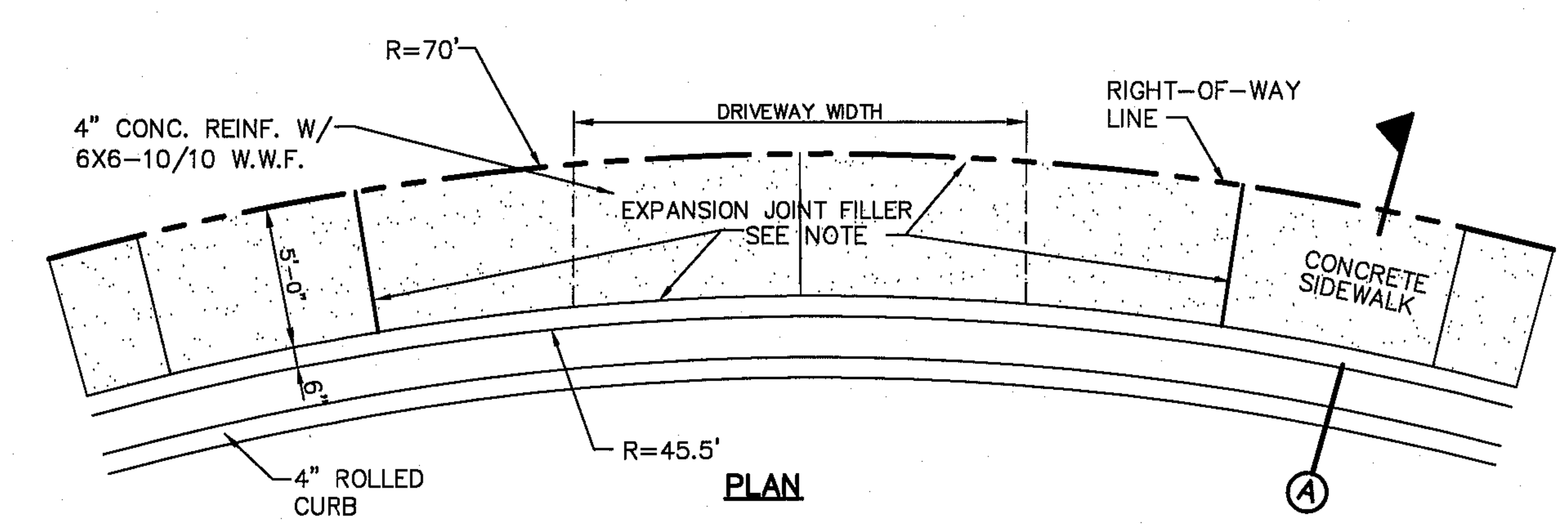


ROCKWALL SECTION
SCALE: 1/2"=1'-0"

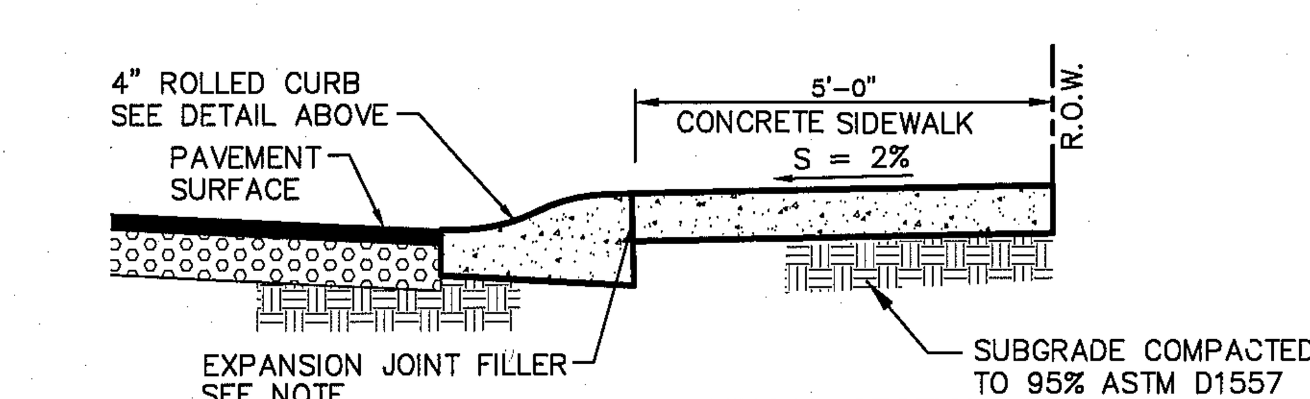
KEY NOTES
(1) 3" x 3" x 3/16" SQUARE STEEL TUBING
(2) 2" x 1" x 14 GA. RECTANGULAR STEEL TUBING
(3) 1 1/2" x 1/2" x 16 GA. RECTANGULAR STEEL TUBING
(4) POLYVINYL CAPS TO BE COMPLETELY WELDED.
(5) 2" x 1" X 10 GA. RECTANGULAR STEEL TUBING
(6) 1'x 1' DEEP 3000 PSI CONCRETE POST FOOTING
(7) 5" x 5" x 3/8" SQUARE STEEL SLEEVE W/7" x 7" x 3/8" BASE PLATE

* ALL ASSEMBLY TO HAVE COMPLETE WELDS FOR RAILS AND SLATS ONTO EACH OTHER AND POST.

(8 / C8.1) TYPICAL ROCKWALL W/ WROUGHT IRON FENCE DETAILS
SCALE: N.T.S.



PLAN



(A) TYPICAL SECTION

NOTE: EXPANSION JOINT FILLER SHALL CONSIST OF 1/2" BITUMINOUS TYPE PREFORMED (AASHTO M-33)

(9 / C8.1) CUL-DE-SAC (50' R) DRIVEWAY DETAIL
SCALE: N.T.S.

THE CITY OF EL PASO TEXAS
Final Approval

REFERENCES – BENCHMARKS
BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.
ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

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85075
LICENSED PROFESSIONAL ENGINEER

SCALE
Horizontal: N/A
Vertical: N/A
Contour Interval: N/A

DATE: MAY 2014
DESIGN BY: F.Z./J.M.
DRAWN BY: J.M.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260-017-LD

PROJECT TITLE
VENTANAS SUBDIVISION UNIT SEVEN
SUBDIVISION IMPROVEMENTS

SHEET TITLE
STANDARD DETAILS
(SHEET 1 OF 3)

SHEET NO.
C8.1

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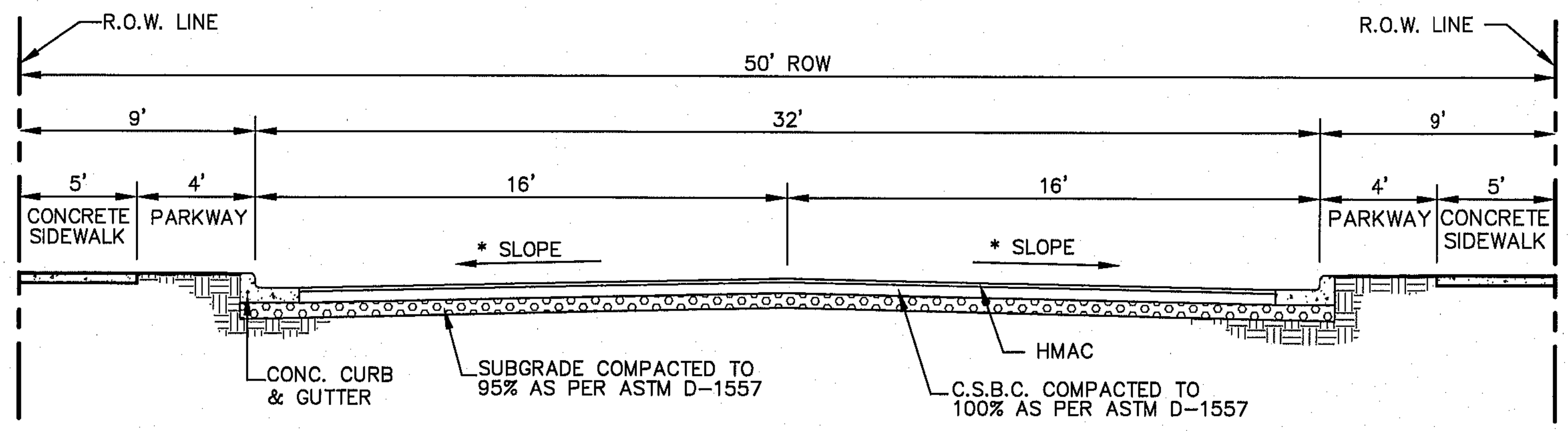
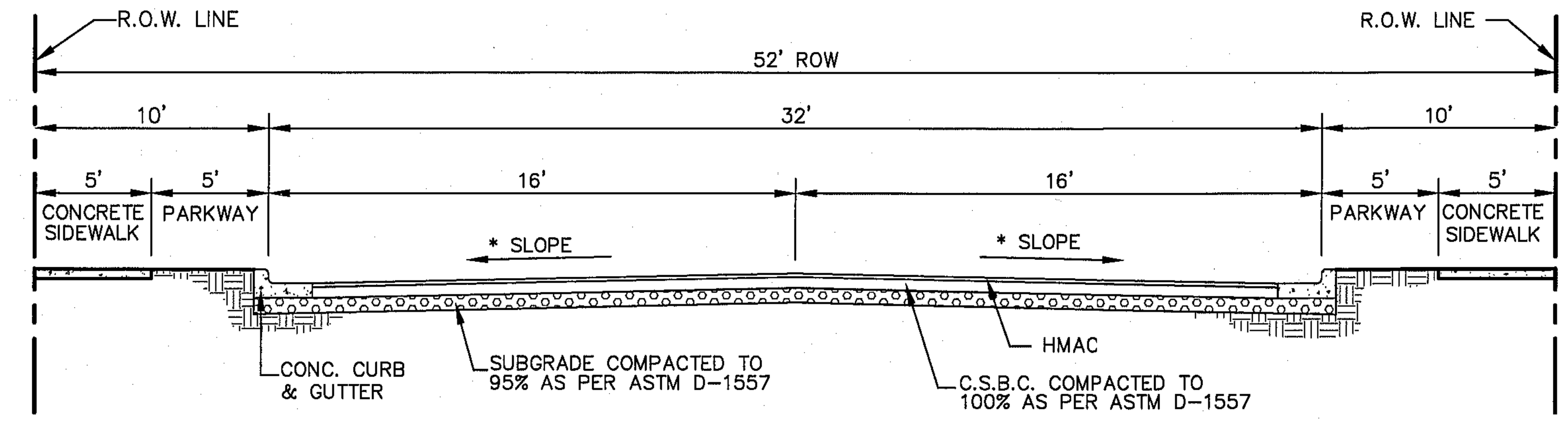


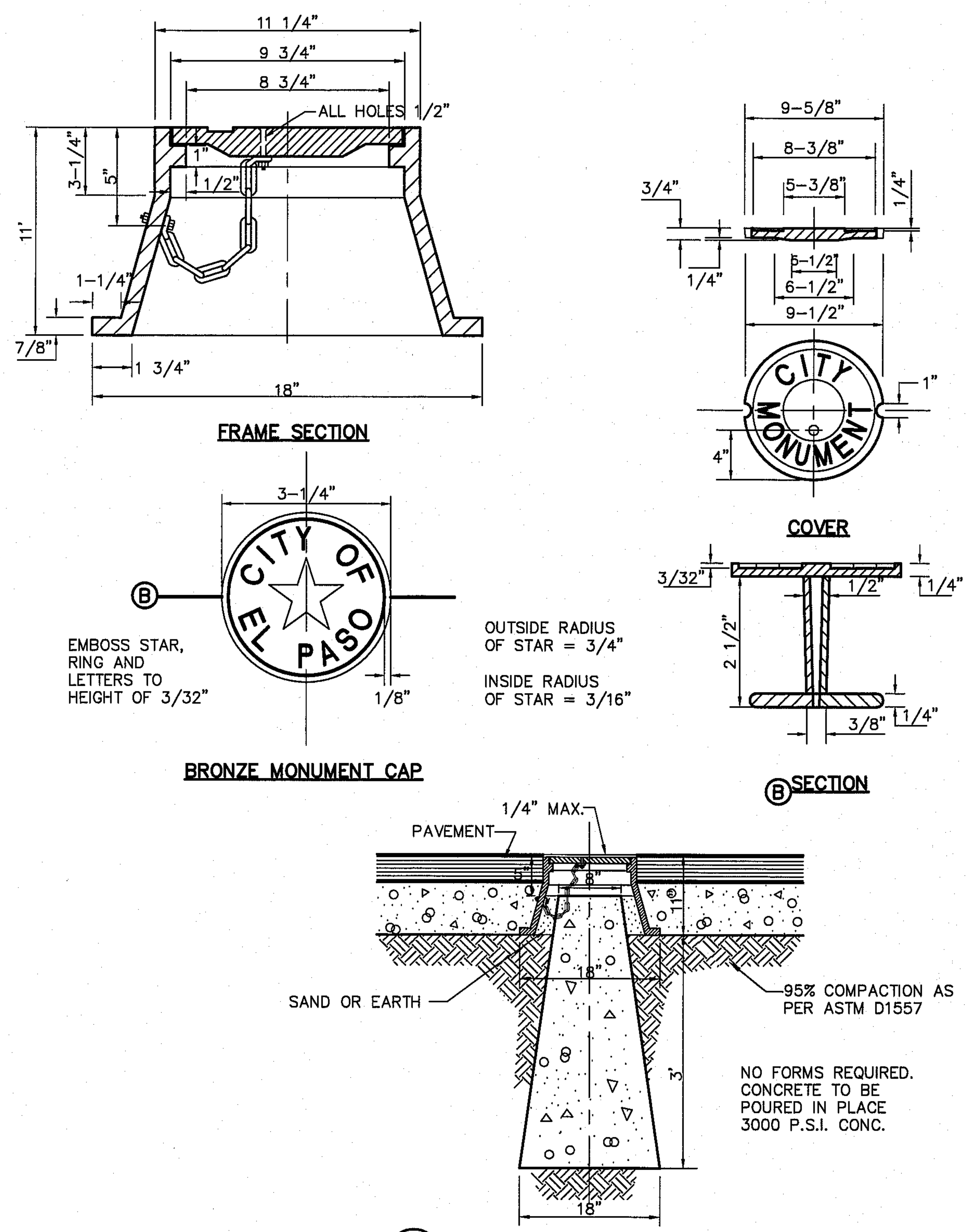
1 C8.2 TYPICAL 50' ROW STREET SECTION DETAIL
SCALE: N.T.S.



2 C8.2 TYPICAL 52' ROW STREET SECTION DETAIL
SCALE: N.T.S.

STREETS NOTES:

1. (*) STREET TRANSVERSE SLOPE AS SHOWN IN PLANS
2. SIDEWALK WIDTH IS REQUIRED TO COMPLY WITH ADA/TAS REGULATIONS.
3. STREET IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CURRENT CITY OF EL PASO PAVING CONSTRUCTION DETAILS AND STANDARD SPECIFICATIONS: CBR @ EVERY 500' RESULTS TO BE SUBMITTED TO THE CITY OF EL PASO FOR REVIEW AND APPROVAL PRIOR TO PLACEMENT OF PAVEMENT.



3 C8.2 CITY SURVEY MONUMENT DETAILS
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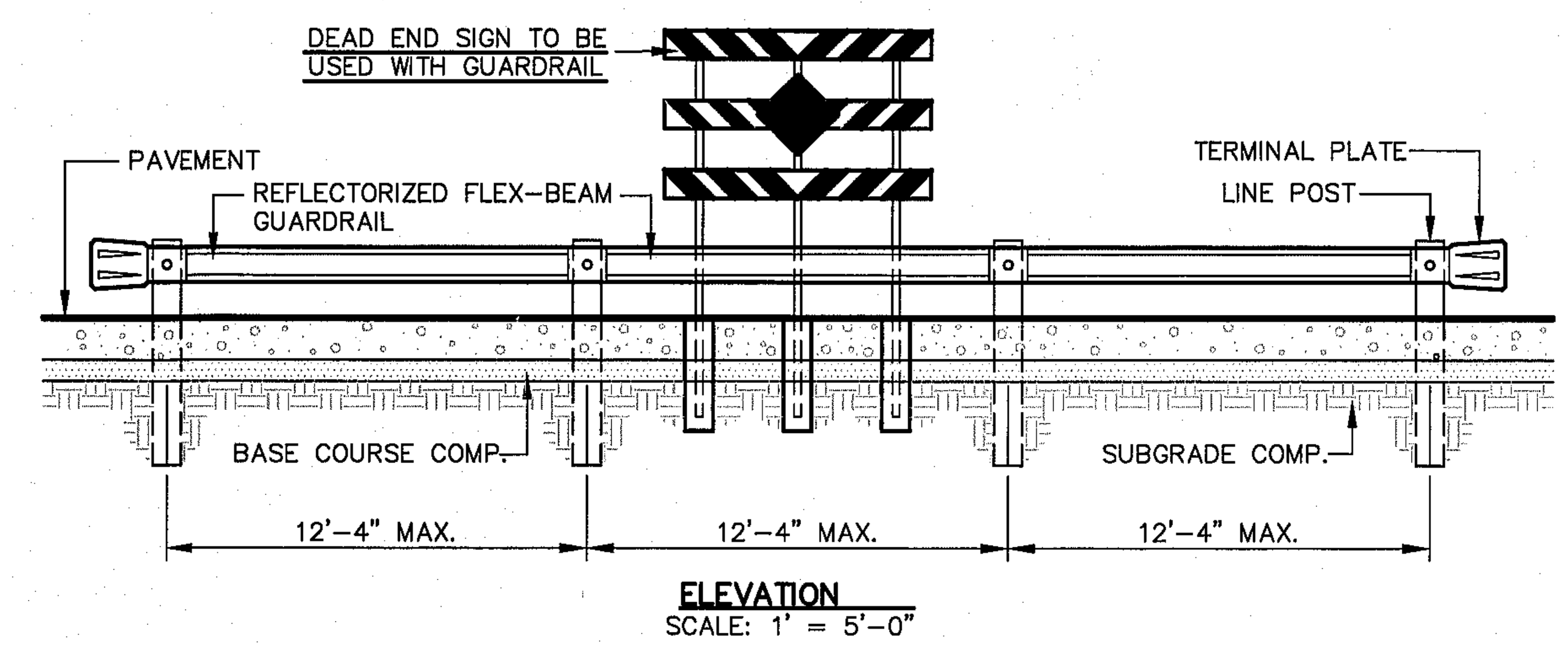
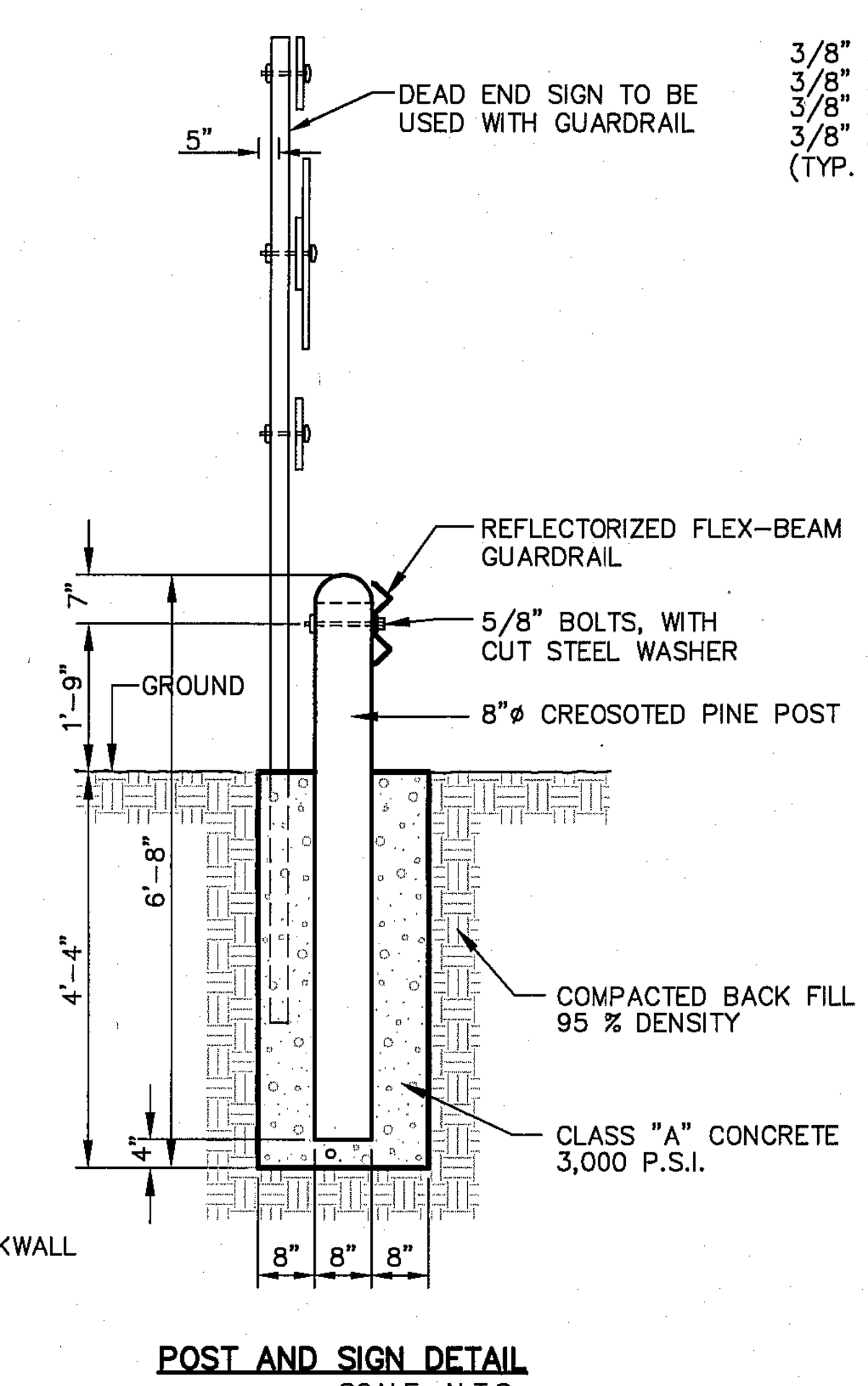
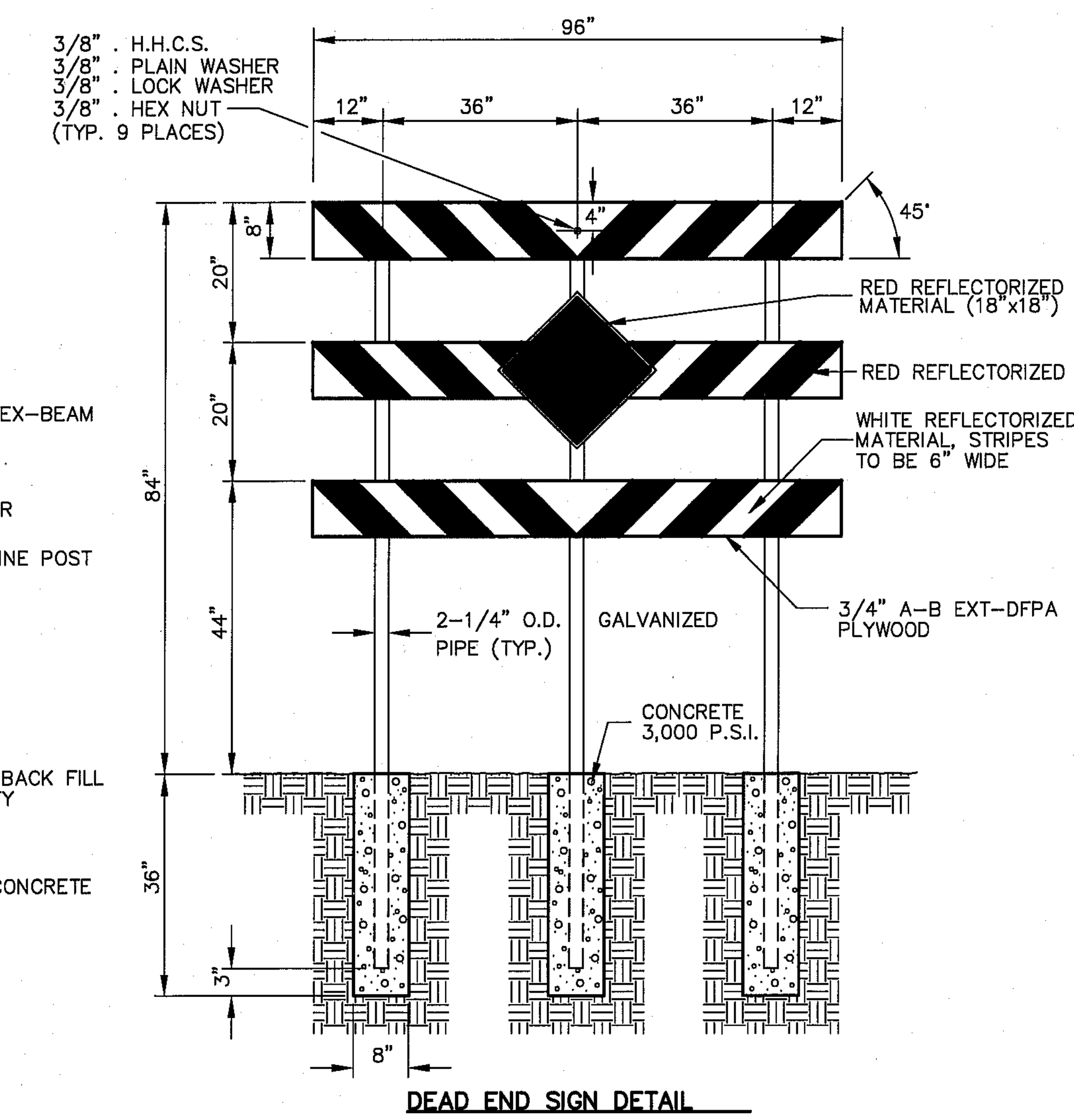
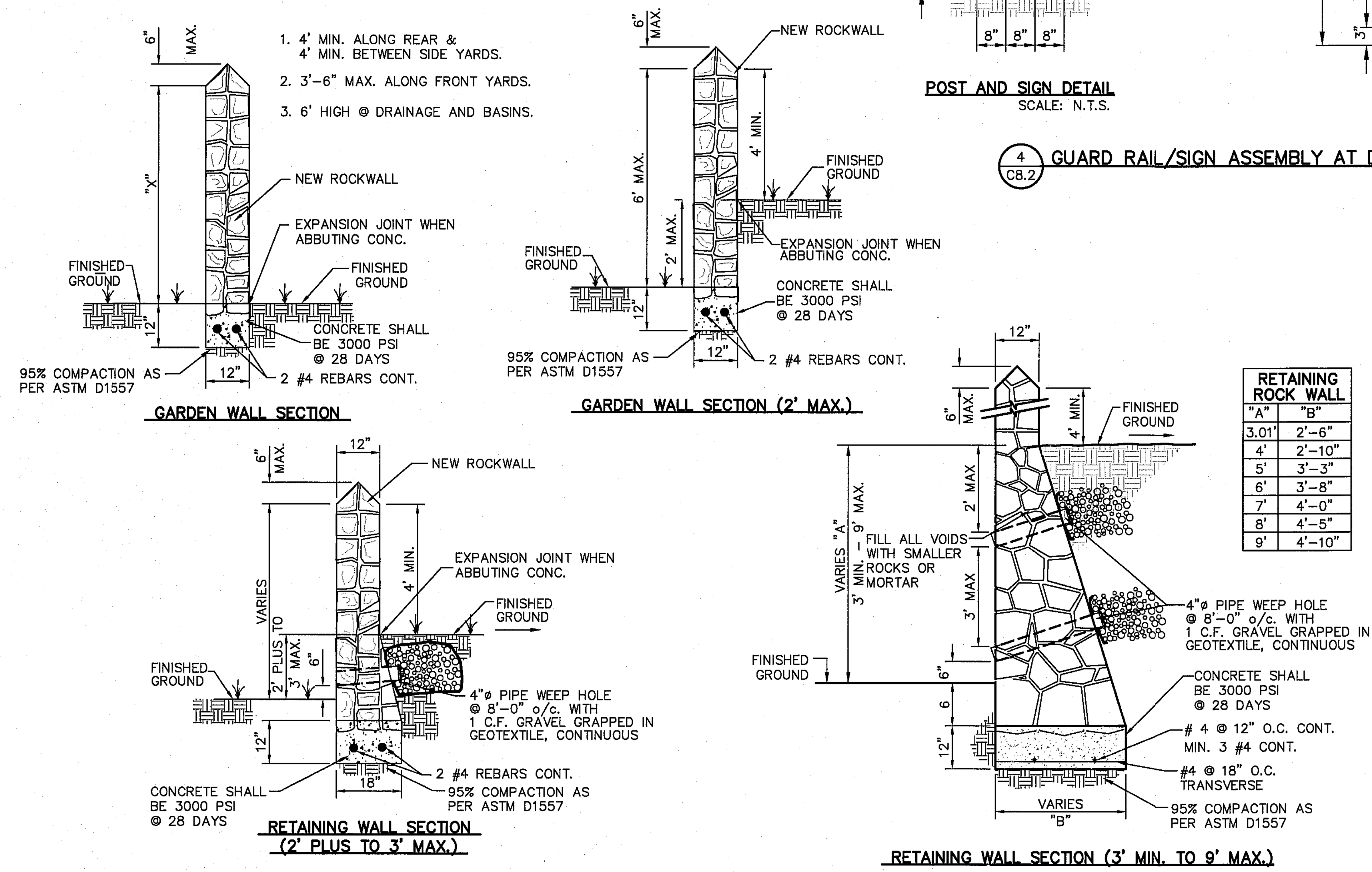






4 C8.2 GUARD RAIL/SIGN ASSEMBLY AT DEAD END STREET DETAL
SCALE: AS SHOWN



RETAINING ROCK WALL	
"A"	"B"
3.01'	2'-6"
4'	2'-10"
5'	3'-3"
6'	3'-8"
7'	4'-0"
8'	4'-5"
9'	4'-10"

5 C8.2 TYPICAL ROCKWALL DETAILS
SCALE: N.T.S.

ROCK WALL NOTES

1. STONE FOR ROCKWALL SHALL BE AS NEARLY UNIFORM IN SECTIONS AS IN PRACTICABLE THE STONE SHALL BE DENSE AND RESISTANT OF AIR AND WATER.
2. MORTAR MUST BE TYPE "S" 1800 P.S.I. AS PER ASTM C270.
3. MASONRY WALL OVER SIX (6) FEET IN HEIGHT AND THOSE USED FOR EARTH RETENTION OVER TWO (2) FEET MUST BE DESIGNED AS STRUCTURAL WALLS..
4. WALLS ADJACENT TO PONDING AREAS OR DRAINAGE DITCHES MAY BE CONSTRUCTED OF BRICK, ROCK, STONE, OR CINDER BLOCK AND SHALL NOT BE LESS THAN SIX (6) FEET HIGH.
5. ROCKWALL MORTAR JOINTS MUST NOT EXCEED TWO (2) INCHES.
6. PROVIDE ONE (1) INCH EXPANSION JOINTS AT EVERY 100 FEET.
7. ALL STONE SHALL BE THOROUGHLY SOAKED BEFORE BEING PLACED.
8. ALL STONE FOR ROCKWALLS SHALL BE FRACTURED QUARRIED ROCK OR ROUND ROCK, NO RIVER ROCK SHALL BE ALLOWED.
9. REINFORCING STEEL SHALL BE ASTM A615 GRADE 40.
10. ALLOWABLE SOIL BEARING PRESSURE = 2,500 PSI (MINIMUM).
11. BACKFILL MATERIALS SHALL CONSIST OF COARSE GRAINED, WELL-DRAINED SOILS (WITH NO CLAY CONTENT).
12. WHENEVER THE RETAINING HEIGHT OF A ROCKWALL/RETAINING WALL EXCEEDS FOUR (4') FEET OR MORE, THE DEVELOPER SHALL BUILD THE RETAINING PORTION OF THE WALL (INCLUDING NECESSARY REINFORCED CONCRETE FOOTING) TO HIGHEST FINISHED GROUND. THE BUILDER SHALL FINISH CONSTRUCTING THE REMAINING OF THE STEM WALL.
13. WHENEVER PLANS SPECIFY A WROUGHT IRON FENCE, REFER TO DETAIL A.

THE CITY OF EL PASO TEXAS
Final Approval

REFERENCES – BENCHMARKS

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ELEVATION = 3970.52 (CITY DATUM).

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ENGINEER'S SEAL
STATE OF TEXAS JORGE L. AZCARATE 85075 LICENSED PROFESSIONAL ENGINEER

SCALE
Horizontal: N/A
Vertical: N/A
Contour Interval: N/A
DATE: MAY 2014
DESIGN BY: F.Z./J.M.
DRAWN BY: J.M.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260-017-LD

PROJECT TITLE
VENTANAS SUBDIVISION UNIT SEVEN
SUBDIVISION IMPROVEMENTS

SHEET TITLE
STANDARD DETAILS
(SHEET 2 OF 3)
SHEET NO.
C8.2

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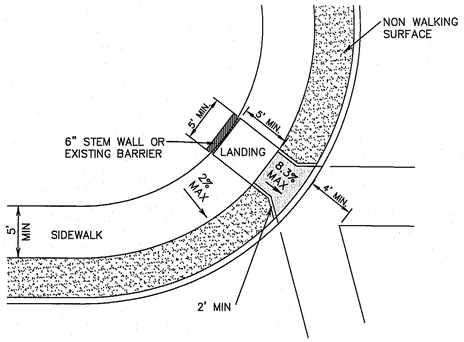

1 C8.3 DIAGONAL CURB RAMP (RETURNED CURB) (TYPE VI)
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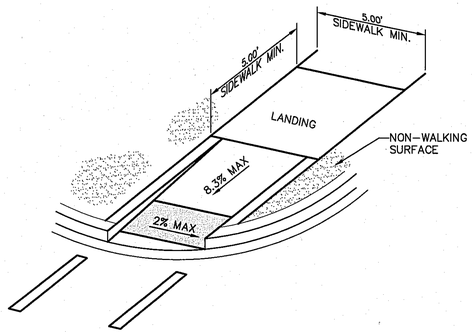

2 C8.3 DIRECTIONAL RAMP WITHIN RADIUS (TYPE IV)
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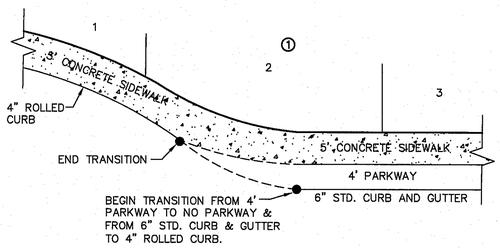
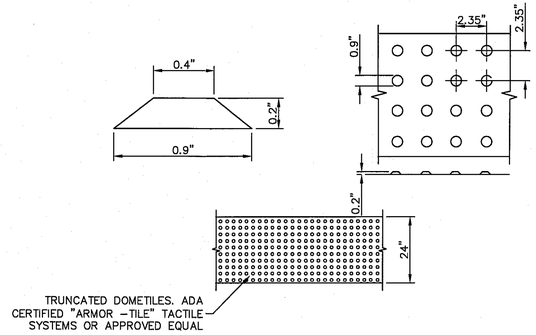


3 C8.3 TYPICAL HEEL/CUL-DE-SAC SIDEWALK TRANSITION
SCALE: N.T.S.

GENERAL NOTES:

1. IMPROVEMENTS SHALL COMPLY WITH AMERICANS WITH DISSABILITY ACT (ADA) AND TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR) STANDARDS.
2. ALL SLOPES ARE MAXIMUM ALLOWABLE. THE LEAST POSSIBLE SLOPE THAT WILL STILL DRAIN PROPERLY SHOULD BE USED. RAMP LENGTH OR GRADE OF APPROACH SIDEWALKS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.
3. THE MINIMUM SIDEWALK WIDTH IS FOUR (4') FEET. WHERE A FIVE (5') FEET SIDEWALK CAN NOT BE PROVIDED DUE TO SITE CONSTRAINTS, A MINIMUM THREE (3') FEET SIDEWALK WITH 5'x5' PASSING SPACE AREAS ARE REQUIRED TO BE LOCATED AT REASONABLE INTERVALS NOT TO EXCEED TWO-HUNDRED (200') FEET.
4. LANDINGS SHALL BE 5'x5' MINIMUM WITH A MAXIMUM TWO (2%) PERCENT SLOPE IN ANY DIRECTION.
5. MANEUVERING SPACE AT THE BOTTOM OF CURB RAMPS SHALL BE A MINIMUM OF 4'x4' WHOLLY CONTAINED WITHIN THE CROSSWALK AND WHOLLY OUTSIDE THE PARALLEL VEHICULAR TRAVEL PATH.
6. CURB RAMPS WITH RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT NORMALLY WALK ACROSS THE RAMP. OTHERWISE, FLARED SIDES SHALL BE PROVIDED WITH A MAXIMUM 10(H):1(V) SLOPE. IF THE LANDING DEPTH IS LESS THAN FOUR (4') FEET, THEN THE SLOPE OF THE FLARED SIDE SHALL NOT EXCEED 12(H):1(V) SLOPE.
7. ALL CONCRETE SIDEWALK SURFACES SHALL RECEIVE A LIGHT BROOM FINISH UNLESS NOTED OTHERWISE IN THE PLANS.
8. RAMP TEXTURES MUST CONSIST OF TRUNCATED DOMED SURFACES. TEXTURES ARE REQUIRED TO BE DETECTABLE UNDERFOOT. SURFACES THAT WOULD ALLOW WATER TO ACCUMULATE ARE PROHIBITED. REFER TO TRUNCATED DOME DETAIL.
9. CROSSWALK DIMENSIONS, CROSSWALK MARKINGS AND STOP BAR LOCATIONS SHALL BE AS SHOWN ELSEWHERE IN THE PLANS. AT INTERSECTIONS WHERE CROSSWALK MARKINGS ARE NOT REQUIRED, RAMPS SHALL BE ALIGNED WITH THEORETICAL CROSSWALKS, OR AS DIRECTED BY THE ENGINEER.
10. ACCESSIBLE ROUTES WITH A RUNNING SLOPE GREATER THAN FIVE (5%) PERCENT IS A RAMP AN SHALL COMPLY WITH TDLR 4.8 – RAMPS. MAXIMUM ALLOWABLE CROSS SLOPE ON SIDEWALK AND RAMP SURFACES IS TWO (2%) PERCENT.
11. ADDITIONAL INFORMATION ON CURB RAMP LOCATION, DESIGN, LIGHT REFLECTIVE VALUE AND TEXTURE MAY BE FOUND IN THE CURRENT EDITION OF THE TEXAS ACCESSIBILITY STANDARDS (TAS) PREPARED AND ADMINISTERED BY TDLR.



DOME SIZE AND SPACING. TRUNCATED DOMES SHALL HAVE A DIAMETER OF NOMINAL 0.9 INCHES (23 mm) AT THE BOTTOM, A DIAMETER OF 0.4 INCH (10 mm) AT THE TOP, A HEIGHT OF NOMINAL 0.2 INCHES (5 mm), AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 INCHES (60 mm) MEASURED ALONG ONE SIDE OF A SQUARE ARRANGEMENT.

DOME ALIGNMENT. DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES. DETECTABLE WARNING SURFACES SHALL EXTEND 24 INCHES (610 mm) MINIMUM IN THE DIRECTION OF TRAVEL AND THE FULL WIDTH OF THE CURB RAMP, LANDING, OR BLENDED TRANSITION.

CONTRAST. THERE SHALL BE A MINIMUM OF 70 PERCENT CONTRAST IN LIGHT REFLECTANCE BETWEEN THE DETECTABLE WARNING AND AN ADJOINING SURFACE, OR THE DETECTABLE WARNING SHALL BE "RED BRICK" COLOR, UNLESS OTHERWISE DIRECTED BY THE OWNER. THE MATERIAL USED TO PROVIDE VISUAL CONTRAST SHALL BE AN INTEGRAL PART OF THE DETECTABLE WARNING SURFACE. CONTRAST SHALL BE PROVIDED BY PLACING AND MIXING TINT IN THE PLASTIC CONCRETE USED FOR THE DETECTABLE WARNING SURFACE. NO PAINTING OF SURFACE SHALL BE PERMITTED.

4 C8.3 TRUNCATED DOME SIZE AND SPACING
SCALE: N.T.S.

Final Approval

REFERENCES – BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.

ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

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ENGINEER(S) SEAL

SCALE
Horizontal: N/A
Vertical: N/A
Contour Interval: N/A

DATE: MAY 2014
DESIGN BY: F.Z./J.M.
DRAWN BY: J.M.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260-017-LD

PROJECT TITLE

VENTANAS SUBDIVISION
UNIT SEVEN
SUBDIVISION IMPROVEMENTS

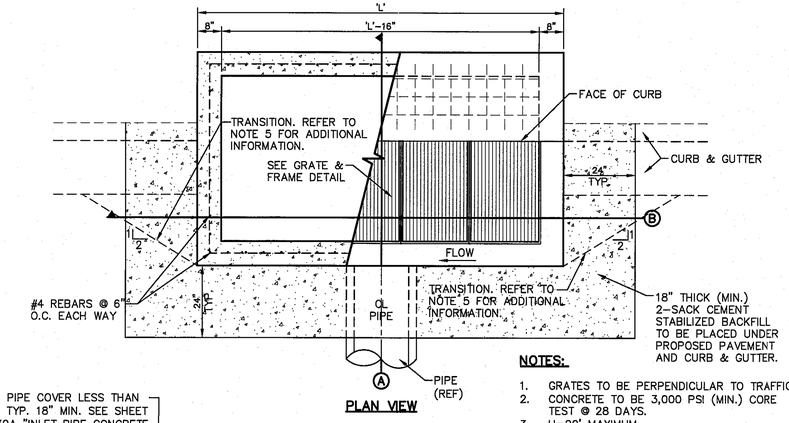
SHEET TITLE

STANDARD DETAILS

(SHEET 3 OF 3)

SHEET NO.

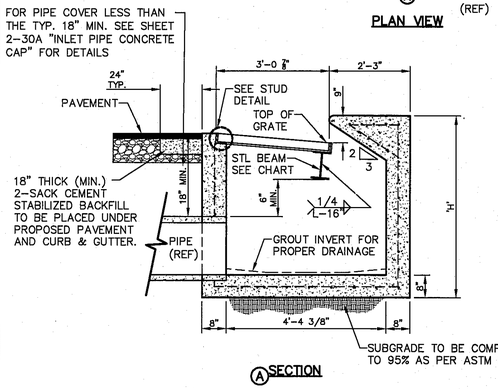
C8.3



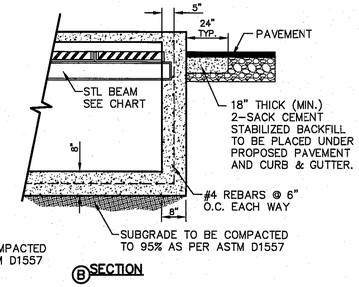
PLAN VIEW

NOTES:

1. GRATES TO BE PERPENDICULAR TO TRAFFIC
2. CONCRETE TO BE 3,000 PSI (MIN.) CORE TEST @ 28 DAYS.
3. H=20' MAXIMUM
4. SEE STORM SEWER PLAN & PROFILES FOR APPROVED PIPE DIAMETER.
5. EDGE OF INLET SHALL BE TRANSITION TO THE EDGE OF THE CONCRETE GUTTER.



A SECTION

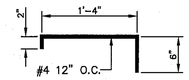


B SECTION

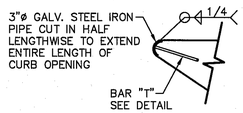
* THESE CAPACITIES CORRESPOND TO A CLOGGING FACTOR OF 0.5

NO. GRATES	CAPACITY	"L"	BEAM LENGTH	BEAM (MIN. SIZES)
2	19.63 CFS	5'-2 1/4"	4'-8 1/4"	W6x12, S6x12.5, MC6x15.1
3	29.69 CFS	7'-1 7/8"	6'-7 7/8"	W8x15, S7x18.4, MC7x19.1
4	39.10 CFS	9'-1 1/2"	8'-7 1/2"	W10x19, S8x18.4, MC10x22
5	48.72 CFS	11'-1 1/8"	10'-7 1/8"	W12x16, S8x23, MC10x22

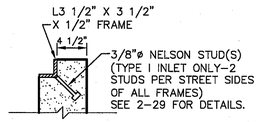
1 / C9.1 DROP INLET (TYPE I) DETAILS
SCALE: 1" = 2'-0"



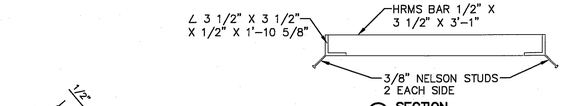
BAR "T" DETAIL
1"=1'

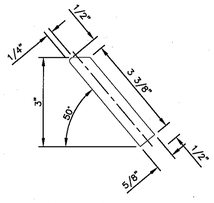


DETAIL "B"
1"=1'

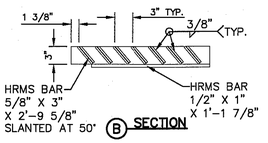


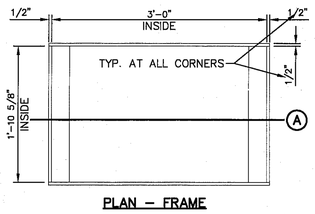
STUD DETAIL
1"=1'



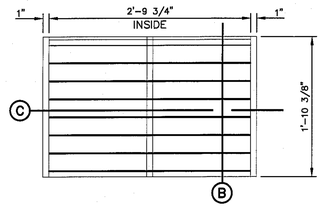


SLANTED BAR DETAIL



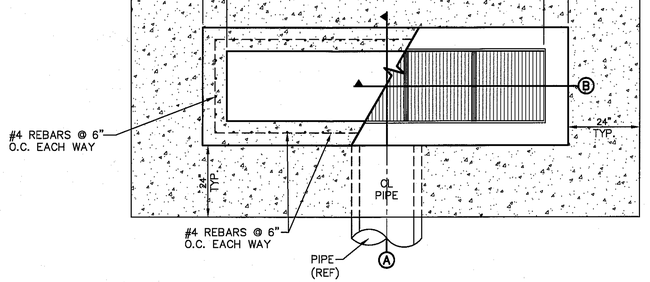


PLAN - FRAME

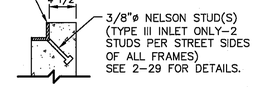


PLAN - GRATE

2 / C9.1 GRATE AND FRAME DETAILS
SCALE: N.T.S.



PLAN VIEW



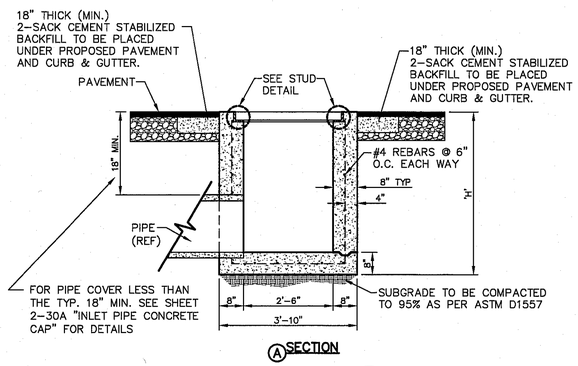
STUD DETAIL
N.T.S.

NUMBER OF GRATES	"L"	CAPACITY*
2	5'-2 1/4"	9.436 CFS
3	7'-1 7/8"	14.155 CFS
4	9'-1 1/2"	18.873 CFS
5	11'-1 1/8"	23.592 CFS

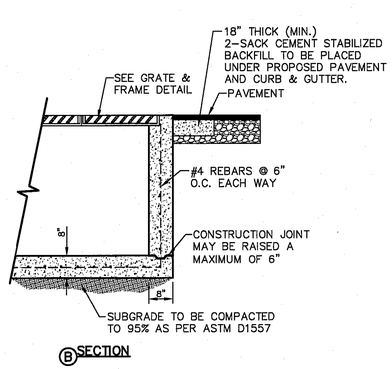
* THESE CAPACITIES CORRESPOND TO A CLOGGING FACTOR OF 0.5

NOTES:

1. GRATES TO BE PERPENDICULAR TO TRAFFIC
2. CONCRETE TO BE 3,000 PSI (MIN.) CORE TEST @ 28 DAYS.
3. H=20' MAXIMUM
4. SEE STORM SEWER PLAN & PROFILES FOR APPROVED PIPE DIAMETER.



A SECTION



B SECTION

3 / C9.1 DROP INLET (TYPE III) DETAILS
SCALE: 1" = 2'-0"

DROP INLET GENERAL NOTES:

1. WELDED STEEL OR CAST GRATES AS DETAILED ARE ALL ACCEPTABLE GRATES. MIXING OF ALTERNATE TYPES OF GRATES ON THE SAME PROJECT WILL BE PERMITTED WITH THE APPROVAL OF THE COUNTY ENGINEER.
2. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARD SPECIFICATIONS.
3. SHARP EDGES RESULTING FROM FABRICATION SHALL BE DULLED BY ANY ACCEPTABLE METHOD FOR SAFETY IN HANDLING.
4. GRATES SHALL BE INSTALLED IN FRAME WITH FLOW ARROW POINTING DOWNSTREAM OR TOWARD THE LOW POINT IN A SUMP.
5. WELDED GRATES SHALL BE STRUCTURAL STEEL CONFORMING TO THE REQUIREMENTS OF AASHTO M-183 OR OF CORROSION RESISTANT STRUCTURAL STEEL CONFORMING TO THE REQUIREMENTS OF AASHTO M-161 OR M-222 OR BE MADE OF OTHER APPROVED STEELS OF EQUAL QUALITY. MIXING GRADES OF STEEL ON THE SAME GRATE WILL NOT BE PERMITTED.
6. GRATES MADE OF M-183 STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M-111 SPECIFICATIONS OR SHALL BE PAINTED WITH INORGANIC ZINC PAINTS, MEETING THE REQUIREMENTS OF CURRENT STANDARD SPECIFICATIONS.
7. ALL WELDS SHALL HAVE A MINIMUM OF 1/4" FILLET AND SHALL CONFORM TO THE SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND TO THE AWS STRUCTURAL WELDING CODE. ELECTRODES SHALL BE COMPATIBLE TO THE DIFFERENT GRADES OF STEEL THAT COMPRISE THE GRATE MEMBERS.
8. CAST GRATES SHALL BE CAST STEEL CONFORMING TO THE REQUIREMENTS OF AASHTO M-103, GRADE 65-35 OR OF DUCTILE IRON CONFORMING TO THE REQUIREMENTS OF ASTM A-536, SPECIAL GRADE 60-45, OR OF GRAY IRON CONFORMING TO THE REQUIREMENTS OF AASHTO M-105, CLASS 35B OR ASTM A-48 CLASS 35B. THE SPECIFICATIONS OF GENERAL APPLICATION FOR CAST STEEL GRATES SHALL BE AASHTO M-103 SCOPE 1.2.1, GRADE N-1.
9. FERROUS CASTINGS SHALL BE OF UNIFORM QUALITY, FREE OF BLOWHOLES, POROSITY, HARD SPOTS, SHRINKAGE DISTORTION OR OTHER DEFECTS. THEY SHALL BE SMOOTH AND WELL CLEANED BY SHOT BLASTING OR OTHER APPROVED CLEANING METHOD. AFTER CLEANING THEY SHALL BE COATED WITH ASPHALT BASE PAINT RESULTING IN A SMOOTH COATING, TOUGH AND TENACIOUS WHEN COLD, NOT TACKY OR BRITTLE.
10. ALL CASTING SHALL BE MANUFACTURED TRUE TO PATTERN. COMPONENT PARTS SHALL FIT TOGETHER IN A SATISFACTORY MANNER.
11. ALL CONCRETE TO BE 3000 PSI. CHAMFER ALL EXPOSED EDGES 3/4". ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
12. MINIMUM CONCRETE COVER SHALL BE 1 1/2" FOR STEEL REINFORCING.
13. EXPANSION MATERIAL TO BE 1/2" BITUMINOUS FIBER AND PLACED WHERE PROPOSED CONCRETE COMES IN CONTACT WITH ANY EXISTING OR PROPOSED CONCRETE OR MASONRY STRUCTURE.
14. STRUCTURAL STEEL SHALL BE SHOP PAINTED IN ACCORDANCE WITH TxDOT. ITEM 446 "PAINT AND PAINTING"
15. SURFACE OF ALL EXPOSED CONCRETE SHALL CONFORM IN SLOPE AND GRADE TO EXISTING OR PROPOSED CURB AND WALK ADJACENT TO INLETS.
16. GRATES WILL BE DEPRESSED 1" BELOW PROPOSED OR EXISTING GRADE.
17. ALL REINFORCING BARS TO BE #4 BARS AT 6" O.C. GRADE 60. BEND BARS AROUND PIPE OPENINGS.
18. INLETS TO BE DESIGNATED IN PLANS BY NUMBER OF GRATES REQUIRED.
19. LOCATION OF SEWER PIPES SHOWN ELSEWHERE IN PLANS.
20. TWO 1/2"Ø X4" LONG CONCRETE ANCHOR STUDS REQUIRED FOR EACH SIDE OF FRAME, WHERE RESTING ON CONCRETE, USE NELSON STUDS OR EQUAL.
21. THE GRATES OF ALL INLETS WITHIN THE STREET PAVEMENT MUST BE CONSTRUCTED WITH THE GRATE BARS PERPENDICULAR TO THE CURB.

REFERENCES - BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.

ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

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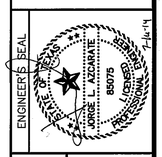
ENGINEER'S SEAL



SCALE
Horizontal: N/A
Vertical: N/A
Contour Interval: N/A

DATE: MAY 2014
DESIGN BY: F.Z./J.M.
DRAWN BY: J.M.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260-017-10

PROJECT TITLE

VENTANAS SUBDIVISION
UNIT SEVEN
SUBDIVISION IMPROVEMENTS

SHEET TITLE

DRAINAGE DETAILS

(SHEET 1 OF 3)

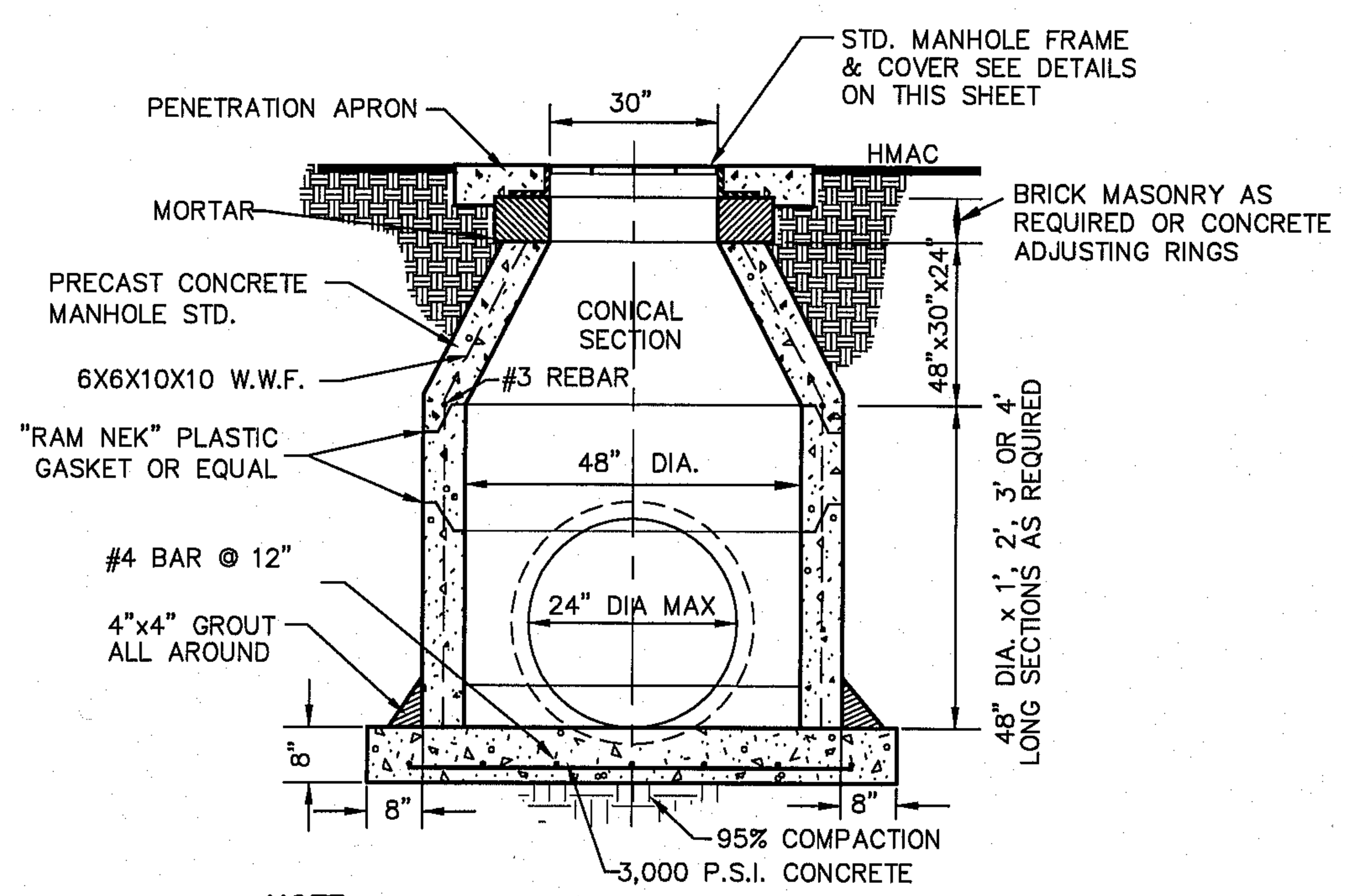
SHEET NO.

C9.1

THE CITY OF EL PASO TEXAS

Final Approval

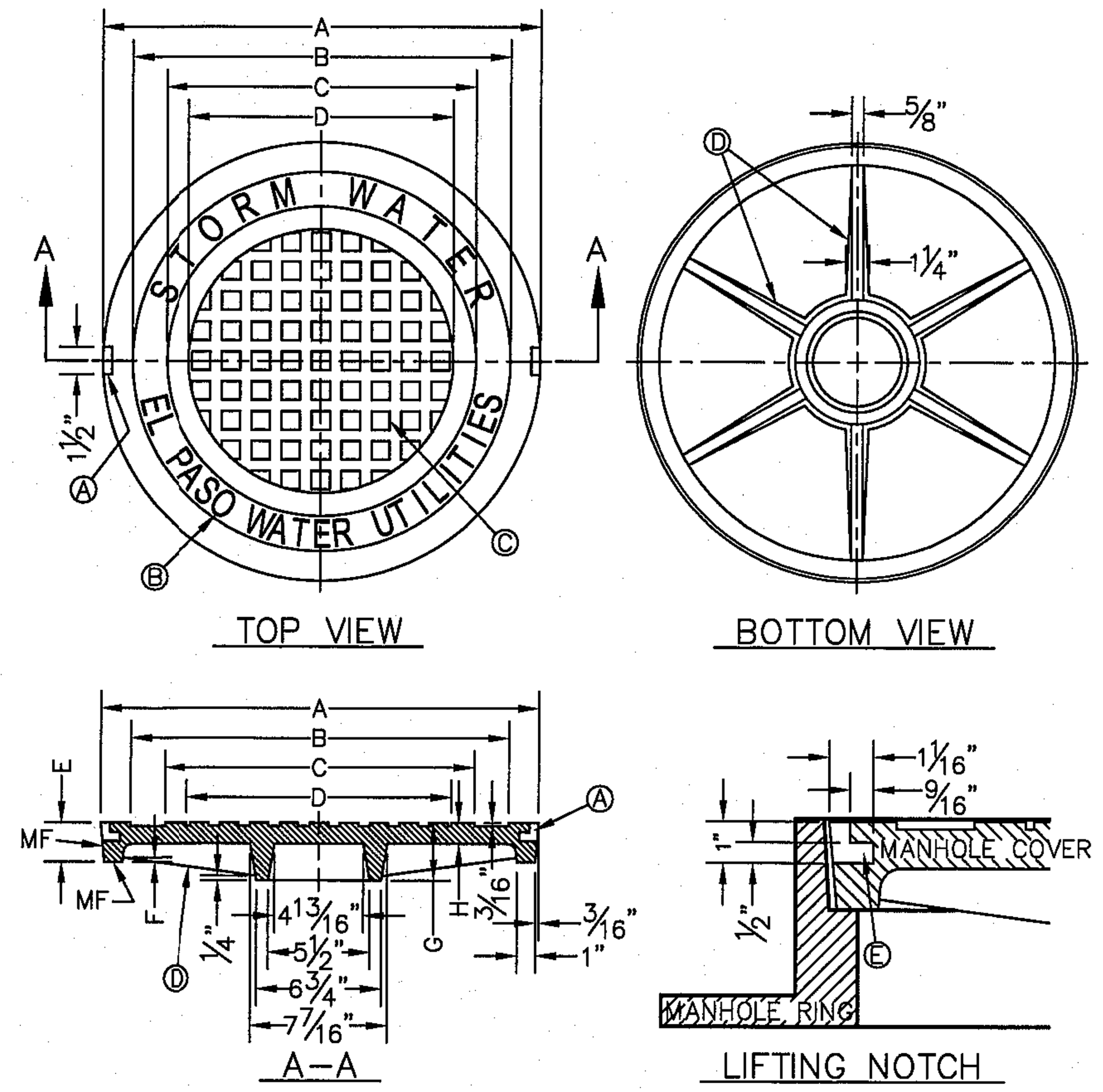
S:\2260\V2260-017D-Ventanas Unit Seven\DWGS\Construction Drawings\Improvement Plans\V2260-017-C9.1-Drainage Details 1.dwg, Layout1, 7/10/2014 4:18:38 PM



NOTE:

1. ALL CONCRETE SHALL HAVE 3000 PSI MIN. @ 28 DAYS.
2. NINETY-FIVE (95%) PERCENT COMPACTION AS PER ASTM D-1557 UNDER ALL CONCRETE STRUCTURES.
3. REINFORCED STEEL SHALL BE DEFORMED AND A MINIMUM OF GRADE 40.

(1 / C9.2) **48" STANDARD MANHOLE DETAIL**
SCALE: N.T.S.



GENERAL NOTES:

1. MATCHING SURFACES MARKED "MF" TO BE FINISHED OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
2. CASTING TO BE SMOOTH & VOID OF AIR HOLES.
3. CASTING MUST MEET REQUIREMENTS OF AASHTO M306-07.
4. AS-CAST DIMENSIONS MAY VARY 1/16"±/ PER FOOT (AASHTO M306-07).
5. WEIGHT MAY VARY 5%± (AASHTO M306-07).
6. SHADED DIMENSIONS IN TABLE FOR REFERENCE ONLY. SOURCE: CITY OF EL PASO DESIGN STANDARDS FOR CONSTRUCTION, DETAIL 2-17.

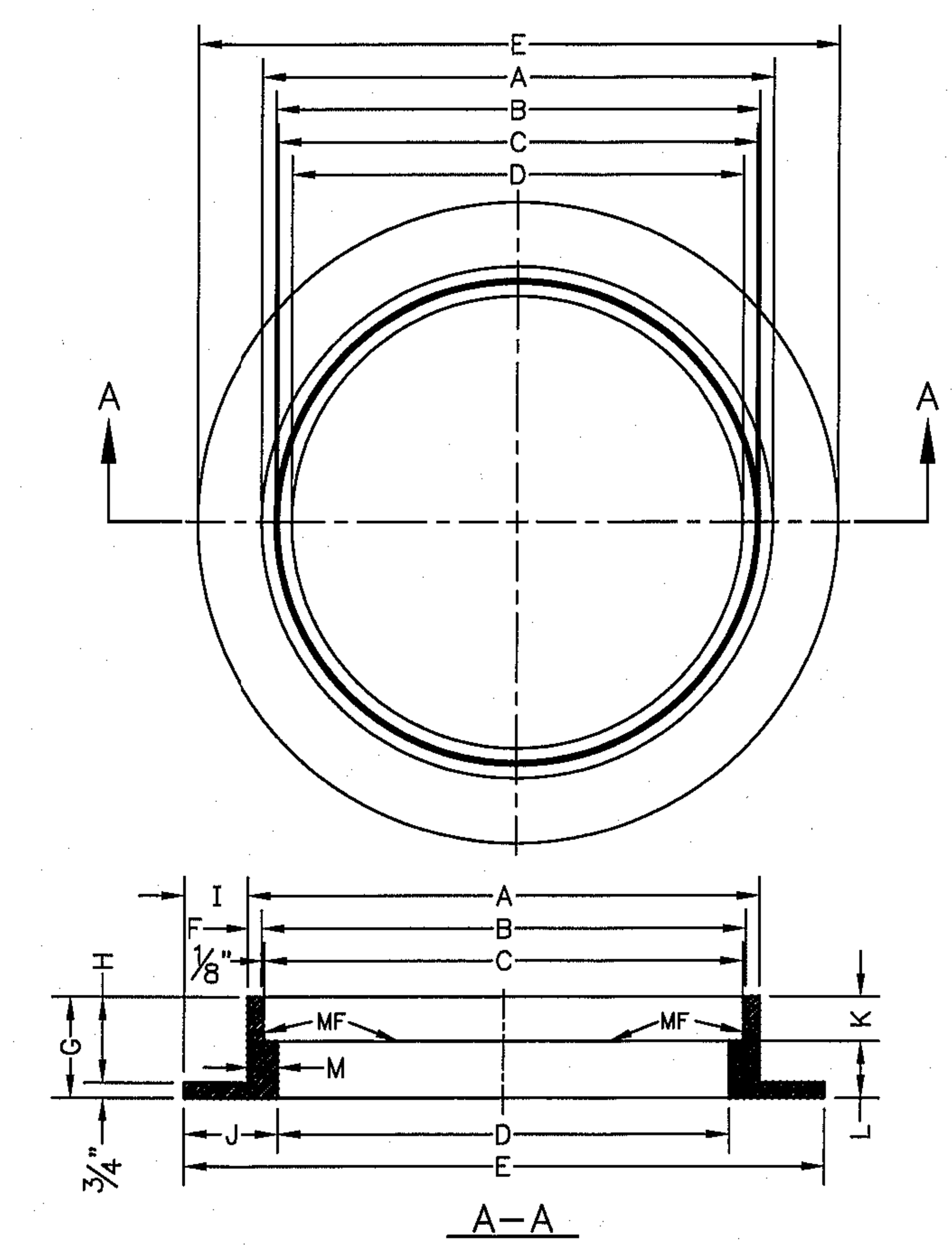
CONSTRUCTION KEY NOTES:

A. LIFTING NOTCH.
B. 3/16" RAISED LETTERING.
C. 1" SQUARES (3/16" TALL) WITH 5/8" SPACE BETWEEN.
D. REINFORCING RIBS.
E. SLOT.

SEE NOTE 6

MANHOLE COVER	MANHOLE – ALL TYPES	MANHOLE TYPE 48"	MANHOLE TYPE 72"
A	31 3/8"	23 3/4"	31 1/4"
B	28 1/8"	20 5/8"	28 1/8"
C	24 3/8"	16 7/8"	24 3/8"
D	21 7/8"	14 3/8"	21 7/8"
E	2 1/8"	3"	3"
F	1/4"	1 1/4"	1 1/4"
G	3 1/8"	3"	3"
H	1 1/8"	1"	1"
WEIGHT	265 lbs.	175 lbs.	310 lbs.

STORMWATER MANHOLE COVER



GENERAL NOTES:

1. MATCHING SURFACES MARKED "MF" TO BE FINISHED OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
2. CASTING TO BE SMOOTH & VOID OF AIR HOLES.
3. CASTING MUST MEET REQUIREMENTS OF AASHTO M306-07.
4. AS-CAST DIMENSIONS MAY VARY 1/16 (AASHTO M306-07).
5. WEIGHT MAY VARY 5%± (AASHTO M306-07).
6. SHADED DIMENSIONS IN TABLE FOR REFERENCE ONLY. SOURCE: CITY OF EL PASO DESIGN STANDARDS FOR CONSTRUCTION, DETAIL 2-17.

SEE NOTE 6

MANHOLE RING	MANHOLE – ALL TYPES	MANHOLE TYPE 48"	MANHOLE TYPE 72"
A	33"	25 1/4"	32 3/4"
B	31 3/4"	23 7/8"	31 3/8"
C	31 1/2"	23 5/8"	31 1/8"
D	30"	22 1/2"	30"
E	39 1/2"	34 1/2"	42"
F	5/8"	1 1/16"	1 1/16"
G	5"	6"	6"
H	4 1/4"	5 1/4"	5 1/4"
I	3 1/4"	4 1/16"	4 1/16"
J	4 3/4"	6"	6"
K	2 3/16"	3 1/16"	3 1/16"
L	2 13/16"	2 15/16"	2 15/16"
M	1 1/2"	1 3/8"	1 3/8"
WEIGHT	220 lbs.	165 lbs.	225 lbs.

STORMWATER MANHOLE RING

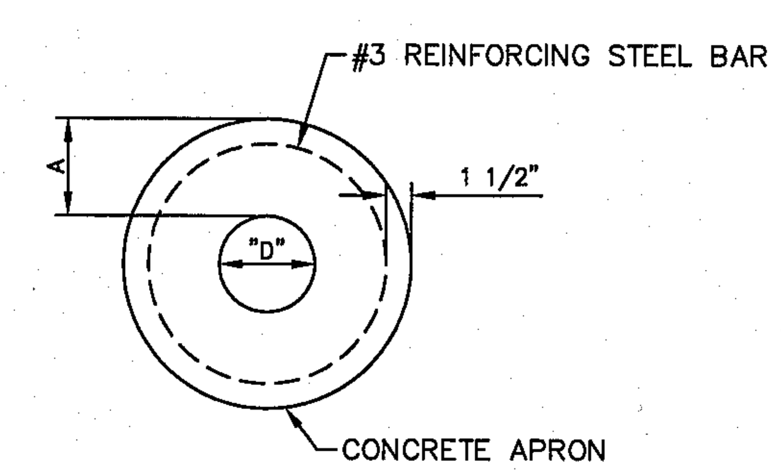
(2 / C9.2) **MANHOLE RING AND COVER DETAILS**
SCALE: N.T.S.

CONSTRUCTION NOTES:

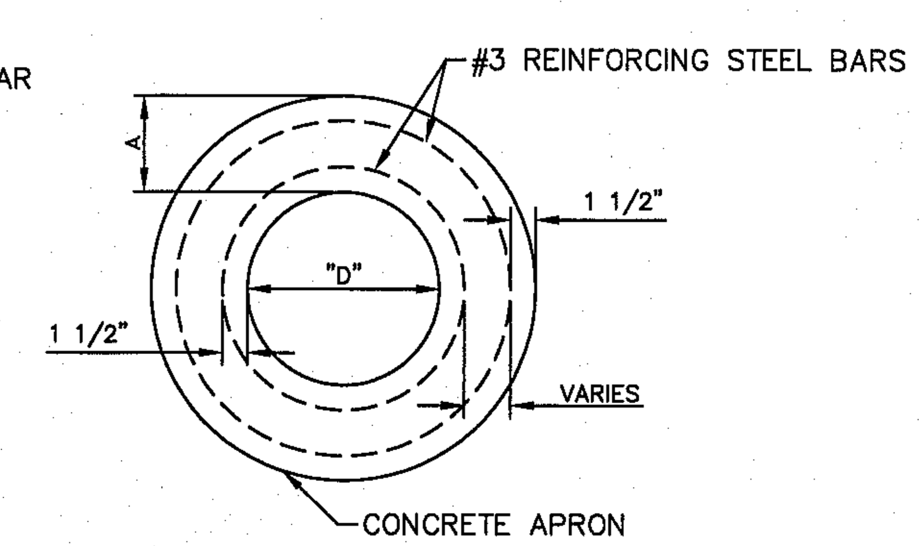
1. ANY DISTURBED SUBGRADE UNDER THE CONCRETE APRON SHALL BE COMPACTED TO 95% DENSITY ±3% OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D-1557.
2. ANY DISTURBED COARSE UNDER THE CONCRETE APRON SHALL BE COMPACTED TO 100% DENSITY ±2% OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D-1557.
3. PROVIDE A MINIMUM OF 1 1/2" OF CONCRETE COVER FOR ALL REINFORCEMENT STEEL.
4. REINFORCING SHALL MEET ASTM C-478 AND TRAFFIC LOADING (HS-20).
5. NO. 3 REINFORCING STEEL HOOPS SHALL BE SPACED EQUALLY.

GENERAL NOTES:

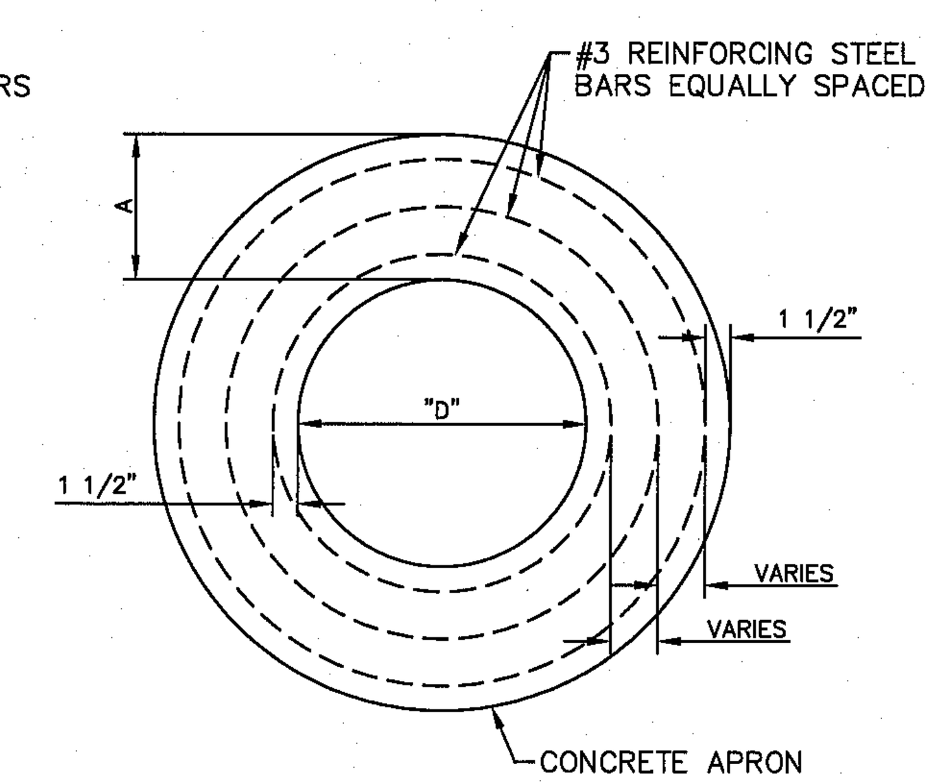
1. THE PENETRATION APRON SHOULD BE CAST IN-PLACE CONCRETE. (MINIMUM 28 DAY COMPRESSIVE STRENGTH 4000 PSI. HIGH EARLY CONCRETE IS REQUIRED).
2. TOPS OF PENETRATION APRON SHALL BE FLUSH WITH ROADWAY SURFACE OR FINISHED GRADE UNLESS OTHERWISE SPECIFIED BY THE CITY ENGINEER.



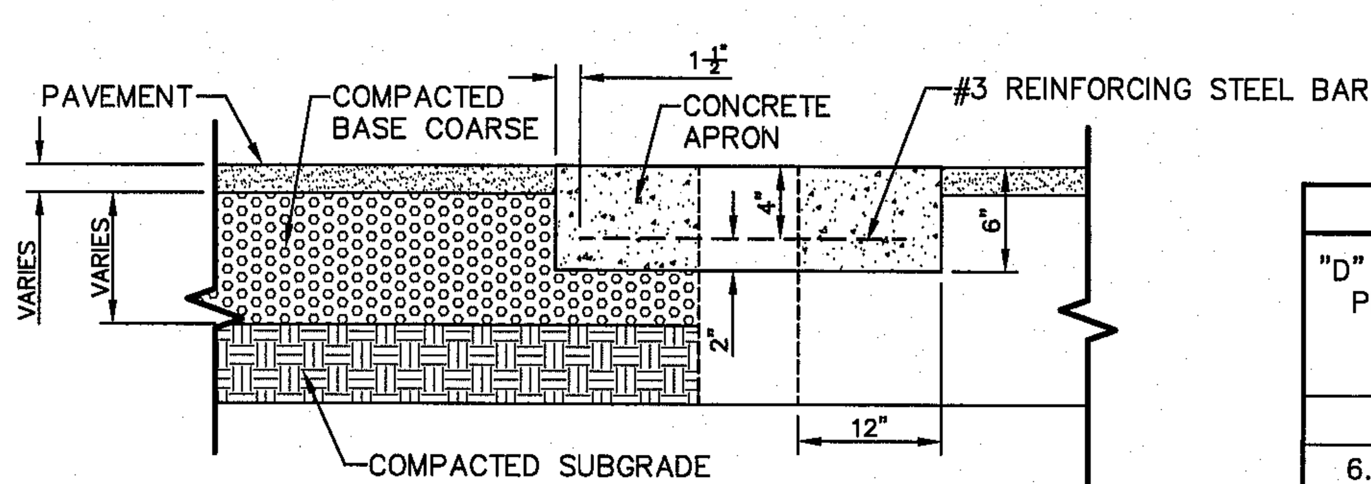
PLAN VIEW – SINGLE REBAR



PLAN VIEW – 2 REBAR



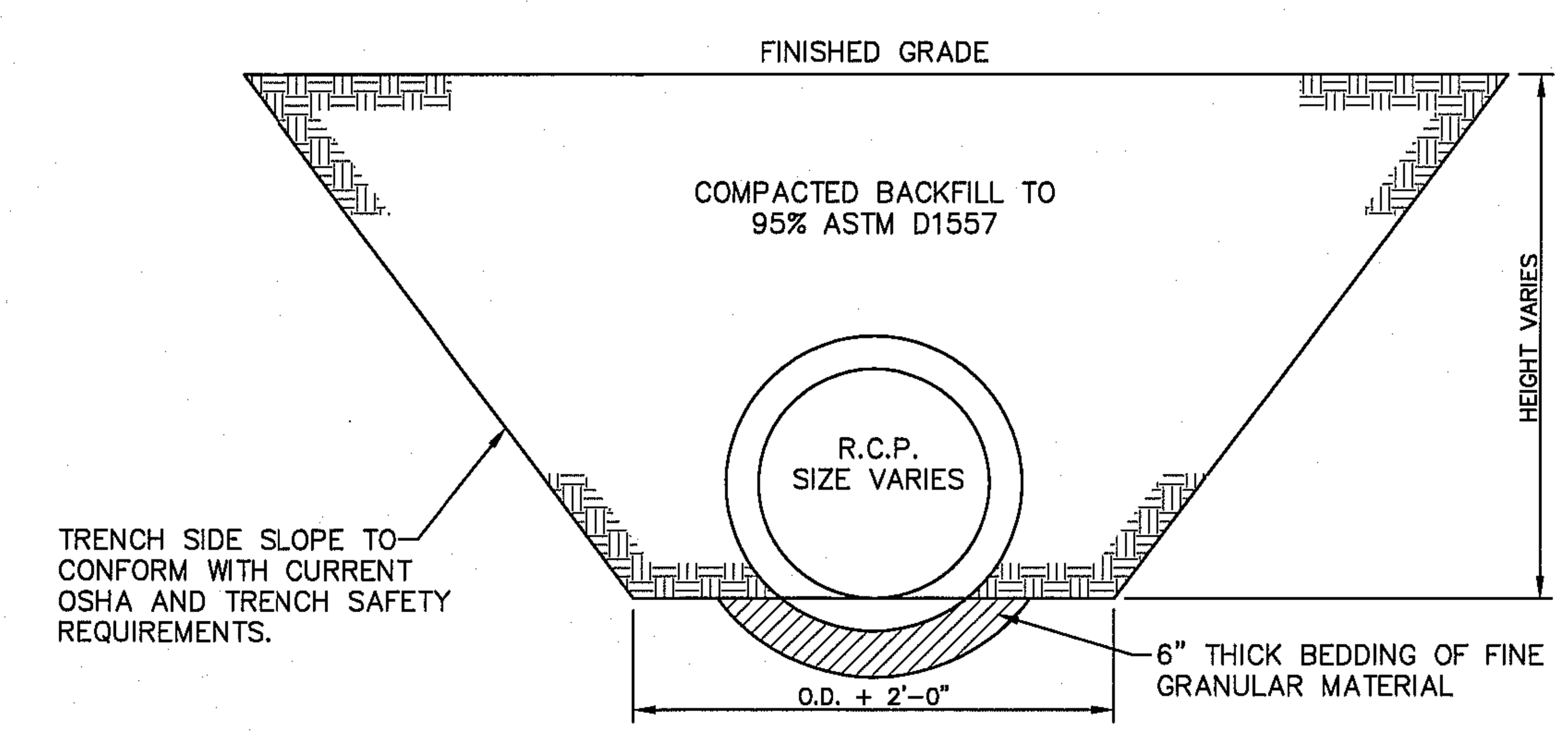
PLAN VIEW – 3 REBAR



SECTION

CONCRETE APRON FOR CIRCULAR PENETRATIONS IN ASPHALT PAVEMENTS				
"D" DIAMETER OF PENETRATION (INCHES)	"A" CONCRETE HORIZONTAL DIMENSION FROM PENETRATION (INCHES)	NUMBER OF NO. 3 REINFORCING STEEL BARS (QUANTITY)	"B" MINIMUM CLEARANCE FROM EDGE OF CONCRETE APRON TO CENTER OF NEAREST REBAR (INCHES)	"C" MINIMUM CLEARANCE FROM PENETRATION EDGE TO CENTER OF NEAREST REBAR (INCHES)
0 TO 6.01	6	1	1 1/2	1 1/2
6.01 TO 18.01	8	2	1 1/2	1 1/2
18.01 AND OVER	12	3	1 1/2	1 1/2

(X / XX) **PENETRATION APRON DETAILS**
SCALE: N.T.S.



(4 / C9.2) **STORM SEWER BEDDING DETAIL**
SCALE: 1/2" = 1'-0"

Final Approval

REFERENCES – BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.

ELEVATION = 3970.52 (CITY DATUM).

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7-10-14

SCALE
Horizontal: N/A
Vertical: N/A
Contour Interval: N/A

DATE: MAY 2014
DESIGN BY: F.Z./J.M
DRAWN BY: J.M.
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APPVD. BY: J.L.A.
JOB No. 2260-017-LD

PROJECT TITLE

VENTANAS SUBDIVISION UNIT SEVEN
SUBDIVISION IMPROVEMENTS

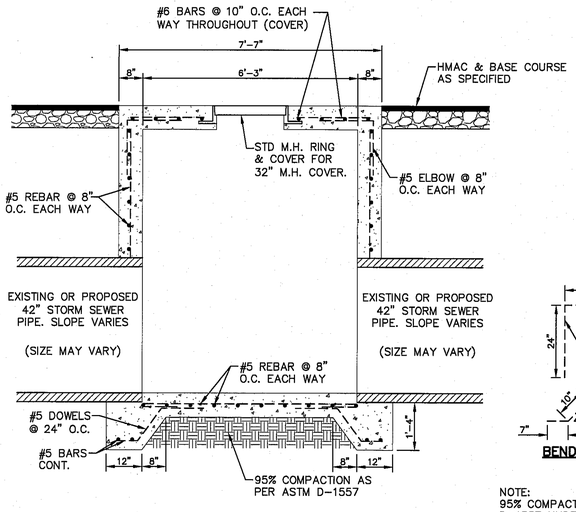
SHEET TITLE

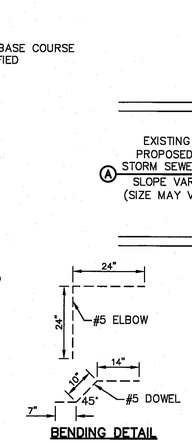
DRAINAGE DETAILS

(SHEET 2 OF 3)

SHEET NO.

C9.2

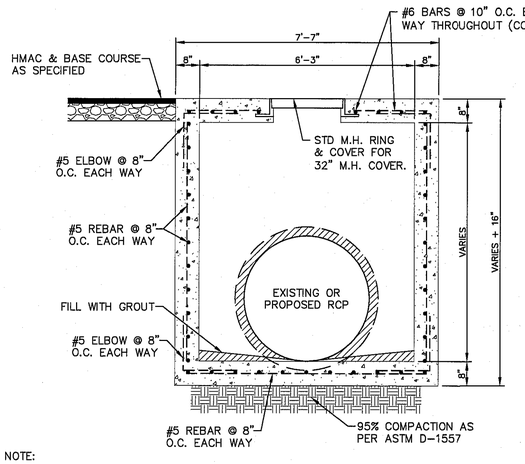




BENDING DETAIL

NOTE:
95% COMPACTION AS PER ASTM D-1557 UNDER ALL CONCRETE STRUCTURES.

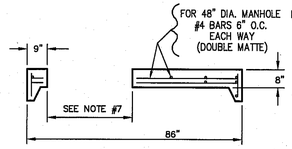
1 / C9.3 **72" CAST-IN PLACE MANHOLE DETAIL**
SCALE: 1" = 2'-0"



NOTE:

FOR JUNCTION BOXES USING INFLOW/OUTFALL PIPE SIZES OTHER THAN THOSE INDICATED IN THIS TYPICAL DETAIL, ATTACHED TABLE SHALL BE USED AS A GUIDELINE FOR BOX SIZING ONLY. COMPLETE ENGINEERING DESIGN DRAWINGS INCLUDING ALL CALCULATIONS, DIMENSIONING, REINFORCEMENT AND SPECIFICATIONS SHALL BE SUBMITTED FOR REVIEW AND COMMENT SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF TEXAS.

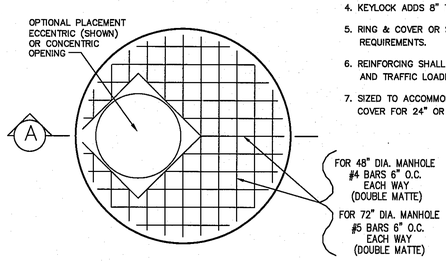
"W" WIDTH OF JUNCTION BOX (MIN.)	JUNCTION BOX WALL THICKNESS	PIPE SIZE ENTERING JUNCTION BOX
5'-3"	8"	18"
5'-10"	8"	24"
6'-5"	8"	30"
7'-0"	8"	36"
7'-7"	8"	42"
8'-2"	8"	48"
8'-9"	8"	54"
9'-4"	8"	60"
9'-11"	8"	66"
10'-6"	8"	72"
11'-8"	8"	84"
12'-10"	8"	96"



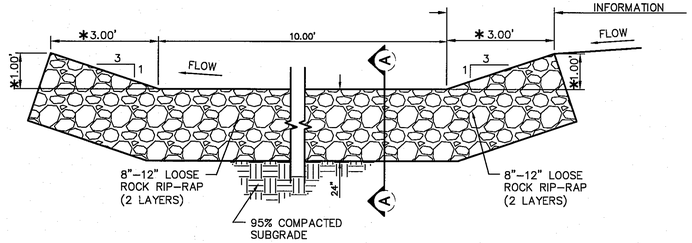
SECTION A-A

GENERAL NOTES:

1. ALL JOINTS TO BE TONGUE AND GROOVE AND SEALED WITH RAM-NEK OR EQUAL.
2. MANUFACTURER TO PROVIDE LIFTERS OF ADEQUATE SIZE AS NEEDED.
3. 4000 P.S.I. CONCRETE 28 DAYS.
4. KEYLOCK ADDS 8" TO VERTICAL HEIGHT.
5. RING & COVER OR SPECIAL LIDS TO MEET REQUIREMENTS.
6. REINFORCING SHALL MEET A.S.T.M. C478-87 AND TRAFFIC LOADING (HS-20).
7. SIZED TO ACCOMMODATE APPLICABLE RING & COVER FOR 24" OR 32" MANHOLE COVER.



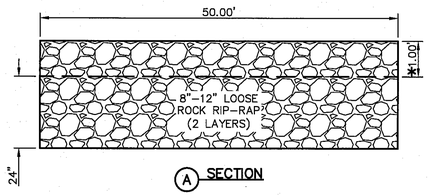
2 / C9.3 **MANHOLE COVER FOR 48" and 72" MANHOLE**
SCALE: N.T.S.



* MINIMUM DIMENSION UNLESS OTHERWISE PROVIDED IN THE PLANS.

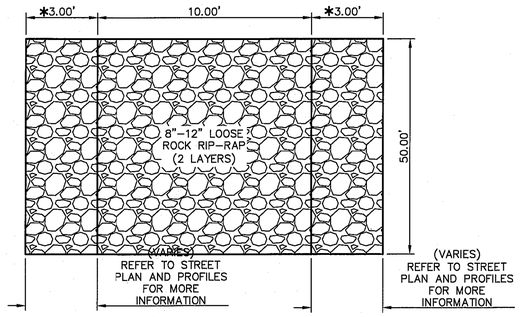
NOTE:

1. SUBGRADE TO BE COMPACTED TO NINETY-FIVE (95%) PERCENT OF MAXIMUM DENSITY AS PER ASTM D-1557.
2. TYPICAL THICKNESS IS SHOWN, ACTUAL THICKNESS WILL VARY, BUT IN NO EVENT SHALL BE LESS THAN TWELVE (12") INCHES.



A SECTION

* MINIMUM DIMENSION UNLESS OTHERWISE PROVIDED IN THE PLANS.



* MINIMUM DIMENSION UNLESS OTHERWISE PROVIDED IN THE PLANS.

PLAN VIEW

3 / C9.3 **TEMPORARY DESILTING BASIN DETAIL**
SCALE: 1" = 2'-0"

Final Approval

REFERENCES - BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.

ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

caa group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F, El Paso, TX 79924
Office: 915.544.2232 Fax: 915.544.3283 www.caagroup.net

ENGINEER'S SEAL

JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
7-14-14

SCALE	
Horizontal:	N/A
Vertical:	N/A
Contour Interval:	N/A
DATE:	MAY 2014
DESIGN BY:	F.Z./J.M.
DRAWN BY:	J.M.
CHKD. BY:	J.L.A.
APP'D. BY:	J.L.A.
JOB No.	2260-017-D

PROJECT TITLE

VENTANAS SUBDIVISION
UNIT SEVEN
SUBDIVISION IMPROVEMENTS

SHEET TITLE

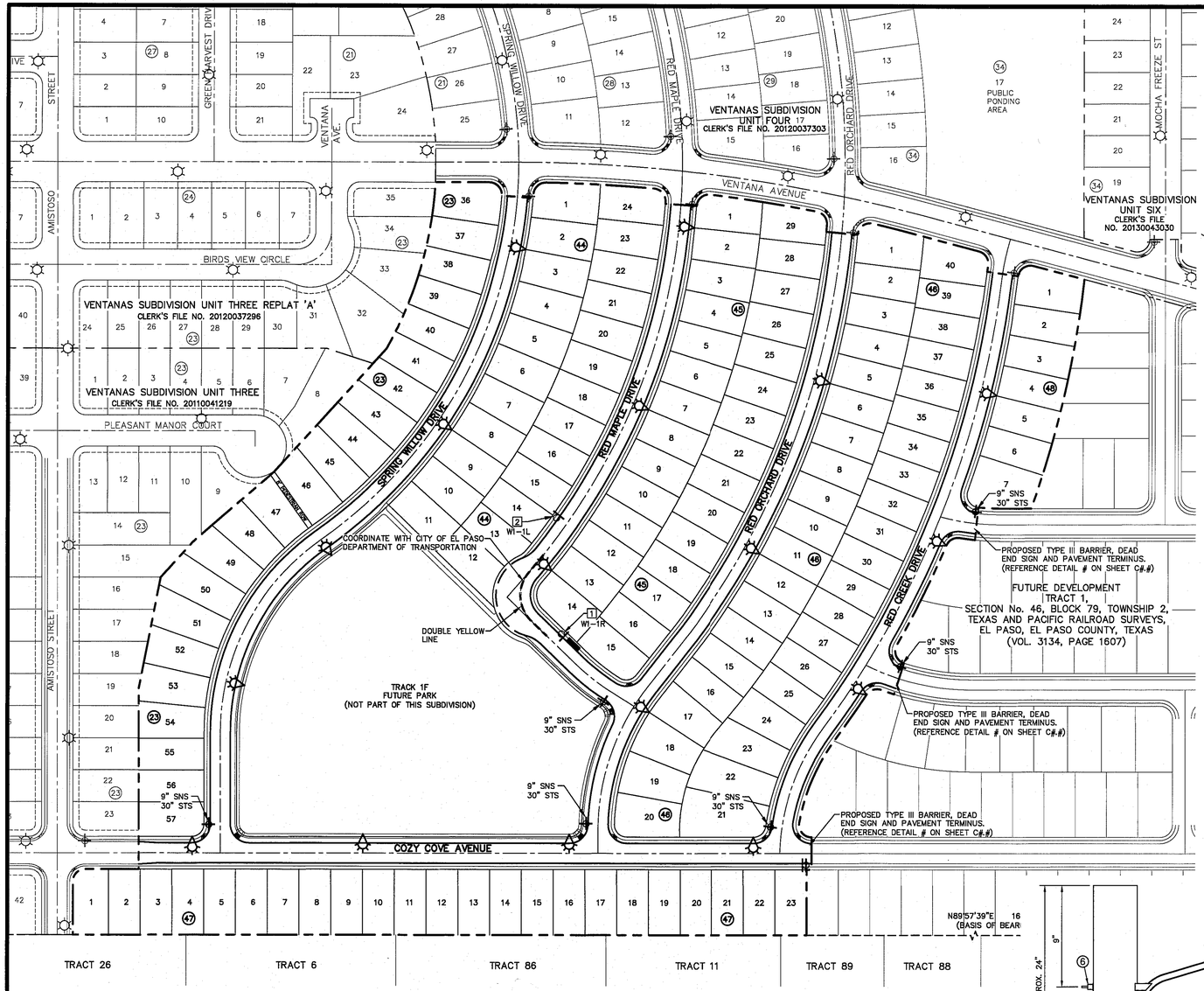
DRAINAGE DETAILS

(SHEET 3 OF 3)

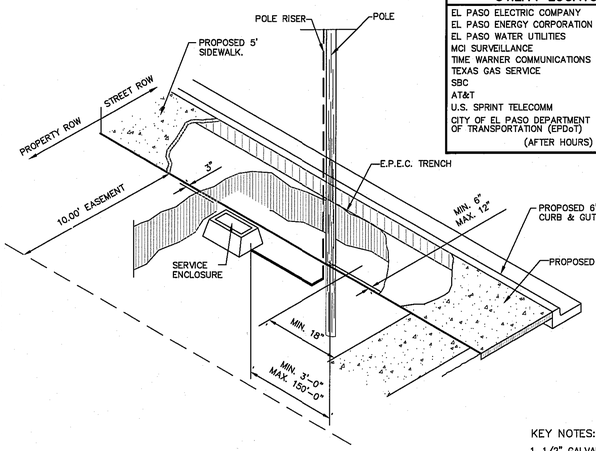
SHEET NO.

C9.3

S:\2260\2260-017D-Ventanas Unit Seven\DWGS\Construction Drawings\Improvement Plans\2260-017-C9.3-Drainage Details 3.dwg, Layout1, 7/10/2014 4:19:23 PM



17 RESIDENTIAL STREET LIGHTS



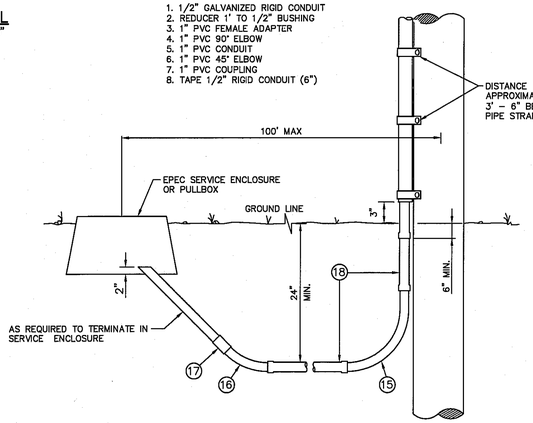
POLE LOCATION DETAIL
SCALE: 1" = 5'-0"

UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579
CITY OF EL PASO DEPARTMENT OF TRANSPORTATION (EPDoT)	(915) 621-6750
(AFTER HOURS)	(915) 240-3220

WARNING! BEFORE YOU DIG
CALL
1-800-DIG-TESS
1-800-344-8377
FOR FIELD LOCATING EXISTING UTILITIES

LEGEND:
- EXISTING RESIDENTIAL STREET LIGHT
- PROPOSED RESIDENTIAL STREET LIGHT
- PROPOSED SIGN
- PROPOSED 9" STREET NAME SIGN (TWO SIGNS)
- EXISTING 9" STREET NAME SIGN (TWO SIGNS)
- PROPOSED 9" STREET NAME AND 30" STOP SIGN AND DEAD END SIGN
- PROPOSED N.D.B.C.U. MAIL

KEY NOTES:
1. 1/2" GALVANIZED RIGID CONDUIT
2. REDUCER 1" TO 1/2" BUSHING
3. 1" PVC FEMALE ADAPTER
4. 1" PVC 90° ELBOW
5. 1" PVC CONDUIT
6. 1" PVC 45° ELBOW
7. 1" PVC COUPLING
8. TAPE 1/2" RIGID CONDUIT (6")



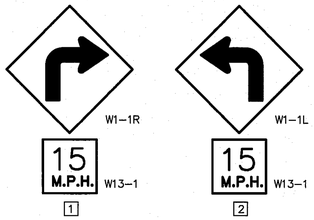
RESIDENTIAL STREET LIGHT WOOD POLE
SCALE: N.T.S.

ITEM NO.	DESCRIPTION	STOCK NO.	QTY.		
1	PHOTO CELL, 240 V-SEE NOTE 1	21-225	1	LCOBRAHD	LCOBRAUG
2	HPS LASMP, 100W	21-085	1		
3	LUMINARE, 100W H.P.S.	21-335	1		
4	SLEEVES, #12-10	05-140	2	LSLV1210	
5	MAST ARM, 6' X 1 1/4"	21-200	1	LBRKT1*6	
6	MACHINE BOLT, 5/8" X 12"	02-470	1	LMB5/812	
	SQUARE GALV. WASHER, 2 1/4" X 2 1/4"	02-760	1		
	COIL SPRING WASHER, 5/8"	02-786	1		
	LOCK NUT, 5/8"	02-705	1		
7	SERVICE ENTRANCE CAP FOR 1" PVC CONDUIT	17-281	1	LSVCCAP1	
8	LAG BOLT, 3/8" X 3"	02-343	1	LLAG38*3	
9	CABLE, #10, 2 CONDUCTOR, 600V, UF	13-600	8'	L2C#10S	
10	COPPER CABLE, #12, SOLID, 600V, BLUE	13-702	60'	LC#12CU	
11	SCHEDULE 80 1" PVC CONDUIT	17-280	30'	LSCH801	
12	PIPE STRAP FOR 1" PVC CONDUIT, 2-HOLE	17-283	9'	LPVCSTRP	
13	NAIL, STAINLESS STEEL SCREW 2.5 IN.	14-427	.25#	LNAL14*2	
14	POLE, 35 FT. - CLASS 4	09-035	1	L354UG	
15	1" PVC 90 DEGREE ELBOW	17-297	1	LEL901	
16	1" PVC 45 DEGREE ELBOW	17-298	1	LEL451	
17	1" PVC COUPLING	17-296	1	LCPLG1	
18	1" PVC CONDUIT	17-299	AS REQ	LPVC1	

NOTES:
1. MOUNT SO THAT PHOTO CELL IS FACING NORTH.
2. ITEM # 9 SHALL NOT BE SPLICED INSIDE ITEM # 5.
3. INSTALLATION MUST COMPLY WITH LOCAL CODE REQUIREMENTS.
4. FOR ANY CLARIFICATION, EXCEPTIONS OR QUESTIONS REGARDING THIS STANDARD, CALL THE EL PASO ELECTRIC COMPANY DISTRIBUTION DESIGN DEPARTMENT.
5. ON STREETS WHERE SIDEWALK IS ADJACENT TO CURBS, STREET LIGHT POLE SHALL BE INSTALLED IN THE SIDEWALK NEXT TO PROPERTY LINE. 36 INCHES REQUIRED FROM BACK OF CURB TO COMPLY WITH AMERICAN DISABILITY'S ACT AND LOCAL CODES.
6. THE CONDUIT RISER SHALL BE INSTALLED ON THE BACK OF THE WOOD POLE (AWAY FROM THE STREET).
7. THE WIRE LEADS FROM THE WEATHER HEAD TO THE MAST ARM SHALL HAVE A MINIMUM 4" DRIP LOOP BELOW THE WEATHER HEAD.

Final Approval

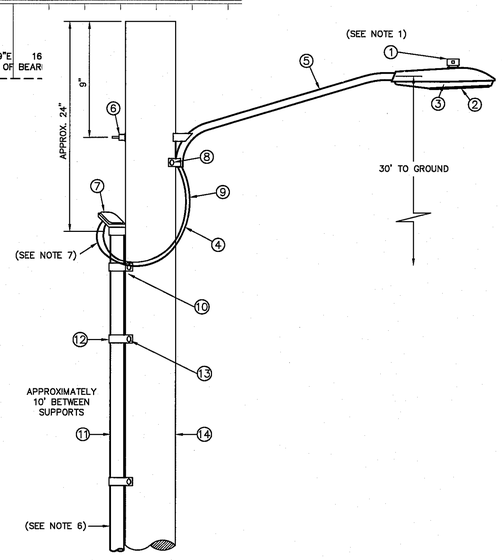
NOTE
1. TRAFFIC STREET SIGNS MUST BE OF HIGH INTENSITY REFLECTIVE SHEETING.



NOTE:
SIGNS SHOULD COMPLY WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

SIGNS DETAIL
SCALE: N.T.S.

ILLUMINATION & SIGNAGE PLAN
SCALE: 1" = 100'



RESIDENTIAL STREET LIGHT WOOD POLE
SCALE: N.T.S.

REFERENCES - BENCHMARKS
BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.
ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

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engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4584
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5232 Fax: 915.544.5233 www.ceagroup.net

ENGINEER'S SEAL

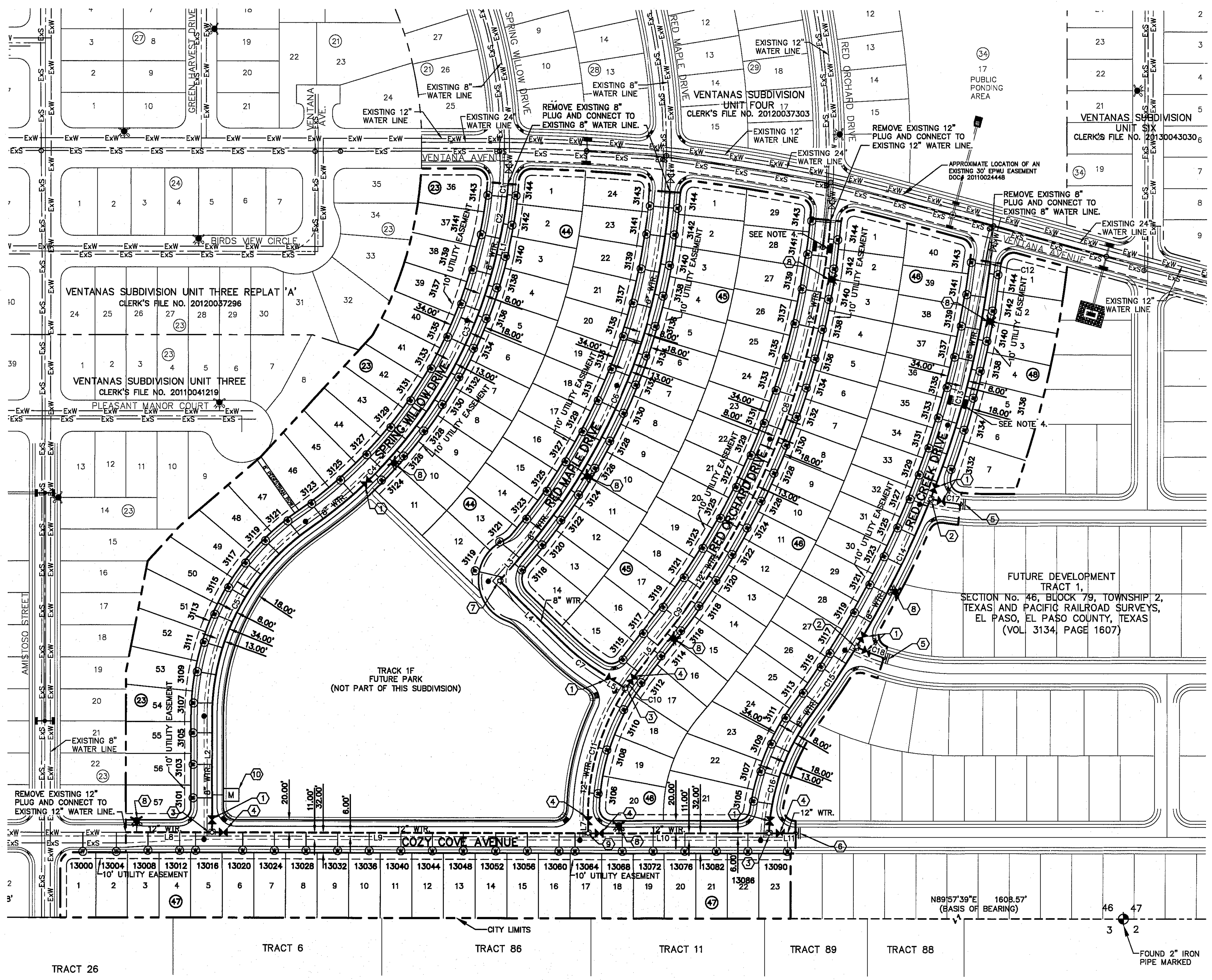
SCALE
Horizontal: 1"=100'
Vertical: N/A
Contour Interval: N/A

DATE: MAY 2014
DESIGN BY: F.Z./J.M.
DRAWN BY: J.M.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260-017-LD

PROJECT TITLE
VENTANAS SUBDIVISION UNIT SEVEN SUBDIVISION IMPROVEMENTS

SHEET TITLE
ILLUMINATION & SIGNAGE PLAN

SHEET NO.
C10.1



CONTRACTOR SHALL VERIFY DEPTH AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION.

WATER INDEX MAP

SCALE: 1" = 100'

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	744.08'	20.23'	10.12'	20.23'	N05°03'20"E	001°33'29"
C2	608.00'	73.75'	36.92'	73.71'	N09°18'35"E	006°57'01"
C3	743.08'	273.89'	138.51'	272.34'	N23°20'38"E	021°07'05"
C4	743.08'	273.89'	138.51'	272.34'	N44°27'44"E	021°07'05"
C5	367.00'	352.68'	191.29'	339.27'	S27°29'28"W	055°03'37"
C6	1005.00'	649.86'	336.74'	638.59'	N22°23'35"E	037°02'56"
C7	342.00'	70.54'	35.40'	70.42'	S51°56'38"E	011°49'05"
C8	1266.00'	674.20'	345.30'	666.26'	N20°23'35"E	030°30'45"
C9	508.00'	21.59'	10.80'	21.59'	N36°52'00"E	002°26'05"
C10	366.86'	30.48'	15.25'	30.47'	S35°42'17"W	004°45'38"
C11	367.00'	213.71'	109.98'	210.70'	S16°38'35"W	033°21'52"
C12	342.00'	7.65'	3.83'	7.65'	S07°38'41"W	001°16'55"
C13	1528.00'	385.45'	193.75'	384.43'	N14°13'50"E	014°27'11"
C14	1528.00'	265.99'	133.33'	265.65'	N26°26'38"E	009°58'26"
C15	1528.00'	132.28'	66.18'	132.24'	N33°54'39"E	004°57'37"
C16	342.00'	203.04'	104.61'	200.07'	S19°22'59"W	034°00'57"
C17	367.00'	48.56'	24.32'	48.53'	S80°19'02"E	007°34'54"
C18	367.00'	47.21'	23.64'	47.18'	S68°43'29"E	007°22'13"

WATER KEYED NOTES	
1	8" ø GATE VALVE
2	8" X 8" X 8" TEE
3	8" X 12" X 12" TEE
4	12" ø GATE VALVE
5	8" PLUG
6	12" PLUG
7	8" BEND
8	FIRE HYDRANT
9	12" TEE
10	3/4" WATER METER LINE

LINE TABLE		
LINE	BEARING	LENGTH
L1	N12°47'06"E	16.47'
L2	N00°02'21"W	186.08'
L3	N40°55'03"E	45.51'
L4	N46°02'05"W	144.25'
L5	N57°51'10"W	51.51'
L6	N38°05'03"E	106.37'
L7	N00°02'21"W	30.01'
L8	N89°57'39"E	138.38'
L9	N89°57'39"E	602.68'
L10	N89°57'39"E	291.54'
L11	N89°57'39"E	42.60'

WATER QUANTITIES		
DESCRIPTION	QUANTITY	UNIT
8" PVC WATER LINE	3248.84'	LF
8" GATE VALVE	8	EA
8" PLUG	2	EA
FIRE HYDRANT	8	EA
12" PVC WATER LINE	2131.56'	LF
12" GATE VALVE	5	EA
12" PLUG	1	EA
12" DIP WATER LINE	20.00'	LF

INDEX

SHEET NO.	DESCRIPTION
C11.1	WATER MAIN PIPE LAYOUT
C12.1–C12.5	WATER DETAILS

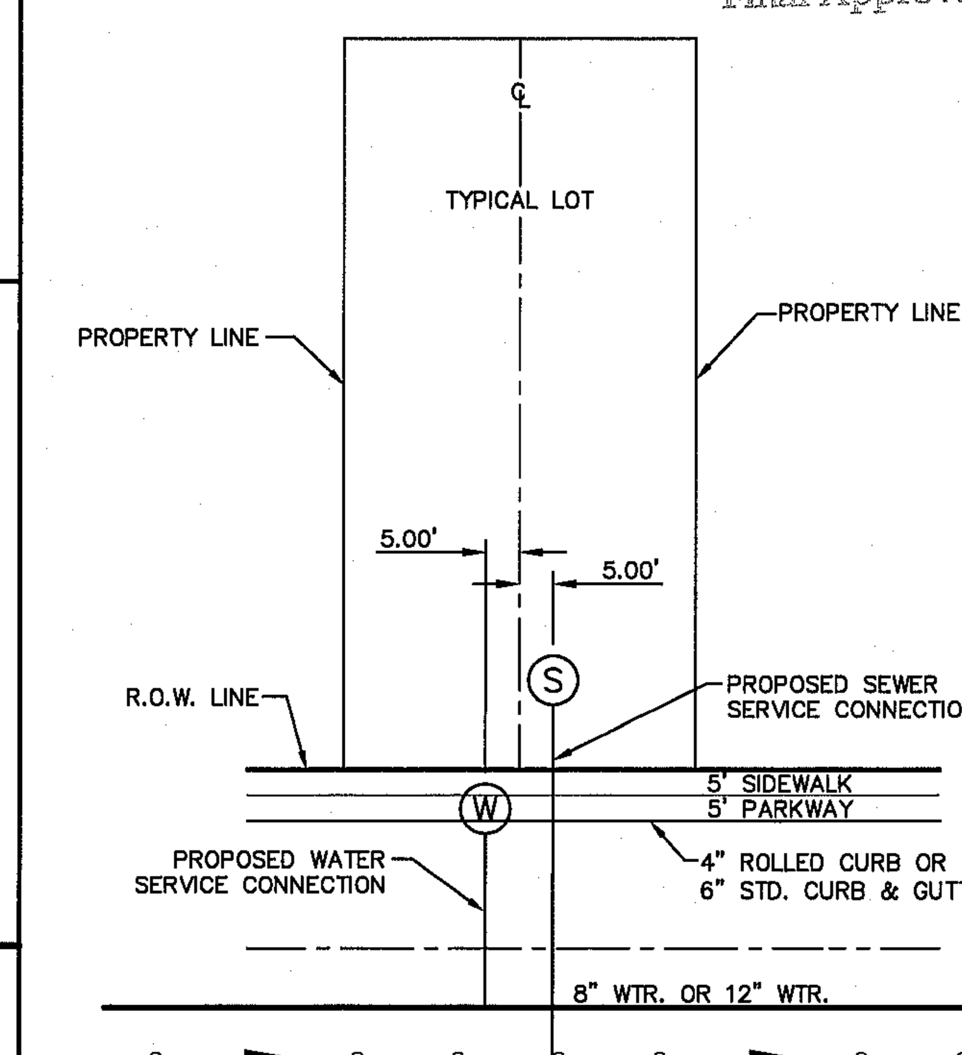
NOTES:

1. ALL LOTS SHALL BE PROVIDED WITH ONE SERVICE CONNECTION TO BE INSTALLED AT THE LOCATION AS SHOWN ON THE SERVICE LOCATION DETAIL.
2. ALL WATER LINES SHALL BE AWWA PVC C–900, CLASS 305.
3. REFERENCE WATER DETAILS FOR TYPICAL VALVE AND WATER LOCATIONS AT STREET INTERSECTIONS.
4. REFERENCE WATER DETAILS FOR WATER LINE CROSSING STORM SEWER.

LEGEND

SYMBOL	DESCRIPTION
8" WTR.	PROPOSED 8" C–900, CLASS 150 P.V.C. PIPE
12" WTR.	PROPOSED 12", C–900 P.V.C. PIPE, UNLESS OTHERWISE SPECIFIED
	SUBDIVISION BOUNDARY LINE
	PROPERTY LINE
	STREET CENTER LINE
8" SWR	PROPOSED SEWER LINE (PLAN VIEW)
	PROPOSED STORM SEWER
(W)	PROPOSED SERVICE CONNECTION (PLAN VIEW)
	PROPOSED FIRE HYDRANT, KENNEDY OR MUELLER MODEL
	PROPOSED 8" PLUG
	PROPOSED GATE VALVE
o	POINT OF TANGENCY
	EXISTING GATE VALVE
	EXISTING FIRE HYDRANT
	EXISTING PLUG
ExS ExS	EXISTING SEWER LINE
ExW ExW	EXISTING WATER LINE
w w	EXISTING 24" WATER LINE

Final Approval



PLAN

SERVICE LOCATION DETAIL

SCALE: N.T.S.

GENERAL NOTES

1. UNLESS OTHERWISE SHOWN ON THE DRAWINGS, THE PROPOSED WATER MAINS SHALL BE INSTALLED NO LESS THAN 10' AWAY FROM EXISTING SEWER LINE. SEPARATIONS DISTANCES SHALL FOLLOW TCEQ STANDARD REQUIREMENTS (290.44).
2. THE INTENT OF THE OWNER IS TO HAVE THE WATER MAINS INSTALLED TO SUCH A DEPTH THAT THEY WILL HAVE AT LEAST 60" FROM INVERT OF PIPELINE TO PROPOSED ELEVATIONS AT ALL LOCATIONS. THE PIPELINES SHALL HAVE NO DIPS, ELEVATIONS AT ALL LOCATIONS. THE PIPELINES SHALL HAVE NO DIPS, SAGS OR HUMPS OR OTHER IRREGULARITIES IN VERTICAL ALIGNMENT. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO INSTALLING THE WATER PIPELINE SO THAT AN ACCEPTABLE PROFILE CAN BE ESTABLISHED PRIOR TO INSTALLATION OF THE PIPELINE.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD LOCATE ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN IN THE PLANS, AND COORDINATE WORK WITH ALL UTILITY COMPANIES, EL PASO WATER UTILITIES AND CITY OF EL PASO PRIOR TO CONSTRUCTION. ALL EXISTING UTILITY DEPTHS ARE UNKNOWN. THE CONTRACTOR SHALL BE ULTIMATELY RESPONSIBLE FOR AQCUIRING FIELD DEPTHS OF ALL UTILITIES WITHIN THE PROJECT AREAS.
4. TRENCH SAFETY REQUIREMENTS SHALL BE AS REQUIRED BY OSHA.
5. THE EL PASO WATER UTILITIES AND CITY OF EL PASO MUST BE NOTIFIED 48 HOURS PRIOR TO COMMENCING ANY WORK IN AREAS WITHIN THEIR JURISDICTION.
6. EXISTING STREETS, DRIVEWAYS, PARKING LOTS, MAILBOXES, SIGNS, CHAIN–LINK FENCES, AND ALL OTHER MISCELLANEOUS STRUCTURES DAMAGE OR REMOVED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO ORIGINAL OR BETTER THAN ORIGINAL CONDITION AT NO COST TO OWNER.
7. TRAFFIC CONTROL SHALL BE IN PLACE PRIOR TO INITIATING WORK.
8. ALL TIE–INS SHALL BE CLOSELY COORDINATED WITH THE EL PASO WATER UTILITIES AT LEAST 48 HOURS PRIOR TO ACTUAL CONSTRUCTION.
9. CONTRACTOR SHALL PROVIDE THE REQUIRED COUPLINGS, ELBOWS AND NECESSARY PIPING APPURTENANCES FOR A COMPLETE AND OPPERATIONAL WATER SYSTEM.
10. ALL NEW VALVES SHALL BE ALIGNED PERPENDICULAR TO PROPERTY LINES.
11. CONSTRUCTION OF THE PUBLIC WATER AND SEWER SYSTEM INCLUDING MATERIALS AND TESTING SHALL CONFORM EPWU–PSB SPECIFICATIONS FOR THE INSTALLATION OF WATER MAINS, SEWER MAINS AND RELATED APPURTENANDCES.
12. FIRE HYDRANTS SHALL BE INSTALLED IN THE PARKWAY AREA.
13. THE WATER METERS FOR THE PROPOSED WATER SERVICE CONNECTIONS SHALL BE INSTALLED ON THE PARKWAYS. SYMBOLS ARE ONLY SHOWN FOR DEPICTION PURPOSES ONLY.

GENERAL UTILITIES:
TEXAS EXCAVATION SAFETY SERVICE
11884 GREENVILLE AVENUE.
DALLAS, TX. 75243
(800) 344–8377

ENGINEER:
CEA GROUP
CASTNER CENTER @ TRANSMOUNTAIN
4712 WOODROW BEAN, STE. F
EL PASO, TX. 79924
(915) 544–5232
MR. JORGE L. AZCARATE, P.E.

FIBER OPTICS:
U.S. SPRINT
151 N. BOONE ST.
EL PASO, TX. 79905
(915) 534–7910
MR. RICK DERAGISCH

FIBER OPTICS:
MCI TELECOMMUNICATIONS CORPS.
4045 DONIPHAN PARK CIRCLE
EL PASO, TX. 79922
(915) 542–2770 EXT. 201
MR. DANIEL HERNANDEZ

CABLE TELEVISION:
TIME WARNER COMMUNICATIONS
7010 AIRPORT ROAD
EL PASO, TX. 79906
(915) 772–1123

WATER & SEWER:
EL PASO WATER UTILITIES
1154 HAWKINS BOULEVARD
EL PASO, TX. 79961
(915) 594–5530
MR. FELIPE LOPEZ, JR., P.E.

ELECTRIC:
EL PASO ELECTRIC CO.
501 W. SAN ANTONIO ST.
EL PASO, TX. 79902
(915) 543–2076
MR. FRANK VIGEL (DISTRIBUTION)

EL PASO STREETS
CITY OF EL PASO
DEPARTMENT OF TRANSPORTATION
7968 SAN PAULO DRIVE
EL PASO, TX. 79907
(915) 621–6750

RESIDENTIAL GAS LINES:
TEXAS GAS SERVICE
4700 POLLARD ST.
EL PASO, TX 79930
(915) 680–7329

TELEPHONE:
SBC
11200 PELICANO
EL PASO, TX. 79935
(915) 595–5151
MR. TIM BROWN

FIBER OPTICS:
AT&T
P.O. BOX 1650
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REFERENCES – BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.

ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

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ENGINEER'S SEAL

STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER
7-16-14

SCALE
Horizontal: 1"=100'
Vertical: N/A
Contour Interval: N/A

DATE: MAY 2014
DESIGN BY: F.Z./J.M
DRAWN BY: J.M.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260–017–LD

PROJECT TITLE

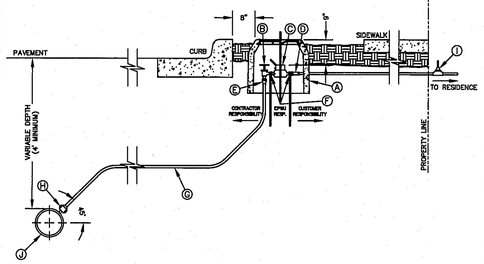
VENTANAS SUBDIVISION UNIT SEVEN SUBDIVISION IMPROVEMENTS

SHEET TITLE

WATER INDEX/ GENERAL INFORMATION

SHEET NO.

C11.1



GENERAL NOTES:

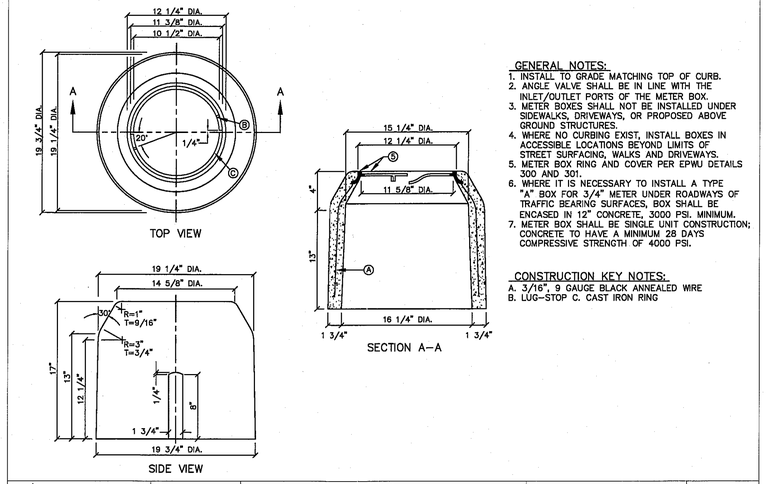
1. DETAIL SHOWN FOR A 3/4" SERVICE, 1" SERVICE INSTALLATION IS SIMILAR EXCEPT FOR SIZES OF PIPE, FITTING, METER AND BOX (TYPE "B").
2. WHERE NO CURB EXISTS, METER IS TO BE SET NEAR PROPERTY LINE OR AT DESIGNATED LOCATION.
3. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY PIPE, FITTINGS, AND METER BOXES REQUIRED. IT SHALL BE THE RESPONSIBILITY OF THE PRIVATE OWNER TO HAVE A CERTIFIED PLUMBER INSTALL A BACKFLOW PREVENTER AND EXTEND SERVICE LINE ON DISCHARGE SIDE OF METER.
4. NO SPLICING SHALL BE ALLOWED. FULL LENGTH OF PIPING SERVICE SHALL BE INSTALLED.
5. THE EPWU WILL FURNISH AND INSTALL THE METER.

CONSTRUCTION KEY NOTES:

A. METER BOX TYPE "A" (SEE DETAILS 300 & 301) SHALL BE SET SLIGHTLY HIGHER THAN SURROUNDING GROUND OR AT CURB LEVEL.
B. 3/4" ANGLE SERVICE VALVE.
C. WATER METER (CENTER INSIDE METER BOX).
D. WHEN REQUIRED BY EPWU, A DUAL CHECK BACKFLOW PREVENTER SHALL BE INSTALLED ON THE OUTLET SIDE OF THE METER.
E. END FLARE OF SERVICE LINE.
F. INLET AND OUTLET COUPLING.
G. 3/4" COPPER SERVICE LINE (SEE NOTE 4).
H. 5/8" X 3/4" CORPORATION STOP
I. PRESSURE REGULATOR SOMETIMES LOCATED NEAR THE RESIDENCE.
J. WATER MAIN

STANDARD DETAIL	DATE: 10/20/2000 REV: 5/24/2007	SERVICE LINE ¾" AND 1" INSTALLATION BY CONTRACTOR N.T.S.	EL PASO WATER UTILITIES PUBLIC SERVICE BOARD	DETAIL No. 290-4

1 C12.1 TYPICAL SERVICE LINE INSTALLATION
SCALE: N.T.S.



GENERAL NOTES:

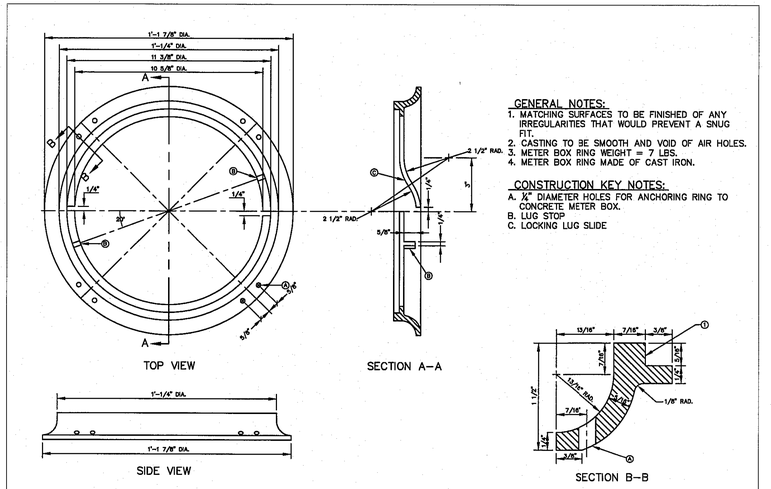
1. INSTALL TO GRADE MATCHING TOP OF CURB.
2. ANGLE VALVE SHALL BE IN LINE WITH THE INLET/OUTLET PORTS OF THE METER BOX.
3. METER BOXES SHALL NOT BE INSTALLED UNDER SIDEWALKS, DRIVEWAYS, OR PROPOSED ABOVE GROUND STRUCTURES.
4. WHERE NO CURBING EXIST, INSTALL BOXES IN ACCESSIBLE LOCATIONS BEYOND LIMITS OF STREET SURFACING, WALKS AND DRIVEWAYS.
5. METER BOX RING AND COVER PER EPWU DETAILS 300 AND 301.
6. WHERE IT IS NECESSARY TO INSTALL A TYPE "A" BOX FOR 3/4" METER UNDER ROADWAYS OF TRAFFIC BEARING SURFACES, BOX SHALL BE ENCASED IN 12" CONCRETE, 3000 PSI. MINIMUM.
7. METER BOX SHALL BE SINGLE UNIT CONSTRUCTION; CONCRETE TO HAVE A MINIMUM 28 DAYS COMPRESSIVE STRENGTH OF 4000 PSI.

CONSTRUCTION KEY NOTES:

A. 3/16", 9 GAUGE BLACK ANNEALED WIRE
B. LUG-STOP C. CAST IRON RING

STANDARD DETAIL	DATE: 4/1994 REV: 8/24/2006	METER BOX TYPE "A" FOR ¾" SERVICE INSTALLATION N.T.S.	EL PASO WATER UTILITIES PUBLIC SERVICE BOARD	DETAIL No. 291

2 C12.1 METER BOX DETAIL
SCALE: N.T.S.



GENERAL NOTES:

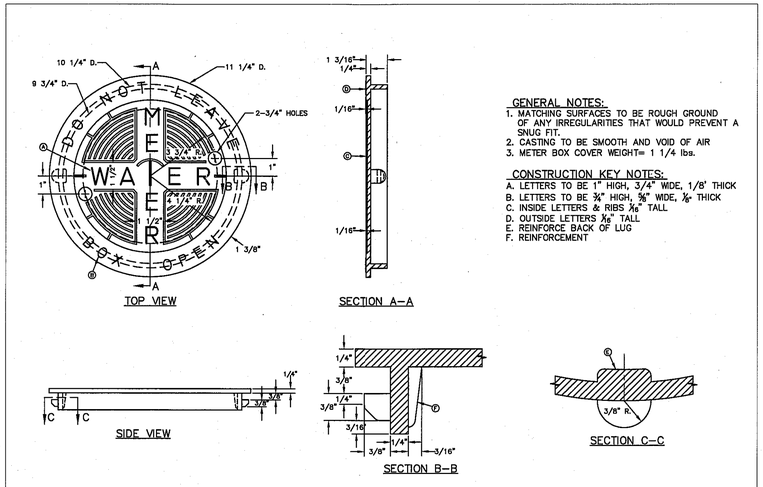
1. MATCHING SURFACES TO BE FINISHED OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
2. CASTING TO BE SMOOTH AND VOID OF AIR HOLES.
3. METER BOX RING WEIGHT = 7 LBS.
4. METER BOX RING MADE OF CAST IRON.

CONSTRUCTION KEY NOTES:

A. ¾" DIAMETER HOLES FOR ANCHORING RING TO CONCRETE METER BOX.
B. LUG STOP
C. LOCKING LUG SLIDE

STANDARD DETAIL	DATE: 1/1995 REV: 8/10/2006	METER BOX RING FOR TYPE "A" & "B" METER BOXES N.T.S.	EL PASO WATER UTILITIES PUBLIC SERVICE BOARD	DETAIL No. 300

4 C12.1 METER BOX RING DETAIL
SCALE: N.T.S.



GENERAL NOTES:

1. MATCHING SURFACES TO BE ROUGH GROUND OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
2. CASTING TO BE SMOOTH AND VOID OF AIR
3. METER BOX COVER WEIGHT= 1 1/4 lbs.

CONSTRUCTION KEY NOTES:

A. LETTERS TO BE 1" HIGH, 3/4" WIDE, 1/8' THICK
B. LETTERS TO BE ¾" HIGH, ⅜" WIDE, ⅛" THICK
C. INSIDE LETTERS & RIBS ⅛" TALL
D. OUTSIDE LETTERS ¼" TALL
E. REINFORCE BACK OF LUG
F. REINFORCEMENT

STANDARD DETAIL	DATE: 4/1994 REV: 8/10/2006	METER BOX COVER FOR TYPE "A" & "B" METER BOXES N.T.S.	EL PASO WATER UTILITIES PUBLIC SERVICE BOARD	DETAIL No. 301

4 C12.1 METER BOX COVER DETAIL
SCALE: N.T.S.

THE CITY OF EL PASO TEXAS
Final Approval

REFERENCES – BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.

ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

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ENGINEER'S SEAL

JORGE L. KOZAKIEWICZ 85075 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS

SCALE
Horizontal:
Vertical:
Contour Interval: N/A

DATE: MAY 2014
DESIGN BY: F.Z./ J.M.
DRAWN BY: J.L.A.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260-017-LD

PROJECT TITLE

VENTANAS SUBDIVISION
UNIT SEVEN
SUBDIVISION IMPROVEMENTS

SHEET TITLE

WATER DETAILS

(SHEET 1 OF 5)

SHEET NO.

C12.1

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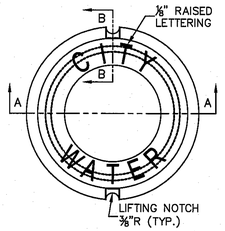
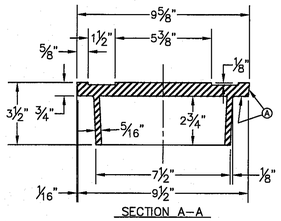
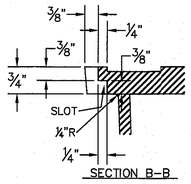


GENERAL NOTES:
1. CASTINGS TO SMOOTH AND VOID OF AIR HOLES.
2. WEIGHT OF COVER IS 18 POUNDS.

CONSTRUCTION KEY NOTES:
A. TO BE ROUGH GROUND OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.



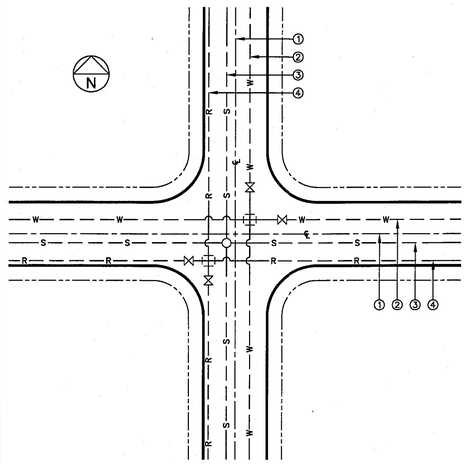
SECTION A–A



SECTION B–B

STANDARD DETAIL	DATE: 2/16/2006 REV: 12/14/2007	BONNET BOX COVER (FLIP RESISTANT) N.T.S.	EL PASO WATER UTILITIES / PUBLIC SERVICE BOARD	DETAIL No. 269–2

1 C12.2 BONNET BOX COVER (FLIP RESISTANT)
SCALE: N.T.S.



GENERAL NOTES:
1. REFERENCE CENTERLINE SHALL BE CENTERLINE OF RIGHT OF WAY.
2. WATER LINES SHALL BE LOCATED ON NORTH OR EAST SIDES OF DEDICATED STREETS OR ALLEYS.
3. SEWER LINES SHALL BE LOCATED ON SOUTH OR WEST SIDES OF DEDICATED STREETS OR ALLEYS.
4. RECLAIMED LINES SHALL BE LOCATED ON SOUTH OR WEST SIDES OF DEDICATED STREETS OR ALLEYS.

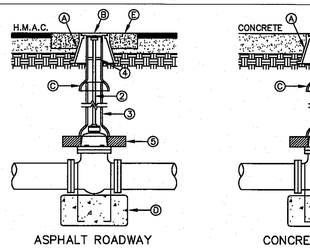
CONSTRUCTION KEY NOTES:
A. DISTANCES FROM CENTERLINE VARY AND SHALL BE ACCORDING TO THE FOLLOWING:

PIPELINE LOCATION WITHIN NEW RIGHT–OF–WAY			
RIGHT–OF–WAY WIDTH*	OFFSET FROM CENTERLINE**		
	WATER	SEWER	RECLAIMED
36 FT.	9 FT.	1 FT.	6 FT.
45 FT.	7.5 FT.	7.5 FT.	8 FT.
52 FT.	8 FT.	5 FT.	10 FT.
64 FT.	10 FT.	5 FT.	10 FT.
72 FT.	10 FT.	5 FT.	10 FT.
76 FT.	10 FT.	5 FT.	10 FT.
84 FT.	22 FT.	5 FT.	10 FT.
110 FT.	25 FT.	15 FT.	20 FT.

*RIGHT OF WAY WIDTH SUBJECT TO CHANGE. VERIFY WITH CITY SUBDIVISION ORDINANCE.
**DISTANCES MAY BE MODIFIED AS NEEDED TO MEET TCEQ SEPARATION REQUIREMENTS. REFER TO DETAILS 160 THRU 163 FOR ADDITIONAL INFORMATION.

STANDARD DETAIL	DATE: 03/1994 REV: 3/28/2007	LOCATION FOR UTILITY LINES N.T.S.	EL PASO WATER UTILITIES / PUBLIC SERVICE BOARD	DETAIL No. 140

2 C12.2 STANDARD LOCATION FOR EXTENSIONS DETAIL
SCALE: N.T.S.

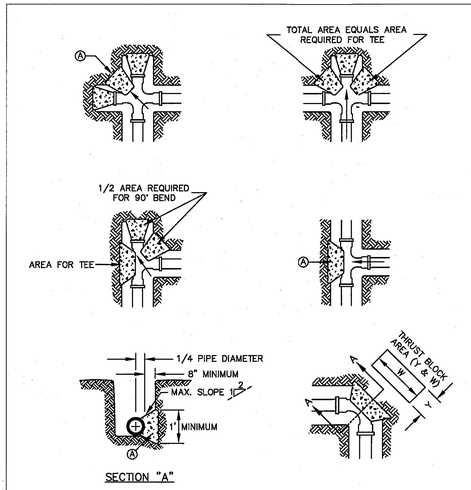


GENERAL NOTES:
1. VALVE TYPE AND VALVE ENDS SHALL BE AS SHOWN ON THE PLANS.
2. ALL BURIED VALVES 5' AND DEEPER SHALL BE PROVIDED WITH SOLID STEEL EXTENSION STEM OPERATOR WITH 2" SQUARE AWWA NUT WITHIN 36" OF VALVE BOX COVER. NUT IS TO INDICATE DIRECTION OF ROTATION TO OPEN VALVE.
3. 8" DIA. MINIMUM VITRIFIED CLAY OR SDR 35 P.V.C. PIPE, PIPE SHALL NOT REST ON VALVE BODY.
4. ⅛" THICK STEEL TRASH RING VALVE BOX INSIDE DIAMETER MINUS ½".
5. MINIMUM 2½" CONCRETE OR BRICK ALL AROUND.
6. CLEAN BONNET BOX OF ALL DEBRIS AND SOIL.
7. COAT BURIED PIPE AND BONNET BOX PER SPECIFICATIONS, VALVE SHALL BE WRAPPED IN POLYETHYLENE IN ACCORDANCE WITH SPECIFICATIONS.

CONSTRUCTION KEY NOTES:
A. BONNET BOX (SEE DETAIL 268).
B. BONNET BOX COVER (SEE DETAILS 269–1 & 269–2)
C. FINAL EXTENSION TO BONNET BOX SHALL BE WITH BELL AND SPIGOT ENDS (CLAY OR SDR 35 P.V.C. SPOOL).
D. CONCRETE VALVE ANCHOR (SEE DETAIL 271).
E. CONCRETE COLLAR (SEE DET 184–1) FLUSH WITH TOP OF H.M.A.C.
F. BONNET BOX FLUSH WITH TOP OF CONCRETE, CONCRETE COLLAR NOT NEEDED.
G. CONCRETE APRON (SEE DETAIL 184–2) FLUSH WITH BONNET BOX AND 2" ABOVE NATURAL GROUND.

STANDARD DETAIL	DATE: 5/1994 REV: 6/22/2009	GATE VALVE INSTALLATION N.T.S.	EL PASO WATER UTILITIES / PUBLIC SERVICE BOARD	DETAIL No. 260

3 C12.2 GATE VALVE INSTALLATION
SCALE: N.T.S.



SECTION "A"

GENERAL NOTES:
1. TABLE IS BASED ON 2000#/SQ. FT. SOIL. IF CONDITIONS ARE FOUND TO INDICATE SOIL BEARING IS LESS, THE AREAS SHALL BE INCREASED ACCORDINGLY. 2. AREAS FOR PIPE LARGER THAN 18" SHALL BE CALCULATED.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSION STRENGTH OF 2500 PSI.
4. THRUST BLOCK IS TO EXTEND TO UNDISTURBED SOIL.
5. SIZE MAY BE DECREASED FOR LESSER DEGREE BENDS AS DETERMINED BY ENGINEER.
6. KEEP CONCRETE CLEAR OF M.J. OR BELL AND SPIGOT JOINTS.
7. BLOCK IN A SIMILAR MANNER AT TEES, HYDRANTS, PLUG OR OTHER LOCATIONS AS REQUIRED.
8. WHEN NECESSARY ADDITIONAL THRUST RESTRAINT METHODS MAY BE USED, SUCH AS MECHANICAL JOINT RESTRAINTS, TIE–RODS (INSTALLED PER MANUFACTURERS' RECCOMMENDATIONS) OR OTHER APPROVED METHODS.

CONSTRUCTION KEY NOTES:
A. LENGTH "Y & W" AS REQUIRED TO OBTAIN BEARING AREA AGAINST UNDISTURBED SOIL.
B. ADDITIONAL EXCAVATION IF NECESSARY TO OBTAIN REQUIRED BEARING AREA.
C. MINIMUM THRUST BLOCK AREA REQUIREMENTS FOR (Y & W) AS FOLLOWS:

PIPE SIZE	WATER PIPE	
	TEE, DEAD END 90° BEND	45° AND 22 1/2° BENDS
4" & LESS	3 SQ. FEET	3 SQ. FEET
6"	4 SQ. FEET	3 SQ. FEET
8"	6 SQ. FEET	3 SQ. FEET
10"	9 SQ. FEET	5 SQ. FEET
12"	13 SQ. FEET	7 SQ. FEET
16"	23 SQ. FEET	12 SQ. FEET
18"	29 SQ. FEET	15 SQ. FEET

STANDARD DETAIL	DATE: 2/1994 REV: 8/7/2006	CONCRETE THRUST BLOCKING N.T.S.	EL PASO WATER UTILITIES / PUBLIC SERVICE BOARD	DETAIL No. 270

4 C12.2 THRUST BLOCKING
SCALE: N.T.S.

REFERENCES – BENCHMARKS

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ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

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ENGINEER'S SEAL

THE STATE OF TEXAS — JORGE L. ACEVEDO — 85075 — LICENSED PROFESSIONAL ENGINEER

SCALE
Horizontal:
Vertical:
Contour Interval: N/A

DATE: MAY 2014
DESIGN BY: F.Z./J.M.
DRAWN BY: J.M.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260–017–LD

PROJECT TITLE

VENTANAS SUBDIVISION
UNIT SEVEN
SUBDIVISION IMPROVEMENTS

SHEET TITLE

WATER DETAILS

(SHEET 2 OF 5)

SHEET NO.

C12.2

THE CITY OF EL PASO TEXAS — Final Approval

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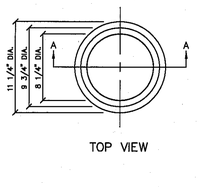
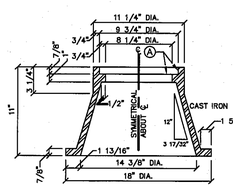
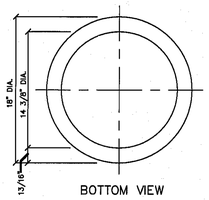


TOP VIEW



SECTION A-A



BOTTOM VIEW

GENERAL NOTES:

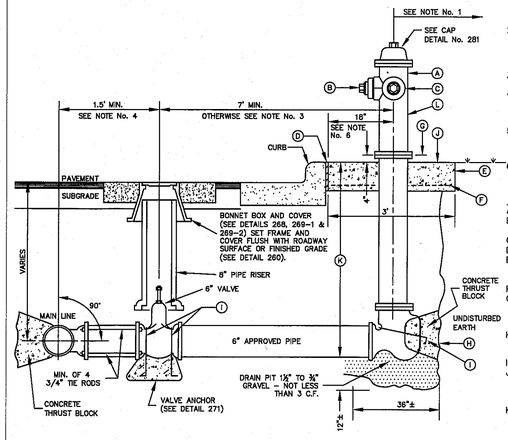
1. CASTING TO BE SMOOTH AND VOID OF AIR HOLES.
2. WEIGHT OF BONNET BOX IS 95 POUNDS.

CONSTRUCTION KEY NOTES:

A. TO BE ROUGH GROUND OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.

STANDARD DETAIL	FEB. 1994 REV:	BONNET BOX N.T.S.	EL PASO WATER UTILITIES PUBLIC SERVICE BOARD	DETAIL No. 268

1 C12.3 **BONNET BOX**
SCALE: N.T.S.



GENERAL NOTES:

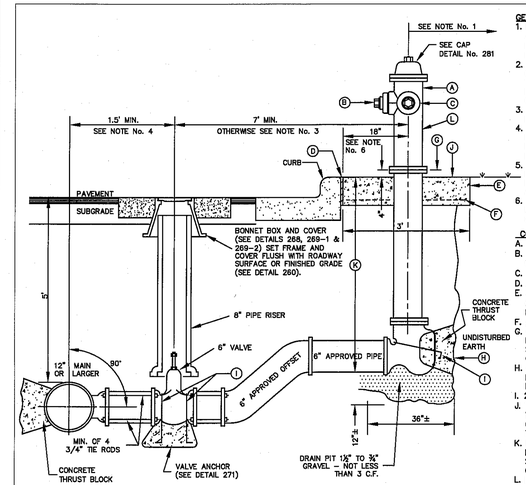
1. NO OBSTRUCTIONS WILL BE PERMITTED WITHIN 5 FT. IN ALL DIRECTIONS OF FIRE HYDRANT (PER EL PASO MUNICIPAL CODE, TITLE 12). FIRE HYDRANT SHALL NOT BE PLACED IN WHEEL CHAIR RAMP OR DRIVEWAY.
2. FIRE HYDRANT SHALL BE LOCATED AT THE BEGINNING OF CURB RETURN OR AT THE PROPERTY LINE COMMON TO ADJOINING LOTS, UNLESS OTHERWISE SHOWN ON PLANS. REFER TO DETAIL No. 282 FOR SPECIAL CASES.
3. WHERE DISTANCE IS LESS THAN 7', HYDRANT SHALL BE INSTALLED IN ACCORDANCE WITH DETAIL No. 282.
4. VALVE MAY BE CONNECTED TO TEE AT MAIN LINE. USE FLANGED MECHANICAL JOINT ENDS. WHERE SPOOL IS REQUIRED BETWEEN TEE AND VALVE, USE FLANGED MECHANICAL ENDS WITH ¾" DIAMETER TIE RODS.
5. COMPLY WITH REQUIREMENTS OF AWWA C-502, DRY BARREL FIRE HYDRANTS AND AWWA C-550, PROTECTIVE EPOXY INTERIOR COATINGS FOR VALVES AND HYDRANTS.
6. WHEN INSTALLATION IS WITHIN TxDOT RIGHT OF WAY, HYDRANT SHALL NOT BE PLACED IN SIDEWALK AREA OR ANY CLOSER THAN 5' FROM BACK OF CURB.

CONSTRUCTION KEY NOTES:

A. FIRE HYDRANT PER SPEC'S.
B. PUMPER NOZZLE 4" TO BE FACING THE TRAVELED WAY, UNLESS OTHERWISE NOTED IN THE PLANS.
C. HOSE NOZZLE 2½".
D. ½" PREMOLDED EXPANSION JOINT WITH 1" TOP FILLER.
E. 3'x3'x6" CONC. SQ. PAD, TO BE CONSTRUCTED AROUND FIRE HYDRANT'S CENTER LINE WHEN NOT LOCATED WITHIN SIDEWALK OR CONC. AREA.
F. #10; 6/6 WWF.
G. CONTROLLED ELEVATION LINE, LEVEL IN ALL DIRECTIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR SETTING TOP FLANGE OF THE HYDRANT TO CONTROLLED ELEVATION.
H. CONC. THRUST BLOCK, APPROX. 2'x2'x3' TO BE POURED AGAINST UNDISTURBED EARTH, F.H. WEEP HOLE MUST BE UNOBSTRUCTED.
I. 2"x1/4" STEEL ANCHOR PINS.
J. TOP OF SLAB SHALL BE AT CURB LEVEL 4" BELOW THE BREAK LINE OF THE HYDRANT. UNDER SPECIAL CONDITIONS THE ENGINEER MAY ALLOW VARIATIONS TO THIS CONSTRUCTION.
K. MAXIMUM OF ONE (1) SPOOL EXTENSION ALLOWED TO MAINTAIN THE CONTROLLED ELEVATION LINE TO TOP OF SLAB. ADDITIONAL ADJUSTMENT MUST ME MADE WITH OFFSETS & FITTINGS AS NEEDED.
L. REQUIRED - DAVIDSON ANTI TERRORISM CORROSION RESISTANT VALVE KIT (DATV).

STANDARD DETAIL	DATE: 2/1993 REV: 10/1/2013	FIRE HYDRANT INSTALLATION N.T.S.	EL PASO WATER UTILITIES PUBLIC SERVICE BOARD	DETAIL No. 280-1

2 C12.3 **STANDARD FIRE HYDRANT INSTALLATION**
SCALE: N.T.S.



GENERAL NOTES:

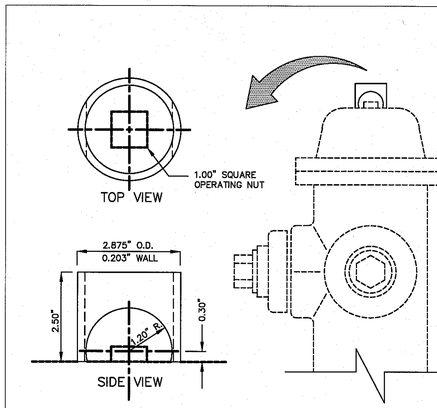
1. NO OBSTRUCTIONS WILL BE PERMITTED WITHIN 5 FT. IN ALL DIRECTIONS OF FIRE HYDRANT (PER EL PASO MUNICIPAL CODE, TITLE 12). FIRE HYDRANT SHALL NOT BE PLACED IN WHEEL CHAIR RAMP OR DRIVEWAY.
2. FIRE HYDRANT SHALL BE LOCATED AT THE BEGINNING OF CURB RETURN OR AT THE PROPERTY LINE COMMON TO ADJOINING LOTS, UNLESS OTHERWISE SHOWN ON PLANS. REFER TO DETAIL No. 282 FOR SPECIAL CASES.
3. WHERE DISTANCE IS LESS THAN 7', HYDRANT SHALL BE INSTALLED IN ACCORDANCE WITH DETAIL No. 282.
4. VALVE MAY BE CONNECTED TO TEE AT MAIN LINE. USE FLANGED MECHANICAL JOINT ENDS. WHERE SPOOL IS REQUIRED BETWEEN TEE AND VALVE, USE FLANGED MECHANICAL ENDS WITH ¾" DIAMETER TIE RODS.
5. COMPLY WITH REQUIREMENTS OF AWWA C-502, DRY BARREL FIRE HYDRANTS AND AWWA C-550, PROTECTIVE EPOXY INTERIOR COATINGS FOR VALVES AND HYDRANTS.
6. WHEN INSTALLATION IS WITHIN TxDOT RIGHT OF WAY, HYDRANT SHALL NOT BE PLACED IN SIDEWALK AREA OR ANY CLOSER THAN 5' FROM BACK OF CURB.

CONSTRUCTION KEY NOTES:

A. FIRE HYDRANT PER SPEC'S.
B. PUMPER NOZZLE 4" TO BE FACING THE TRAVELED WAY, UNLESS OTHERWISE NOTED IN THE PLANS.
C. HOSE NOZZLE 2½".
D. ½" PREMOLDED EXPANSION JOINT WITH 1" TOP FILLER.
E. 3'x3'x6" CONC. SQ. PAD, TO BE CONSTRUCTED AROUND FIRE HYDRANT'S CENTER LINE WHEN NOT LOCATED WITHIN SIDEWALK OR CONC. AREA.
F. #10; 6/6 WWF.
G. CONTROLLED ELEVATION LINE, LEVEL IN ALL DIRECTIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR SETTING TOP FLANGE OF THE HYDRANT TO CONTROLLED ELEVATION.
H. CONC. THRUST BLOCK, APPROX. 2'x2'x3' TO BE POURED AGAINST UNDISTURBED EARTH, F.H. WEEP HOLE MUST BE UNOBSTRUCTED.
I. 2"x1/4" STEEL ANCHOR PINS.
J. TOP OF SLAB SHALL BE AT CURB LEVEL 4" BELOW THE BREAK LINE OF THE HYDRANT. UNDER SPECIAL CONDITIONS THE ENGINEER MAY ALLOW VARIATIONS TO THIS CONSTRUCTION.
K. MAXIMUM OF ONE (1) SPOOL EXTENSION ALLOWED TO MAINTAIN THE CONTROLLED ELEVATION LINE TO TOP OF SLAB. ADDITIONAL ADJUSTMENT MUST ME MADE WITH OFFSETS & FITTINGS AS NEEDED.
L. REQUIRED - DAVIDSON ANTI TERRORISM CORROSION RESISTANT VALVE KIT (DATV).

STANDARD DETAIL	DATE: 12/1995 REV: 10/1/2013	FIRE HYDRANT INSTALLATION (12" MAIN OR LARGER) N.T.S.	EL PASO WATER UTILITIES PUBLIC SERVICE BOARD	DETAIL No. 280-2

3 C12.3 **12" MAIN OR LARGER FIRE HYDRANT INSTALLATION**
SCALE: N.T.S.

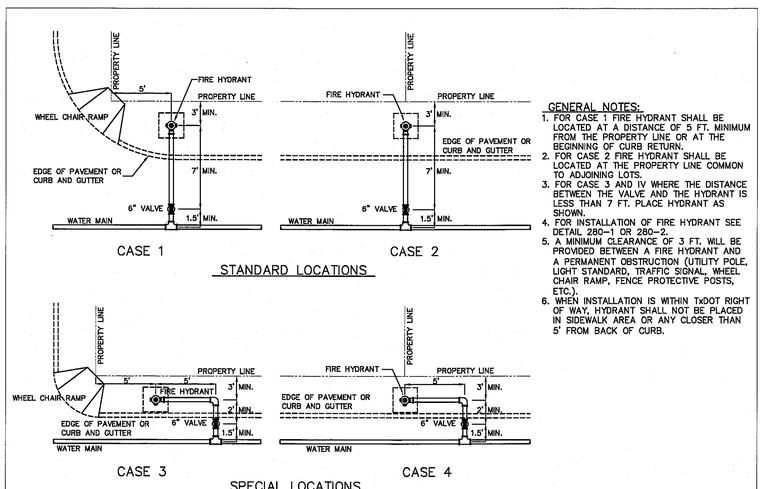


GENERAL NOTES:

1. STEEL CAPS TO BE MACHINED FROM STEEL PIPE:
   NOMINAL SIZE = 2 1/2" DIA.
   OUTSIDE DIA. = 2.875"
   WALL THICKNESS = 0.203
   LBS/FT. = 5.79
2. CAPS ARE TO BE TACK WELDED OR BRAZED ON FIRE HYDRANT BONNET OR WEATHER CAP.
3. THE CAPS OVER THE OPERATING NUT WILL PREVENT ACCESS TO THE UNAUTHORIZED USE OF HYDRANT WATER.

STANDARD DETAIL	FEB. 1993 REV: FEB. 1994	FIRE HYDRANT CAP N.T.S.	EL PASO WATER UTILITIES PUBLIC SERVICE BOARD	DETAIL No. 281

4 C12.3 **FIRE HYDRANT CAP**
SCALE: N.T.S.



GENERAL NOTES:

1. FOR CASE 1 FIRE HYDRANT SHALL BE LOCATED AT A DISTANCE OF 5 FT. MINIMUM FROM THE PROPERTY LINE OR AT THE BEGINNING OF CURB RETURN.
2. FOR CASE 2 FIRE HYDRANT SHALL BE LOCATED AT THE PROPERTY LINE COMMON TO ADJOINING LOTS.
3. FOR CASE 3 AND IV WHERE THE DISTANCE BETWEEN THE VALVE AND THE HYDRANT IS LESS THAN 7 FT. PLACE HYDRANT AS SHOWN.
4. FOR INSTALLATION OF FIRE HYDRANT SEE DETAIL 280-1 OR 280-2.
5. A MINIMUM CLEARANCE OF 3 FT. WILL BE PROVIDED BETWEEN A FIRE HYDRANT AND A PERMANENT OBSTRUCTION (UTILITY POLE, LIGHT STANDARD, TRAFFIC SIGNAL, WHEEL CHAIR RAMP, FENCE PROTECTIVE POSTS, ETC.).
6. WHEN INSTALLATION IS WITHIN TxDOT RIGHT OF WAY, HYDRANT SHALL NOT BE PLACED IN SIDEWALK AREA OR ANY CLOSER THAN 5' FROM BACK OF CURB.

STANDARD DETAIL	DATE: 5/1994 REV: 6/25/2007	FIRE HYDRANT LOCATIONS N.T.S.	EL PASO WATER UTILITIES PUBLIC SERVICE BOARD	DETAIL No. 282

5 C12.3 **FIRE HYDRANT LOCATIONS**
SCALE: N.T.S.

Final Approval

REFERENCES - BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.

ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

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ENGINEER'S SEAL

THE STATE OF TEXAS — JORGE L. ACHARAN — 85075 — LICENSED PROFESSIONAL ENGINEER — 7-14-14

SCALE
Horizontal: N/A
Vertical: N/A
Contour Interval: N/A

DATE: MAY 2014
DESIGN BY: F.E./J.M.
DRAWN BY: J.M.
CHKD BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260-017-LD

PROJECT TITLE

VENTANAS SUBDIVISION
UNIT SEVEN
SUBDIVISION IMPROVEMENTS

SHEET TITLE

WATER DETAILS

(SHEET 3 OF 5)

SHEET NO.

C12.3

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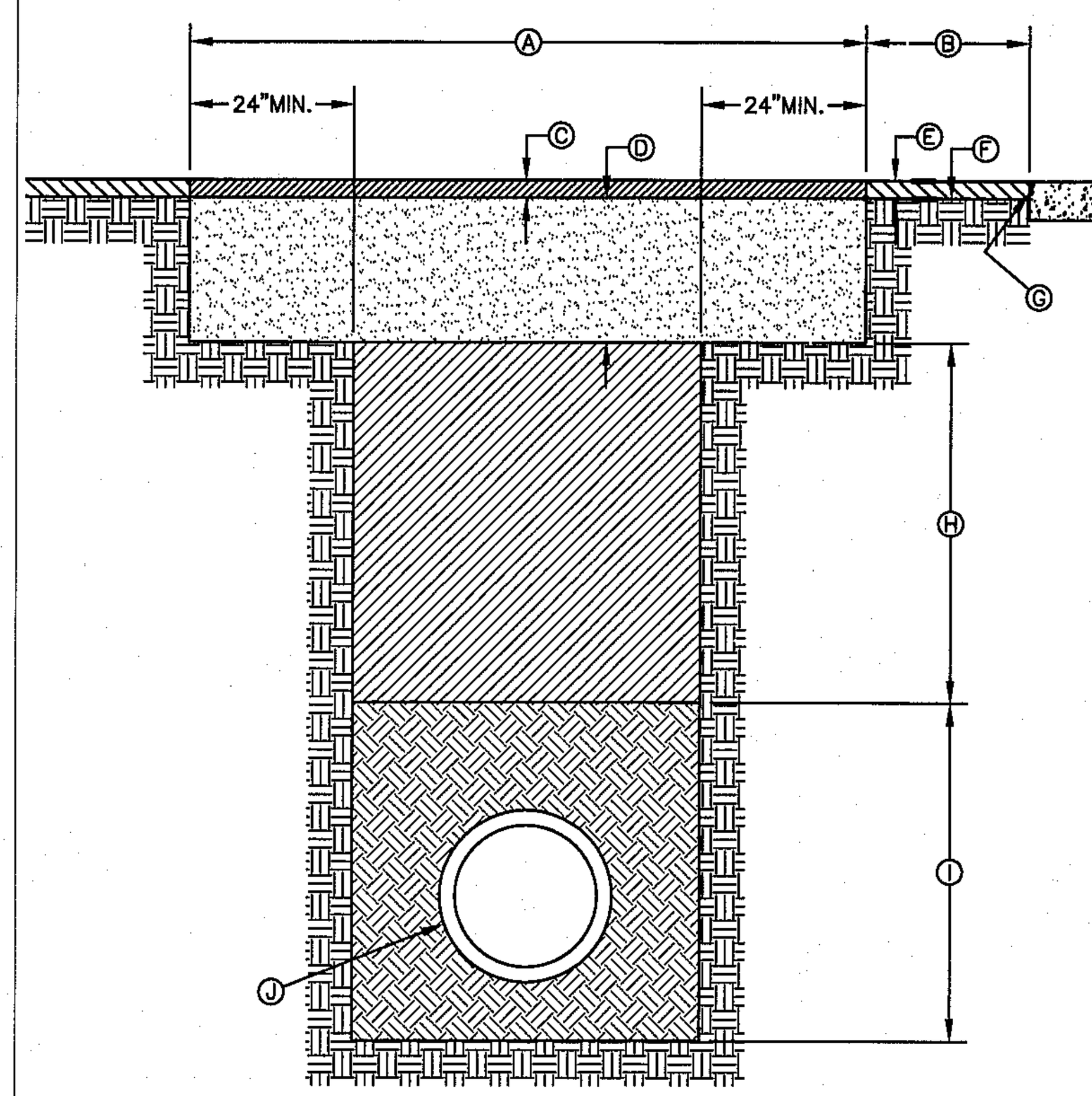


GENERAL NOTES:

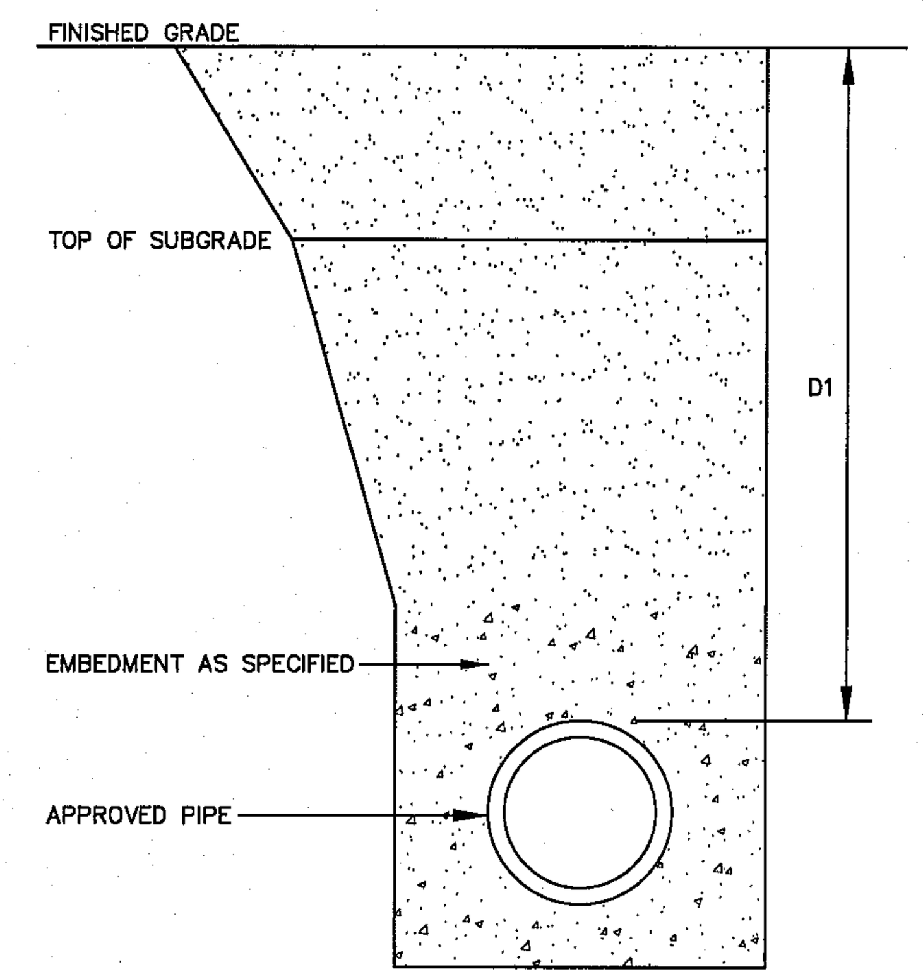
1. ALL ASPHALT CUTS MUST BE SAW CUT.
2. SOIL CEMENT SLURRY SHALL BE ALLOWED TO CURE BEFORE PAVING OR OPENING TO ALL TRAFFIC.

CONSTRUCTION KEY NOTES:

A. REFER TO SPECS FOR LIMIT OF PAVING WIDTH.
B. DIMENSION VARIES. WHERE GUTTER FACE, ETC. IS WITHIN 3' OF SAW CUT EDGE, CONTRACTOR SHALL REMOVE & REPLACE EXISTING HMAC IN THIS AREA.
C. 2" ASPHALT MIN.
D. 12" THICK SOIL CEMENT BACKFILL (2 SACK PER C.Y. OF SOIL).
E. EXISTING HMAC–THICKNESS MAY VARY.
F. EXISTING BASE COURSE–THICKNESS MAY VARY.
G. EXISTING GUTTER FACE, EDGE OF PAVEMENT OR BEGINNING OF SHOULDER.
H. BACKFILL DEPTH VARIES, REFER TO REQUIREMENTS LISTED IN EMBEDMENT DETAILS (DETAIL 171 THRU DETAIL 173).
I. PIPE BEDDING AS SPECIFIED, REFER TO APPROPRIATE EMBEDMENT DETAIL (DETAIL 171 THRU DETAIL 173).
J. APPROVED PIPE.

STANDARD DETAIL | DATE: 10/1992 REV: 5/9/2011 | PAVEMENT REPLACEMENT N.T.S. | EL PASO WATER UTILITIES PUBLIC SERVICE BOARD | DETAIL No. 179

1 C12.4 PAVEMENT REPAIR DETAIL
SCALE: N.T.S.



GENERAL NOTES:

1. REFER TO UTILITY DETAIL FOR PAVEMENT REPLACEMENT AND BACKFILL REQUIREMENTS.
2. TRENCH SAFETY SYSTEMS SHALL BE USED WHEN TRENCH DEPTH EXCEEDS 5 FEET.

CONSTRUCTION KEY NOTES:

A. COVER FOR WATER MAINS SHALL DEPEND ON THE PIPE SIZE AND THE FOLLOWING INSTALLATION CONDITIONS,

CONDITION A – NORMAL LINE INSTALLATION, STREET AND DRAINAGE PROJECTS, WATERLINE RELOCATION

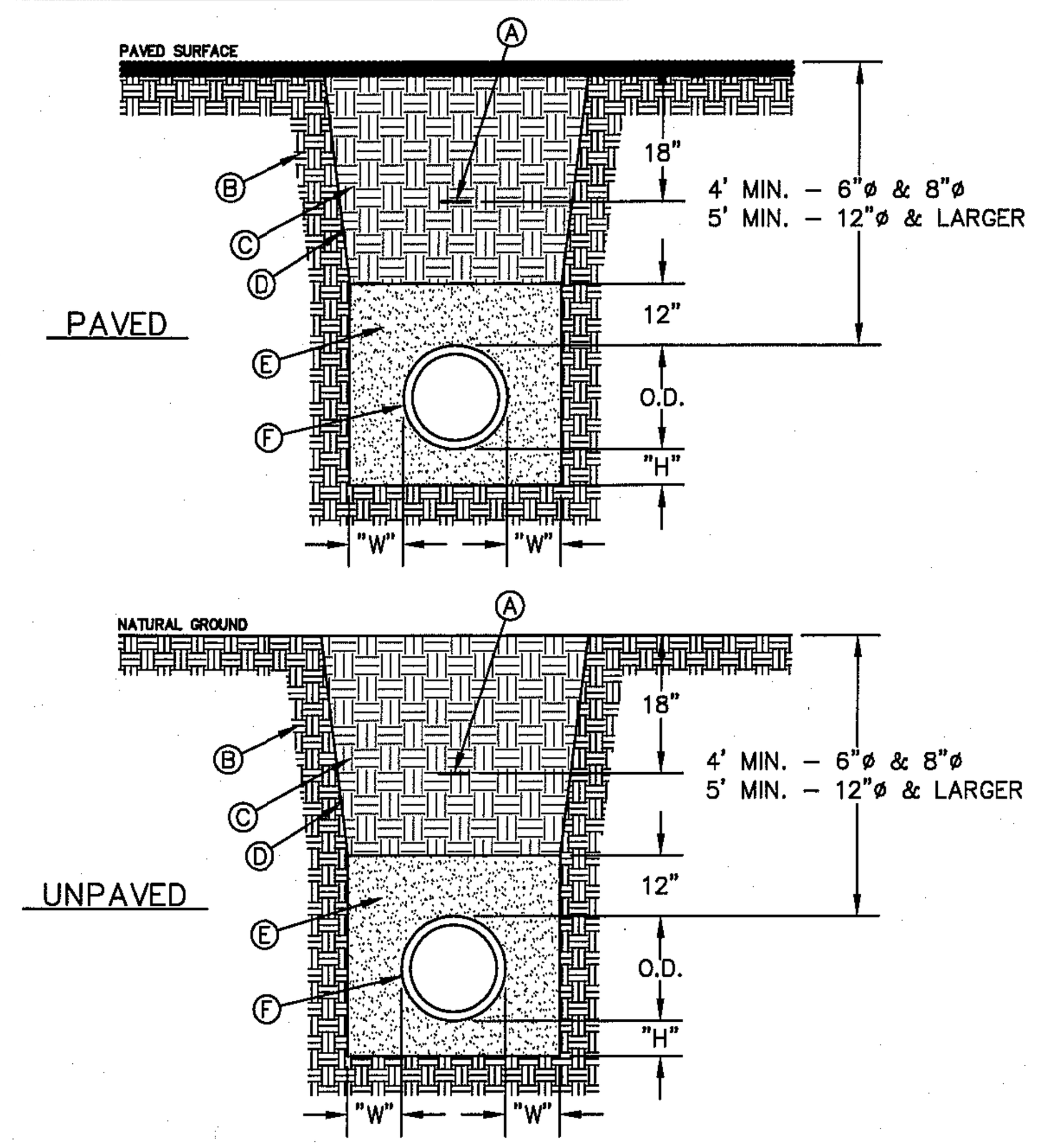
CONDITION B – NEW SUBDIVISIONS, NON–PAVED AREA

AND SHALL BE AS FOLLOWS.

PIPE SIZE	CONDITION	DIMENSION
6", 8"	A	D1 = 4'
6", 8"	B	D1 = 4'
12" & LARGER	A OR B	D1 = 5'

STANDARD DETAIL | FEB. 1994 REV: 8/3/2006 | COVER FOR WATER MAINS N.T.S. | EL PASO WATER UTILITIES PUBLIC SERVICE BOARD | DETAIL No. 250

2 C12.4 STANDARD COVER FOR WATER MAINS
SCALE: N.T.S.



GENERAL NOTES:

1. BEDDING FOR PRESSURE AND GRAVITY PIPE IN DRY CONDITIONS.
2. PROVIDE TRENCH SAFETY SYSTEM FOR TRENCH DEPTHS GREATER THAN 5 FEET.
3. IF THE NATIVE MATERIAL EXCAVATED FROM THE TRENCH IS UNSUITABLE AS BACKFILL MATERIAL, OR THE REQUIRED COMPACTION IS UNATTAINABLE, THE CONTRACTOR SHALL, AT HIS EXPENSE, IMPORT SELECT MATERIAL TO BE MIXED WITH OR USED IN PLACE OF THE NATIVE MATERIAL. SELECT MATERIAL MUST BE APPROVED BY EPWU. SUBSTITUTE SOIL CEMENT SLURRY (1–SACK) IF REQUIRED IN SPECS.

CONSTRUCTION KEY NOTES:

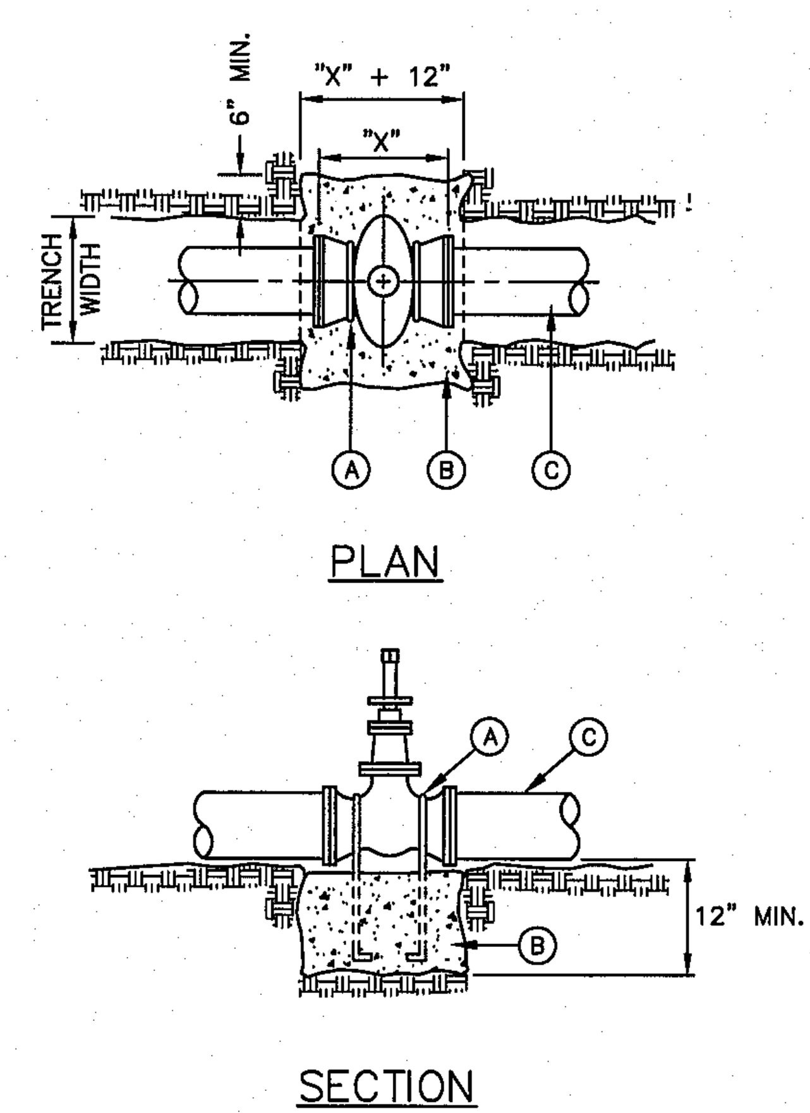
A. APPROVED MARKING TAPE.
B. UNDISTURBED STABLE MATERIAL.
C. NATIVE MATERIAL BACKFILL.
PAVED CONDITION: COMPACT TO 90% DENSITY PER ASTM D–1557 MODIFIED PROCTOR.
UNPAVED CONDITION: COMPACT TO 85% DENSITY PER ASTM D–1557 MODIFIED PROCTOR.
(*SEE NOTE #3 IF THESE PREVIOUS CONDITIONS CANNOT BE MET.)
D. SLOPE TRENCH IN SANDY SOIL CONDITIONS.
E. USE CLASS II OR CLASS III SAND PER ASTM D–2487. NATIVE MATERIAL OR IMPORTED SELECT MATERIAL MEETING OR EXCEEDING THIS REQUIREMENT MAY BE USED. COMPACT TO 85% DENSITY PER ASTM D–1557 MODIFIED PROCTOR (OR 90% D–698 STANDARD PROCTOR).
F. APPROVED PIPE.
G. TRENCH DIMENSIONS AS FOLLOWS:

PIPE DIAMETER	"H"
6" – 30"	4"
GREATER THAN 30"	6"

PIPE DIAMETER	"W"
6" – 30"	8"
GREATER THAN 30"	12"

STANDARD DETAIL | DATE: 4/24/2007 REV: 2/21/2011 | EMBEDMENT CLASS "A" FOR PRESSURE PIPE AND GRAVITY PIPE DRY CONDITIONS N.T.S. | EL PASO WATER UTILITIES PUBLIC SERVICE BOARD | DETAIL No. 171

3 C12.4 BEDDING CLASS DETAILS FOR P.V.C. PRESSURE PIPE
SCALE: N.T.S.



GENERAL NOTES:

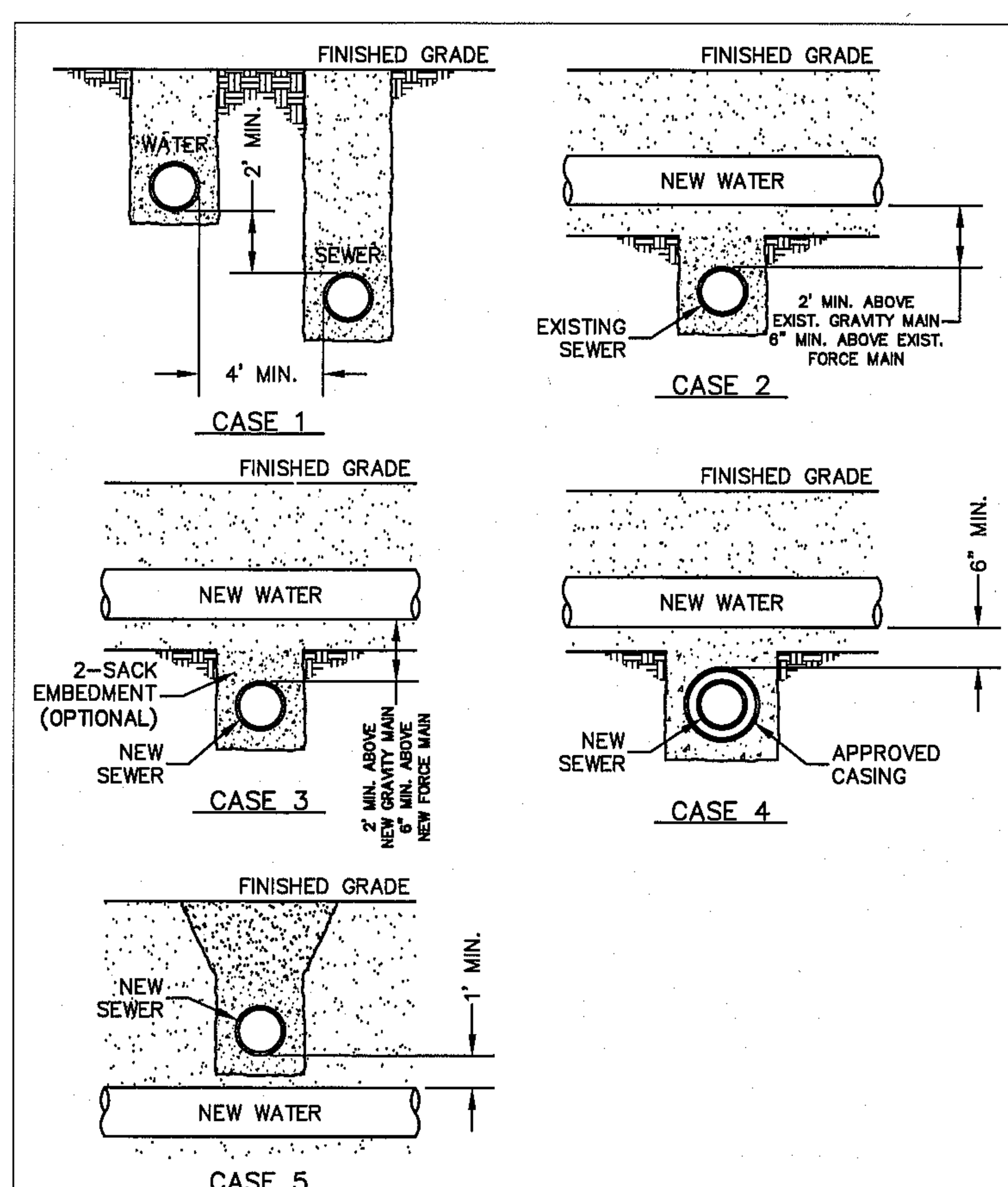
1. THE ENGINEER SHALL PROVIDE DESIGN FOR ALL VALVES GREATER THAN 12".
2. COMPLY WITH REQUIREMENTS OF AWWA C–550, PROTECTIVE EPOXY INTERIOR COATINGS FOR VALVES.

CONSTRUCTION KEY NOTES:

A. TWO No. 5 REBAR HAIR PINS. PAINT UNEMBEDDED PORTION OF REBARS WITH TWO COATS OF COAL TAR EPOXY.
B. CONCRETE VALVE SUPPORT, 2500 PSI. CONCRETE.
C. APPROVED PIPE.

STANDARD DETAIL | DATE: 2/1994 REV: 12/12/2011 | VALVE ANCHOR N.T.S. | EL PASO WATER UTILITIES PUBLIC SERVICE BOARD | DETAIL No. 271

4 C12.4 VALVE ANCHOR
SCALE: N.T.S.



GENERAL NOTES:

1. NEW OR EXISTING POTABLE WATER AND SANITARY SEWER MAINS.
2. SEPARATION DISTANCES SHALL FOLLOW TEXAS COMMISSION ON ENVIRONMENTAL QUALITY STANDARD REQUIREMENTS.

CONSTRUCTION KEY NOTES

WHEN STANDARD NINE (9) FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, SEPARATION SHALL BE DETERMINED ACCORDING TO THE FOLLOWING CONDITIONS:

CASE 1. GRAVITY SANITARY SEWER MAIN OR FORCE MAIN PARALLEL TO POTABLE WATER MAIN (PER TCEQ §290.44(e)(4)(A)).
- LOCATION: WATER ABOVE SEWER OR FORCE MAIN.
- SEWER MATERIALS: EXISTING GRAVITY MAIN (PVC SDR35 OR CLAY) OR FORCE MAIN TO REMAIN IF NOT LEAKING-IF LEAKING, MUST BE REPLACED WITH PVC (150 PSI) OR DI. NEW GRAVITY MAIN OR FORCE MAIN REQUIRES PVC (150 PSI) OR DI.
- SEPARATE TRENCHES SHALL BE USED.

CASE 2. NEW POTABLE WATER MAIN CROSSING EXISTING GRAVITY SANITARY SEWER MAIN OR EXISTING FORCE MAIN (PER TCEQ §290.44(e)(4)(B)(I) AND §290.44(e)(4)(B)(II).
- LOCATION: WATER ABOVE SEWER OR FORCE MAIN.
- SEWER MATERIALS: EXISTING GRAVITY MAIN (PVC SDR35 OR CLAY) OR FORCE MAIN TO REMAIN IF NOT LEAKING-IF LEAKING, REPLACE ONE PIPE SEGMENT PER CASE 3 REQUIREMENTS.
- CENTER ONE SEGMENT OF WATER PIPE OVER SEWER MAIN OR FORCE MAIN.
- MINIMUM PIPE SEGMENT LENGTH FOR WATER PIPE SHALL BE 18 FEET LONG.

CASE 3. NEW POTABLE WATER MAIN CROSSING NEW GRAVITY SANITARY SEWER MAIN OR NEW FORCE MAIN (PER TCEQ §290.44(e)(4)(B)(iii), §290.44(e)(4)(B)(v) AND §290.44(e)(4)(B)(iv)(I).
- LOCATION: WATER ABOVE SEWER OR FORCE MAIN.
- SEWER MATERIALS: NEW GRAVITY MAIN - PVC (150 PSI) or DI REQUIRED, CENTER UNDER WATER MAIN. NEW FORCE MAIN - PVC (150PSI) OR DI REQUIRED. FORCE MAIN TO BE EMBEDDED IN CEMENT STABILIZED BACKFILL THE TOTAL LENGTH OF ONE PIPE PLUS 12" BEYOND THE JOINT AT EACH END.
- CENTER ONE SEGMENT OF WATER PIPE OVER SEWER PIPE OR FORCE MAIN.
- MINIMUM PIPE SEGMENT LENGTH FOR WATER AND SEWER SHALL BE 18 FEET LONG.
- FOR NEW GRAVITY SEWER ONLY, IN LIEU OF PVC (150PSI) OR DI, INSTALL ONE PIPE SEGMENT OF SDR35; SEWER MAIN MUST BE EMBEDDED IN CEMENT STABILIZED BACKFILL THE TOTAL LENGTH OF ONE PIPE PLUS 12" BEYOND THE JOINT AT EACH END.

CASE 4. NEW POTABLE WATER MAIN CROSSING NEW GRAVITY SANITARY SEWER MAIN OR NEW FORCE MAIN (PER TCEQ §290.44(e)(4)(B)(iv)(II)).
- LOCATION: WATER ABOVE SEWER OR FORCE MAIN.
- SEWER MATERIALS: NEW GRAVITY MAIN - SDR35 ACCEPTABLE, NEW FORCE MAIN - PVC (150PSI) OR DI REQUIRED. IN ADDITION, SEWER MAIN OR FORCE MAIN MUST BE ENCASED IN DI OR STEEL, TWO NOMINAL SIZES LARGER THAN MAIN AND AT LEAST 18 FEET LONG.
- CENTER CASING PIPE ON WATER MAIN.

CASE 5. NEW GRAVITY SANITARY SEWER MAIN OR NEW FORCE MAIN CROSSING NEW POTABLE WATER MAIN (PER TCEQ §290.44(e)(4)(B)(iv)(III)).
- LOCATION: SEWER OR FORCE MAIN ABOVE WATER.
- NEW GRAVITY MAIN OR FORCE MAIN REQUIRES ONE PIPE SEGMENT OF PVC (150 PSI) OR DI. IN ADDITION, WATER MUST BE DI OR STEEL OR ENCASED IN DI OR STEEL, TWO NOMINAL SIZES LARGER THAN MAIN AND AT LEAST 18 FEET LONG.
- CENTER ONE SEGMENT OF SEWER PIPE ON WATER MAIN.

STANDARD DETAIL | DATE: 8/3/2006 REV: 8/21/2007 | SEPARATION DISTANCE SANITARY SEWER AND POTABLE WATER (SPECIAL CONDITIONS) N.T.S. | EL PASO WATER UTILITIES PUBLIC SERVICE BOARD | DETAIL No. 161

5 C12.4 SEPARATION DISTANCE–SANITARY SEWER AND POTABLE WATER
SCALE: N.T.S.

REFERENCES – BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.

ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

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SCALE
Horizontal:
Vertical:
Contour Interval: N/A

DATE: MAY 2014
DESIGN BY: F.Z./J.M
DRAWN BY: J.M.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260–017–LD

PROJECT TITLE
VENTANAS SUBDIVISION UNIT SEVEN
SUBDIVISION IMPROVEMENTS

SHEET TITLE
WATER DETAILS

(SHEET 4 OF 5)

SHEET NO.
C12.4

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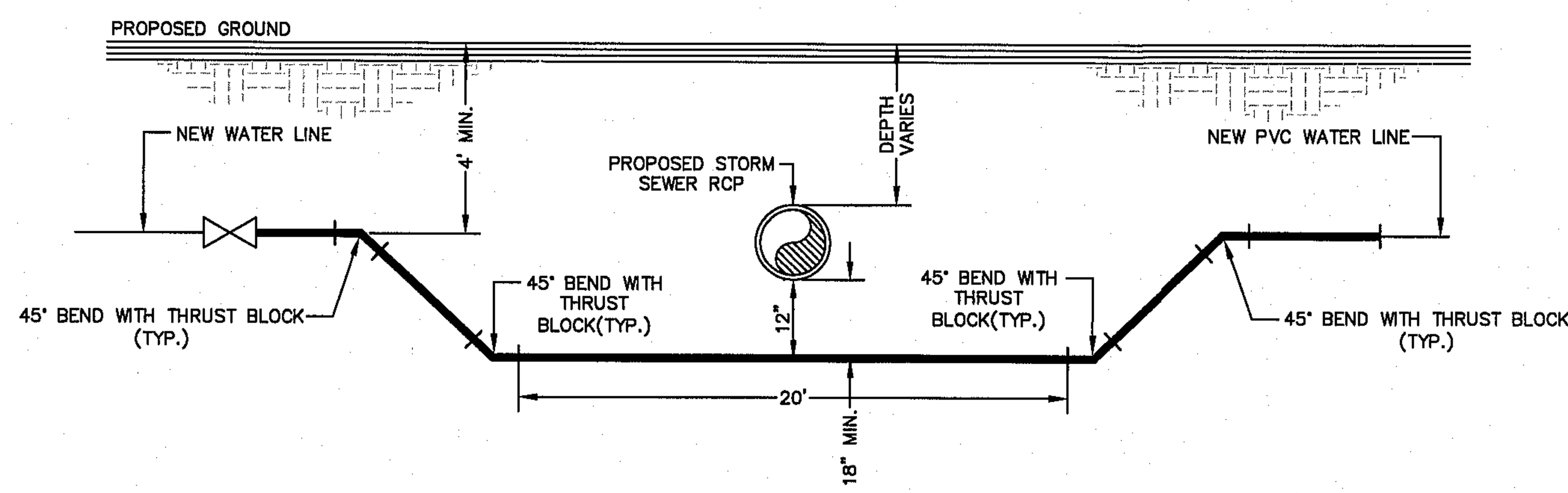
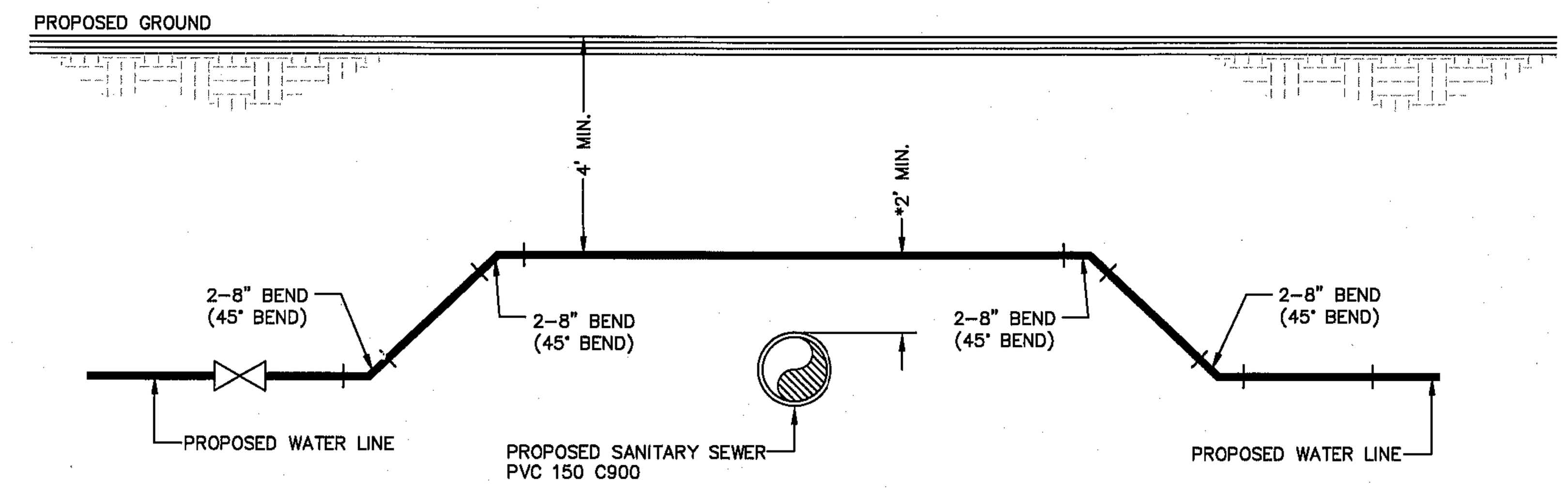
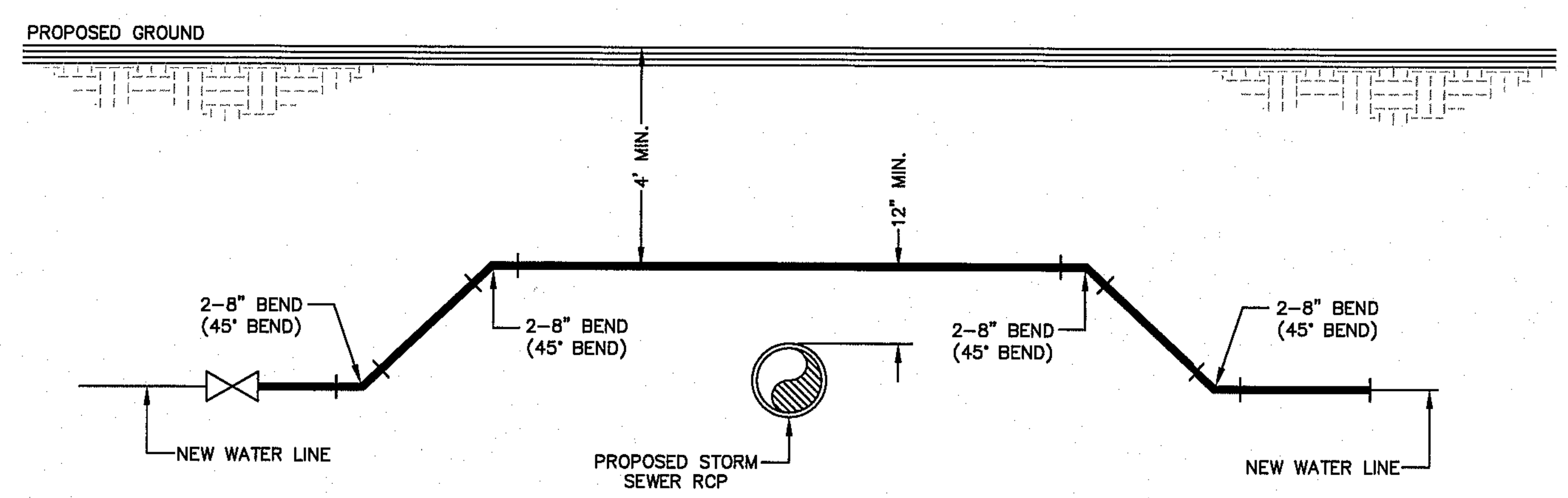


1 C12.5 **STORM SEWER CROSSING DETAIL**
SCALE: N.T.S.



*NOTE:
IF DISTANCE BETWEEN PROPOSED SANITARY SEWER AND PROPOSED WATER LINE IS BETWEEN 6"(MIN.)-2'(MAX.), SANITARY SEWER MUST BE ENCASED IN DUCTILE IRON PIPE AS PER SEPARATION DISTANCE (SPECIAL CONDITION) DETAIL.

2 C12.5 **SANITARY SEWER CROSSING WATER LINE DETAIL**
SCALE: N.T.S.



3 C12.5 **STORM SEWER CROSSING DETAIL**
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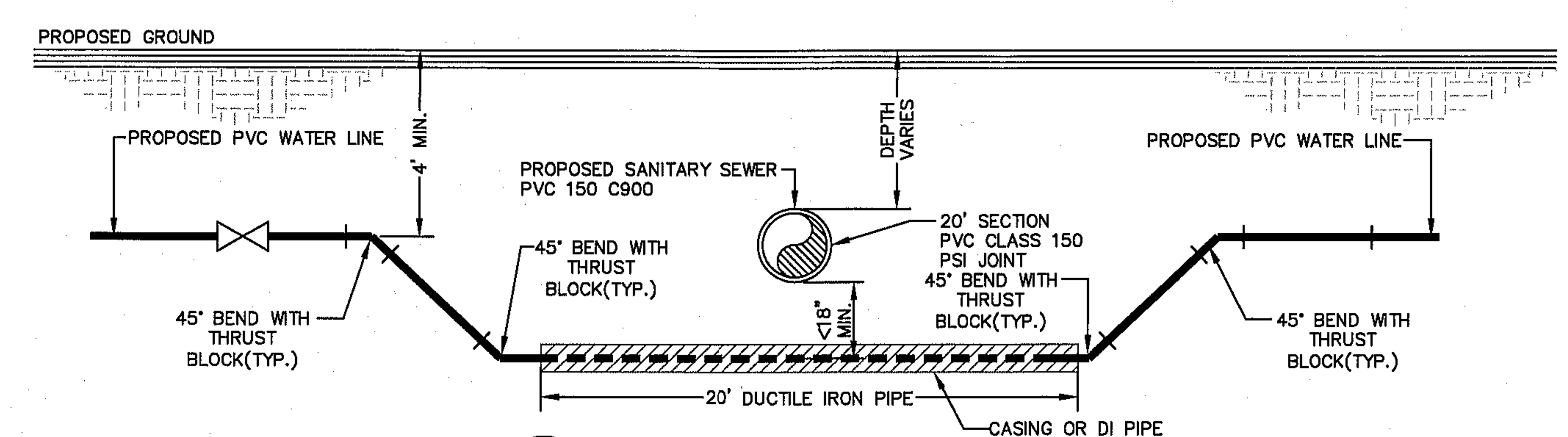
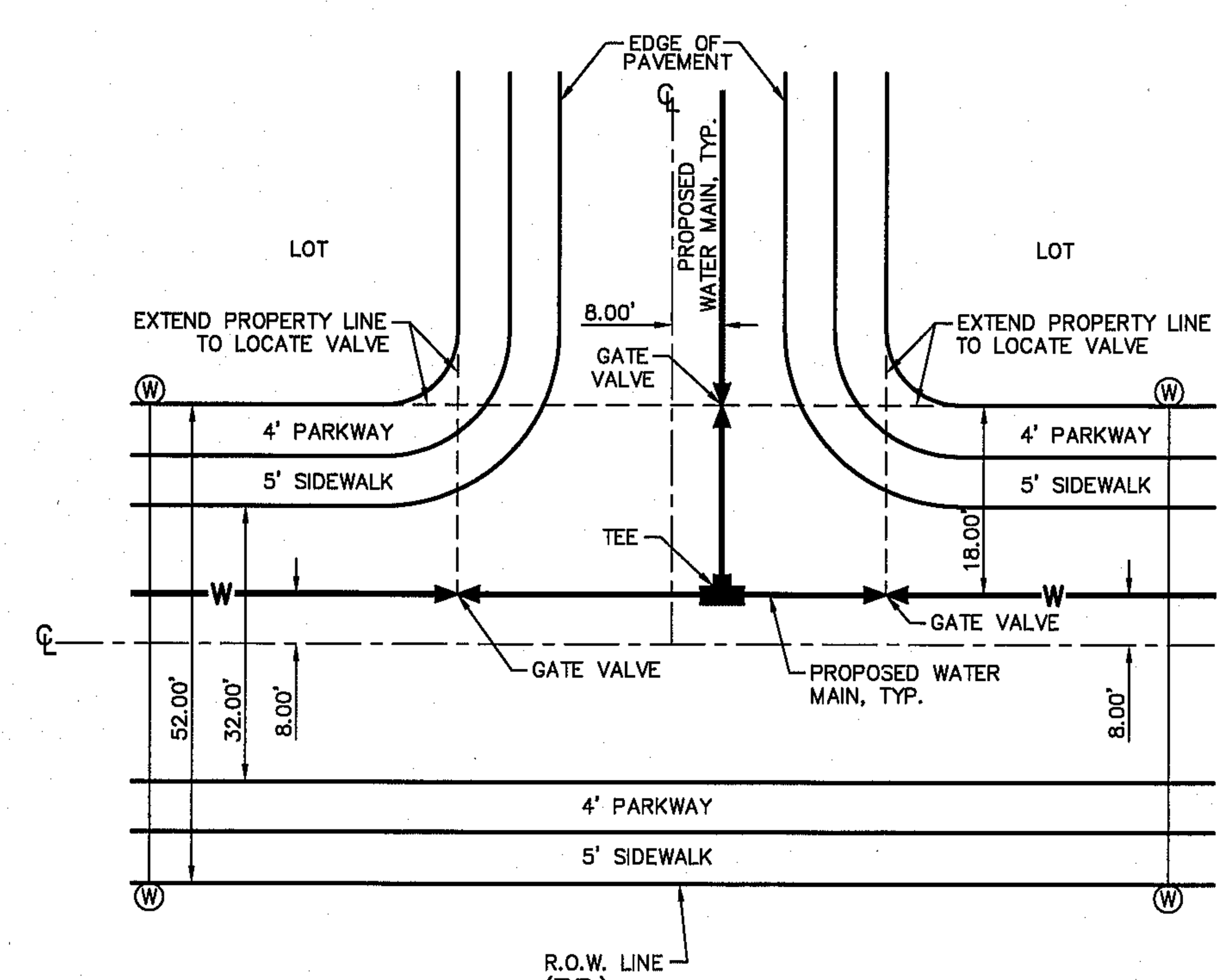


4 C12.5 **SANITARY SEWER CROSSING WATER LINE DETAIL**
SCALE: N.T.S.



5 C12.5 **TYPICAL VALVE AND WATER LOCATION AT STREET INTERSECTIONS ON A 52' R.O.W.**
SCALE: N.T.S.

REFERENCES – BENCHMARKS
BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.
ELEVATION = 3970.52 (CITY DATUM).

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SCALE
Horizontal:
Vertical:
Contour Interval: N/A
DATE: MAY 2014
DESIGN BY: F.Z./J.M.
DRAWN BY: J.M.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260-017-LD

PROJECT TITLE
VENTANAS SUBDIVISION
UNIT SEVEN
SUBDIVISION IMPROVEMENTS

SHEET TITLE
WATER DETAILS
(SHEET 5 OF 5)
SHEET NO.
C12.5

THE CITY OF EL PASO TEXAS
Final Approval

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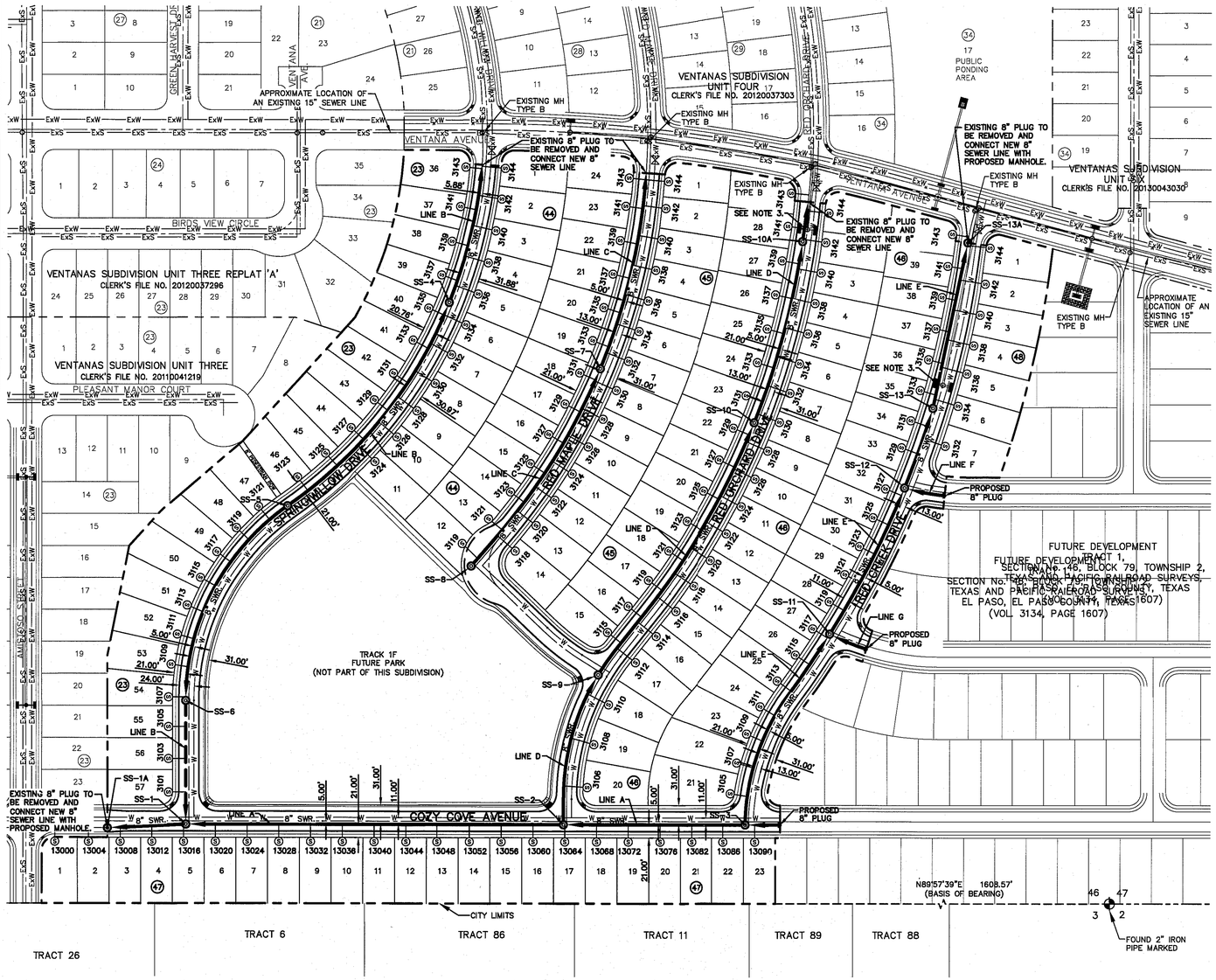

INDEX

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C14.1	LINE A
C14.2	LINE B
C14.3	LINE C, G & F
C14.4	LINE D
C14.5	LINE E
C15.1	SANITARY SEWER DETAILS
C15.2	SANITARY SEWER DETAILS
C15.3	SANITARY SEWER DETAILS

NOTES:

1. ALL LOTS SHALL BE PROVIDED WITH ONE SERVICE CONNECTION TO BE INSTALLED AT THE LOCATION AS SHOWN ON THE SERVICE LOCATION DETAIL.
2. ALL SANITARY SEWER PIPES SHALL BE PVC, SDR 35, (D 3034), UNLESS OTHERWISE SHOWN. AS REQUIRED BY THE EPWU/PSB RULES AND REGULATIONS AND DESIGN STANDARDS.
3. REFERENCE SANITARY SEWER DETAILS FOR SEWER CROSSINGS AT STORM SEWER.

LEGEND

SYMBOL	DESCRIPTION
	PROPOSED STORM SEWER
ExW ExW	EXISTING WATER LINE
ExS ExS	EXISTING SEWER LINE
	SUBD. BOUNDARY LINE
	PROPERTY LINE
	CENTER LINE
W W W	PROPOSED WATER LINE
8" SEWER SDR35	PROPOSED SEWER LINE (PLAN VIEW)
8" SEWER C-900 CLASS 235 (DR-18)	PROPOSED SEWER LINE (PLAN VIEW)
	PROPOSED SEWER LINE ON ANOTHER SHEET (PLAN VIEW)
P.V.C. @ 0.33% 311 GPM	PROPOSED SEWER LINE (PROFILE VIEW)
	PROPOSED MANHOLE (PLAN VIEW)
	PROPOSED SERVICE CONNECTION (PLAN VIEW)
S	EXISTING MANHOLE (PLAN VIEW)
	PROPOSED MANHOLE (PROFILE VIEW)
	EXISTING MANHOLE (PROFILE VIEW)

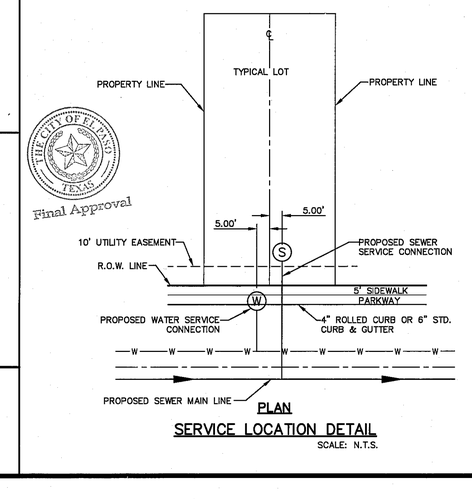
WASTEWATER QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
1	8" PVC SDR35 GRAVITY LINE	5,010.75'	LINEAR FEET
2	8" PVC C-900 CLASS 235 (DR-18)	197.08'	LINEAR FEET
3	STANDARD WASTEWATER MANHOLE (0'-8' DEEP)	14	EACH
4	STANDARD WASTEWATER MANHOLE (8'-12' DEEP)	2	EACH
5	4" WASTEWATER SERVICE CONNECTION	145	EACH

CONTRACTOR SHALL VERIFY DEPTH AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION.

SANITARY SEWER INDEX MAP

SCALE: 1" = 100'



PLAN

SERVICE LOCATION DETAIL

SCALE: N.T.S.

GENERAL NOTES

1. UNLESS OTHERWISE SHOWN ON THE DRAWINGS, THE PROPOSED SEWER MAINS AND SEWER MANHOLES SHALL BE INSTALLED NO LESS THAN 10' AWAY FROM EXISTING WATER LINE. SEPARATIONS DISTANCES SHALL FOLLOW TCEQ STANDARD REQUIREMENTS (§290.44)
2. THE INTENT OF THE OWNER IS TO HAVE THE SANITARY SEWER PIPELINES INSTALLED TO SUCH A DEPTH THAT THEY WILL HAVE AT LEAST 48" OF COVER BELOW PROPOSED GROUND AT ALL LOCATIONS. THE PIPELINES SHALL HAVE NO DIPS, SAGS OR HUMPS OR OTHER IRREGULARITIES IN VERTICAL ALIGNMENT. CONSIDERING UTILITIES AND OTHER CONDITIONS, VARIANCE FROM GRADE PROFILE IS NOT RECOMMENDED IF OTHER EXISTING UTILITIES OR OBSTRUCTIONS ARE ENCOUNTERED DURING THE WORK. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO INSTALLING THE SEWER PIPELINE SO THAT AN ACCEPTABLE PROFILE CAN BE ESTABLISHED PRIOR TO INSTALLATION OF THE PIPELINE.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD LOCATE ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN IN THE PLANS, AND COORDINATE HIS WORK WITH ALL UTILITY COMPANIES, EL PASO WATER UTILITIES AND CITY OF EL PASO PRIOR TO CONSTRUCTION. ALL EXISTING UTILITY DEPTHS ARE UNKNOWN. THE CONTRACTOR SHALL BE ULTIMATELY RESPONSIBLE FOR ACQUIRING FIELD DEPTHS OF ALL UTILITIES WITH THE PROJECT AREAS.
4. TRENCH SAFETY REQUIREMENTS SHALL COMPLY WITH CURRENT OSHA REGULATIONS.
5. THE EL PASO WATER UTILITIES AND CITY OF EL PASO MUST BE NOTIFIED 48 HOURS PRIOR TO COMMENCING ANY WORK IN AREAS WITHIN THEIR JURISDICTION. A COPY OF ALL FIELD SOIL DENSITY TESTS WITHIN THEIR RESPECTIVE R.O.W. SHALL BE FORWARDED TO THE DEVELOPER'S ENGINEER AND THE DEVELOPER BY THE CONTRACTOR.
6. EXISTING STREETS, DRIVEWAYS AND ALL OTHER MISCELLANEOUS STRUCTURES DAMAGE OR REMOVED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO ORIGINAL OR BETTER THAN ORIGINAL CONDITION.
7. CONSTRUCTION OF THE PUBLIC WATER AND SEWER SYSTEM INCLUDING MATERIALS AND TESTING SHALL CONFIRM TO EPWU-PSB STANDARD SPECIFICATIONS FOR THE INSTALLATION OF WATER MAINS, SEWER MAINS AND RELATED APPURTENANCES.

GENERAL UTILITIES:
TEXAS EXCAVATION SAFETY SERVICE
11884 GREENVILLE AVENUE.
DALLAS, TX. 75243
(800) 344-8377

ENGINEER:
CEA GROUP
CASTNER CENTER @ TRANSMOUNTAIN
4712 WOODROW BEAN, STE. F
EL PASO, TX. 79924
(915) 544-5232
MR. JORGE L. AZCARATE, P.E.

FIBER OPTICS:
U.S. SPRINT
151 N. BOONE ST.
EL PASO, TX. 79905
(915) 534-7910
MR. RICK DERAGISCH

FIBER OPTICS:
MCI TELECOMMUNICATIONS CORPS.
4045 DONIPHAN PARK CIRCLE
EL PASO, TX. 79922
(915) 542-2770 EXT. 201
MR. DANIEL HERNANDEZ

WATER & SEWER:
EL PASO WATER UTILITIES
1154 HAWKINS BOULEVARD
EL PASO, TX. 79961
(915) 594-5530
MR. FELIPE LOPEZ, JR., P.E.

ELECTRIC:
EL PASO ELECTRIC CO.
501 W. SAN ANTONIO ST.
EL PASO, TX. 79902
(915) 543-2076
MR. FRANK VIGEL (DISTRIBUTION)

EL PASO STREETS
CITY OF EL PASO
DEPARTMENT OF TRANSPORTATION
7969 SAN PAULO DRIVE
EL PASO, TX. 79907
(915) 621-6750

CABLE TELEVISION:
TIME WARNER COMMUNICATIONS
7010 AIRPORT ROAD
EL PASO, TX. 79906
(915) 772-1123

TELEPHONE:
SBC
11200 PELICANO
EL PASO, TX. 79935
(915) 595-515!
MR. TIM BROWN

FIBER OPTICS:
AT&T
P.O. BOX 1650
EL PASO, TX. 79949
1(800) 852-3786
MS. DARLENE NORIS

RESIDENTIAL GAS LINES:
TEXAS GAS SERVICE
4700 POLLARD ST.
EL PASO, TX 79930
(915) 680-7218

WARNING!
BEFORE YOU DIG
CALL
1-800-DIG-TESS
1-800-344-8377
FOR FIELD LOCATING EXISTING UTILITIES

THE CITY OF EL PASO TEXAS
Final Approval

REFERENCES - BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.

ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY
/ /		

cea
CEA GROUP
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4864
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5232 Fax: 915.544.5233 www.ceagroup.net

ENGINEER'S SEAL

THE STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER

SCALE	1"=100'
Horizontal:	N/A
Vertical:	N/A
Contour Interval:	N/A
DATE:	MAY 2014
DESIGN BY:	F.Z./J.M.
DRAWN BY:	J.M.
CHKD. BY:	J.L.A.
APPVD. BY:	J.L.A.
JOB No.	2260-017-LD

PROJECT TITLE

VENTANAS SUBDIVISION UNIT SEVEN SUBDIVISION IMPROVEMENTS

SHEET TITLE

SEWER INDEX/ GENERAL INFORMATION

SHEET NO.

C13.1

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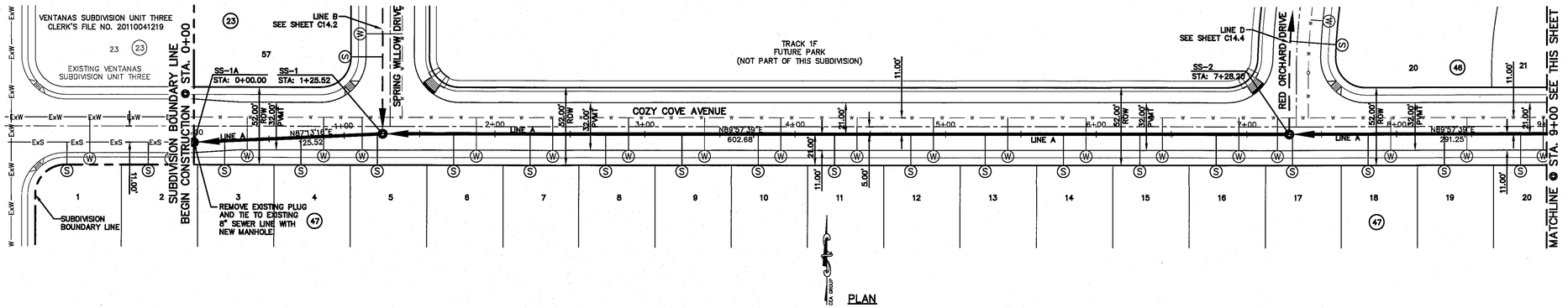
UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579
CITY OF EL PASO DEPARTMENT OF TRANSPORTATION (EPDoT)	(915) 621-6750
(AFTER HOURS)	(915) 240-3220

WARNING ! BEFORE YOU DIG
CALL
1-800-DIG-TESS
1-800-344-8377
FOR FIELD LOCATING EXISTING UTILITIES

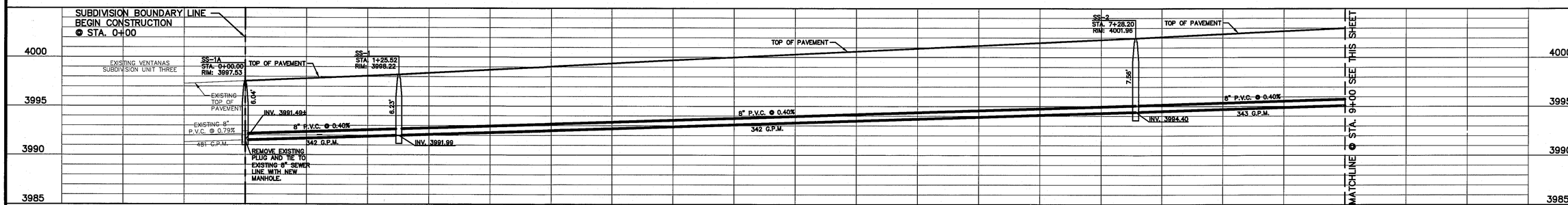
LINE A



PLAN

LEGEND:

- PROPOSED STORM SEWER LINE
- PROPOSED WATER LINE
- PROPOSED SEWER LINE ON ANOTHER SHEET (PLAN VIEW)
- PROPOSED SEWER LINE
- PROPOSED WATER SERVICE
- PROPOSED SEWER SERVICE
- PROPOSED SEWER MANHOLE
- EXISTING WATER LINE
- EXISTING SEWER LINE



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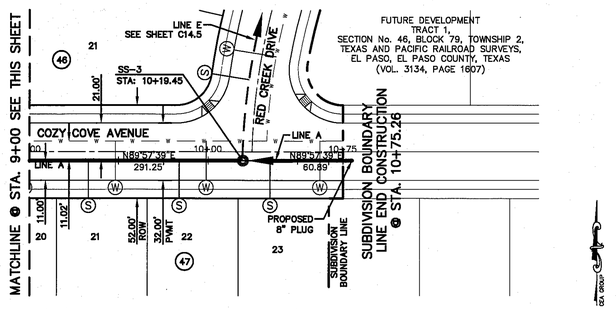

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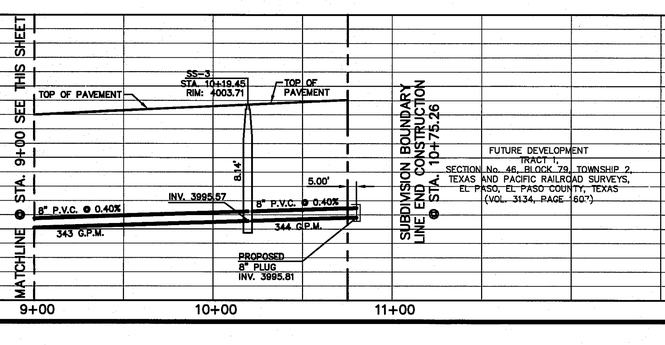

Final Approval

REFERENCES - BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.

ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

csa group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4864
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5232 Fax: 915.544.5233 www.csagroup.net

ENGINEER'S SEAL

STATE OF TEXAS — JORGE L. ACEBEDO — 85075 — LICENSED PROFESSIONAL ENGINEER — 7-15-14

SCALE
Horizontal: 1"=40'
Vertical: 1"=5'
Contour Interval: N/A

DATE: MAY 2014
DESIGN BY: F.Z./J.M.
DRAWN BY: J.M.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260-017-LD

PROJECT TITLE

VENTANAS SUBDIVISION UNIT SEVEN SUBDIVISION IMPROVEMENTS

SHEET TITLE

SANITARY SEWER PLAN & PROFILE LINE A

SHEET NO.

C14.1

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UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579
CITY OF EL PASO DEPARTMENT OF TRANSPORTATION (EPDoT)	(915) 621-6750
(AFTER HOURS)	(915) 240-3220

WARNING ! BEFORE YOU DIG

CALL
1-800-DIG-TESS
1-800-344-8377
FOR FIELD LOCATING EXISTING UTILITIES

REFERENCES - BENCHMARKS

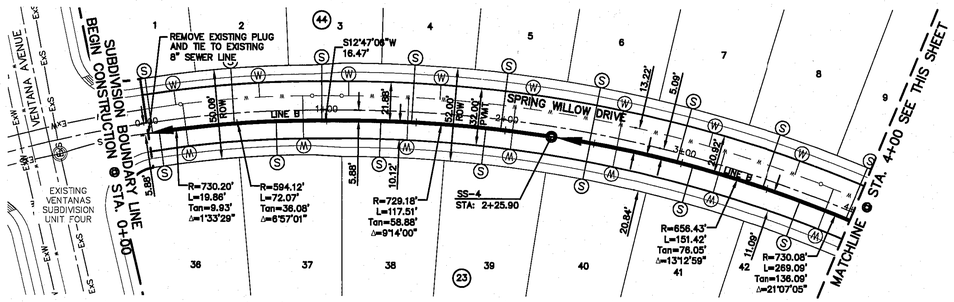
BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.

ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

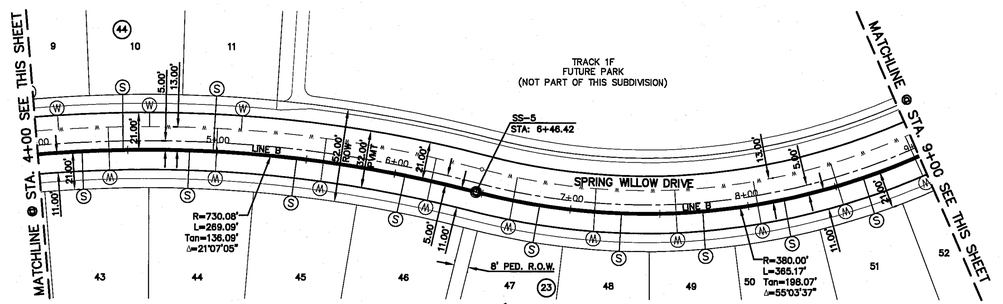
cea
civil engineering associates
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4584
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5232 Fax: 915.544.5233 www.ceagroup.net

LINE B



PLAN

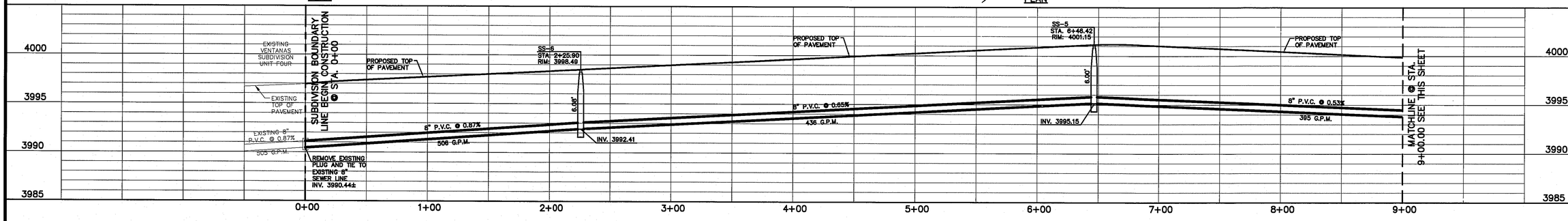
LINE B



PLAN

LEGEND:

- PROPOSED STORM SEWER LINE
- PROPOSED WATER LINE
- PROPOSED SEWER LINE ON ANOTHER SHEET (PLAN VIEW)
- SDR-35 — PROPOSED SEWER LINE
- C-900 CLASS 235 (DR-18) — PROPOSED SEWER LINE
- PROPOSED WATER SERVICE
- PROPOSED SEWER SERVICE
- PROPOSED SEWER MANHOLE
- EXISTING WATER LINE
- EXISTING SEWER LINE



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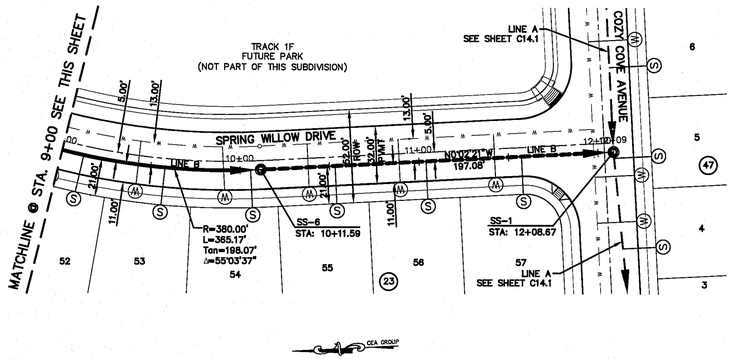

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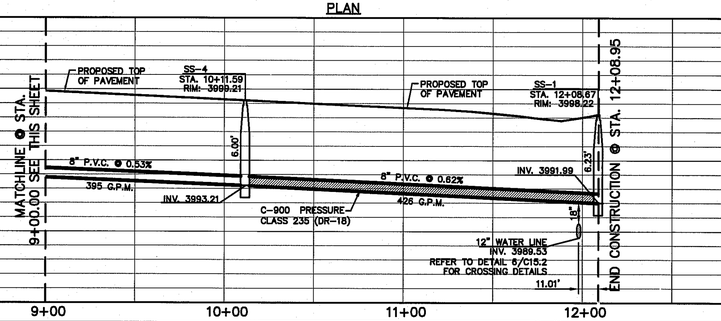


Final Approval

PROJECT TITLE

VENTANAS SUBDIVISION
UNIT SEVEN
SUBDIVISION IMPROVEMENTS

SHEET TITLE

SANITARY SEWER PLAN & PROFILE LINE B

SHEET NO.

C14.2

ENGINEER'S SEAL

STATE OF TEXAS — JORGE L. AZCARATE — 85075 — LICENSED PROFESSIONAL ENGINEER

SCALE	
Horizontal:	1"=40'
Vertical:	1"=5'
Contour Interval:	N/A
DATE:	MAY 2014
DESIGN BY:	F.Z./J.M.
DRAWN BY:	J.M.
CHKD. BY:	J.L.A.
APPVD. BY:	J.L.A.
JOB No.	2260-017-LD

S:\2260\2260-017LD-Ventanas Unit Seven\DWGS\Construction Drawings\Improvement Plans\2260-017-C14.2-San Sewer B.dwg, Layout1, 7/15/2014 10:11:22 AM

UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579
CITY OF EL PASO DEPARTMENT OF TRANSPORTATION (EPDoT)	(915) 621-6750
(AFTER HOURS)	(915) 240-3220

WARNING ! BEFORE YOU DIG

CALL
1-800-DIG-TESS
1-800-344-8377
FOR FIELD LOCATING EXISTING UTILITIES

REFERENCES - BENCHMARKS

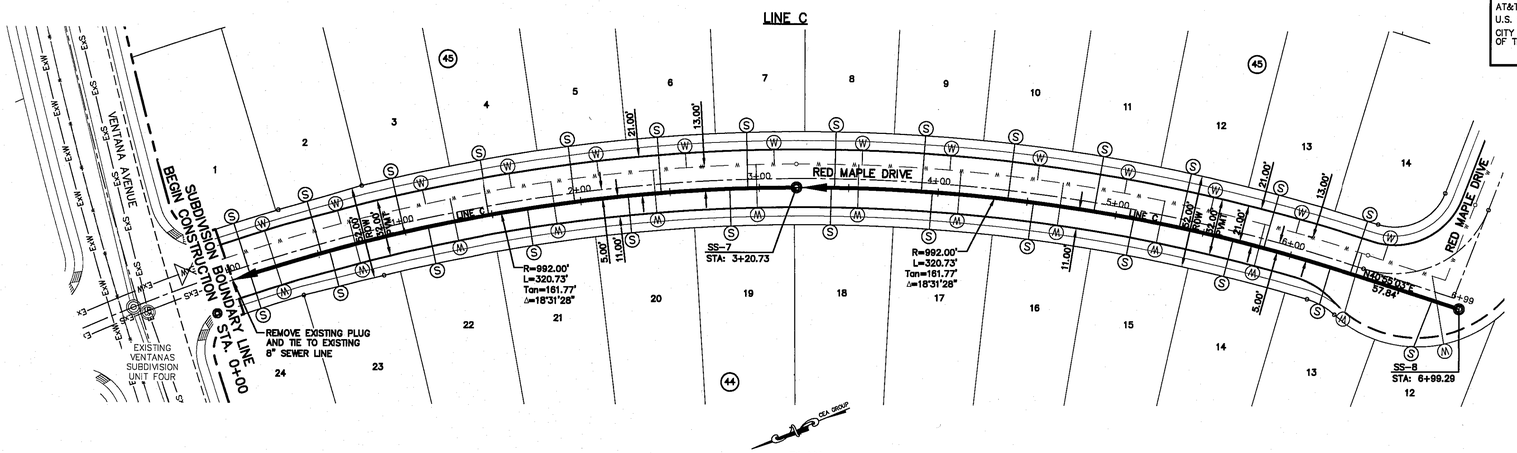
BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.

ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

LEGEND:

- PROPOSED STORM SEWER LINE
- PROPOSED WATER LINE
- PROPOSED SEWER LINE ON ANOTHER SHEET (PLAN VIEW)
- PROPOSED SEWER LINE
- PROPOSED WATER SERVICE
- PROPOSED SEWER SERVICE
- PROPOSED SEWER MANHOLE
- EXISTING WATER LINE
- EXISTING SEWER LINE



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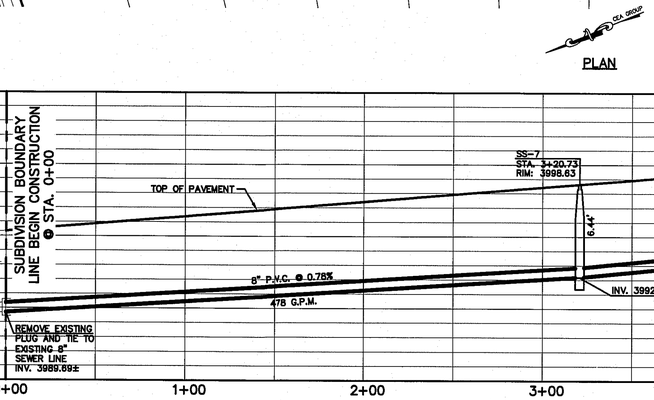

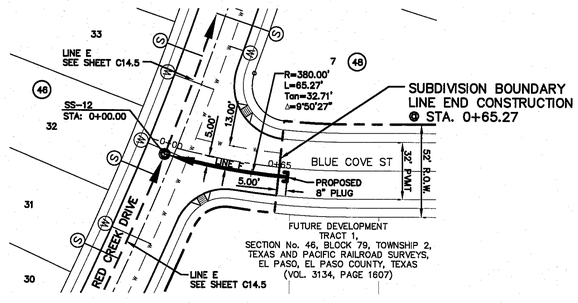

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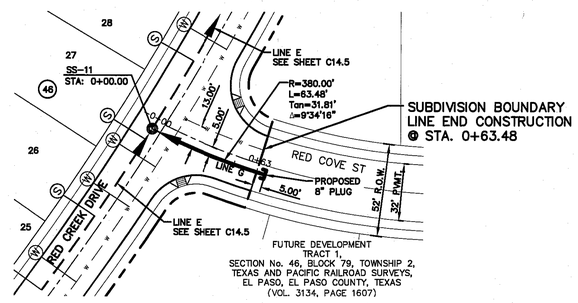

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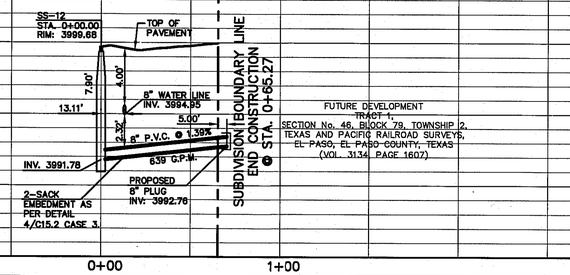

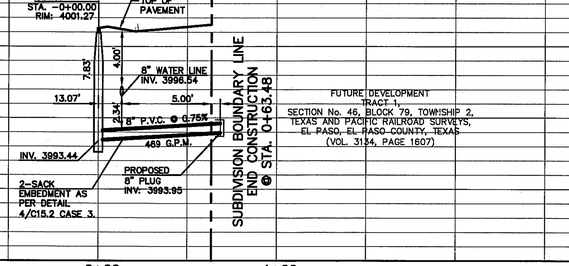

Final Approval

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4594
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5232 Fax: 915.544.5233 www.ceagroup.net

ENGINEER'S SEAL

THE STATE OF TEXAS
JORGE L. ACEVEDO
85075
LICENSED PROFESSIONAL ENGINEER

SCALE
Horizontal: 1"=40'
Vertical: 1"=5'
Contour Interval: N/A

DATE: MAY 2014
DESIGN BY: F.Z./J.M.
DRAWN BY: J.M.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260-017-LD

PROJECT TITLE

VENTANAS SUBDIVISION UNIT SEVEN SUBDIVISION IMPROVEMENTS

SHEET TITLE

SANITARY SEWER PLAN & PROFILE LINE C, F & G

SHEET NO.

C14.3

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UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579
CITY OF EL PASO DEPARTMENT OF TRANSPORTATION (EPDoT)	(915) 621-6750
(AFTER HOURS)	(915) 240-3220

WARNING ! BEFORE YOU DIG
CALL
1-800-DIG-TESS
1-800-344-8377
FOR FIELD LOCATING EXISTING UTILITIES

LEGEND:
- PROPOSED STORM SEWER LINE
- PROPOSED WATER LINE
- PROPOSED SEWER LINE ON ANOTHER SHEET (PLAN VIEW)
- PROPOSED SEWER LINE
- PROPOSED WATER SERVICE
- PROPOSED SEWER SERVICE
- PROPOSED SEWER MANHOLE
- EXISTING WATER LINE
- EXISTING SEWER LINE

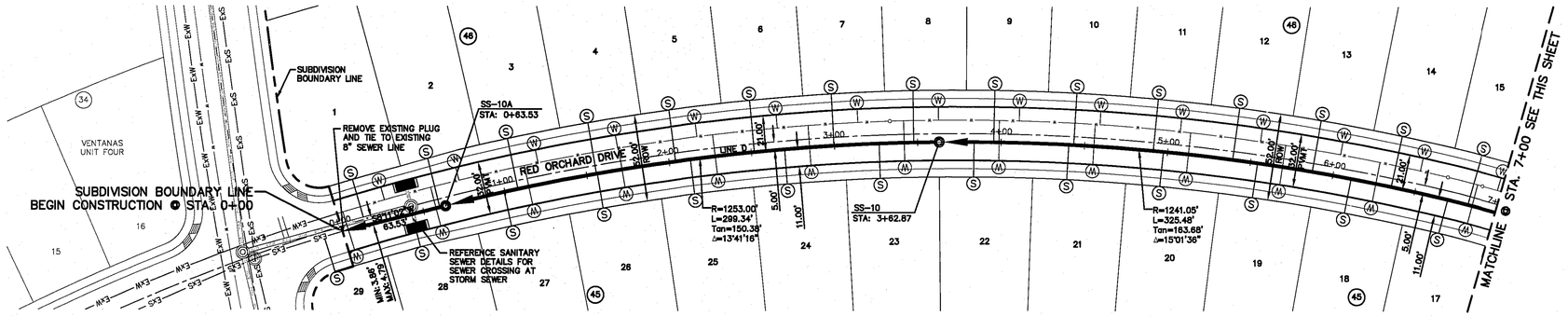
REFERENCES - BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.
ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

caa
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4804
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.2232 Fax: 915.544.8233 www.caagroup.net

LINE D



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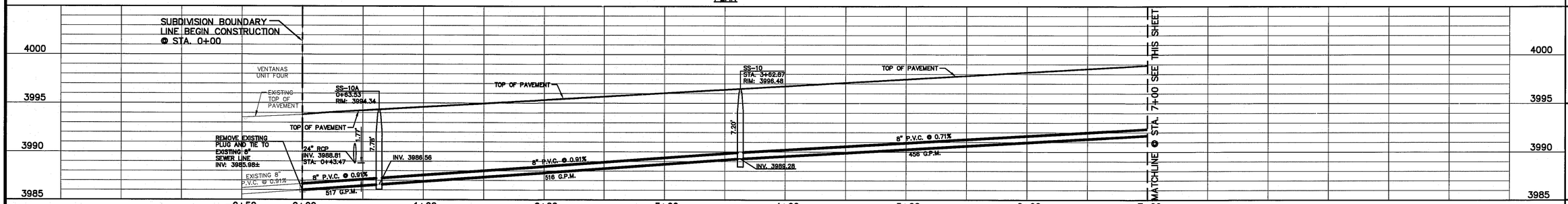

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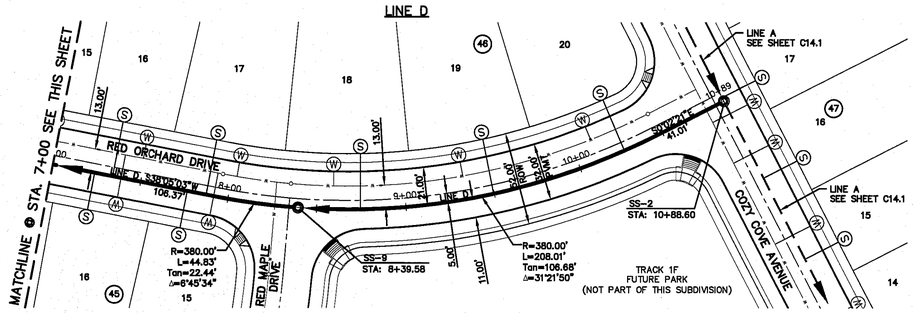

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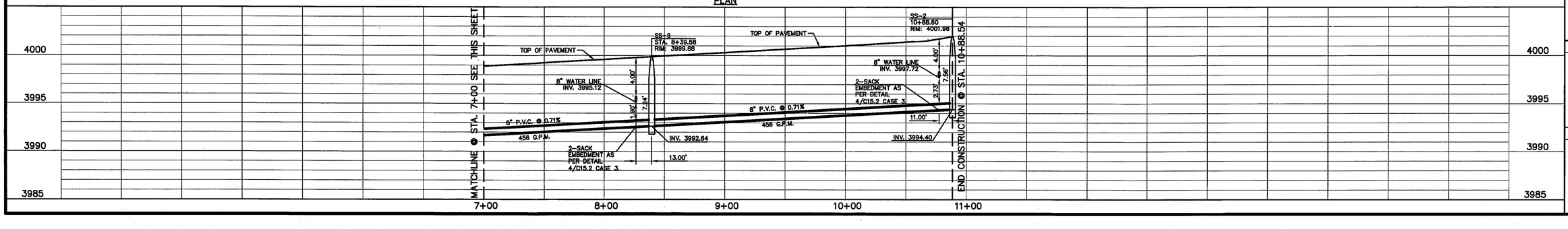

Final Approval

PROJECT TITLE
VENTANAS SUBDIVISION
UNIT SEVEN
SUBDIVISION IMPROVEMENTS

ENGINEER'S SEAL
JORGE L. AZCARATE 85075 CERTIFIED PROFESSIONAL ENGINEER STATE OF TEXAS

SCALE
Horizontal: 1"=40'
Vertical: 1"=5'
Contour Intervall: N/A

DATE: MAY 2014
DESIGN BY: F.Z./J.M.
DRAWN BY: J.M.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260-017-LD

SHEET TITLE
SANITARY SEWER PLAN & PROFILE LINE D

SHEET NO.
C14.4

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UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579
CITY OF EL PASO DEPARTMENT OF TRANSPORTATION (EPDoT)	(915) 621-6750
(AFTER HOURS)	(915) 240-3220

WARNING ! BEFORE YOU DIG
CALL
1-800-DIG-TESS
1- 800-344-8377
FOR FIELD LOCATING EXISTING UTILITIES

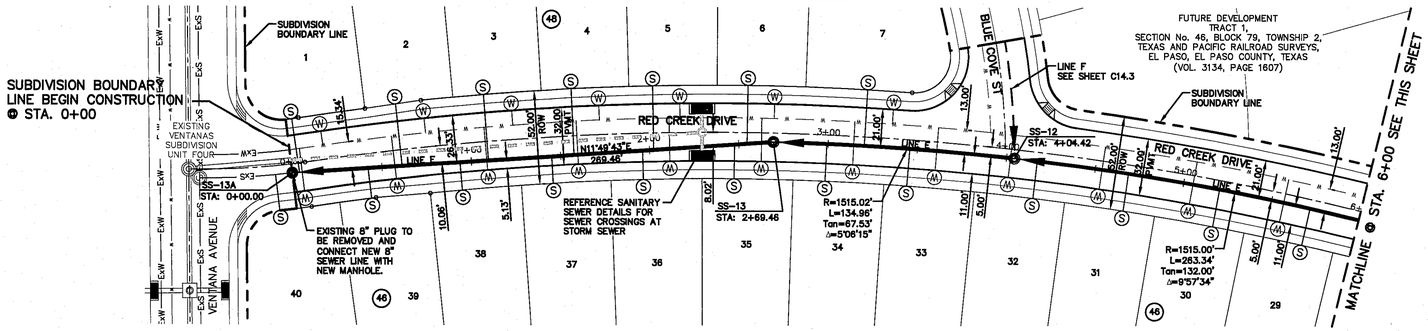
REFERENCES – BENCHMARKS
BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.
ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY
	/	

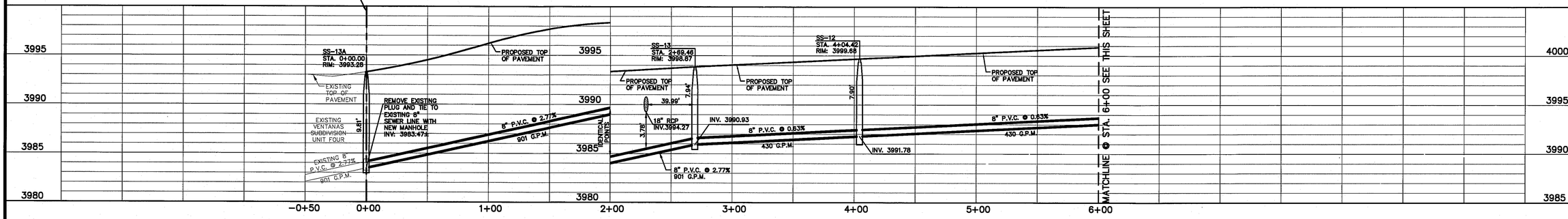
LEGEND:
- PROPOSED STORM SEWER LINE
- PROPOSED WATER LINE
- PROPOSED SEWER LINE ON ANOTHER SHEET (PLAN VIEW)
- PROPOSED SEWER LINE
- PROPOSED WATER SERVICE
- PROPOSED SEWER SERVICE
- PROPOSED SEWER MANHOLE
- EXISTING WATER LINE
- EXISTING SEWER LINE

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office 915.544.0232 Fax 915.544.0233 www.ceagroup.net

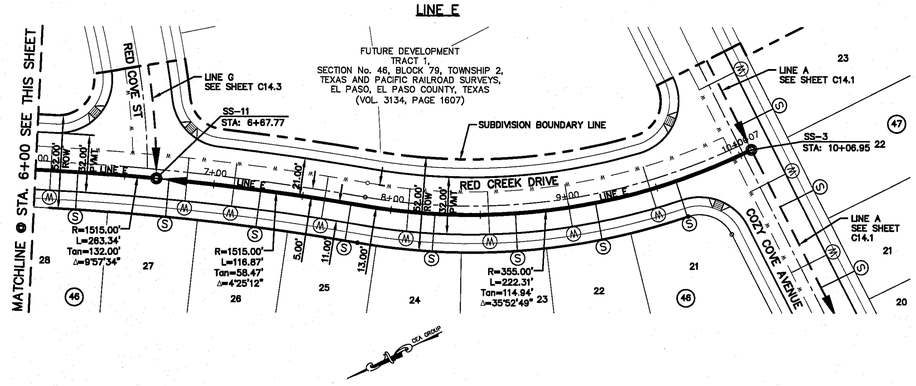
LINE E

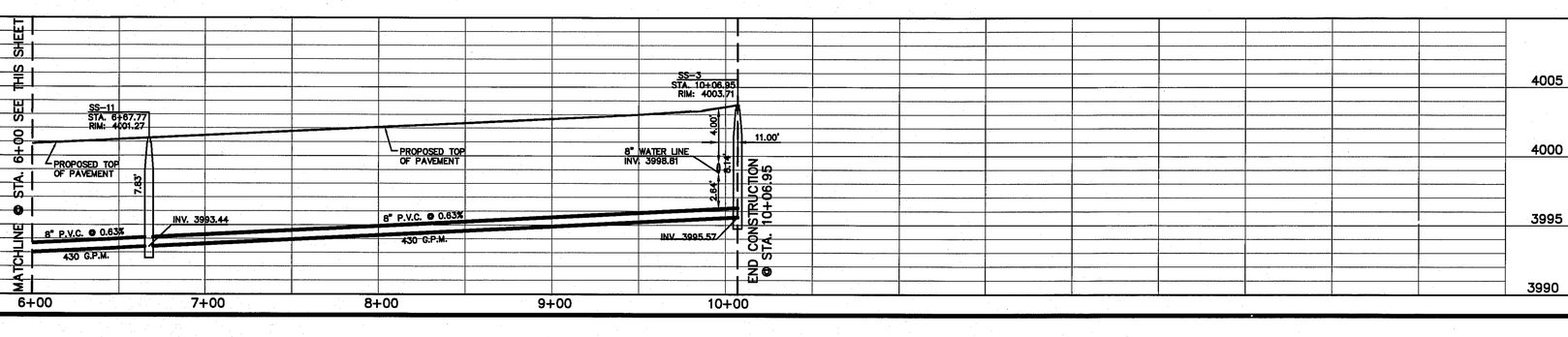


SUBDIVISION BOUNDARY LINE BEGIN CONSTRUCTION @ STA. 0+00



LINE E





Final Approval

PROJECT TITLE
VENTANAS SUBDIVISION
UNIT SEVEN
SUBDIVISION IMPROVEMENTS

SHEET TITLE
SANITARY SEWER PLAN & PROFILE LINE E

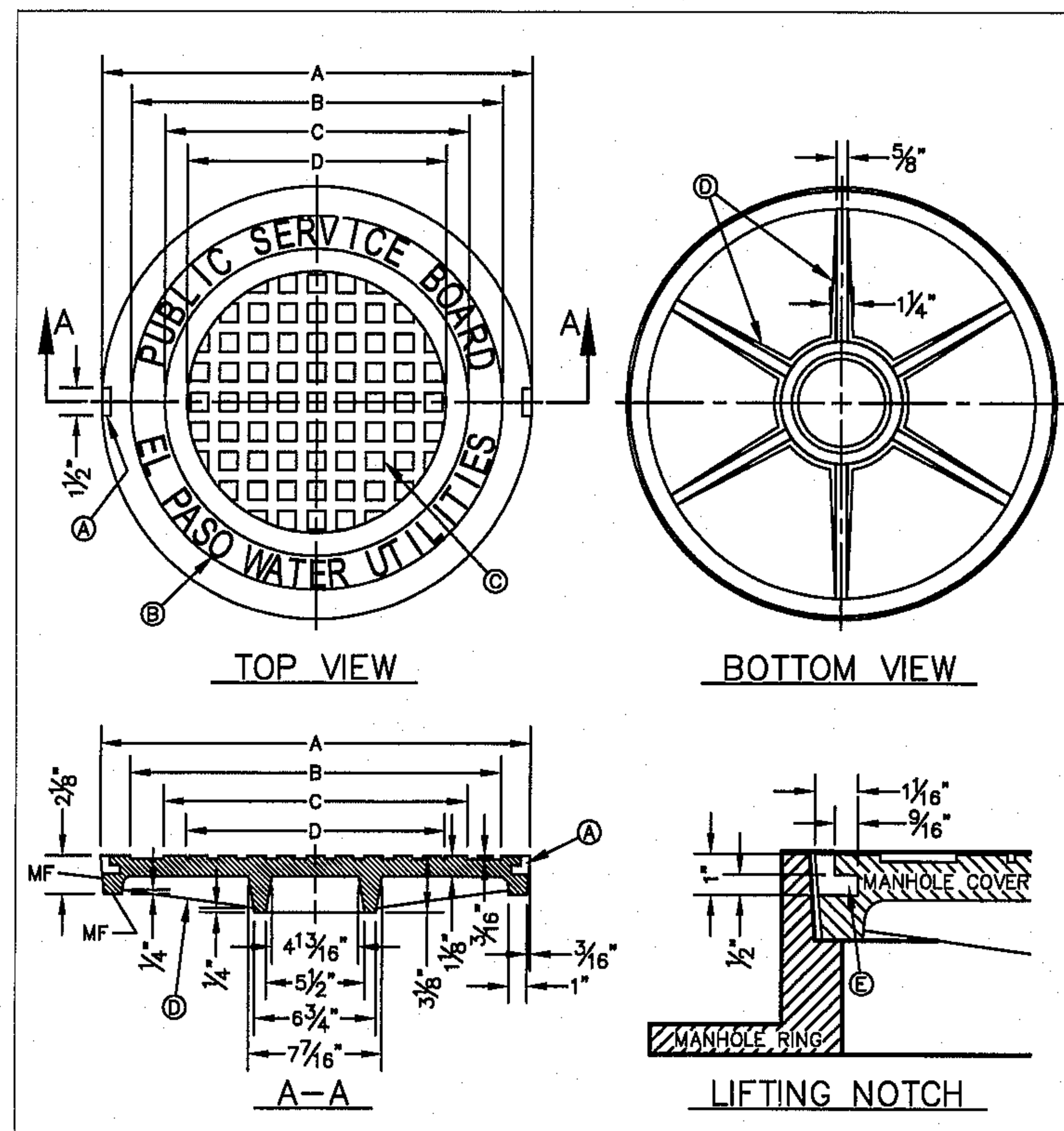
SHEET NO.
C14.5

ENGINEER'S SEAL
JORGE L. AZCARATE 85075 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS

SCALE
Horizontal: 1"=40'
Vertical: 1"=5'
Contour Interval: N/A

DATE: MAY 2014
DESIGN BY: F.Z./J.A.M.
DRAWN BY: J.L.A.
CHKD. BY: J.L.A.
APP'VD. BY: J.L.A.
JOB No. 2260-017-D

S:\2260\2260-017D-Ventanas Unit Seven\DWGS\Construction Drawings\Improvement Plans\2260-017-C14.5-San Sewer E.dwg, Layout1, 7/10/2014 4:28:32 PM



GENERAL NOTES:
1. MATCHING SURFACES MARKED "MF" TO BE FINISHED OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
2. CASTING TO BE SMOOTH & VOID OF AIR HOLES.
3. CASTING MUST MEET REQUIREMENTS OF AASHTO M306–07.
4. AS–CAST DIMENSIONS MAY VARY 1/16"±/ PER FOOT (AASHTO M306–07).
5. WEIGHT MAY VARY 5%± (AASHTO M306–07).

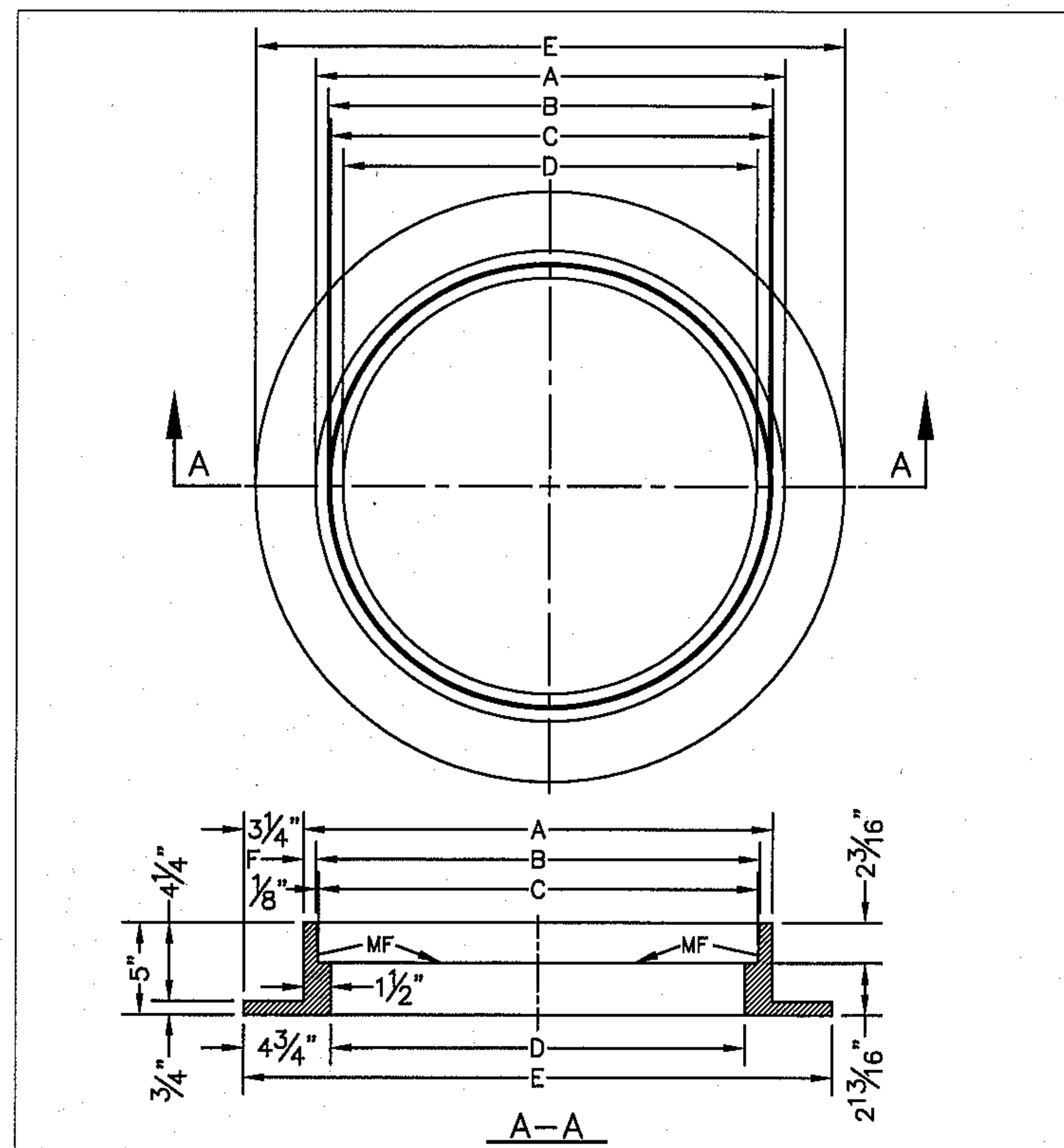
CONSTRUCTION KEY NOTES:
A. LIFTING NOTCH.
B. 3/16" RAISED LETTERING.
C. 1" SQUARES (3/16" TALL) WITH 5/8" SPACE BETWEEN.
D. REINFORCING RIBS.
E. SLOT.

MANHOLE COVER	MANHOLE – ALL TYPES	*MANHOLE TYPE A, A1, A2 & C
A	31 3/8"	23 7/8"
B	28 1/8"	20 5/8"
C	24 3/8"	16 7/8"
D	21 7/8"	14 3/8"
WEIGHT	200 lbs.	165 lbs.

*OBSOLETE –DO NOT USE (FOR REFERENCE ONLY)

STANDARD DETAIL | DATE: 11/1992 REV: 2/21/2011 | SEWER MANHOLE COVER | N.T.S. | EL PASO WATER UTILITIES PUBLIC SERVICE BOARD | DETAIL No. 378

1 / C15.1 STANDARD MANHOLE COVER DETAIL
SCALE: N.T.S.



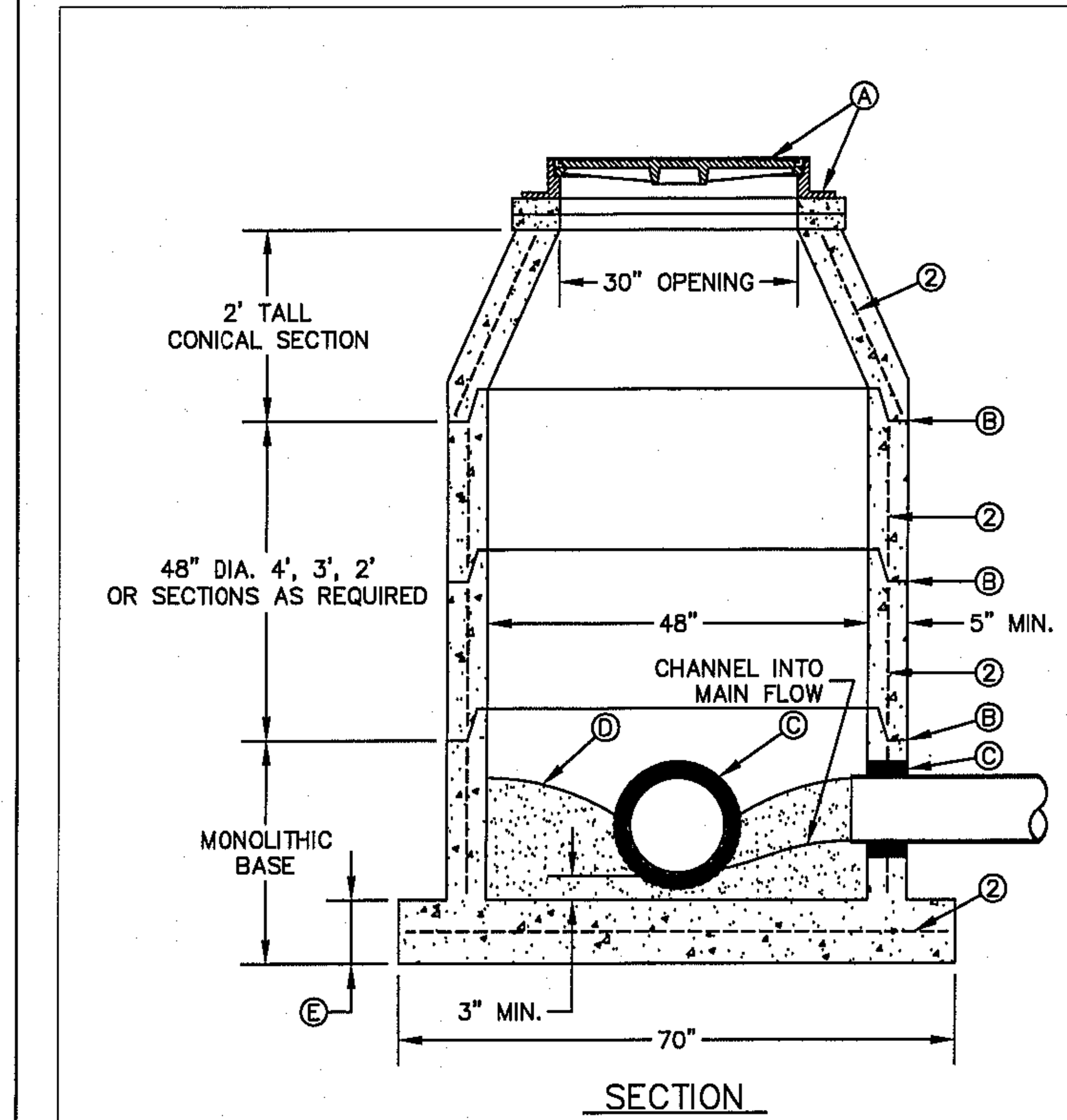
GENERAL NOTES:
1. MATCHING SURFACES MARKED "MF" TO BE FINISHED OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
2. CASTING TO BE SMOOTH & VOID OF AIR HOLES.
3. CASTING MUST MEET REQUIREMENTS OF AASHTO M306–07.
4. AS–CAST DIMENSIONS MAY VARY 1/16"±/ PER FOOT (AASHTO M306–07).
5. WEIGHT MAY VARY 5%± (AASHTO M306–07).

MANHOLE RING	MANHOLE – ALL TYPES	*MANHOLE TYPE A, A1, A2 & C
A	33"	25 1/2"
B	31 3/4"	24 1/8"
C	31 1/2"	23 7/8"
D	30"	22 1/2"
E	39 1/2"	32"
F	5/8"	1 1/16"
WEIGHT	205 lbs.	170 lbs.

*OBSOLETE –DO NOT USE (FOR REFERENCE ONLY)

STANDARD DETAIL | DATE: 11/1992 REV: 2/21/2011 | SEWER MANHOLE RING | N.T.S. | EL PASO WATER UTILITIES PUBLIC SERVICE BOARD | DETAIL No. 377

2 / C15.1 STANDARD MANHOLE RING DETAIL
SCALE: N.T.S.

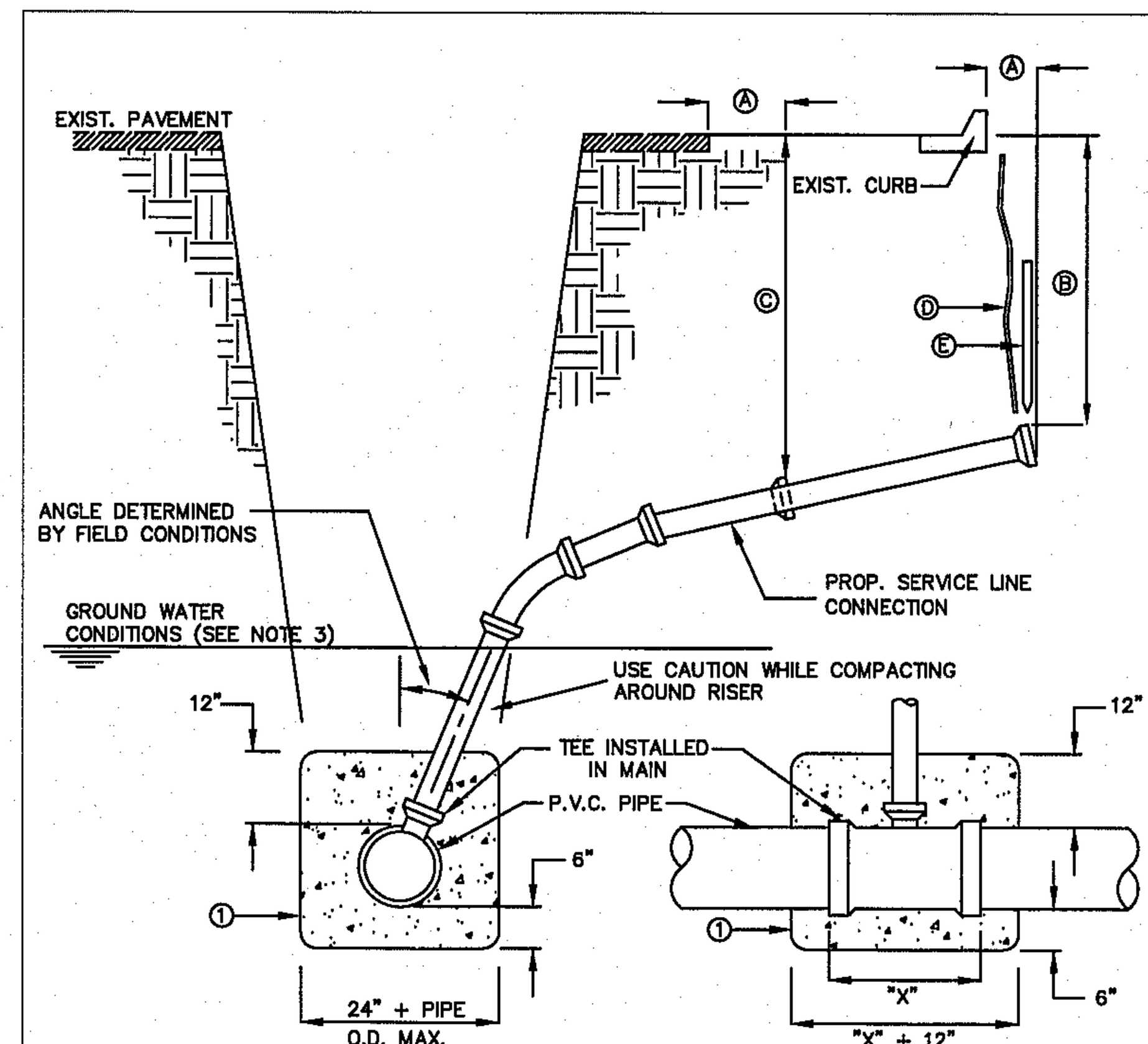


GENERAL NOTES:
1. MANHOLE TYPE "A" SHALL BE USED FOR LINES 21" AND SMALLER.
2. PRE–CAST MANHOLE SECTIONS SHALL BE OF REINFORCED CONCRETE CONFORMING TO ASTM C–478 AND SHALL MEET HS–20 LOADING. PROVIDE REINFORCEMENT WITHIN 3" @ OPENINGS OR KNOCKOUTS, OPENINGS (UP TO 8") MADE IN FIELD SHALL BE CORE DRILLED.
3. CEMENT SHALL BE TYPE I–II, PER ASTM C–150, AND MUST CONTAIN A MINIMUM OF 4% FLY ASH OF THE TOTAL MANHOLE WEIGHT.
4. THE BASE & RISER SHALL BE INTEGRALLY CAST. CONCRETE SHALL BE MIN. 28 DAY COMPRESSIVE STRENGTH 4000psi.
5. MANUFACTURER TO PROVIDE LIFTERS OF ADEQUATE SIZE AS NEEDED.
6. THE SUBGRADE UNDER THE BASE SHALL BE COMPACTED TO 95% DENSITY IN ACCORDANCE WITH ASTM D–1557.
7. MANHOLES BELOW GROUNDWATER TO BE EXTERNALLY AND INTERNALLY COATED WITH BITUMINOUS COATING.

CONSTRUCTION KEY NOTES:
A. MANHOLE RING AND COVER (SEE DETAILS 377 & 378). SET FRAME AND COVER FLUSH WITH ROADWAY SURFACE OR FINISHED GRADE (SEE DETAIL 185).
B. ALL JOINTS TO BE TONGUE, GROOVE AND SEALED WITH RAM–NEK OR APPROVED EQUAL.
C. PIPE OPENINGS/KNOCKOUTS AS REQUIRED TO FIT PIPE SIZE AND SHALL HAVE FLEXIBLE PIPE TO MANHOLE CONNECTORS (COMPRESSION TYPE ASTM–923), "KOR–N–SEAL" OR APPROVED EQUAL.
D. GROUT AS REQUIRED.
E. CONCRETE BASE SHALL BE 8" FOR MH's UP TO 12' DEEP AND 12" FOR DEPTHS GREATER THAN 12'.

STANDARD DETAIL | DATE: 11/1992 REV: 2/8/2013 | MANHOLE TYPE "A" | N.T.S. | EL PASO WATER UTILITIES PUBLIC SERVICE BOARD | DETAIL No. 370–1

3 / C15.1 STANDARD MANHOLE TYPE "A"
SCALE: N.T.S.



GENERAL NOTES:
1. IN GROUNDWATER CONDITIONS ONLY, P.V.C. SADDLES OR TEES ARE TO BE ENCASED WITH CLASS B CONCRETE.
2. UNDER CERTAIN CONDITIONS FIELD INVESTIGATIONS WILL BE REQUIRED TO DETERMINE THE ADEQUACY OF THE DEPTH ON THE LATERAL.
3. WHEN GROUND WATER IS ENCOUNTERED SERVICE RISER SHALL BE EXTENDED ABOVE ANTICIPATED WATER TABLE LEVEL.

CONSTRUCTION KEY NOTES:
A. CONTRACTOR TO INSTALL SEWER SERVICE LINE FROM THE MAIN TO A LOCATION 6" BEHIND THE CURB OR 18" BEYOND THE EDGE OF PAYMENT, UNLESS CONDITIONS REQUIRE OTHERWISE.
B. 18" FOR STANDARD SUBDIVISION, 3.5' FOR SUBDIVISIONS WITH ON–SITE PONDING OR FLAT TERRAIN.
C. RISERS OR LATERALS EXTENDING BEYOND EXISTING PAVING SHALL BE INSTALLED TO 3.5' MINIMUM TOP OF GROUND OR PAVEMENT, UNLESS CONDITIONS REQUIRE OTHERWISE.
D. PLASTIC METALLIC MARKING TAPE RISING TO WITHIN 6" OF GROUND SURFACE OR METALLIC DISK.
E. WOODEN STAKE (1"x2"x36") VERTICALLY PLACED AT PLUGGED END OF PROPOSED SERVICE LINE.

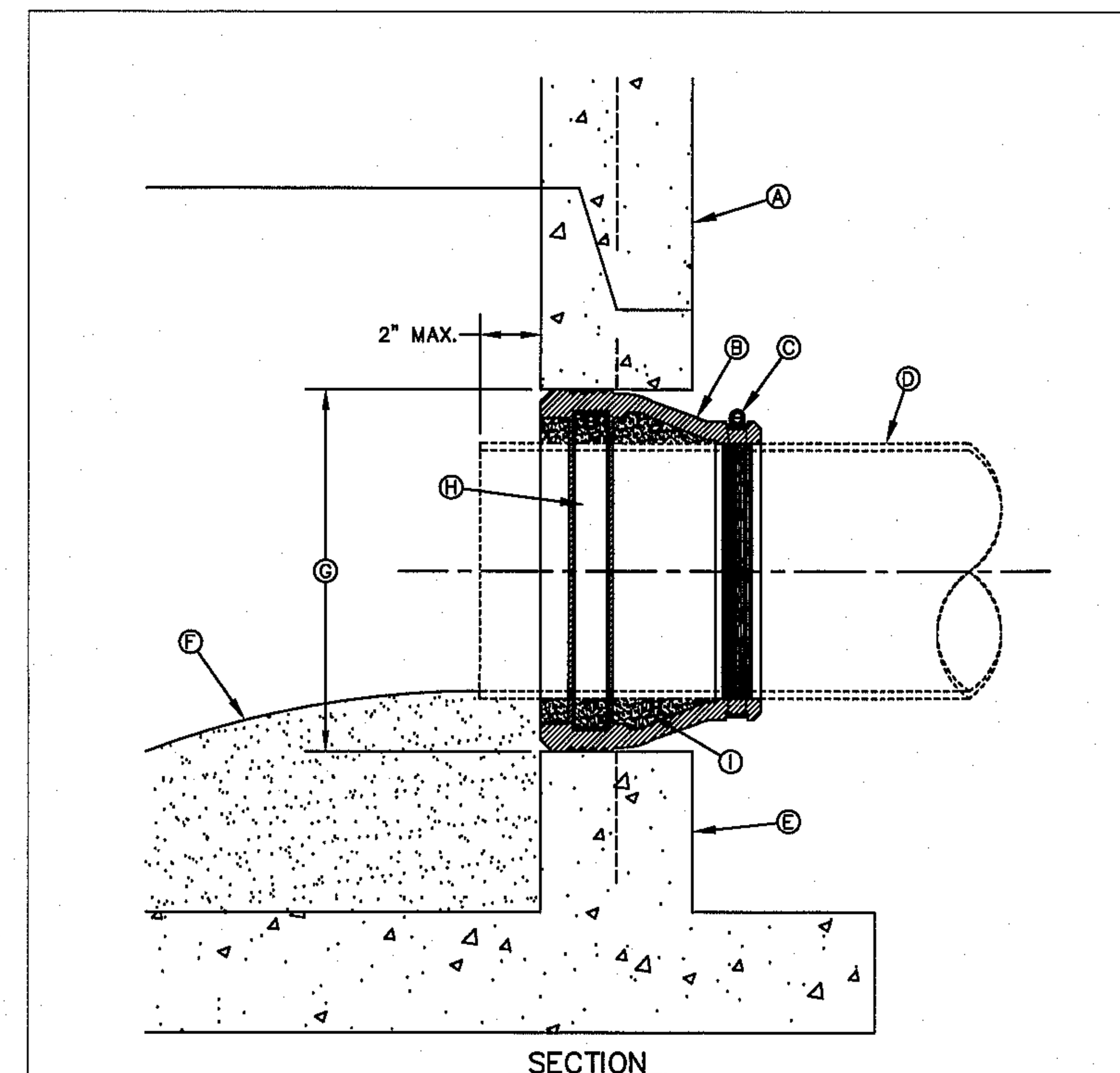
STANDARD DETAIL | DATE: 11/1992 REV: 1/23/2009 | SEWER SERVICE RISER AND SERVICE LINE CONNECTION | N.T.S. | EL PASO WATER UTILITIES PUBLIC SERVICE BOARD | DETAIL No. 391

4 / C15.1 SEWER SERVICE RISER AND SERVICE LINE CONNECTION
SCALE: N.T.S.

GENERAL NOTES:

1. DEVELOPER SHALL ENSURE RESIDENTIAL SEWER SERVICE LINES HAVE BEEN EXTENDED TO THE PROPERTY LINE.

2. BUILDER SHALL ENSURE SIDEWALKS ARE NOT CONSTRUCTED UNTIL THE RESIDENTIAL SEWER SERVICE LINES HAVE BEEN EXTENDED 10 PLUS FEET INTO PRIVATE PROPERTY FROM PROPERTY LINE.



GENERAL NOTES:
1. MANHOLE CONNECTOR SHALL BE KOR–N–SEAL OR EQUAL MEETING THE REQUIREMENTS OF ASTM C–923. CONNECTOR SHALL BE FURNISHED BY CONTRACTOR.

CONSTRUCTION KEY NOTES:
A. PRECAST MANHOLE BARREL.
B. FLEXIBLE CONNECTOR.
C. PIPE CLAMP SS 316.
D. APPROVED PIPE.
E. PRECAST MANHOLE BASE.
F. GROUT AS REQUIRED TO FORM SMOOTH CHANNEL TO MANHOLE INVERT.
G. PIPE OPENINGS/KNOCKOUTS AS REQUIRED TO FIT PIPE SIZE.
H. EXPANSION BAND SS 316.
I. FILL SPACE WITH GROUT.

STANDARD DETAIL | DATE: 11/1992 REV: 8/13/2009 | PIPE CONNECTION TO MANHOLE | N.T.S. | EL PASO WATER UTILITIES PUBLIC SERVICE BOARD | DETAIL No. 376

5 / C15.1 PIPE CONNECTION TO MANHOLE
SCALE: N.T.S.

Final Approval
THE CITY OF EL PASO, TEXAS

REFERENCES – BENCHMARKS
BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.
ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

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engineers • architects • planners
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ENGINEER'S SEAL
STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER

SCALE
Horizontal: N/A
Vertical: N/A
Contour Interval: N/A

DATE: MAY 2014
DESIGN BY: F.Z./J.M
DRAWN BY: J.M.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260–017–LD

PROJECT TITLE
VENTANAS SUBDIVISION UNIT SEVEN
SUBDIVISION IMPROVEMENTS

SHEET TITLE
SANITARY SEWER DETAILS
(SHEET 1 OF 3)

SHEET NO.
C15.1

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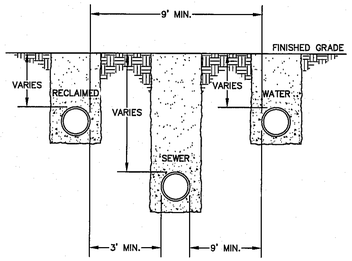
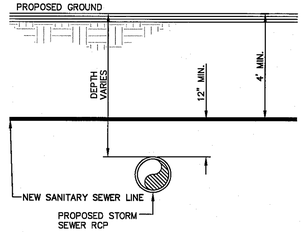


SECTION

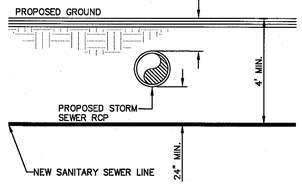
GENERAL NOTES:
1. SEPARATION DISTANCES SHALL FOLLOW TEXAS COMMISSION ON ENVIRONMENTAL QUALITY STANDARD REQUIREMENTS.
2. MINIMUM SEPARATION DISTANCES SHOWN. IF CONDITIONS DO NOT ALLOW FOR INDICATED DISTANCES REFER TO DETAILS 161, 162 & 163.
3. RECLAIMED WATER LINE AT OR ABOVE SEWER LINE.

STANDARD DETAIL	DATE: 8/3/2006 REV: 3/28/2007	SEPARATION DISTANCE POTABLE WATER, SANITARY SEWER AND RECLAIMED WATER N.T.S.	EL PASO WATER UTILITIES / PUBLIC SERVICE BOARD	DETAIL No. 160

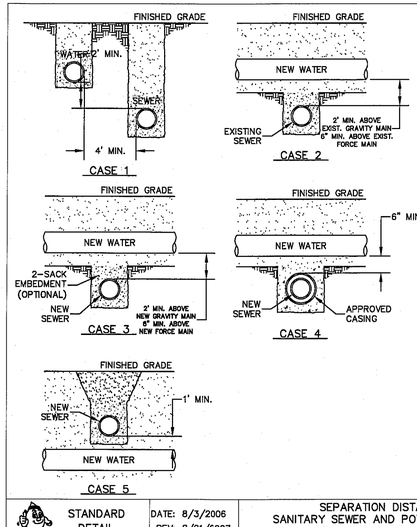
1 / C15.2 SEPARATION DISTANCE–NEW WATER AND NEW SEWER
SCALE: N.T.S.



2 / C15.2 STORM SEWER CROSSING DETAIL
SCALE: N.T.S.



3 / C15.2 STORM SEWER CROSSING DETAIL
SCALE: N.T.S.



GENERAL NOTES:
1. NEW OR EXISTING POTABLE WATER AND SANITARY SEWER MAINS.
2. SEPARATION DISTANCES SHALL FOLLOW TEXAS COMMISSION ON ENVIRONMENTAL QUALITY STANDARD REQUIREMENTS.

CONSTRUCTION KEY NOTES
WHEN STANDARD NINE (9) FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, SEPARATION SHALL BE DETERMINED ACCORDING TO THE FOLLOWING CONDITIONS:

CASE 1. GRAVITY SANITARY SEWER MAIN OR FORCE MAIN PARALLEL TO POTABLE WATER MAIN (PER TCEQ §290.44(e)(4)(A)).
- LOCATION: WATER ABOVE SEWER OR FORCE MAIN.
- SEWER MATERIALS: EXISTING GRAVITY MAIN (PVC SDR35 OR CLAY) OR FORCE MAIN TO REMAIN IF NOT LEAKING-IF LEAKING, MUST BE REPLACED WITH PVC (150 PSI) OR DI. NEW GRAVITY MAIN OR FORCE MAIN REQUIRES PVC (150 PSI) OR DI.
- SEPARATE TRENCHES SHALL BE USED.

CASE 2. NEW POTABLE WATER MAIN CROSSING EXISTING GRAVITY SANITARY SEWER MAIN OR EXISTING FORCE MAIN (PER TCEQ §290.44(e)(4)(B)(i)) AND §290.44(e)(4)(B)(ii).
- LOCATION: WATER ABOVE SEWER OR FORCE MAIN.
- SEWER MATERIALS: EXISTING GRAVITY MAIN (PVC SDR35 OR CLAY) OR FORCE MAIN TO REMAIN IF NOT LEAKING-IF LEAKING, REPLACE ONE PIPE SEGMENT PER CASE 3 REQUIREMENTS.
- CENTER ONE SEGMENT OF WATER PIPE OVER SEWER MAIN OR FORCE MAIN.
- MINIMUM PIPE SEGMENT LENGTH FOR WATER PIPE SHALL BE 18 FEET LONG.

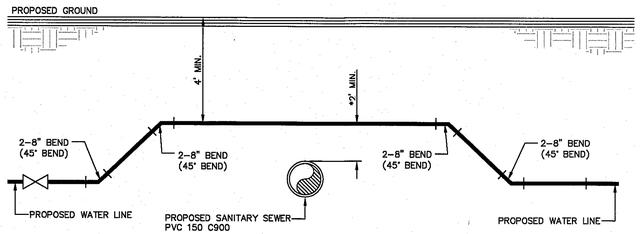
CASE 3. NEW POTABLE WATER MAIN CROSSING NEW GRAVITY SANITARY SEWER MAIN OR NEW FORCE MAIN (PER TCEQ §290.44(e)(4)(B)(ii), §290.44(e)(4)(a)(v) AND §290.44(e)(4)(B)(iv)(I).
- LOCATION: WATER ABOVE SEWER OR FORCE MAIN.
- SEWER MATERIALS: NEW GRAVITY MAIN - PVC (150 PSI) or DI REQUIRED, CENTER UNDER WATER MAIN. NEW FORCE MAIN - PVC (150PSI) OR DI REQUIRED, FORCE MAIN TO BE EMBEDDED IN CEMENT STABILIZED BACKFILL THE TOTAL LENGTH OF ONE PIPE PLUS 12" BEYOND THE JOINT AT EACH END.
- CENTER ONE SEGMENT OF WATER PIPE OVER SEWER PIPE OR FORCE MAIN.
- MINIMUM PIPE SEGMENT LENGTH FOR WATER AND SEWER SHALL BE 18 FEET LONG.
- FOR NEW GRAVITY SEWER ONLY, IN LIEU OF PVC (150PSI) OR DI, INSTALL ONE PIPE SEGMENT OF SDR35; SEWER MAIN MUST BE EMBEDDED IN CEMENT STABILIZED BACKFILL THE TOTAL LENGTH OF ONE PIPE PLUS 12" BEYOND THE JOINT AT EACH END.

CASE 4. NEW POTABLE WATER MAIN CROSSING NEW GRAVITY SANITARY SEWER MAIN OR NEW FORCE MAIN (PER TCEQ §290.44(e)(4)(B)(iv)(II)).
- LOCATION: WATER ABOVE SEWER OR FORCE MAIN.
- SEWER MATERIALS: NEW GRAVITY MAIN - SDR35 ACCEPTABLE, NEW FORCE MAIN - PVC (150PSI) OR DI REQUIRED. IN ADDITION, SEWER MAIN OR FORCE MAIN MUST BE ENCASED IN DI OR STEEL, TWO NOMINAL SIZES LARGER THAN MAIN AND AT LEAST 18 FEET LONG.
- CENTER CASING PIPE ON WATER MAIN.

CASE 5. NEW GRAVITY SANITARY SEWER MAIN OR NEW FORCE MAIN CROSSING NEW POTABLE WATER MAIN (PER TCEQ §290.44(e)(4)(B)(iv)(III)).
- LOCATION: SEWER OR FORCE MAIN ABOVE WATER.
- NEW GRAVITY MAIN OR FORCE MAIN REQUIRES ONE PIPE SEGMENT OF PVC (150 PSI) OR DI. IN ADDITION, WATER MUST BE DI OR STEEL OR ENCASED IN DI OR STEEL, TWO NOMINAL SIZES LARGER THAN MAIN AND AT LEAST 18 FEET LONG.
- CENTER ONE SEGMENT OF SEWER PIPE ON WATER MAIN.

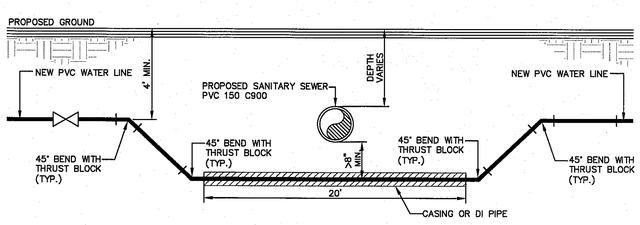
STANDARD DETAIL	DATE: 8/3/2006 REV: 8/21/2007	SEPARATION DISTANCE SANITARY SEWER AND POTABLE WATER (SPECIAL CONDITIONS) N.T.S.	EL PASO WATER UTILITIES / PUBLIC SERVICE BOARD	DETAIL No. 161

4 / C15.2 SEPARATION DISTANCE–SANITARY SEWER AND POTABLE WATER
SCALE: N.T.S.

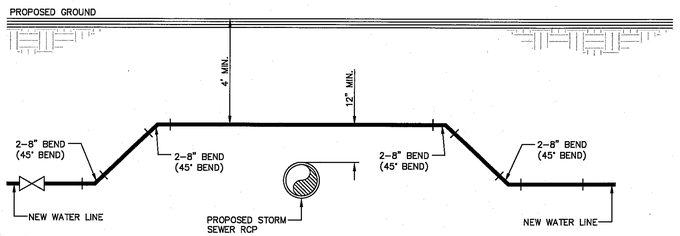


*NOTE:
IF DISTANCE BETWEEN PROPOSED SANITARY SEWER AND PROPOSED WATER LINE IS BETWEEN 6"(MIN.)–2'(MAX.), SANITARY SEWER MUST BE ENCASED IN DUCTILE IRON PIPE AS PER SEPERATION DISTANCE (SPECIAL CONDITION) DETAIL.

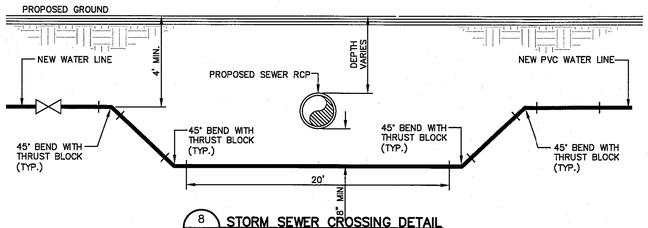
5 / C15.2 SANITARY SEWER CROSSING WATER LINE DETAIL
SCALE: N.T.S.



6 / C15.2 SANITARY SEWER CROSSING DETAIL
SCALE: N.T.S.



7 / C15.2 STORM SEWER CROSSING DETAIL
SCALE: N.T.S.



8 / C15.2 STORM SEWER CROSSING DETAIL
SCALE: N.T.S.

THE CITY OF EL PASO TEXAS
Final Approval

REFERENCES – BENCHMARKS
BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.
ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

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STATE OF TEXAS — JAMES L. AZCARATE — 85075 — LICENSED PROFESSIONAL ENGINEER — 7-14-14

SCALE	
Horizontal:	N/A
Vertical:	N/A
Contour Interval:	N/A
DATE:	MAY 2014
DESIGN BY:	F.Z./J.M.
DRAWN BY:	J.M.
CHKD. BY:	J.L.A.
APPVD. BY:	J.L.A.
JOB No.	2260–017–1D

PROJECT TITLE
VENTANAS SUBDIVISION
UNIT SEVEN
SUBDIVISION IMPROVEMENTS

SHEET TITLE
SANITARY SEWER DETAILS
(SHEET 2 OF 3)

SHEET NO.
C15.2

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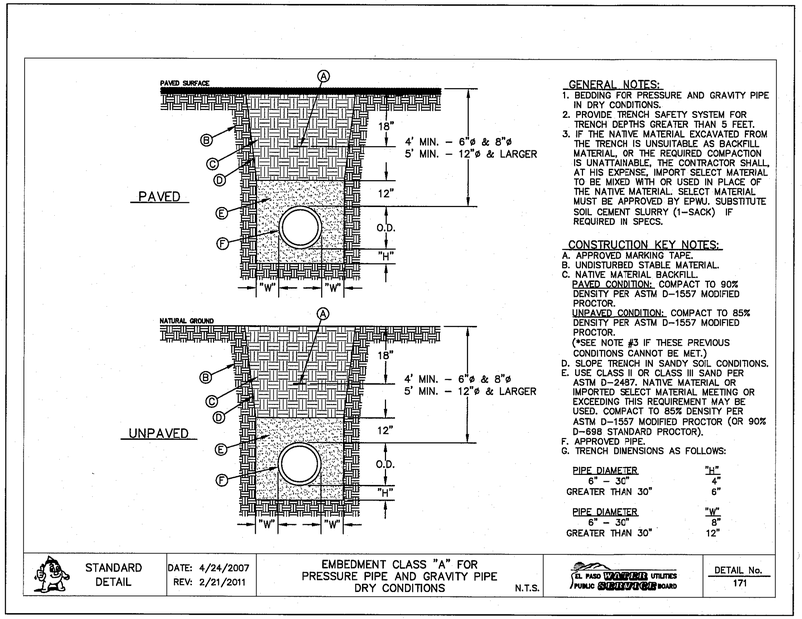


GENERAL NOTES:
1. BEDDING FOR PRESSURE AND GRAVITY PIPE IN DRY CONDITIONS.
2. PROVIDE TRENCH SAFETY SYSTEM FOR TRENCH DEPTHS GREATER THAN 5 FEET.
3. IF THE NATIVE MATERIAL EXCAVATED FROM THE TRENCH IS UNSUITABLE AS BACKFILL MATERIAL, OR THE REQUIRED COMPACTION IS UNATTAINABLE, THE CONTRACTOR SHALL, AT HIS EXPENSE, IMPORT SELECT MATERIAL TO BE MIXED WITH OR USED IN PLACE OF THE NATIVE MATERIAL. SELECT MATERIAL MUST BE APPROVED BY EPWU. SUBSTITUTE SOIL CEMENT SLURRY (1-SACK) IF REQUIRED IN SPECS.

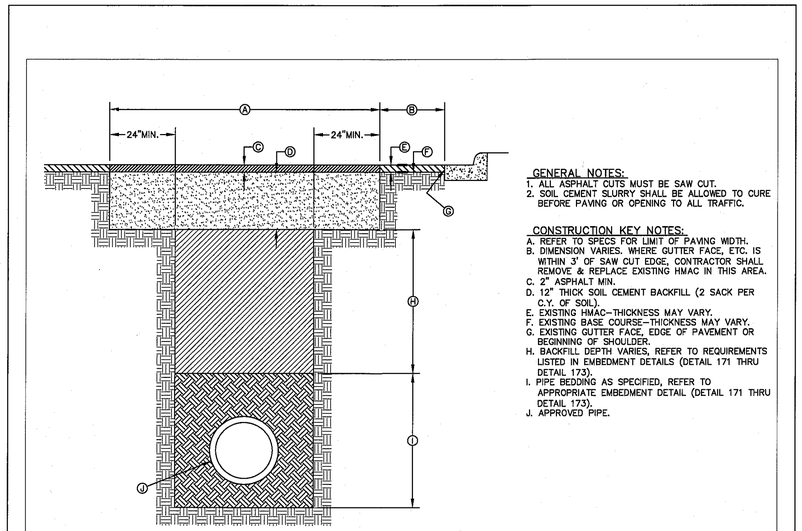
CONSTRUCTION KEY NOTES:
A. APPROVED MARKING TAPE.
B. UNDISTURBED STABLE MATERIAL.
C. NATIVE MATERIAL BACKFILL.
PAVED CONDITION: COMPACT TO 90% DENSITY PER ASTM D-1557 MODIFIED PROCTOR.
UNPAVED CONDITION: COMPACT TO 85% DENSITY PER ASTM D-1557 MODIFIED PROCTOR.
(*SEE NOTE #3 IF THESE PREVIOUS CONDITIONS CANNOT BE MET.)
D. SLOPE TRENCH IN SANDY SOIL CONDITIONS.
E. USE CLASS II OR CLASS III SAND PER ASTM D-2487. NATIVE MATERIAL OR IMPORTED SELECT MATERIAL MEETING OR EXCEEDING THIS REQUIREMENT MAY BE USED. COMPACT TO 85% DENSITY PER ASTM D-1557 MODIFIED PROCTOR (OR 90% D-698 STANDARD PROCTOR).
F. APPROVED PIPE.
G. TRENCH DIMENSIONS AS FOLLOWS:

PIPE DIAMETER	"H"
6" – 30"	4"
GREATER THAN 30"	6"

PIPE DIAMETER	"W"
6" – 30"	8"
GREATER THAN 30"	12"

STANDARD DETAIL	DATE: 4/24/2007 REV: 2/21/2011	EMBEDMENT CLASS "A" FOR PRESSURE PIPE AND GRAVITY PIPE DRY CONDITIONS N.T.S.	EL PASO WATER UTILITIES / PUBLIC SERVICE BOARD	DETAIL No. 171

1 C15.3 BEDDING CLASS DETAILS FOR P.V.C. PRESSURE PIPE
SCALE: N.T.S.

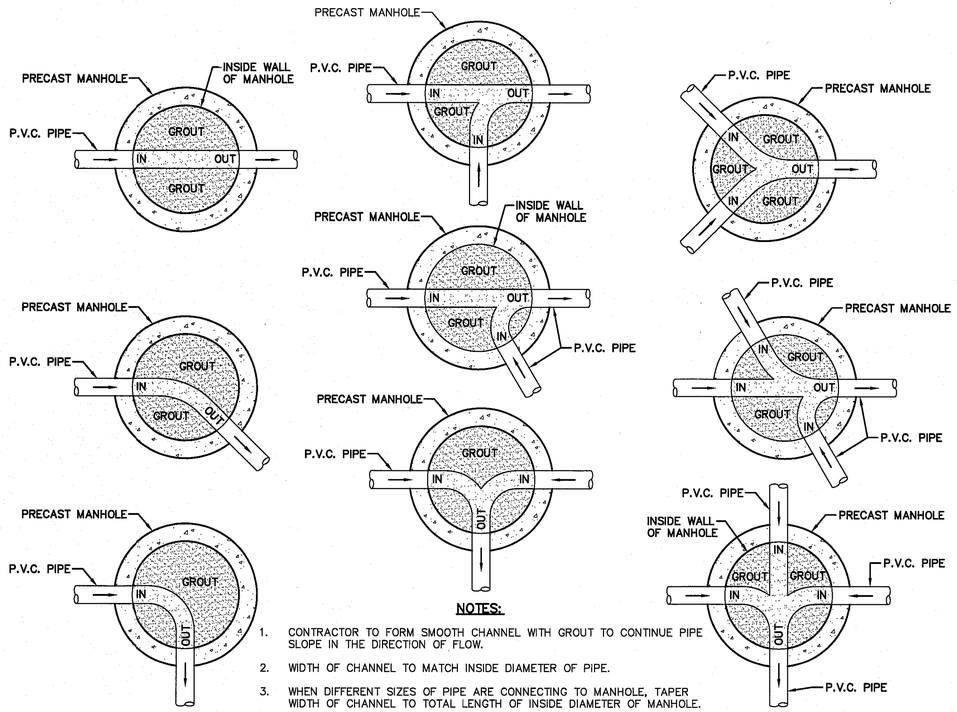


GENERAL NOTES:
1. ALL ASPHALT CUTS MUST BE SAW CUT.
2. SOIL CEMENT SLURRY SHALL BE ALLOWED TO CURE BEFORE PAVING OR OPENING TO ALL TRAFFIC.

CONSTRUCTION KEY NOTES:
A. REFER TO SPECS FOR LIMIT OF PAVING WIDTH.
B. DIMENSION VARIES. WHERE GUTTER FACE, ETC. IS WITHIN 3' OF SAW CUT EDGE, CONTRACTOR SHALL REMOVE & REPLACE EXISTING HMAC IN THIS AREA.
C. 2" ASPHALT MIN.
D. 12" THICK SOIL CEMENT BACKFILL (2 SACK PER C.Y. OF SOIL).
E. EXISTING HMAC-THICKNESS MAY VARY.
F. EXISTING BASE COURSE-THICKNESS MAY VARY.
G. EXISTING GUTTER FACE, EDGE OF PAVEMENT OR BEGINNING OF SHOULDER.
H. BACKFILL DEPTH VARIES, REFER TO REQUIREMENTS LISTED IN EMBEDMENT DETAILS (DETAIL 171 THRU DETAIL 173).
I. PIPE BEDDING AS SPECIFIED, REFER TO APPROPRIATE EMBEDMENT DETAIL (DETAIL 171 THRU DETAIL 173).
J. APPROVED PIPE.

STANDARD DETAIL	DATE: 10/1992 REV: 5/9/2011	PAVEMENT REPLACEMENT N.T.S.	EL PASO WATER UTILITIES / PUBLIC SERVICE BOARD	DETAIL No. 179

2 C15.3 PAVEMENT REPLACEMENT DETAIL
SCALE: N.T.S.



NOTES:
1. CONTRACTOR TO FORM SMOOTH CHANNEL WITH GROUT TO CONTINUE PIPE SLOPE IN THE DIRECTION OF FLOW.
2. WIDTH OF CHANNEL TO MATCH INSIDE DIAMETER OF PIPE.
3. WHEN DIFFERENT SIZES OF PIPE ARE CONNECTING TO MANHOLE, TAPER WIDTH OF CHANNEL TO TOTAL LENGTH OF INSIDE DIAMETER OF MANHOLE.
4. GROUT TO BE USED FOR BOTH MANHOLES AND DROP MANHOLES. NO P.V.C. PIPE SHALL BE INSTALLED IN MANHOLE. REFER TO DETAILS 1 & 2 SHEET C6.2 AND DETAIL 3 THIS SHEET.
5. REFER TO PLAN & PROFILE SHEETS FOR SIZE OF PIPES AND MANHOLES.

3 C15.3 TYPICAL INVERT PLANS
SCALE: N.T.S.

REFERENCES – BENCHMARKS
BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.
ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

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LICENSED PROFESSIONAL ENGINEER
7-1-14

SCALE	N/A
Horizontal:	N/A
Vertical:	N/A
Contour interval:	N/A
DATE:	MAY 2014
DESIGN BY:	F.Z./J.M.
DRAWN BY:	J.M.
CHKD. BY:	J.L.A.
APPVD. BY:	J.L.A.
JOB No.	2260-017-LD

PROJECT TITLE
VENTANAS SUBDIVISION
UNIT SEVEN
SUBDIVISION IMPROVEMENTS

SHEET TITLE
SANITARY SEWER DETAILS
(SHEET 3 OF 3)
SHEET NO.
C15.3

THE CITY OF EL PASO TEXAS
Final Approval

S:\2260\2260-017LD-Ventanas Unit Seven\DWGS\Construction Drawings\Improvement Plans\2260-017-C15.1-C15.3-Sanitary Sewer Details.dwg, Layout3, 7/10/2014 4:28:34 PM

SITE DESCRIPTION

PROJECT NAME AND LIMITS: VENTANAS SUBDIVISION UNIT SEVEN IS BORDERED BY VENTANAS SUBDIVISION UNIT FOUR TO THE NORTH, A POTION OF TRACT 1, OF SECTION 46, BLOCK 79, TOWNSGIP 2, TEXAS AND PACIFIC RAILROAD COMPANY SURVEY TO THE EAST AND VENTANAS SUBDIVISION UNIT THREE TO THE WEST.

PROJECT DESCRIPTION: THE SITE FOR THE NEW SUBDIVISION WILL ENCOMPASS APPROXIMATELY 25.149± ACRES, AND WILL CONTAIN A TOTAL OF 145 RESIDENTIAL LOTS

EXISTING CONDITIONS: THE SITE IS CLEAR OF SITE IMPROVEMENTS AND IS COVERED WITH ITS NATURAL SURROUNDINGS. EXISTING RUNOFF IS TO THE WEST.

MAJOR SOIL DISTURBING ACTIVITIES: MAJOR SOIL DISTURBING ACTIVITIES WILL CONSIST OF CLEARING AND GRUBBING, GRADING FOR BUILDING PAD ELEVATIONS, CONSTRUCTION OF STREETS AND EXCAVATION FOR UTILITIES.

TOTAL PROJECT AREA: 25.149±

TOTAL AREA TO BE DISTURBED: 25.149±

WEIGHTED RUNOFF COEFFICIENT (AFTER CONSTRUCTION): 0.60

EXISTING CONDITION OF SOIL AND VEGETATIVE COVER AND % OF EXISTING VEGETATIVE COVER: THE PROJECT SITE IS LOCATED IN THE VICINITY OF THE DELNORTE-CANUTIO ASSOCIATION. THE SOIL IS NEARLY LEVEL TO STEEP SOILS THAT ARE SHALLOW OR VERY SHALLOW OVER CALICHE OR THAT ARE DEEP AND GRAVELLY THROUGHOUT; MAINLY ON AND NEAR FOOT SLOPES OF THE FRANKLIN MOUNTAINS.

NAME OF RECEIVING WATERS: VENTANAS SUBDIVISION UNIT SEVEN WILL DISCHARGE INTO AN ON-SITE STORM SEWER INFRASTRUCTURE AND ULTIMATELY DISCHARGE INTO AN EXISTING RETENTION BASIN. LOCATED IN VENTANAS SUBDIVISION UNIT FOUR.

EROSION AND SEDIMENT CONTROL

SOIL STABILIZATION PRACTICES

- ____ TEMPORARY SEEDING
- ____ PERMANENT PLANTING, SODDING, OR SEEDING
- ____ MULCHING
- ____ SOIL RETENTION BLANKET
- ____ BUFFER ZONES
- ____ PRESERVATION OF NATURAL RESOURCES

OTHER: ____

STRUCTURAL PRACTICES:

- X SILT FENCES
- X HAY BALES
- ____ ROCK BERMS
- ____ DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
- ____ DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
- ____ DIVERSION DIKE AND SWALE COMBINATION
- ____ PIPE SLOPE DRAINS
- ____ CONCRETE FLUMES
- X ROCK BEDDING AT CONSTRUCTION EXIT
- ____ TIMBER MATTING AT CONSTRUCTION EXIT
- ____ CHANNEL LINERS
- ____ SEDIMENT TRAPS
- X SEDIMENT BASINS
- ____ STORM INLET SEDIMENT TRAP
- ____ STONE OUTLET STRUCTURES
- X CURBS AND GUTTERS
- X STORM DRAINS
- ____ VELOCITY CONTROL DEVICES
- ____ VEGETATED SWALES & NATURAL DEPRESSIONS

OTHER: ____

NARRATIVE - SEQUENCE OF CONSTRUCTION (STORM WATER MANAGEMENT) ACTIVITIES:

1. INSTALL TEMPORARY EROSION AND SEDIMENT CONTROLS (e.g. SILT FENCE AND/OR EARTHEN BERM, AND STABILIZED CONSTRUCTION ENTRANCE) ;
2. PERFORM CLEARING AND GRUBBING;
3. EXCAVATION FOR UTILITIES;
4. COMPLETE STREET AND LOT GRADING;
5. CONSTRUCTION OF SUBDIVISION IMPROVEMENTS; AND,
6. WHEN ALL CONSTRUCTION ACTIVITY RELATED IN DEVELOPMENT OF THE SITE IS COMPLETE, REMOVE TEMPORARY CONTROLS IN 1. ABOVE.

SWPPP GENERAL NOTES:

1. PLACEMENT OF SILT FENCE SHALL BE ADJUSTED AS NECESSARY TO PREVENT THE BLOCKING OF DRIVEWAYS OR DRIVING LANES.
2. THE SWPPP MANUAL IDENTIFIES THE DUTIES AND RESPONSIBILITIES OF THE GENERAL CONTRACTOR IN COMPLIANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS. THIS ITEM SHALL BE SUBSIDIARY TO THE SWPP BEST MANAGEMENT PRACTICES (COMPLETE IN PLACE) ITEMS. THE SWPPP PROJECT MANUAL IS AVAILABLE FOR REVIEWING AT THE CITY OF EL PASO-ENGINEERING DEPARTMENT. UPON SELECTION, THE CONTRACTOR WILL BE PROVIDED AN SWPPP MANUAL. THE CONTRACTOR SHALL MAINTAIN THIS MANUAL AT THE CONSTRUCTION SITE AT ALL TIMES THROUGHOUT THE CONSTRUCTION PERIOD.
3. THE CONTRACTOR SHALL COMPLETE AND SUBMIT ALL REGULATORY FORMS AND APPLICATIONS, AS PROVIDED IN THE SWPPP MANUAL, INCLUDING, BUT NOT LIMITED TO; NOI, NOT, SDPCP, AND ANY OTHER FORM REQUIRED BY THE CITY OF EL PASO AND TCEQ.
4. ALLOWABLE STORM WATER AND NON-STORMWATER DISCHARGE SHALL COMPLY WITH 15.20.080 (GENERAL PROHIBITION) AND 15.20.090 (SPECIFIC PROHIBITIONS AND REQUIREMENTS) OF THE CITY OF EL PASO STORM DRAIN POLLUTION CONTROL PLAN ORDINANCE. NON-STORMWATER DISCHARGES MAY CONSIST OF, BUT ARE NOT LIMITED TO, THE DISCHARGE RESULTING FROM FIREFIGHTING, LAWN WATERING, LANDSCAPE IRRIGATION, NATURAL SPRING, AND/OR AGRICULTURAL STORM WATER RUNOFF.
5. REFER TO DRAINAGE PLAN SHEET C4.1, FOR DETAILED INFORMATION ON WATERSHED AREAS AND RUNOFF QUANTITIES (Q).
6. THE FOLLOWING HAVE BEEN IDENTIFIED AS POTENTIAL CONTAMINATION SOURCES: CLEARED AND GRADED AREAS; CONSTRUCTION SITE ENTRANCE AND ASPHALT PARKING AREA CONSTRUCTION; ASPHALT LOADING/UNLOADING AREAS; CONCRETE LOADING/UNLOADING AREAS; AND, ALL UNDISTURBED AREAS.
7. THE FOLLOWING IS A LIST OF POTENTIAL CONSTRUCTION SITE STORM WATER POLLUTANTS: ASPHALT; CONCRETE; GLUE/ADHESIVE; PAINTS; CURING COMPOUNDS; WASTEWATER FROM CONSTRUCTION EQUIPMENT WASHING; HYDRAULIC OIL/FLUIDS; ;GASOLINE; DIESEL FUEL; KEROSENE; ANTIFREEZE/COOLANT; AND EROSION.

BEST MANAGEMENT PRACTICES CONTROLS

I. **WASTE MATERIALS:**

ALL WASTE MATERIALS, INCLUDING CONSTRUCTION DEBRIS, SHALL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. NO CONSTRUCTION WASTE MATERIAL SHALL BE BURIED ON SITE. THE TRANSIT DUMPSTER SHALL COMPLY WITH ORDINANCE 18.52.010 (ENCLOSURE AND REMOVAL OF WASTE MATERIALS DURING CONSTRUCTION). THE DUMPSTER SHALL BE EMPTIED AS NECESSARY OR AS REQUIRED BY ORDINANCE 9.04 (SOLID WASTE MANAGEMENT) AND THE TRASH SHALL BE HAULED TO A LICENSED LANDFILL.

II. **HAZARDOUS WASTE:**

AT A MINIMUM, ANY PRODUCTS IN THE FOLLOWING CATEGORIES SHALL BE CONSIDERED HAZARDOUS: PAINT, ACIDS FOR CLEANING MASONRY SURFACES, CLEANING SOLVENTS, ASPHALT PRODUCTS, CHEMICAL ADDITIVES FOR SPILL STABILIZATION, CURING COMPOUNDS AND ADDITIVES. IN THE EVENT OF A SPILL WHICH MAY BE HAZARDOUS, THE CONTRACTOR SHALL TAKE IMMEDIATE ACTION AND CONTACT THE FIRE DEPT. AND TNRCC.

III. **SANITARY WASTE:**

ALL SANITARY WASTE SHALL BE COLLECTED FROM THE CONSTRUCTION PORTABLE UNITS AS NECESSARY OR AS REQUIRED, CHAPTER 18.08 (BUILDING CODE), BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR. ALL WASTE MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

IV. **SPILL PREVENTION:**

THE FOLLOWING PRACTICES SHALL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURES OF MATERIALS TO STORM WATER RUNOFF.

V. **GOOD HOUSEKEEPING:**

A. STORE ONLY ENOUGH PRODUCTS REQUIRED TO DO THE JOB
B. NEATLY STORE MATERIALS ON-SITE IN AN ORDERLY MANNER
C. KEEP PRODUCTS IN THEIR ORIGINAL CONTAINER
D. DO NOT MIX SUBSTANCES WITH ONE ANOTHER, UNLESS OTHERWISE RECOMMENDED BY THE MANUFACTURER
E. USE ENTIRE CONTENTS OF A PRODUCT BEFORE DISPOSING THE CONTAINER
F. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL

VI. **HAZARDOUS PRODUCTS:**

PRACTICES USED TO REDUCE RISKS:

A. KEEP PRODUCTS IN THEIR ORIGINAL CONTAINER IF AT ALL POSSIBLE
B. RETAIN ORIGINAL LABELS, PRODUCT INFORMATION AND MATERIAL SAFETY DATA SHEETS (MSDS)
C. DISPOSE SURPLUS PRODUCT IN ACCORDANCE WITH MANUFACTURER'S OR LOCAL & STATE RECOMMENDED METHODS

VII. **PETROLEUM PRODUCTS:**

ALL ON-SITE VEHICLES SHALL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS SHALL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ON-SITE SHALL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATION.

VIII. **SPILL CONTROL PRACTICES:**

A. MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP SHALL BE CLEARLY POSTED AND SITE PERSONNEL SHALL BE MADE AWARE OF THE PROCEDURES:
B. MATERIALS AND EQUIPMENT NECESSARY FOR CLEANUP SHALL BE KEPT IN THE MATERIAL STORAGE AREA ON-SITE:
C. ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY
D. SPILL AREA SHALL BE WELL VENTILATED AND APPROPRIATE CLOTHING WILL BE WORN:
E. ANY SPILL SHALL BE REPORTED TO THE APPROPRIATE GOVERNMENTAL AGENCY
F. MEASURES SHALL BE TAKEN TO PREVENT A SPILL FROM REOCCURRING

IX. **MAINTENANCE AND INSPECTION PROCEDURES:**

ALL POLLUTION PREVENTION MEASURES SHALL BE INSPECTED AT LEAST ONCE A MONTH OR WITHIN 24-HOURS PRIOR TO ANTICIPATED STORM EVENT AND FOLLOWING A STORM EVENT OF 0.5 INCHES OR MORE. INSPECTION IN FINAL STABILIZED AREAS OR DURING ARID PERIODS WILL BE CONDUCTED MONTHLY, BEST MANAGEMENT PRACTICES AND POLLUTION CONTROL PROCEDURES SHALL BE INSPECTED FOR ADEQUACY.

X. **REMARKS:**

DISPOSAL AREAS, STOCKPILES, AND HAUL ROADS SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE AND CONTROL THE AMOUNT OF SEDIMENT THAT MAY ENTER RECEIVING WATERS. DISPOSAL AREAS SHALL NOT BE LOCATED IN ANY WETLAND, WATERBODY OR STREAMBED. CONSTRUCTION STAGING AREAS AND VEHICLE MAINTENANCE AREAS SHALL BE CONSTRUCTED BY THE CONTRACTOR IN A MANNER TO MINIMIZE THE RUNOFF OF POLLUTANTS. ALL WATERWAYS SHALL BE CLEANED AS SOON AS PRACTICABLE OF TEMPORARY EMBANKMENT, TEMPORARY BRIDGES, MATTING, FALSEWORK, PILING DEBRIS OR OTHER OBSTRUCTIONS PLACED DURING CONSTRUCTION OPERATIONS THAT ARE NOT A PART OF THE FINISHED WORK.

XI. **OFFSITE VEHICLE TRACKING:**

IN ADDITION TO THE STABILIZED CONSTRUCTION ENTRANCES, THE FOLLOWING MEASURES SHALL BE OBSERVED DURING CONSTRUCTION:

- HAUL ROADS SHALL BE DAMPENED FOR DUST CONTROL
- LOADED HAUL TRUCKS SHALL BE COVERED WITH TARPAULIN
- EXCESS DIRT ON ROAD SHALL BE REMOVED IMMEDIATELY
- STABILIZED CONSTRUCTION ENTRANCE
- OTHER: ____

THE CITY OF EL PASO TEXAS

Final Approval

REFERENCES - BENCHMARKS

BENCHMARK IS CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUN TRAIL DRIVE AND SETTING SUN DRIVE.

ELEVATION = 3970.52 (CITY DATUM).

DATE	REVISIONS	BY

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LICENSED PROFESSIONAL ENGINEER
7-10-14

SCALE
Horizontal: N/A
Vertical: N/A
Contour Interval: N/A

DATE: MAY 2014
DESIGN BY: F.Z./J.M
DRAWN BY: J.M.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260-017-LD

PROJECT TITLE

VENTANAS SUBDIVISION UNIT SEVEN SUBDIVISION IMPROVEMENTS

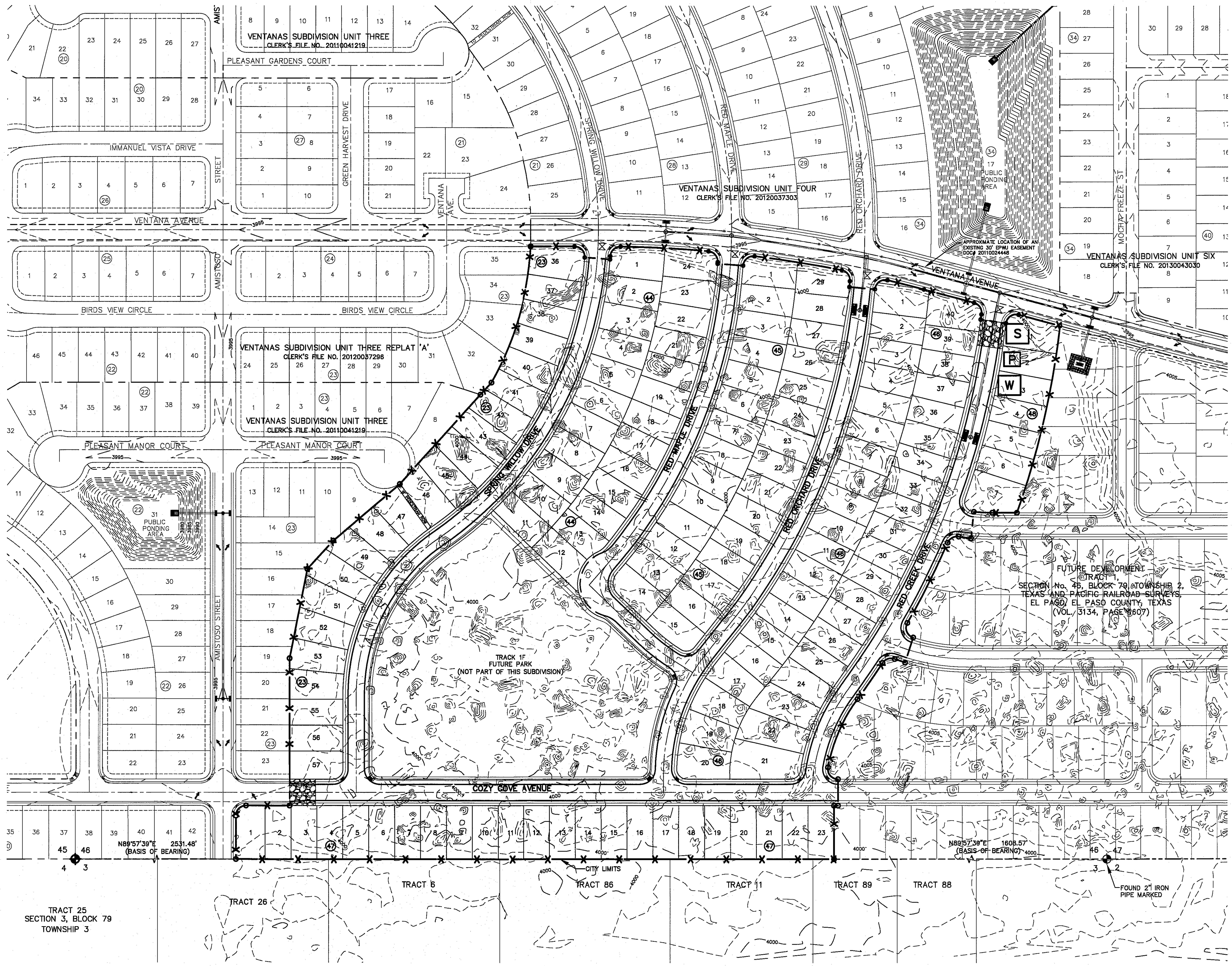
SHEET TITLE

STORM WATER POLLUTION CONTROL PLAN: GENERAL NOTES

(SHEET 1 OF 3)

SHEET NO.

C16.1



UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543–5720
EL PASO ENERGY CORPORATION	(915) 496–5244
EL PASO WATER UTILITIES	(915) 594–5500
MCI SURVEILLANCE	(800) MCI–WORK
TIME WARNER COMMUNICATIONS	(915) 772–1123
TEXAS GAS SERVICE	(915) 680–7200
SBC	(800) 545–6005
AT&T	(800) 852–3786
U.S. SPRINT TELECOMM	(800) 521–0579
CITY OF EL PASO DEPARTMENT OF TRANSPORTATION (EPDoT)	(915) 621–6750
(AFTER HOURS)	(915) 240–3220

WARNING ! BEFORE YOU DIG

CALL
1–800–DIG–TESS
1–800–344–8377
FOR FIELD LOCATING EXISTING UTILITIES

—X—X— SILT FENCE OR EARTHEN BERM

STABILIZED CONSTRUCTION ENTRANCE

S — STAGING AREA

P — PORTABLE TOILETS

W — WASH OUT

TEMPORARY WOOD CHIP FILLED MESH BAGS PLACED TO PROTECT INLET.

SITE PLAN

SCALE: 1" = 100'

Final Approval

THE CITY OF EL PASO TEXAS

REFERENCES – BENCHMARKS

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STATE OF TEXAS
JORGE L. AZCARATE
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LICENSED PROFESSIONAL ENGINEER
7-16-14

SCALE
Horizontal: 1"=100'
Vertical: N/A
Contour Interval: N/A

DATE: MAY 2014
DESIGN BY: F.Z./J.M
DRAWN BY: J.M.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2260–017–LD

PROJECT TITLE

VENTANAS SUBDIVISION UNIT SEVEN
SUBDIVISION IMPROVEMENTS

SHEET TITLE

STORM WATER POLLUTION CONTROL PLAN: (SITE PLAN)

(SHEET 2 OF 3)

SHEET NO.

C16.2

S:\2260\2260-017LD-Ventanas Unit Seven\DWGS\Construction Drawings\Improvement Plans\2260-017-C16.2-SWPPP Site Plan.dwg, SWPPP Site Plan, 7/15/2014 10:14:17 AM

UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
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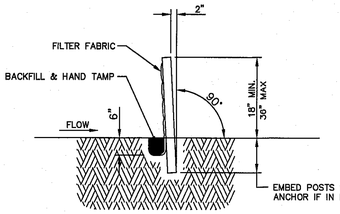
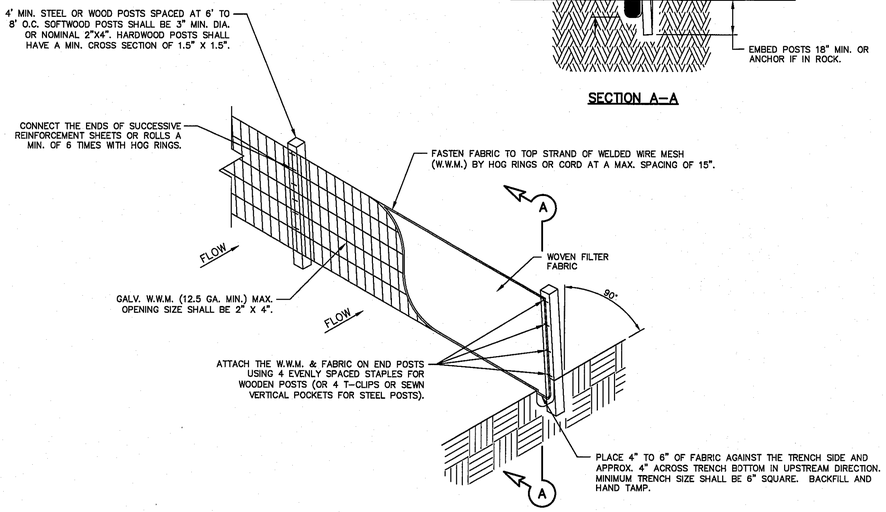
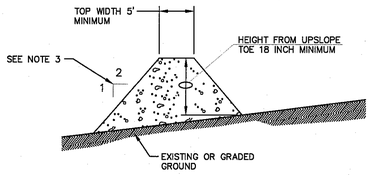


SECTION A-A



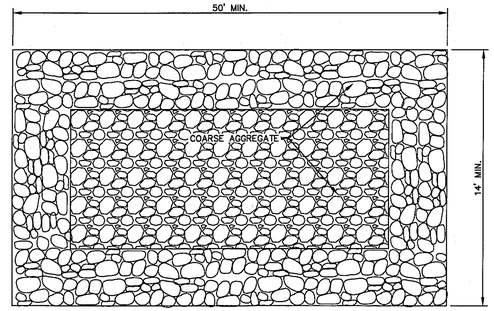
TEMPORARY SEDIMENT CONTROL FENCE



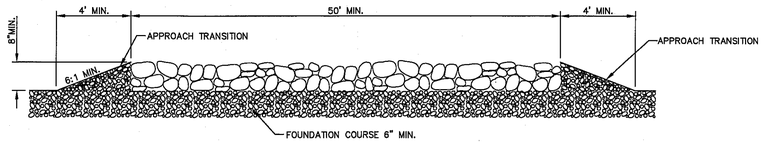
GENERAL NOTES:

1. SOIL USED IN BERM CONSTRUCTION SHALL BE MACHINE COMPACTED.
2. TOP WIDTH AND HEIGHT OF BERM MAY BE MODIFIED WITH PRIOR APPROVAL OF THE ENGINEER.
3. SIDE SLOPES WITHIN THE SAFETY CLEAR ZONE OF A ROADWAY SHALL BE 6:1 OR FLATTER.
4. GRADING SHALL BE SHOWN ELSEWHERE IN THE PLANS OR AS DIRECTED BY THE ENGINEER.
5. THE ENGINEER RESERVES THE RIGHT TO MODIFY THE DIMENSIONS SHOWN FOR THE BERM DEPENDENT ON RUNOFF VOLUME CHARACTERISTICS.
6. BERM THAT ARE IN PLACE FOR MORE THAN 14 CALENDAR DAYS SHOULD BE STABILIZED TO PREVENT SEDIMENT RUNOFF.
7. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

TYPICAL BERM CONFIGURATION



PLAN

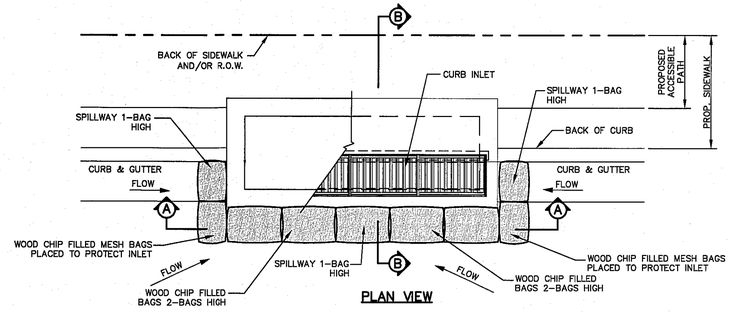


PROFILE

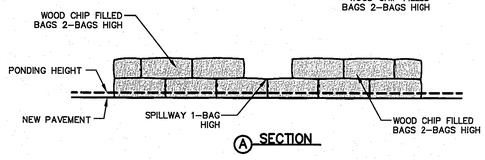
GENERAL NOTES

1. THE LENGTH OF THE TYPE 1 CONSTRUCTION EXIT SHALL BE AS INDICATED ON THE PLANS, BUT NOT LESS THAN 50'.
2. THE COARSE AGGREGATE SHOULD BE OPEN GRADED WITH A SIZE OF 4" TO 8".
3. THE APPROACH TRANSITIONS SHOULD BE NO STEEPER THAN 6:1 AND CONSTRUCTED AS DIRECTED BY THE ENGINEER.
4. THE CONSTRUCTION EXIT FOUNDATION COURSE SHALL BE FLEXIBLE BASE, BITUMINOUS CONCRETE, PORTLAND CEMENT CONCRETE OR OTHER MATERIAL AS APPROVED BY THE ENGINEER.
5. THE CONSTRUCTION EXIT SHALL BE GRADED TO ALLOW DRAINAGE TO A SEDIMENT TRAPPING DEVICE.
6. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

CONSTRUCTION EXIT (TYPE 1)

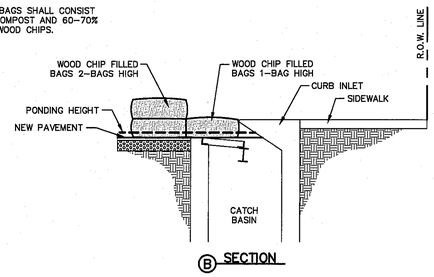


PLAN VIEW



A SECTION

NOTE:
WOOD CHIP FILLED MESH BAGS SHALL CONSIST OF 30-40% WEED FREE COMPOST AND 60-70% PARTIALLY DECOMPOSED WOOD CHIPS.



B SECTION

GENERAL NOTES:

1. PLACE CURB TYPE SEDIMENT BARRIERS ON GENTLY SLOPING STREET SEGMENTS, WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE FROM RUNOFF.
2. INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT. SEDIMENT AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.

TEMPORARY INLET PROTECTION

THE CITY OF EL PASO TEXAS
Final Approval

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engineers • architects • planners
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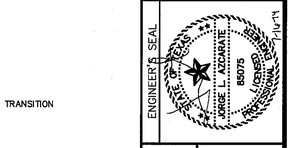
ENGINEER'S SEAL



SCALE	
Horizontal:	N/A
Vertical:	N/A
Contour Interval:	N/A
DATE:	MAY 2014
DESIGN BY:	F.Z./J.M.
DRAWN BY:	J.M.
CHKD. BY:	J.L.A.
APP'VD. BY:	J.L.A.
JOB No.	2260-017-LD

PROJECT TITLE

VENTANAS SUBDIVISION
UNIT SEVEN
SUBDIVISION IMPROVEMENTS

SHEET TITLE

STORM WATER POLLUTION PREVENTION PLAN: (DETAILS)

(SHEET 3 OF 3)

SHEET NO.

C16.3

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