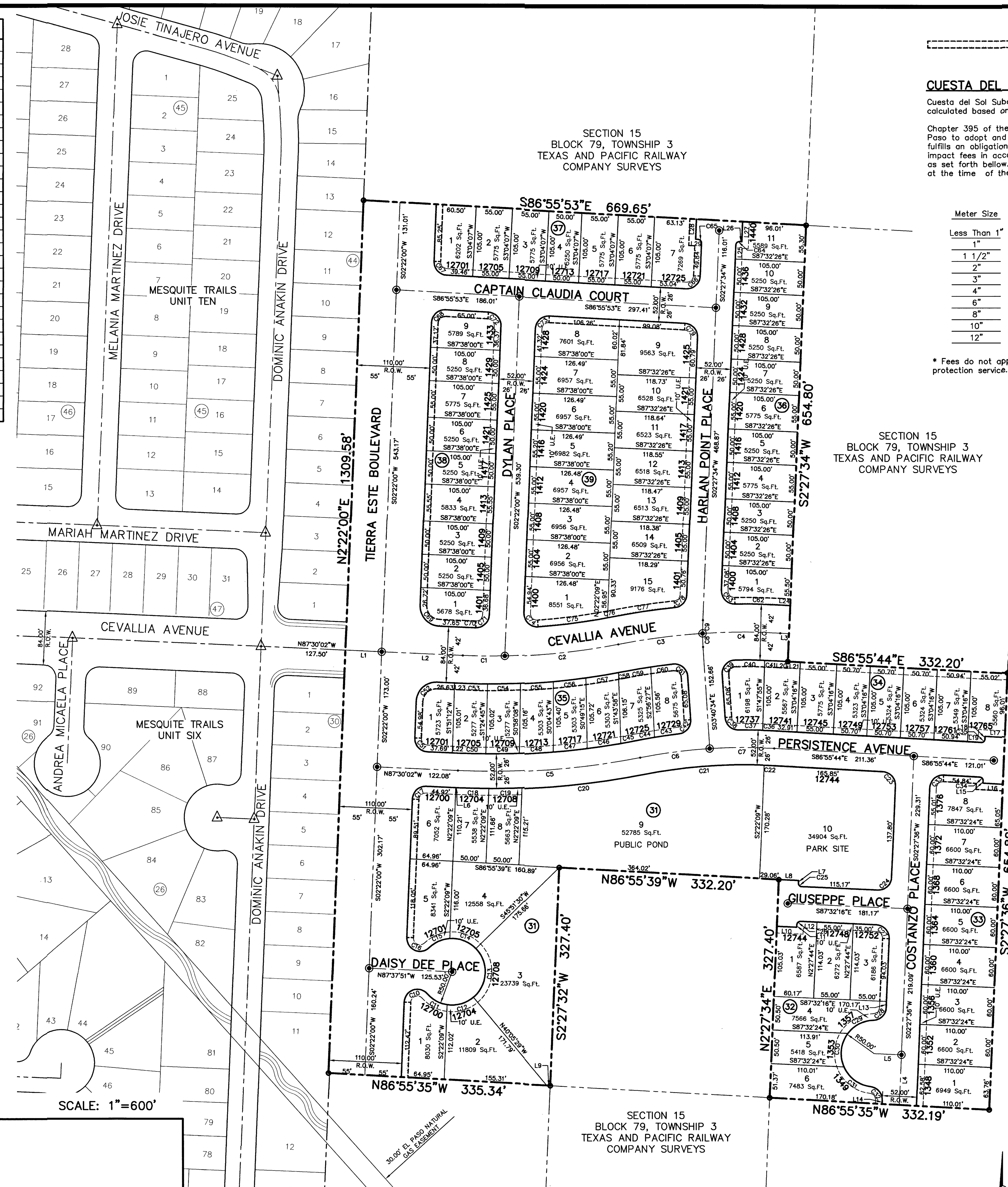
CUESTA DEL SOL SUBDIVISION

BEING A PORTION OF SECTION 15, BLOCK 79, TOWNSHIP 3
TEXAS AND PACIFIC RAILWAY COMPANY SURVEYS
CITY OF EL PASO, EL PASO COUNTY, TEXAS.
CONTAINING 22.596± ACRES

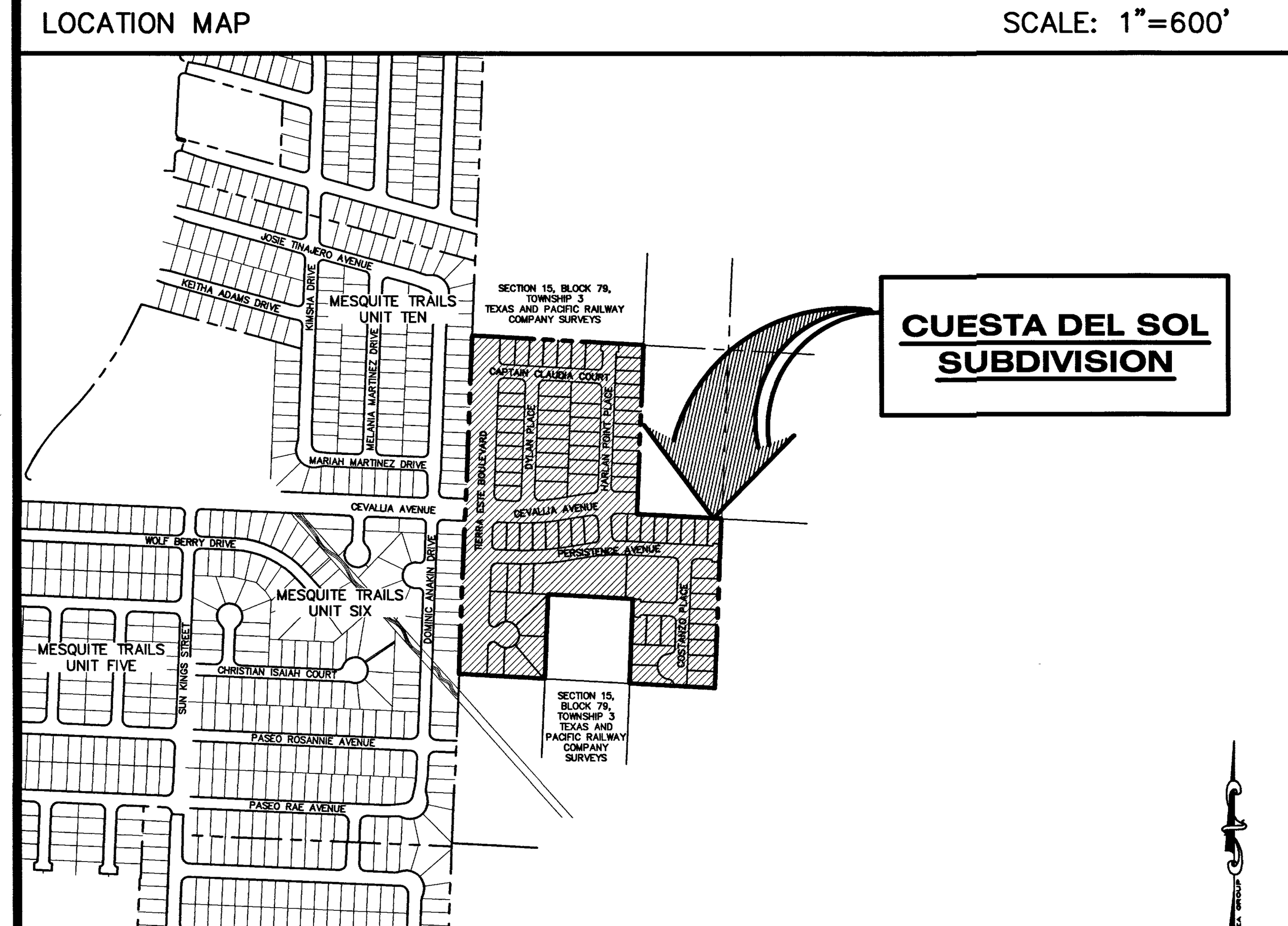
CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	1000.00'	63.56'	31.79'	63.55'	S89°19'17"E	003°38'30"
C2	1000.00'	172.48'	86.45'	172.26'	N83°55'00"E	009°52'56"
C3	1000.00'	128.66'	64.42'	128.57'	S82°39'41"W	007°22'17"
C4	1000.00'	117.40'	58.77'	117.33'	S89°42'37"W	006°43'35"
C5	1173.00'	276.87'	139.08'	276.23'	N85°44'15"E	013°31'26"
C6	827.00'	105.92'	53.03'	105.85'	S82°38'41"W	007°20'17"
C7	827.00'	97.53'	48.82'	97.48'	S89°41'33"W	006°45'26"
C8	375.00'	20.35'	10.18'	20.35'	S02°07'16"E	003°06'35"
C9	375.00'	19.80'	9.90'	19.80'	S00°56'48"W	003°01'32"
C10	20.00'	47.54'	49.76'	37.11'	S70°28'11"W	136°12'22"
C11	50.00'	34.73'	18.10'	34.04'	S61°19'38"E	039°48'00"
C12	50.00'	42.64'	22.71'	41.36'	N74°20'27"E	048°51'51"
C13	50.00'	82.07'	53.67'	73.17'	N02°53'01"E	094°03'01"
C14	50.00'	43.54'	23.26'	42.18'	N69°05'17"W	049°53'35"
C15	50.00'	34.74'	18.10'	34.04'	S66°03'47"W	039°48'17"
C16	20.00'	47.54'	49.76'	37.11'	S65°44'11"E	136°12'22"
C17	20.00'	31.46'	20.05'	28.32'	S47°25'59"W	090°07'58"
C18	1199.00'	47.96'	23.98'	47.95'	S88°38'47"E	002°17'30"
C19	1199.00'	50.09'	25.05'	50.09'	N89°00'40"E	002°23'37"
C20	1199.00'	184.96'	92.66'	184.78'	N83°23'42"E	008°50'19"
C21	801.00'	183.18'	91.99'	182.78'	S85°31'37"W	013°06'10"
C22	801.00'	13.88'	6.94'	13.88'	N87°25'31"W	000°59'34"
C23	20.00'	31.20'	19.79'	28.13'	N42°14'04"W	089°23'20"
C24	20.00'	31.42'	20.00'	28.28'	N47°27'40"E	090°00'08"
C25	5.00'	7.85'	5.00'	7.07'	S42°32'21"E	089°59'50"
C26	5.00'	7.85'	5.00'	7.07'	S47°27'39"W	090°00'10"
C27	20.00'	31.42'	20.00'	28.28'	N42°32'20"W	089°59'52"
C28	20.00'	30.05'	18.68'	27.30'	N45°30'14"E	086°05'16"
C29	50.00'	44.72'	23.98'	43.24'	S62°55'34"W	051°14'37"
C31	50.00'	52.42'	28.91'	50.05'	S53°35'34"E	060°04'12"
C32	20.00'	30.05'	18.68'	27.30'	N40°35'02"W	086°05'16"
C33	20.00'	31.63'	20.21'	28.43'	S47°45'56"W	090°36'40"
C34	5.00'	7.80'	4.95'	7.03'	N42°14'04"W	089°23'20"
C35	5.00'	7.91'	5.05'	7.11'	N47°45'56"E	090°36'40"
C36	853.00'	18.94'	9.47'	18.94'	N87°33'54"W	001°16'21"
C37	853.00'	36.68'	18.34'	36.68'	N89°26'00"W	002°27'50"
C38	20.00'	30.36'	18.98'	27.53'	S47°10'14"E	086°59'21"
C39	20.00'	32.39'	21.00'	28.97'	S42°43'30"W	092°48'06"
C40	958.00'	44.69'	22.35'	44.69'	N89°32'16"W	002°40'22"
C41	958.00'	21.32'	10.66'	21.32'	N87°33'50"W	001°16'30"
C42	20.00'	30.36'	18.97'	27.53'	N39°48'32"E	086°58'12"
C43	853.00'	37.41'	18.71'	37.41'	S82°02'15"W	002°30'47"
C44	853.00'	26.88'	13.44'	26.87'	S79°52'42"W	001°48'19"
C45	1147.00'	24.98'	12.49'	24.98'	N79°35'58"E	001°14'52"
C46	1147.00'	51.31'	25.66'	51.31'	N81°30'18"E	002°33'48"
C47	1147.00'	51.31'	25.66'	51.31'	N84°04'05"E	002°33'48"
C48	1147.00'	51.31'	25.66'	51.31'	N86°37'53"E	002°33'47"
C49	1147.00'	50.66'	25.33'	50.65'	N89°10'41"E	002°31'50"
C50	1147.00'	41.16'	20.58'	41.16'	S88°31'43"E	002°03'22"
C51	20.00'	31.37'	19.95'	28.25'	S42°34'01"E	089°52'02"
C52	30.00'	47.19'	30.07'	42.48'	S47°25'59"W	090°07'58"
C53	1042.00'	39.17'	19.59'	39.16'	S88°34'39"E	002°09'13"
C54	1042.00'	49.85'	24.93'	49.85'	N88°58'31"E	002°44'28"
C55	1042.00'	49.70'	24.85'	49.69'	N86°14'18"E	002°43'58"
C56	1042.00'	49.70'	24.85'	49.69'	N83°30'20"E	002°43'58"
C57	1042.00'	49.70'	24.85'	49.69'	N80°46'22"E	002°43'58"
C58	1042.00'	7.84'	3.92'	7.84'	N79°11'28"E	000°25'51"
C59	958.00'	41.73'	20.87'	41.72'	S80°13'24"W	002°29'44"
C60	958.00'	33.99'	17.00'	33.99'	S82°29'15"W	002°01'58"
C61	20.00'	32.40'	21.01'	28.97'	N50°05'10"W	092°49'12"
C62	1042.00'	71.05'	35.54'	71.04'	N88°52'48"W	003°54'25"
C63	20.00'	32.57'	21.18'	29.09'	S44°11'13"E	093°17'34"
C64	5.00'	7.91'	5.05'	7.11'	S47°45'51"W	090°36'33"
C65	5.00'	7.80'	4.95'	7.03'	N42°14'09"W	089°23'27"
C66	20.00'	31.63'	20.21'	28.43'	N47°45'51"E	090°36'33"
C67	20.00'	31.17'	19.76'	28.11'	S42°16'56"E	089°17'53"
C68	20.00'	31.66'	20.25'	28.46'	S47°43'04"W	090°42'07"
C69	30.00'	47.05'	29.93'	42.38'	S42°34'01"E	089°52'02"
C70	958.00'	17.75'	8.87'	17.75'	S88°01'53"E	001°03'41"
C71	20.00'	31.09'	19.68'	28.05'	N46°54'08"E	089°04'17"
C72	20.00'	31.17'	19.76'	28.11'	N42°16'56"W	089°17'53"
C73	20.00'	31.66'	20.25'	28.46'	S47°43'04"W	090°42'07"
C74	20.00'	33.71'	22.43'	29.86'	S45°54'53"E	096°33'45"
C75	958.00'	105.76'	52.93'	105.71'	N82°38'29"E	006°19'31"
C76	958.00'	8.41'	4.21'	8.41'	N79°13'38"E	000°30'11"
C77	1042.00'	94.58'	47.32'	94.55'	S81°34'33"W	005°12'02"
C78	20.00'	28.52'	17.30'	26.17'	N43°19'04"E	081°43'00"
C79	20.00'	31.20'	19.79'	28.13'	N42°14'09"W	089°23'27"

LINE TABLE		
LINE	BEARING	LENGTH
L1	N87°30'02"W	55.00'
L2	N87°30'02"W	122.48'
L3	S86°55'35"E	13.28'
L4	S02°27'36"W	75.40'
L5	S87°32'16"E	41.22'
L6	N87°30'02"W	2.06'
L7	N02°27'34"E	4.00'
L8	S87°32'26"E	30.00'
L9	N86°55'35"W	5.07'
L10	S87°32'26"E	30.00'
L11	N02°27'34"E	4.00'
L12	S87°32'16"E	25.18'
L13	S02°27'36"W	9.22'
L14	S02°27'36"W	5.29'
L15	S02°27'36"W	4.05'
L16	S86°55'44"E	30.00'
L17	S86°55'44"E	30.00'
L18	S02°27'36"W	3.95'
L19	S86°55'44"E	21.08'
L20	S86°55'35"E	13.73'
L21	S86°55'44"E	19.14'
L22	N87°30'02"W	9.50'
L23	N87°30'02"W	10.68'
L24	S86°55'35"E	12.83'
L25	S02°27'34"W	21.36'
L26	S86°55'53"E	3.95'
L27	S02°27'34"W	30.00'
L28	S02°27'34"W	30.00'
L29	S86°55'53"E	4.05'



SCALE: 1"=600'

LOCATION MAP



CUESTA DEL SOL SUBDIVISION

LEGEND

10' RESTRICTIVE ACCESS EASEMENT

CUESTA DEL SOL SUBDIVISION

Cuesta del Sol Subdivision is subject to impact fees and they shall be calculated based on the table below.

Chapter 395 of the Texas Local Government Code authorizes the City of El Paso to adopt and impose water and wastewater impact fees. This plat note fulfills an obligation mandated by Chapter 395 and sets the assessment of the impact fees in accordance with the impact fee schedule adopted by City Council as set forth bellow. The collection of the impact fee for this subdivision shall be at the time of the meter connection if development is outside the city limits.

EASTSIDE SERVICE AREA

Meter Size	Meter Capacity Ratio	*Water ($)	Wastewater ($)
Less Than 1"	1.00	697.00	920.00
1"	1.67	1,163.00	1,537.00
1 1/2"	3.33	2,321.00	3,065.00
2"	5.33	3,714.00	4,905.00
3"	10.00	6,968.00	9,203.00
4"	16.67	11,615.00	15,341.00
6"	33.33	23,223.00	30,672.00
8"	53.33	37,158.00	49,077.00
10"	76.67	40,064.00	52,916.00
12"	143.33	74,899.00	98,924.00

* Fees do not apply to water meter or connections made for standby fire protection service.

DEDICATION

Sun Quest Development Inc., 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, ponding area, park and 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 5th day of April 2023.

Joseph L. O'Leary, President

ACKNOWLEDGEMENT

STATE OF TEXAS
COUNTY OF EL PASO

Before me, the undersigned authority, on this day personally appeared Joseph L. O'Leary, 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 5th day of April 2023.

Nancy Aralia Nunez
Notary Public in and for El Paso County

August 09, 2025
My Commission Expires

CITY PLAN 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 1st day of June, 2023.

Chairperson

Executive Secretary

Approved for filing this 6th day of June, 2023.

Planning and Inspections Director

FILING

Filed and recorded in the office of the County Clerk of El Paso County, Texas, this 6th day of JUNE 2023, in File No. 20230040655 of the Plat Records.

FOR RECORDING PURPOSES ONLY
County Clerk

by Deputy

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

3-7-2023
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.

Carlos M. Jimenez TX, R.P.L.S. No. 3950

STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER

NOTES:

1. THIS IS TO CERTIFY THAT WATER AND SEWER SERVICES WILL BE PROVIDED TO CUESTA DEL SOL SUBDIVISION 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 CEVALLIA 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. 20230040656-660, DATE 6-6-2023.
3. RESTRICTIVE COVENANTS FOR THIS SUBDIVISION ARE FILED IN THE OFFICE OF THE COUNTY CLERK, DEED AND RECORD SECTION. INSTRUMENT No. 20230040661, DATE 6-6-2023.
4. VEHICULAR ACCESS SHALL BE RESTRICTIVE TO RESIDENTIAL LOTS AS PER THE DESIGNATED 10-FOOT RESTRICTED ACCESS EASEMENT. THE INSTRUMENT ASSURING RELEASE OF ACCESS 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 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 0250B, 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. ◉ DENOTES PROPOSED MONUMENT. (FOR EXACT LOCATION CONTACT CITY OF EL PASO)
9. △ DENOTES PROPOSED MONUMENT AS PER MESQUITE TRAILS UNIT SIX. (NOT IN PLACE AS OF DATE OF PREPARATION)
10. ○ DENOTES A SET 1/2" REBAR. UNLESS OTHERWISE SHOWN.

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

SCHOOL DISTRICT
SOCORRO INDEPENDENT SCHOOL DISTRICT 12440 ROJAS DRIVE, EL PASO, TX 79928

TOTAL LOTS	
RESIDENTIAL	=80
PARK	=1
POND	=1
TOTAL	=82

BENCHMARK:
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE.
ELEVATION: 3990.65' (CITY DATUM)

ENGINEER

cea group
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564
CONTACT: JORGE L. AZCARATE, P.E.

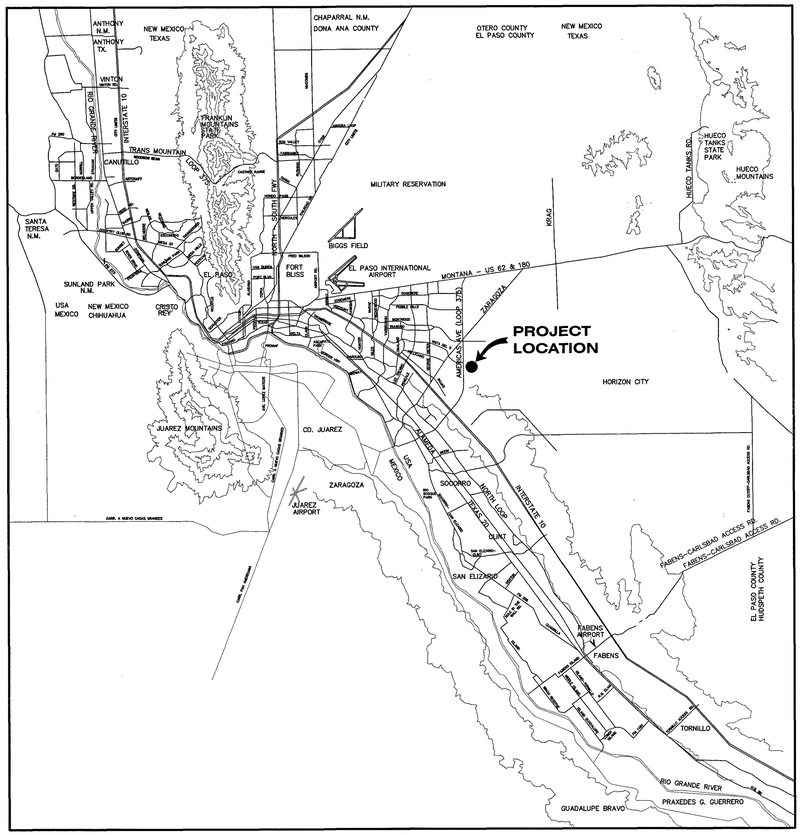
SURVEYOR

CONSULTING COMPANY
1790 N. LEE TREVINO DR. SUITE 503
EL PASO, TEXAS 79936
TEL (915) 633-6422
CONTACT: CARLOS M. JIMENEZ, R.P.L.S.

DATE OF PREPARATION: MAY 2021

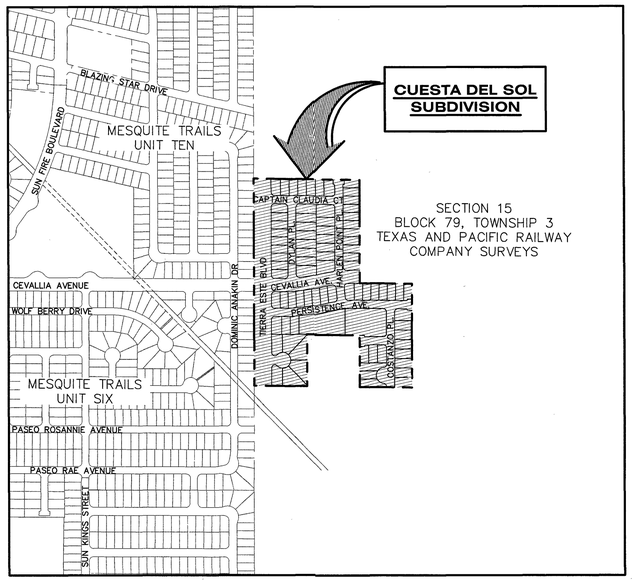
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

A PORTION OF SECTION 15, BLOCK 79, TOWNSHIP 3
TEXAS AND PACIFIC RAILWAY COMPANY SURVEYS
CITY OF EL PASO, EL PASO COUNTY, TEXAS
CONTAINING 22.596± ACRES



VICINITY MAP
APPROXIMATE SCALE:
1" = 2 MILES

SHEET NUMBER	SHEET TITLE
CVR	COVER SHEET
C1.1	GENERAL INFORMATION
C2.1	FINAL PLAT
C3.1	GRADING PLAN
C3.2	PARK GRADING PLAN
C4.1	DRAINAGE PLAN
C5.1–C5.2	GRADING SECTIONS
C6.1–C6.9	STREET PLAN & PROFILES
C7.1–C7.2	STORM SEWER PLAN & PROFILES
C8.1	POND DESIGN PLAN
C9.1–C9.3	STANDARD DETAILS
C10.1–C10.5	DRAINAGE DETAILS
C11.1–C11.3	ILLUMINATION & SIGNAGE PLAN & DETAILS
C12.1	WATER INDEX / GENERAL INFORMATION
C12.2–C12.6	WATER DETAILS
C13.1	SANITARY SEWER INDEX / GENERAL INFORMATION
C13.2–C13.6	SANITARY SEWER PLAN & PROFILES
C13.7–C13.9	SANITARY SEWER DETAILS
C14.1–C14.3	STORM WATER POLLUTION PREVENTION PLAN
L1–L12	PARK PLANS
L1–L4	MEDIAN LANDSCAPE IMPROVEMENTS
E1–E2	ELECTRICAL PLANS



LOCATION MAP
APPROXIMATE SCALE: 1" = 600'

STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER

1-8-21
JORGE L. AZCARATE, P.E. PROJECT MANAGER

cea group
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

CITY DEVELOPMENT DEPARTMENT

Reviewed For Conformance For Condition Related To:

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

Contractor Must Call 24 Hours Prior To Construction for Inspections

Oscar Romero Villalobos — By
03/08/2021 — Date

PRINCIPAL CONTACTS:

	NAME	ADDRESS	CITY & ZIP	PHONE	FAX
OWNER:	CUESTA DEL SOL INC.	12798 EDGEMERE BLVD. STE. F	EL PASO, TX 79938	(915) 565–1428	
ENGINEER:	CEA GROUP	813 NORTH KANSAS ST. STE. 300	EL PASO, TX 79902	(915) 544–5232	
SURVEYOR:	CAD CONSULTING COMPANY	1790 N. LEE TREVINO DR. SUITE 503	EL PASO, TX 79936	(915) 633–6422	

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)
- NEW RETAINING ROCKWALL (9'-13' IN HEIGHT)
- NEW RETAINING ROCKWALL (13'-20' IN HEIGHT)
- X / X — STANDARD DETAIL/SECTION NUMBER; SHEET NUMBER WHERE STANDARD/SECTION DETAIL IS LOCATED
- 4000.00 — FINISHED SPOT ELEVATION
- FG 4000.00 — LOT FINISHED GROUND ELEVATION
- RC 4000.00 — ROLLED CURB 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
- THRUST BLOCK
- HEADWALL WITH WINGWALLS
- DA-1 — 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

UTILITY LOCATOR SERVICES

PASEO DEL ESTE MUNICIPAL UTILITY DISTRICT No. 1	(915) 852-1465
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
SPECTRUM	(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

WARNING !
BEFORE YOU DIG
CALL 811
FOR FIELD LOCATING EXISTING UTILITIES

THE CITY OF EL PASO TEXAS

Oscar Villalobos — 03/08/2021
BY — DATE

REFERENCES – BENCHMARKS
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE.
ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

cea group
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL
THE STATE OF TEXAS — JORGE L. AZCARATE — 85075 — LICENSED PROFESSIONAL ENGINEER — 8-8-21

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

DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE
GENERAL INFORMATION

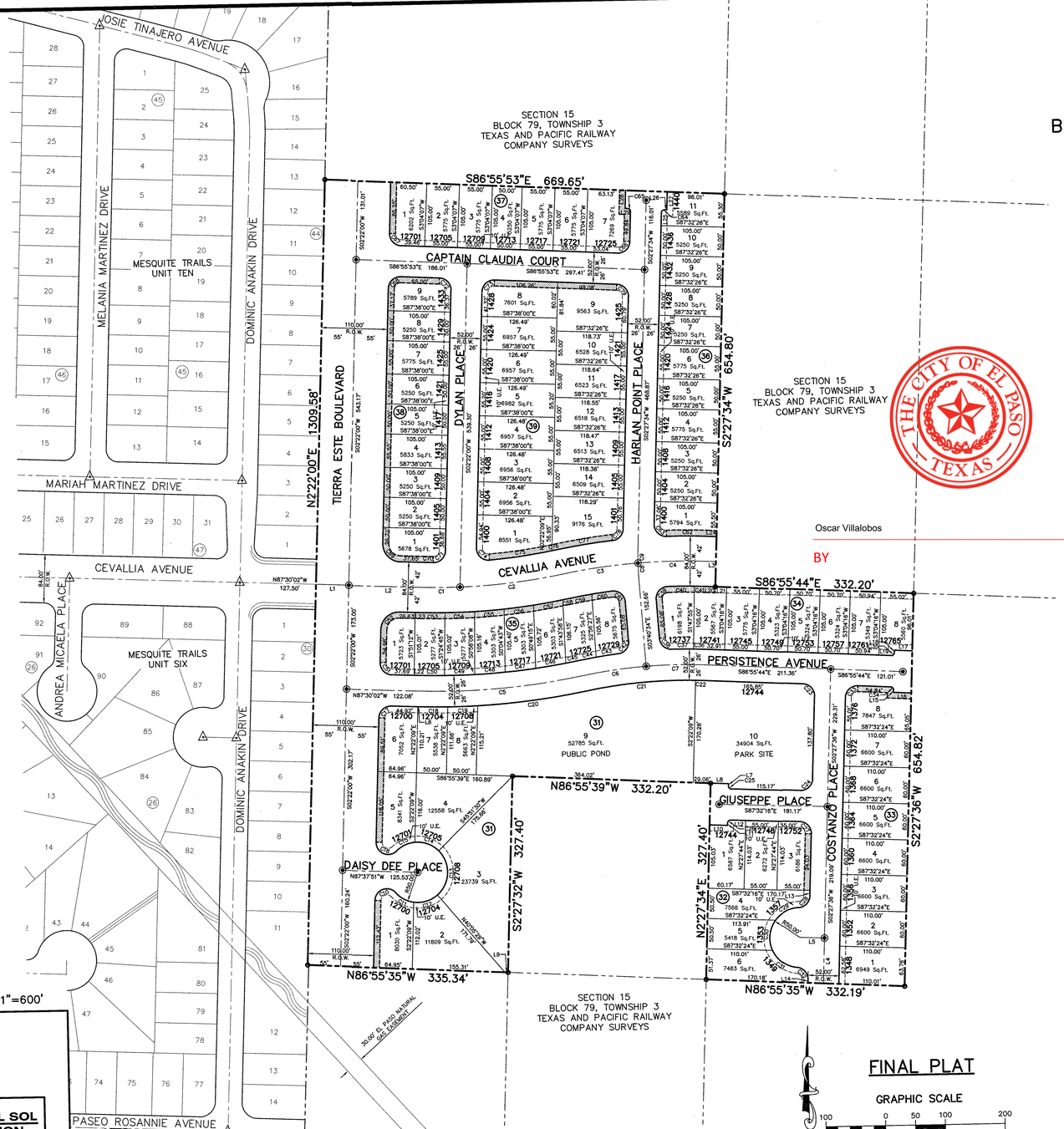
SHEET NO.
C1.1

CUESTA DEL SOL SUBDIVISION

BEING A PORTION OF SECTION 15, BLOCK 79, TOWNSHIP 3 TEXAS AND PACIFIC RAILWAY COMPANY SURVEYS
CITY OF EL PASO, EL PASO COUNTY, TEXAS.
CONTAINING 22.596± ACRES

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	1000.00'	63.56'	31.79'	63.55'	S89°19'17"E	003°38'30"
C2	1000.00'	172.48'	86.45'	172.26'	N83°55'00"E	009°52'56"
C3	1000.00'	128.66'	64.42'	128.57'	S82°39'41"W	007°22'17"
C4	1000.00'	117.40'	58.77'	117.33'	S89°42'37"W	006°43'35"
C5	1173.00'	276.87'	139.08'	276.23'	N85°44'15"E	013°31'26"
C6	827.00'	105.92'	53.03'	105.85'	S82°38'41"W	007°20'17"
C7	827.00'	97.53'	48.82'	97.48'	S89°41'33"W	006°45'26"
C8	375.00'	20.35'	10.18'	20.35'	S02°07'16"E	003°06'35"
C9	375.00'	19.80'	9.90'	19.80'	S00°56'48"W	003°01'32"
C10	20.00'	47.54'	49.76'	37.11'	S70°28'11"W	136°12'22"
C11	50.00'	34.73'	18.10'	34.04'	S61°19'38"E	039°48'00"
C12	50.00'	42.64'	22.71'	41.36'	N74°20'27"E	048°51'51"
C13	50.00'	82.07'	53.67'	73.17'	N02°53'01"E	094°03'01"
C14	50.00'	43.54'	23.26'	42.18'	N69°05'17"W	049°53'35"
C15	50.00'	34.74'	18.10'	34.04'	S66°03'47"W	039°48'17"
C16	20.00'	47.54'	49.76'	37.11'	S65°44'11"E	136°12'22"
C17	20.00'	31.46'	20.05'	28.32'	S47°25'59"W	090°07'58"
C18	1199.00'	47.96'	23.98'	47.95'	S88°38'47"E	002°17'30"
C19	1199.00'	50.09'	25.05'	50.09'	N89°00'40"E	002°23'37"
C20	1199.00'	184.96'	92.66'	184.78'	N83°23'42"E	008°50'19"
C21	801.00'	183.18'	91.99'	182.78'	S85°31'37"W	013°06'10"
C22	801.00'	13.88'	6.94'	13.88'	N87°25'31"W	000°59'34"
C23	20.00'	31.20'	19.79'	28.13'	N42°14'04"W	089°23'20"
C24	20.00'	31.42'	20.00'	28.28'	N47°27'40"E	090°00'08"
C25	5.00'	7.85'	5.00'	7.07'	S42°32'21"E	089°59'50"
C26	5.00'	7.85'	5.00'	7.07'	S47°27'39"W	090°00'10"
C27	20.00'	31.42'	20.00'	28.28'	N42°32'20"W	089°59'52"
C28	20.00'	30.05'	18.68'	27.30'	N45°30'14"E	086°05'16"
C29	50.00'	44.72'	23.98'	43.24'	S62°55'34"W	051°14'37"
C31	50.00'	52.42'	28.91'	50.05'	S53°35'34"E	060°04'12"
C32	20.00'	30.05'	18.68'	27.30'	N40°35'02"W	086°05'16"
C33	20.00'	31.63'	20.21'	28.43'	S47°45'56"W	090°36'40"
C34	5.00'	7.80'	4.95'	7.03'	N42°14'04"W	089°23'20"
C35	5.00'	7.91'	5.05'	7.11'	N47°45'56"E	090°36'40"
C36	853.00'	18.94'	9.47'	18.94'	N87°33'54"W	001°16'21"
C37	853.00'	36.68'	18.34'	36.68'	N89°26'00"W	002°27'50"
C38	20.00'	30.36'	18.98'	27.53'	S47°10'14"E	086°59'21"
C39	20.00'	32.39'	21.00'	28.97'	S42°43'30"W	092°48'06"
C40	958.00'	44.69'	22.35'	44.69'	N89°32'16"W	002°40'22"
C41	958.00'	21.32'	10.66'	21.32'	N87°33'50"W	001°16'30"
C42	20.00'	30.36'	18.97'	27.53'	N39°48'32"E	086°58'12"
C43	853.00'	37.41'	18.71'	37.41'	S82°02'15"W	002°30'47"
C44	853.00'	26.88'	13.44'	26.87'	S79°52'42"W	001°48'19"
C45	1147.00'	24.98'	12.49'	24.98'	N79°35'58"E	001°14'52"
C46	1147.00'	51.31'	25.66'	51.31'	N81°30'18"E	002°33'48"
C47	1147.00'	51.31'	25.66'	51.31'	N84°04'05"E	002°33'48"
C48	1147.00'	51.31'	25.66'	51.31'	N86°37'53"E	002°33'47"
C49	1147.00'	50.66'	25.33'	50.65'	N89°01'41"E	002°31'50"
C50	1147.00'	41.16'	20.58'	41.16'	S88°31'43"E	002°03'22"
C51	20.00'	31.37'	19.95'	28.25'	S42°34'01"E	089°52'02"
C52	30.00'	47.19'	30.07'	42.48'	S47°25'59"W	090°07'58"
C53	1042.00'	39.17'	19.59'	39.16'	S88°34'39"E	002°09'13"
C54	1042.00'	49.85'	24.93'	49.85'	N88°58'31"E	002°44'28"
C55	1042.00'	49.70'	24.85'	49.69'	N86°14'18"E	002°43'58"
C56	1042.00'	49.70'	24.85'	49.69'	N83°30'20"E	002°43'58"
C57	1042.00'	49.70'	24.85'	49.69'	N80°46'22"E	002°43'58"
C58	1042.00'	7.84'	3.92'	7.84'	N79°11'28"E	000°25'51"
C59	958.00'	41.73'	20.87'	41.72'	S80°13'24"W	002°29'44"
C60	958.00'	33.99'	17.00'	33.99'	S82°29'15"W	002°01'58"
C61	20.00'	32.40'	21.01'	28.97'	N50°05'10"W	092°49'12"
C62	1042.00'	71.05'	35.54'	71.04'	N88°52'48"W	003°54'25"
C63	20.00'	32.57'	21.18'	29.09'	S44°11'13"E	093°17'34"
C64	5.00'	7.91'	5.05'	7.11'	S47°45'51"W	090°36'33"
C65	5.00'	7.80'	4.95'	7.03'	N42°14'09"W	089°23'27"
C66	20.00'	31.63'	20.21'	28.43'	N47°45'51"E	090°36'33"
C67	20.00'	31.17'	19.76'	28.11'	S42°16'56"E	089°17'53"
C68	20.00'	31.66'	20.25'	28.46'	S47°43'04"W	090°42'07"
C69	30.00'	47.05'	29.93'	42.38'	S42°34'01"E	089°52'02"
C70	958.00'	17.75'	8.87'	17.75'	S88°01'53"E	001°03'41"
C71	20.00'	31.09'	19.68'	28.05'	N46°54'08"E	089°04'17"
C72	20.00'	31.17'	19.76'	28.11'	N42°16'56"W	089°17'53"
C73	20.00'	31.66'	20.25'	28.46'	S47°43'04"W	090°42'07"
C74	20.00'	33.71'	22.43'	29.86'	S45°54'53"E	096°33'45"
C75	958.00'	105.76'	52.93'	105.71'	N82°38'29"E	006°19'31"
C76	958.00'	8.41'	4.21'	8.41'	N79°13'38"E	000°30'11"
C77	1042.00'	94.58'	47.32'	94.55'	S81°34'33"W	005°12'02"
C78	20.00'	28.52'	17.30'	26.17'	N43°19'04"E	081°43'00"
C79	20.00'	31.20'	19.79'	28.13'	N42°14'09"W	089°23'27"

LINE TABLE		
LINE	BEARING	LENGTH
L1	N87°30'02"W	55.00'
L2	N87°30'02"W	122.48'
L3	S86°55'35"E	13.28'
L4	S02°27'36"W	75.40'
L5	S87°32'16"E	41.22'
L6	N87°30'02"W	2.06'
L7	N02°27'34"E	4.00'
L8	S87°32'26"E	30.00'
L9	N86°55'35"W	5.07'
L10	S87°32'26"E	30.00'
L11	N02°27'34"E	4.00'
L12	S87°32'16"E	25.18'
L13	S02°27'36"W	9.22'
L14	S02°27'36"W	4.00'
L15	S02°27'36"W	4.05'
L16	S86°55'44"E	30.00'
L17	S86°55'44"E	30.00'
L18	S02°27'36"W	3.95'
L19	S86°55'44"E	21.08'
L20	S86°55'35"E	13.73'
L21	S86°55'44"E	19.14'
L22	N87°30'02"W	9.50'
L23	N87°30'02"W	10.68'
L24	S86°55'35"E	12.83'
L25	S02°27'34"W	21.36'
L26	S86°55'53"E	3.95'
L27	S02°27'34"W	30.00'
L28	S02°27'34"W	30.00'
L29	S86°55'53"E	4.05'

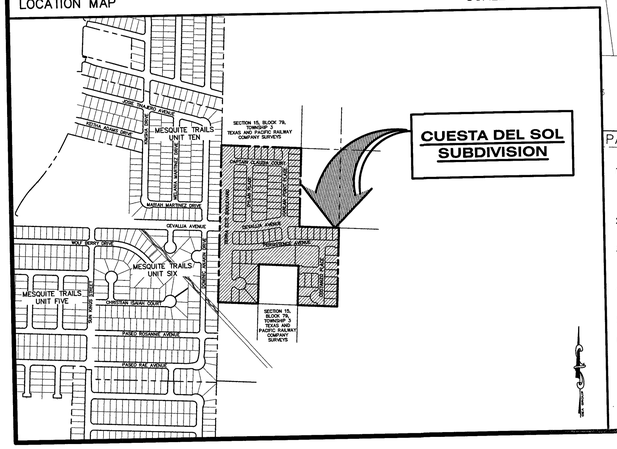


SECTION 15
BLOCK 79, TOWNSHIP 3
TEXAS AND PACIFIC RAILWAY
COMPANY SURVEYS

SECTION 15
BLOCK 79, TOWNSHIP 3
TEXAS AND PACIFIC RAILWAY
COMPANY SURVEYS

SCALE: 1"=600'

LOCATION MAP



NOTES:

1. THIS IS TO CERTIFY THAT WATER AND SEWER SERVICES WILL BE PROVIDED TO CUESTA DEL SOL SUBDIVISION 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 CEVALLIA 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. _____, DATE _____
3. RESTRICTIVE COVENANTS FOR THIS SUBDIVISION ARE FILED IN THE OFFICE OF THE COUNTY CLERK, DEED AND RECORD SECTION.
INSTRUMENT No. _____, DATE _____
4. INTERIOR LOT CORNERS WILL BE SET UPON COMPLETION OF CONSTRUCTION OF ROADWAYS AND UTILITIES. (BY OTHERS) SET 1/2" REBAR AT ALL EXTERIOR BOUNDARY CORNERS UNLESS OTHERWISE SHOWN.
5. "U.S. POSTAL SERVICE DELIVERY WILL BE PROVIDED THROUGH NEIGHBORHOOD DELIVERY AND COLLECTION BOX UNITS."
6. THIS SUBDIVISION LIES WITH IN ZONE "X" AS DESIGNATED IN PANEL NO. 480212 0250B, 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.
7. ◉ DENOTES PROPOSED MONUMENT. (FOR EXACT LOCATION CONTACT CITY OF EL PASO)
8. ⚠ DENOTES PROPOSED MONUMENT AS PER MESQUITE TRAILS UNIT SIX. (NOT IN PLACE AS OF DATE OF PREPARATION)
9. O DENOTES A SET 1/2" REBAR, UNLESS OTHERWISE SHOWN.

DEDICATION

Cuesta del Sol, Inc., 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, ponding area, park, pedestrian right-of-way, drainage right of way and 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 overhang of service wires for buried service wires, conduits and pipes for underground utilities, lines as may be required, easements for buried service wires, conduits and pipes for underground utilities, lines as may be required, easements for buried service and construction, and the right to trim interfering trees and shrubs.

Witness my signature this_____day of _____2020.

_____
Joseph L. O'Leary, President

ACKNOWLEDGEMENT

STATE OF TEXAS
COUNTY OF EL PASO

Before me, the undersigned authority, on this day personally appeared Joseph L. O'Leary, 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 _____day of_____2020.

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

CITY PLAN 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 _____day of _____,2020.

_____ _____
Chairperson Executive Secretary

Approved for filing this_____day of _____,2020.

_____
Planning and Inspections Director

FILING

Filed and recorded in the office of the County Clerk of El Paso County, Texas, this_____ day of_____2020, in File No._____ of the Plat Records.

_____ _____
County Clerk 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.

Carlos M. Jimenez TX, R.P.L.S. No. 3950

Oscar Villalobos 03/08/2021
BY DATE

FINAL PLAT

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

CEA GROUP

SCHOOL DISTRICT
SOCORRO INDEPENDENT SCHOOL DISTRICT
12440 ROJAS DRIVE, EL PASO, TX 79928

TOTAL LOTS

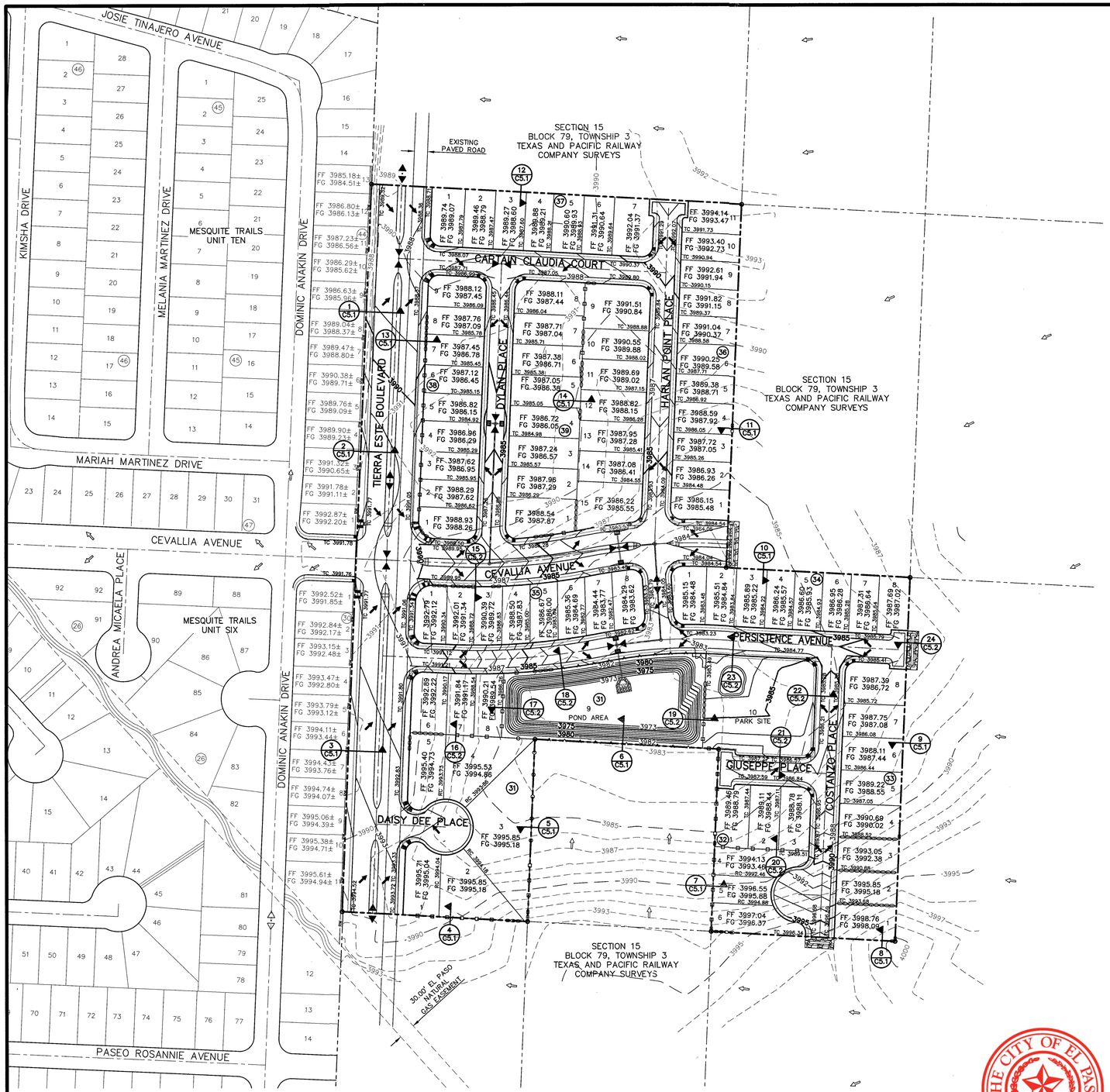
RESIDENTIAL	=80
PARK	=1
POND	=1
TOTAL	=82

BENCHMARK:
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE.
ELEVATION: 3990.65' (CITY DATUM)

ENGINEER
cea group
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564
CONTACT: JORGE L. AZCARATE, P.E.

SURVEYOR
CONSULTING COMPANY
1790 N. LEE TREVINO DR. SUITE 503
EL PASO, TEXAS 79936
TEL (915) 633-6422
CONTACT: CARLOS M. JIMENEZ, R.P.L.S.

DATE OF PREPARATION: JULY 2020



UTILITY LOCATOR SERVICES	
PASEO DEL ESTE MUNICIPAL UTILITY DISTRICT No. 1	(915) 852-1465
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
SPECTRUM	(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

WARNING ! BEFORE YOU DIG

CALL 811

FOR FIELD LOCATING EXISTING UTILITIES

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. IMPROVEMENTS SHALL NOT BE PLACED ON SIDEWALK (NOBCU's, SIGNS, POLES, FIRE HYDRANTS, ETC.) REFER TO STANDARD DETAIL SHEETS.
6. IMPROVEMENTS SHALL COMPLY WITH T.A.S./A.D.A.
7. WHEELCHAIR RAMPS WILL BE CONSTRUCTED BY BUILDER UNLESS OTHERWISE NOTED.

BENCHMARK:

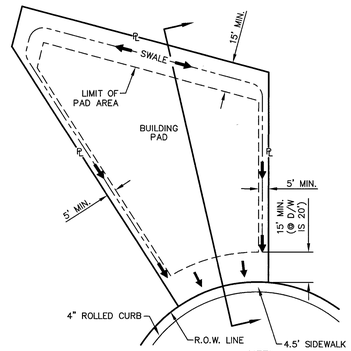
CITY MONUMENT AT CENTERLINE INTERSECTION OF CEVALLIA AND DOMINIC ANAKIN DRIVE.
ELEVATION: 3990.65' (CITY DATUM)

FLOOD ZONE:

THIS SUBDIVISION LIES WITHIN ZONE "X" AS DESIGNATED BY F.E.M.A.; EL PASO COUNTY, COMMUNITY PANEL NO. 480212 0250 B.

LEGEND:

	NEW 6' ROCKWALL
	NEW RETAINING ROCKWALL (2'-3' RETAINING HEIGHT)
	NEW RETAINING ROCKWALL (3.01'-9' RETAINING HEIGHT)
	NEW RETAINING ROCKWALL (9.01'-13' RETAINING HEIGHT)
RW	EXISTING ROCKWALL/RETAINING WALL
4000	PROPOSED MAJOR CONTOURS
	PROPOSED MINOR CONTOURS
4000	EXISTING MAJOR CONTOURS
	EXISTING MINOR CONTOURS
TC 4075.00	TOP OF CURB ELEVATION
RC 4075.00	TOP OF ROLLED CURB ELEVATION
FG 4075.00	FINISHED GROUND ELEVATION
FF 4075.00	FINISHED FLOOR ELEVATION
FG 4075.00±	EXISTING FINISH GROUND ELEVATION
FF 4075.00±	EXISTING FINISH FLOOR ELEVATION
	DRAINAGE FLOW
	HIGH POINT
	LOW POINT
	EXISTING DRAINAGE FLOW
	EXISTING HIGH POINT
	PROPOSED TEMPORARY DESILTING BASIN

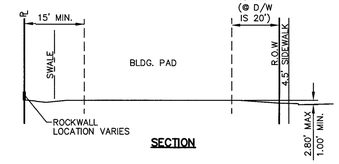


HEEL

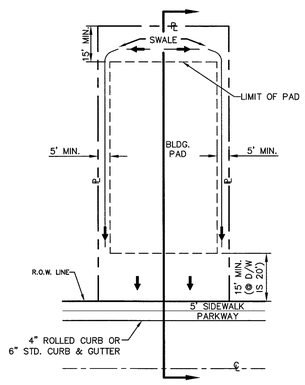
TYPICAL LOT DETAIL AT HEEL

SCALE: N.T.S.

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. SETBACKS SHOWN ARE THE MINIMUM. BUILDER SHALL REFER TO CITY OF EL PASO ZONING CODE FOR MINIMUM AND CUMULATIVE SETBACK REQUIREMENTS.



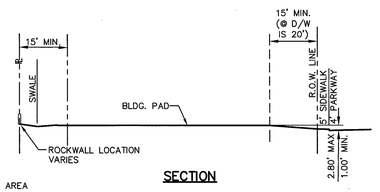
SECTION



PLAN

TYPICAL LOT PLAN

SCALE: N.T.S.



SECTION

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)
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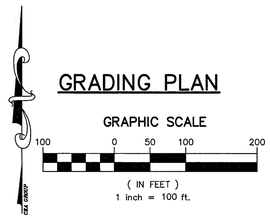


THE CITY OF EL PASO TEXAS

Oscar Villalobos — 03/08/2021

BY — DATE

REFERENCES – BENCHMARKS

FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE. ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

ceagroup
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL

STATE OF TEXAS — JORGE L. AZCARATE — 85075 — REGISTERED — 8-21

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

DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE

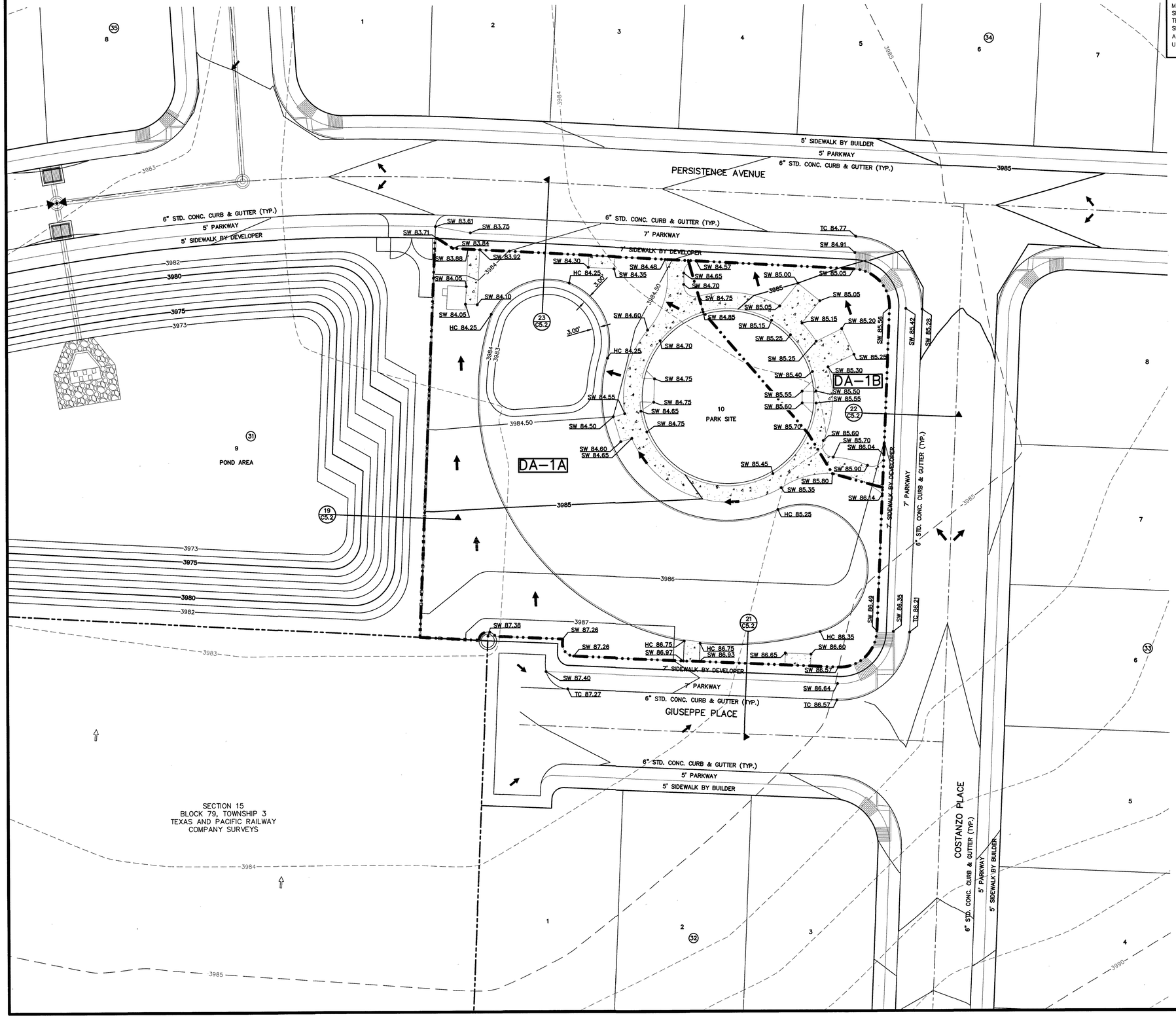
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE

GRADING PLAN

SHEET NO.

C3.1



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U.S. SPRINT TELECOMM	(800) 521-0579

WARNING ! BEFORE YOU DIG

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FOR FIELD LOCATING EXISTING UTILITIES

LEGEND

- NEW 6' ROCKWALL
- NEW RETAINING ROCKWALL (2'-3' RETAINING HEIGHT)
- NEW RETAINING ROCKWALL (3.01'-9' RETAINING HEIGHT)
- 3770 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- 3770 NEW MAJOR CONTOUR
- NEW MINOR CONTOUR
- EXISTING DRAINAGE FLOW DIRECTION
- DRAINAGE FLOW DIRECTION
- DRAINAGE LOW POINT
- CONCRETE WALKWAY (REFER TO LANDSCAPING PLANS)

NOTES:

1. PARK STEMWALL/RETAINING WALL SHALL BE BUILT TO A 3' MINIMUM HEIGHT FROM THE HIGHEST GROUND BY DEVELOPER.
2. PROPOSED ROCKWALLS & RETAINING WALL LOCATIONS SHALL BE CONSTRUCTED ACCORDING TO GRADING SECTIONS AND RELATED DETAILS.
3. REFER TO LANDSCAPE/IRRIGATION PLANS FOR ADDITIONAL INFORMATION.

100 YEAR STORM CALCULATIONS FOR WATERSHED AREAS

DRAINAGE AREA NO. (1)	DRAINAGE AREA (AC) (2)	DESIGN STORM INTENSITY (I100) (3)	TIME OF CONCENTRATION (4)	RUNOFF COEFF. (C) (5)	Q100 (CFS) (6)
DA-1A	0.64	3.82	25.98	0.50	1.22
DA-1B	0.12	3.95	24.24	0.50	0.24

HARVESTING AREA CALCULATIONS

CONTOUR	ACCUMULATED VOLUME (AC-FT.)
3984.00	0.05
3983.00	0.00

QT = (ARC)/12
QT = 0.125 AC-FT
A = 0.75
*R = 4.0"
Cw = 0.50

TOTAL $_{req}$= 0.125 AC-FT

*AS PER DETENTION BASIN DESIGN CRITERIA (2-4) OF THE CITY OF EL PASO DESIGN STANDARDS FOR CONSTRUCTION. STORM WILL BE 4" RAINFALL IN THREE (3) HOURS.

THE CITY OF EL PASO TEXAS

Oscar Villalobos — BY
03/08/2021 — DATE

REFERENCES – BENCHMARKS

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ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

caa group
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Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL
STATE OF TEXAS — JORGE L. AZCARATE — 86075 — LICENSED PROFESSIONAL ENGINEER — 8-21

SCALE
Horizontal: 1"=20'
Vertical: N/A
Contour Interval: N/A

DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE

CUESTA DEL SOL SUBDIVISION IMPROVEMENTS

SHEET TITLE

PARK GRADING PLAN

SHEET NO.

C3.2

DROP INLETS

NO.	EXPECTED. FLOW Qexp. (CFS)	ADDITIONAL FLOW Qadd (CFS) FROM INLET #	CROWN Q OVERTOP (CFS)	Q REQUIRED Qactual (CFS)	AVAIL. FLOW CAPACITY Q AVAIL. (CFS)	FLOW BYPASS Qbyp (CFS) TO INLET #	# OF GRATES	TYPE OF INLET	INLET LOCATION
1	17.40	3.11 (OFFSITE)	5.31 (TO I-2)	15.20	19.27	0	2	I	ON SUMP
2	6.69	3.11(OFFSITE)+5.31 (FROM I-1)	0	15.11	19.27	0	2	I	ON SUMP
3	8.15	2.73 (OFFSITE)	0	10.88	19.27	0	2	I	ON SUMP
4	9.04	2.73 (OFFSITE)	0	11.77	19.27	0	2	I	ON SUMP
5	6.72	1.42 (FROM I-6)	0	8.14	17.75	0	2	III	ON SUMP
6	9.57	0	1.42 (TO I-5)	8.15	17.75	0	2	III	ON SUMP

AVAILABLE FLOW CAPACITY SHOWN AT ON-GRADE INLETS REFLECTS CAPACITIES WITH INLET GRATE EFFICIENCIES.

$Q = A \times V$ $Q = A \times 1.5/n \times R^{2/3} \times S^{1/2}$

MOMENTUM COMPUTATION

LOCATION @ INLET (1)	DEPTH (2)	VELOCITY (3)	PRODUCT NUMBER (4)
1	0.32	4.87	1.56
2	0.32	4.87	1.56
3	0.30	3.92	1.19
4	0.31	4.00	1.25
5	0.32	2.59	0.83
6	0.32	2.59	0.83

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

DRAINAGE PLAN

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

UTILITY LOCATOR SERVICES

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FOR FIELD LOCATING EXISTING UTILITIES

NOTE:
POND SLOPES SHALL BE STABILIZED WITH PIONEER'S PRIDE SEED MIXTURE (SEED RATE: 1 BULK PER 1000 SF) HYDROSEEDING AS PER MANUFACTURE'S RECOMMENDATION BY EWING IRRIGATION OR APPROVED EQUAL, OR HYDRO-MULCH OR HYDRO-SEEDING.

LEGEND:
- DRAINAGE AREA BOUNDARY
- DRAINAGE FLOW
- EXISTING DRAINAGE FLOW
- HIGH POINT
- LOW POINT
- DROP INLET
- STORM SEWER MANHOLE
- RCP
- HEADWALL STRUCTURE
- DA-1 DRAINAGE AREA
- WS-1 OFF SITE DRAINAGE AREA

POND CALCULATIONS

QT = (ARC)/12
QT = 6.12 AC-FT
A = 22.60 + 47.97(OUTSIDE RUNOFF) 70.57 Ac
*R = 4.0" TOTAL$_{req}$ = 6.12 AC-FT
Cw = 0.26

*AS PER DETENTION BASIN DESIGN CRITERIA (2-4) OF THE CITY OF EL PASO DESIGN STANDARDS FOR CONSTRUCTION. STORM WILL BE 4" RAINFALL IN THREE (3) HOURS.

POND

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	6.12	6.96	72.48	0	3981.17±	3973.00	0.83	3982.00

NOTE:
THE HGL REFLECTS THE ELEVATION AS REQUIRED BY THE CITY OF EL PASO.

HWSE = HGL = QT
HWSE = 6.12 AC-FT
CONTOUR 3981.00, ACCUMULATED VOLUME = 5.94 AC-FT
CONTOUR 3982.00, ACCUMULATED VOLUME = 6.96 AC-FT
HYDRAULIC GRADE LINE ELEVATION = 3981.17±

POND AREAS

CONTOUR	ACCUMULATED VOLUME (AC-FT.)
3982.00	6.96
3981.00	5.94
3980.00	4.98
3979.00	4.09
3978.00	3.27
3977.00	2.50
3976.00	1.79
3975.00	1.14
3974.00	0.54
3973.00	0.00

100 YEAR STORM CALCULATIONS FOR WATERSHED AREAS

DRAINAGE AREA NO. (1)	DRAINAGE AREA (AC) (2)	DESIGN STORM INTENSITY (100) (3)	TIME OF CONCENTRATION (4)	RUNOFF COEFF. (C) (5)	Q100 (CFS) (6)
DA-1	7.14	4.13	21.78	0.59	17.40
DA-2	2.66	4.19	21.06	0.60	6.69
DA-3	1.60	5.36	10.00	0.95	8.15
DA-4	3.57	4.22	20.70	0.60	9.04
DA-5	2.69	4.16	21.42	0.60	6.72
DA-6	3.73	4.28	20.04	0.60	9.57
DA-7	1.21	5.36	10.00	0.50	3.24
WS-1	21.40	2.55	54.90	0.10	5.45
WS-2	26.57	2.34	62.64	0.10	6.22

REFERENCE: CITY OF EL PASO SUBDIVISION STANDARDS (JUNE 2008)

(1) WATERSHED AREA IDENTIFICATION
(2) AREA FROM DRAINAGE PLAN
(3) RAINFALL INTENSITY, 100 YEAR STORM => EASTSIDE INTENSITY EQUATIONS (4-25)

$$I_{100} = \frac{144.20}{(Tc + 25.944)^{0.9190}}$$ EQUATION 4-25

(4) TIME OF CONCENTRATION: TC= T (OVERLAND) + T (GUTTER)
(5) TABLE 4-5: RATIONAL METHOD DEVELOPED CONDITION COEFFICIENT (100yr C)
SINGLE FAMILY RESIDENTIAL = 0.60
PAVEMENT AND ROOFTOPS = 0.95
GENERAL OPEN SPACE = 0.50
(6) $Q_{100} = C \times A \times I_{100}$
C= RATIONAL COEFFICIENT
A= COMPUTED CONTRIBUTING WATERSHEDS AREA, ACRES
I= RAINFALL INTENSITY, INCH PER HOUR

THE CITY OF EL PASO TEXAS

Oscar Villalobos 03/08/2021
BY DATE

Inlet #1													
Width	cross slope	Depth	Area	P	R	n	S	Q	V	Total Q	Q actual	Actual Depth	spread width	Actual Velocity
16	2.00	0.32	2.56	16.3232	0.1568	0.013	0.0215	15.130	4.874		15.20	0.32	16.03	4.88
32	0.00	0.18	5.76	32.36	0.1780	0.013	0.0215	30.549	5.304	60.808				
Inlet #2													
Width	cross slope	Depth	Area	P	R	n	S	Q	V	Total Q	Q actual	Actual Depth	spread width	Actual Velocity
16	2.00	0.32	2.56	16.3232	0.1568	0.013	0.0215	15.130	4.874		15.11	0.32	15.99	4.87
32	0.00	0.18	5.76	32.36	0.1780	0.013	0.0215	30.549	5.304	60.808				
Inlet #3													
Width	cross slope	Depth	Area	P	R	n	S	Q	V	Total Q	Q actual	Actual Depth	spread width	Actual Velocity
31	2.00	0.62	9.61	31.6262	0.3039	0.013	0.015	41.545	6.328		10.88	0.30	15.13	3.92
62	0.00	-0.12	-7.44	61.76	-0.1205	0.013	0.015	0.000	0.000	83.089				
Inlet #4													
Width	cross slope	Depth	Area	P	R	n	S	Q	V	Total Q	Q actual	Actual Depth	spread width	Actual Velocity
31	2.00	0.62	9.61	31.6262	0.3039	0.013	0.015	41.545	6.328		11.77	0.31	15.58	4.00
62	0.00	-0.12	-7.44	61.76	-0.1205	0.013	0.015	0.000	0.000	83.089				
Inlet #5													
Width	cross slope	Depth	Area	P	R	n	S	Q	V	Total Q	Q actual	Actual Depth	spread width	Actual Velocity
16	2.00	0.32	2.56	16.3232	0.1568	0.013	0.006	7.993	2.575		8.14	0.32	16.11	2.59
32	0.00	0.18	5.76	32.36	0.1780	0.013	0.006	16.138	2.802	32.123				
Inlet #6													
Width	cross slope	Depth	Area	P	R	n	S	Q	V	Total Q	Q actual	Actual Depth	spread width	Actual Velocity
16	2.00	0.32	2.56	16.3232	0.1568	0.013	0.006	7.993	2.575		8.15	0.32	16.12	2.59
32	0.00	0.18	5.76	32.36	0.1780	0.013	0.006	16.138	2.802	32.123				

REFERENCES - BENCHMARKS
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE.
ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

caa group
813 N. Kansas St. Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL
STATE OF TEXAS JAIME L. AZCARATE 85075 LICENSED PROFESSIONAL ENGINEER 8-21

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

DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APP'VD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE
DRAINAGE PLAN

SHEET NO.
C4.1

NOTES:

1. RETAINING WALLS OVER 4 FT IN DEPTH SHALL BE CONSTRUCTED BY DEVELOPER (RETAINING PORTION OF ROCK WALL ONLY). REMAINING ROCK WALL HEIGHT SECTION TO BE BUILT BY BUILDER.

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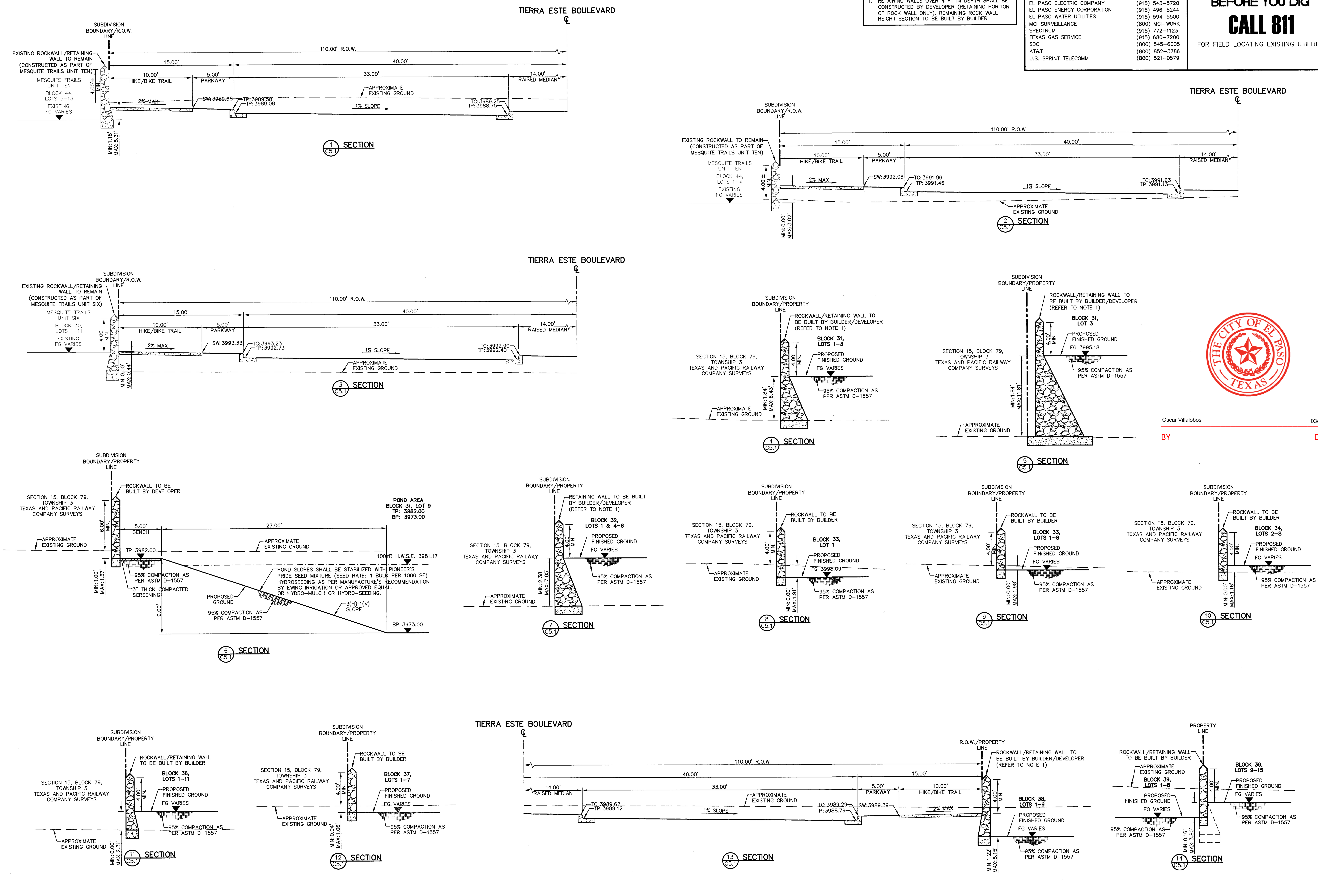

REFERENCES – BENCHMARKS: FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE. ELEVATION: 3990.65' (CITY DATUM)

cea group
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TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL: JORGE L. AZCARATE 85075 LICENSED PROFESSIONAL ENGINEER

THE CITY OF EL PASO TEXAS

Oscar Villalobos 03/08/202
BY DATE

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

DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

DATE | REVISIONS | BY

PROJECT TITLE

CUESTA DEL SOL SUBDIVISION IMPROVEMENTS

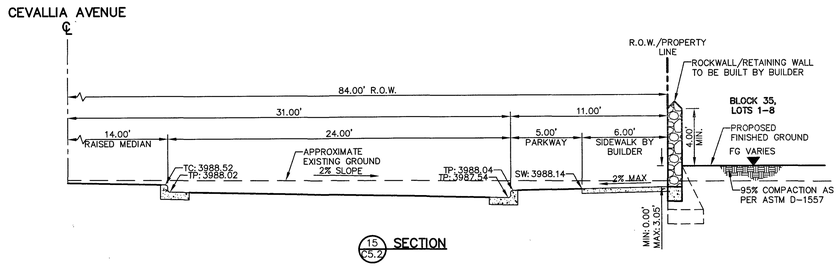
SHEET TITLE

GRADING SECTIONS

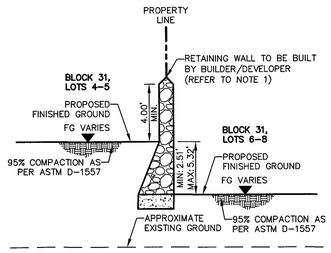
(SHEET 1 OF 2)

SHEET NO.

C5.1



15 / C5.2 SECTION



16 / C5.2 SECTION

NOTES:

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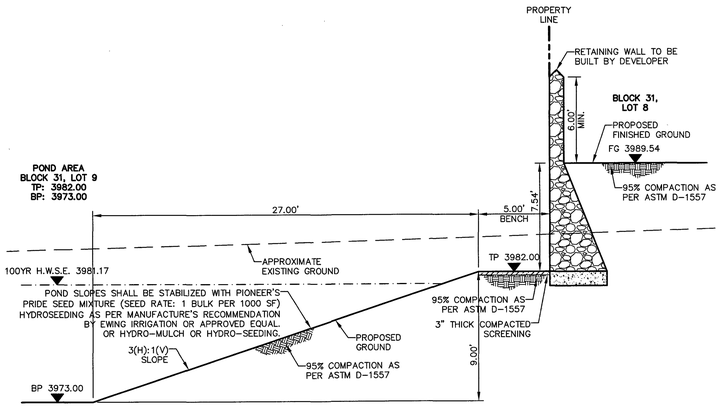
MCI SURVEILLANCE	(800) MCI–WORK
SPECTRUM	(915) 772–1123
TEXAS GAS SERVICE	(915) 680–7200
SBC	(800) 545–6005
AT&T	(800) 852–3786
U.S. SPRINT TELECOMM	(800) 521–0579

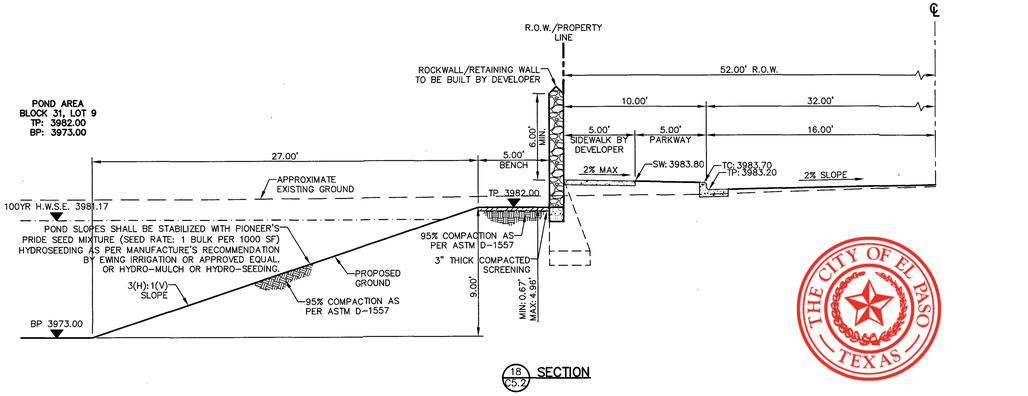
WARNING ! BEFORE YOU DIG

CALL 811

FOR FIELD LOCATING EXISTING UTILITIES



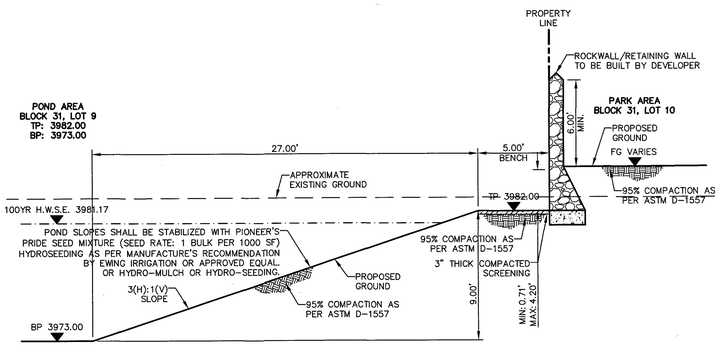
17 / C5.2 SECTION



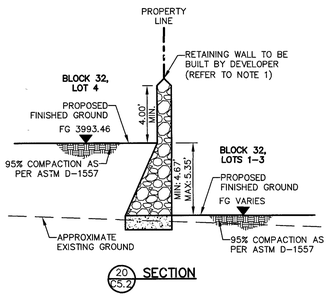
18 / C5.2 SECTION

Oscar Villalobos 03/08/2021

BY DATE



19 / C5.2 SECTION



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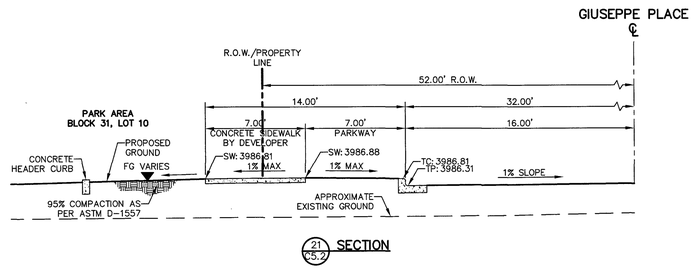
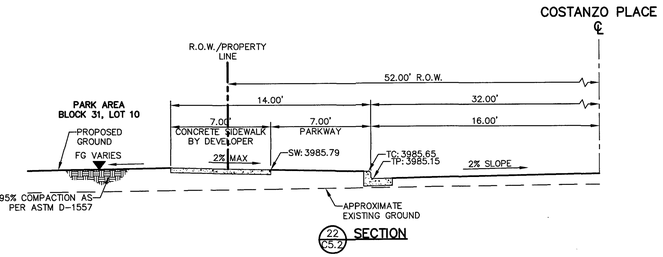
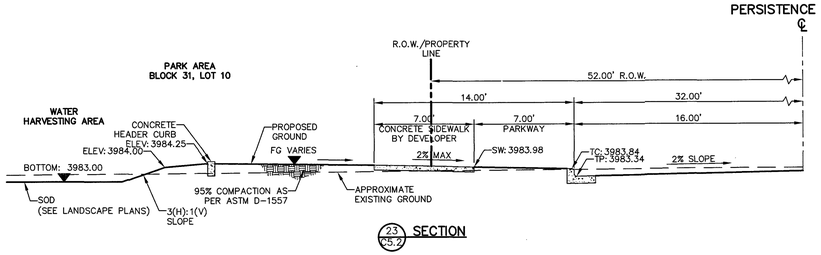


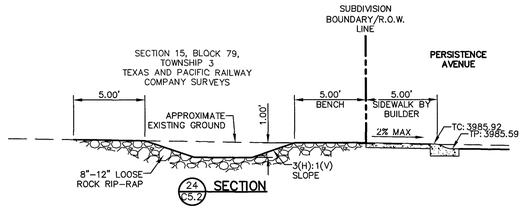
21 / C5.2 SECTION



22 / C5.2 SECTION



23 / C5.2 SECTION



24 / C5.2 SECTION

REFERENCES – BENCHMARKS

FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE
ELEVATION: 3990.65' (CITY DATUM)

BY	REVISIONS	DATE

caa group
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL

STATE OF TEXAS — DANIEL L. AZCARATE — 85075 — LICENSED PROFESSIONAL ENGINEER — 8-21

THE CITY OF EL PASO TEXAS

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

DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE

CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE

GRADING SECTIONS

(SHEET 2 OF 2)

SHEET NO.

C5.2

THE CITY OF EL PASO — TEXAS

See Revised Sheet.

Oscar Villalobos — BY — 03/08/2021 — DATE

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	55.00'	22.94'	11.64'	22.77'	S14°18'52"W	023°53'44"
C2	2.50'	5.77'	5.64'	4.57'	N87°38'00"W	132°12'32"
C3	55.00'	22.94'	11.64'	22.77'	N09°34'52"W	023°53'44"
C4	55.00'	22.94'	11.64'	22.77'	S09°34'52"E	023°53'44"
C5	2.50'	5.77'	5.64'	4.57'	S87°38'00"E	132°12'32"
C6	55.00'	22.94'	11.64'	22.77'	N14°18'52"E	023°53'44"

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C7	55.00'	22.97'	11.65'	22.80'	S14°19'48"W	023°55'36"
C8	2.50'	5.77'	5.64'	4.57'	N87°36'08"W	132°12'32"
C9	55.00'	22.91'	11.62'	22.74'	N09°33'56"W	023°51'51"
C10	55.00'	22.94'	11.64'	22.77'	S09°34'52"E	023°53'44"
C11	2.50'	5.77'	5.64'	4.57'	S87°38'00"E	132°12'32"
C12	55.00'	22.94'	11.64'	22.77'	N14°18'52"E	023°53'44"

UTILITY LOCATOR SERVICES

PASEO DEL ESTE MUNICIPAL UTILITY DISTRICT No. 1	(915) 852-1465
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
SPECTRUM	(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

WARNING ! BEFORE YOU DIG

CALL 811

FOR FIELD LOCATING EXISTING UTILITIES

REFERENCES – BENCHMARKS

FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

cea group
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL — JORGE L. AZCARATE — 85075 — LICENSED PROFESSIONAL ENGINEER — 8-21

SECTION 15, BLOCK 79, TOWNSHIP 3
TEXAS AND PACIFIC RAILWAY COMPANY SURVEYS

LEGEND
- DIRECTIONAL WHEELCHAIR RAMP BY BUILDER (TYP.)
- PVI ELEVATIONS ARE SHOWN AT TOP OF CURB. REFER TO PLAN VIEW FOR TOP OF PAVEMENT ELEVATIONS.
- PROPOSED STREET NAME SIGN & STOP SIGN

PLAN

PROFILE

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

DATE: JUNE 2020 — DESIGN BY: K.A.P. — DRAWN BY: K.A.P. — CHKD. BY: F.Z. — APPVD. BY: J.L.A. — JOB No. 3049-002

PROJECT TITLE

CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE

TIERRA ESTE BOULEVARD PLAN & PROFILE FROM STA. 0+00.00 TO STA. 7+50.00

SHEET NO.

C6.1

REVISED
9:06 am, Jul 20, 2021

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	55.00'	22.94'	11.64'	22.77'	S14°18'52"W	023°53'44"
C2	2.50'	5.77'	5.64'	4.57'	N87°38'00"W	132°12'32"
C3	55.00'	22.94'	11.64'	22.77'	N09°34'52"W	023°53'44"
C4	55.00'	22.94'	11.64'	22.77'	S09°34'52"E	023°53'44"
C5	2.50'	5.77'	5.64'	4.57'	S87°38'00"E	132°12'32"
C6	55.00'	22.94'	11.64'	22.77'	N14°18'52"E	023°53'44"

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C7	55.00'	22.97'	11.65'	22.80'	S14°19'48"W	023°55'36"
C8	2.50'	5.77'	5.64'	4.57'	N87°36'08"W	132°12'32"
C9	55.00'	22.91'	11.62'	22.74'	N09°33'56"W	023°51'51"
C10	55.00'	22.94'	11.64'	22.77'	S09°34'52"E	023°53'44"
C11	2.50'	5.77'	5.64'	4.57'	S87°38'00"E	132°12'32"
C12	55.00'	22.94'	11.64'	22.77'	N14°18'52"E	023°53'44"

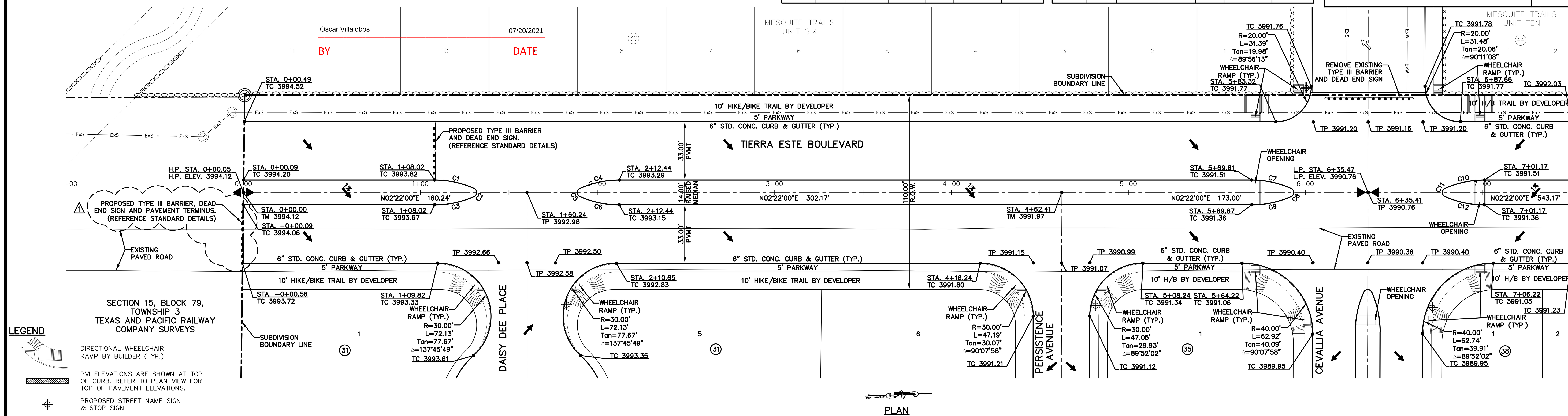
UTILITY LOCATOR SERVICES	
PASEO DEL ESTE MUNICIPAL UTILITY DISTRICT No. 1	(915) 852-1465
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
SPECTRUM	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579

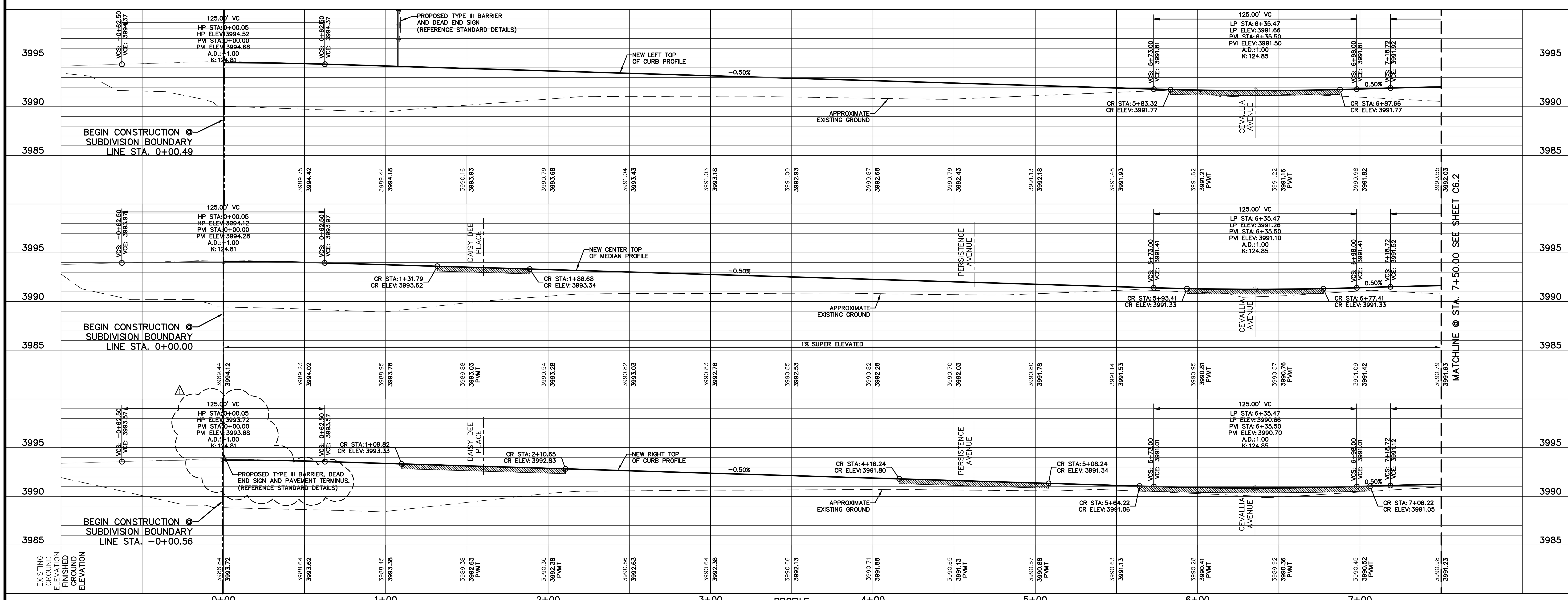
WARNING ! BEFORE YOU DIG

CALL 811

FOR FIELD LOCATING EXISTING UTILITIES

Oscar Villalobos — BY — 07/20/2021 — DATE





REFERENCES – BENCHMARKS

FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE. ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY
6/22/21	AS PER CEP REVISIONS	K.A.P.

cea group
813 N. Kansas St. Suite 300 El Paso, TX 79902 915.544.5232 www.ceagroup.net
Texas Registered Engineering Firm F-4564

ENGINEER'S SEAL — JORGE L. AZCARATE 85073 — 6-22-21

SCALE Horizontal: 1"=30' Vertical: 1"=5' Contour Interval: N/A
DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE
CUESTA DEL SOL SUBDIVISION IMPROVEMENTS

SHEET TITLE
TIERRA ESTE BOULEVARD PLAN & PROFILE FROM STA. 0+00.00 TO STA. 7+50.00

SHEET NO.
C6.1R

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C13	55.00'	22.94'	11.64'	22.77'	S14°18'52"W	023°53'44"
C14	2.50'	5.77'	5.64'	4.57'	N87°38'00"W	132°12'32"
C15	55.00'	22.94'	11.64'	22.77'	N09°34'52"W	023°53'44"
C16	55.00'	22.94'	11.64'	22.77'	S09°34'52"E	023°53'44"
C17	2.50'	5.77'	5.64'	4.57'	S87°38'00"E	132°12'32"
C18	55.00'	22.94'	11.64'	22.77'	N14°18'52"E	023°53'44"

UTILITY LOCATOR SERVICES

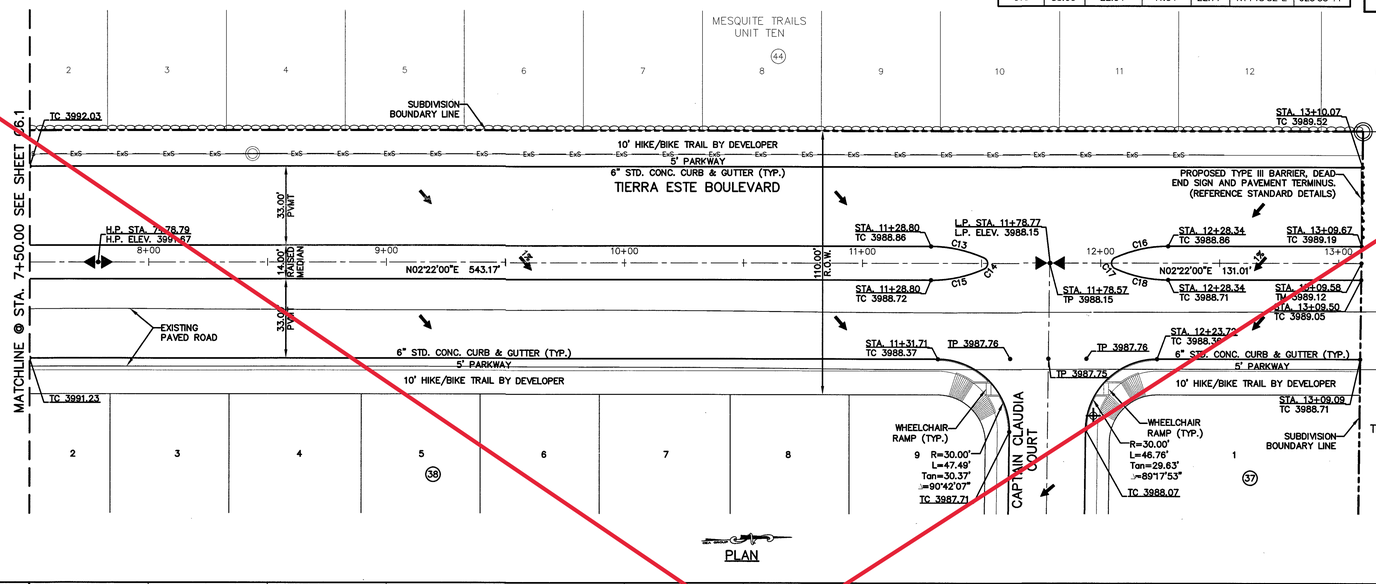
PASEO DEL ESTE MUNICIPAL UTILITY DISTRICT No. 1	(915) 852-1465
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
SPECTRUM	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579

WARNING ! BEFORE YOU DIG

CALL 811

FOR FIELD LOCATING EXISTING UTILITIES

See Revised Sheet.



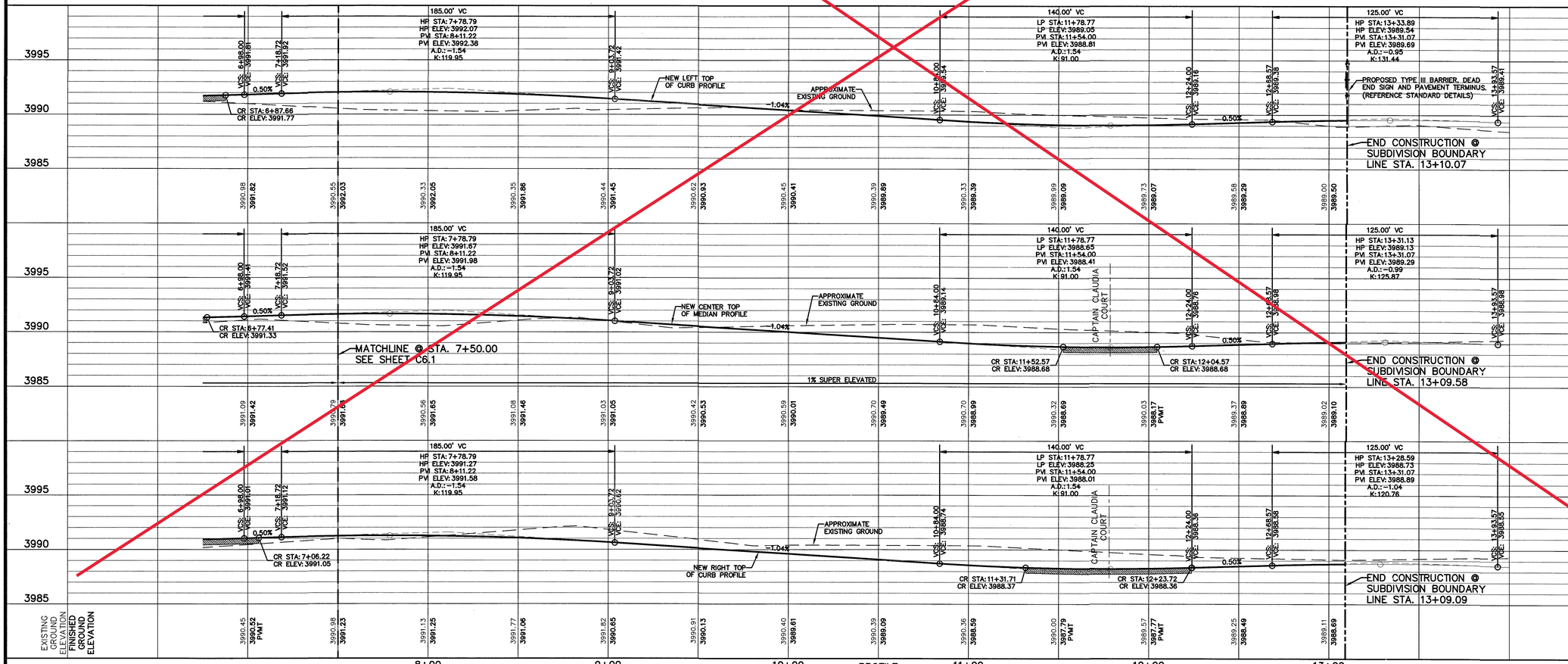
PLAN

LEGEND

DIRECTIONAL WHEELCHAIR RAMP BY BUILDER (TYP.)

PVI ELEVATIONS ARE SHOWN AT TOP OF CURB. REFER TO PLAN VIEW FOR TOP OF PAVEMENT ELEVATIONS.

PROPOSED STREET NAME SIGN & STOP SIGN



PROFILE

REFERENCES — BENCHMARKS

FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEBALLA AVENUE AND DOMINIC ANAKIN DRIVE. ELEVATION: 3990.65' (CITY DATUM)

BY	REVISIONS	DATE

THE CITY OF EL PASO TEXAS

Oscar Villalobos — 03/08/2021

BY — DATE

ceagroup
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL

COMMONWEALTH OF PUERTO RICO — JORGE L. ACARATE — 24075 — LICENSED PROFESSIONAL ENGINEER — 8-21

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

DATE:	JUNE 2020
DESIGN BY:	K.A.P.
DRAWN BY:	K.A.P.
CHKD. BY:	F.Z.
APPVD. BY:	J.L.A.
JOB No.	3049-002

PROJECT TITLE

CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE

TIERRA ESTE BOULEVARD PLAN & PROFILE FROM STA. 7+50.00 TO STA. 13+09.58

SHEET NO.

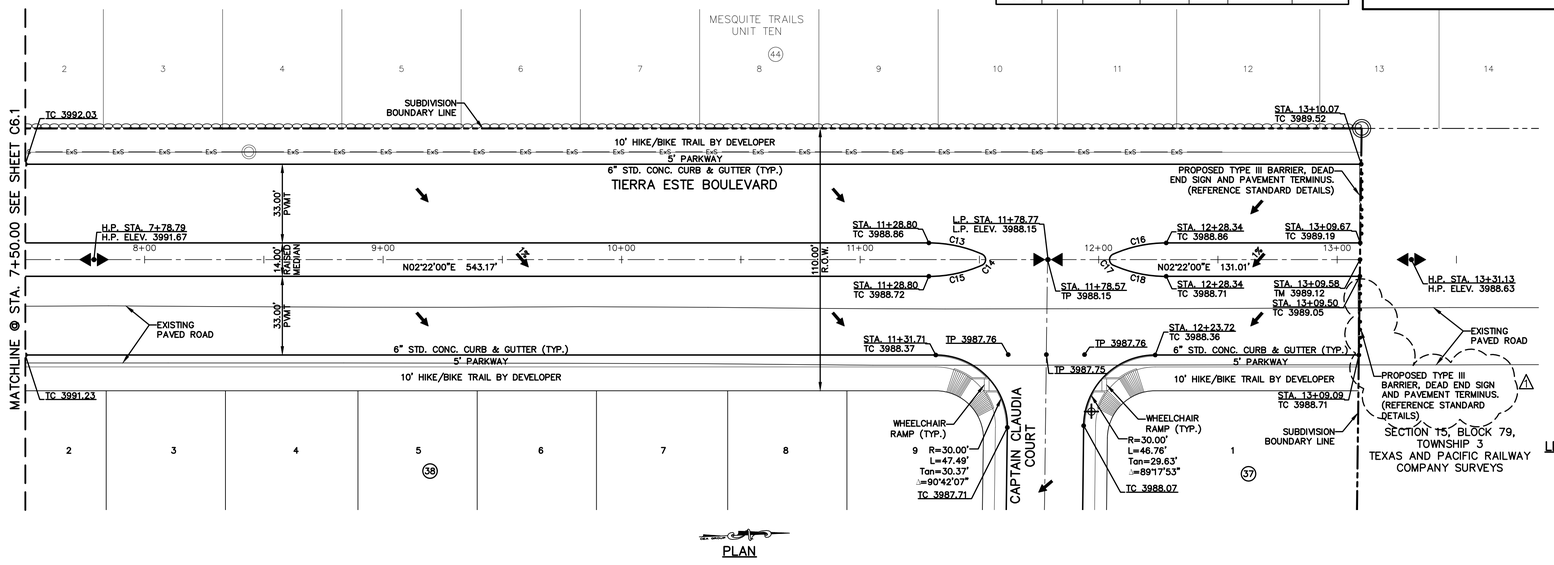
C6.2

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C13	55.00'	22.94'	11.64'	22.77'	S14°18'52"W	023°53'44"
C14	2.50'	5.77'	5.64'	4.57'	N87°38'00"W	132°12'32"
C15	55.00'	22.94'	11.64'	22.77'	N09°34'52"W	023°53'44"
C16	55.00'	22.94'	11.64'	22.77'	S09°34'52"E	023°53'44"
C17	2.50'	5.77'	5.64'	4.57'	S87°38'00"E	132°12'32"
C18	55.00'	22.94'	11.64'	22.77'	N14°18'52"E	023°53'44"

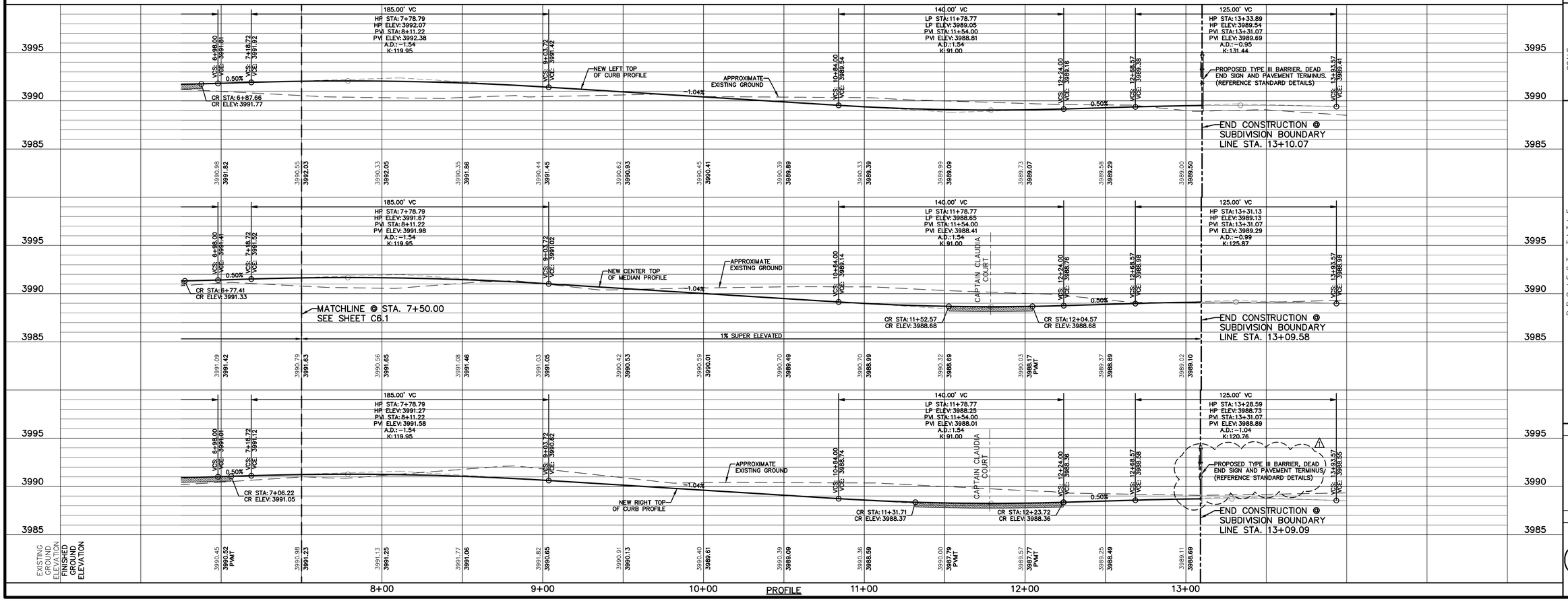
UTILITY LOCATOR SERVICES

PASEO DEL ESTE MUNICIPAL UTILITY DISTRICT No. 1	(915) 852-1465
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
SPECTRUM	(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

WARNING !
BEFORE YOU DIG
CALL 811
FOR FIELD LOCATING EXISTING UTILITIES



PLAN



PROFILE

Oscar Villalobos 07/20/2021

BY DATE

REVISED
9:06 am, Jul 20, 2021

LEGEND

DIRECTIONAL WHEELCHAIR RAMP BY BUILDER (TYP.)

PVI ELEVATIONS ARE SHOWN AT TOP OF CURB. REFER TO PLAN VIEW FOR TOP OF PAVEMENT ELEVATIONS.

PROPOSED STREET NAME SIGN & STOP SIGN

REFERENCES – BENCHMARKS

FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE. ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY
6/22/21	1 AS PER CEP REVISIONS	K.A.P.

cea group
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL

JORGE L. AZCARATE 85075 LICENSED PROFESSIONAL ENGINEER 6-22-21

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

DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE

CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE

TIERRA ESTE BOULEVARD PLAN & PROFILE FROM STA. 7+50.00 TO STA. 13+09.58

SHEET NO.

C6.2R

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	1000.00	63.56	31.79	63.55	S89°19'17"E	3°38'30"
C2	1000.00	172.48	86.45	172.26	N83°55'00"E	9°52'56"
C3	1000.00	128.66	64.42	128.57	N82°39'41"E	7°22'17"
C4	1000.00	117.40	58.77	117.33	N89°42'37"E	6°43'35"

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C5	2.50'	5.77'	5.64'	4.57'	S02°29'58"W	132°12'32"
C6	55.00'	22.94'	11.64'	22.77'	S75°33'10"E	023°53'44"
C7	1007.00'	237.69'	119.40'	237.14'	N85°44'15"E	013°31'26"
C8	993.00'	77.95'	38.99'	77.93'	S81°13'28"W	004°29'51"
C9	55.00'	23.31'	11.83'	23.14'	N71°32'10"E	024°17'11"
C10	2.50'	5.77'	5.64'	4.57'	N06°42'42"W	132°12'32"
C11	55.00'	22.91'	11.62'	22.75'	N84°44'59"W	023°52'03"
C12	1007.00'	79.40'	39.72'	79.38'	S81°14'04"W	004°31'04"

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C13	993.00'	234.38'	117.74'	233.84'	N85°44'15"E	013°31'26"
C14	55.00'	22.94'	11.64'	22.77'	S80°33'06"W	023°53'44"
C15	2.50'	5.77'	5.64'	4.57'	S00°43'46"E	132°12'32"
C16	55.00'	22.94'	11.64'	22.77'	S78°46'54"E	023°53'44"
C17	993.00'	65.91'	32.97'	65.90'	N88°49'41"W	003°48'11"
C18	1007.00'	66.84'	33.43'	66.83'	N88°49'41"W	003°48'11"
C19	55.00'	22.94'	11.64'	22.77'	S77°19'22"W	023°53'44"

LINE TABLE		
LINE	BEARING	LENGTH
L1	S87°30'02"E	55.00
L2	S86°55'35"E	13.28

THE CITY OF EL PASO TEXAS

Oscar Villalobos 03/08/2021
BY DATE

UTILITY LOCATOR SERVICES	
PASEO DEL ESTE MUNICIPAL UTILITY DISTRICT No. 1	(915) 852-1465
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
SPECTRUM	(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

WARNING ! BEFORE YOU DIG

CALL 811

FOR FIELD LOCATING EXISTING UTILITIES

REFERENCES – BENCHMARKS

FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC AMAKIN DRIVE. ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

SECTION 15, BLOCK 79, TOWNSHIP 3 TEXAS AND PACIFIC RAILWAY COMPANY SURVEYS

cea group
813 N. Kansas St. Suite 300 El Paso, TX 79902 915.544.5232 www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL

STATE OF TEXAS — JORGE L. AZCARATE — 85075 — LICENSED PROFESSIONAL ENGINEER — 8-21

PLAN

LEGEND

- DIRECTIONAL WHEELCHAIR RAMP BY BUILDER (TYP.)
- PVI ELEVATIONS ARE SHOWN AT TOP OF CURB. REFER TO PLAN VIEW FOR TOP OF PAVEMENT ELEVATIONS.
- PROPOSED STREET NAME SIGN & STOP SIGN
- LIMITS OF DEMOLITION

PROFILE

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

DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE

CUESTA DEL SOL SUBDIVISION IMPROVEMENTS

SHEET TITLE

CEVALLIA AVENUE PLAN & PROFILE FROM STA. −0+15.00 TO STA. 6+72.85

SHEET NO.

C6.3

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	1173.00	276.87	139.08	276.23	N85°44'15"E	13°31'26"
C2	827.00	105.92	53.03	105.85	N82°38'41"E	7°20'17"
C3	827.00	97.53	48.82	97.48	N89°41'33"E	6°45'26"

UTILITY LOCATOR SERVICES	
PASEO DEL ESTE MUNICIPAL UTILITY DISTRICT No. 1	(915) 852-1465
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
SPECTRUM	(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

WARNING ! BEFORE YOU DIG

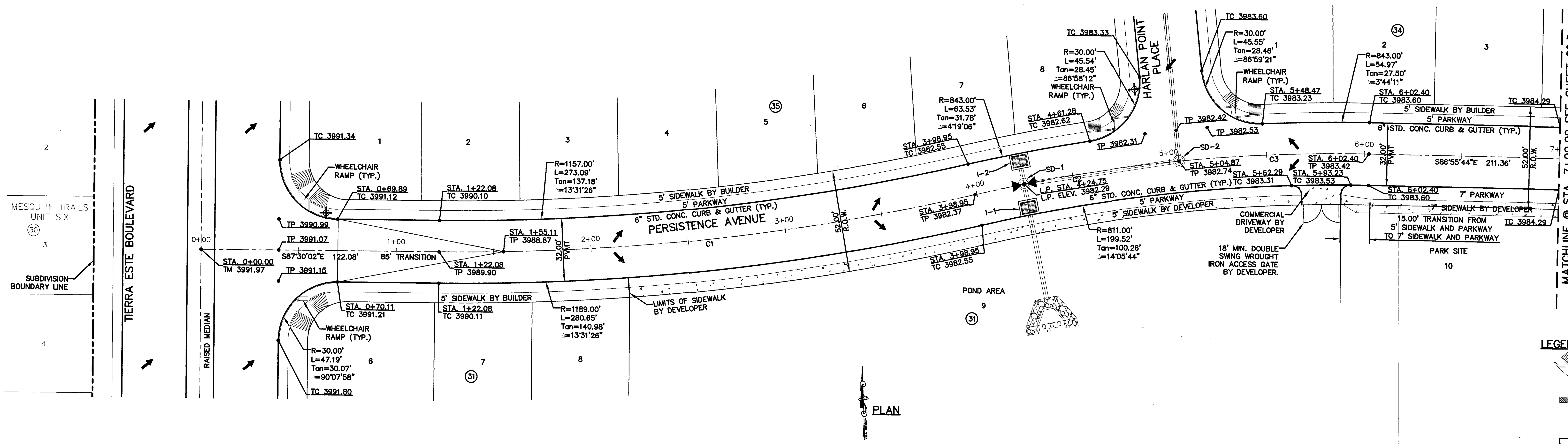
CALL 811

FOR FIELD LOCATING EXISTING UTILITIES

REFERENCES – BENCHMARKS

FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE. ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY



Oscar Villalobos 03/08/2021

BY DATE

THE CITY OF EL PASO TEXAS

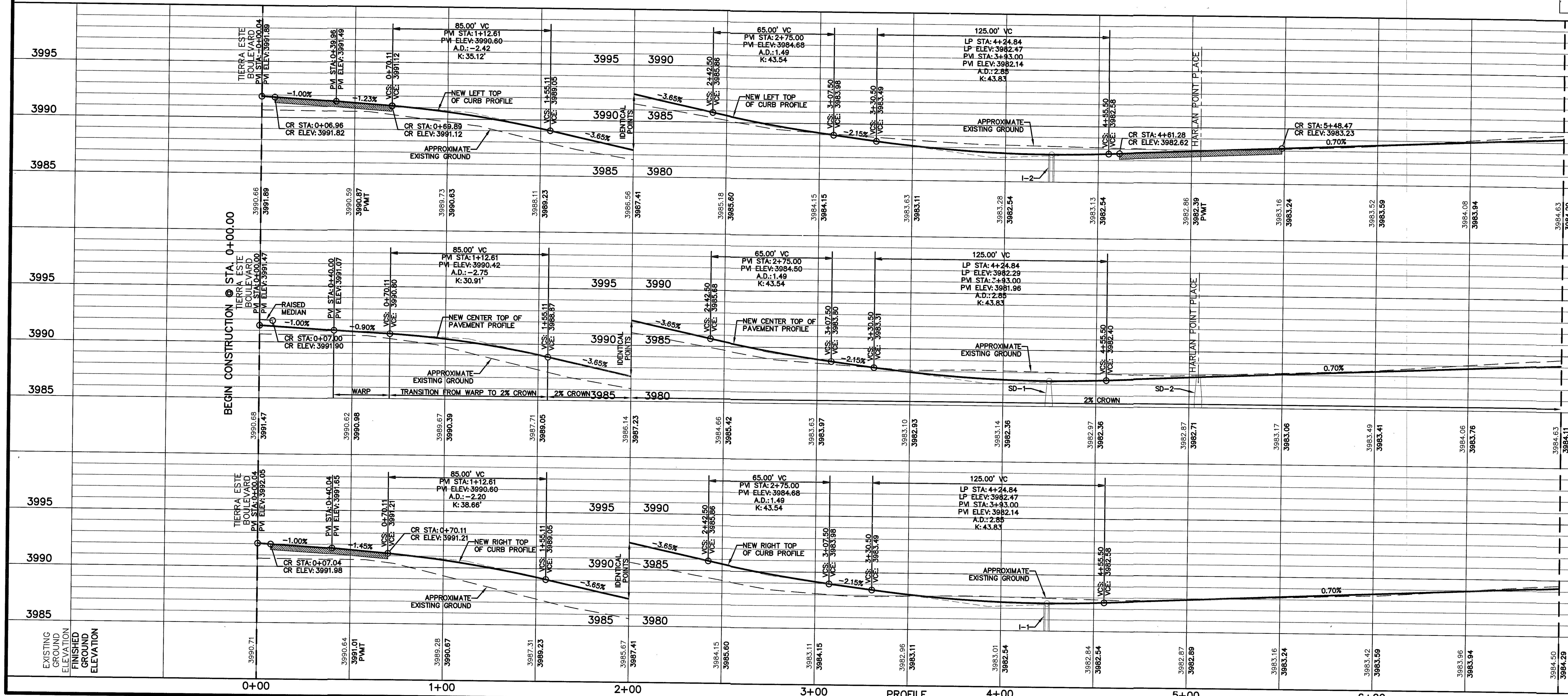
LEGEND

DIRECTIONAL WHEELCHAIR RAMP BY BUILDER (TYP.)

PVI ELEVATIONS ARE SHOWN AT TOP OF CURB. REFER TO PLAN VIEW FOR TOP OF PAVEMENT ELEVATIONS.

PROPOSED STREET NAME SIGN & STOP SIGN

SIDEWALK BY DEVELOPER



ceagroup — 813 N. Kansas St. Suite 300 El Paso, TX 79902 915.544.5232 www.ceagroup.net

TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL — STATE OF TEXAS, JORGE L. AZCARATE, 85075, LICENSED PROFESSIONAL ENGINEER, 1-8-21

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

DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE

CUESTA DEL SOL SUBDIVISION IMPROVEMENTS

SHEET TITLE

PERSISTENCE AVENUE PLAN & PROFILE FROM STA. 0+00.00 TO STA. 7+00.00

SHEET NO.

C6.4

UTILITY LOCATOR SERVICES	
PASEO DEL ESTE MUNICIPAL UTILITY DISTRICT No. 1	(915) 852-1465
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
SPECTRUM	(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

WARNING ! BEFORE YOU DIG

CALL 811

FOR FIELD LOCATING EXISTING UTILITIES

THE CITY OF EL PASO TEXAS

Oscar Villalobos — BY

03/08/2021 — DATE

REFERENCES – BENCHMARKS

FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANA DRIVE. ELEVATION: 3990.65' (CITY DATUM)

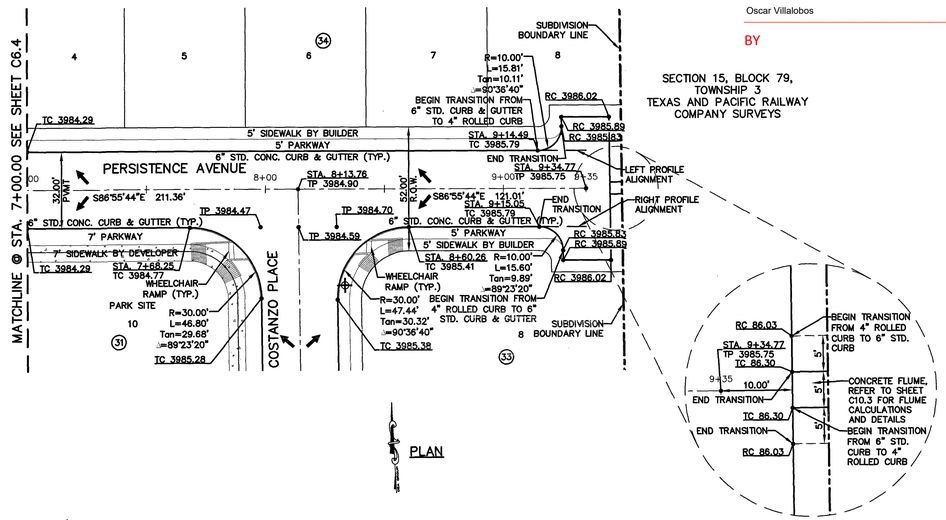
BY	REVISIONS	DATE

cea
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

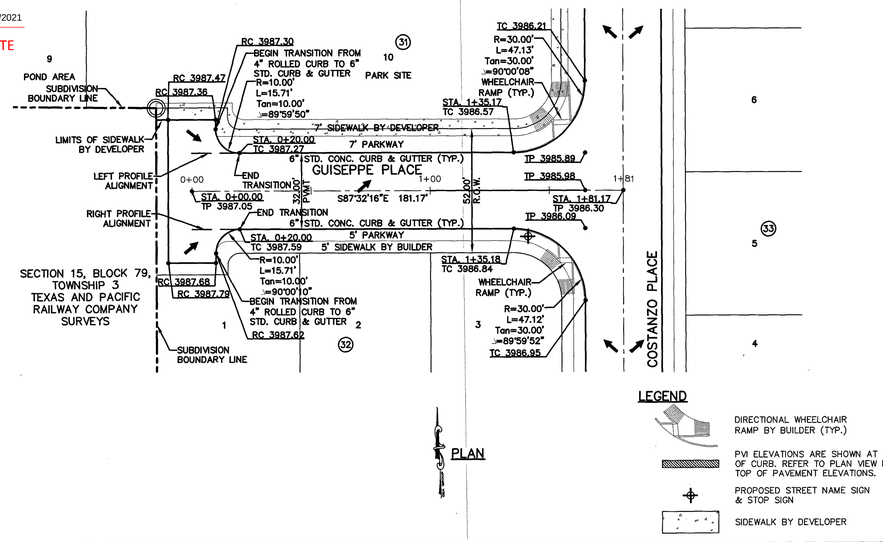
ENGINEER'S SEAL

JORGE L. AZCARATE — LICENSED PROFESSIONAL ENGINEER — 85075 — 08-21-2020

SECTION 15, BLOCK 79, TOWNSHIP 3 TEXAS AND PACIFIC RAILWAY COMPANY SURVEYS

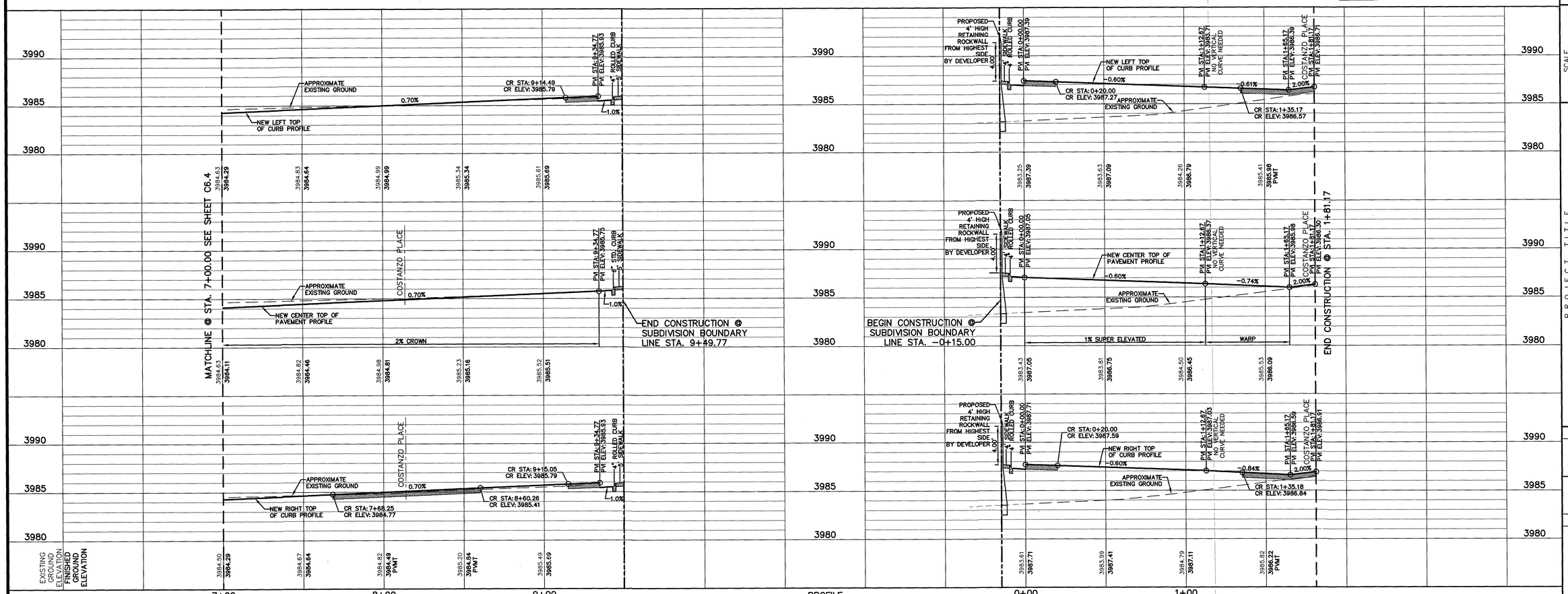


SECTION 15, BLOCK 79, TOWNSHIP 3 TEXAS AND PACIFIC RAILWAY COMPANY SURVEYS



LEGEND

- DIRECTIONAL WHEELCHAIR RAMP BY BUILDER (TYP.)
- PVI ELEVATIONS ARE SHOWN AT TOP OF CURB. REFER TO PLAN VIEW FOR TOP OF PAVEMENT ELEVATIONS.
- PROPOSED STREET NAME SIGN & STOP SIGN
- SIDEWALK BY DEVELOPER



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

DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.A.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE

CUESTA DEL SOL SUBDIVISION IMPROVEMENTS

SHEET TITLE

PERSISTENCE AVENUE PLAN & PROFILE FROM STA. 7+00.00 TO STA. 9+49.77

GIUSEPPE PLACE PLAN & PROFILE FROM STA. -0+15.00 TO STA. 1+81.17

SHEET NO.

C6.5

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	375.00	20.35	10.18	20.35	N2°07'16"W	3°06'35"
C2	375.00	19.80	9.90	19.80	N0°56'48"E	3°01'32"

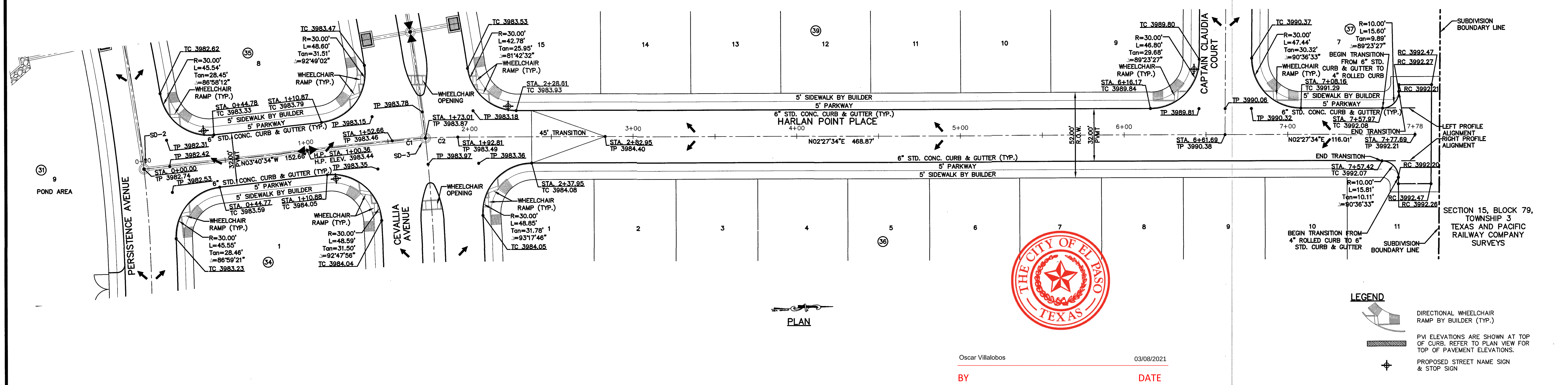
UTILITY LOCATOR SERVICES

PASEO DEL ESTE MUNICIPAL UTILITY DISTRICT No. 1	(915) 852-1465
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
SPECTRUM	(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

WARNING ! BEFORE YOU DIG

CALL 811

FOR FIELD LOCATING EXISTING UTILITIES

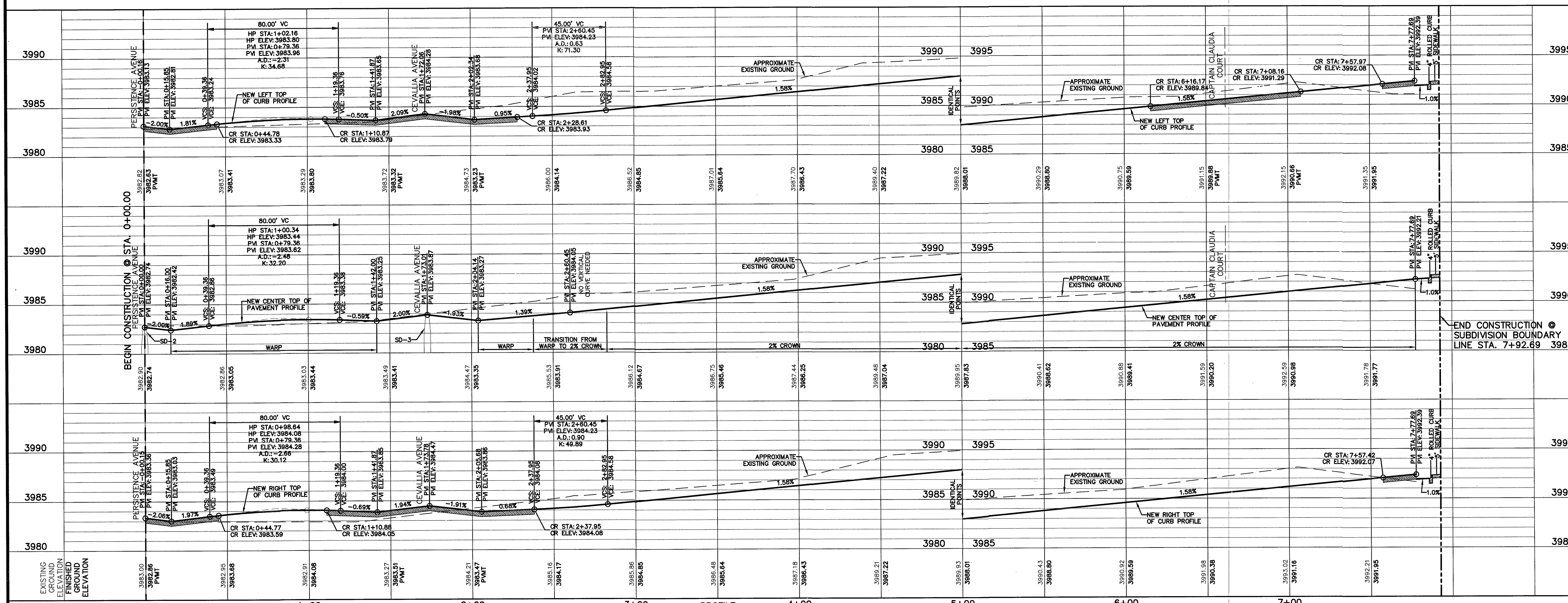


PLAN

THE CITY OF EL PASO TEXAS

Oscar Villalobos 03/08/2021

BY DATE



PROFILE

REFERENCES – BENCHMARKS

FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE. ELEVATION: 3990.65' (CITY DATUM)

REVISIONS | DATE | BY

cea group

813 N. Kansas St. Suite 300 El Paso, TX 79902 915.544.5232 www.ceagroup.net

Texas Registered Engineering Firm F-4564

ENGINEER'S SEAL

JORGE L. AZCARATE 85075

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

DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE

CUESTA DEL SOL SUBDIVISION IMPROVEMENTS

SHEET TITLE

HARLAN POINT PLACE PLAN & PROFILE FROM STA. 0+00.00 TO STA. 7+92.69

SHEET NO.

C6.6

UTILITY LOCATOR SERVICES	
PASEO DEL ESTE MUNICIPAL UTILITY DISTRICT No. 1	(915) 852-1465
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
SPECTRUM	(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

WARNING ! BEFORE YOU DIG

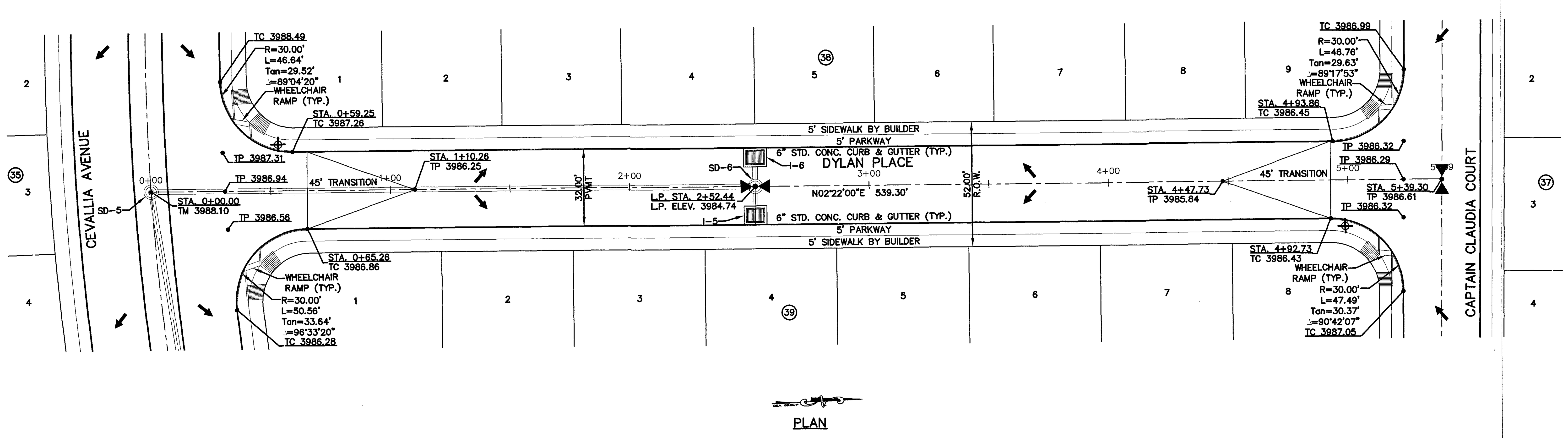
CALL 811

FOR FIELD LOCATING EXISTING UTILITIES

REFERENCES – BENCHMARKS

FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE.
ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY



THE CITY OF EL PASO TEXAS

Oscar Villalobos 03/08/2021

BY DATE

LEGEND

DIRECTIONAL WHEELCHAIR RAMP BY BUILDER (TYP.)

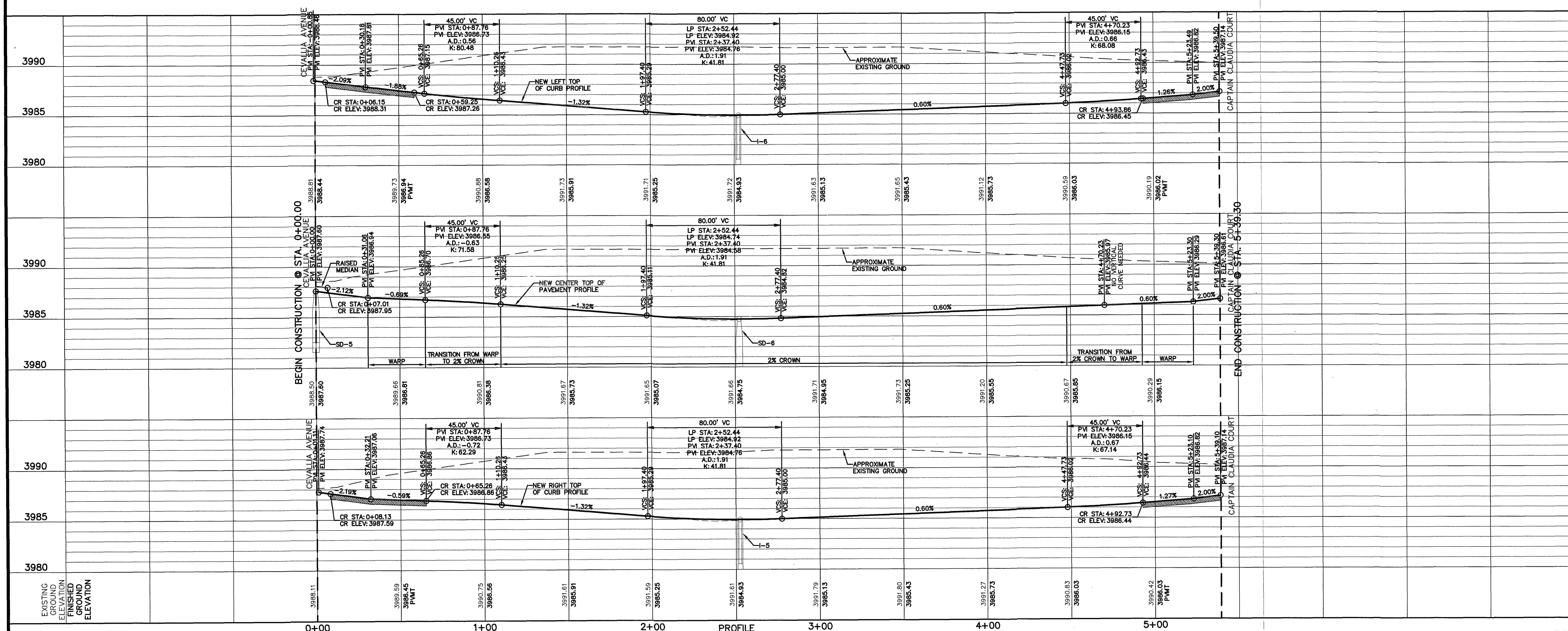
PVI ELEVATIONS ARE SHOWN AT TOP OF CURB. REFER TO PLAN VIEW FOR TOP OF PAVEMENT ELEVATIONS.

PROPOSED STREET NAME SIGN & STOP SIGN

cea group
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
Texas Registered Engineering Firm F-4564

ENGINEER'S SEAL

STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER



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

DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE

CUESTA DEL SOL SUBDIVISION IMPROVEMENTS

SHEET TITLE

DYLAN PLACE PLAN & PROFILE FROM STA. 0+00.00 TO STA. 5+39.30

SHEET NO.

C6.7

UTILITY LOCATOR SERVICES

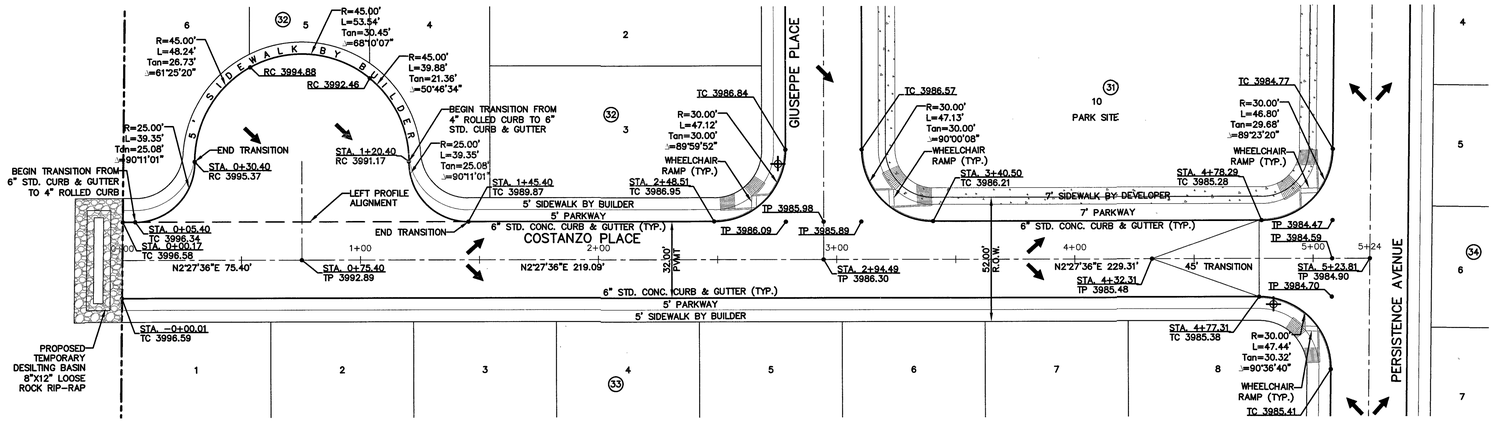
PASEO DEL ESTE MUNICIPAL UTILITY DISTRICT No. 1	(915) 852-1465
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
SPECTRUM	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579

WARNING !
BEFORE YOU DIG
CALL 811
FOR FIELD LOCATING EXISTING UTILITIES

REFERENCES – BENCHMARKS

FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLA AVENUE AND DOMINIC ANAKIN DRIVE.
ELEVATION: 3990.65' (CITY DATUM)

BY	REVISIONS	DATE



PLAN

THE CITY OF EL PASO — TEXAS

Oscar Villalobos 03/08/2021

BY DATE

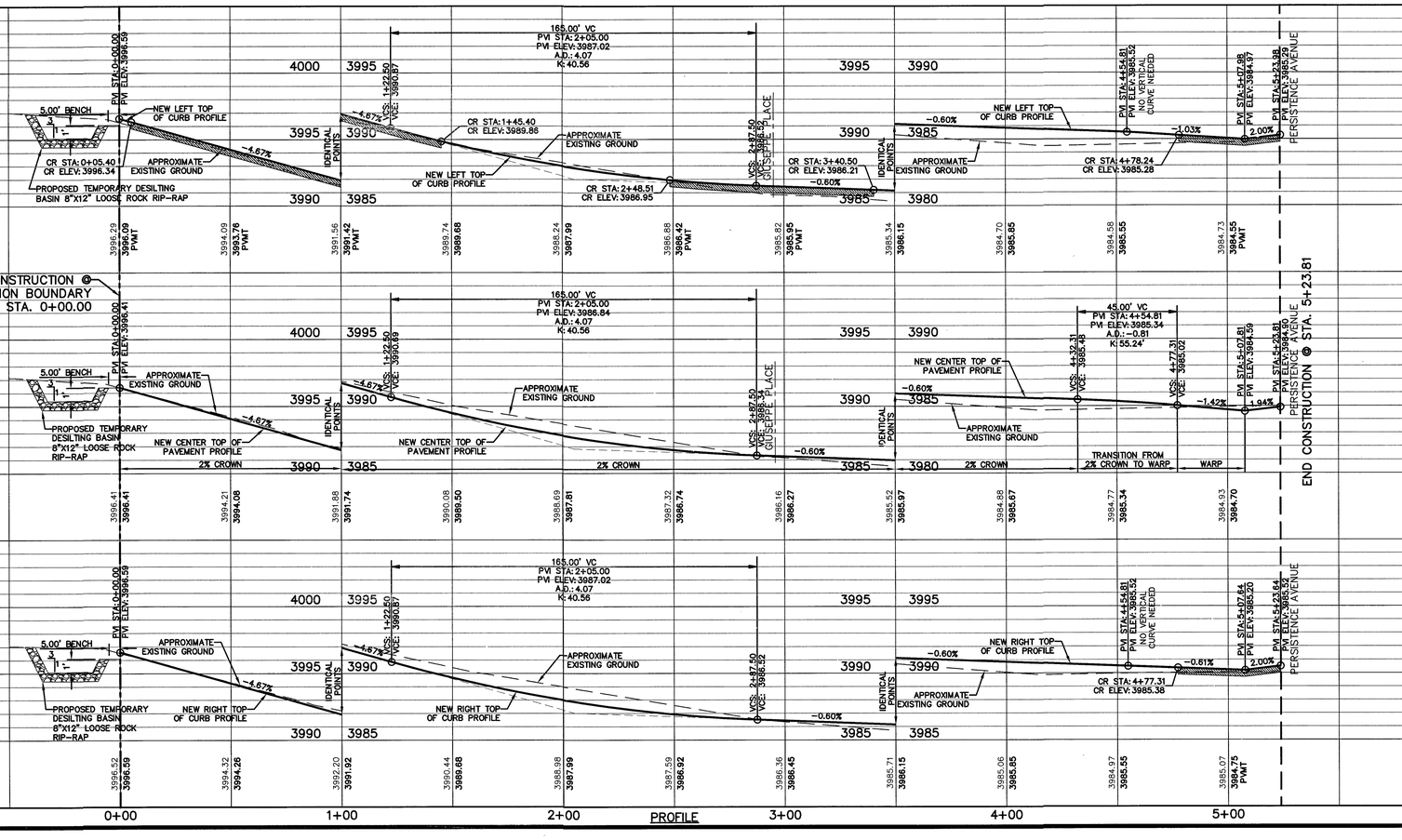
LEGEND

- DIRECTIONAL WHEELCHAIR RAMP BY BUILDER (TYP.)
- P.V.I ELEVATIONS ARE SHOWN AT TOP OF CURB. REFER TO PLAN VIEW FOR TOP OF PAVEMENT ELEVATIONS.
- PROPOSED STREET NAME SIGN & STOP SIGN
- SIDEWALK BY DEVELOPER

caa group
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.caagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL

JORGE L. AZCARATE 85073 — 8-21



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

DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHK'D. BY: F.Z.
APPV'D. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE

CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE

COSTANZO PLACE PLAN & PROFILE FROM STA. 0+00.00 TO STA. 5+23.81

SHEET NO.

C6.8

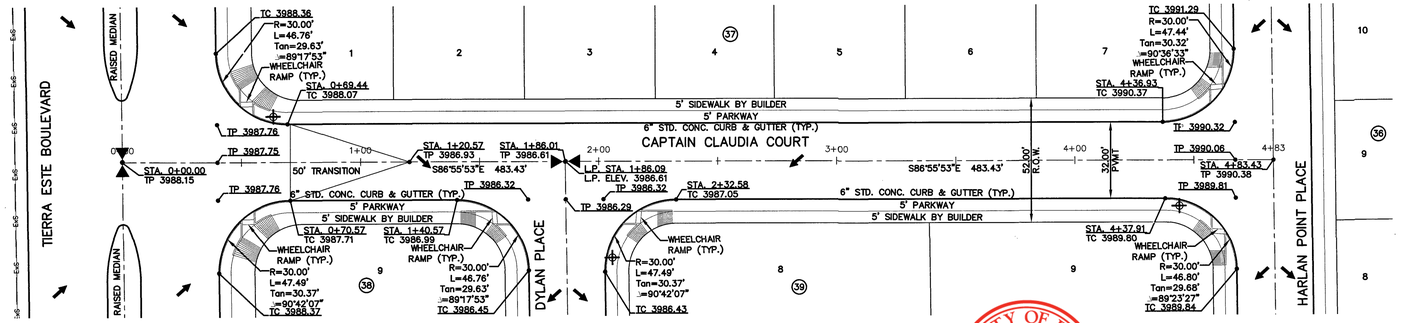
UTILITY LOCATOR SERVICES

PASEO DEL ESTE MUNICIPAL UTILITY DISTRICT No. 1	(915) 852-1465
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
SPECTRUM	(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

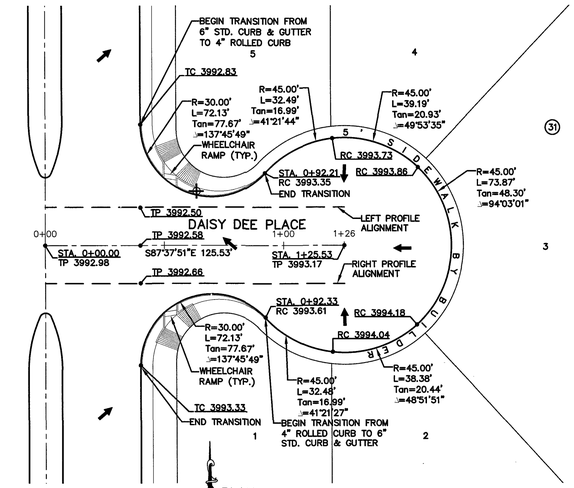
WARNING !
BEFORE YOU DIG
CALL 811
FOR FIELD LOCATING EXISTING UTILITIES

REFERENCES – BENCHMARKS
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLA AVENUE AND DOMINIC ANAKIN DRIVE.
ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY



PLAN



PLAN

LEGEND

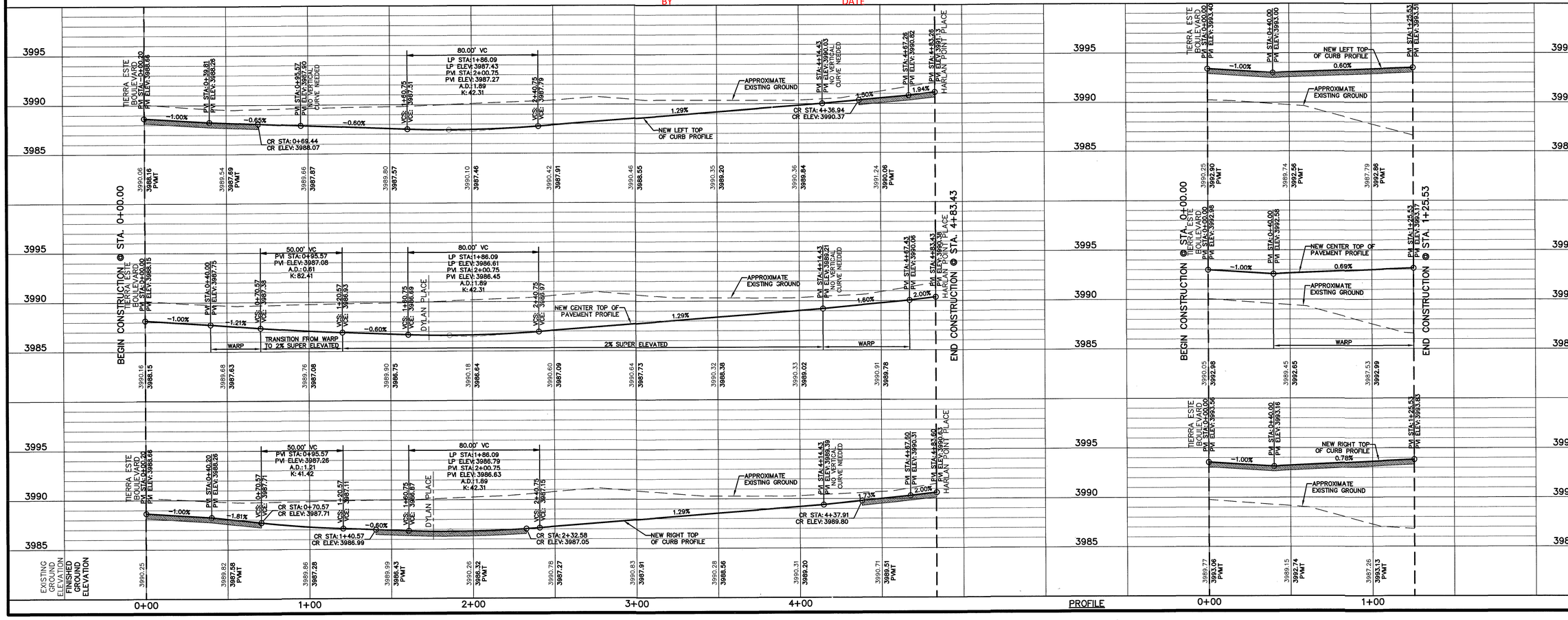
DIRECTIONAL WHEELCHAIR RAMP BY BUILDER (TYP.)

PVI ELEVATIONS ARE SHOWN AT TOP OF CURB. REFER TO PLAN VIEW FOR TOP OF PAVEMENT ELEVATIONS.

PROPOSED STREET NAME SIGN & STOP SIGN

THE CITY OF EL PASO TEXAS

Oscar Villalobos — 03/08/2021
BY — DATE



ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232

ENGINEER'S SEAL
COMMONWEALTH OF PUERTO RICO
JORGE L. AZCARATE
8807S
LICENSED PROFESSIONAL ENGINEER
8-21

SCALE	
Horizontal:	1"=30'
Vertical:	1"=5'
Contour Interval:	N/A
DATE:	JUNE 2020
DESIGN BY:	K.A.P.
DRAWN BY:	K.A.P.
CHKD. BY:	F.Z.
APPVD. BY:	J.L.A.
JOB No.	3049-002

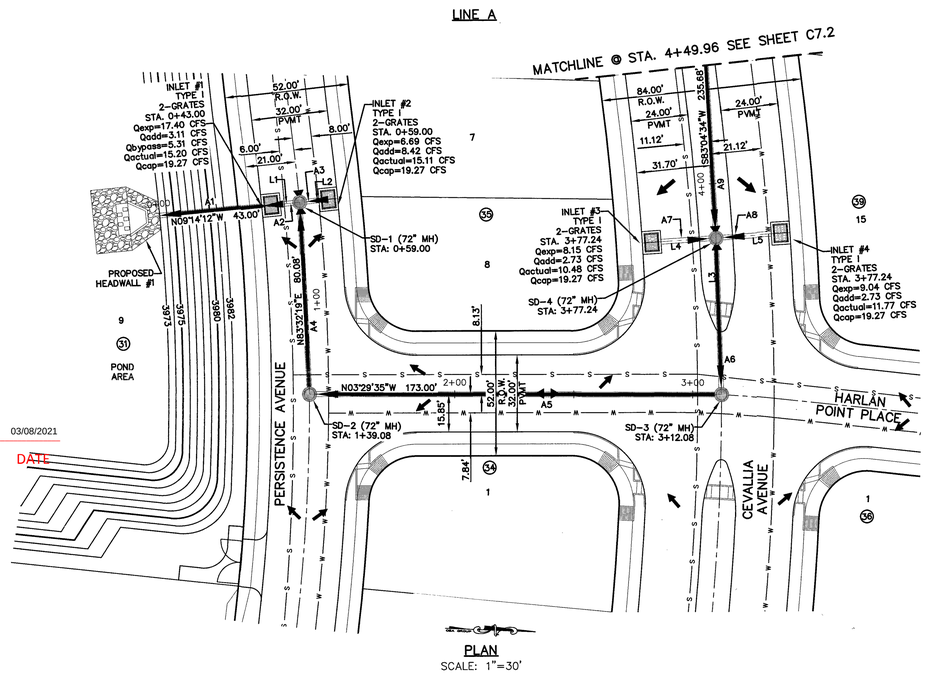
PROJECT TITLE
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE
CAPTAIN CLAUDIA COURT PLAN & PROFILE FROM STA. 0+00.00 TO STA. 4+83.43
DAISY DEE PLACE PLAN & PROFILE FROM STA. 0+00.00 TO STA. 1+25.53

SHEET NO.
C6.9

UTILITY LOCATOR SERVICES	
PASEO DEL ESTE MUNICIPAL UTILITY DISTRICT No. 1	(915) 852-1465
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
SPECTRUM	(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

WARNING !
BEFORE YOU DIG
CALL 811
FOR FIELD LOCATING EXISTING UTILITIES



PLAN
SCALE: 1"=30'

LINE TABLE		
LINE	BEARING	LENGTH
L1	N09°14'12"W	16.00'
L2	N09°14'12"W	16.00'
L3	S84°28'49"W	65.15'
L4	S07°23'11"E	31.00'
L5	N07°23'11"W	31.00'

STORM PIPE OUTPUT INFORMATION

PIPE ID	DOWNSTREAM INVERT ELEVATION (ft)	UPSTREAM INVERT ELEVATIO(ft)	HYDRAULIC GRADE DOWNSTREAM (ft)	HYDRAULIC GRADE UPSTREAM (ft)	Q(100) Expected (cfs)	Q(100) Capacity (cfs)
A1	3,973.00	3,975.50	3,981.17	3,981.25	63.67	346.34
A2	3,975.50	3,975.75	3,981.45	3,981.49	49.36	125.76
A3	3,975.75	3,976.95	3,981.82	3,981.89	15.11	61.95
A4	3,975.75	3,976.20	3,981.82	3,981.92	34.96	75.42
A5	3,976.20	3,976.65	3,982.08	3,982.29	35.36	51.31
A6	3,976.65	3,977.00	3,982.46	3,982.54	35.52	73.74
A7	3,977.00	3,977.90	3,982.76	3,982.83	10.95	38.54
A8	3,977.00	3,977.90	3,982.76	3,982.84	11.84	38.54
A9	3,977.00	3,978.50	3,982.76	3,983.10	15.75	32.72

LEGEND:

- STORM SEWER LINE
- DROP INLET
- STORM DRAIN MANHOLE
- SANITARY SEWER LINE
- WATER LINE

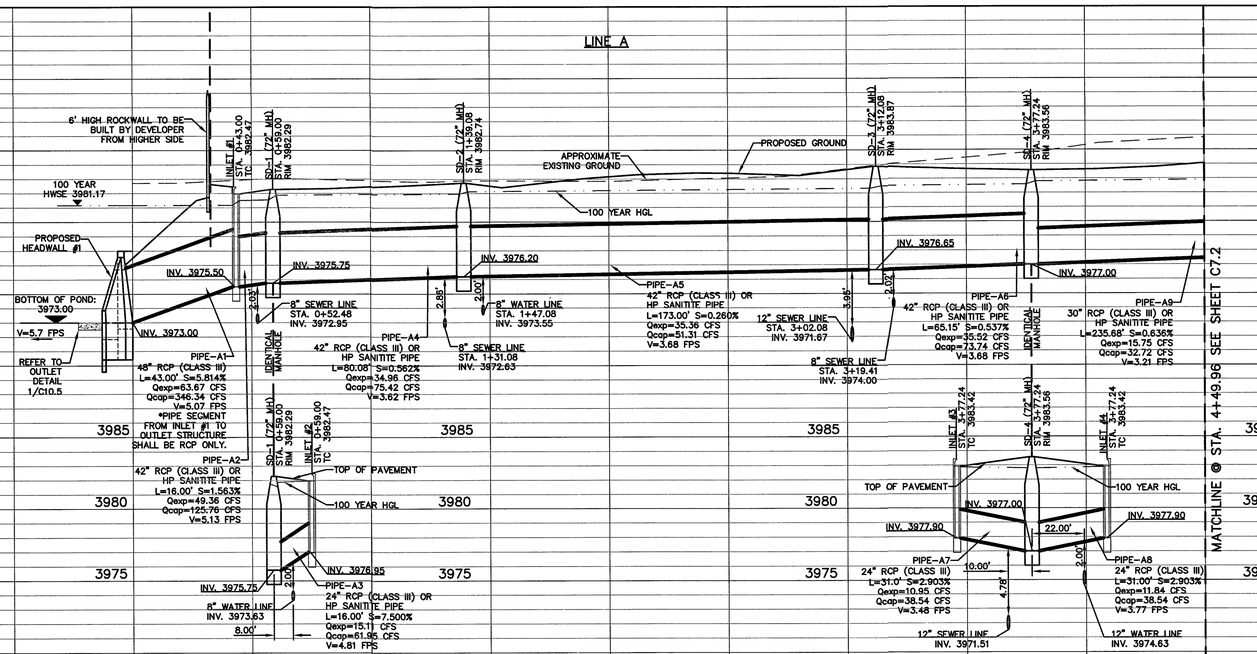
NOTE:

1. ALL MANHOLE LIDS SHALL BE 30" AS PER DETAIL 1/C10.2 AND 2/C10.2

THE CITY OF EL PASO TEXAS

Oscar Villalobos 03/08/2021

BY DATE



PROFILE

REFERENCES – BENCHMARKS
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANKHIN DRIVE.
ELEVATION: 3990.65' (CITY DATUM)

DATE | REVISIONS | BY

cea group
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL
STATE OF TEXAS JORGE L. AZCARATE 85075 LICENSED PROFESSIONAL ENGINEER 8-21

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

DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE
STORM SEWER PLAN & PROFILE: LINE A

SHEET NO.
C7.1

UTILITY LOCATOR SERVICES

PASEO DEL ESTE MUNICIPAL UTILITY DISTRICT No. 1	(915) 852-1465
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
SPECTRUM	(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

WARNING !
BEFORE YOU DIG
CALL 811
FOR FIELD LOCATING EXISTING UTILITIES

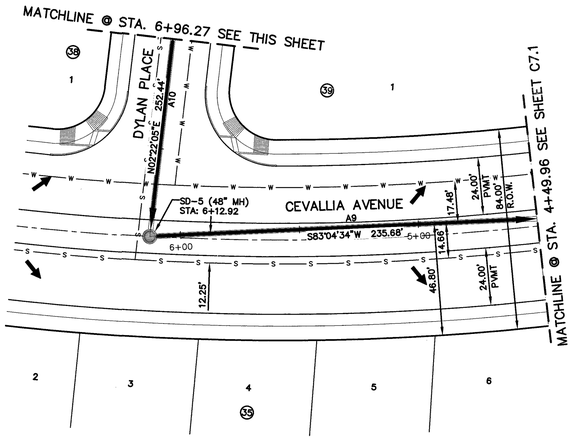
REFERENCES — BENCHMARKS
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE.
ELEVATION: 3990.65' (CITY DATUM)

BY	REVISIONS	DATE

cea
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL
STATE OF TEXAS
JORGE L. AZCARATE
86075
LICENSED PROFESSIONAL ENGINEER
8-21

LINE A

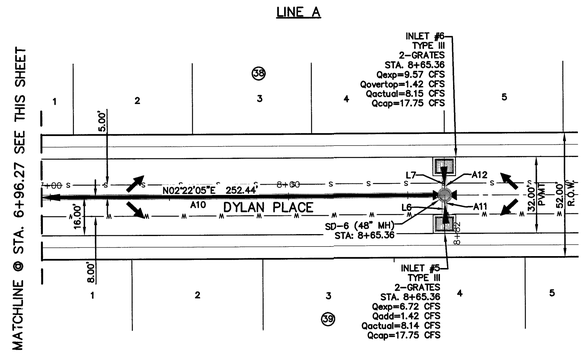


PLAN
SCALE: 1"=30'

THE CITY OF EL PASO — TEXAS

Oscar Villalobos — 03/08/2021
BY — DATE

LINE A



PLAN
SCALE: 1"=30'

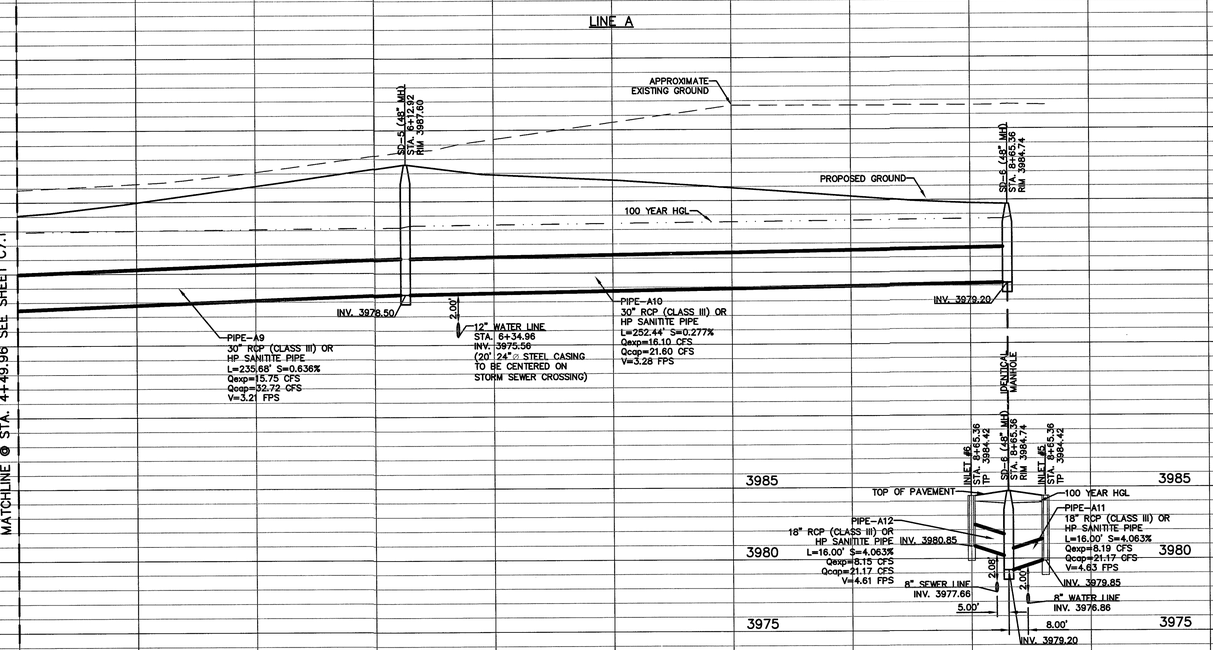
LINE TABLE		
LINE	BEARING	LENGTH
L6	S87°38'00"E	16.00'
L7	N87°38'00"W	16.00'

STORM PIPE OUTPUT INFORMATION						
PIPE ID	DOWNSTREAM INVERT ELEVATION (ft)	UPSTREAM INVERT ELEVATIO(ft)	HYDRAULIC GRADE DOWNSTREAM (ft)	HYDRAULIC GRADE UPSTREAM (ft)	Q(100) Expected (cfs)	Q(100) Capacity (cfs)
A9	3,977.00	3,978.50	3,982.76	3,983.10	15.75	32.72
A10	3,978.50	3,979.20	3,983.23	3,983.62	16.10	21.60
A11	3,979.20	3,979.85	3,983.75	3,983.85	8.19	21.17
A12	3,980.20	3,980.85	3,983.75	3,983.85	8.15	21.17

LEGEND:
- STORM SEWER LINE
- DROP INLET
- STORM DRAIN MANHOLE
- —— S —— S —— SANITARY SEWER LINE
- —— W —— W —— WATER LINE

NOTE:
1. ALL MANHOLE LIDS SHALL BE 30" AS PER DETAIL 1/C10.2 AND 2/C10.2

LINE A



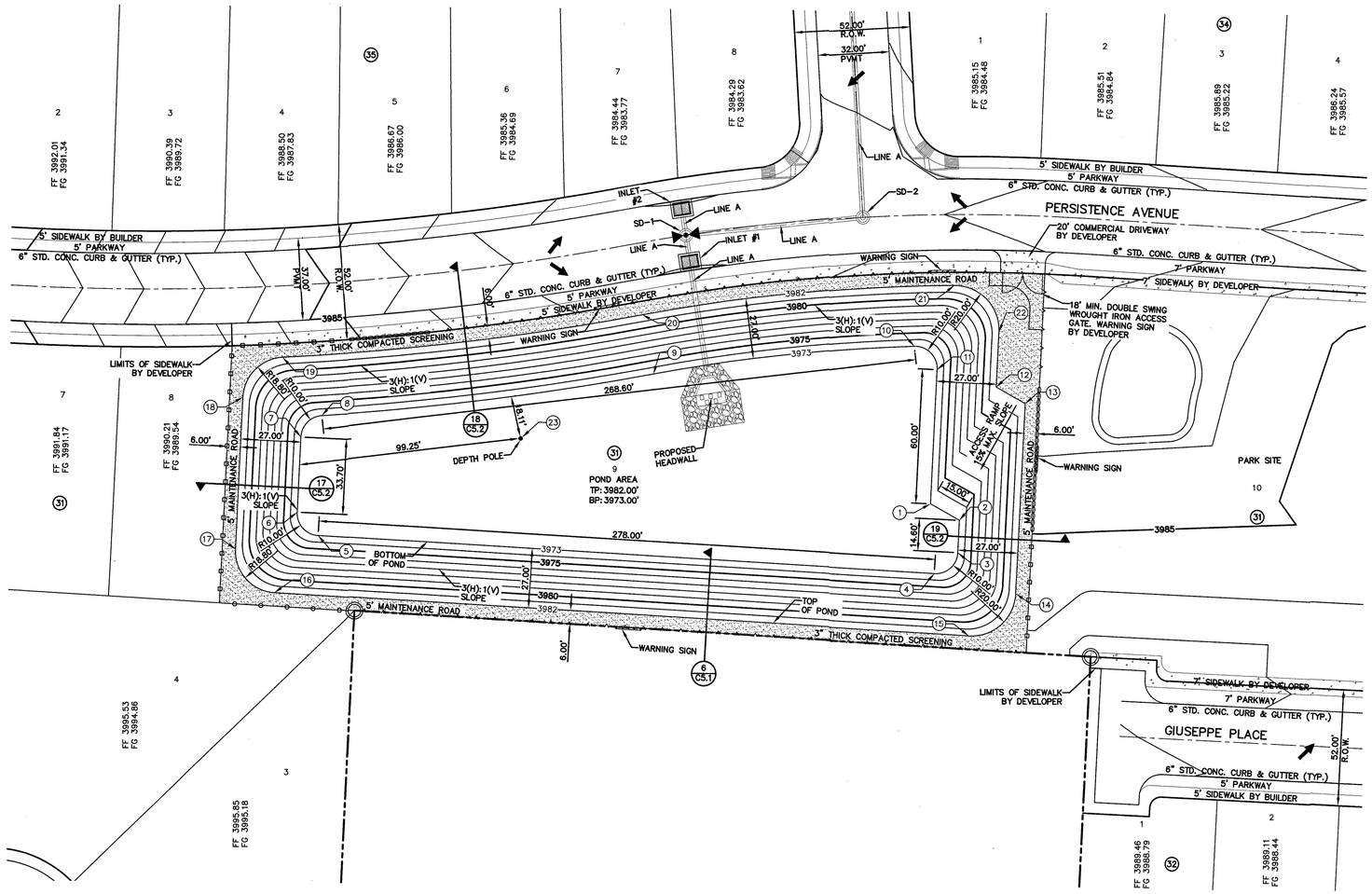
PROFILE

SCALE: Horizontal: 1"=30' Vertical: 1"=5' Contour Interval: N/A
DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE
STORM SEWER PLAN & PROFILE: LINE A

SHEET NO.
C7.2



UTILITY LOCATOR SERVICES

PASEO DEL ESTE MUNICIPAL UTILITY DISTRICT No. 1	(915) 852-1465
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
SPECTRUM	(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

WARNING ! BEFORE YOU DIG

CALL 811

FOR FIELD LOCATING EXISTING UTILITIES

LEGEND

- 3770 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- 3770 NEW MAJOR CONTOUR
- NEW MINOR CONTOUR
- NEW 6' ROCKWALL
- NEW 6' HIGH RETAINING ROCKWALL (2'-3' RETAINING HEIGHT)
- NEW 6' HIGH RETAINING ROCKWALL (3.01'-9' RETAINING HEIGHT)
- NEW RETAINING ROCKWALL (9.01'-13' RETAINING HEIGHT)
- 3" THICK COMPACTED SCREENING
- NO TRESPASSING SIGN
- POND DEPTH GAUGE
- DRAINAGE FLOW DIRECTION
- DRAINAGE LOW POINT

NOTES:

1. 15' WIDE POND ACCESS RAMP SHALL HAVE A MINIMUM P.I. OF 8 WITH NO LOOSE MATERIAL AND A MINIMUM 95% COMPACTION PER ASTM-D1557.
2. POND ROCKWALL/RETAINING WALL SHALL BE BUILT TO A 6' MIN. HEIGHT FROM THE HIGHEST GROUND BY DEVELOPER.
3. PROPOSED ROCKWALLS & RETAINING WALL LOCATIONS SHALL BE CONSTRUCTED ACCORDING TO GRADING SECTIONS AND RELATED DETAILS.

BENCHMARK:

CITY MONUMENT AT CENTERLINE INTERSECTION OF CEVALLIA AND DOMINIC ANAKIN DRIVE.
ELEVATION: 3990.65' (CITY DATUM)

FLOOD ZONE:

THIS SUBDIVISION LIES WITHIN ZONE "X" AS DESIGNATED BY F.E.M.A.; EL PASO COUNTY, COMMUNITY PANEL NO. 480212 0250 B.

COORDINATE TABLE		
Point #	Northing	Easting
1	333.4782	2400.6636
2	326.1803	2413.7685
3	311.5772	2413.1644
4	302.0049	2402.6369
5	316.9064	2125.0227
6	327.3053	2115.5672
7	360.9411	2116.9588
8	370.5031	2126.2491
9	390.2067	2275.4632
10	403.8103	2392.7665
11	393.4044	2403.1428
12	385.8981	2429.8553
13	378.6001	2442.9603
14	293.2658	2439.4299
15	274.1213	2418.3750
16	290.9088	2105.6234
17	310.4589	2087.8471
18	378.4276	2090.6591
19	396.4201	2108.3743
20	416.7084	2270.3001
21	431.2928	2410.5938
22	410.4682	2430.8719
23	361.5510	2216.6654

NOTE:
POND SLOPES SHALL BE STABILIZED WITH PIONEER'S PRIDE SEED MIXTURE (SEED RATE: 1 BULK PER 1000 SF) HYDROSEEDING AS PER MANUFACTURE'S RECOMMENDATION BY EWING IRRIGATION OR APPROVED EQUAL. OR HYDRO-MULCH OR HYDRO-SEEDING.

POND CALCULATIONS

QT = (ARC)/12
QT = 6.12 AC-FT
A = 22.60 + 47.97(OUTSIDE RUNOFF) 70.57 Ac
*R = 4.0"
Cw = 0.26
$TOTAL_{req}$ = 6.12 AC-FT

*AS PER DETENTION BASIN DESIGN CRITERIA (2-4) OF THE CITY OF EL PASO DESIGN STANDARDS FOR CONSTRUCTION. STORM WILL BE 4" RAINFALL IN THREE (3) HOURS.

POND

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	6.12	6.96	72.48	0	3981.17±	3973.00	0.83	3982.00

NOTE:
THE HGL REFLECTS THE ELEVATION AS REQUIRED BY THE CITY OF EL PASO.

HWSE = HGL = QT
HWSE = 6.12 AC-FT
CONTOUR 3981.00, ACCUMULATED VOLUME = 5.94 AC-FT
CONTOUR 3982.00, ACCUMULATED VOLUME = 6.96 AC-FT
HYDRAULIC GRADE LINE ELEVATION = 3981.17±

POND AREAS	
CONTOUR	ACCUMULATED VOLUME (AC-FT.)
3982.00	6.96
3981.00	5.94
3980.00	4.98
3979.00	4.09
3978.00	3.27
3977.00	2.50
3976.00	1.79
3975.00	1.14
3974.00	0.54
3973.00	0.00

THE CITY OF EL PASO — TEXAS

Oscar Villalobos — 03/08/2021
BY — DATE

POND DESIGN PLAN

SCALE: 1" = 30'

REFERENCES - BENCHMARKS
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE.
ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

cea group
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

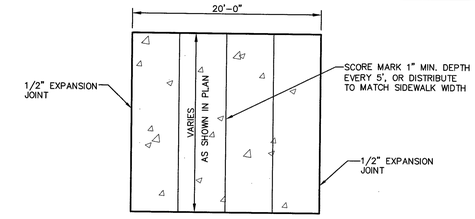
ENGINEER'S SEAL
JORGE L. AZCARATE
85075
8-21

SCALE
Horizontal: 1"=30'
Vertical: N/A
Contour Interval: N/A
DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

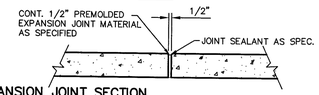
PROJECT TITLE
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE
POND DESIGN PLAN

SHEET NO.
C8.1



PLAN



EXPANSION JOINT SECTION

SCALE: N.T.S.

NOTES:

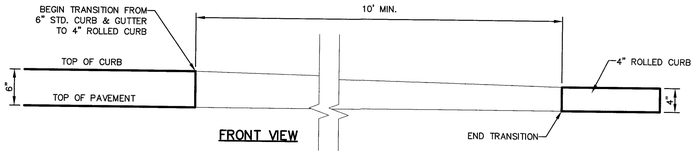
1. EXPANSION JOINT FILLER SHALL BE 1/2" BITUMINOUS TYPE PREFORMED JOINT FILLER (AASHTO M-33).
2. EXPANSION JOINTS SHALL BE SPACED AT 20'-0" MAX.
3. WHEREVER SIDEWALK ABUTS ROCK OR MANSONRY STRUCTURES SUCH AS CURBS OR BUILDINGS, EXPANSION JOINTS FILLER SHALL BE PLACED IN ACCORDANCE WITH STANDARD SPECIFICATIONS.

SIDEWALK NOTES:

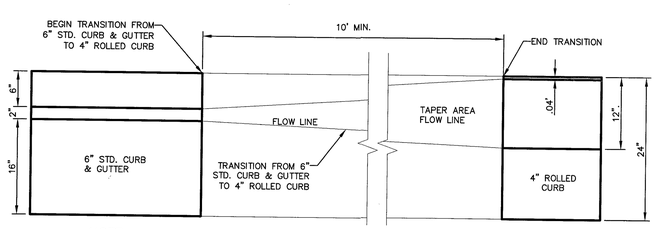
1. CONCRETE SIDEWALK SHALL BE 3,000 P.S.I. AT 28 DAYS.
2. DUMMY JOINTS REQUIRED AT 5' O.C.
3. EXPANSION JOINTS SHALL BE AT 20' O.C. MAXIMUM, USE 1/2" PREMOLDED BITUMINOUS EXPANSION JOINTS (AASHTO M-33)
4. EXPANSION JOINT FILLER SHALL BE PLACED WHEREVER SIDEWALK ABUTS ROCK OR MASONRY STRUCTURES SUCH AS CURBS OR BUILDINGS.
5. SUBGRADE TO BE COMPACTED TO 95% AS PER ASTM D1557.

1 / C9.1 SECTION-SIDEWALK/SLAB

SCALE: N.T.S.



FRONT VIEW



NOTE:

SIDEWALK SHALL MAINTAIN TOP OF CURB ELEVATIONS.

TOP VIEW

6 / C9.1 CURB TRANSITION DETAIL

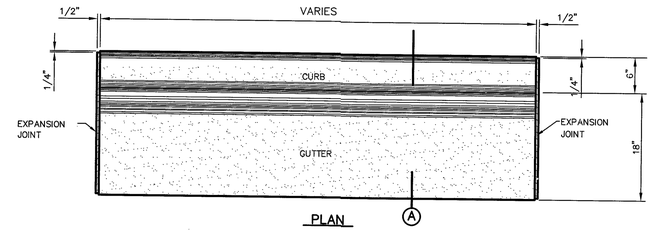
SCALE: N.T.S.

SIDEWALK NOTES:

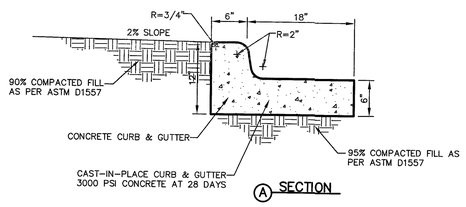
1. CONCRETE SIDEWALK SHALL BE 3,000 P.S.I.
2. CONTROL JOINT REQUIRED AT 5' O.C FOR SIDEWALKS OR AS SHOWN ON THE PLANS. CONTROL JOINTS SHALL BE 1/4" THICK AND 1" DEEP.
3. EXPANSION JOINTS SHALL BE AT 20' O.C. MAXIMUM, USE 1/2" PREMOLDED BITUMINOUS EXPANSION JOINTS (AASHTO M-33)
4. EXPANSION JOINT FILLER 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.

9 / C9.1 SIDEWALK ABUTTING PARK SITE

SCALE: N.T.S.



PLAN



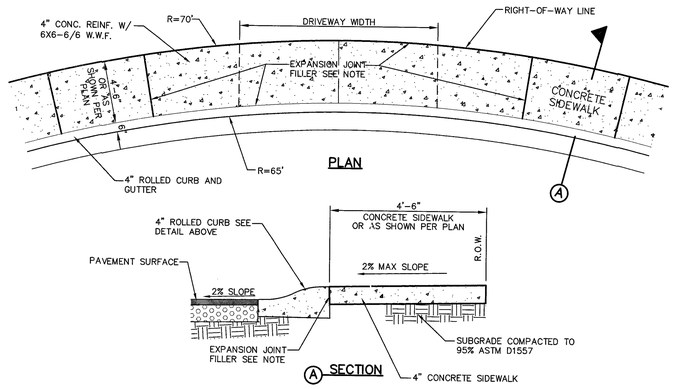
A SECTION

NOTES:

1. CONCRETE CURB, GUTTER AND RETURNS SHALL BE 3,000 P.S.I. MIN. AT 28 DAYS.
2. DUMMY JOINT REQUIRED AT 10' O.C. FOR CURB & GUTTER, AND 5' O.C. FOR SIDEWALK
3. 1/2" PREMOLDED BITUMINOUS EXPANSION JOINT (AASHTO M-33) IS REQUIRED FOR ALL CURB RETURNS. TRIM BITUMINOUS MATERIAL 1/4" LESS THAN NEAT CURB AND GUTTER DIMENSION.
4. SUBGRADE UNDER CURBS MUST BE FORMED AND COMPACTED TO 95% ASTM D1557
5. EXPANSION JOINTS REQUIRED AT 50' O.C. WHEN FORMING FOR CURBS.

2 / C9.1 CURB & GUTTER DETAIL

SCALE: 1"=1'-0"



PLAN

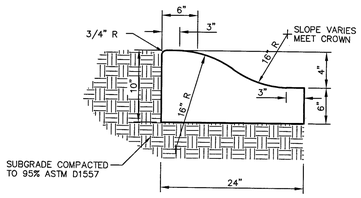
A SECTION

NOTE:

EXPANSION MATERIAL SHALL BE 1/2" PREMOLDED ASPHALT IMPREGNATED EXPANSION MATERIAL OR EQUAL.

7 / C9.1 HEEL/DRIVEWAY DETAIL

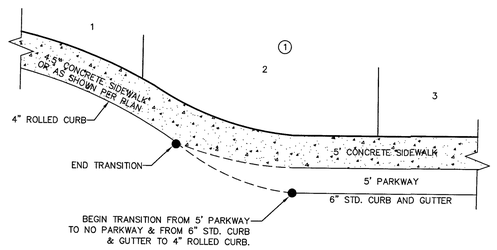
SCALE: N.T.S.



1. CONCRETE TO BE 3000 PSI MIN. AT 28 DAYS.
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.

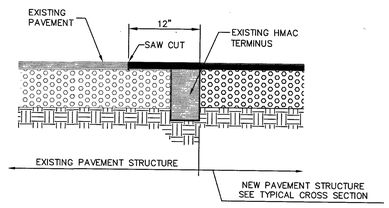
10 / C9.1 4" CONCRETE ROLLED CURB DETAIL

SCALE: 1"=1'-0"



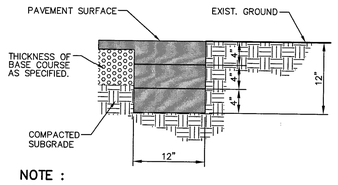
11 / C9.1 TYPICAL HEEL/SIDEWALK TRANSITION

SCALE: N.T.S.



3 / C9.1 TYPICAL PAVEMENT JOINT SECTION

SCALE: N.T.S.

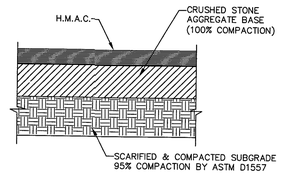


NOTE :

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

4 / C9.1 TERMINUS OF STREET

SCALE: 1"=1'-0"

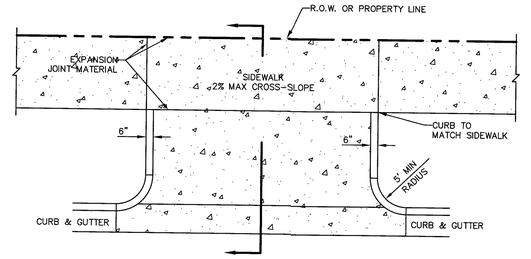


PAVEMENT SECTION NOTES:

1. SUBGRADE TO BE COMPACTED TO 95% OF MAXIMUM DENSITY AS PER ASTM D-1557.
2. MINIMUM PAVEMENT DESIGN DETAILS ARE SHOWN, ACTUAL PAVEMENT DESIGN WILL BE DETERMINED BY CBR.
3. STREET IMPROVEMENTS (FLEXIBLE PAVEMENT DESIGN STRUCTURE)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. THE CBR RESULTS WILL DICTATE THE REQUIRED THICKNESS OF THE PAVEMENT STRUCTURE BASED ON CITY OF EL PASO DESIGN STANDARDS. THE DEVELOPER SHALL PLACE THE HIGHER VALUE OF PAVEMENT STRUCTURE BASED ON THE CBR RESULTS OR THE MINIMUM PAVEMENT THICKNESS AS SHOWN ON THE CITY OF EL PASO DESIGN STANDARDS.

5 / C9.1 TYPICAL PAVEMENT SECTION

SCALE: N.T.S.



DRIVEWAY PLAN

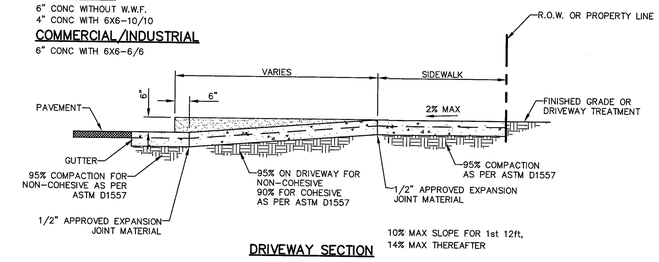
DRIVEWAY WIDTH	MIN	MAX
COMMERCIAL/INDUSTRIAL	24'	35'
RESIDENTIAL (SINGLE FAMILY 60' LOTS)	10'	20'
LESS THAN 60' LOTS, DUPLEX AND TOWN HOMES (REFER TO PLATE 6-16)	15'	25'

RESIDENTIAL

6" CONC WITHOUT W.W.F.
4" CONC WITH 6X6-10/10

COMMERCIAL/INDUSTRIAL

6" CONC WITH 6X6-6/6



10% MAX SLOPE FOR 1st 12ft, 14% MAX THEREAFTER

DRIVEWAY SECTION

8 / C9.1 CONCRETE APRON FOR DRIVEWAYS/ALLEYWAYS

SCALE: N.T.S.

THE CITY OF EL PASO TEXAS

Oscar Villalobos 03/08/2021

BY DATE

REFERENCES - BENCHMARKS

FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE
ELEVATION: 3990.65' (CITY DATA)

DATE	REVISIONS	BY

cea group
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL

JOSE L. AZCARATE 85075 8-21

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

DATE:	JUNE 2020
DESIGN BY:	K.A.P.
DRAWN BY:	K.A.P.
CHKD. BY:	F.Z.
APPVD. BY:	J.L.A.
JOB No.	3049-002

PROJECT TITLE

CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

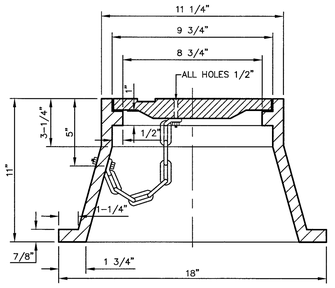
SHEET TITLE

STANDARD DETAILS

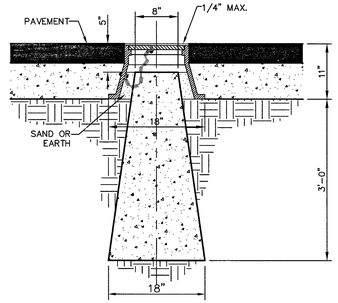
(SHEET 1 OF 3)

SHEET NO.

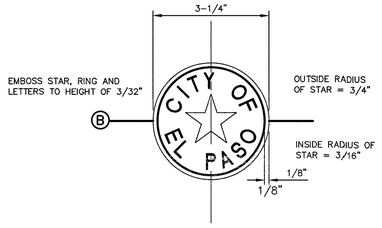
C9.1



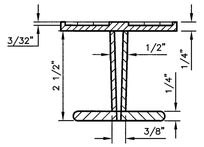
FRAME SECTION



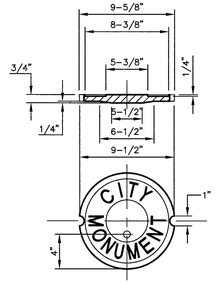
NO FORMS REQUIRED.
CONCRETE TO BE POURED IN PLACE
3000 P.S.I. CONC.



BRONZE MONUMENT CAP



B SECTION



COVER

1 / C9.2 CITY SURVEY MONUMENT DETAILS
SCALE: N.T.S.

PROPOSED MONUMENT LOCATIONS

A. MONUMENTS SHALL BE INSTALLED SO THAT ALL FRONT PROPERTY CORNERS OF ALL LOTS IN THE SUBDIVISION ARE WITHIN LINE OF SIGHT OF A MONUMENT, OR WITHIN SIGHT OF THE LINE BETWEEN TWO ADJACENT MONUMENTS.

B. EACH MONUMENT SHALL BE WITHIN LINE OF SIGHT OF ANOTHER MONUMENT.

C. MONUMENTS SHALL BE NO FARTHER THAN 2000 FEET APART.

D. AT LEAST ONE (1) MONUMENT SHALL BE PLACED ON EACH HORIZONTAL CURVE (PI) OF THE TANGENTS LEADING INTO THE CURVE FALLS OUTSIDE THE CURB LINE.

E. NO FEWER THAN TWO MONUMENTS SHALL BE PLACED IN ONE (1) STREET SUBDIVISIONS.

THE CITY OF EL PASO TEXAS

Oscar Villalobos 03/08/2021

BY DATE

ROCK WALLS

MATERIALS: STONE FOR ROCK WALLS SHALL CONSIST OF QUARRIED LIMESTONE AS NEARLY UNIFORM IN SECTION AS IS PRACTICABLE. FIELD STONE OR SALVAGED STONE FROM ROCK WALLS SHALL BE USED ONLY WHERE DIRECTED BY THE ENGINEER. THE STONE SHALL BE DENSE, RESISTANT TO THE ACTION OF AIR AND WATER, CLEAN OF OLD MORTAR AND SUITABLE IN ALL RESPECTS FOR THE PURPOSE INTENDED.

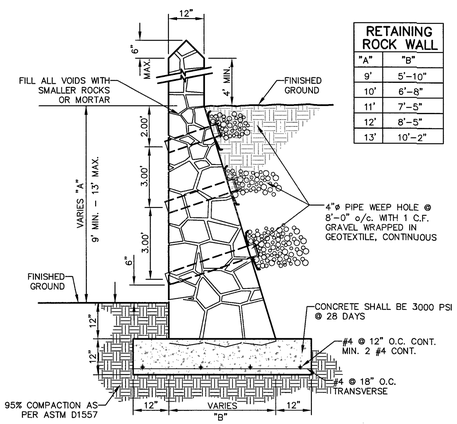
MORTAR FOR THE ROCK WALLS SHALL CONSIST BY VOLUMES OF ONE (1) PART PORTLAND CEMENT, ONE-QUARTER TO ONE-HALF (1/4 TO 1/2) PART HYDRATED LIME, AND THREE (3) PARTS CLEAN, HARD, DURABLE SAND (2 1/4 TO 3 TIMES THE SUM OF THE VOLUMES OF CEMENT AND LIME COMBINED. SEE CITY BUILDING CODE PP. 14-3 AND 14-4). MORTAR SHALL BE TYPE S, ASTM SPECIFICATION C270-73. COMPRESSIVE STRENGTH = 1800 P.S.I. (28 DAYS). CONCRETE FOR THE FOUNDATION SHALL BE CLASS "A" (3000 P.S.I.). REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60. IF ROCK WALL IS FREQUENTLY EXPOSED TO WATER, LIME SHALL NOT BE USED AND THE PORTIONS SHALL BE ONE PART PORTLAND CEMENT AND THREE PARTS SAND.

CONSTRUCTION METHODS: PRIOR TO PLACING THE CONCRETE FOUNDATION, THE EXCAVATION FOR THE ROCK WALLS SHALL BE MADE TO THE PROPER SECTION, AND, IF CONSIDERED NECESSARY BY THE ENGINEER, THE BOTTOM OF EXCAVATION SHALL BE HAND-TAMPED AND SPRINKLED. THE EXCAVATED AREA FOR ROCK WALLS SHALL BE MOIST WHEN THE CONCRETE IS PLACED. REINFORCING STEEL SHALL BE PLACED CONTINUOUSLY AS SHOWN ON THE PLANS AND PROPERLY SUPPORTED THROUGHOUT THE PLACEMENT OF CONCRETE. THE SURFACE OF THE CONCRETE SHALL NOT BE TROWELED. THE CONCRETE SHALL BE CURED A MINIMUM OF 24 HOURS BEFORE ANY STONE OR MORTAR IS PLACED ON THE FOUNDATION. THE CONCRETE SHALL BE CURED A MINIMUM OF 48 HOURS BEFORE MORE THAN 300 POUNDS PER SQUARE FOOT OF STONE AND MORTAR IS PLACED ON THE FOUNDATION. CONTRACTOR SHALL EMBED THE FIRST FOUR INCHES OF THE FIRST LAYER INTO THE FRESH CONCRETE OF THE FOOTING.

STONE SHALL BE SELECTED AS TO SIZE AND SHAPE IN ORDER TO SECURE FAIRLY LARGE, FLAT-SURFACED STONE WHICH MAY BE ERECTED WITH TRUE AND EVEN SURFACE FACES AND A MINIMUM OF EXPOSED MORTAR. ALL STONES SHALL BE THOROUGHLY CLEANED, WETTED, HAND-PLACED AND EMBEDDED IN MORTAR SO THAT NO STONES SHALL TOUCH EACH OTHER OR THE CONCRETE FOUNDATION BUT SHALL BE FIRMLY BOUND TOGETHER WITH MORTAR. THE FINISHED SURFACE SHALL PRESENT A NEAT, CLEAN, WORKMANLIKE AND TRUE-TO-LINE APPEARANCE. THE INTERIOR OF THE ROCK WALL SHALL BE COMPLETELY FILLED WITH SPALLS AND PIECES OF THE SPECIFIED STONE, COMPLETELY EMBEDDED AND SURROUNDED BY MORTAR WITH NO VOIDS.

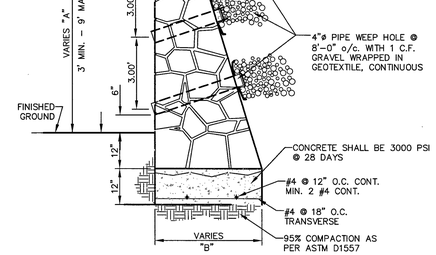
THE ERECTION OF THE ROCK WALL SHALL NOT BE MORE THAN THREE FEET IN HEIGHT FOR EVERY 24-HOUR PERIOD TO ALLOW FOR THE LOWER PORTIONS TO BECOME SUFFICIENTLY SET. ALL STONES SHALL BE THOROUGHLY WET BEFORE BEING PLACED IN FRESH MORTAR. THE LAST LAYER OF ROCK PRIOR TO BREAK OF CONSTRUCTION PHASE SHALL NOT HAVE ANY MORTAR ON TOP. FRESH MORTAR MUST BE USED FOR CONTINUATION OF WORK FOLLOWING ERECTION BREAK.

WEEP HOLES SHALL BE PLACED ON THE ROCK WALL AS SHOWN ON THE PLANS. THE WEEP HOLES SHALL BE NOT MORE THAN TEN FEET APART ON-CENTER. THE WEEP HOLES SHALL CONSIST OF FOUR-INCH VITRIFIED CLAY PIPE, OR OTHER PIPE AS APPROVED BY THE ENGINEER, NEATLY CUT TO THE EXPOSED SURFACE OF THE ROCK WALL. NO LESS THAN ONE CUBIC FOOT OF ONE-INCH TO 3/4- INCH OF GRADED GRAVEL SHALL BE PLACED AT THE INLET OF EACH WEEP HOLE AS SHOWN ON THE PLANS.



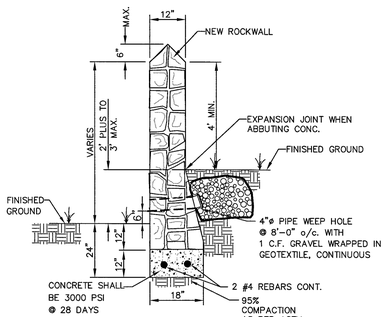
RETAINING ROCK WALL	
"A"	"B"
9'	5'-10"
10'	6'-8"
11'	7'-5"
12'	8'-5"
13'	10'-2"

RETAINING WALL SECTION (9' MIN. TO 13' MAX.)

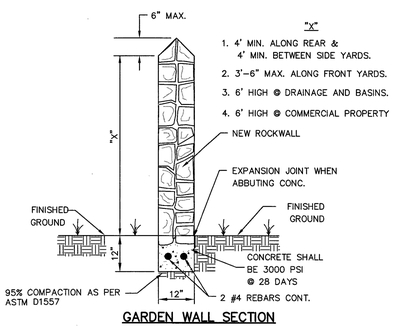


RETAINING ROCK WALL	
"A"	"B"
3.01'	2'-6"
4'	2'-10"
5'	3'-3"
6'	3'-8"
7'	4'-0"
8'	4'-5"

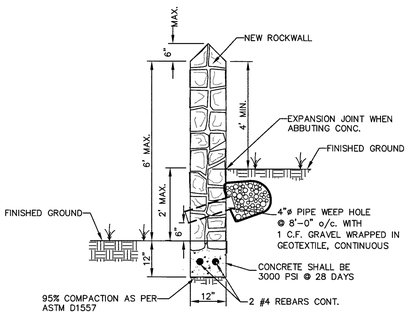
RETAINING WALL SECTION (3' MIN. TO 8' MAX.)



RETAINING WALL SECTION (2' PLUS TO 3' MAX.)



GARDEN WALL SECTION



GARDEN WALL SECTION (2' MAX.)

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. ALL THE RETAINING WALLS OVER 4' IN DEPTH SHALL BE BUILT BY DEVELOPER, REMAINING ROCKWALL TO BE BUILT BY BUILDER.

NOTE: BUILDER SHALL SUBMIT ROCKWALL AND RETAINING ROCKWALL COMPUTATIONS TO THE CITY OF EL PASO OR FOR APPROVAL, IF IN EXCESS OF THOSE SHOWN.

2 / C9.2 TYPICAL ROCKWALL DETAILS
SCALE: 1/2" = 1'-0"

REFERENCES - BENCHMARKS

FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CETALLA AVENUE AND DOMINIC ANAKIN DRIVE.
ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

cea group
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL

STATE OF TEXAS JORGE L. AZCARATE 88075 LICENSED PROFESSIONAL ENGINEER 8-21

SCALE: Horizontal: AS SHOWN
Vertical: N/A
Contour Intervai: N/A

DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE

CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE

STANDARD DETAILS

(SHEET 2 OF 3)

SHEET NO.

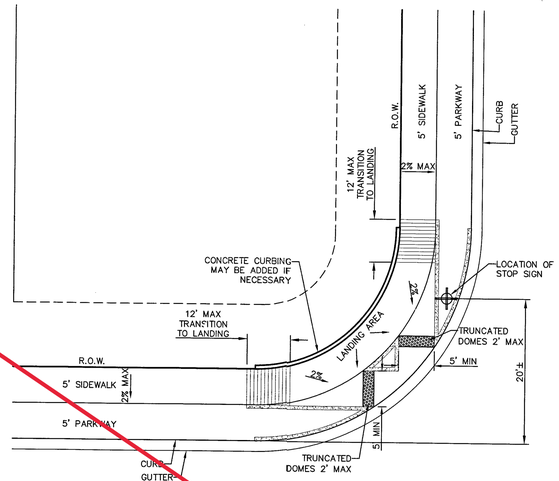
C9.2

LEGEND

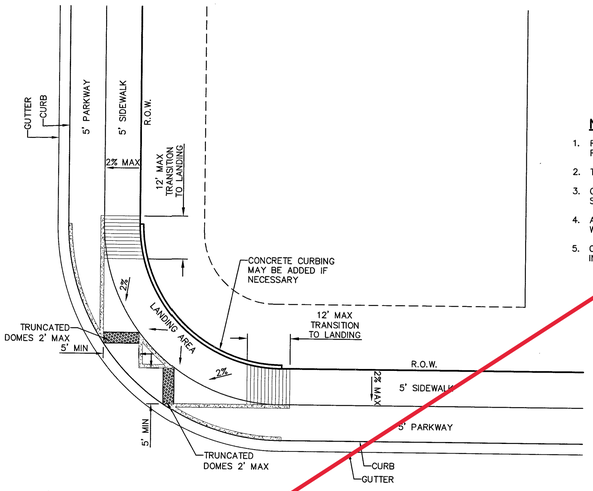
DETECTABLE WARNING SURFACE SHALL CONSIST OF RAISED TRUNCATED DOMES WITH A NOMINAL DIAMETER OF 0.9 IN, A NOMINAL HEIGHT OF 0.2 IN AND A CENTER TO CENTER NOMINAL SPACING OF 2.35 IN, AND SHALL NOT BE STAGGERED. THE SURFACE SHALL BE A MINIMUM OF 70% CONTRAST IN LIGHT REFLECTANCE BETWEEN THE DETECTABLE WARNING AND AN ADJOINING SURFACE, OR THE DETECTABLE WARNING SHALL BE "RED BRICK" COLOR, UNLESS OTHERWISE DIRECTED BY THE CITY OF EL PASO ROAD AND BRIDGE DEPARTMENT. THE MATERIAL USED TO PROVIDE VISUAL CONTRAST SHALL BE AN INTEGRAL PART OF THE DETECTABLE WARNING SURFACE. ADA TILE 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.

HANDICAP RAMPS NOTES:

1. 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.
2. THE MINIMUM SIDEWALK WIDTH IS 5'. WHERE A 5' SIDEWALK CAN NOT BE PROVIDED DUE TO SITE CONSTRAINTS, A MINIMUM 3' SIDEWALK WITH 5'X 5' PASSING AREAS AT INTERVALS NOT TO EXCEED 200 FT IS REQUIRED.
3. LANDINGS SHALL BE 5' X 5' MINIMUM WITH A MAXIMUM 2% SLOPE IN ANY DIRECTION.
4. MANEUVERING SPACE AT THE BOTTOM OF CURB RAMPS SHALL BE A MINIMUM OF 4'X 4' WHOLLY CONTAINED WITHIN THE CROSSWALK AND WHOLLY OUTSIDE THE PARALLEL VEHICULAR TRAVEL PATH.
5. CURB RAMPS WITH RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT NORMALLY WALK ACROSS THE RAMP. OTHERWISE, FLARED SIDES SHALL BE PROVIDED.
6. ALL CONCRETE SIDEWALK SURFACES SHALL RECEIVE A LIGHT BROOM FINISH UNLESS NOTED OTHERWISE IN THE PLANS.
7. 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.
8. 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.
9. MAXIMUM ALLOWABLE CROSS SLOPE ON SIDEWALK AND RAMP SURFACES IS 2%
10. 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 THE TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR).

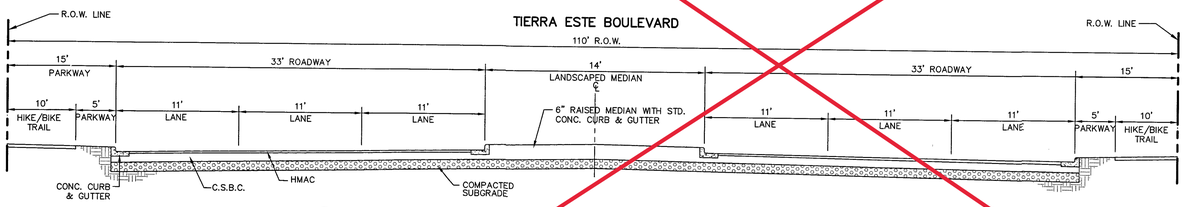


1 / C9.3 TYPICAL DIRECTIONAL RAMP @ INTERSECTION
SCALE: 1" = 10'

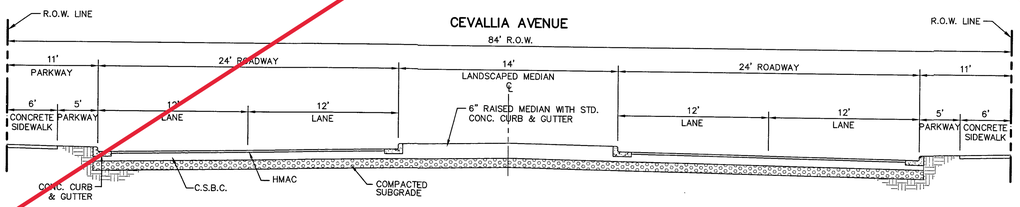


NOTES:

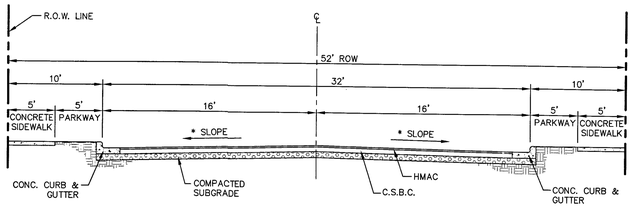
1. RAMPS MAY BE PLACED AS SUGGESTED, HOWEVER EXISTING LIGHT POLES, FIREHYDRANTS, DROP INLETS, ETC., MAY AFFECT PLACEMENT.
2. THE CONCRETE SURFACE SHALL HAVE A ROUGH, NONSKID TYPE FINISH.
3. CONSTRUCTION METHODS SHALL CONFORM WITH THE CITY OF EL PASO SPECIFICATIONS.
4. ALL PARKING AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH CURRENT CITY OF EL PASO.
5. CONTRACTOR SHALL CONSTRUCT LANDING AREAS WITH POSITIVE SLOPE IN ALL DIRECTIONS TO ALLOW RUNOFF TO PROPERLY DRAIN



2 / C9.3 TYPICAL 110' ROW MAJOR ARTERIAL STREET SECTION DETAIL
SCALE: N.T.S.



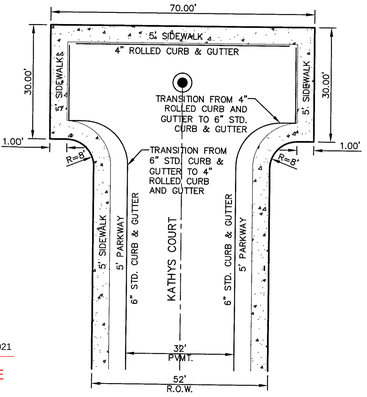
3 / C9.3 TYPICAL 84' ROW MINOR ARTERIAL STREET SECTION DETAIL
SCALE: N.T.S.



4 / C9.3 TYPICAL 52' ROW STREET SECTIONS DETAIL
SCALE: N.T.S.

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.



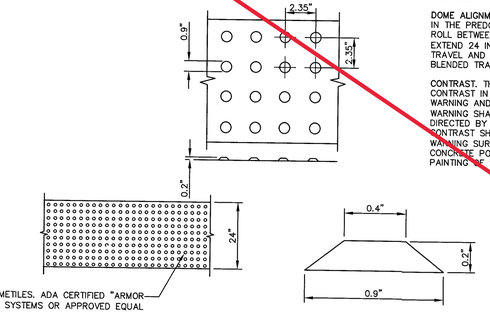
5 / C9.3 "T" CUL-D-SAC W/SIDEWALK DETAIL
SCALE: N.T.S.

See Revised Sheet.

THE CITY OF EL PASO TEXAS

Oscar Villalobos 03/08/2021

BY DATE



TRUNCATED DOMETILES, ADA CERTIFIED "ARMOR-TILE" TACTILE SYSTEMS OR APPROVED EQUAL

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. ADA CERTIFIED "ARMOR-TILE REQUIRED). CONCRETE POURED TRUNCATED DOMES NOT ALLOWED. NO PAINTING OF SURFACE SHALL BE PERMITTED.

6 / C9.3 TRUNCATED DOME SIZE AND SPACING
SCALE: N.T.S.

REFERENCES – BENCHMARKS
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE.
ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

caa group
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL
STATE OF TEXAS
JORGE L. AZCARATE
86075
REGISTERED
PROFESSIONAL
ENGINEER
8-21

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

DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE
STANDARD DETAILS
(SHEET 3 OF 3)
SHEET NO.
C9.3

LEGEND

DETECTABLE WARNING SURFACE SHALL CONSIST OF RAISED TRUNCATED DOMES WITH A NOMINAL DIAMETER OF 0.9 IN, A NOMINAL HEIGHT OF 0.2 IN AND A CENTER TO CENTER NOMINAL SPACING OF 2.35 IN, AND SHALL NOT BE STAGGERED. THE SURFACE SHALL BE A MINIMUM OF 70% 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 CITY OF EL PASO ROAD AND BRIDGE DEPARTMENT. THE MATERIAL USED TO PROVIDE VISUAL CONTRAST SHALL BE AN INTEGRAL PART OF THE DETECTABLE WARNING SURFACE. ADA TILE 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.

HANDICAP RAMPS NOTES:

1. 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.
2. THE MINIMUM SIDEWALK WIDTH IS 5'. WHERE A 5' SIDEWALK CAN NOT BE PROVIDED DUE TO SITE CONSTRAINTS, A MINIMUM 3' SIDEWALK WITH 5'X 5' PASSING AREAS AT INTERVALS NOT TO EXCEED 200 FT IS REQUIRED.
3. LANDINGS SHALL BE 5' X 5' MINIMUM WITH A MAXIMUM 2% SLOPE IN ANY DIRECTION.
4. MANEUVERING SPACE AT THE BOTTOM OF CURB RAMPS SHALL BE A MINIMUM OF 4'X 4' WHOLLY CONTAINED WITHIN THE CROSSWALK AND WHOLLY OUTSIDE THE PARALLEL VEHICULAR TRAVEL PATH.
5. CURB RAMPS WITH RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT NORMALLY WALK ACROSS THE RAMP. OTHERWISE, FLARED SIDES SHALL BE PROVIDED.
6. ALL CONCRETE SIDEWALK SURFACES SHALL RECEIVE A LIGHT BROOM FINISH UNLESS NOTED OTHERWISE IN THE PLANS.
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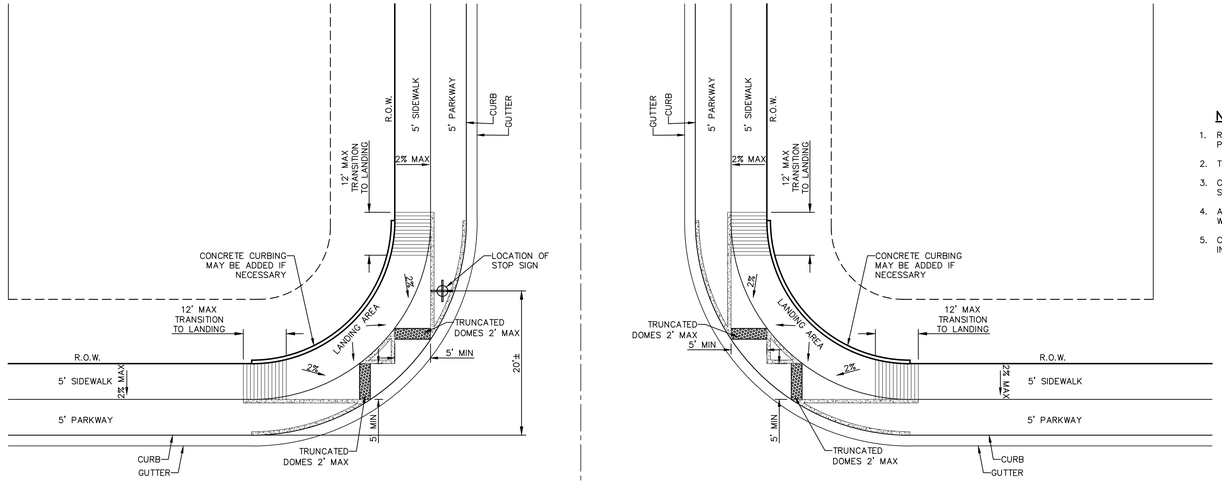
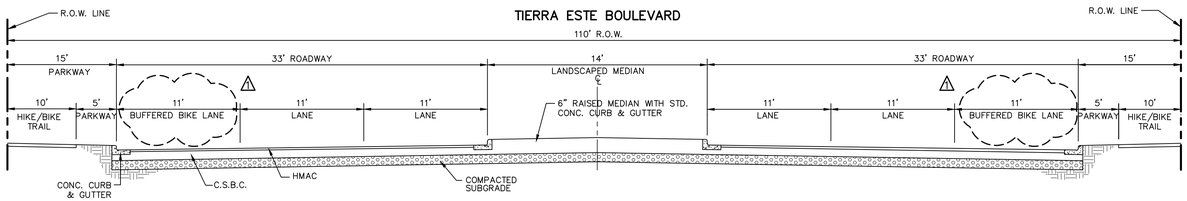


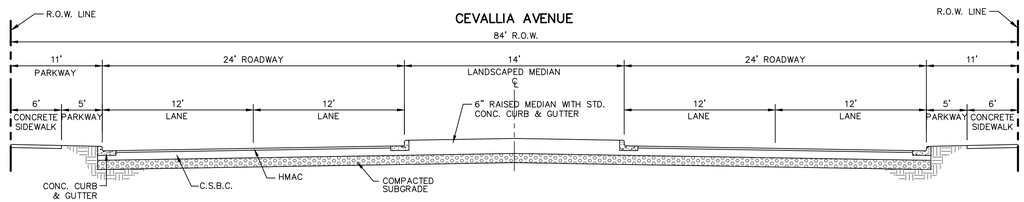
1 / C9.3 TYPICAL DIRECTIONAL RAMP @ INTERSECTION
SCALE: 1" = 10'

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.
5. CONTRACTOR SHALL CONSTRUCT LANDING AREAS WITH POSITIVE SLOPE IN ALL DIRECTIONS TO ALLOW RUNOFF TO PROPERLY DRAIN



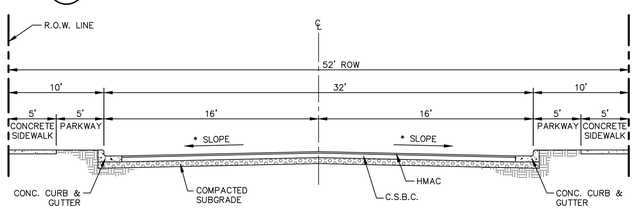
2 / C9.3 TYPICAL 110' ROW MAJOR ARTERIAL STREET SECTION DETAIL
SCALE: N.T.S.



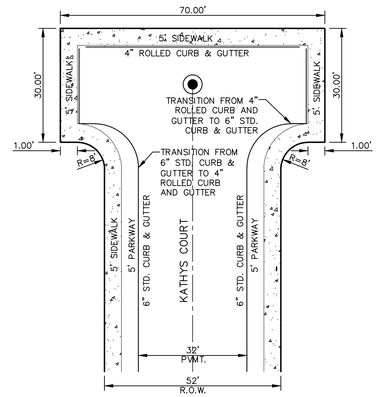
3 / C9.3 TYPICAL 84' ROW MINOR ARTERIAL STREET SECTION DETAIL
SCALE: N.T.S.

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.



4 / C9.3 TYPICAL 52' ROW STREET SECTIONS DETAIL
SCALE: N.T.S.



5 / C9.3 "T" CUL-D-SAC W/SIDEWALK DETAIL
SCALE: N.T.S.

THE CITY OF EL PASO — TEXAS

Oscar Villalobos 07/20/2021

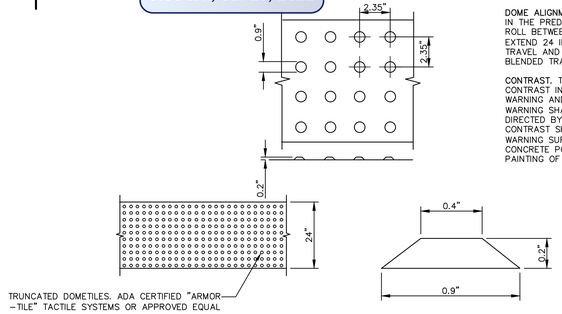
BY DATE

REVISED
9:06 am, Jul 20, 2021

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. ADA CERTIFIED "ARMOR-TILE REQUIRED). CONCRETE POURED TRUNCATED DOMES NOT ALLOWED. NO PAINTING OF SURFACE SHALL BE PERMITTED.



TRUNCATED DOMETILES. ADA CERTIFIED "ARMOR-TILE" TACTILE SYSTEMS OR APPROVED EQUAL

6 / C9.3 TRUNCATED DOME SIZE AND SPACING
SCALE: N.T.S.

REFERENCES – BENCHMARKS
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE.
ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY
6/22/21	1 AS PER CEP REVISIONS	K.A.P.

cea group
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL
STATE OF TEXAS — JORGE L. AZCARATE — 85075 — REGISTERED — 6-22-21

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

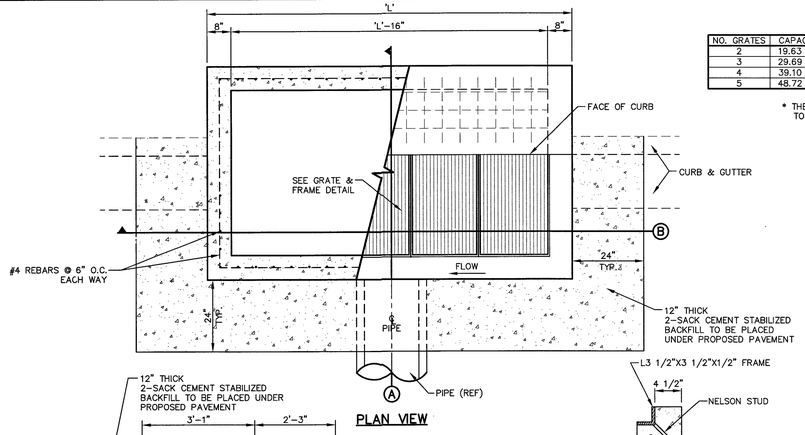
DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE
STANDARD DETAILS
(SHEET 3 OF 3)
SHEET NO.
C9.3R

NO. GRATES	CAPACITY	"L"	BEAM LENGTH	BEAM (MIN. SIZES)
2	19.63 CFS	5'-1 1/8"	4'-7 1/8"	W8x12, S6x12.5, MC6x15.1
3	29.69 CFS	7'-0 1/4"	6'-5 1/8"	W8x15, S7x15.3, MC7x17.6
4	39.10 CFS	8'-9 7/8"	8'-3 7/8"	W9x18, S8x18.4, MC10x21.9
5	48.72 CFS	10'-8"	10'-2"	W12x16, S8x21, MC10x21.9

* THESE CAPACITIES CORRESPOND TO A CLOGGING FACTOR OF 0.5

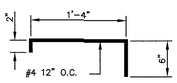


PLAN VIEW

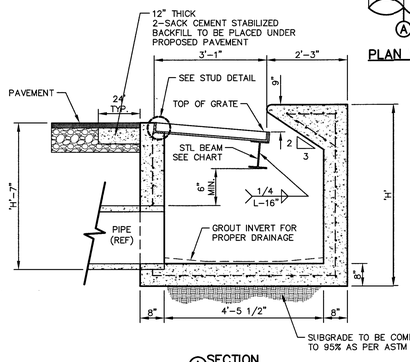
NOTES:

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.

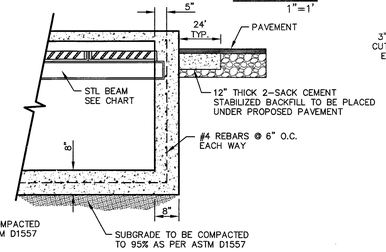
STUD DETAIL
1"=1'



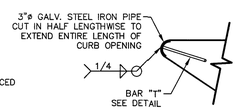
BAR "T" DETAIL
1"=1'



A SECTION

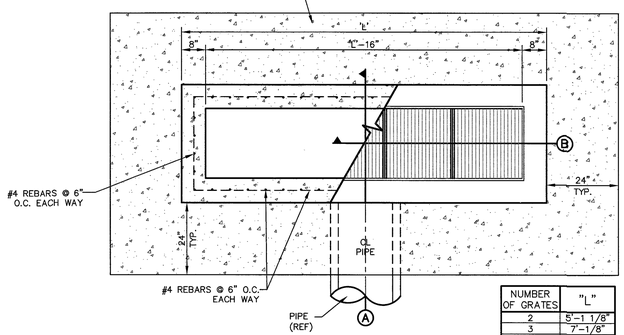


B SECTION



DETAIL "B"
1"=1'

1 C10.1 DROP INLET (TYPE I) DETAILS
SCALE: 1" = 2'-0"

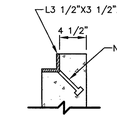


PLAN VIEW

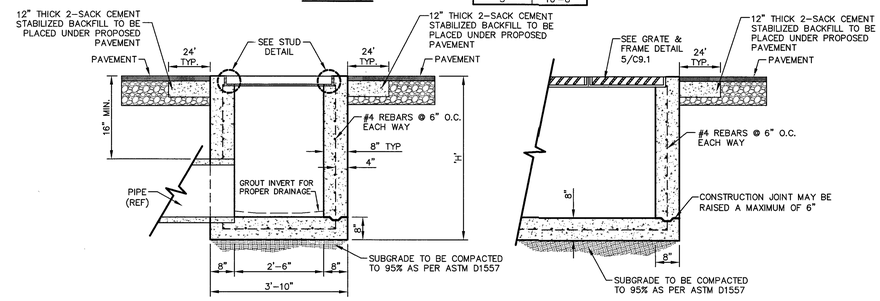
NUMBER OF GRATES	"L"
2	5'-1 1/8"
3	7'-1/8"
4	8'-9 7/8"
5	10'-8"

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.



STUD DETAIL
N.T.S.



A SECTION B SECTION

2 C10.1 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 CITY 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 P.S.I. 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 3/8"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.

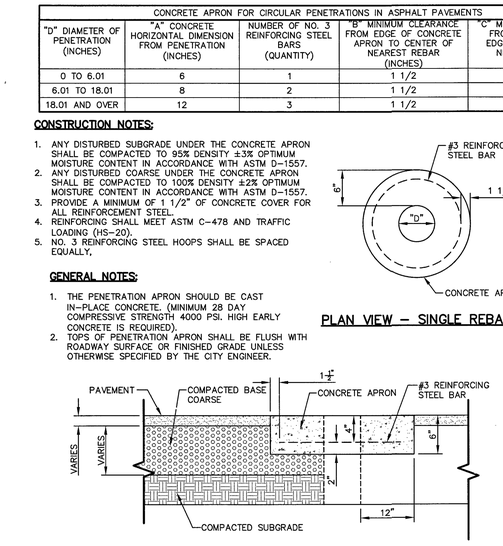
CONCRETE APRON FOR CIRCULAR PENETRATIONS IN ASPHALT PAVEMENTS				
"D" DIAMETER OF PENETRATION (INCHES)	"A" CONCRETE HORIZONTAL DIMENSION FROM PENETRATION (INCHES)	NUMBER OF NO. 3 REINFORCING STEEL BARS (QUANTITY)	"B" MINIMUM CLEARANCE FROM EDGE OF CONCRETE APRON TO CENTER OF NEAREST REBAR (INCHES)	"C" 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

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.

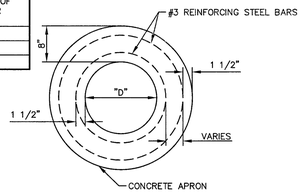
GENERAL NOTES:

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.

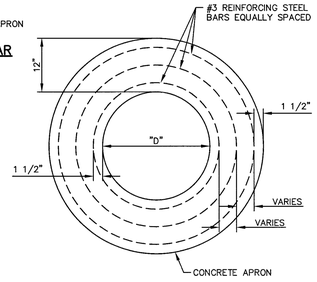


SECTION

PLAN VIEW – SINGLE REBAR

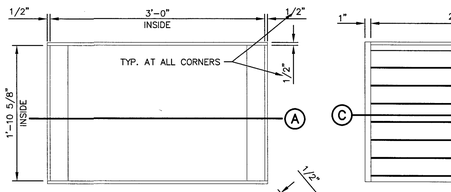


PLAN VIEW – 2 REBAR

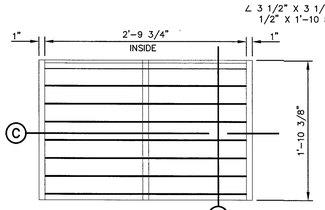


PLAN VIEW – 3 REBAR

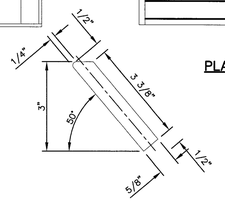
3 C10.1 PENETRATION APRON DETAILS
SCALE: N.T.S.



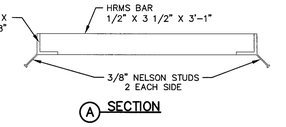
PLAN – FRAME

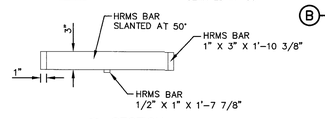


PLAN – GRATE



SLANTED BAR DETAIL





4 C10.1 GRATE AND FRAME DETAILS
SCALE: 1" = 1'-0"

THE CITY OF EL PASO — TEXAS

Oscar Villalobos 03/08/2021

BY DATE

REFERENCES – BENCHMARKS

FOUND, CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CESALIA AVENUE AND DOMINIC ANAKIN DRIVE. ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

cea group
813 N. Kansas St. Suite 300 El Paso, TX 79902 915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL

JORGE L. ACCARATE 85075 LICENSED PROFESSIONAL ENGINEER 8-21

SCALE
Horizontal: AS SHOWN
Vertical: N/A
Contour Interval: N/A
DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE

CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

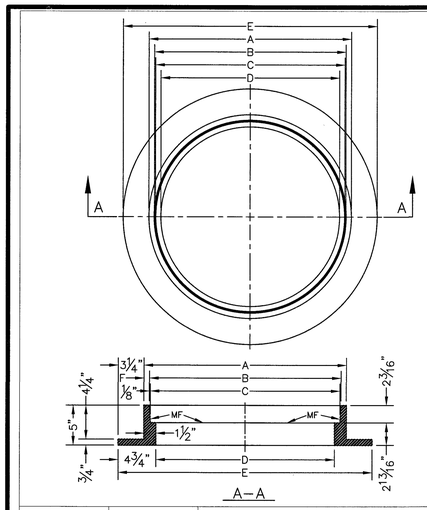
SHEET TITLE

DRAINAGE DETAILS

(SHEET 1 OF 5)

SHEET NO.

C10.1

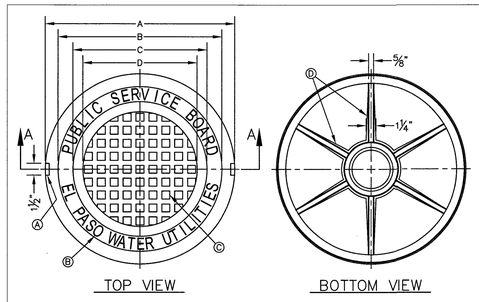


GENERAL NOTES:
1. MATCHING SURFACES MARKED "MF" TO BE FINISHED OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
2. CASTING TO BE SMOOTH & VOID OF AIR HOLES.
3. CASTING MUST MEET REQUIREMENTS OF AASHTO M306–07.
4. AS–CAST DIMENSIONS MAY VARY ⅛"±/ PER FOOT (AASHTO M306–07).
5. WEIGHT MAY VARY 5%± (AASHTO M306–07).

MANHOLE RING	MANHOLE – ALL TYPES
A	33"
B	31¾"
C	31½"
D	30"
E	39½"
F	⅝"
WEIGHT	205 lbs.

STANDARD DETAIL	DATE: 11/1992 REV: 2/21/2011	SEWER MANHOLE RING	N.T.S.	el paso WATER	DETAIL No. 377

1 C10.2 MANHOLE RING
SCALE: N.T.S.



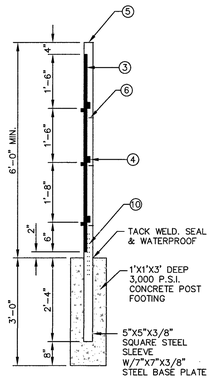
GENERAL NOTES:
1. MATCHING SURFACES MARKED "MF" TO BE FINISHED OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
2. CASTING TO BE SMOOTH & VOID OF AIR HOLES.
3. CASTING MUST MEET REQUIREMENTS OF AASHTO M306–07.
4. AS–CAST DIMENSIONS MAY VARY ⅛"±/ PER FOOT (AASHTO M306–07).
5. WEIGHT MAY VARY 5%± (AASHTO M306–07).

CONSTRUCTION KEY NOTES:
A. LIFTING NOTCH.
B. ⅜" RAISED LETTERING.
C. 1" SQUARES (⅜" TALL) WITH ⅝" SPACE BETWEEN.
D. REINFORCING RIBS.
E. SLOT.

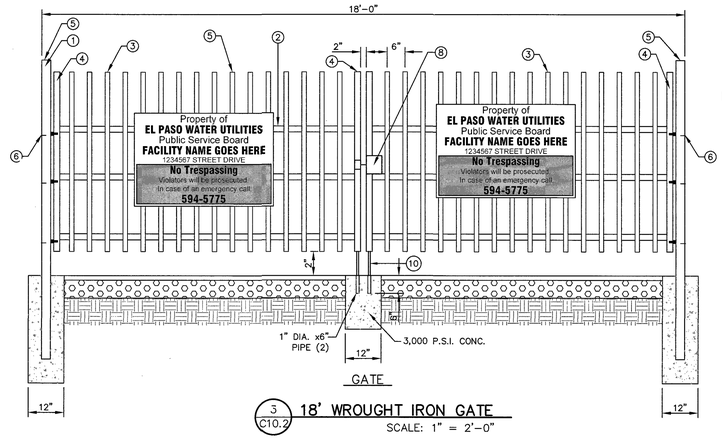
MANHOLE COVER	MANHOLE – ALL TYPES
A	31⅜"
B	28⅛"
C	24⅜"
D	21⅞"
WEIGHT	200 lbs.

STANDARD DETAIL	DATE: 11/1992 REV: 2/21/2011	SEWER MANHOLE COVER	N.T.S.	el paso WATER	DETAIL No. 378

2 C10.2 MANHOLE COVER
SCALE: N.T.S.



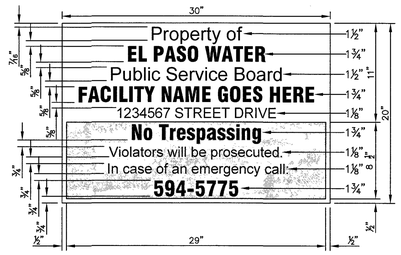
GATE POST



GATE

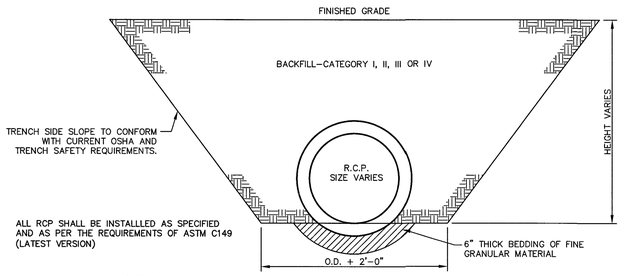
NOTES:
1. 3"X3"X3/16" SQUARE STEEL TUBING
2. 2" x 1" x 14 GA. RECTANGULAR STEEL TUBING
3. 1 1/2" x 1/2" x 16 GA. RECTANGULAR STEEL TUBING
4. 2" x 1" X 10 GA. RECTANGULAR STEEL TUBING
5. FLAT TOP POLYVINYL CAPS (TYPICAL)
6. BOLT HOOK AND STRAP HINGE
7. 1'x 3' DEEP 3000 PSI CONCRETE POST FOOTING
8. DOUBLE GATE HEAVY DUTY INDUSTRIAL LATCH W/PAD LOCK
9. 5" x 5" x 3/8" SQUARE STEEL SLEEVE W/7" x 7" x 3/8" BASE PLATE
10. CANE BOLT LATCH W/KEEPER 5–8" X 18" LONG (2 REQUIRED)

3 C10.2 18' WROUGHT IRON GATE
SCALE: 1" = 2'–0"



GENERAL NOTES:
1. SIGN MATERIAL TO BE 16 GAUGE GALVANIZED SHEET METAL.
2. TOP PART OF SIGN SHALL SHOW BLACK LETTERS ON A WHITE BACKGROUND.
3. BOTTOM PART OF SIGN SHALL SHOW WHITE LETTERS ON A BLACK BACKGROUND.

4 C10.2 NO TRESPASSING WARNING SIGN
SCALE: N.T.S.



NOTES:

1. EXCAVATION. PIPE TRENCHES SHALL BE EXCAVATED TO THE LINES AND GRADES SHOWN IN THE PLANS. WHEN ROCK OR OTHER UNYIELDING FOUNDATION MATERIAL IS ENCOUNTERED, IT SHALL BE REMOVED TO A DEPTH OF O.D./12 OR 6", WHICHEVER IS GREATER AND REPLACED WITH APPROVED MATERIAL AND COMPACTED TO AT LEAST THE STANDARD PROCTOR DENSITY SPECIFIED FOR THE BEDDING MATERIAL.
2. FOUNDATION. THE FOUNDATION SHALL BE MODERATELY FIRM TO HARD SOIL, STABILIZED SOIL OR COMPACTED FILL MATERIAL. WHEN UNSUITABLE OR UNSTABLE MATERIAL IS ENCOUNTERED, THE FOUNDATION SHALL BE STABILIZED.
3. BEDDING. THE BEDDING SHALL BE CONSTRUCTED UNIFORMLY OVER THE FULL LENGTH OF THE PIPE BY EXERTING FORCE ON THE BARREL TO DISTRIBUTE THE LOAD–BEARING REACTION UNIFORMLY ON THE PIPE BARREL OVER ITS FULL LENGTH AND TO MAINTAIN THE REQUIRED PIPE GRADE. IF PLACED IN LAYERS, THE THICKNESS OF THE LAYERS SHALL BE REQUIRED TO ACHIEVE THE SPECIFIED COMPACTION. IF THE PIPE BEING INSTALLED HAS A PROJECTING BELL, BELL HOLES SHALL BE PLACED TO BE AS UNIFORM AS POSSIBLE. THE MAXIMUM AGGREGATE SIZE SHALL BE 1–INCH WHEN THE BEDDING THICKNESS IS LESS THAN 6–INCHES AND 1 1/2" WHEN THE BEDDING IS 6–INCH OR GREATER.
4. PIPE LAYING. PIPE SHALL BE INSTALLED TO THE LINE AND GRADE AS SHOWN ON THE PLANS. THE JOINT SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS. UNLESS APPROVED BY THE DESIGN ENGINEER, PIPE LAYING SHALL START AT THE LOWEST END OF THE PIPE LINE AND PIPE LAID WITH THE BELL END UPGRADE. THE BEDDING GRADE UNDER THE MIDDLE THIRD OF THE PIPE OUTSIDE DIAMETER SHALL BE PREPARED BEFORE LAYING THE PIPE SECTION. MAKING ADJUSTMENTS IN GRADE BY EXERTING FORCE ON THE BARREL OF THE PIPE WITH EXCAVATING EQUIPMENT, BY LIFTING AND DROPPING THE PIPE, OR BY LIFTING AND PACKING THE BEDDING MATERIAL UNDER IT SHALL BE PROHIBITED. IF THE INSTALLED PIPE SECTION IS NOT ON GRADE, THE PIPE SECTION SHALL BE COMPLETELY UNJOINED, THE GRADE CORRECTED, AND THE PIPE THEN REJOINED.
5. BEFORE ASSEMBLING THE PIPE JOINT, CLEAN ALL DIRT AND FOREIGN SUBSTANCE FROM THE BELL & SPIGOT OR TONGUE & GROOVE ENDS OF THE PIPE. FOR TONGUE & GROOVE JOINTS, PLACE THE PREFORMED FLEXIBLE JOINT SEALANT MATERIAL AROUND THE TOP HALF OF THE SPIGOT AND THE BOTTOM HALF OF THE BELL.
6. BACKFILLING. ALL TRENCHES SHALL BE BACKFILLED AS PER PROJECT REQUIREMENTS. THE HAUNCH SHALL BE CONSTRUCTED USING THE SPECIFIED SOIL TYPE AND COMPACTION LEVEL REQUIRED FOR THE DESIGNATED INSTALLATION. THE BACKFILL SHALL BE PLACED IN LAYERS, THE THICKNESS OF THE LAYERS SHALL BE 8–INCH LIFTS AD COMPACTED TO THE SPECIFIED REQUIREMENTS. THE BACKFILL SHALL BE MATERIAL CONFORMING TO THE PROJECT PLAN SAND CONTAINING NO DEBRIS, ORGANIC MATTER OR FROZEN MATERIAL.
7. MINIMUM COVER FOR CONSTRUCTION LOADS. IF PASSAGE OF CONSTRUCTION EQUIPMENT OVER AN INSTALLED PIPELINE IS NECESSARY DURING PROJECT CONSTRUCTION, COMPACTED OVERFILL IN THE FORM OF A RAMP SHALL BE CONSTRUCTED TO A MINIMUM ELEVATION OF 3–FEET OVER THE TOP OF THE PIPE OR TO A HEIGHT SUCH THAT THE EQUIPMENT LOADS ON THE PIPE DO NOT EXCEED THE PIPE DESIGN STRENGTH.
8. HORIZONTAL AND VERTICAL ALIGNMENTS. THE HORIZONTAL ALIGNMENT OF THE FACILITIES WILL BE ALLOWED IF THE CENTER OF 36–INCH AND SMALLER DIAMETER PIPES SHALL NOT BE MORE THAN 6–INCHES OFF THE DESIGNATED ALIGNMENT. IN ADDITION, FOR PIPE GREATER THAN 36–INCH DIAMETER, THE CENTER LINE SHALL NOT BE MORE THAN 2–INCHES PER 12–INCH OF DIAMETER FROM THE DESIGNATED ALIGNMENT. PIPELINE ALIGNMENT SHALL BE STRAIGHT FROM MANHOLE TO MANHOLE WITH A LINE OF SIGHT THROUGH THE PIPE SHALL EXIST. THE VERTICAL ALIGNMENT SHALL NOT DEVIATE FROM THE DESIGNATED GRADE BY AN AMOUNT GREATER THAN THE TOTAL OF 1/4 INCH PLUS 1 INCH PER YARD OF DIAMETER OF SEWER PIPE. NO VARIANCE FROM GRADE, VERTICALLY OR HORIZONTALLY, SHALL BE PERMITTED THAT RESULTS IN INDIVIDUAL JOINT DEFLECTIONS IN EXCESS OF MANUFACTURER'S RECOMMENDATIONS.

5 C10.2 STORM SEWER BEDDING DETAIL
SCALE: N.T.S.

EQUIVALENT USCS AND AASHTO SOIL CONDITIONS FOR SOIL DESIGNATION

INSTALLATION TYPE	BEDDING THICKNESS	HAUNCH AND OUTER BEDDING	LOWER SIDE
TYPE 1	OD/24 MINIMUM; NOT LESS THAN 3–INCH. IF ROCK FOUNDATION =, USE OD/12 MINIMUM; NOT LESS THAN 6–INCH	95% CATEGORY I	95 90 85 80
TYPE 2	OD/24 MINIMUM; NOT LESS THAN 3–INCH. IF ROCK FOUNDATION =, USE OD/12 MINIMUM; NOT LESS THAN 6–INCH	95% CATEGORY I OR 95% CATEGORY	95 90 85 80
TYPE 3	OD/24 MINIMUM; NOT LESS THAN 3–INCH. IF ROCK FOUNDATION =, USE OD/12 MINIMUM; NOT LESS THAN 6–INCH	100 95 90 85	90 85 80 75
TYPE 4	OD/24 MINIMUM; NOT LESS THAN 3–INCH. IF ROCK FOUNDATION =, USE OD/12 MINIMUM; NOT LESS THAN 6–INCH	100 95 90	90 85 80

SOIL	REPRESENTATIVE SOILS TYPE		PERCENT COMPACTION	
	USCS ASTM PRACTICE D2487	AASHTO M–145	SATNDARD PROCTOR	MODIFIED PROCTOR
CATEGORY I	CLEAN, COARSE GRAINED SOILS; SW, SP, GW, GP OR ANY SOIL BEGINNING WITH ONE OF THESE SYMBOLS WITH 12% OR LESS PASSING PASSING #200 SIEVE	A–1, A–3	100 95 90 85	95 90 85 80
CATEGORY II	CLEAN, COARSE GRAINED SOILS WITH FINES; GM, GC, SM, SC OR ANY SOIL BEGINNING WITH ONE OF THESE SYMBOLS, CONTAINING MORE THAN 12% PASSING #200 SIEVE SANDY OR GRAVELLY FINE–GRAINED SOILS: CL, ML (OR CL–ML, CL/ML, ML/CL) ON A #200 SIEVE	A–2–4, A–2–5, A–2–6, A–4 OR A–6 SOILS WITH 30% OR MORE RETAINED ON A #200 SIEVE	100 95 90 85	95 90 85 80
CATEGORY III	FINE–GRAINED SOILS: CL, ML, OR (CL–ML, CL/ML) WITH LESS THAN 30% TETAINED ON A #200 SIEVE	A–2–7, A–4 OR A–6 WITH LESS THAN 30% RETAINED ON A #200 SIEVE	100 95 90 85	90 85 80 75
CATEGORY IV BUT NOT ALLOWED FOR HAUNCH OR BEDDING	MH, CH, OL, OH, PT	A–5, A–7	100 95 90	90 85 80

THE CITY OF EL PASO TEXAS

Oscar Villalobos 03/08/2021
BY DATE

REFERENCES – BENCHMARKS
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLA AVENUE AND DOMINIC ANAKIN DRIVE.
ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

cea group
813 N. Kansas St. Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

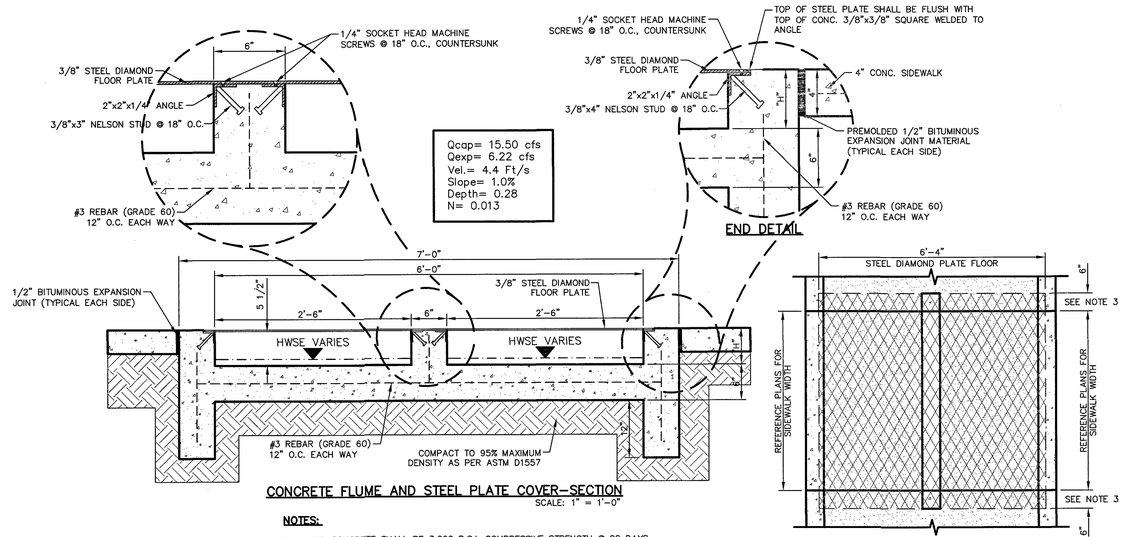
ENGINEER'S SEAL
JORGE L. AZCARATE 86075 6-8-21

SCALE AS SHOWN
Horizontal: N/A
Vertical: N/A
Contour Interval: N/A
DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE
DRAINAGE DETAILS
(SHEET 2 OF 5)

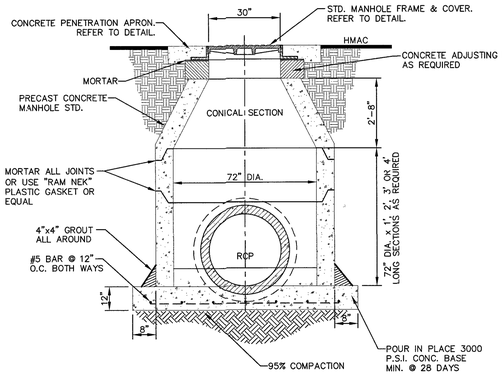
SHEET NO.
C10.2



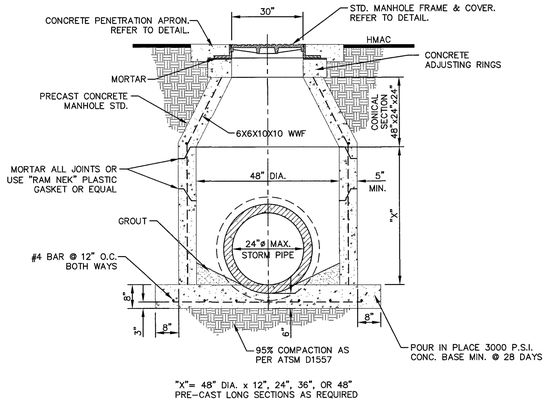
NOTES:

1. ALL CONCRETE SHALL BE 3,000 P.S.I. COMPRESSIVE STRENGTH @ 28 DAYS.
2. STEEL DIAMOND FLOOR PLATE TO HAVE A MINIMUM OF TWO COATS OF RED OXIDE PRIMER.
3. EXTEND STEEL DIAMOND FLOOR PLATE SIX (6) INCHES BEYOND SIDEWALK WIDTH.
4. THE TOP OF THE STEEL PLATE IS TO FOLLOW PROPOSED SIDEWALK ELEVATIONS.
5. REFER TO DRAINAGE PLAN FOR FLUME CALCULATIONS AND NUMBER OF PLATES REQUIRED.

1 / C10.3 CONCRETE FLUME AND STEEL PLATE COVER-SECTION
SCALE: AS SHOWN



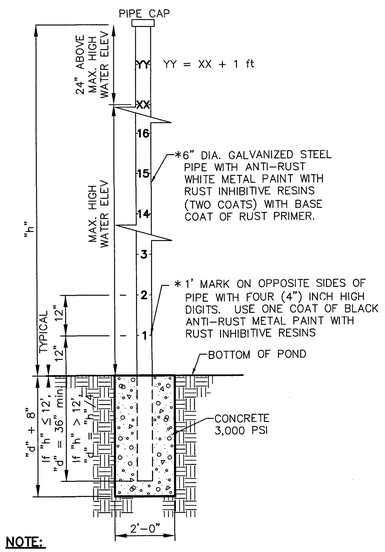
2 / C10.3 72" STANDARD MANHOLE DETAIL
SCALE: N.T.S.



"X"= 48" DIA. x 12", 24", 36", OR 48" PRE-CAST LONG SECTIONS AS REQUIRED

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

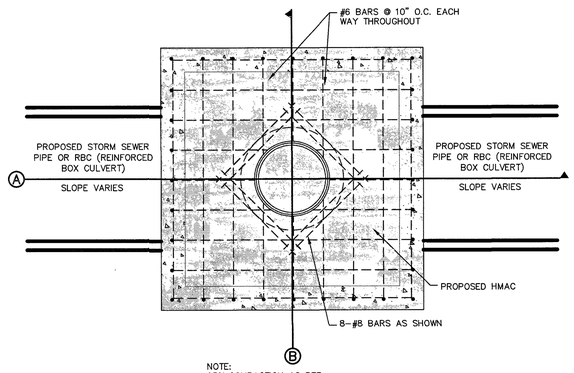
3 / C10.3 48" STANDARD MANHOLE DETAIL
SCALE: N.T.S.



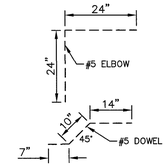
NOTE:

* 1. CONSULT WITH PAINT MANUFACTURER FOR PRODUCTS THAT CAN SUSTAIN LONG PERIODS OF MOISTURE.
2. GAUGE REQUIRED IN PONDS OF GREATER THAN FIVE (5') FOOT DEPTH ONLY.
3. "h"=Height
4. XX = MAXIMUM HIGH WATER ELEVATION BASED ON A 100-YR STORM EVENT ROUNDED TO NEAREST WHOLE NUMBER.
5. ALTERNATES WILL BE ALLOWED WITH THE PRIOR REVIEW AND APPROVAL OF THE CITY ENGINEER

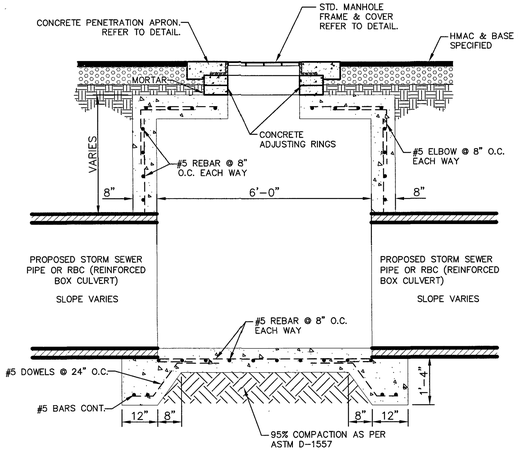
4 / C10.3 WATER DEPTH POLE DETAIL
SCALE: N.T.S.



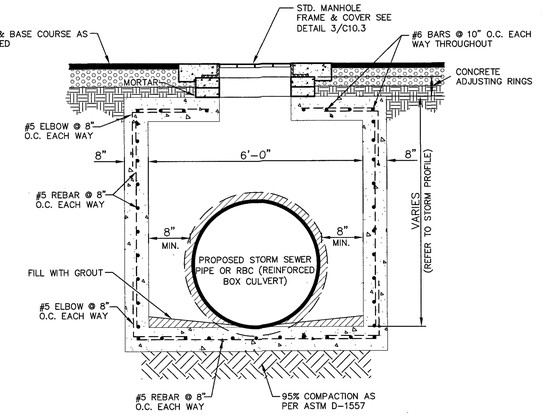
NOTE:
95% COMPACTION AS PER ASTM D-1557 UNDER ALL CONCRETE STRUCTURES.



BENDING DETAIL



A SECTION



B SECTION

5 / C10.3 72" CAST-IN PLACE MANHOLE DETAIL
SCALE: N.T.S.

THE CITY OF EL PASO TEXAS

Oscar Villalobos 03/08/2021

BY DATE

REFERENCES - BENCHMARKS
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE. ELEVATION: 3990.65' (CITY DATUM)

BY	DATE	REVISIONS

caa group
813 N. Kansas St.
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TEXAS REGISTERED ENGINEERING FIRM F-4564

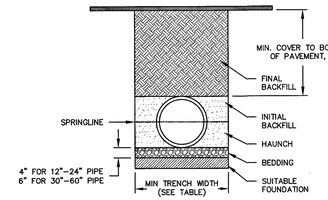
ENGINEER'S SEAL
STATE OF TEXAS
JORGE L. LAZCANO
85078
LICENSED PROFESSIONAL ENGINEER
8-21

SCALE Horizontal: AS SHOWN Vertical: N/A Contour Interval: N/A
DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE
DRAINAGE DETAILS
(SHEET 3 OF 5)
SHEET NO.
C10.3

PP TRENCH INSTALLATION DETAIL FOR STORM APPLICATIONS



	CLASS I	CLASS II		CLASS III	
PIPE DIAM.	COMPACTED	95%	90%	95%	90%
12" (300mm)	39 (11.9)	27 (8.2)	20 (6.1)	21 (6.4)	12 (3.7)
15" (375mm)	42 (12.8)	29 (8.8)	21 (6.4)	22 (6.7)	12 (3.7)
18" (450mm)	36 (11.0)	25 (7.6)	18 (5.5)	19 (5.8)	12 (3.7)
24" (600mm)	31 (9.5)	22 (6.7)	16 (4.9)	16 (4.9)	11 (3.7)
30" (750mm)	30 (9.1)	22 (6.7)	16 (4.9)	16 (4.9)	11 (3.7)
36" (900mm)	31 (9.5)	22 (6.7)	16 (4.9)	16 (4.9)	11 (3.7)
42" (1050mm)	34 (10.4)	23 (7.0)	17 (5.2)	17 (5.2)	11 (3.7)
48" (1200mm)	34 (10.4)	24 (7.3)	17 (5.2)	18 (5.5)	11 (3.7)
60" (1500mm)	32 (9.8)	22 (6.7)	16 (4.9)	16 (4.9)	11 (3.7)

FILL HEIGHT TABLE GENERATED USING AASHTO SECTION 12, LOAD RESISTANCE FACTOR DESIGN (LRFD) PROCEDURE WITH THE FOLLOWING ASSUMPTIONS:
NO HYDROSTATIC PRESSURE, UNIT WEIGHT OF SOIL (γ_s) = 120 PCF

TABLE 1, RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN TRENCH WIDTH
12" (300mm)	30" (750mm)
15" (375mm)	34" (860mm)
18" (450mm)	39" (990mm)
24" (600mm)	48" (1200mm)
30" (750mm)	56" (1420mm)
36" (900mm)	64" (1620mm)
42" (1050mm)	72" (1830mm)
48" (1200mm)	80" (2030mm)
60" (1500mm)	96" (2440mm)

TABLE 2, MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS

	SURFACE LIVE LOADING CONDITION		
PIPE DIAM.	H-25	HEAVY CONSTRUCTION (75T AXLE LOAD) *	
12"–48" (300mm - 1200mm)	12" (300mm)	48" (1200mm)	
60" (1500mm)	24" (600mm)	60" (1500mm)	

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION, WITH THE EXCEPTION THAT THE INITIAL BACKFILL MAY EXTEND TO THE CROWN OF THE PIPE. SOIL CLASSIFICATIONS ARE PER THE LATEST VERSION OF ASTM D2321.
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER, AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II, OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. COMPACTION SHALL BE 90% OF MAXIMUM DENSITY PER ASTM D-1557 OR AS SHOWN ON THE PLANS. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 12"-24"(300mm-600mm) DIAMETER PIPE; 6" (150mm) FOR 30"-60" (750mm-1500mm) DIAMETER PIPE. THE MIDDLE 1/3 BENEATH THE PIPE INVERT SHALL BE LOOSELY PLACED.
5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II, OR III IN THE PIPE ZONE EXTENDING TO THE CROWN OF THE PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION, FOR TRAFFIC APPLICATIONS; CLASS I, II, OR III MATERIAL SHALL BE COMPACTED TO A DENSITY OF NOT LESS THAN 95% PER THE CITY STANDARDS FOR BOTH COHESIVE AND COHESION LESS SOILS.
6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" (300mm) FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" (300mm) UP TO 48" (1200mm) DIAMETER PIPE AND 24" (600mm) OF COVER FOR 60" (1500mm) DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF PAVEMENT OR TO TOP OF RIGID PAVEMENT.

THE INSTALLATION DETAILS PROVIDED HEREIN ARE GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT. THE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION. IT IS THE DESIGN ENGINEERS RESPONSIBILITY TO ENSURE THE DETAILS PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT

#1 - POLYPROPYLENE PIPE DETAIL FOR STORM SEWER APPLICATIONS

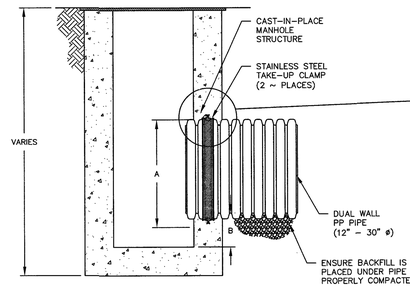
INSTALLATION DETAIL

ABC | DATE | ENG | NTS | OF

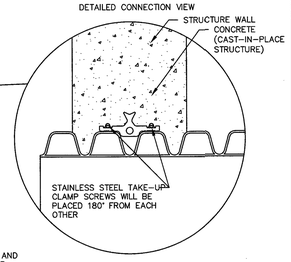
1 / C10.4 **#1–POLYPROPYLENE PIPE DETAIL FOR STORM SEWER APPLICATIONS (INSTILLATION DETAIL)**
SCALE: N.T.S.

12"–30" PP WATERSTOP GROUTED MANHOLE CONNECTION (**DUAL WALL**)

INSTALLATION VIEW



DETAILED CONNECTION VIEW



PIPE SIZE (IN)	PIPE OD (IN)	"A" MIN. HOLE ø (IN)	"B" MIN. DISTANCE PIPE INVERT TO STRUCUTRE INVERT (IN)
12	14.5	19.50	3.7
15	17.6	23.00	4.0
18	21.2	26.50	4.2
24	27.8	33.25	4.5
30	35.1	40.50	5.2
36	41.1	47.00	5.5
42	47.7	53.00	5.7
48	53.6	59.00	5.7
60	66.3	72.00	6.4

NOTES:

PERFORMANCE HIGHLY DEPENDENT ON INSTALLATION. CONTRACTOR MUST ENSURE MANHOLE GASKET IS UNIFORMLY SEATED AROUND STRUCTURE ADAPTER. EXTRA PRECAUTIONS MUST BE TAKEN TO PREVENT DIFFERENTIAL SETTLEMENT BETWEEN THE PIPE AND MANHOLE.

INSTALLATION RECOMMENDATIONS ARE ALSO SPECIFIED IN INSTALLATION GUIDE 1.05: WATERSTOP INSTALLATION

THE INSTALLATION DETAILS PROVIDED HEREIN ARE GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT. THE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION. IT IS THE DESIGN ENGINEERS RESPONSIBILITY TO ENSURE THE DETAILS PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT.

#4 - WATERSTOP **12"-30"** DUAL WALL POLYPROPYLENE STORM DETAIL

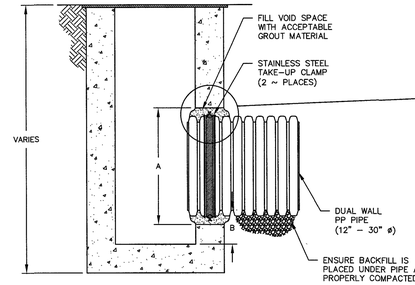
WATERSTOP GROUT RING CONNECTION DETAIL FOR CAST-IN-PLACE STRUCTURES

ABC | DATE | ENG | NTS | OF

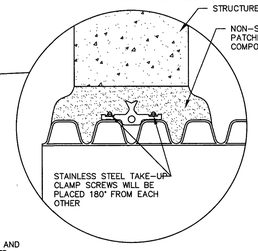
2 / C10.4 **#4–WATERSTOP 12"–30" DUEL WALL POLYPROPYLENE STORM DETAIL (WATERSTOP GROUT RING CONNECTION DETAIL FOR CAST–IN–PLACE STRUCTURES)**
SCALE: N.T.S.

12"–30" PP WATERSTOP GROUTED MANHOLE CONNECTION (**DUAL WALL**)

INSTALLATION VIEW



DETAILED CONNECTION VIEW



PIPE SIZE (IN)	PIPE OD (IN)	"A" MIN. HOLE ø (IN)	"B" MIN. DISTANCE PIPE INVERT TO STRUCUTRE INVERT (IN)
12	14.5	19.50	3.7
15	17.6	23.00	4.0
18	21.2	26.50	4.2
24	27.8	33.25	4.5
30	35.1	40.50	5.2
36	41.1	47.00	5.5
42	47.7	53.00	5.7
48	53.6	59.00	5.7
60	66.3	72.00	6.4

NOTES:

PERFORMANCE HIGHLY DEPENDENT ON INSTALLATION. CONTRACTOR MUST ENSURE MANHOLE GASKET IS UNIFORMLY SEATED AROUND STRUCTURE ADAPTER. EXTRA PRECAUTIONS MUST BE TAKEN TO PREVENT DIFFERENTIAL SETTLEMENT BETWEEN THE PIPE AND MANHOLE.

INSTALLATION RECOMMENDATIONS ARE ALSO SPECIFIED IN INSTALLATION GUIDE 1.05: WATERSTOP INSTALLATION

THE INSTALLATION DETAILS PROVIDED HEREIN ARE GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT. THE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION. IT IS THE DESIGN ENGINEERS RESPONSIBILITY TO ENSURE THE DETAILS PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT

#2 - WATERSTOP **12"-30"** DUAL WALL POLYPROPYLENE STORM DETAIL

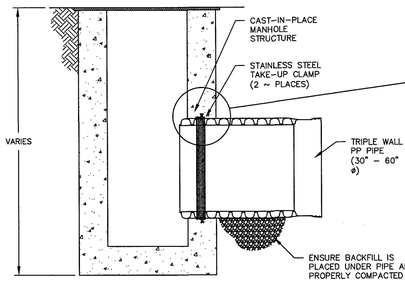
WATERSTOP GROUT RING CONNECTION DETAIL FOR PRECAST STRUCTURES

ABC | DATE | ENG | NTS | OF

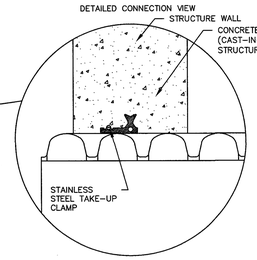
3 / C10.4 **#2–WATERSTOP 12"–30" DUAL WALL POLYPROPYLENE STORM DETAIL (WATERSTOP GROUT RING CONNECTION DETAIL FOR PRECAST STRUCTURES)**
SCALE: N.T.S.

30"–60" PP WATERSTOP GROUTED MANHOLE CONNECTION (**TRIPLE WALL**)

INSTALLATION VIEW



DETAILED CONNECTION VIEW



PIPE SIZE (IN)	PIPE OD (IN)	"A" MIN. HOLE ø (IN)
30	35.4	41.5
36	41.1	46.0
42	47.2	52.5
48	53.8	60.0
60	66.5	72.5

NOTES:

PERFORMANCE HIGHLY DEPENDENT ON INSTALLATION. CONTRACTOR MUST ENSURE MANHOLE GASKET IS UNIFORMLY SEATED AROUND STRUCTURE ADAPTER. EXTRA PRECAUTIONS MUST BE TAKEN TO PREVENT DIFFERENTIAL SETTLEMENT BETWEEN THE PIPE AND MANHOLE.

THE INSTALLATION DETAILS PROVIDED HEREIN ARE GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT. THE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION. IT IS THE DESIGN ENGINEERS RESPONSIBILITY TO ENSURE THE DETAILS PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT

#3 - WATERSTOP TRIPLE WALL **30"-60"** POLYPROPYLENE STORM DETAIL

WATERSTOP GROUT RING CONNECTION DETAIL FOR CAST-IN-PLACE STRUCTURES

ABC | DATE | ENG | NTS | OF

4 / C10.4 **#3–WATERSTOP TRIPLE WALL 30"–60" POLYPROPYLENE STORM DETAIL (WATERSTOP GROUT RING CONNECTION DETAIL FOR CAST–IN–PLACE STRUCTURES)**
SCALE: N.T.S.

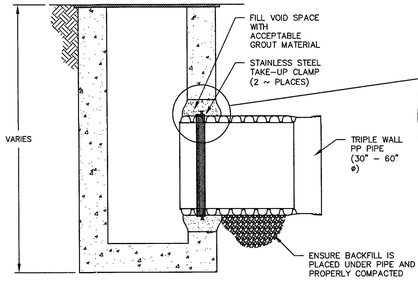
THE CITY OF EL PASO TEXAS

Oscar Villalobos — 03/08/2021

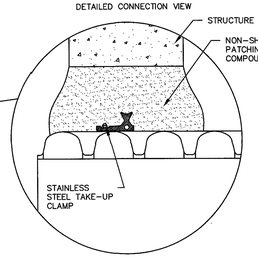
BY — DATE

30"–60" PP WATERSTOP GROUTED MANHOLE CONNECTION (**TRIPLE WALL**)

INSTALLATION VIEW



DETAILED CONNECTION VIEW



PIPE SIZE (IN)	PIPE OD (IN)	"A" MIN. HOLE ø (IN)
30	35.4	41.5
36	41.1	46.0
42	47.2	52.5
48	53.8	60.0
60	66.5	72.5

NOTES:

PERFORMANCE HIGHLY DEPENDENT ON INSTALLATION. CONTRACTOR MUST ENSURE MANHOLE GASKET IS UNIFORMLY SEATED AROUND STRUCTURE ADAPTER. EXTRA PRECAUTIONS MUST BE TAKEN TO PREVENT DIFFERENTIAL SETTLEMENT BETWEEN THE PIPE AND MANHOLE.

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#5 - WATERSTOP TRIPLE WALL **30"-60"** POLYPROPYLENE STORM DETAIL

WATERSTOP GROUT RING CONNECTION DETAIL FOR PRECAST STRUCTURES

ABC | DATE | ENG | NTS | OF

5 / C10.4 **#5–WATERSTOP TRIPLE WALL 30"–60" POLYPROPYLENE STORM DETAIL (WATERSTOP GROUT RING CONNECTION DETAIL FOR PRECAST STRUCTURES)**
SCALE: N.T.S.

REFERENCES – BENCHMARKS

FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLA AVENUE AND DOMINIC ANAKIN DRIVE.
ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

cea
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL

JORGE L. ACARATE — 84075 — LICENSED PROFESSIONAL ENGINEER — STATE OF TEXAS — 8-21

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

DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APP'VD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE

CUESTA DEL SOL SUBDIVISION IMPROVEMENTS

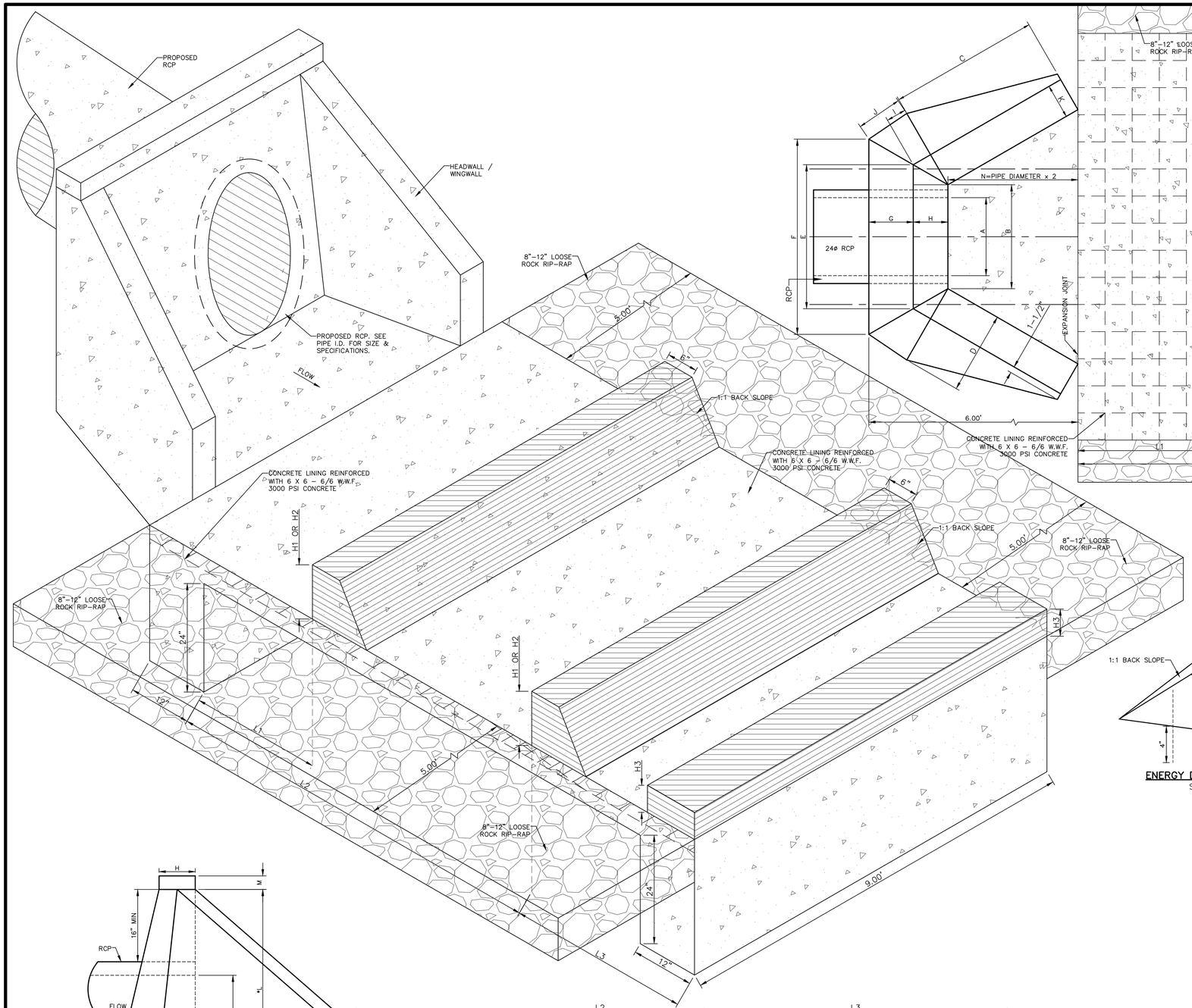
SHEET TITLE

DRAINAGE DETAILS

(SHEET 4 OF 5)

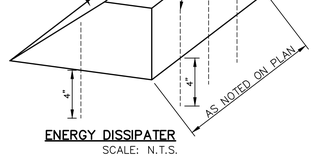
SHEET NO.

C10.4

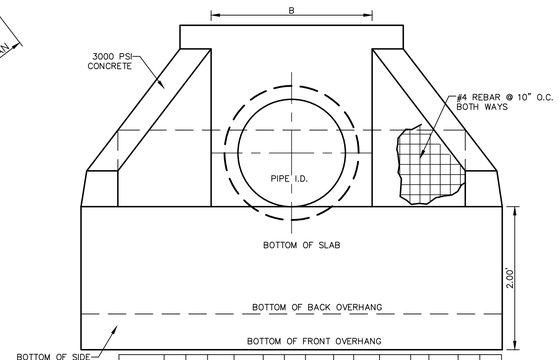


TOP VIEW
SCALE: N.T.S.

#4 DOWEL AT 8" O.C. WITH 2" CLEARANCE ON EITHER SIDE. NO DOWELS WILL NOT BE REQUIRED IF THE OUTLET STRUCTURE IS A MONOLITHIC POUR.



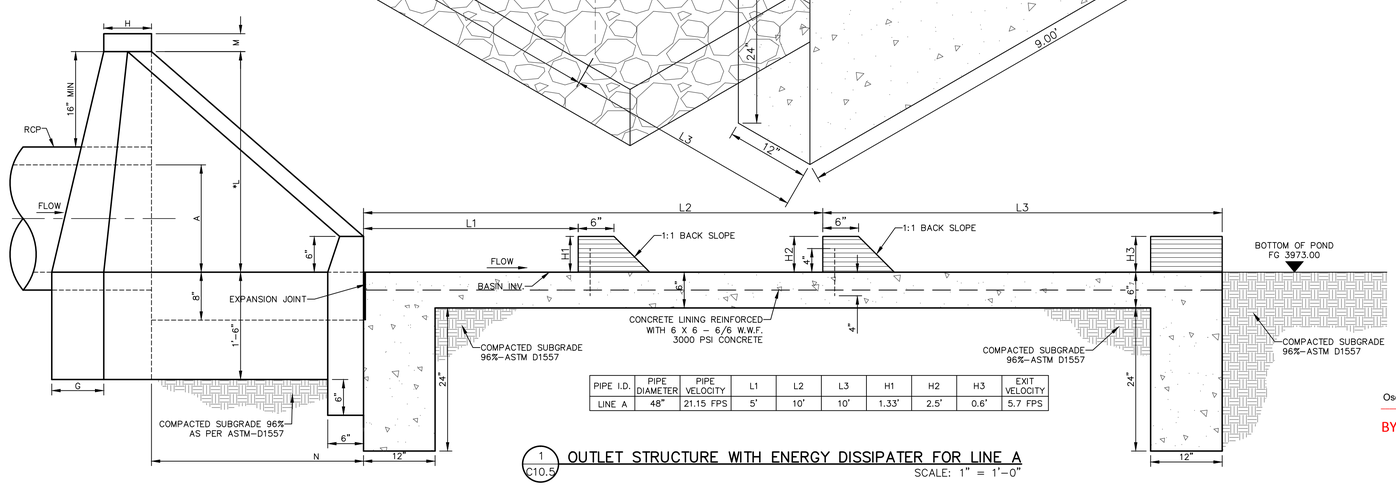
ENERGY DISSIPATER
SCALE: N.T.S.



PIPE I.D.	A	B	C	D	E	F	G	H	I	J	K	*L	M	N
18"	18"	30"	34 3/4"	19"	39 1/4"	52"	11"	8"	4 3/8"	11"	8"	37"	3"	36"
24"	24"	36"	41 3/8"	19"	45 1/4"	58"	11"	8"	4 3/8"	11"	8"	43"	3"	48"
30"	30"	42"	48 1/2"	20"	51 1/8"	65"	12"	8"	4 3/8"	11 1/8"	8"	50"	3"	60"
36"	36"	48"	55 1/2"	20"	58 1/8"	72"	11"	9"	5 1/2"	12"	9"	57"	3 1/2"	72"
42"	42"	54"	62 1/2"	25"	65 1/8"	82 1/8"	15"	10"	5 1/2"	14 1/8"	10"	63"	3 1/2"	84"
48"	48"	60"	69 1/2"	25"	71 1/8"	88 1/8"	15"	10"	5 1/2"	14 1/8"	10"	70"	4"	96"
54"	54"	66"	76 1/2"	25"	77 1/8"	94 1/8"	15"	10"	5 1/2"	14 1/8"	10"	76"	4 1/4"	108"

*NOTE:
APPROXIMATE DISTANCE SHOWN. ACTUAL DISTANCE WILL VARY ACCORDING TO PIPE WALL THICKNESS.

FRONT VIEW
SCALE: N.T.S.



PIPE I.D.	PIPE DIAMETER	PIPE VELOCITY	L1	L2	L3	H1	H2	H3	EXIT VELOCITY
LINE A	48"	21.15 FPS	5'	10'	10'	1.33'	2.5'	0.6'	5.7 FPS

1 / C10.5 OUTLET STRUCTURE WITH ENERGY DISSIPATER FOR LINE A
SCALE: 1" = 1'-0"

THE CITY OF EL PASO TEXAS

Oscar Villalobos 03/08/2021
BY DATE

REFERENCES - BENCHMARKS
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CETALLIA AVENUE AND DOMINIC ANAKIN DRIVE.
ELEVATION: 3990.65' (CITY DATUM)

BY	REVISIONS	DATE

cea group
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL
STATE OF TEXAS
JOSE L. AZCARATE
85075
REGISTERED PROFESSIONAL ENGINEER
8-21

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

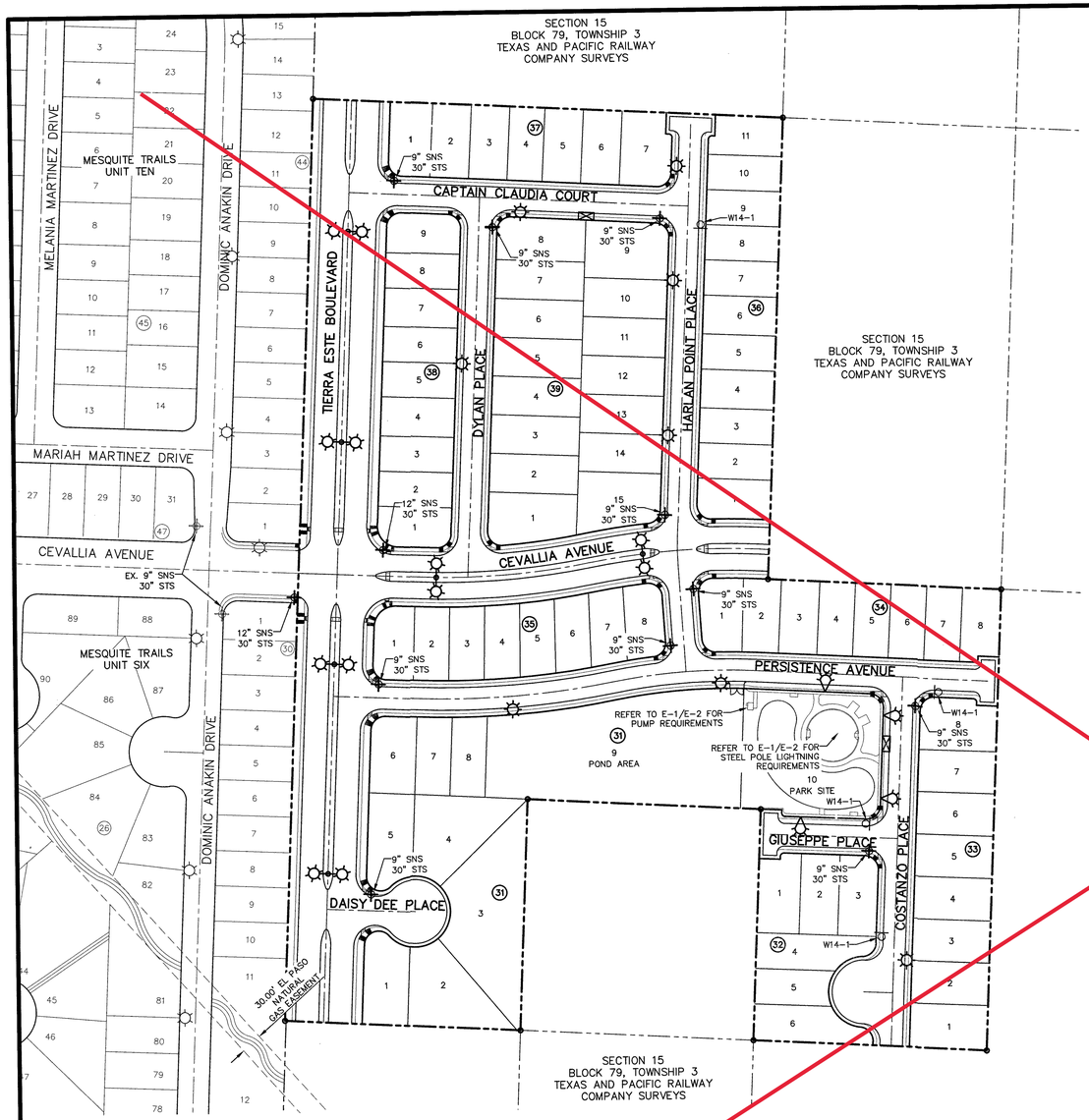
DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

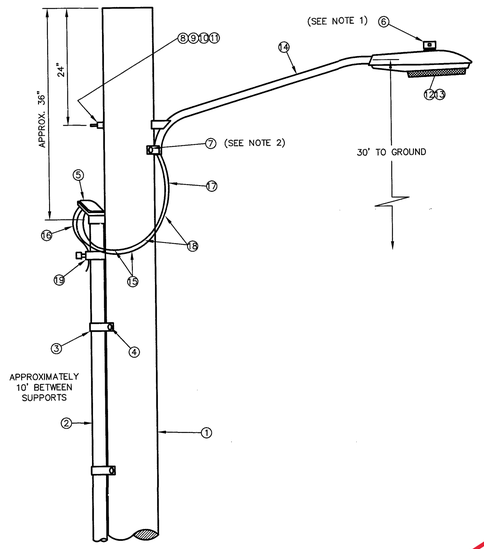
PROJECT TITLE
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE
DRAINAGE DETAILS

(SHEET 5 OF 5)

SHEET NO.
C10.5



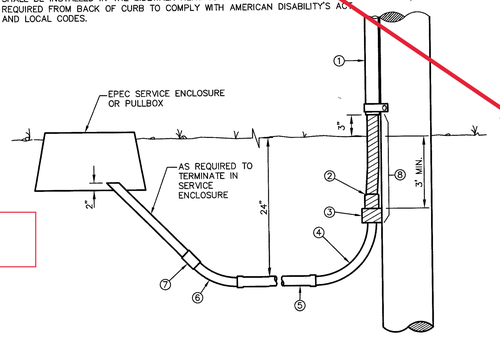


RESIDENTIAL STREET LIGHT WOOD POLE
SCALE: N.T.S.

ITEM No.	DESCRIPTION	STOCK No.	QTY.
1	POLE, 35 FT.-CLASS IV	609-035	1
2	GALVANIZED RIGID 1/2" CONDUIT	017-292	3
3	PIPE STRAP FOR 1/2" CONDUIT, 2-HOLE	017-334	7
4	LAG BOLT, 1/4" x 2"	002-330	6
5	WEATHERHEAD, 1/2" CONDUIT	017-293	1
6	PHOTOCELL, 240V-SEE NOTE 1	021-225	1
7	LAG BOLT, 1/2" x 4"	002-370	2
8	MACHINE BOLT, 5/8" x 8"	002-450	1
9	SQUARE GALV. WASHER, 2-1/4"x2"-1/4"	002-760	1
10	COIL SPRING WASHER, 5/8"	002-786	1
11	LOCKNUT, 5/8"	002-705	1
12	LUMINAIRE, 65W LED	021-335	1
13	LED LAMP, 65W	021-085	1
14	MAST ARM, 6' x 1-1/4"	021-200	1
15	COPPER CABLE, #12, 19 STRAND, 600 V	013-665	
16	COPPER CABLE, #12, SOLID, 600 V, GREEN	013-701	
17	CABLE, #10, 2 CONDUCTOR, 600 V, UF	013-600	8
18	SLEEVES, #12-10	005-140	2
19	GROUNDING CLAMP	021-215	1

NOTES:

1. MOUNT SO THAT PHOTO CELL IS FACING NORTH.
2. ITEM # 17 SHALL NOT BE SPLICED INSIDE ITEM # 14.
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 DEVELOPMENT 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.



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.

See Revised Sheet.

THE CITY OF EL PASO TEXAS

Oscar Villalobos 03/08/2021

BY DATE

UTILITY LOCATOR SERVICES	
PASEO DEL ESTE MUNICIPAL UTILITY DISTRICT No. 1	(915) 852-1465
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
SPECTRUM	(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

WARNING !
BEFORE YOU DIG
CALL 811
FOR FIELD LOCATING EXISTING UTILITIES

DEAD END

W14-1
(30" x 30")

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

SIGNS DETAIL
SCALE: N.T.S.

LEGEND:

- PROPOSED RESIDENTIAL STREET LIGHT
- PROPOSED STEEL STREET LIGHT
- PROPOSED DOUBLE MOUNTED LIGHT (STEEL POLE) (2-100 WATTS)
- EXISTING RESIDENTIAL STREET LIGHT
- PROPOSED 9" & 12" STREET NAME SIGN (TWO SIGNS) AND 30" STOP SIGN
- EXISTING 9" STREET NAME SIGN (TWO SIGNS) AND 30" STOP SIGN
- PROPOSED TRAFFIC SIGN
- PROPOSED N.D.C.B.U. MAIL BOX

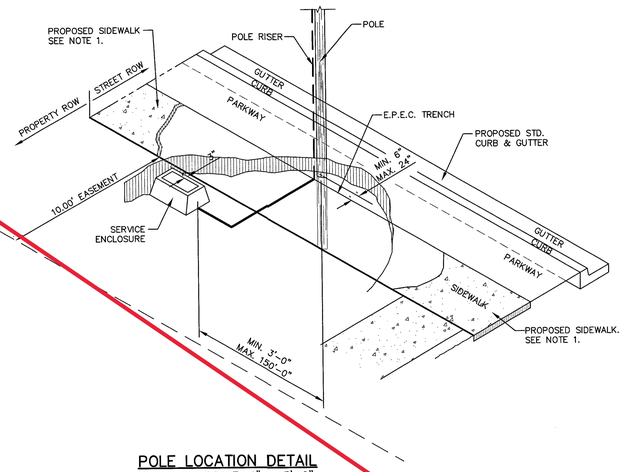
NOTES:

1. TRAFFIC STREET SIGNS MUST BE OF HIGH INTENSITY REFLECTIVE SHEETING.
2. TEXT SIZES, FONTS, COLORS, ETC. MUST BE AS PER TMUTCD STANDARDS & REQUIREMENTS.
3. SIGNS & STRIPING SHOULD COMPLY WITH TMUTCD.
4. ANY STRIPING, SIGNS, ETC. WITHIN TxDOT ROW SHALL COMPLY WITH TxDOT STANDARDS & REQUIREMENTS.
5. POSTS MUST BE BREAK-AWAY TYPE AS SHOWN ON THIS SHEET.
6. MAILBOX TO BE INSTALLED IN PARKWAY, NOT OBSTRUCTING SIDEWALK.
7. SIGN LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL INSTALL ALL TRAFFIC SIGNS PER THE LATEST TMUTCD MANUAL.

8 RESIDENTIAL STREET LIGHTS

4 STEEL STREET LIGHTS

6 DOUBLE MOUNTED LIGHTS



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

ILLUMINATION AND SIGNAGE PLAN AND DETAILS

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

REFERENCES – BENCHMARKS
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE
ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

cea group
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL
OF TEXAS
JORGE L. AZCARATE
85075
LICENSED
PROFESSIONAL ENGINEER
8-21

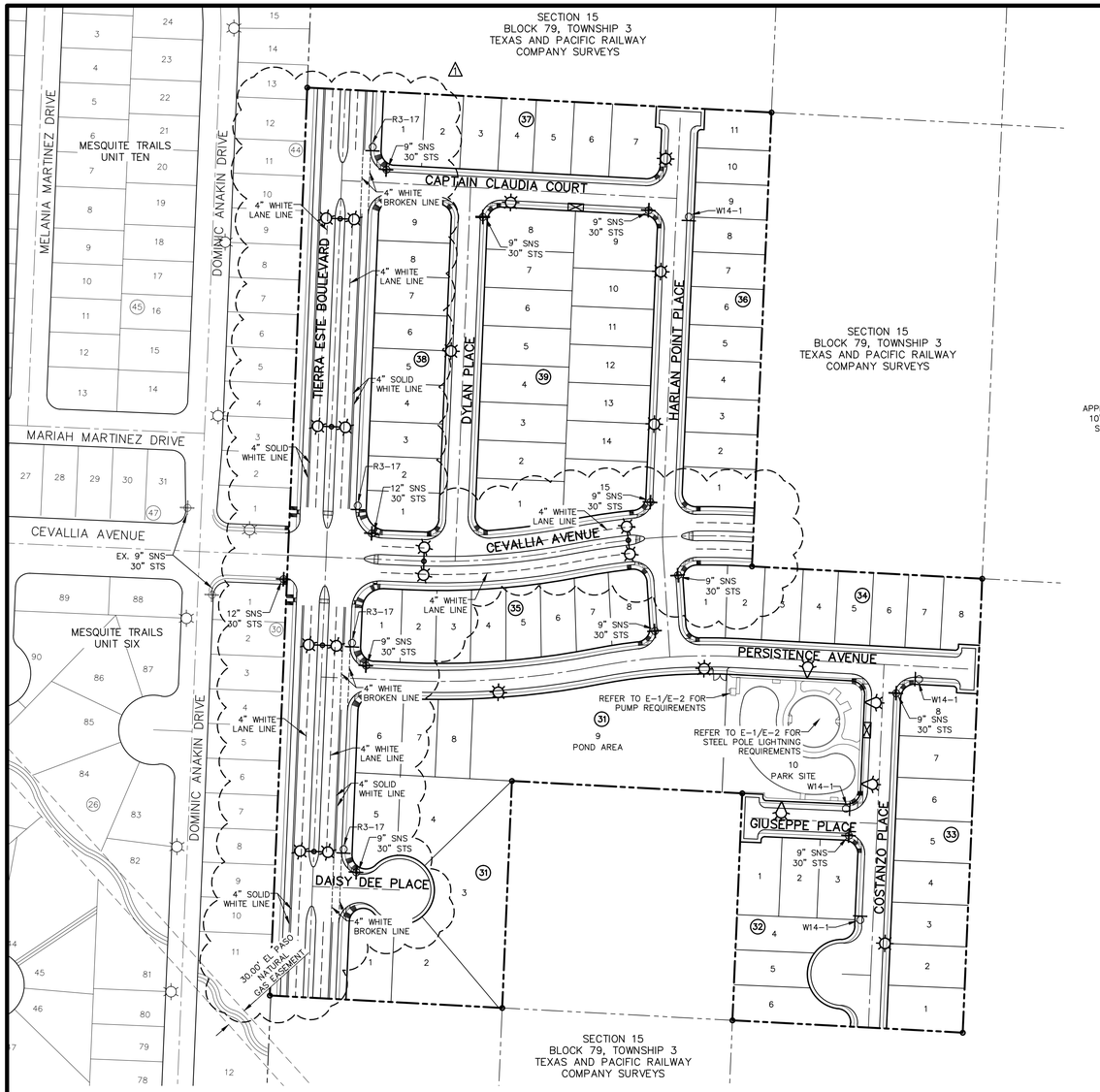
SCALE
Horizontal: 1"=100'
Vertical: N/A
Contour Interval: N/A

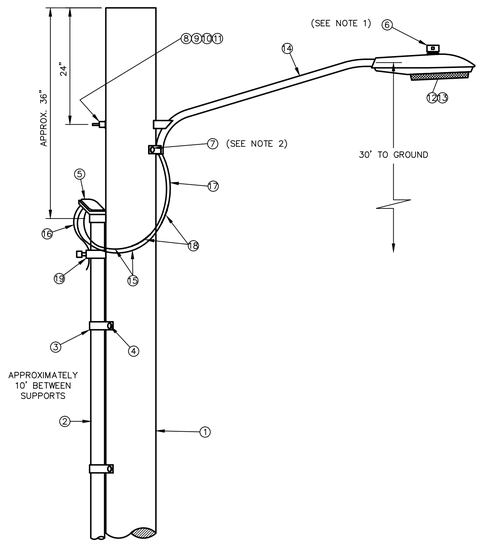
DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE
ILLUMINATION AND SIGNAGE PLAN AND DETAILS

SHEET NO.
C11.1





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

ITEM No.	DESCRIPTION	STOCK No.	QTY.
1	POLE, 35 FT.–CLASS IV	009–035	1
2	GALVANIZED RIGID 1/2" CONDUIT	017–292	3
3	PIPE STRAP FOR 1/2" CONDUIT, 2–HOLE	017–334	7
4	LAG BOLT, 1/4" x 2"	002–330	6
5	WEATHERHEAD, 1/2" CONDUIT	017–293	1
6	PHOTOCELL, 240V–SEE NOTE 1	021–225	1
7	LAG BOLT, 1/2" x 4"	002–370	2
8	MACHINE BOLT, 5/8" x 8"	002–450	1
9	SQUARE GALV. WASHER, 2–1/4"x2"–1/4"	002–760	1
10	COIL–SPRING WASHER, 5/8"	002–786	1
11	LOCKNUT, 5/8"	002–705	1
12	LUMINAIRE, 65W LED	021–335	1
13	LED LAMP, 65W	021–085	1
14	MAST ARM, 6' x 1–1/4"	021–200	1
15	COPPER CABLE, #12, 19 STRAND, 600 V	013–665	
16	COPPER CABLE, #12, SOLID, 600 V, GREEN	013–701	
17	CABLE #10, 2 CONDUCTOR, 600 V, UF	013–600	8
18	SLEEVES, #12–10	005–140	2
19	GROUNDING CLAMP	021–215	1

NOTES:

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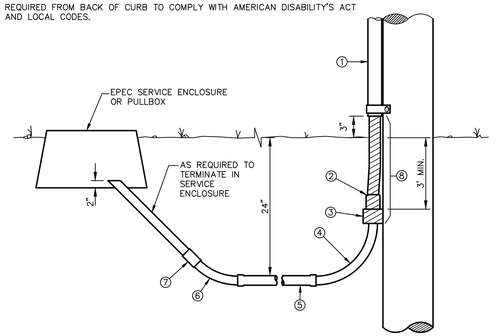

KEY NOTES:

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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.

UTILITY LOCATOR SERVICES

PASEO DEL ESTE MUNICIPAL UTILITY DISTRICT No. 1	(915) 852–1465
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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U.S. SPRINT TELECOMM	(800) 521–0579

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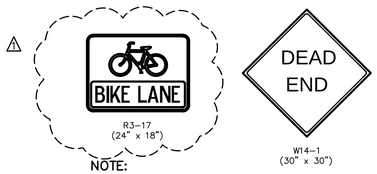

NOTE:
SIGNS SHOULD COMPLY WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).

SIGNS DETAIL
SCALE: N.T.S.

LEGEND:

- PROPOSED RESIDENTIAL STREET LIGHT
- PROPOSED STEEL STREET LIGHT
- PROPOSED DOUBLE MOUNTED LIGHT (STEEL POLE) (2–100 WATTS)
- EXISTING RESIDENTIAL STREET LIGHT
- PROPOSED 9" & 12" STREET NAME SIGN (TWO SIGNS) AND 30" STOP SIGN
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NOTES:

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6. MAILBOX TO BE INSTALLED IN PARKWAY, NOT OBSTRUCTING SIDEWALK.
7. SIGN LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL INSTALL ALL TRAFFIC SIGNS PER THE LATEST TMUTCD MANUAL.

THE CITY OF EL PASO TEXAS

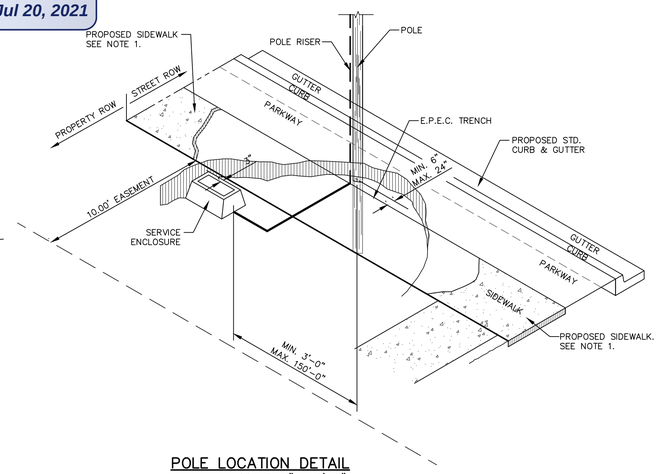
Oscar Villalobos 07/20/2021
BY DATE

REVISED
9:06 am, Jul 20, 2021

8 RESIDENTIAL STREET LIGHTS

4 STEEL STREET LIGHTS

6 DOUBLE MOUNTED LIGHTS



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

ILLUMINATION AND SIGNAGE PLAN AND DETAILS

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

REFERENCES – BENCHMARKS
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE.
ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY
6/22/21	AS PER CEP REVISIONS	K.A.P.

cea group
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL
STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER
6-22-21

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

DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049–002

PROJECT TITLE
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE
ILLUMINATION AND SIGNAGE PLAN AND DETAILS

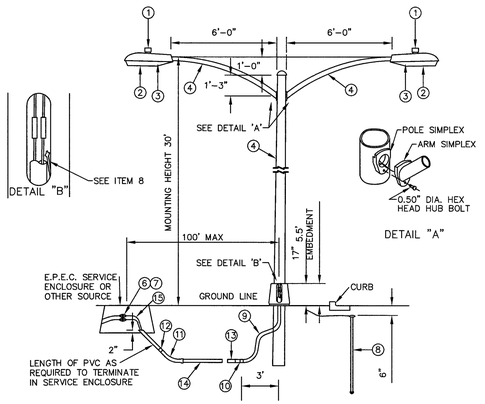
SHEET NO.
C11.1R

UTILITY LOCATOR SERVICES	
PASEO DEL ESTE MUNICIPAL UTILITY DISTRICT No. 1	(915) 852-1465
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
SPECTRUM	(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

WARNING ! BEFORE YOU DIG

CALL 811

FOR FIELD LOCATING EXISTING UTILITIES



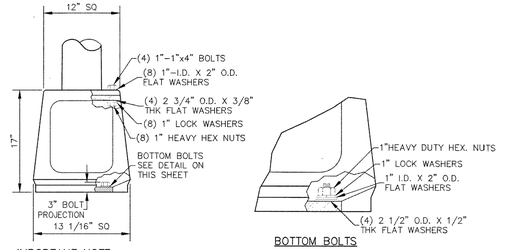
ITEM NO.	DESCRIPTION	STOCK/DSO NO.	QTY.	C/U CODE	FEATURE
1	PHOTOCELL, 240V-SEE NOTE 1	21-225	1	LCOBRAHD	ST. LT. 65W LED FOR STEEL POLE
2	LED LAMP, 65W	21-085	1		
3	LUMINAIRE, 65W LED	21-335	1		
4	34'-6" DIRECT EMB. ST POLE WITH 6' MAST ARM	09-310	1	L34STLUG	STEEL DIRECT BURIED ST. LT. POLE
5	BUTT SPLICE, #12,-#10	05-140	2	ESLV1210	
6	FUSE 10A	21-240	2	LFUSE10A	
7	FUSEHOLDER-30A-SUBMERSIBLE	21-246	2	LFUSEHOLDERSUB	
8	5/8"X10' CU BONDED GROUND ROD	08-626	1	PGRNDSTL	
	5/8" GROUND ROD CLAMP	07-461	1		
	TRANSFORMER GROUND CLAMP	04-100	1		
	#4 BARE COPPER WELD	12-106	6'		
9	1" PVC FLEX CONDUIT	21-527	6'	LPVCFLX1	
10	1" PVC FLEX CONDUIT FITTING	21-214	1	LFLXFIT1	
11	1" PVC 45 DEGREE ELBOW	17-298	1	DEL451	
12	1" PVC COUPLING	17-296	1	DCPLG1	
13	1" PVC FEMALE ADAPTER	17-295	1	DFADAPT1	
14	1" PVC CONDUIT	17-299	1	DPVC1	
15	CABLE COPPER #12, SOLID, 600V, BLUE	13-702	1	LC#12CU	LTCIRCUIT#12 CU

NOTES:

1. MOUNT SO THAT PHOTO CELL IS FACING NORTH.
2. INSTALLATION MUST COMPLY WITH LOCAL CODE REQUIREMENTS.
3. FOR ANY CLARIFICATION, EXCEPTIONS OR QUESTIONS REGARDING STANDARD, CALL THE EL PASO ELECTRIC COMPANY DISTRIBUTION DESIGN DEPARTMENT.
4. ON STREETS WHERE SIDEWALK IS ADJACENT TO CURB, 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.
5. EL PASO ELECTRIC RESERVES THE RIGHT TO SUBSTITUTE THE SINGLE MEMBER MAST ARM WITH A TRUSS ARM

DOUBLE MAST STEEL LIGHT POLE

SCALE: N.T.S.



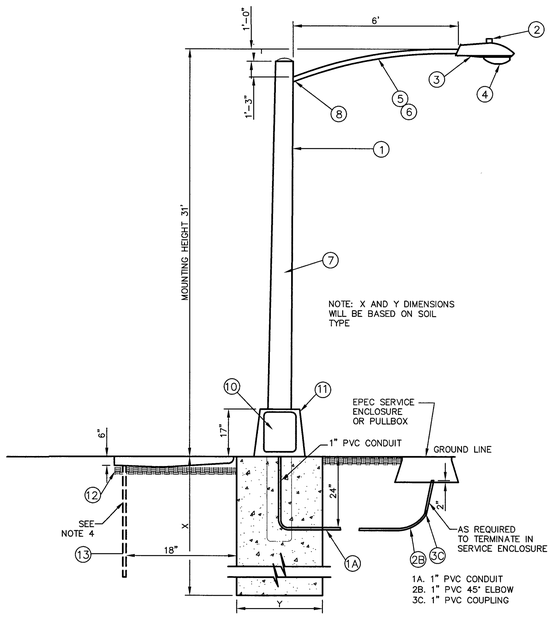
IMPORTANT NOTE

TRANSFORMER BASE AND LIGHT POLE TO BE LEVELED AS ONE UNIT. DO NOT USE LEVELING NUTS.

BOTTOM BOLTS

NOTES:

1. ALL LIGHT POLES ALONG TIERRA ESTE AND CEVALLIA AVENUE SHALL BE STEEL POLES.
2. POLES MUST BE OF BREAK AWAY TYPE.



ITEM NO.	DESCRIPTION	STOCK No.	QTY.
1	POLE, 35 FT.-CLASS IV		1
2	PHOTOCELL, 240V-SEE NOTE 1	021-225	1
3	LUMINAIRE, 65W LED	021-335	1
4	LED LAMP, 65W	021-085	1
5	MAST ARM, 6' X 1-1/4"	21-200	1
6	#10 SOLID CABLE 600 V	013-600	AS REQ
7	CABLE, #10, 3 CONDUCTOR, 600 V, UF	013-600	1
8	SLEEVES, #12	05-145	1
9	ROADWAY LUMINAIRE HPS 150 WATTS	21-340	1
10	BREAK-A-WAY FUSES 30 AMP.	21-250	1
11	ALUMINUM TRANSFORMER BASE	21-608	1
12	5/8" GROUND ROD CLAMP	07-561	1
13	5/8" X 10' CU BONDED GROUND ROD	08-626	1

KEY NOTES

1. MOUNT SO THAT CONTROL FACES NORTH.
2. ITEM 7 SHALL NOT BE SPLICED INSIDE ITEM 5.

DESIGN NOTES

1. INSTALLATION SHALL COMPLY WITH ALL LOCAL CODE REQUIREMENTS.
2. FOR ANY CLARIFICATION, EXCEPTIONS OR QUESTIONS REGARDING CODE INTERPRETATION, CALL EL PASO ELECTRIC CO. DISTRIBUTION DEVELOPMENT DEPARTMENT.
3. A GROUND ROD MUST BE USED.

RESIDENTIAL STREET LIGHT STEEL POLE

SCALE: N.T.S.

THE CITY OF EL PASO TEXAS

Oscar Villalobos 03/08/2021

BY DATE

REFERENCES - BENCHMARKS

FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE. ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

cea group
813 N. Kansas St. Suite 300 El Paso, TX 79902 915.544.5232 www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL

STATE OF TEXAS JORGE L. AZCARATE 86075 LICENSED PROFESSIONAL ENGINEER 8-21

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

DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
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JOB No. 3049-002

PROJECT TITLE

CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE

ILLUMINATION AND SIGNAGE DETAILS

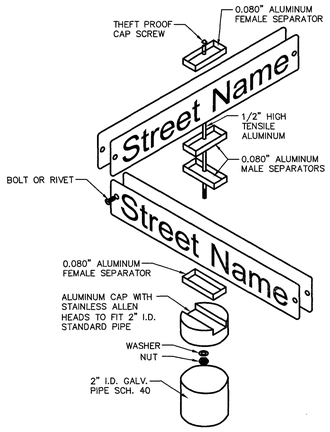
(SHEET 1 OF 2)

SHEET NO.

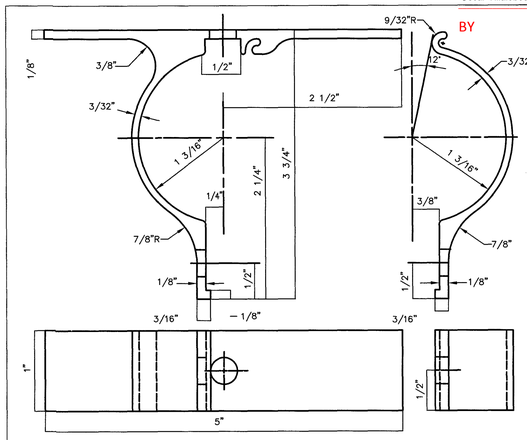
C11.2

CITY OF EL PASO
SPECIFICATIONS FOR REFLECTORIZED STREET NAME SIGNS

1. COLOR OF SIGNS : THE FINISHED SIGN MUST HAVE A REFLECTORIZED BLUE BACKGROUND. THE BLUE MUST CONFORM WITH THE BUREAU OF PUBLIC ROADS HIGHWAY BLUE. THE LEGEND MUST BE REFLECTORIZED SILVER WHITE (BLUE REVERSE SCREENED BACKGROUND WITH SILVER COPY).
2. LETTER DESIGN: THE LETTERING OF ALL LEGENDS MUST BE UPPER CASE LETTERS IN ACCORDANCE WITH "STANDARD ALPHABETS FOR HIGHWAY SIGNS" PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
3. LETTER SPACING: THE CONTROL FOR THE SPACING VALUES IN TRAFFIC LAYOUT IS THE DISTANCE RECOGNIZED AS AESTHETIC SPACING BETWEEN TWO STRAIGHT LETTERS (HH). A SPACING CONTROL OF TWO TIMES THE WIDTH OF THE STROKE OF THE LETTER SERIES TO BE USED MUST BE THE AESTHETIC CONTROL (100%). TWO AND ONE–HALF TIMES (2–1/2) THIS CONTROL MUST BE USED AS THE AESTHETIC WORD SPACE BETWEEN ELEMENTS IN THE PRIMARY LEGEND.
4. LAYOUT: THE MAXIMUM NUMBER OF LETTERS TO BE ACCOMMODATED ON A GIVEN LENGTH STREET NAME FACE MUST BE DETERMINED BY THE WIDEST LETTER SERIES POSSIBLE FOR THAT LEGEND AND THE SPACING CONTROL (100%) FOR THE SERIES USED MUST BE EXPANDED OR CONDENSED UP TO 25% IN 5% INCREMENTS.
5. THE SPACING CONTROL (100%) FOR THE SERIES USED MUST BE EXPANDED OR CONDENSED UP TO 25% IN 5% INCREMENTS FOR THE END MARGIN WITH MINIMUM OF 1".
6. THE WORD SPACE MUST BE EXPANDED UP TO 25% IN 5% INCREMENTS BUT NOT CONDENSED.
7. SPACE BETWEN PRIMARY AND BLOCK NUMBER AREA MUST BE 1/2 THE AESTHETIC WORK SPACE USED IN THE PRIMARY LEGEND.
8. SUFFIX LETTER SIZE FOR ALL LENGTHS MUST BE 2" CAPITALS, "C" SERIES, EXCEPT THAT SERIES "A" OR "B" WHERE SUFFIX ABBREVIATION EXCEEDS TWO LETTERS, MAY BE USED.
9. SIZE OF LEGEND: FOR 9" STREET NAME SIGNS, THE PRIMARY LEGEND, OR STREET NAME MUST HAVE CAPITAL LETTERS SIX INCHES (6") HIGH AND ALL SECONDARY LEGENDS, INCLUDING THE SUFFIX, BLOCK NUMBERS, MUST HAVE UPPER CASE LETTERS TWO AND ONE–HALF INCHES (2 1/2") HIGH.
10. SUFFIX LETTER SIZE FOR ALL LENGTHS MUST BE 2 1/2" CAPITALS, "C" SERIES, EXCEPT THAT SERIES "A" OR "B" WHERE SUFFIX ABBREVIATION EXCEEDS TWO LETTERS, MAY BE USED.
11. POSITION OF LEGEND: EACH SIGN FACE WILL CONSIST OF THE STREET NAME, SUFFIX, AND TWO ZEROS OF THE BLOCK NUMBER . THE ADDITIONAL NUMBERS OF THE BLOCK NUMBER WILL BE APPLIED BY THE CITY OF EL PASO. THE SUFFIX WILL BE LOCATED IN THE UPPER RIGHT CORNER AND THE BLOCK NUMBER IN THE LOWER RIGHT CORNER OF THE SIGN FACE AND THE STREET NAME CENTERED IN THE REMAINING SPACE.
12. SIGN FABRICATION: THE SIGN FACE MUST BE FABRICATED BY REVERSE SCREENING GREEN TRANSPARENT COLOR OVER SILVER REFLECTIVE SHEETING. TRANSPARENT PROCESS COLORS MUST BE AS RECOMMENDED BY THE SHEETING MANUFACTURER. CUT–OUT OR APPLIED LEGENDS ARE NOT PERMITTED. SIGN FACES MUST BE COMPRISED OF ONE PIECE OR PANEL OF REFLECTIVE SHEETING.
13. TYPE OF SHEETING: ENGINEER GRADE REFLECTIVE SHEETING MUST BE USED IN THE FABRICATION OF THE STREET NAME SIGN FACES.



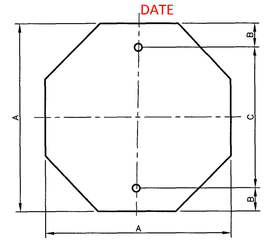
9" STREET NAME ASSEMBLY



ALUMINUM SIGN CLAMP BRACKET FOR TRAFFIC CONTROL SIGNS
N.T.S.

NOTES:

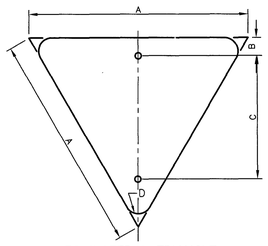
1. ALL HOLES 3/8" PUNCH
2. FILLETS & ROUNDS 1/16"=R
3. FURNISH THE FOLOWING HARDWARE FOR EACH BRACKET:
   1 – 5/16"x 3/4" BOLTS
   1 – 5/16"x 1 1/4" BOLT
   2 – 5/16"x NUTS & LOCK WASHERS
   2 – FLAT WASHERS
4. THE BRACKET IS TO BE MADE FROM HIGH STRENGTH ALUMINUM ALLOY. THE BRACKET IS TO EMPLOY AN EXTRUDED INTERLOCKING FEATURE OFFERING A RIGID MEANS OF ATTACHING A FLAT SIGN TO A STANDARD 2" (2/8" O.D.) TUBULAR POST.



3/8" HOLE DIA.

A	B	C
24	3	18
30	3	24
36	3	30

OCTAGON
N.T.S.

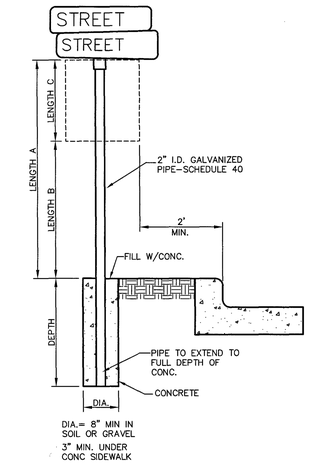


3/8" HOLE DIA.

A	B	C	D
36	3	21	2
42	3	24	2 1/2
48	3	35	3

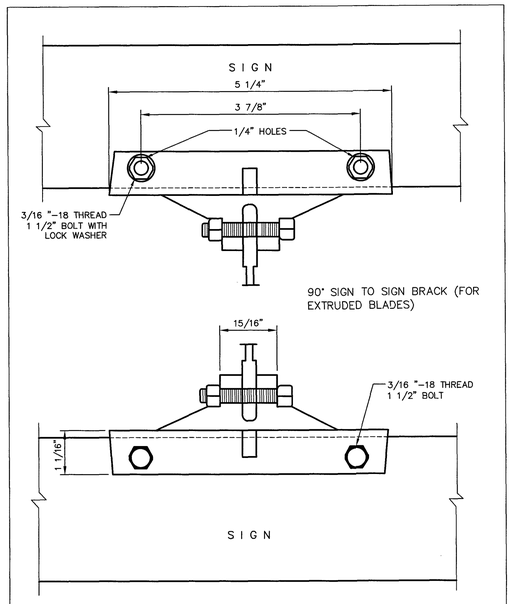
EQUILATERAL TRIANGLE
N.T.S.

D.H.T. BLANK STANDARDS
N.T.S.

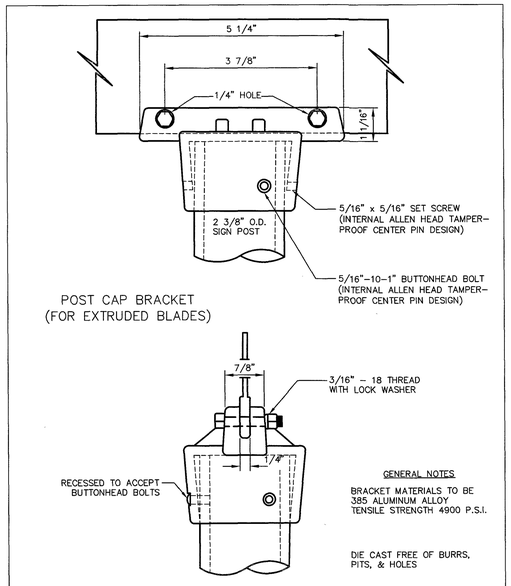


SIGN POST INSTALLATION

LENGTH A	LENGTH B	LENGTH C	DEPTH
10 FT	7 FT	LARGER THAN 24"	2 FT
9 FT	7 FT	SMALLER THAN 24"	1 1/2 FT



9" STREET NAME SIGN ASSEMBLY

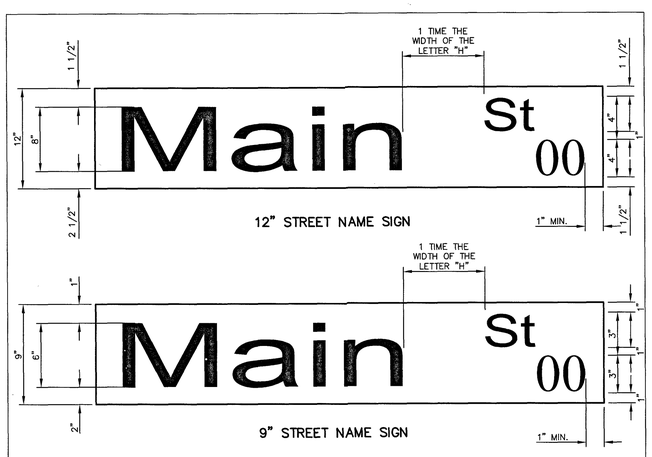


GENERAL NOTES

BRACKET MATERIALS TO BE 385 ALUMINUM ALLOY TENSILE STRENGTH 4900 P.S.I.

DIE CAST FREE OF BURRS, PITS, & HOLES

9" STREET NAME SIGN ASSEMBLY



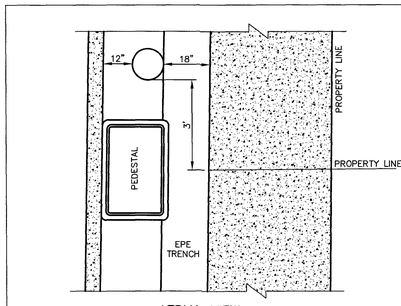
12" STREET NAME SIGN

9" STREET NAME SIGN

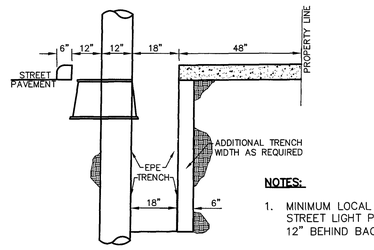
SIGN CLASS	SIGN HEIGHT	SIGN LENGTH	PRIMARY LETTERS SIZE & SERIES	LOWERCASE LETTERS SIZE & SERIES	SUFFIX & BLOCK NUMBER SIZE & SERIES
STREETS	9"	24",30",36"	6" C.D. SERIES	4.5" C.D. SERIES	3" C SERIES
ARTERIAL	12"	30",36",42"	8" C.D. SERIES	6" C.D. SERIES	4" C SERIES

NOTE:
12" SIGNS ARE REQUIRED ON CEVALLIA AVENUE.

LAYOUT FOR STREET NAME SIGNS



AERIAL VIEW



FRONT VIEW

NOTES:

1. MINIMUM LOCAL RESIDENTIAL STREET LIGHT POLE DISTANCE IS 12" BEHIND BACK OF CURB.

TYPICAL EL PASO ELECTRIC TRENCH LOCATION ON LOCAL RESIDENTIAL STREET
EL PASO ELECTRIC CO. DISTRIBUTION STANDARD

THE CITY OF EL PASO TEXAS

UTILITY LOCATOR SERVICES

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WARNING ! BEFORE YOU DIG
CALL 811
FOR FIELD LOCATING EXISTING UTILITIES

Oscar Villalobos — 03/08/2021

BY	DATE	REVISIONS

REFERENCES – BENCHMARKS
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC
ELEVATION: 3990.65' (CITY DATUM)

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813 N. Kansas St.
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TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL
JORGE L. AZCARATE
85075
11-8-21

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

DATE: JUNE 2020
DESIGN BY: K.A.P.
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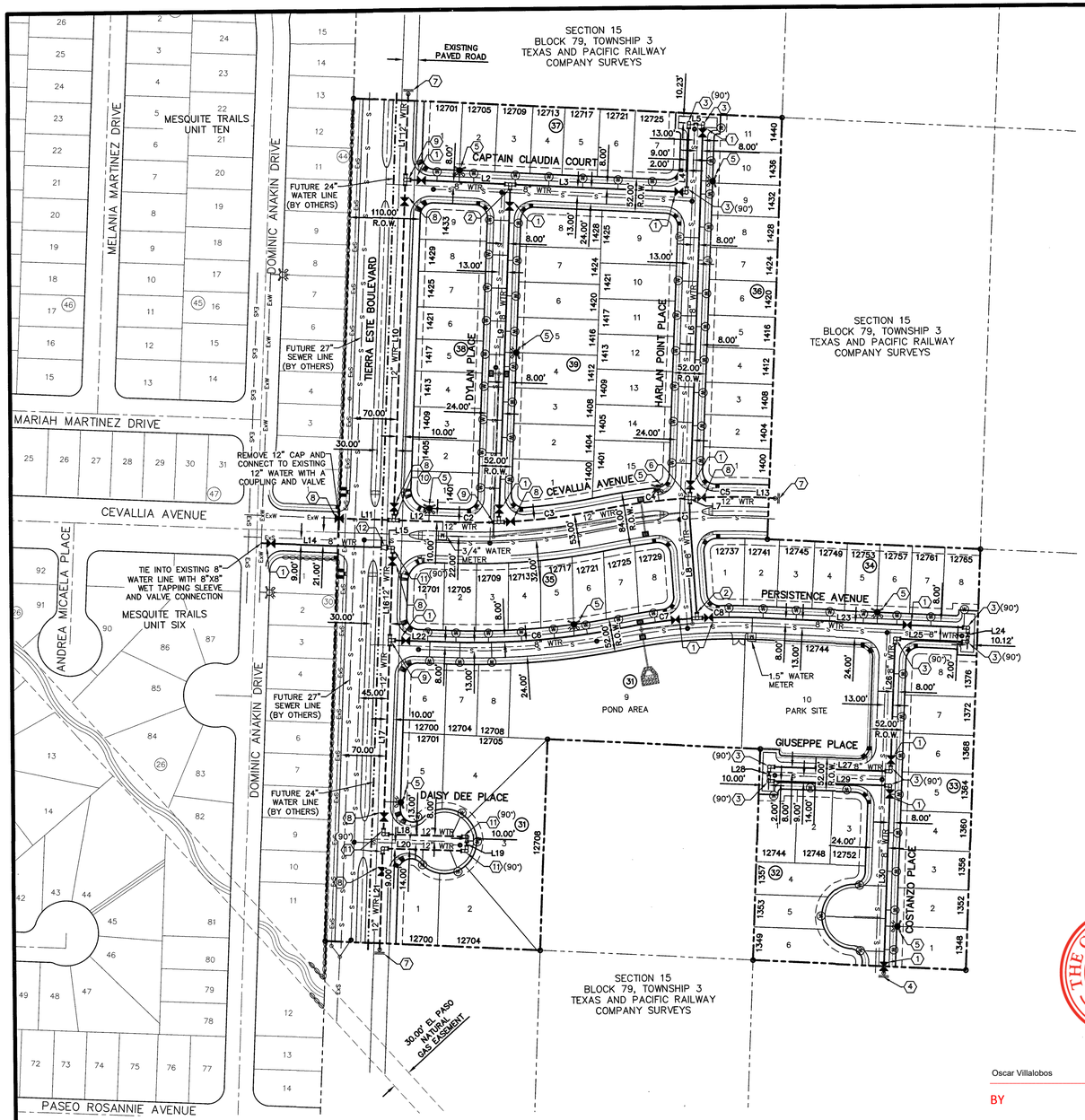
PROJECT TITLE
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE
ILLUMINATION AND SIGNAGE DETAILS
(SHEET 2 OF 2)

SHEET NO.
C11.3



LINE TABLE		
LINE	BEARING	LENGTH
L1	S02°22'00"W	133.01'
L2	S86°55'53"E	164.01'
L3	S86°55'53"E	275.43'
L4	S02°27'34"W	107.77'
L5	N87°32'26"W	22.00'
L6	S02°27'34"W	581.71'
L7	S02°27'34"W	3.09'
L8	S03°40'34"E	144.69'
L9	S02°22'00"W	524.63'
L10	S02°22'00"W	528.87'
L11	N87°30'02"W	84.95'
L12	N87°30'02"W	92.53'
L13	S86°55'35"E	23.07'
L14	S87°30'02"E	200.00'
L15	S87°30'02"E	5.00'
L16	S02°22'00"W	144.00'
L17	S02°22'00"W	302.10'
L18	N87°37'51"W	130.53'
L19	S02°22'09"W	22.00'
L20	N87°37'51"W	130.53'
L21	S02°22'00"W	156.61'
L22	N87°30'02"W	92.10'
L23	S86°55'44"E	332.29'
L24	S03°04'16"W	22.00'
L25	S86°55'44"E	112.77'
L26	S02°27'36"W	207.23'
L27	S87°32'16"E	189.17'
L28	S02°27'44"W	22.00'
L29	S87°32'16"E	189.17'
L30	S02°27'36"W	290.58'

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	367.00'	39.30'	19.67'	39.28'	S00°36'30"E	006°08'08"
C2	978.00'	71.52'	35.78'	71.51'	S89°35'44"E	004°11'24"
C3	978.00'	159.32'	79.84'	159.15'	N83°38'33"E	009°20'02"
C4	1022.00'	141.36'	70.79'	141.25'	S82°56'17"W	007°55'30"
C5	1022.00'	110.11'	55.11'	110.06'	S89°59'13"W	006°10'23"
C6	1165.00'	274.98'	138.13'	274.34'	N85°44'15"E	013°31'26"
C7	835.00'	114.94'	57.56'	114.85'	S82°55'09"W	007°53'14"
C8	835.00'	90.48'	45.28'	90.43'	S89°58'01"W	006°12'30"

WATER QUANTITIES		
DESCRIPTION	QUANTITY	UNIT
8" PVC WATER LINE	4001	LF
8" GATE VALVE	14	EA
8" PLUG	1	EA
8" 90° BEND	10	EA
8" TEE	2	EA
FIRE HYDRANT	9	EA
8"X8" WET TAPPING SLEEVE & VALVE	1	EA
3/4" WATER SERVICE LINES	80	EA
12" PVC WATER LINE	2236	LF
12" GATE VALVE	8	EA
12" PLUG	3	EA
8"X12"X8"X12" CROSS	1	EA
12"X12"X8" TEE	3	EA
12" TEE	1	EA
12" 90° BEND	5	EA
REDUCER	1	EA
3/4" WATER METER	1	EA
1.5" WATER METER	1	EA
24"ø STEEL CASING	20	LF

WATER KEYED NOTES	
①	8" ø GATE VALVE
②	8" TEE
③	8" BEND
④	8" PLUG
⑤	FIRE HYDRANT
⑥	8"X12"X8"X12" CROSS
⑦	12" PLUG
⑧	12" GATE VALVE
⑨	12"X12"X8" TEE
⑩	12" TEE
⑪	12" BEND
⑫	REDUCER

THE CITY OF EL PASO TEXAS

Oscar Villalobos — 03/08/2021
BY — DATE

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

WATER INDEX MAP
SCALE: 1" = 100'

GENERAL NOTES

1. UNLESS OTHERWISE SHOWN ON THE DRAWINGS, THE PROPOSED WATER MAINS SHALL BE INSTALLED NO LESS THAN TEN (10') FEET 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 SIXTY (60") INCHES 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.
4. TRENCH SAFETY REQUIREMENTS SHALL BE AS REQUIRED BY OSHA.
5. AS-BUILT STATIONING, OFFSET FROM R.O.W. AND INVERT ELEVATIONS SHALL BE ACCURATELY RECORDED BY THE CONTRACTOR ON A CLEAN SET OF PLANS FOR EACH VALVE, FIRE HYDRANT, ELBOW, SERVICE CONNECTION AND/OR STUB-OUT, WITH RESPECT TO THE APPROPRIATE PROJECT CONTROL POINT.
6. THE EL PASO WATER UTILITIES AND CITY OF EL PASO MUST BE NOTIFIED FORTY-EIGHT (48) HOURS PRIOR TO COMMENCING ANY WORK IN AREAS WITHIN THEIR JURISDICTION.
7. 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.
8. TRAFFIC CONTROL SHALL BE IN PLACE PRIOR TO INITIATING WORK.
9. ALL TIE-INS SHALL BE CLOSELY COORDINATED WITH THE EL PASO WATER UTILITIES AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO ACTUAL CONSTRUCTION.
10. CONTRACTOR SHALL PROVIDE THE REQUIRED COUPLINGS, ELBOWS AND NECESSARY PIPING APPURTENANCES FOR A COMPLETE AND OPERATIONAL WATER SYSTEM.
11. ALL NEW VALVES SHALL BE ALIGNED PERPENDICULAR TO PROPERTY LINES.
12. 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 APPURTENANCES.
13. FIRE HYDRANTS SHALL BE INSTALLED IN THE PARKWAY AREA.
14. 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
UPTOWN CENTRE
813 KANSAS ST. STE. 300
EL PASO, TX. 79902
(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

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

WATER & SEWER:
EL PASO WATER UTILITIES
1154 HAWKINS BOULEVARD
EL PASO, TX. 79961
(915) 594-5530

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

EL PASO STREETS
CITY OF EL PASO
DEPARTMENT OF TRANSPIRATION
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) 595-5151

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

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

WARNING!
BEFORE YOU DIG
CALL 811
FOR FIELD LOCATING EXISTING UTILITIES

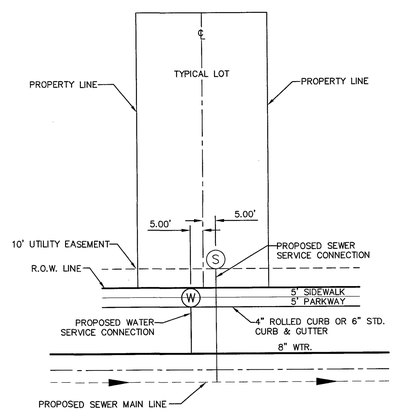
INDEX

SHEET NO.	DESCRIPTION
C12.1	CUESTA DEL SOL WATER MAIN PIPE LAYOUT
C12.2	WATER DETAILS
C12.3	WATER DETAILS
C12.4	WATER DETAILS
C12.5	WATER DETAILS
C12.6	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 PVC DR 18, C-900, CLASS 235.
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 235 (DR 18), P.V.C. PIPE
12" WTR.	PROPOSED 12" C-900, CLASS 235 (DR 18), P.V.C. PIPE
24" WTR.	FUTURE 24" WATER LINE (BY OTHERS)
	SUBDIVISION BOUNDARY LINE
	PROPERTY LINE
	STREET CENTER LINE
S S S	PROPOSED SEWER LINE (PLAN VIEW)
	PROPOSED STORM SEWER
	PROPOSED WATER CROSS CONNECTION
	PROPOSED WATER TEE CONNECTION
	PROPOSED WATER BEND CONNECTION
	PROPOSED WATER REDUCER
W	PROPOSED SERVICE CONNECTION (PLAN VIEW)
	PROPOSED FIRE HYDRANT, KENNEDY OR MUELLER MODEL
M	PROPOSED IRRIGATION WATER METER (REFERENCE LANDSCAPE/IRRIGATION PLANS)
	PROPOSED 8" PLUG
	PROPOSED GATE VALVE
	POINT OF TANGENCY
	REDUCER
	EXISTING GATE VALVE
	EXISTING FIRE HYDRANT
ExS ExS	EXISTING SEWER LINE
ExW ExW	EXISTING WATER LINE



PLAN
SERVICE LOCATION DETAIL
SCALE: N.T.S.

cea group
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

REFERENCES – BENCHMARKS
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE
ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

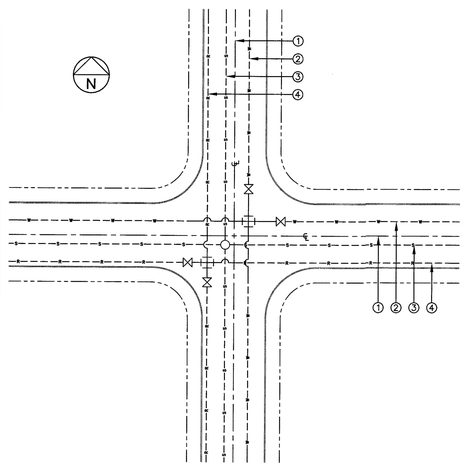
ENGINEER'S SEAL
JORGE L. AZCARATE 85075 8-21

SCALE
Horizontal: 1"=100'
Vertical: N/A
Contour Interval: N/A
DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE
WATER INDEX

SHEET NO.
C12.1



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:

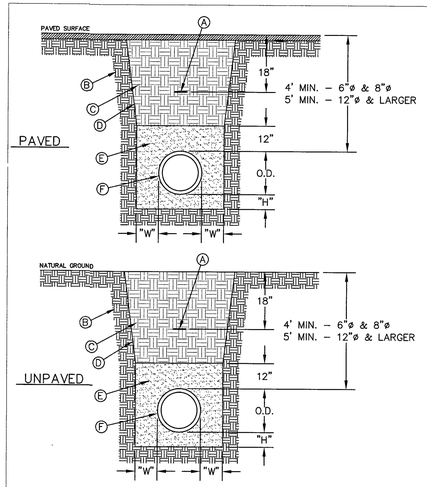
A. DISTANCES FROM CENTERLINE VARY AND SHALL BE ACCORDING TO THE FOLLOWING:

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.
44 FT.	8 FT.	3 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.	20 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	DETAIL No. 140

1 C12.2 LOCATION FOR UTILITY LINES
SCALE: NTS



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:

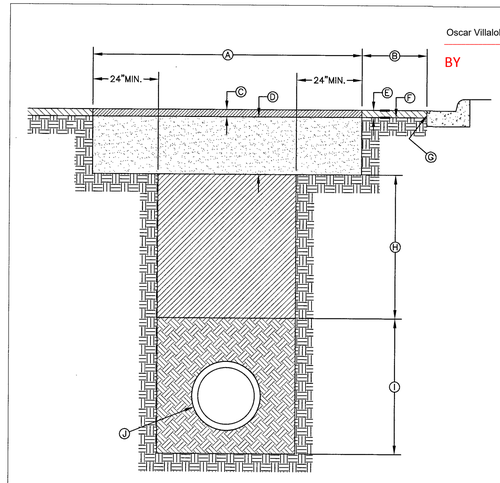
A. APPROVED MARKING TAPE.
B. UNDISTURBED STABLE MATERIAL.
C. NATIVE MATERIAL BACKFILL.
PAVED CONDITION: COMPACT TO 90% DENSITY PER ASTM D–1557 MODIFIED PROCTOR.
UNPAVED CONDITION: COMPACT TO 85% DENSITY PER ASTM D–1557 MODIFIED PROCTOR.
(*SEE NOTE #3 IF THESE PREVIOUS CONDITIONS CANNOT BE MET.)
D. SLOPE 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	DETAIL No. 171

2 C12.2 BEDDING CLASS DETAILS FOR P.V.C. PRESSURE PIPE
SCALE: NTS



GENERAL NOTES:

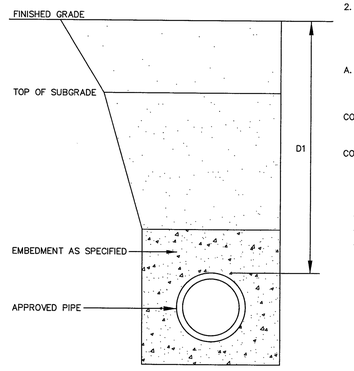
1. ALL ASPHALT CUTS MUST BE SAW CUT.
2. SOIL CEMENT SLURRY SHALL BE ALLOWED TO CURE BEFORE PAVING OR OPENING TO ALL TRAFFIC.

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	DETAIL No. 179

3 C12.2 PAVEMENT REPLACEMENT
SCALE: NTS



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

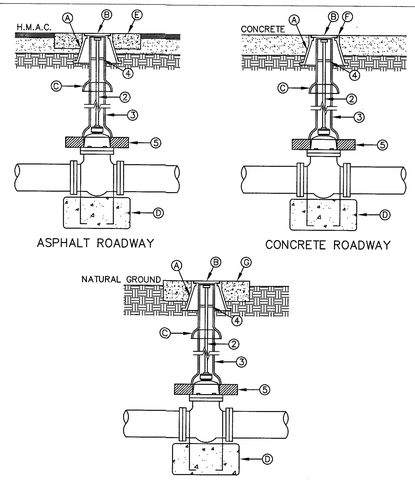
CONDITION B – NEW SUBDIVISIONS, NON–PAVED AREA

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	DETAIL No. 250

4 C12.2 COVER FOR WATER MAINS
SCALE: NTS



GENERAL NOTES:

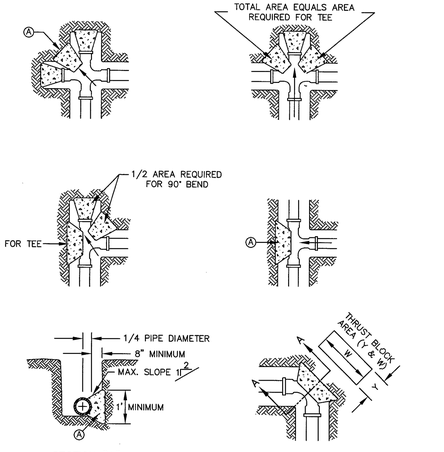
1. VALVE TYPE AND VALVE ENDS SHALL BE AS SHOWN ON THE PLANS.
2. ALL BURIED VALVES 5' AND DEEPER SHALL BE PROVIDED WITH SOLID STEEL EXTENSION STEM OPERATOR WITH 2" SQUARE AWWA NUT WITHIN 36" OF VALVE BOX COVER. NUT IS TO INDICATE DIRECTION OF ROTATION TO OPEN VALVE.
3. 8" DIA. MINIMUM VITRIFIED CLAY OR SDR 35 P.V.C. PIPE, PIPE SHALL NOT REST ON VALVE BODY.
4. ¼" THICK STEEL TRASH RING VALVE BOX INSIDE DIAMETER MINUS ⅛".
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	DETAIL No. 260

5 C12.2 GATE VLAVE INSTALLATION
SCALE: NTS



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	DETAIL No. 270

6 C12.2 CONCRETE THRUST BLOCKING
SCALE: NTS

THE CITY OF EL PASO TEXAS

REFERENCES – BENCHMARKS
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLA AVENUE AND DOMINIC ANAKIN DRIVE.
ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

Oscar Villalobos 03/08/2021
BY DATE

cea group
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

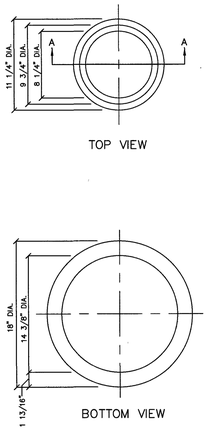
ENGINEER'S SEAL
JORGE L. AZCARATE 85075 8-21

SCALE: Horizontal: AS SHOWN Vertical: N/A Contour interval: N/A
DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

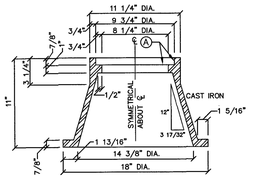
SHEET TITLE
WATER DETAILS
(SHEET 1 OF 5)

SHEET NO.
C12.2



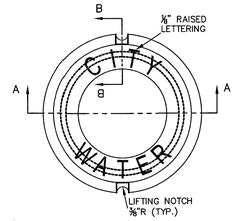
GENERAL NOTES:
1. CASTING TO BE SMOOTH AND VOID OF AIR HOLES.
2. WEIGHT OF BONNET BOX IS 95 POUNDS.

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



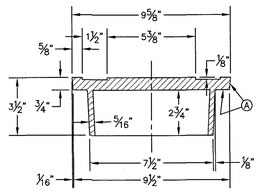
SECTION A–A

STANDARD DETAIL	DATE: 2/1994 REV:	BONNET BOX N.T.S.	el paso WATER	DETAIL No. 268

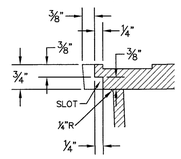


GENERAL NOTES:
1. CASTINGS TO SMOOTH AND VOID OF AIR HOLES.
2. WEIGHT OF COVER IS 18 POUNDS.

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

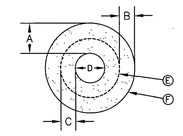


SECTION A–A

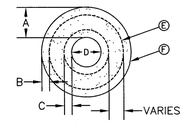


SECTION B–B

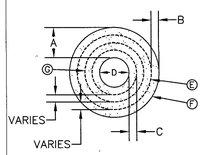
STANDARD DETAIL	DATE: 2/16/2006 REV: 12/14/2007	BONNET BOX COVER (FLIP RESISTANT) N.T.S.	el paso WATER	DETAIL No. 269–2



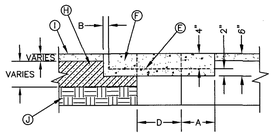
PLAN VIEW – SINGLE REBAR



PLAN VIEW – TWO REBARS



PLAN VIEW – THREE REBARS



SECTION VIEW – ASPHALT JUNCTURE

GENERAL NOTES:
1. THE CONCRETE COLLAR SHOULD BE CAST IN–PLACE CONCRETE. (MINIMUM 28 DAY COMPRESSIVE STRENGTH 4000 PSI. HIGH EARLY CONCRETE IS REQUIRED)
2. TOPS OF CONCRETE COLLAR SHALL BE FLUSH WITH ROADWAY SURFACE OR FINISHED GRADE UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.
3. ANY DISTURBED SUBGRADE UNDER THE CONCRETE COLLAR SHALL BE COMPACTED TO 95% DENSITY ± 3% OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D–1557.
4. ANY DISTURBED BASE COARSE UNDER THE CONCRETE COLLAR SHALL BE COMPACTED TO 100% DENSITY ± 2% OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D–1557.
5. PROVIDE A MINIMUM OF 1 1/2" OF CONCRETE COVER FOR ALL REINFORCEMENT STEEL.
6. REINFORCING SHALL MEET ASTM C–478 AND TRAFFIC LOADING (HS–20).
7. NO. 3 REINFORCING STEEL HOOPS SHALL BE SPACED EQUALLY.

CONSTRUCTION KEY NOTES:
E. #3 REINFORCING STEEL TYP.
F. CONCRETE COLLAR.
G. #3 REINFORCING STEEL EQUALLY SPACED.
H. COMPACTED BASE COARSE.
I. PAVEMENT.
J. COMPACTED SUBGRADE.

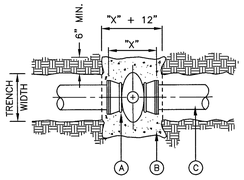
"D" DIAMETER OF PENETRATION	NUMBER OF #3 REINFORCING STEEL BARS	"A" MINIMUM CONCRETE HORIZONTAL DIMENSION FROM PENETRATION	"B" MINIMUM CLEARANCE FROM EDGE OF CONCRETE COLLAR TO CENTER OF NEAREST REBAR	"C" MINIMUM CLEARANCE FROM PENETRATION EDGE TO CENTER OF NEAREST REBAR
0" TO 6"	1	6"	1½"	1½"
6.1" TO 18"	2	8"	1½"	1½"
18.1" AND OVER	3	12"	1½"	1½"

STANDARD DETAIL	DATE: 8/9/2006 REV: 5/11/2017	CONCRETE COLLAR INSTALLATION IN PAVED AREAS N.T.S.	el paso WATER	DETAIL No. 184–1

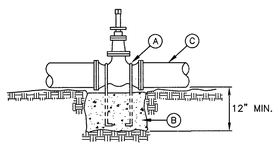
1 C12.3 BONNET BOX
SCALE: NTS

2 C12.3 BONNET BOX COVER
SCALE: NTS

3 C12.3 CONCRETE COLLAR INSTALLATION IN PAVED AREAS
SCALE: NTS



PLAN

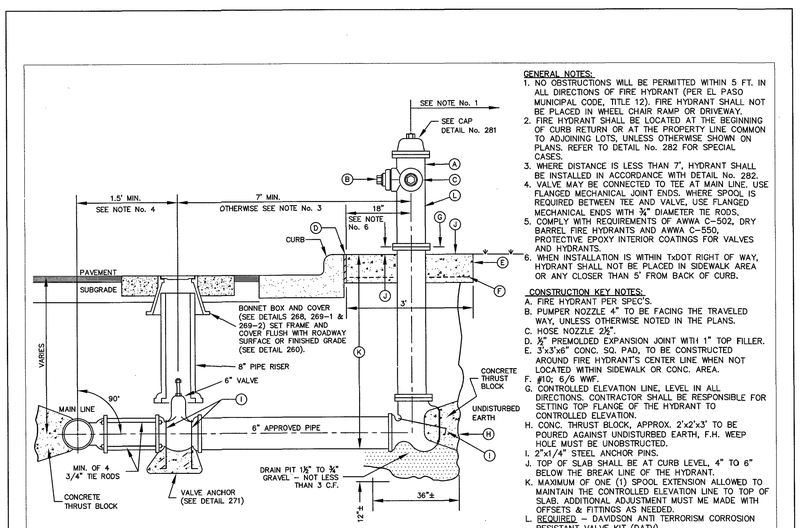


SECTION

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	DETAIL No. 271



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" TO 6" BELOW THE BREAK LINE OF THE HYDRANT.
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: 5/8/2017	FIRE HYDRANT INSTALLATION N.T.S.	el paso WATER	DETAIL No. 280–1

4 C12.3 VALVE ANCHOR
SCALE: NTS

5 C12.3 FIRE HYDRANT INSTALLATION
SCALE: NTS

Oscar Villalobos 03/08/2021
BY DATE

REFERENCES – BENCHMARKS
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEBALLA AVENUE AND DOMINIC ANAKIN DRIVE.
ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

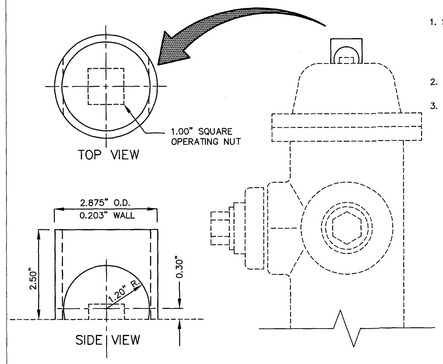
ENGINEER'S SEAL
THE STATE OF TEXAS
JORGE L. ACEVEDO
88075
LICENSED PROFESSIONAL ENGINEER
8-21

SCALE
Horizontal: AS SHOWN
Vertical: N/A
Contour Interval: N/A
DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE
WATER DETAILS
(SHEET 2 OF 5)

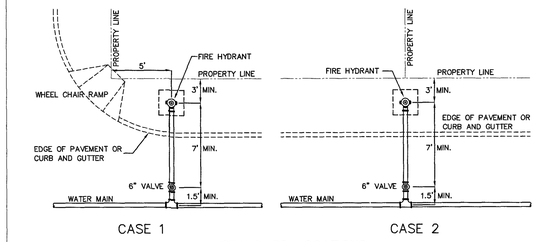
SHEET NO.
C12.3



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	DETAIL No. 281



GENERAL NOTES:

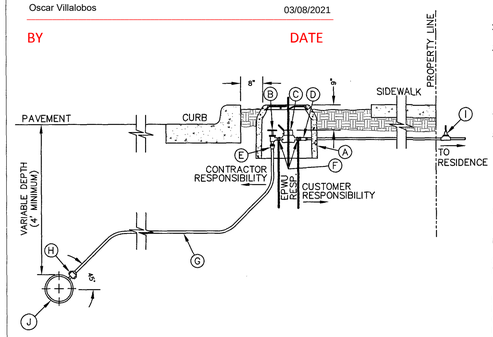
1. FOR CASE 1 FIRE HYDRANT SHALL BE LOCATED AT A DISTANCE OF 5 FT. MINIMUM FROM THE PROPERTY LINE OR AT THE BEGINNING OF CURB RETURN.
2. FOR CASE 2 FIRE HYDRANT SHALL BE LOCATED AT THE PROPERTY LINE COMMON TO ADJOINING LOTS.
3. FOR CASE 3 AND IV WHERE THE DISTANCE BETWEEN THE VALVE AND THE HYDRANT IS 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 5 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: 5/8/2017	FIRE HYDRANT LOCATIONS N.T.S.	el paso WATER	DETAIL No. 282

THE CITY OF EL PASO TEXAS

Oscar Villalobos 03/08/2021

BY DATE



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:

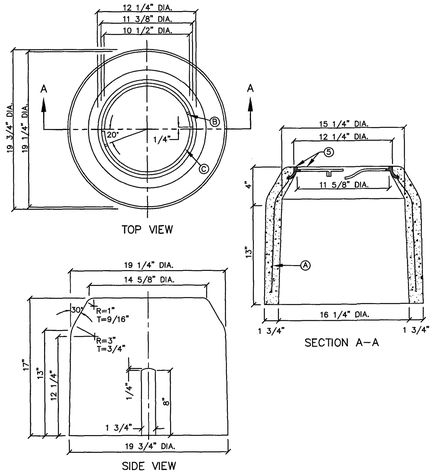
A. METER BOX TYPE "A" (SEE DETAILS 291 & 292) SHALL BE SET SLIGHTLY HIGHER THAN SURROUNDING GROUND OR AT CURB LEVEL.
B. 3/4" BALL ANGLE SERVICE VALVE WITH PADLOCK WINGS.
C. WATER METER (CENTER INSIDE METER BOX).
D. WHEN REQUIRED BY EPWU, A DUAL CHECK BACKFLOW PREVENTER SHALL BE INSTALLED ON THE OUTLET 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: 5/10/2017	SERVICE LINE ¾" AND 1" INSTALLATION BY CONTRACTOR N.T.S.	el paso WATER	DETAIL No. 290-4

1 C12.4 FIRE HYDRANT CAP
SCALE: NTS

2 C12.4 FIRE HYDRANT LOCATIONS
SCALE: NTS

3 C12.4 SERVICE LINE 3/4" AND 1" INSTALLATION
SCALE: NTS



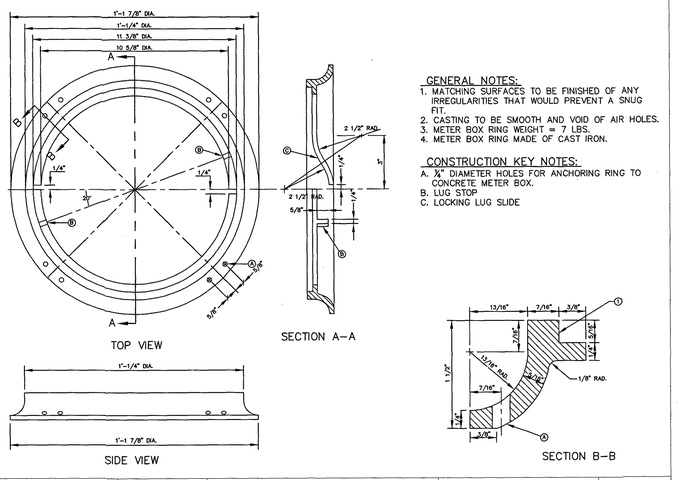
GENERAL NOTES:

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	DETAIL No. 291



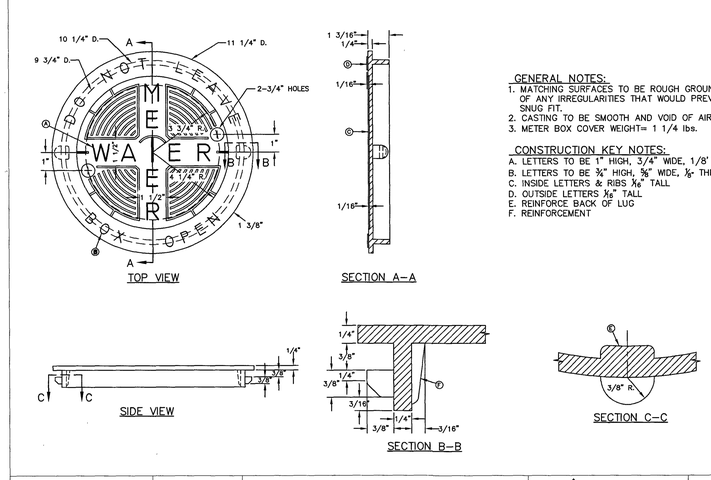
GENERAL NOTES:

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	DETAIL No. 300



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, ⅝" 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	DETAIL No. 301

4 C12.4 METER BOX TYPE "A" FOR 3/4" SERVICE INSTALLATION
SCALE: NTS

5 C12.4 METER BOX RING FOR TYPE "A" & "B" METER BOXES
SCALE: NTS

6 C12.4 METER BOX COVER FOR TYPE "A" & "B" METER BOXES
SCALE: NTS

REFERENCES – BENCHMARKS
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC LANNING DRIVE
ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

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TEXAS REGISTERED ENGINEERING FIRM F-4564

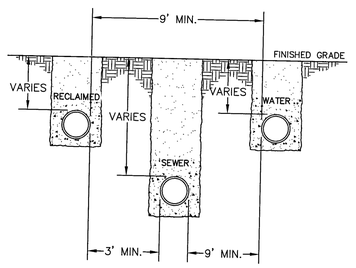
ENGINEER'S SEAL
STATE OF TEXAS JORGE L. AZCARATE 85075 LICENSED PROFESSIONAL ENGINEER
8-21

SCALE
Horizontal: AS SHOWN
Vertical: N/A
Contour Interval: N/A
DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: U.L.A.
JOB No. 3049-002

PROJECT TITLE
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE
WATER DETAILS
(SHEET 3 OF 5)

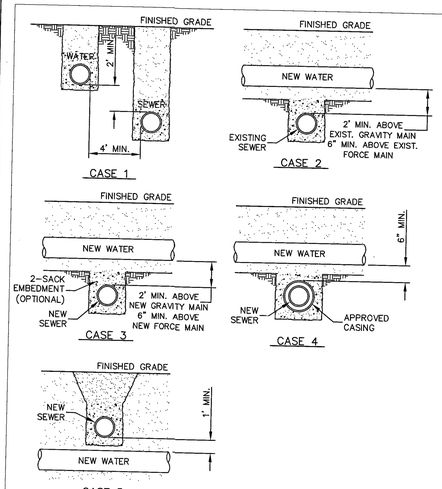
SHEET NO.
C12.4



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	DETAIL No. 160



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.

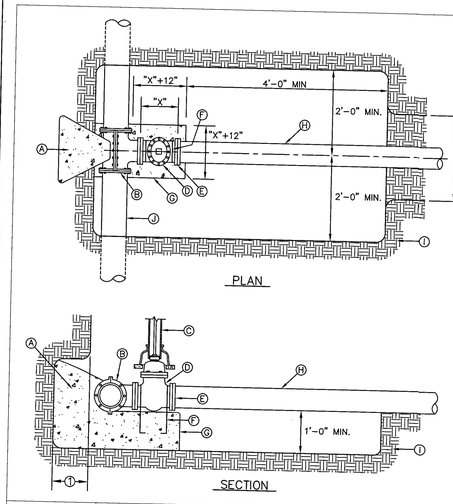
CASE 2. NEW POTABLE WATER MAIN CROSSING EXISTING GRAVITY SANITARY SEWER MAIN OR EXISTING FORCE MAIN. (PER TCEQ §290.44(e)(4)(B)(i) AND §290.44(e)(4)(B)(iii)).
- LOCATION: WATER ABOVE SEWER OR FORCE MAIN.
- SEWER MATERIALS: EXISTING GRAVITY MAIN (PVC SDR35 OR CLAY) OR FORCE MAIN TO REMAIN IF NOT LEAKING-IF 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)(vi)).
- 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 PCTABLE WATER MAIN CROSSING NEW GRAVITY SANITARY SEWER MAIN OR NEW FORCE MAIN. (PER TCEQ §290.44(e)(4)(B)(v)(III)).
- 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)(v)(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	DETAIL No. 161



SECTION

GENERAL NOTES:
1. THRUST BLOCKING SHALL EXTEND TO UNDISTURBED EARTH.
2. TAPPING SLEEVE SHALL BE 18" MINIMUM FROM ANY BELL, COUPLING, VALVE OR FITTING LOCATED ALONG EXISTING WATER LINE TO BE TAPPED.
3. REPLACE EXCAVATED MATERIAL WITH CEMENT STABILIZED BACKFILL PRIOR TO PAVING.
4. JOINTS AND BOLTS SHALL BE CLEAR OF CONCRETE.
5. INSTALL PERMANENT THRUST BLOCKING UNDER VALVE BEFORE TAP IS MADE. JOINTS AND BOLTS TO BE CLEAR OF CONCRETE.

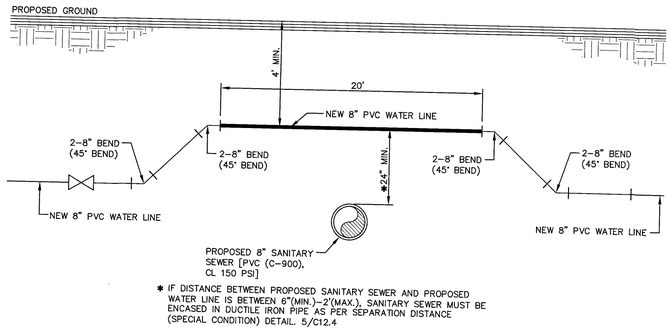
CONSTRUCTION KEY NOTES:
A. CONCRETE THRUST BLOCKING, PER DETAIL 270.
B. TAPPING SLEEVE.
C. RISER INSTALLATION, PER DETAIL 260.
D. TAPPING VALVE.
E. VALVE ENDS FOR TYPE OF PIPE INSTALLED.
F. 2-#5 REBAR HAIRPINS, PAINT UNEMBEDDED PORTION OF BARS WITH 2-COATS OF COAL TAR EPOXY, THEN COVER WITH 2" MINIMUM OF CEMENT MORTAR.
G. CONCRETE VALVE SUPPORT, PER DETAIL 271.
H. NEW WATER LINE TO BE INSTALLED.
I. UNDISTURBED EARTH.
J. EXISTING WATER MAIN TO BE TAPPED.

STANDARD DETAIL	DATE: 9/1994 REV: 8/9/2006	TAPPING SLEEVE AND VALVE INSTALLATION N.T.S.	el paso WATER	DETAIL No. 266

1 C12.5 SEPARATION DISTANCE POTABLE WATER, SANITARY SEWER AND RECLAIMED WATER
SCALE: NTS

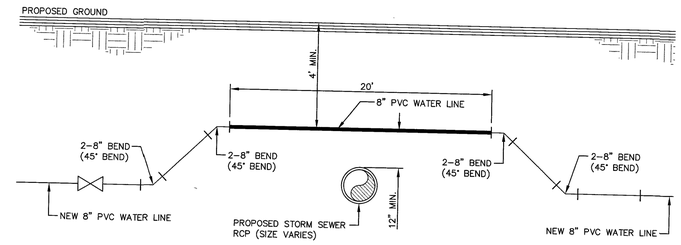
2 C12.5 SEPARATION DISTANCE SANITARY SEWER AND POTABLE WATER (SPECIAL CONDITIONS)
SCALE: NTS

3 C12.5 TAPPING SLEEVE AND VALVE INSTALLATION

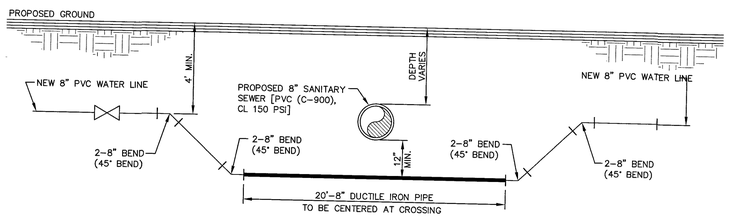


* IF DISTANCE BETWEEN PROPOSED SANITARY SEWER AND PROPOSED WATER LINE IS BETWEEN 6"(MIN.)-2'(MAX.), SANITARY SEWER MUST BE ENCASED IN DUCTILE IRON PIPE AS PER SEPARATION DISTANCE (SPECIAL CONDITION) DETAIL. 5/C12.4

4 C12.5 WATER LINE OVER SANITARY SEWER CROSSING DETAIL
SCALE: NTS



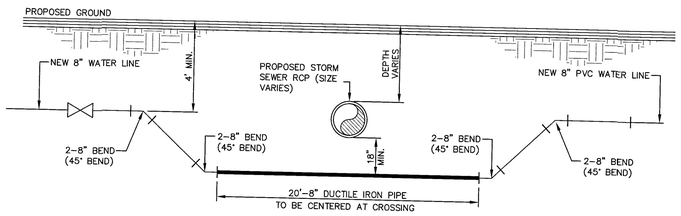
5 C12.5 WATER LINE OVER STORM SEWER CROSSING DETAIL
SCALE: NTS



6 C12.5 WATER LINE UNDER SANITARY SEWER CROSSING DETAIL
SCALE: NTS

THE CITY OF EL PASO TEXAS

Oscar Villalobos 03/08/2021
BY DATE



7 C12.5 WATER LINE UNDER STORM SEWER CROSSING DETAIL
SCALE: NTS

REFERENCES - BENCHMARKS
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANARKIS DRIVE
ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

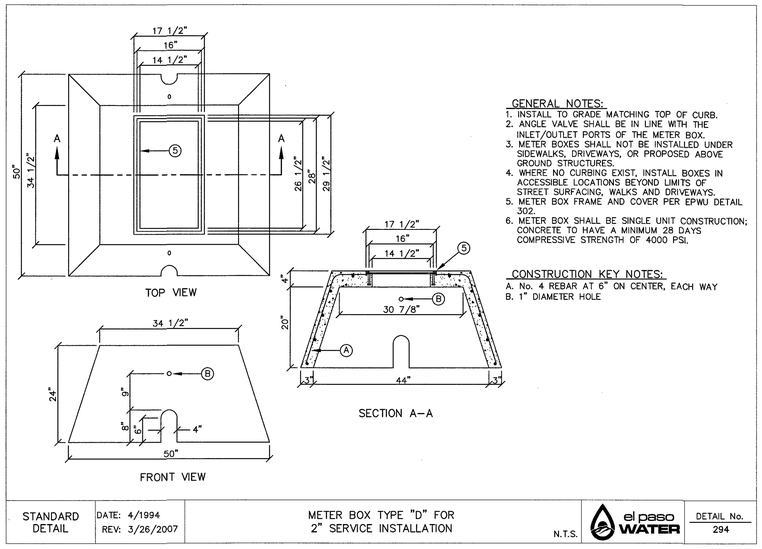
casa group
813 N. Kansas St. Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL
JORGE L. AZCARATE 85075 LICENSED PROFESSIONAL ENGINEER 8-21

SCALE
Horizontal: AS SHOWN
Vertical: N/A
Contour Interval: N/A
DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE
WATER DETAILS
(SHEET 4 OF 5)
SHEET NO.
C12.5

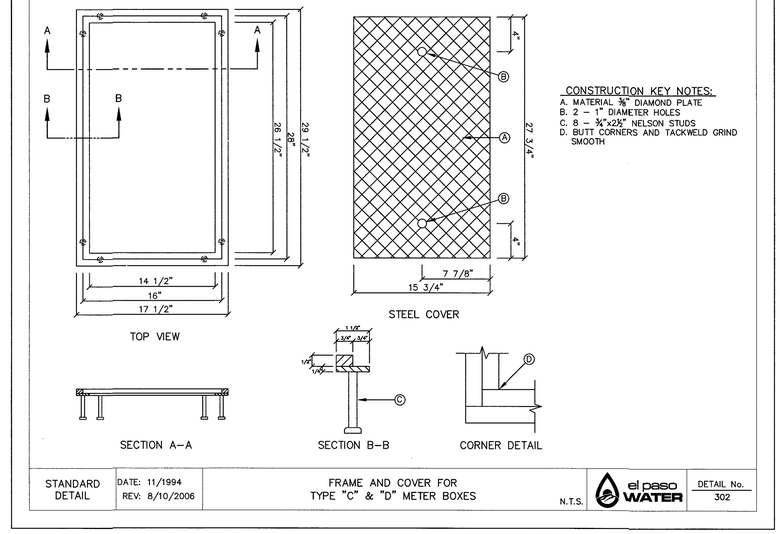


GENERAL NOTES:
1. INSTALL TO GRADE MATCHING TOP OF CURB.
2. ANGLE VALVE SHALL BE IN LINE WITH THE INLET/OUTLET PORTS OF THE METER BOX.
3. METER BOXES SHALL NOT BE INSTALLED UNDER SIDEWALKS, DRIVEWAYS, OR PROPOSED ABOVE GROUND STRUCTURES.
4. WHERE NO CURBING EXIST, INSTALL BOXES IN ACCESSIBLE LOCATIONS BEYOND LIMITS OF STREET SURFACING, WALKS AND DRIVEWAYS.
5. METER BOX FRAME AND COVER PER EPWU DETAIL 302.
6. METER BOX SHALL BE SINGLE UNIT CONSTRUCTION; CONCRETE TO HAVE A MINIMUM 28 DAYS COMPRESSIVE STRENGTH OF 4000 PSI.

CONSTRUCTION KEY NOTES:
A. No. 4 REBAR AT 6" ON CENTER, EACH WAY
B. 1" DIAMETER HOLE

STANDARD DETAIL	DATE: 4/1994 REV: 3/26/2007	METER BOX TYPE "D" FOR 2" SERVICE INSTALLATION	N.T.S.	el paso WATER	DETAIL No. 294

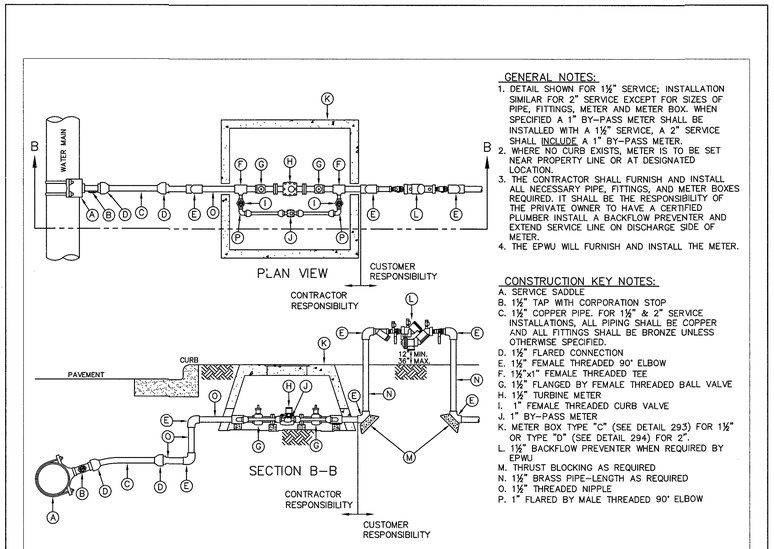
1 / C12.6 METER BOX TYPE "D" FOR 2" SERVICE INSTALLATION
SCALE: N.T.S.



CONSTRUCTION KEY NOTES:
A. MATERIAL ⅜" DIAMOND PLATE
B. 2 – 1" DIAMETER HOLES
C. 8 – ¾"x2½" NELSON STUDS
D. BUTT CORNERS AND TACKWELD GRIND SMOOTH

STANDARD DETAIL	DATE: 11/1994 REV: 8/10/2006	FRAME AND COVER FOR TYPE "C" & "D" METER BOXES	N.T.S.	el paso WATER	DETAIL No. 302

2 / C12.6 FRAME AND COVER FOR TYPE "C" & "D" METER BOXES DETAIL
SCALE: N.T.S.



GENERAL NOTES:
1. DETAIL SHOWN FOR 1½" SERVICE; INSTALLATION SIMILAR FOR 2" SERVICE EXCEPT FOR SIZES OF PIPE, FITTINGS, METER AND METER BOX. WHEN SPECIFIED A 1" BY-PASS METER SHALL BE INSTALLED WITH A 1½" SERVICE, A 2" SERVICE SHALL INCLUDE A 1" BY-PASS METER.
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. THE EPWU WILL FURNISH AND INSTALL THE METER.

CONSTRUCTION KEY NOTES:
A. SERVICE SADDLE
B. 1½" TAP WITH CORPORATION STOP
C. 1½" COPPER PIPE. FOR 1½" & 2" SERVICE INSTALLATIONS, ALL PIPING SHALL BE COPPER AND ALL FITTINGS SHALL BE BRONZE UNLESS OTHERWISE SPECIFIED.
D. 1½" FLARED CONNECTION
E. 1½" FEMALE THREADED 90° ELBOW
F. 1½"x1" FEMALE THREADED TEE
G. 1½" FLANGED BY FEMALE THREADED BALL VALVE
H. 1½" TURBINE METER
I. 1" FEMALE THREADED CURB VALVE
J. 1" BY-PASS METER
K. METER BOX TYPE "C" (SEE DETAIL 293) FOR 1½" OR TYPE "D" (SEE DETAIL 294) FOR 2".
L. 1½" BACKFLOW PREVENTER WHEN REQUIRED BY EPWU
M. THRUST BLOCKING AS REQUIRED
N. 1½" BRASS PIPE–LENGTH AS REQUIRED
O. 1½" THREADED NIPPLE
P. 1" FLARED BY MALE THREADED 90° ELBOW

STANDARD DETAIL	DATE: 4/21/1998 REV: 3/9/2011	SERVICE LINE 1½" AND 2" INSTALLATION BY CONTRACTOR	N.T.S.	el paso WATER	DETAIL No. 290-5

3 / C12.6 SERVICE LINE 1 1/2" AND 2" INSTALLATION BY CONTACTOR
SCALE: N.T.S.

REFERENCES – BENCHMARKS
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEBALLA AVENUE AND DOMINIC ANAKIN DRIVE.
ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

cea group
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL
JORGE L. AZCARATE 85075 LICENSED PROFESSIONAL ENGINEER
8-21

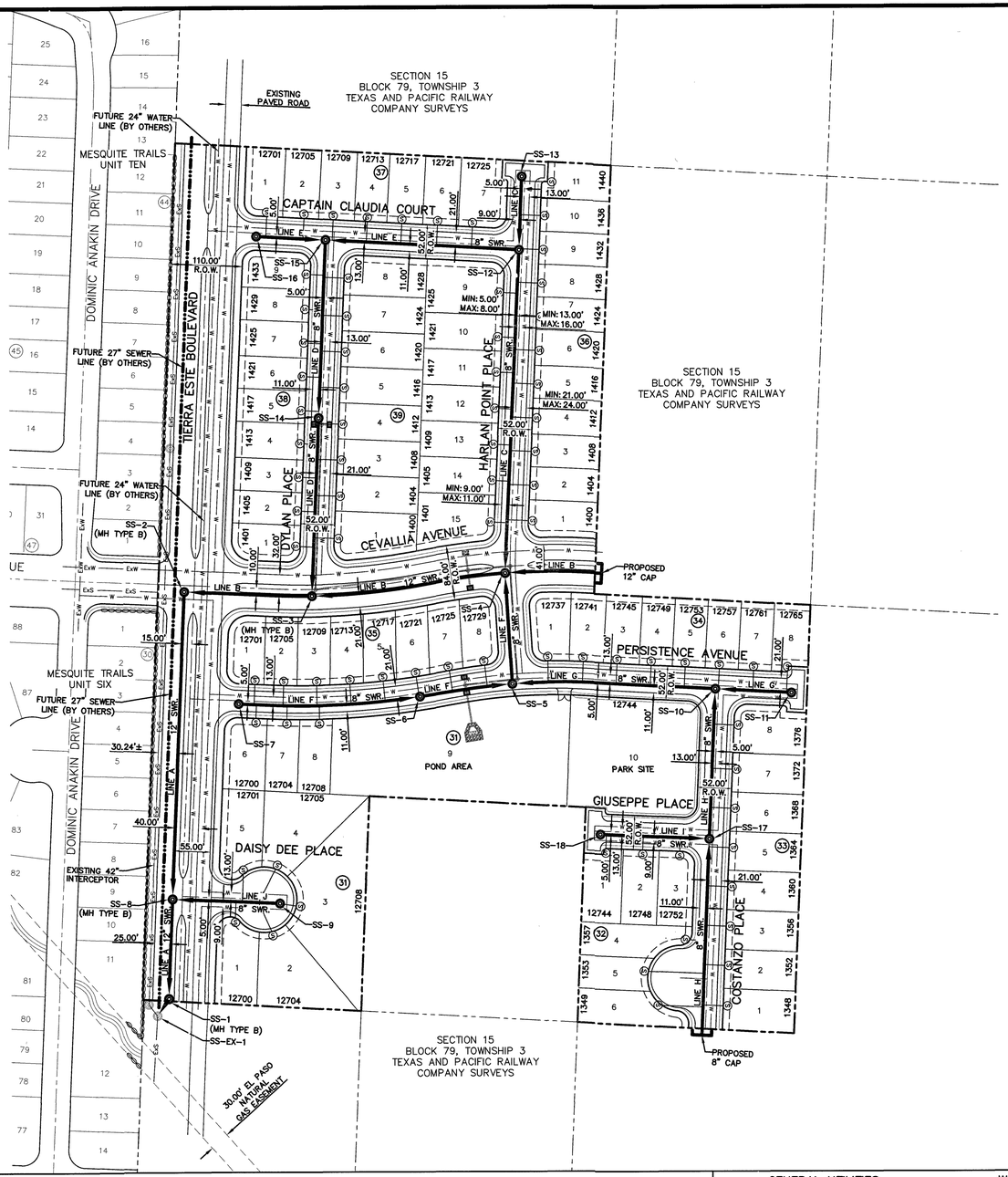
SCALE
Horizontal: AS SHOWN
Vertical: N/A
Contour Interval: N/A
DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

THE CITY OF EL PASO TEXAS

SHEET TITLE
WATER DETAILS
(SHEET 5 OF 5)
SHEET NO.
C12.6

Oscar Villalobos 03/08/2021
BY DATE



THE CITY OF EL PASO TEXAS

Oscar Villalobos 03/08/2021

BY DATE

WASTEWATER QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
1	12" PVC SDR35 GRAVITY LINE	1296	LINEAR FEET
2	8" PVC SDR35 GRAVITY LINE	3437	LINEAR FEET
3	STANDARD WASTEWATER MANHOLE (0'-8' DEEP)	11	EACH
4	STANDARD WASTEWATER MANHOLE (8'-12' DEEP)	2	EACH
5	STANDARD WASTEWATER MANHOLE (12'-22' DEEP)	2	EACH
6	DROP CONNECTION MANHOLE (ALL DEPTHS)	3	EACH
7	24"ø STEEL CASING	20	LINEAR FEET
8	16"ø STEEL CASING	60	LINEAR FEET
9	4" WASTEWATER SERVICE CONNECTION	80	EACH

INDEX

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, AND WATER LINES.

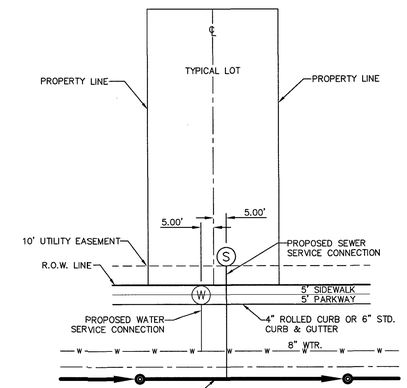
LEGEND

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	PROPOSED SEWER LINE (PLAN VIEW)
	FUTURE 27" SEWER LINE (BY OTHERS)
	PROPOSED SEWER LINE ON ANOTHER SHEET (PLAN VIEW)
P.V.C. @ 0.33% 311 GPM	PROPOSED SEWER LINE (PROFILE VIEW)
	PROPOSED SEWER LINE (PROFILE VIEW)
S	PROPOSED SERVICE CONNECTION (PLAN VIEW)
	EXISTING MANHOLE (PLAN VIEW)
	PROPOSED MANHOLE (PROFILE VIEW)
	EXISTING MANHOLE (PROFILE VIEW)

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 DRAWNGS, THE PROPOSED SEWER MAINS AND SEWER MANHOLES SHALL BE INSTALLED NO LESS THAN TEN (10') FEET 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 FORTY-EIGHT (48") INCHES 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. AS-BUILT STATIONING, OFFSET FROM R.O.W. AND INVERT ELEVATIONS SHALL BE ACCURATELY RECORDED BY THE CONTRACTOR ON A CLEAN SET OF PLANS FOR EACH MANHOLE, SERVICE CONNECTION AND/OR STUB-OUT, WITH RESPECT TO THE APPROPRIATE PROJECT CONTROL POINT.
6. THE EL PASO WATER UTILITIES AND CITY OF EL PASO MUST BE NOTIFIED FORTY-EIGHT (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.
7. EXISTING STREETS, DRIVEWAYS AND ALL OTHER MISCELLANEOUS STRUCTURES DAMAGE OR REMOVED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO ORIGINAL OR BETTER THAN ORIGINAL CONDITION.
8. 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
UPTOWN CENTRE
813 KANSAS ST. STE. 300
EL PASO, TX. 79902
(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

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

WATER & SEWER:
EL PASO WATER UTILITIES
1154 HAWKINS BOULEVARD
EL PASO, TX. 79961
(915) 594-5530

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

EL PASO STREETS
CITY OF EL PASO
DEPARTMENT OF TRANSPIRATION
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) 595-5151

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

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

WARNING!
BEFORE YOU DIG
CALL 811
FOR FIELD LOCATING EXISTING UTILITIES

REFERENCES - BENCHMARKS
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE.
ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

cea group
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL
STATE OF TEXAS JORGE L. AZCARATE 85075 LICENSED PROFESSIONAL ENGINEER 8-21

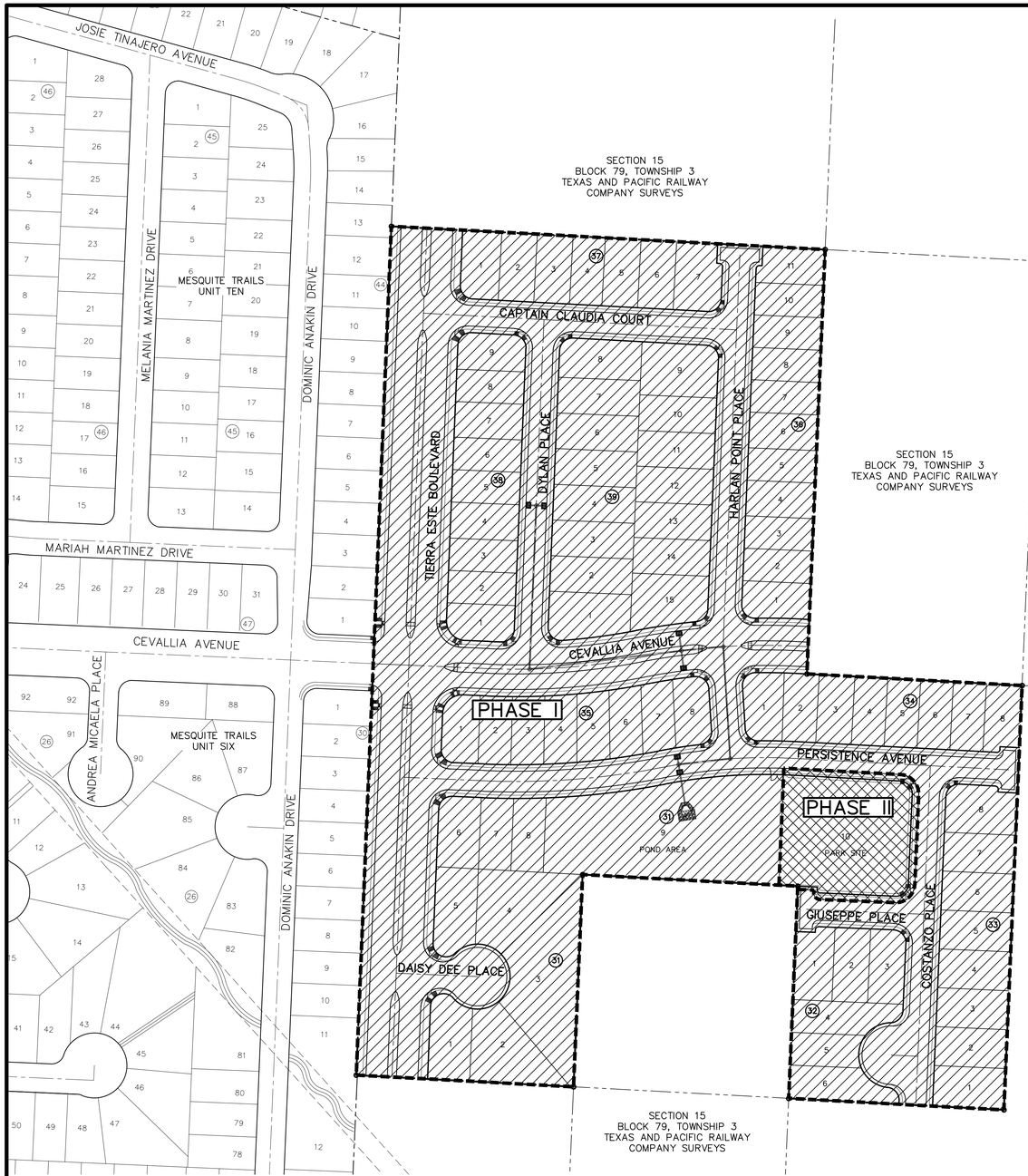
SCALE
Horizontal: 1" = 100'
Vertical: N/A
Contour Interval: N/A

DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE
SANITARY SEWER INDEX

SHEET NO.
C13.1



UTILITY LOCATOR SERVICES	
PASEO DEL ESTE MUNICIPAL UTILITY DISTRICT No. 1	(915) 852-1465
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
SPECTRUM	(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

WARNING !
BEFORE YOU DIG
CALL 811
FOR FIELD LOCATING EXISTING UTILITIES

LEGEND

PHASE I

PHASE II

PHASE	AREA (ACRES)	RESIDENTIAL LOTS
PHASE I	21.68	80
PHASE II	0.92	0

BENCHMARK:

CITY MONUMENT AT CENTERLINE INTERSECTION OF CEVALLIA AND DOMINIC ANAKIN DRIVE.
ELEVATION: 3990.65' (CITY DATUM)

FLOOD ZONE:

THIS SUBDIVISION LIES WITHIN ZONE "X" AS DESIGNATED BY F.E.M.A.; EL PASO COUNTY, COMMUNITY PANEL NO. 480212 0250 B.

CONSTRUCTION PHASING PLAN
SCALE: 1" = 100'

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

REFERENCES – BENCHMARKS

FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE. ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

cea group
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL
STATE OF TEXAS
JORGE L. AZCARATE
85075
REGISTERED
PROFESSIONAL
ENGINEER
5-6-22

SCALE
Horizontal: 1"=100'
Vertical: N/A
Contour Interval: N/A
DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE

CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE
CONSTRUCTION PHASING PLAN

SHEET NO.
C11.4

LINE TABLE		
LINE	BEARING	LENGTH
L1	N34°28'33"E	31.00

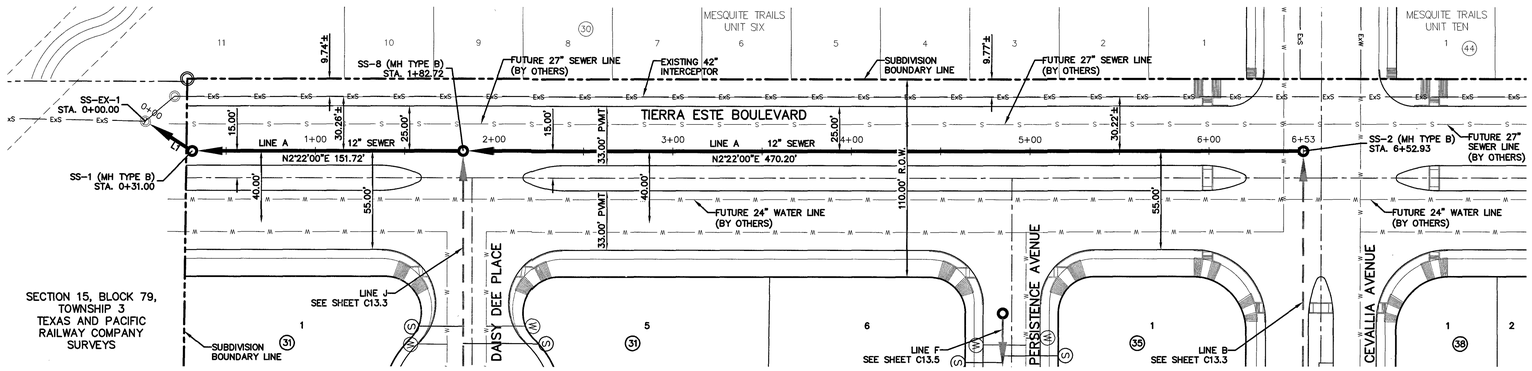
UTILITY LOCATOR SERVICES	
PASEO DEL ESTE MUNICIPAL UTILITY DISTRICT No. 1	(915) 852-1465
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
SPECTRUM	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579

WARNING ! BEFORE YOU DIG

CALL 811

FOR FIELD LOCATING EXISTING UTILITIES

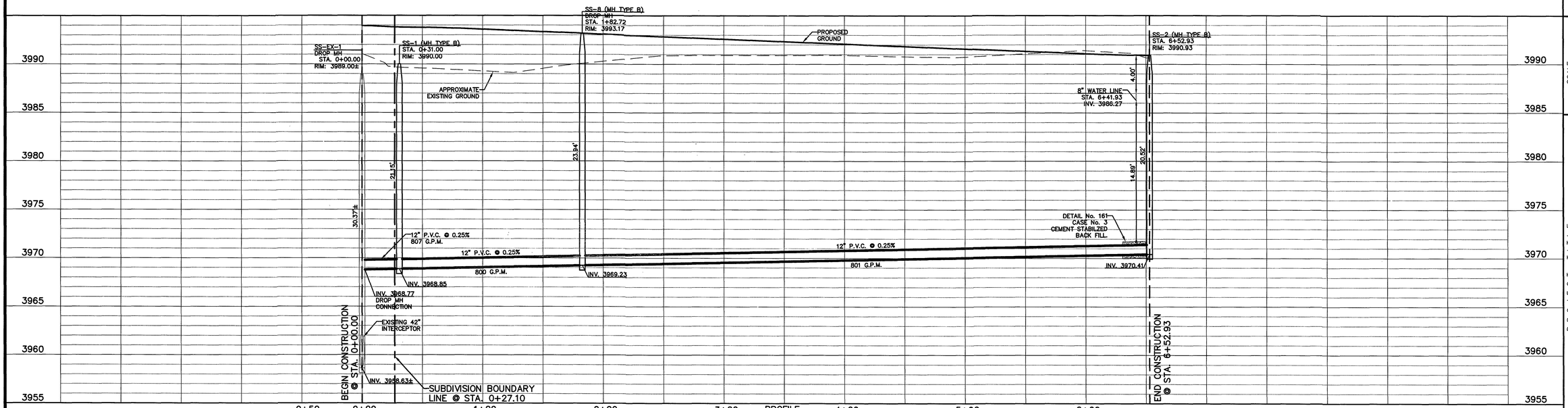
LINE A



PLAN

LEGEND:

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



REFERENCES – BENCHMARKS

FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ALARCON DRIVE
ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL

STATE OF TEXAS — DAVID L. ACUNTO — 85075 — LICENSED PROFESSIONAL ENGINEER — 4-21

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

DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE

CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE

SANITARY SEWER PLAN & PROFILE LINE A

SHEET NO.

C13.2

THE CITY OF EL PASO — TEXAS

Oscar Villalobos — 03/08/2021

BY — DATE

LINE TABLE		
LINE	BEARING	LENGTH
L1	S86°55'35"E	23.39

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	1010.43	58.57	29.29	58.56	S89°09'42"E	3°19'16"
C2	1010.00	179.83	90.15	179.59	N84°04'35"E	10°12'05"
C3	1025.59	118.96	59.54	118.89	N82°25'05"E	6°38'44"
C4	990.00	124.63	62.40	124.55	N89°28'01"E	7°12'47"

UTILITY LOCATOR SERVICES

PASEO DEL ESTE MUNICIPAL UTILITY DISTRICT No. 1	(915) 852-1465
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
SPECTRUM	(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

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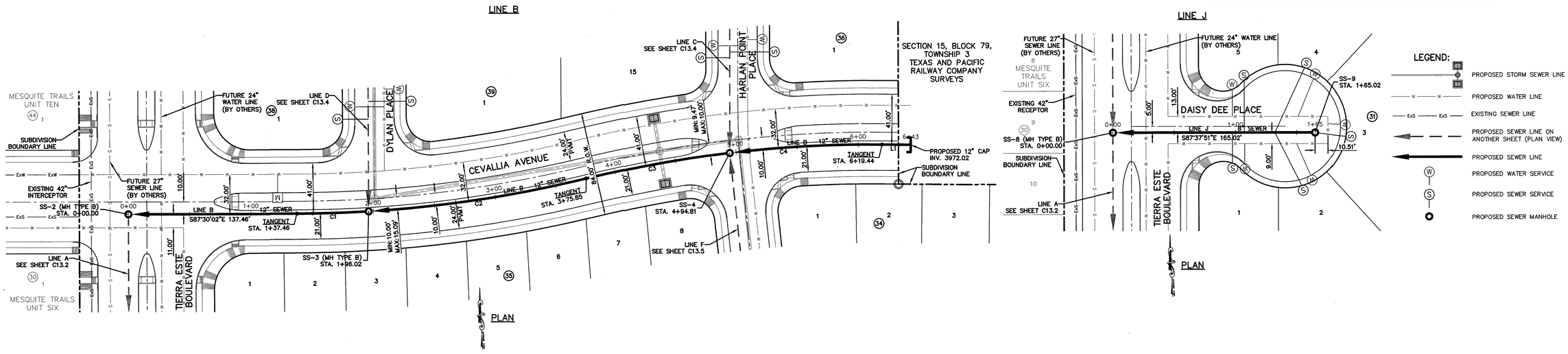
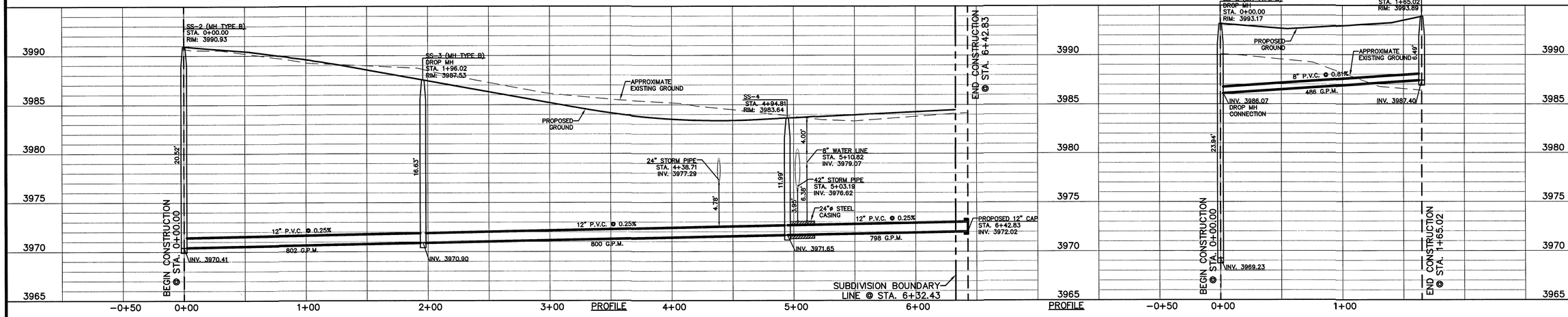
CALL 811
FOR FIELD LOCATING EXISTING UTILITIES





cea
813 N. Kansas St.
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915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

REFERENCES – BENCHMARKS
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE. ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

ENGINEER'S SEAL
STATE OF TEXAS — JORGE L. AZCARATE — 85075 — REGISTERED PROFESSIONAL ENGINEER — 8-21

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

DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

THE CITY OF EL PASO — TEXAS

Oscar Villalobos — 03/08/2021
BY — DATE

SHEET TITLE
SANITARY SEWER PLAN & PROFILE LINE B & J

SHEET NO.
C13.3

UTILITY LOCATOR SERVICES

PASEO DEL ESTE MUNICIPAL UTILITY DISTRICT No. 1	(915) 852-1465
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
SPECTRUM	(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

WARNING !
BEFORE YOU DIG
CALL 811
FOR FIELD LOCATING EXISTING UTILITIES

REFERENCES – BENCHMARKS
FOUND, CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE.
ELEVATION: 3990.65' (CITY DATUM)

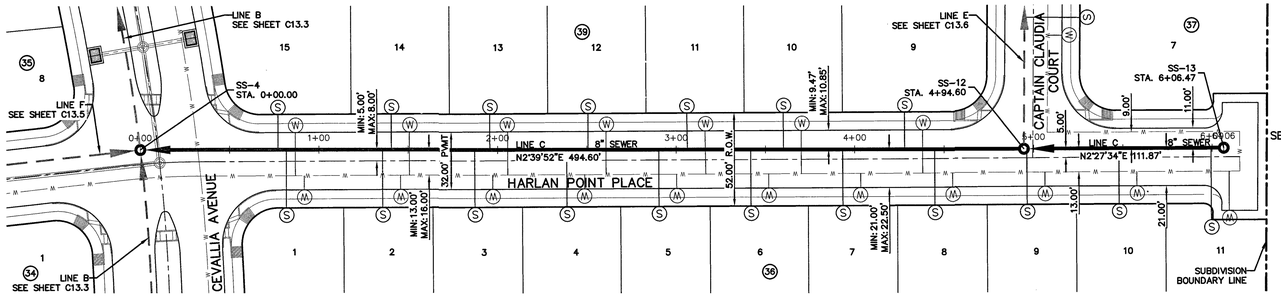
BY	DATE	REVISIONS

caa group
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

THE CITY OF EL PASO — TEXAS

Oscar Villalobos — 03/08/2021
BY — DATE

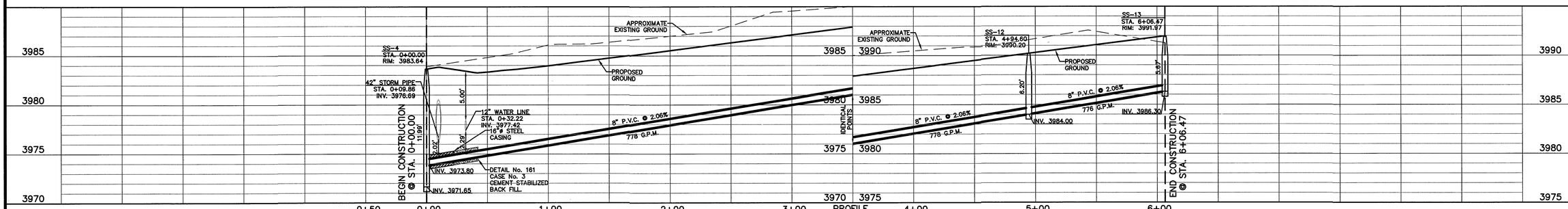
LINE C



SECTION 15, BLOCK 79, TOWNSHIP 3 TEXAS AND PACIFIC RAILWAY COMPANY SURVEYS

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

PLAN



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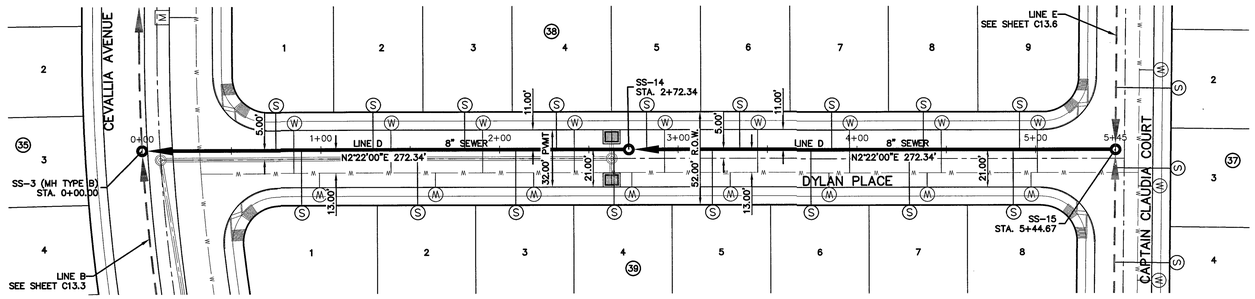
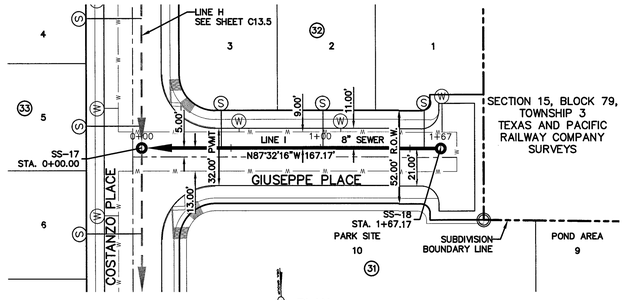


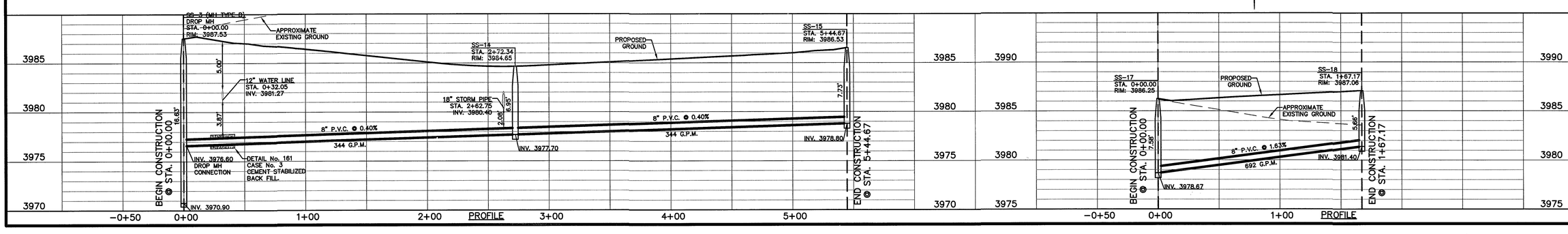
PLAN

LINE I



SECTION 15, BLOCK 79, TOWNSHIP 3 TEXAS AND PACIFIC RAILWAY COMPANY SURVEYS

PLAN



ENGINEER'S SEAL
JORGE L. AZCARATE 85075 LICENSED PROFESSIONAL ENGINEER 8-21

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

DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE
SANITARY SEWER PLAN & PROFILE LINE C, D & I

SHEET NO.
C13.4

LINE TABLE		
LINE	BEARING	LENGTH
L1	S81°13'02"W	67.04
L2	N87°30'02"W	46.97

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	1000.00	76.14	38.09	76.12	S83°23'55"W	4°21'46"
C2	1178.00	231.96	116.36	231.59	S86°51'30"W	11°16'56"

UTILITY LOCATOR SERVICES

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U.S. SPRINT TELECOMM	(800) 521-0579

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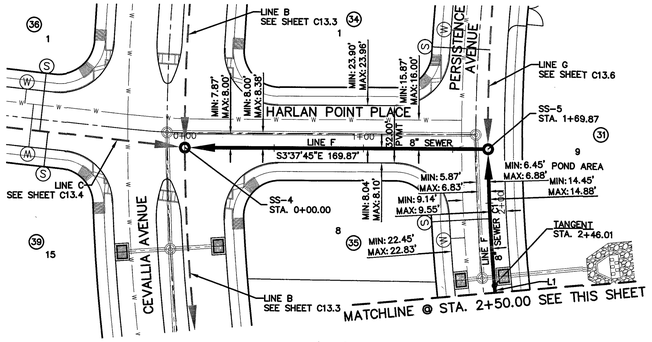
LINE F



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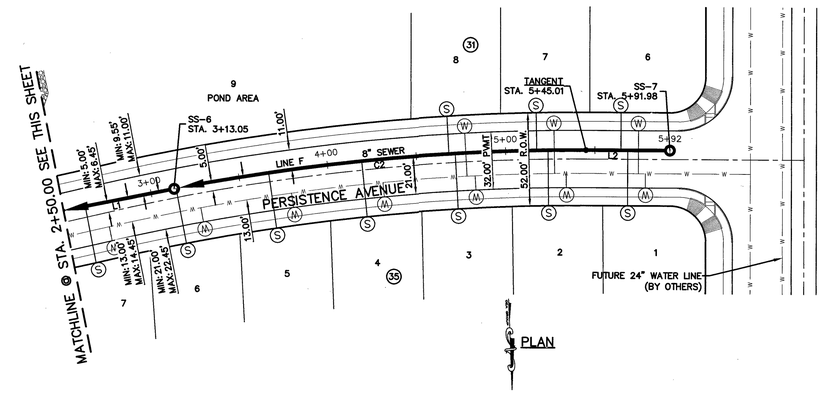
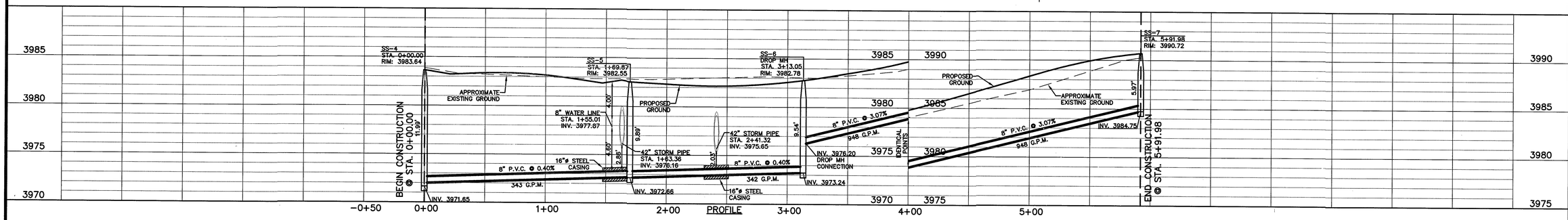


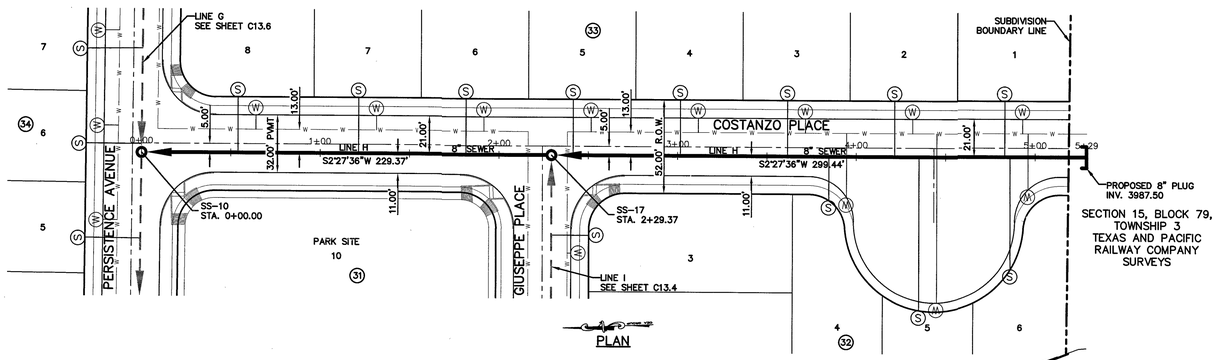
PLAN

LEGEND:

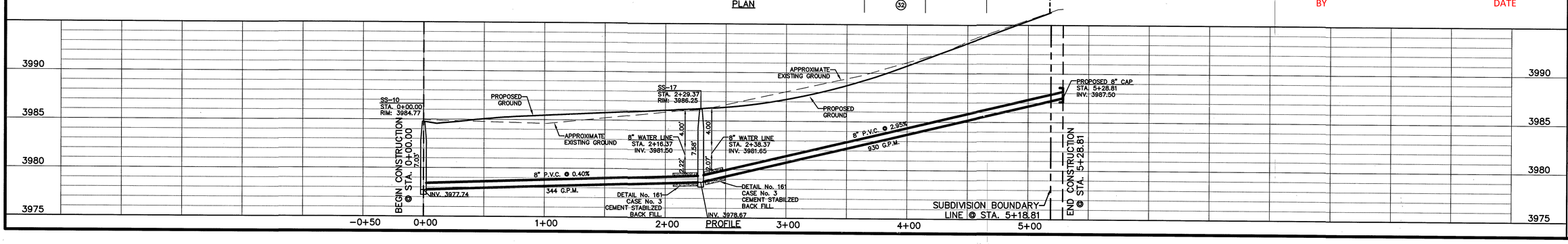
- PROPOSED STORM SEWER LINE
- PROPOSED WATER LINE
- EXISTING SEWER LINE
- PROPOSED SEWER LINE ON ANOTHER SHEET (PLAN VIEW)
- PROPOSED SEWER LINE
- PROPOSED WATER SERVICE
- PROPOSED SEWER SERVICE
- PROPOSED SEWER MANHOLE



LINE H



PLAN



Oscar Villalobos — 03/08/2021
BY — DATE

REFERENCES – BENCHMARKS
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE
ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

cea group
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL
STATE OF TEXAS — JORGE L. AZCARATE — 86075 — LICENSED PROFESSIONAL ENGINEER — 8-21

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

DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE
SANITARY SEWER PLAN & PROFILE LINE F & H

SHEET NO.
C13.5

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	1000.00	130.74	65.47	130.65	N89°19'32"E	7°29'28"

UTILITY LOCATOR SERVICES

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DATE	REVISIONS	BY

caa group
813 N. Kansas St.
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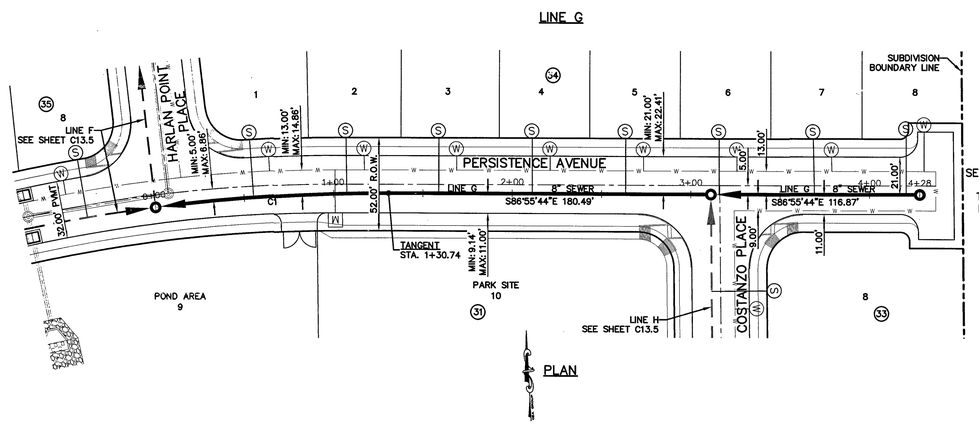
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564



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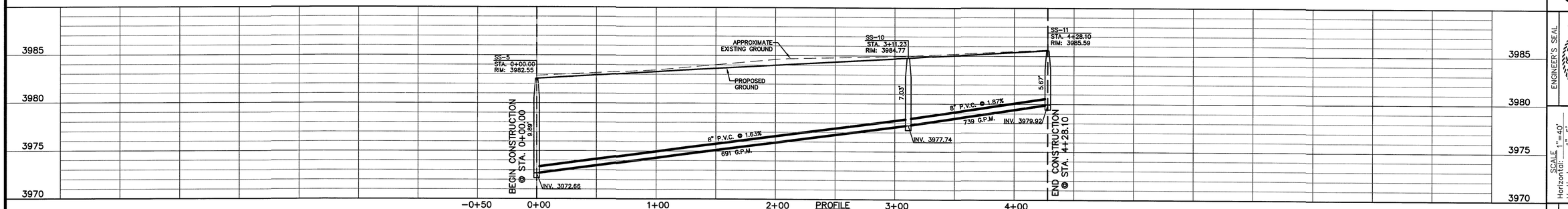
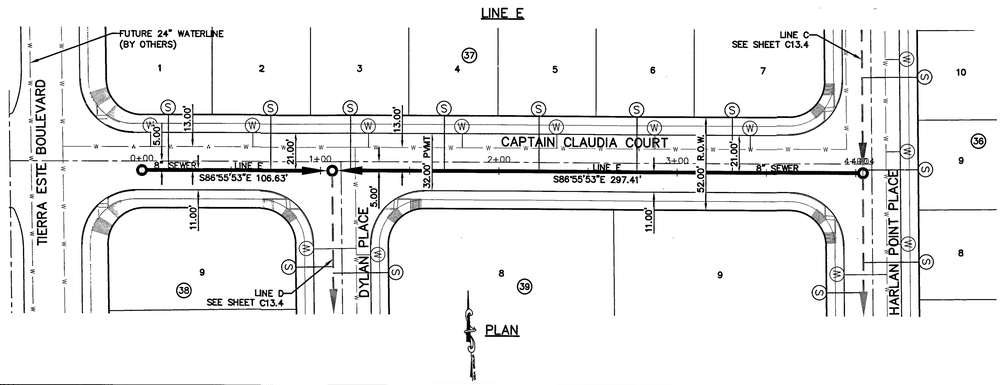
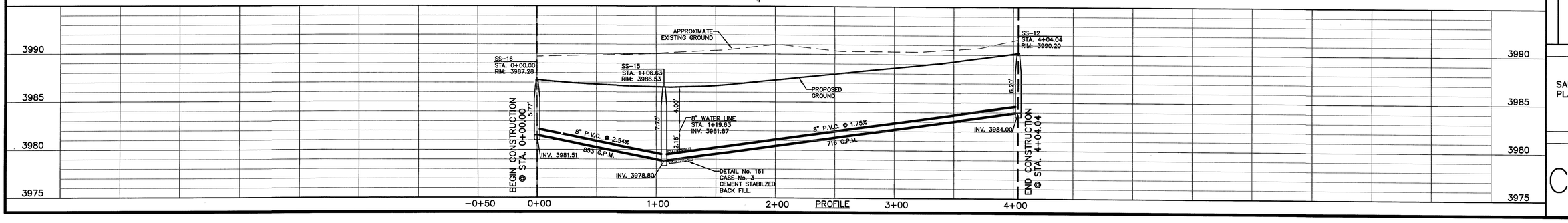
- PROPOSED WATER SERVICE
- PROPOSED SEWER SERVICE
- PROPOSED SEWER MANHOLE







Oscar Villalobos 03/08/2021

BY DATE

ENGINEER'S SEAL

THE STATE OF TEXAS — JORGE L. AZCARATE — 85075 — LICENSED PROFESSIONAL ENGINEER — 8-21

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

DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE

CUESTA DEL SOL SUBDIVISION IMPROVEMENTS

SHEET TITLE

SANITARY SEWER PLAN & PROFILE LINE G & E

SHEET NO.

C13.6

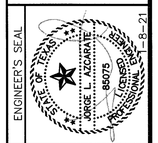
REFERENCES – BENCHMARKS

FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLA AVENUE AND DOMINIC ANAKIN DRIVE. ELEVATION: 3990.65' (CITY DATUM)

BY	REVISIONS	DATE

cea group
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL



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

DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
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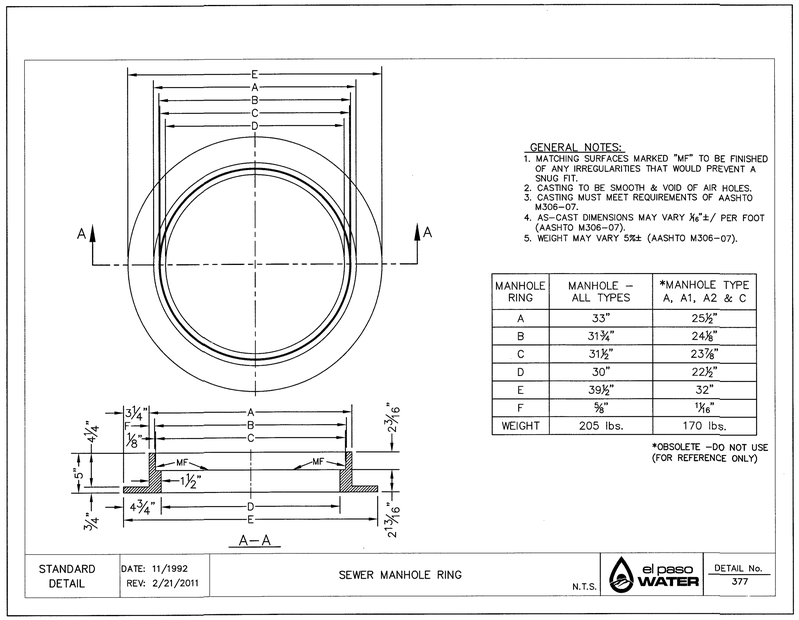


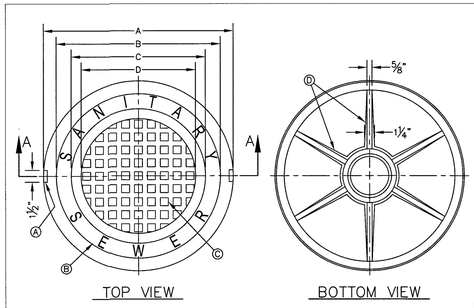
GENERAL NOTES:
1. MATCHING SURFACES MARKED "MF" TO BE FINISHED OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
2. CASTING TO BE SMOOTH & VOID OF AIR HOLES.
3. CASTING MUST MEET REQUIREMENTS OF AASHTO M306-07.
4. AS-CAST DIMENSIONS MAY VARY ⅛"±/ PER FOOT (AASHTO M306-07).
5. WEIGHT MAY VARY 5%± (AASHTO M306-07).

MANHOLE RING	MANHOLE – ALL TYPES	*MANHOLE TYPE A, A1, A2 & C
A	33"	25½"
B	31¾"	24⅛"
C	31½"	23⅞"
D	30"	22½"
E	39½"	32"
F	⅝"	1¹⁄₁₆"
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	DETAIL No. 377

1 / C13.7 STANDARD MANHOLE RING
SCALE: N.T.S.



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2. CASTING TO BE SMOOTH & VOID OF AIR HOLES.
3. CASTING MUST MEET REQUIREMENTS OF AASHTO M306-07.
4. AS-CAST DIMENSIONS MAY VARY ⅛"±/ PER FOOT (AASHTO M306-07).
5. WEIGHT MAY VARY 5%± (AASHTO M306-07).

CONSTRUCTION KEY NOTES:
A. LIFTING NOTCH.
B. ⅜" RAISED LETTERING.
C. 1" SQUARES (³⁄₁₆" TALL) WITH ⅝" SPACE BETWEEN.
D. REINFORCING RIBS.
E. SLOT.

MANHOLE COVER	MANHOLE – ALL TYPES	*MANHOLE TYPE A, A1, A2 & C
A	31⅜"	23⅞"
B	28⅛"	20⅝"
C	24⅜"	16⅞"
D	21⅜"	14⅜"
WEIGHT	200 lbs.	165 lbs.

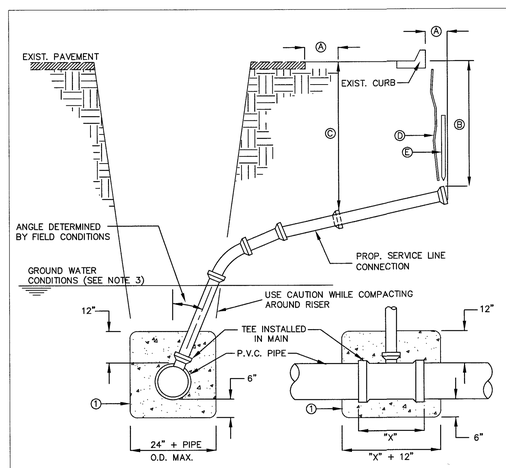
*OBSOLETE –DO NOT USE (FOR REFERENCE ONLY)

STANDARD DETAIL	DATE: 11/1992 REV: 2/21/2011	SEWER MANHOLE COVER	N.T.S.	el paso WATER	DETAIL No. 378

2 / C13.7 STANDARD COVER DETAIL
SCALE: N.T.S.

THE CITY OF EL PASO TEXAS

Oscar Villalobos 03/08/2021
BY DATE

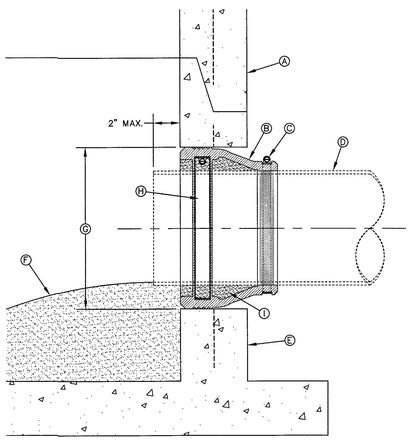


GENERAL NOTES:
1. IN GROUNDWATER CONDITIONS ONLY, P.V.C. SADDLES OR TEES ARE TO BE ENCASED WITH CLASS B CONCRETE.
2. UNDER CERTAIN CONDITIONS FIELD INVESTIGATIONS WILL BE REQUIRED TO DETERMINE THE ADEQUACY OF THE DEPTH ON THE LATERAL.
3. WHEN GROUND WATER IS ENCOUNTERED SERVICE RISER SHALL BE EXTENDED 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 PAVMENT, 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	DETAIL No. 391

3 / C13.7 SEWER SERVICE RISER AND SERVICE LINE CONNECTION
SCALE: N.T.S.

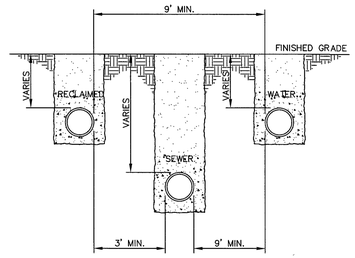


GENERAL NOTES:
1. MANHOLE CONNECTOR SHALL BE KOR-N-SEAL OR EQUAL MEETING THE REQUIREMENTS OF ASTM C-923. CONNECTOR SHALL BE FURNISHED BY CONTRACTOR.

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	DETAIL No. 376

4 / C13.7 PIPE CONNECTION TO MANHOLE
SCALE: N.T.S.



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	DETAIL No. 160

5 / C13.7 SEPARATION DISTANCE–POTABLE WATER, SANITARY SEWER AND RECLAIMED WATER
SCALE: N.T.S.

PROJECT TITLE

CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE

SANITARY SEWER DETAILS

(SHEET 1 OF 3)

SHEET NO.

C13.7

UTILITY LOCATOR SERVICES	
PASEO DEL ESTE MUNICIPAL UTILITY DISTRICT No. 1	(915) 852-1465
EL PASO ELECTRIC COMPANY	(915) 543-5720
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EL PASO WATER UTILITIES	(915) 594-5500
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AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579

WARNING ! BEFORE YOU DIG

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FOR FIELD LOCATING EXISTING UTILITIES

REFERENCES – BENCHMARKS

FOUND, CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLA AVENUE AND DOMINIC ANAKIN DRIVE. ELEVATION: 3990.65' (CITY DATUM)

BY	DATE	REVISIONS

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813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL

JORGE L. AZCARATE 86075 LICENSED PROFESSIONAL ENGINEER 8-21

SCALE	N/A
Horizontal:	N/A
Vertical:	N/A
Contour Interval:	N/A
DATE:	JUNE 2020
DESIGN BY:	K.A.P.
DRAWN BY:	K.A.P.
CHKD. BY:	F.Z.
APPVD. BY:	J.L.A.
JOB No.	3049-002

PROJECT TITLE

CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

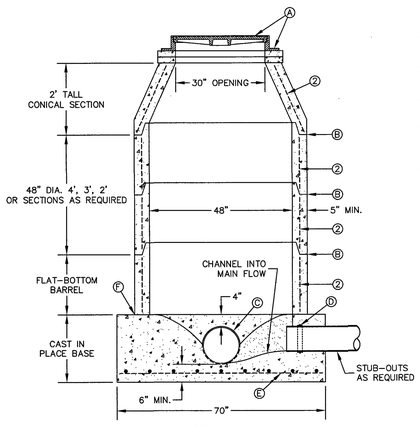
SHEET TITLE

SANITARY SEWER DETAILS

(SHEET 2 OF 3)

SHEET NO.

C13.8



SECTION

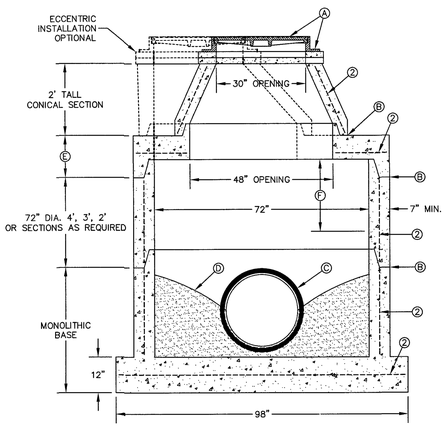
GENERAL NOTES:
1. MANHOLE TYPE "A1" SHALL BE USED FOR LINES 21" AND SMALLER. NOT TO BE USED IN GROUNDWATER CONDITIONS.
2. PRE-CAST MANHOLE SECTIONS SHALL BE OF REINFORCED CONCRETE CONFORMING TO ASTM C-478 AND SHALL MEET HS-20 LOADING.
3. CEMENT SHALL BE TYPE I-II, PER ASTM C-150, AND MUST CONTAIN A MINIMUM OF 4% FLY ASH OF THE TOTAL MANHOLE WEIGHT.
4. THE BASE SHALL BE CAST IN PLACE CONCRETE (MINIMUM 28 DAY COMPRESSIVE STRENGTH 4000 PSI.) POURED ON UNDISTURBED OR THOROUGHLY COMPACTED SUB-BASE.
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.

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. ON MAINLINE, PIPE IS TO BE LAID THRU AND UPPER HALF CUT OUT.
D. PIPE GASKET.
E. No. 4 REBARS 8" ON CENTER, BOTH WAYS.
F. SEAL ALL AROUND WITH RAM-NEK OR APPROVED EQUAL.

STANDARD DETAIL	DATE: 11/1992 REV: 12/1/2011	MANHOLE TYPE "A1" N.T.S.	el paso WATER	DETAIL No. 370-2

1 / C13.8 STANDARD MANHOLE TYPE "A1"
SCALE: N.T.S.

Oscar Villalobos 03/08/2021
BY DATE



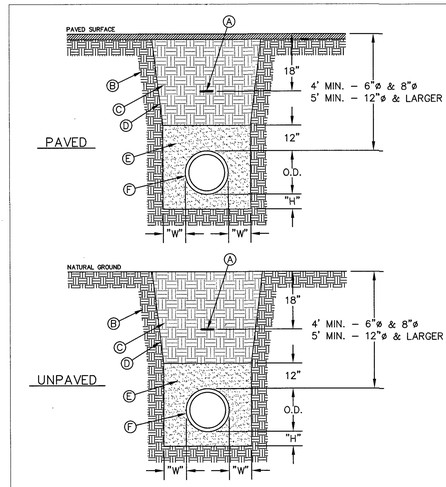
SECTION

GENERAL NOTES:
1. MANHOLE TYPE "B" SHALL BE USED FOR LINES 24" AND LARGER OR WHEN SEWER MONITORING EQUIPMENT IS REQUIRED.
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.
8. CONE SECTION REINFORCEMENT IN ACCORDANCE WITH ASTM C-478 (ECCENTRIC CONE APPLICATION SHOWN DASHED).
9. OTHER UTILITIES SHALL NOT BE INSTALLED ADJACENT TO THE CONE SECTION AND DIRECTLY ABOVE THE MANHOLE.

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. ECCENTRIC/CONCENTRIC LID (CONCENTRIC SHOWN BOLD) WITH KEYED TOP, 8" THICK (SEE DETAIL 379-2).
F. MINIMUM 24" DISTANCE FROM BOTTOM OF LID TO TOP OF PIPE FOR DROP CONNECTION.

STANDARD DETAIL	DATE: 11/1992 REV: 9/1/2009	MANHOLE TYPE "B" N.T.S.	el paso WATER	DETAIL No. 371-1

2 / C13.8 STANDARD MANHOLE TYPE "B"
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.

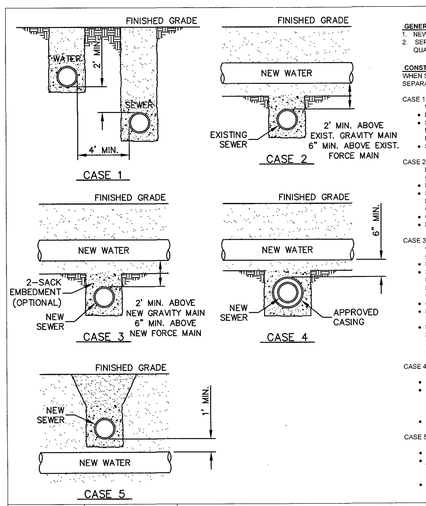
CONSTRUCTION KEY NOTES:
A. APPROVED MARKING TAPE.
B. UNDISTURBED STABLE MATERIAL.
C. NATIVE MATERIAL BACKFILL.
PAVED CONDITION: COMPACT TO 90% DENSITY PER ASTM D-1557 MODIFIED PROCTOR.
UNPAVED CONDITION: COMPACT TO 85% DENSITY PER ASTM D-1557 MODIFIED PROCTOR.
(*SEE NOTE #3 IF THESE PREVIOUS CONDITIONS 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	DETAIL No. 171

3 / C13.8 BEDDING CLASS DETAILS FOR FOR P.V.C. PRESSURE PIPE
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.

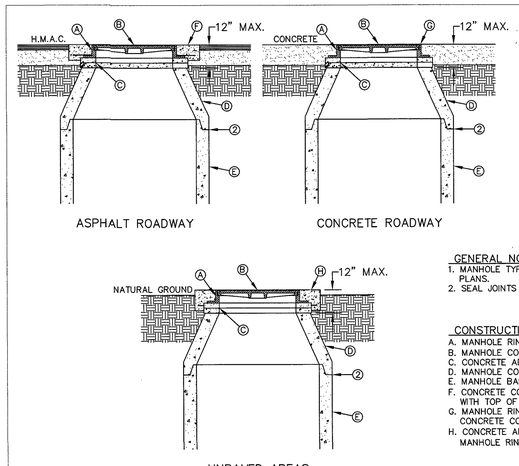
CASE 3: NEW POTABLE WATER MAIN CROSSING NEW GRAVITY SANITARY SEWER MAIN OR NEW FORCE MAIN (PER TCEQ §290.44(e)(4)(B)(iii), §290.44(e)(4)(B)(v) AND §290.44(e)(4)(B)(vi)(II)).
- LOCATION: WATER ABOVE SEWER OR FORCE MAIN.
- SEWER MATERIALS: NEW GRAVITY MAIN - PVC (150 PSI) or DI REQUIRED. CENTER UNDER WATER 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)(vi)(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)(vi)(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	DETAIL No. 161

4 / C13.8 SEPARATION DISTANCE SANITARY SEWER AND POTABLE WATER (SPECIAL CONDITIONS)
SCALE: N.T.S.

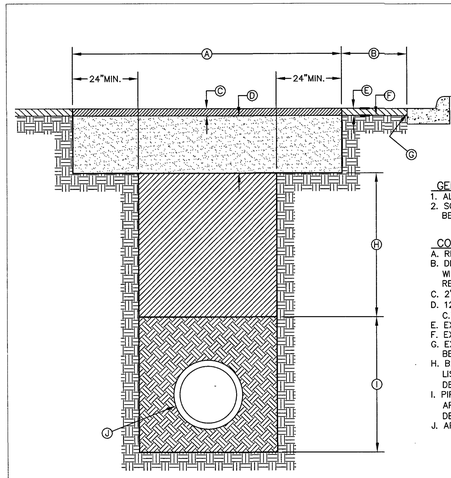


GENERAL NOTES:
1. MANHOLE TYPE SHALL BE AS SHOWN ON THE PLANS.
2. SEAL JOINTS PER SPECIFICATIONS.

CONSTRUCTION KEY NOTES:
A. MANHOLE RING (SEE DETAIL 377).
B. MANHOLE COVER (SEE DETAIL 378).
C. CONCRETE ADJUSTMENT RINGS AS REQUIRED.
D. MANHOLE CONE SECTION.
E. MANHOLE BARREL SECTION.
F. CONCRETE COLLAR (SEE DETAIL 184-1) FLUSH WITH TOP OF H.M.A.C.
G. MANHOLE RING FLUSH WITH TOP OF CONCRETE, CONCRETE COLLAR NOT NEEDED.
H. CONCRETE APRON (SEE DETAIL 184-2) FLUSH WITH MANHOLE RING AND 2" ABOVE NATURAL GROUND.

STANDARD DETAIL	DATE: 6/22/2009 REV:	MANHOLE RING AND COVER INSTALLATION N.T.S.	el paso WATER	DETAIL No. 185

5 / C13.8 STANDARD MANHOLE RING AND COVER INSTALLATION DETAIL
SCALE: N.T.S.

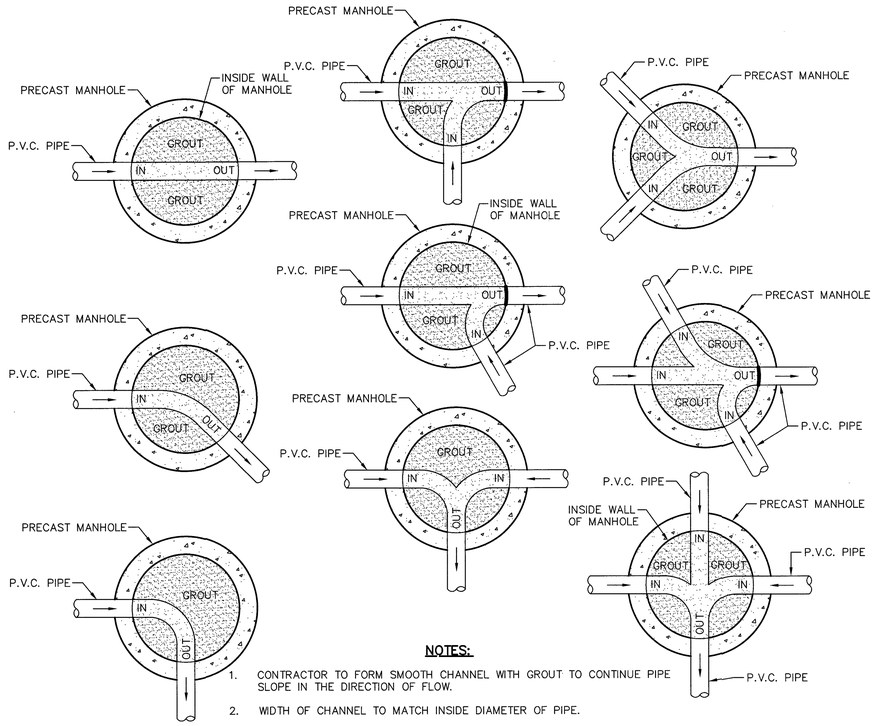


GENERAL NOTES:
1. ALL ASPHALT CUTS MUST BE SAW CUT.
2. SOIL CEMENT SLURRY SHALL BE ALLOWED TO CURE BEFORE PAVING OR OPENING TO ALL TRAFFIC.

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	DETAIL No. 179

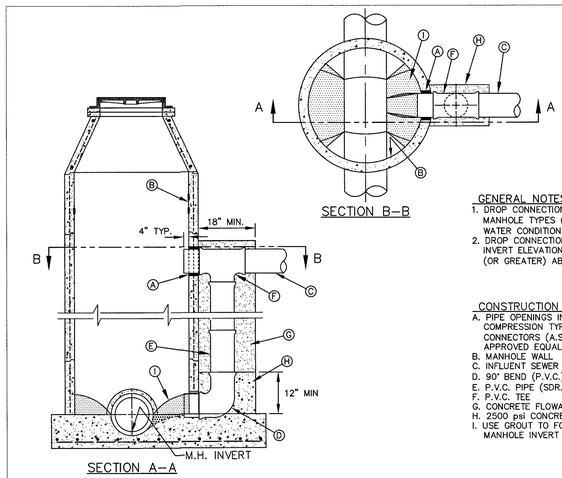
6 / C13.8 PAVEMENT REPAIR DETAIL
SCALE: N.T.S.



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.
5. REFER TO PLAN & PROFILE SHEETS FOR SIZE OF PIPES AND MANHOLES.

1 C13.9 **TYPICAL MANHOLE INVERT PLANS**
SCALE: N.T.S.



GENERAL NOTES:
1. DROP CONNECTION SHOWN MAY BE USED ON ALL MANHOLE TYPES (NOT RECOMMENDED IN GROUND WATER CONDITIONS).
2. DROP CONNECTION TO BE CONSTRUCTED WHEN INVERT ELEVATION OF INFLUENT PIPE IS 3 FEET (OR GREATER) ABOVE THE MANHOLE INVERT.

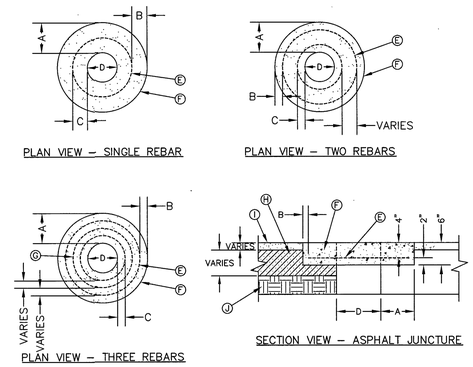
CONSTRUCTION KEY NOTES:
A. PIPE OPENINGS IN MANHOLE RISERS SHALL HAVE COMPRESSION TYPE FLEXIBLE PIPE TO MANHOLE CONNECTORS (A.S.T.M.– C923) "KOR–N–SEAL" OR APPROVED EQUAL.
B. MANHOLE WALL
C. INFLUENT SEWER PIPE.
D. 90° BEND (P.V.C.)
E. P.V.C. PIPE (SDR. 35)
F. P.V.C. TEE
G. CONCRETE FLOWABLE FILL
H. 2500 psi CONCRETE
I. USE GROUT TO FORM A SMOOTH CHANNEL TO MANHOLE INVERT

STANDARD DETAIL	DATE: 3/18/1998 REV: 6/19/2009	DROP CONNECTION – EXTERNAL MANHOLE INSTALLATION	N.T.S.	el paso WATER	DETAIL No. 375–1

3 C13.9 **DROP CONNECTION MANHOLE**
SCALE: N.T.S.

THE CITY OF EL PASO TEXAS

Oscar Villalobos — 03/08/2021
BY — DATE



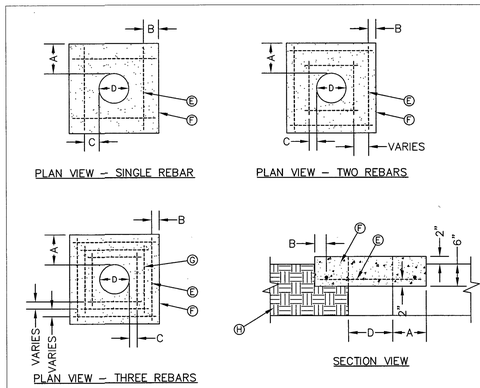
GENERAL NOTES:
1. THE CONCRETE COLLAR SHOULD BE CAST IN–PLACE CONCRETE. (MINIMUM 28 DAY COMPRESSIVE STRENGTH 4000 PSI. HIGH EARLY CONCRETE IS REQUIRED)
2. TOPS OF CONCRETE COLLAR SHALL BE FLUSH WITH ROADWAY SURFACE OR FINISHED GRADE UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.
3. ANY DISTURBED SUBGRADE UNDER THE CONCRETE COLLAR SHALL BE COMPACTED TO 95% DENSITY ± 3% OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D–1557.
4. ANY DISTURBED BASE COARSE UNDER THE CONCRETE COLLAR SHALL BE COMPACTED TO 100% DENSITY ± 2% OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D–1557.
5. PROVIDE A MINIMUM OF 1 1/2" OF CONCRETE COVER FOR ALL REINFORCEMENT STEEL.
6. REINFORCING SHALL MEET ASTM C–478 AND TRAFFIC LOADING (HS–20).
7. NO. 3 REINFORCING STEEL HOOPS SHALL BE SPACED EQUALLY.

CONSTRUCTION KEY NOTES:
E. #3 REINFORCING STEEL TYP.
F. CONCRETE COLLAR.
G. #3 REINFORCING STEEL EQUALLY SPACED.
H. COMPACTED BASE COARSE.
I. PAVEMENT.
J. COMPACTED SUBGRADE.

"D" DIAMETER OF PENETRATION	NUMBER OF #3 REINFORCING STEEL BARS	"A" MINIMUM CONCRETE HORIZONTAL DIMENSION FROM PENETRATION	"B" MINIMUM CLEARANCE FROM EDGE OF CONCRETE COLLAR TO CENTER OF NEAREST REBAR	"C" MINIMUM CLEARANCE FROM PENETRATION EDGE TO CENTER OF NEAREST REBAR
0" TO 6"	1	6"	1½"	4½"
6.1" TO 18"	2	6"	1½"	1½"
18.1" AND OVER	3	9"	1½"	1½"

STANDARD DETAIL	DATE: 8/9/2006 REV: 11/6/2008	CONCRETE COLLAR INSTALLATION IN PAVED AREAS	N.T.S.	el paso WATER	DETAIL No. 184–1

2 C13.9 **CONCRETE APRON IN PAVED AREAS**
N.T.S.



GENERAL NOTES:
1. THE CONCRETE APRON SHOULD BE CAST IN–PLACE CONCRETE. (MINIMUM 28 DAY COMPRESSIVE STRENGTH 4000 PSI. HIGH EARLY CONCRETE IS REQUIRED)
2. TOPS OF CONCRETE APRON SHALL BE FLUSH WITH ROADWAY SURFACE OR FINISHED GRADE UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.
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 REBARS SPACED EQUALLY MAY BE LAP TIED OR SQUARE HOOPS.

CONSTRUCTION KEY NOTES:
E. #3 REINFORCING STEEL TYP.
F. CONCRETE APRON.
G. #3 REINFORCING STEEL EQUALLY SPACED.
H. COMPACTED BACKFILL.

"D" DIAMETER OF PENETRATION	NUMBER OF #3 REINFORCING STEEL BARS	"A" MINIMUM CONCRETE HORIZONTAL DIMENSION FROM PENETRATION	"B" MINIMUM CLEARANCE FROM EDGE OF CONCRETE APRON TO CENTER OF NEAREST REBAR	"C" MINIMUM CLEARANCE FROM PENETRATION EDGE TO CENTER OF NEAREST REBAR
0" TO 6"	1	4"	1½"	4½"
6.1" TO 18"	2	6"	1½"	1½"
18.1" AND OVER	3	8"	1½"	1½"

STANDARD DETAIL	DATE: 11/6/2008 REV:	CONCRETE APRON INSTALLATION IN NON PAVED AREAS	N.T.S.	el paso WATER	DETAIL No. 184–2

4 C13.9 **CONCRETE APRON IN NON PAVED AREAS**
N.T.S.

UTILITY LOCATOR SERVICES	
PASEO DEL ESTE MUNICIPAL UTILITY DISTRICT No. 1	(915) 852–1465
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
SPECTRUM	(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

WARNING ! BEFORE YOU DIG
CALL 811
FOR FIELD LOCATING EXISTING UTILITIES

REFERENCES – BENCHMARKS
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLA AVENUE AND DOMINIC ANAKIN DRIVE. ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

caa group
813 N. Kansas St. Suite 300 El Paso, TX 79902 915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL
JORGE L. AZCARATE 86075 LICENSED PROFESSIONAL ENGINEER 8–21

SCALE
Horizontal: N/A
Vertical: N/A
Contour Interval: N/A
DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049–002

PROJECT TITLE
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE
SANITARY SEWER DETAILS
(SHEET 3 OF 3)

SHEET NO.
C13.9

SITE DESCRIPTION

PROJECT NAME AND LIMITS: CUESTA DEL SOL IS BORDERED BY A PORTION OF SECTION 15, BLOCK 79, TOWNSHIP AND PACIFIC RAILWAY COMPANY SURVEYS, CITY OF EL PASO, EL PASO COUNTY, TEXAS TO THE NORTH, SOUTH AND EAST. MESQUITE TRAILS UNIT TEN AND MESQUITE TRAILS UNIT SIX, TO THE WEST.

PROJECT DESCRIPTION: THE SITE FOR THE NEW SUBDIVISION WILL ENCOMPASS APPROXIMATELY 22.596± ACRES, AND WILL CONTAIN A TOTAL OF 80 RESIDENTIAL LOTS, ONE PARK SITE AND ONE POND.

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: 22.596±

TOTAL AREA TO BE DISTURBED: 22.596±

WEIGHTED RUNOFF COEFFICIENT
(AFTER CONSTRUCTION): 0.59

EXISTING CONDITION OF SOIL AND VEGETATIVE
COVER AND % OF EXISTING VEGETATIVE COVER: THE PROJECT SITE IS LOCATED IN THE VICINITY OF THE HUECO–WINK ASSOCIATION. THE SOIL IS NEARLY LEVEL AND GENTLY SLOPING SOILS THAT HAVE A FINE SANDY LOAM SUBSOIL AND ARE MODERATELY DEEP OVER CALICHE; IN THE HUECO BOLSON.

NAME OF RECEIVING WATERS: CUESTA DEL SOL SUBDIVISION WILL DISCHARGE INTO ON–SITE STORM SEWER INFRASTRUCTURE AND ULTIMATELY DISCHARGE INTO ON–SITE RETENTION BASIN.

EROSION AND SEDIMENT CONTROL

SOIL STABILIZATION PRACTICES

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

OTHER:

STRUCTURAL PRACTICES:

- X SILT FENCES
- ____ 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
- ____ 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 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.

THE CITY OF EL PASO TEXAS

Oscar Villalobos 03/08/2021
BY DATE

BEST MANAGEMENT PRACTICES CONTROLS

1. STRUCTURAL MEASURES SHALL BE MAINTAINED THROUGHOUT THE LIFE OF THE PROJECT IN EFFECTIVE OPERATING CONDITION.
2. DOCUMENTATION OF MAINTENANCE ACTIVITIES INCLUDING FREQUENCY, LOT DESIGNATION, INSPECTION OF STRUCTURAL CONTROLS, MATERIAL STORAGE AREAS, VEHICLES ENTRANCE AND EXITS: ACTIONS TAKEN AND INSPECTORS NAME.
3. CONSTRUCTION SITE NOTICE WILL BE MAINTAIN ON SITE.
4. COPY OF SWPPP SHALL BE KEPT ON SITE.
5. PERIMETER MUST RETAIN THE SWPS NOI AND INSPECTION LOG FOR A MINIMUM OF 3 YEARS FROM THE TERMINATION AND FINAL STABILIZATION OF PROJECT.

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.

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

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

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.

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

V. **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.

VI. **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.

VII. **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:

REFERENCES – BENCHMARKS
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEBALLA AVENUE AND DOMINIC ANAKIN DRIVE.
ELEVATION: 3990.65' (CITY DATUM)

BY	REVISIONS	DATE

caa group
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
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TEXAS REGISTERED ENGINEERING FIRM F-4564

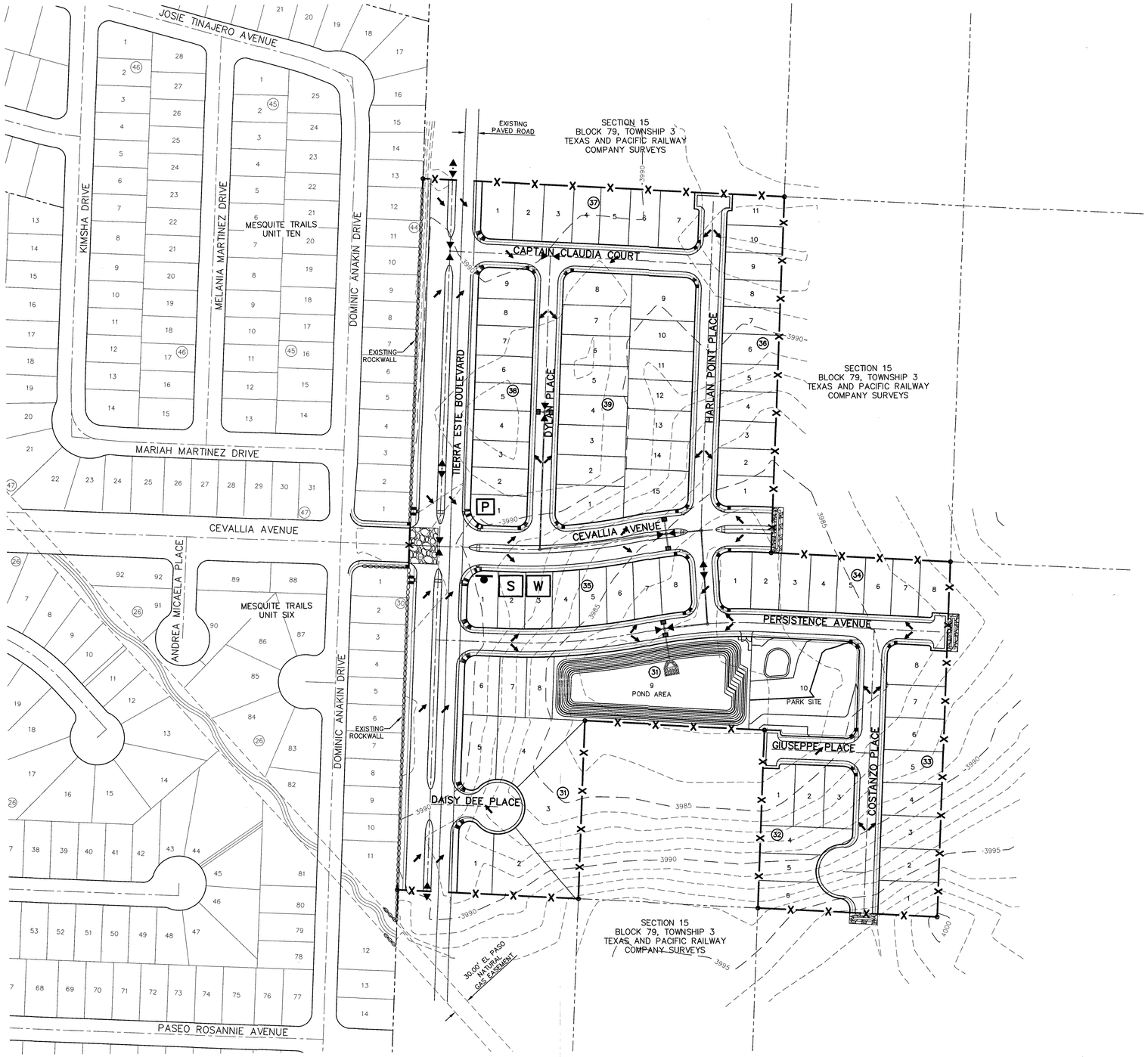
ENGINEER'S SEAL
STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED
PROFESSIONAL
ENGINEER
8–21

SCALE
Horizontal: N/A
Vertical: N/A
Contour Interval: N/A
DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APPVD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE
STORM WATER POLLUTION PREVENTION PLAN: GENERAL NOTES

SHEET NO.
C14.1



UTILITY LOCATOR SERVICES	
PASEO DEL ESTE MUNICIPAL UTILITY DISTRICT No. 1	(915) 852-1465
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
SPECTRUM	(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

WARNING ! BEFORE YOU DIG

CALL 811

FOR FIELD LOCATING EXISTING UTILITIES

LEGEND:

- SILT FENCE OR EARTHEN BERM
- STABILIZED CONSTRUCTION ENTRANCE
- S — STAGING AREA
- P — PORTABLE TOILETS
- W — WASH OUT
- LOCATION OF NOI AND SW3P SIGN POSTING

Oscar Villalobos 03/08/2021

BY DATE

SITE PLAN

SCALE: 1" = 100'

REFERENCES – BENCHMARKS

FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE. ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

cea group
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El Paso, TX 79902
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www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL

JORGE L. AZCARATE 86075 STATE OF TEXAS PROFESSIONAL ENGINEER 8-21

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

DATE: JUNE 2020
DESIGN BY: K.A.P.
DRAWN BY: K.A.P.
CHKD. BY: F.Z.
APP'VD. BY: J.L.A.
JOB No. 3049-002

PROJECT TITLE

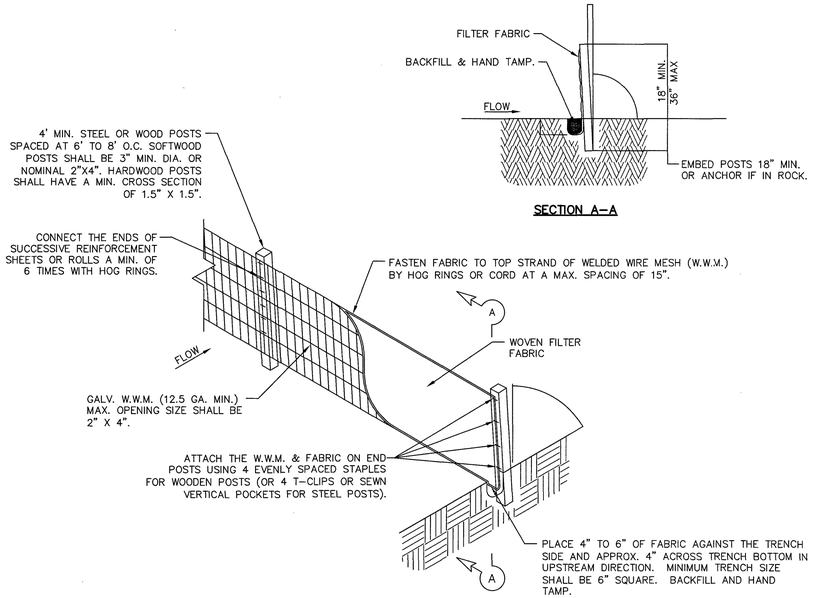
CUESTA DEL SOL SUBDIVISION IMPROVEMENTS

SHEET TITLE

STORM WATER POLLUTION PREVENTION PLAN: SITE PLAN

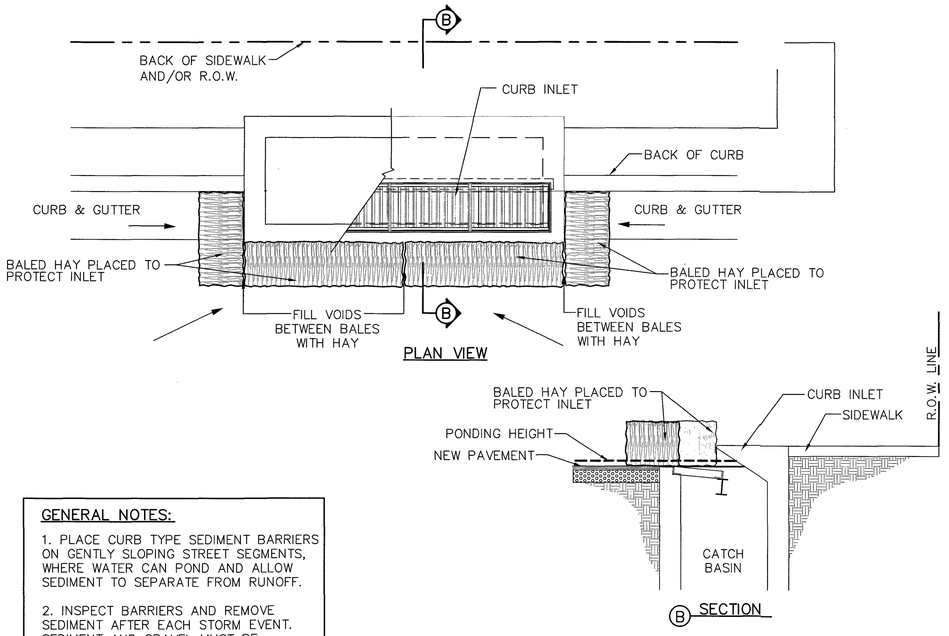
SHEET NO.

C14.2



SECTION A–A

TEMPORARY SEDIMENT CONTROL FENCE



GENERAL NOTES:

1. PLACE CURB TYPE SEDIMENT BARRIERS ON GENTLY SLOPING STREET SEGMENTS, WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE FROM RUNOFF.

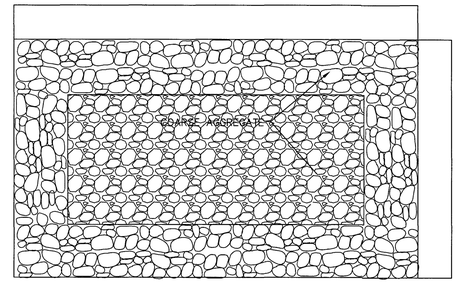
2. INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT. SEDIMENT AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.

TEMPORARY INLET PROTECTION

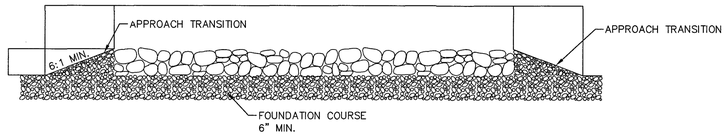
THE CITY OF EL PASO — TEXAS

Oscar Villalobos — 03/08/2021

BY — DATE



PLAN

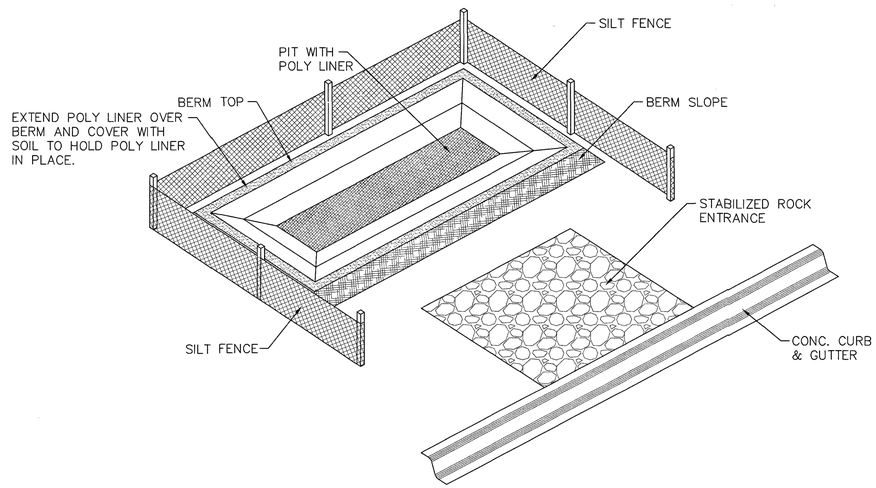


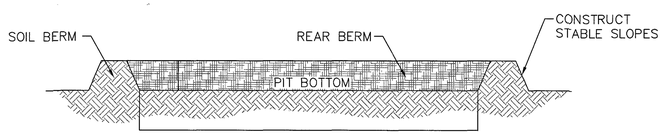
PROFILE

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. BE MODIFIED BY THE ENGINEER.
6. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

CONSTRUCTION EXIT (TYPE 1)





CONCRETE WASHOUT AREA

REFERENCES – BENCHMARKS

FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLOS AVENUE AND DOMINIC ANAKIN DRIVE. ELEVATION: 3990.65' (CITY DATUM)

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TEXAS REGISTERED ENGINEERING FIRM F-4564

ENGINEER'S SEAL

STATE OF TEXAS — JORGE L. AZCARATE — 85075 — LICENSED PROFESSIONAL ENGINEER — 8-21

SCALE	N/A
Horizontal:	N/A
Vertical:	N/A
Contour Interval:	N/A
DATE:	JUNE 2020
DESIGN BY:	K.A.P.
DRAWN BY:	K.A.P.
CHKD. BY:	F.Z.
APPVD. BY:	J.L.A.
JOB No.	3049-002

PROJECT TITLE

CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE

STORM WATER POLLUTION PREVENTION PLAN: DETAILS

SHEET NO.

C14.3

SODDING NOTES

SUBMIT THE FOLLOWING:

1. SOD CERTIFICATION FOR GRASS SPECIES AND NAME AND LOCATION OF SOD SOURCE. SODDING SCHEDULE, INCLUDING DATES AND TYPE OF WORK TO BE PERFORMED. PRIOR TO ORDERING, NAME OF SUPPLIER OF SOIL AMENDMENTS MATERIALS.

QUALITY ASSURANCE

2. MINIMUM AGE 18 MONTHS, WITH ROOT DEVELOPMENT THAT WILL SUPPORT ITS OWN WEIGHT WITHOUT TEARING, WHEN SUSPENDED VERTICALLY BY HOLDING THE UPPER TWO CORNERS.
   DELIVERY, STORAGE AND HANDLING
3. TIME DELIVERY SO THAT SOD WILL BE PLACED WITHIN 24 HOURS OF DELIVERY AT SITE. PROTECT AGAINST DRYING AND BREAKING OF ROLLED STRIPS.
4. DELIVER PACKAGED MATERIALS IN CONTAINERS SHOWING WEIGHT, ANALYSIS AND NAME OF MANUFACTURER. PROTECT MATERIALS FROM DETERIORATION DURING DELIVERY AND WHILE STORED ON SITE.

SITE CONDITIONS

5. PROCEED WITH AND COMPLETE LANDSCAPE WORK AS RAPIDLY AS PORTIONS OF SITE BECOME AVAILABLE, WORKING WITHIN SEASONAL LIMITATIONS FOR EACH KIND OF LANDSCAPE WORK REQUIRED.
6. WHEN CONDITIONS DETRIMENTAL TO PLANT GROWTH ARE ENCOUNTERED, SUCH AS RUBBLE FILL, ADVERSE DRAINAGE CONDITIONS, OR OBSTRUCTIONS CONSULT THE LANDSCAPE ARCHITECT AND CITY OF EL PASO PARKS AND RECREATION BEFORE PLANTING.
7. PLANT OR INSTALL MATERIALS DURING NORMAL PLANTING SEASONS FOR EACH TYPE OF LANDSCAPE WORK REQUIRED. CORRELATE PLANTING WITH SPECIFIED MAINTENANCE PERIODS TO PROVIDE MAINTENANCE FROM DATE OF FINAL ACCEPTANCE.

SOIL AMENDMENTS

8. PROVIDE SOIL ANALYSIS BEFORE ADDITION OF SOIL AMENDMENTS & ANALYSES OF SOIL AMENDMENTS. ORGANIC AMENDMENTS SHALL CONSIST OF WELL-AGED ORGANIC COMPOST OR APPROVED EQUAL.

FERTILIZER

9. SLOW-RELEASE STARTER FERTILIZER ANALYSIS AS RECOMMENDED BY LANDSCAPE ARCHITECT BY WEIGHT AT A RATE OF 1 LB OF ACTUAL NITROGEN PER 1,000 SQUARE FEET BY WEIGHT.

GRASS MATERIALS

10. PROVIDE STRONGLY ROOTED SOD, NOT LESS THAN 18 MONTHS OLD AND FREE OF WEEDS AND UNDESIRABLE NATIVE GRASSES AND MACHINE CUT TO PAD THICKNESS OF 3/4 INCH (PLUS OR MINUS 1/4 INCH), EXCLUDING TOP GROWTH AND THATCH. PROVIDE SOD CAPABLE OF GROWTH AND DEVELOPMENT WHEN PLANTED. CUT SOD PIECES A MINIMUM OF 18 INCHES WIDE.

PREPARATION

11. PRIOR TO START OF SOIL PREPARATION ALL FINISH GRADES SHALL BE ESTABLISHED AND APPROVED AS MEETING THE REQUIREMENTS OF THE GRADING PLAN. APPLY A UNIFORM ONE-INCH LAYER (3 C.Y./1000 SQUARE FEET) OF ORGANIC SOIL AMENDMENT, AFTER APPLICATION OF ORGANIC AMENDMENT AND STARTER FERTILIZER ALL AREAS TO BE SODDED SHALL BE THOROUGHLY ROTOTILLED TO A MINIMUM DEPTH OF 12 INCHES. AFTER ROTOTILLING IS COMPLETE AT CROSS DIRECTIONS, DRAG, AND LASER LEVEL TO AN EVEN GRADE, THEN ROLL FOR FIRMNESS. RAKE TILLED AREA AND REMOVE STONES OVER 1 INCH IN ANY DIMENSION, STICKS, ROOTS, RUBBISH AND OTHER EXTRANEOUS MATTER. ROLL ENTIRE AREA WITH WEIGHTED HAND ROLLER.

SODDING OPERATIONS

12. LAY SOD WITHIN 24 HOURS OF DELIVERY AT SITE. DO NOT PLANT DORMANT SOD OR ON FROZEN GROUND.
13. IF SOIL IS DRY, MOISTEN AREAS BEFORE SODDING. WATER THOROUGHLY AND ALLOW SURFACE MOISTURE TO DRY. DO NOT CREATE A MUDDY SOIL CONDITION.
14. REMOVE FIBER MESH USED BY SOD FARM TO TRANSPORT SOD ROLLS AS SOD IS BEING INSTALLED.
15. LAY SOD TO FORM A SOLID MASS WITH TIGHTLY FITTED JOINTS. NO JOINT SHALL BE MORE THAN 1/8" LAY SOD OVER MOISTENED SOIL, LIGHTLY RAKING THE SOIL AHEAD OF EACH SOD STRIP. BUTT ENDS AND SIDES OF SOD STRIPS; DO NOT OVERLAP. STAGGER STRIPS TO OFF-SET JOINTS IN ADJACENT COURSES. LAY SOD PARALLEL TO CONTOURS OF SLOPE. WORK FROM BOARDS TO AVOID DAMAGE TO SUBSOIL OR SOD. TAMP FIRMLY AND EVENLY BY HAND TO ENSURE CONTACT WITH SUBSOIL. WORK SIFTED TOPSOIL OR SAND INTO MINOR CRACKS BETWEEN PIECES OF SOD
16. WATER SOD THOROUGHLY WITH A FINE SPRAY IMMEDIATELY AFTER PLANTING.

MAINTENANCE

17. BEGIN MAINTENANCE IMMEDIATELY AFTER PLANTING.
18. MAINTAIN LAWNS FOR NOT LESS THAN A PERIOD OF AT LEAST 60 DAYS AFTER COMPLETION AND ACCEPTANCE OF SOD. INSPECTION TO DETERMINE ACCEPTANCE OF SODDED LAWNS WILL BE MADE BY PARKS STAFF AND SITES SOUTHWEST REPRESENTATIVE UPON CONTRACTOR'S REQUEST. PROVIDE NOTIFICATION AT LEAST 10 WORKING DAYS BEFORE REQUESTED INSPECTION DATE. AND LONGER AS REQUIRED TO ESTABLISH AN ACCEPTABLE LAWN.
19. SODDED LAWNS TO BE MAINTAINED NOT LESS THAN 60 DAYS AFTER COMPLETION AND ACCEPTANCE OF SODDING OPERATIONS.
20. MAINTENANCE TO INCLUDE:
   WATER SOD THOROUGH EVERY 2 TO 3 DAYS MIN. AS REQUIRED TO ESTABLISH PROPER ROOTING.
   REPAIR, REWORK AND RESOD AREAS THAT HAVE WASHED OUT OR ERODED.
   REPLACE DEAD OR UNDESIRABLE SOD SECTIONS WITH NEW SOD.
   MOW LAWN AREAS WHEN THE GRASS IS OVER 2 INCHES HIGH FOR FIRST CUTTING.
   FERTILIZE LAWN WITH TOP DRESSING FERTILIZER AT 1 LB. PER 1,000 SQ.FT. OF NITROGEN, WATER THOROUGHLY.
21. ADDITIONAL LAWN MAINTENANCE CONSISTS OF WEEDING, TRIMMING AND OTHER OPERATIONS SUCH AS ROLLING, REGRADING AND REPLANTING AS REQUIRED TO ESTABLISH A SMOOTH, ACCEPTABLE LAWN, FREE OF ERODED OR BARE AREAS.

CLEANUP AND PROTECTION

22. DURING THE WORK, KEEP PAVEMENTS CLEAN AND WORK AREA IN AN ORDERLY CONDITION.
23. PROTECT WORK AND MATERIALS FROM DAMAGE DUE TO SODDING OPERATIONS, OPERATIONS BY OTHER CONTRACTORS AND TRADES AND TRESPASSERS. MAINTAIN PROTECTION DURING INSTALLATION AND MAINTENANCE PERIODS. TREAT, REPAIR OR REPLACE DAMAGED WORK AS DIRECTED.

INSPECTION AND ACCEPTANCE

24. WHEN INSPECTED WORK DOES NOT COMPLY WITH REQUIREMENTS, REPLACE REJECTED WORK AND CONTINUE SPECIFIED MAINTENANCE UNTIL REINSPECTED BY THE LANDSCAPE ARCHITECT AND CITY OF EL PASO PARKS AND RECREATION AND FOUND TO BE ACCEPTABLE. REMOVE REJECTED SOD AND MATERIALS PROMPTLY FROM PROJECT SITE.

GENERAL IRRIGATION NOTES

1. ALL MATERIALS LISTED BY BRAND NAME MAY BE SUBSTITUTED BY EQUAL OR BETTER PRODUCTS AS APPROVED BY THE CITY OF EL PASO PARKS AND RECREATION DEPT.
2. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL EXISTING AND PROPOSED UTILITIES, AND ALL SITE CONDITIONS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
3. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE OTHER CONTRACTORS WORKING ON THE SITE. COORDINATE INSTALLATION OF SLEEVING!
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY WATER PRESSURE, WATER SOURCE AND SIZE IN THE FIELD PRIOR TO CONSTRUCTION. SHOULD A DISCREPANCY EXIST BETWEEN DESIGN PRESSURE AND FIELD PRESSURE THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY.
5. IF PRESSURE IS MORE THAN 95 PSI DOWNSTREAM OF METER NOTIFY THE PROJECT MANAGER AND LANDSCAPE ARCHITECT IMMEDIATELY.
6. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS.
7. LOCATION OF THE CONTROLLER AND BACKFLOW SHALL BE APPROVED BY CITY OF EL PASO PARKS AND RECREATION DEPT.
8. STAKE OUT ROTOR HEAD AND PIPING LOCATIONS PRIOR TO TRENCHING. AFTER APPROVAL BY CITY OF EL PASO PARKS AND RECREATION DEPT., TRENCHING AND EQUIPMENT INSTALLATION MAY BEGIN.
9. THE CONTRACTOR SHALL NOT IMPEDE DRAINAGE IN ANY WAY. THE CONTRACTOR SHALL ALWAYS MANTAIN POSITIVE DRAINAGE AWAY FROM BUILDINGS, WALLS, ETC.
10. ALL PIPING/WIRING RUNNING BENEATH PAVED SURFACES (DRIVES, WALKS, ETC.) SHALL BE INSTALLED IN SCHEDULE 40 PVC SLEEVES.
   SLEEVES MUST BE 2 X THE DIAMETER SIZE OF PIPE ENCASED. REMOTE CONTROL WIRING MUST BE RUN IN SEPARATE SLEEVES FROM IRRIGATION PIPE SLEEVES.
   EXTEND SLEEVE TWENTY-FOUR INCHES (24") BEYOND EDGE OF HARD SURFACES; WRAP ENDS WITH FOUR (4) MILS PLASTIC AND GOOD QUALITY PLASTIC TAPE. GRAY, CLOTH DUCT TAPE IS NOT ACCEPTABLE.
11. DIRECT BURIAL 24V ELECTRIC CONTROL WIRE (#14G) AND COMMON GROUND (#12G) SHALL BE STANDARD COLORS- RED(HOT) AND WHITE(COMMON). INSTALL WIRE WITH SLACK TO ALLOW FOR THERMAL EXPANSION AND CONTRACTION. LABEL ALL WIRE ENDS AT CONTROLLER AND IN VALVE BOX. PROVIDE THREE SPARE REMOTE CONTROL VALVE WIRES FOR EACH CONTROLLER AND EXTEND TO FURTHEST VALVE. WIRING SHALL BE IN SEPARATE TRENCH FIVE FEET (5') FROM PRESSURE MAIN LINE ON NORTH AND WEST SIDE OF MAIN. PROVIDE EXPANSION LOOPS FOR WIRING EVERY 200'. WIRES SHALL NOT BE STRETCHED TIGHT. USE DRI-SPLICE CONNECTORS FACTORY FILLED WITH SILICONE FOR VALVE WIRE. SPLICES ARE NOT ALLOWED BETWEEN CONTROLLER AND VALVES. SPARE REMOTE CONTROL VALVE WIRES MUST BE OTHER THAN STANDARD RED IN COLOR.
12. ALL VALVES SHALL BE TAGGED WITH A WATERPROOF TAG SHOWING VALVE NUMBER. LABEL ALL WIRING AT CONTROLLERS AND PANELS.
13. ALL PIPE CUTS SHALL BE MITERED TO 90 DEGREES TO ASSURE PROPER SOLVENT WELD. ALL BURRS SHALL BE REMOVED PRIOR TO GLUING AND MUST HAVE A FILED BEVELED EDGE A MINIMUM OF ONE FOURTH (1/4) THE WIDTH OF PIPE WALL.
   USE "3-STEP" GLUING PROCESS.
   PIPE MUST BE CLEAN AND PRIMER APPLIED AS RECOMMENDED BY MANUFACTURER WHEN GLUING PROCESS IS UNDERTAKEN. PRIMER SHOULD BE MOIST AS GLUE IS APPLIED AND PVC PIPING IS ASSEMBLED. USE IPS WELD-ON PURPLE PRIMER P68 OR P70.
   USE IPS WELD-ON GRAY GLUE #711 HEAVY DUTY. WIPE OFF ALL EXCESS CEMENT AND LET SET PER MANUFACTURER'S RECOMMENDATIONS. INITIAL SET TIMES SHALL BE MINIMUM OF 5 MIN. FOR 1/2 TO 1-1/4" PIPE; 8 MIN. FOR 1-1/2" PIPE TO 2" PIPE; 2 HOURS FOR 2-1/2"TO 6" PIPE.
   CURE TIMES ARE 20 MIN FOR 1/2" TO 1-1/4" PIPE; 30 MIN. FOR 1-1/2" PIPE; 4 HOURS FOR 2-1/2" PIPE. WHEN HUMIDITY EXCEEDS 60% INCREASE CURE TIME BY 50%. ONCE WELD IS SET, PIPE SHALL NOT BE MOVED FOR ANY REASON UNTIL SET TIMES HAVE BEEN ACHIEVED. WATER SHALL NOT BE TURNED ON UNTIL ALL CURE TIMES HAVE BEEN ACHIEVED.
14. A CITY OF EL PASO PARKS AND RECREATION DEPT. REPRESENTATIVE MUST BE PRESENT DURING ALL FLUSHING, TESTING AND ADJUSTING. THE CONTRACTOR MUST PROVIDE 24 HRS NOTICE TO THE CITY OF EL PASO PARKS AND RECREATION DEPT. PRIOR TO CONDUCTING THE TESTS. FLUSHING AND TESTING SHALL BE PERFORMED IN ACCORDANCE WITH PARKS AND RECREATION DEPARTMENT DESIGN AND CONSTRUCTION STANDARDS.
15. THE FINISH GRADE OF ALL TRENCHED AREAS SHALL BE SMOOTH, EVEN AND CONSISTENT, FREE OF ANY HUMPS, DEPRESSIONS OR OTHER GRADING IRREGULARITIES. OVERFILL TRENCHES AND COMPACT SO NOT TO CRUSH THE PIPE. PRIOR TO SODDING INSPECT TRENCHES FOR SETTLING AND BACKFILL AND REGRADE IF NECESSARY. DO NOT LAY SOD UNTIL TRENCHES ARE ACCEPTABLE.
16. THE CONTRACTOR SHALL FINE TUNE AND ADJUST THE IRRIGATION SYSTEM SO THAT NO WATER WILL RUN ONTO THE STREET OR WALKS
17. THE CONTRACTOR SHALL PROVIDE A WATER AUDIT CONDUCTED IN THE PRESENCE OF THE CITY OF EL PASO PARKS AND RECREATION DEPT. REPRESENTATIVE.
18. THE CONTRACTOR SHALL MAINTAIN ALL WORK UNTIL ALL WORK IS COMPLETE AND ACCEPTED BY THE CITY OF EL PASO PARKS AND RECREATION DEPT.
19. WATERING TIME: TO SET TURF STATIONS
   SEE TURF IRRIGATION SYSTEM DESIGN CRITERIA. SET PER LOCAL WATERING CODES.
20. WARRANTY PERIOD IS ONE YEAR FROM DATE OF ACCEPTANCE.

PROJECT MUST BE COORDINATED WITH TDLR TO INSURE COMPLIANCE WITH TAS REQUIREMENTS TO INCLUDE INSPECTION AND CERTIFICATE OF SUBSTANTIAL COMPLETION. TABS REGISTRATION #

WATER AUDIT

1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING AN IRRIGATION SYSTEM WATER AUDIT AFTER INSTALLATION IS COMPLETE.
2. AUDIT MUST BE PERFORMED BY A TEXAS CERTIFIED IRRIGATION WATER AUDITOR.
3. WATER AUDIT MUST BE PERFORMED IN ACCORDANCE TO THE EL PASO PARKS AND RECREATION DESIGN AND CONSTRUCTION STANDARDS FOR PARK FACILITIES.

PLANTING NOTES

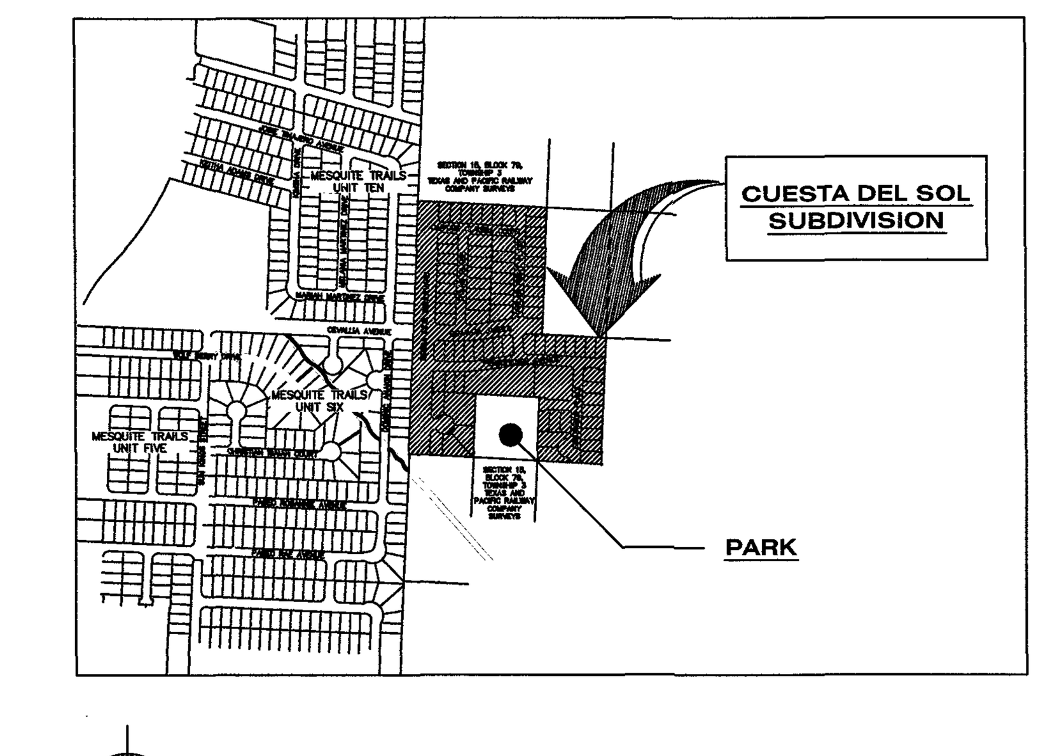
1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PREVENT PLANTS FROM FALLING OR BEING BLOWN OVER AND TO STRAIGHTEN OR REPLANT ALL PLANTS WHICH ARE DAMAGED DUE TO WIND. PLANTS BLOWN OVER BY HIGH WINDS SHALL NOT BE A CAUSE FOR ADDITIONAL EXPENSE TO THE OWNER, BUT SHALL BE THE FINANCIAL RESPONSIBILITY OF THE CONTRACTOR.
2. TOPSOIL MATERIAL FOR PLANTING,SHALL BE FREE FROM HARD CLODS, STIFF CLAY, HARD PAN, STONES LARGER THAN 1" IN DIAMETER, NOXIOUS WEEDS AND PLANTS, SOD, PARTIALLY DISINTEGRATED DEBRIS INSECTS OR ANY OTHER UNDESIRABLE MATERIAL. PLANTS OR SEEDS THAT WOULD BE TOXIC OR HARMFUL TO GROWTH.
3. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF PLANT MATERIAL QUANTITIES.
4. IN THE EVENT OF VARIATION BETWEEN QUANTITIES SHOWN ON THE PLANT LIST AND THE PLANS, THE PLANS SHALL CONTROL. IMPROPER PLANT COUNT MADE BY THE LANDSCAPE CONTRACTOR SHALL BE NO CAUSE FOR ADDITIONAL COSTS TO THE OWNER.
5. THE CONTRACTOR SHALL MEET BOTH THE CONTAINER SIZE AND CALIPER SIZE, AS WELL AS HEIGHT AND SPREAD SPECIFICATIONS.
6. EXCAVATE TWO TIMES GREATER THAN THE ROOT BALL-DIAMETER OF SHRUBS AND ROOT BALLS OF TREES. SCARIFY THE BOTTOM OF PLANTING PIT BEFORE PLACING PLANT. PLACEMENT OF PLANT SHALL BE PERPENDICULAR TO GROUND/VERTICAL WITHOUT LEANING.
7. REMOVE ALL WIRE, STRING, WIRE BASKETS, BURLAP, CONTAINERS, ETC., FROM THE ROOT BALL OF PLANTS BEFORE BACKFILLING THE PLANTING HOLE.
8. CONTRACTOR WILL NOT PLANT MATERIAL SHOWN ON PLANS WHEN IT IS EVIDENT THAT FIELD CONDITIONS HAVE CHANGED SINCE PLANS WERE DRAWN OR IF OTHER CONFLICTS ARE EVIDENT. ANY CHANGES ARE TO BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT BEFORE PLANTING IS DONE IN THE AREA.
9. PLANT SUBSTITUTIONS WILL BE PERMITTED DUE TO AVAILABILITY ISSUES NOT PRICE. REQUEST SUBSTITUTION IN WRITING GIVING REASON FOR SUCH SUBSTITUTIONS.
10. TURF QUANTITY TAKE-OFFS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
11. TREAT ALL PLANTING AREAS WITH AN APPLICATION OF SURFLAN. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR APPLICATION.
12. SEEDED AREAS SHOULD BE MAINTAINED UNTIL A FULL GROWTH OF WILD GRASS OR SEEDED MATERIAL IS ACHIEVED.
13. WARRANTY FOR THE PLANTING MATERIAL SHALL BE ONE YEAR FROM THE DATE OF ACCEPTANCE. (TREES, SHRUBS AND GROUNDCOVER).

UNSUITABLE SOIL CONDTION MITIGATION PER PARKS AND RECREATION STANDARDS

DEVELOPER / CONTRACTOR SHALL OBTAIN SOIL SAMPLES (TAKEN FROM PROPOSED PARK SITE LOCATION FINISHED GROUND) & PROVIDE COMPLETE ANALYSIS REPORT (TEXTURAL, SOILS CLASSIFICATION, MINERALS AND NUTRIENTS AVAILABILITY, WATER INFILTRATION/PERCOLATION, DETAILED SALINITY, & PH CONDUCTIVITY TEST) WITH RECOMMENDATIONS FOR SOILS AMENDMENTS AND PREPARATION TO INSURE EXISTING SOIL CONDITIONS ARE SUITABLE FOR TURF, SHRUBS, AND TREE GROWTH; COORDINATE SITE VISIT WITH PARKS STAFF FOR COLLECTION OF SOIL SAMPLES.

ANY UNSUITABLE SOIL CONDITIONS SHALL BE REMEDIED TO ELIMINATE HARD SOILS, STONY SOILS, HIGH CALICHE SOILS, CLAY SOILS AND CONTAMINATED SOILS TO A MINIMUM DEPTH OF 12 INCHES AND BY SHATTERING, IN TWO DIRECTIONS, OF HARD PAN CALICHE, CLAY SOILS, ROCKS TO A DEPTH OF 36 INCHES BELOW FINISHED GRADE AS REQUIRED FOR PROPER PLANTING AS PER PARK'S DESIGN & CONSTRUCTION STANDARDS FOR PARK FACILITIES APPROVED ON 01/08/2013.

ANY UNSUITABLE SOIL MATERIALS NOT APPROVED BY PARKS DEPARTMENT AND/OR DEPARTMENT LIAISON/DESIGNEE ARE TO BE REMOVED, DISPOSED-OFF, AND REPLACED WITH ©TOP SOIL^ / SANDY LOAM MATERIAL (BLEND OF 40% SAND, 40% SILT, & 20% CLAY - CAPABLE OF HOLDING MOISTURE) TO INCLUDE ORGANIC MATTER / NUTRIENTS TO A MINIMUM DEPTH OF 12 INCHES.



LOCATION MAP
SCALE 1"=600'

APPROVED FOR CONSTRUCTION
Parks & Recreation Department-Planning

KARLA CHAVEZ
SIGNATURE
2/22/2021
DATE

SHEET INDEX	
L1	SITE MAP, SHEET INDEX, NOTES
L2	PARK PLANTING AND MATERIALS PLAN
L3	PARK IRRIGATION - PIPE SIZING
L4	PARK IRRIGATION - SPRAY PATTERN
L5	PLAYGROUND LAYOUT
L6	PARK LAYOUT
L7	CONSTRUCTION DETAILS
L8	CONSTRUCTION DETAILS
L9	IRRIGATION DETAILS
L10	IRRIGATION DETAILS
L11	IRRIGATION DETAILS
L12	SHELTER MANUFACTURER'S DETAILS

DATE | REFERENCES – BENCHMARKS

REVISIONS | BY

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(575) 621-3032

ARCHITECT'S SEAL
REGISTERED LANDSCAPE ARCHITECT
FAITH McNELIS
1136
STATE OF TEXAS
1/13/21

SCALE
Horizontal:
Vertical:
Contour Interval: N/A
DATE:
DESIGN BY: LM
DRAWN BY: LM
CHKD. BY: LM
APPVD. BY: LM
JOB No.

PROJECT TITLE

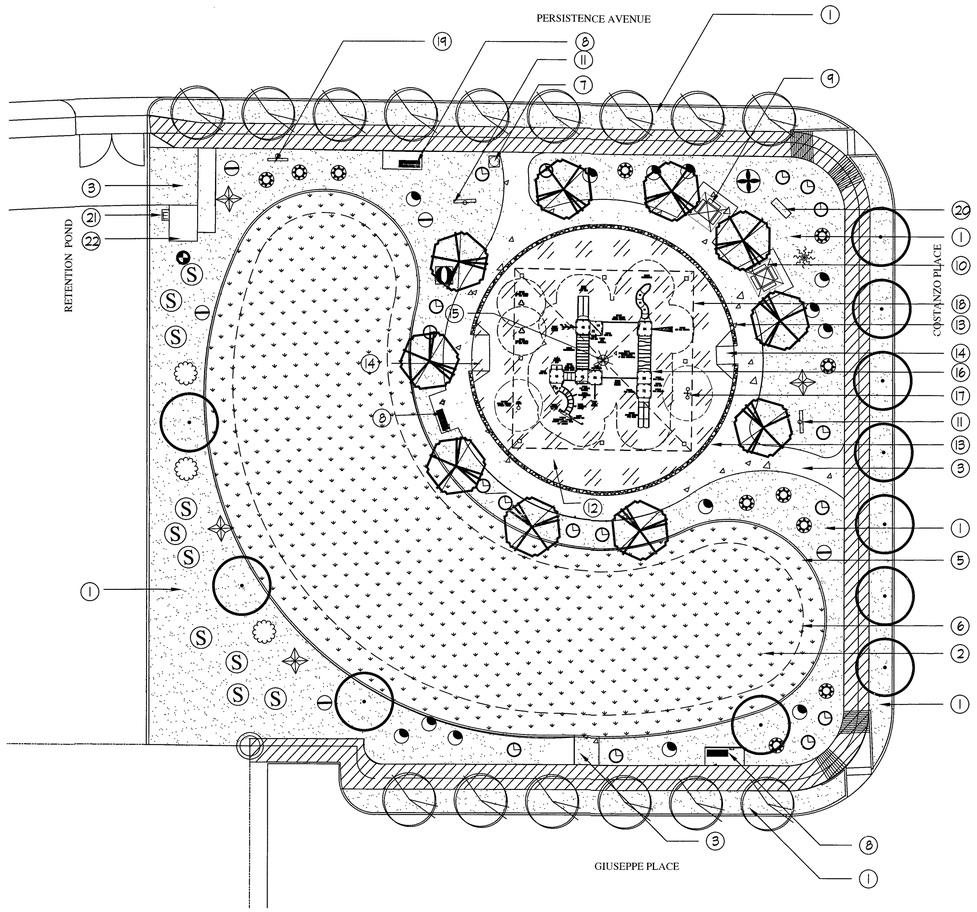
CUESTA DEL SOL PARK

12744 PERSISTENCE AVE.
LOT 10, BLOCK 31
CITY OF EL PASO, EL PASO, TEXAS 79928
AREA: 34769.48 SQ.FT.- .7981 ACRES

SHEET TITLE

L1

INDEX AND NOTES



PLAN VIEW - PLANTING AND MATERIALS

SCALE: 1" = 20' - 0"

QUANTITES ARE PROJECT TOTALS - VERIFY! PLANS TAKE PRECEDENCE

PLANT LEGEND/SCHEDULE

SYM	KEY	COMMON NAME	BOTANICAL NAME	CONT.	MIN. SPACING	QUANT.	SIZE	REMARKS
	CS	CIMARRON SAGE-BLUE RANGER	LEUCOPHYLLUM ZYGOPHYLLUM 'CIMARRON'	5 GAL	6'	13	18" HT	OO
	RY	RED YUCCA	HESPERALOE PARVIFLORA	5 GAL	4'	1	18" HT	OO
	SE	SILVER CASSIA	SENNA ARTEMISOIDES	5 GAL	8'	10	4" HT	OO
	YL	NEW GOLD YELLOW LANTANA	LANTANA X NEW GOLD	5 GAL	3'	17	12" HT	OO
	RM	REGAL MIST MUHLY	MUHLENBERGIA CAPILLARIS 'REGAL MIST'	5 GAL	6'	1	18" HT	OO
	PP	PINK PARADE HESPERALOE	HESPERALOE FUNIFERA X PARVIFLORA	5 GAL	4'	4	18" HT	OO
	YB	YELLOW BELLS	TECOMA STANS VAR. ANGUSTATA	5 GAL	8'	3	18" HT	OO
	TB	TURPENTINE BUSH	ERICAMERIA LARICIFOLIA	5 GAL	4'	11	15" HT	OO
	CB	DW COYOTE BUSH 'PIGEON POINT'	BACCHARIS PILULARIS 'PIGEON POINT'	5 GAL	4'	5	8" HT	OO
		SANTA ANA BERMUDA GRASS	C.DACTYLON X TRANSVAALENSIS	SOD		11,709 SF	N/A	LAY SOD TIGHTLY SO THAT NO LINES ARE VISIBLE TIFFWAY II MAY BE USED AS ALTERNATE

TREE LEGEND/SCHEDULE PROJECT TOTAL

SYM	KEY	COMMON NAME	BOTANICAL NAME	CONT.	SIZE	QUANT.	REMARKS
	LET	LACEBARK ELM	ULMUS PARVIFOLIA	24"BOX	2" CAL-10HT-6' SPREAD	10	SINGLE-FULL
	CPT	CHINESE PISTACHE	PISTACIA CHINENSIS	24"BOX	2" CAL-10HT-6' SPREAD	15	SINGLE TRUNK-FULL
	MOT	MONTERREY OAK	QUERCUS POLYMORPHA	24"BOX	2" CAL-10HT-6' SPREAD	11	SINGLE TRUNK-FULL

PARK MATERIAL LEGEND AND DETAIL KEY:

1. FRANKLIN RED GRAVEL CRUSHER FINES 3" DEPTH 2" BELOW ALL CONCRETE SURFACES, USE WEED BARRIER. PROJECT TOTAL 16,522 SF SEE DETAIL G ON SHEET L7.
2. SANTA ANA BERMUDA GRASS PROJECT TOTAL 12,740 SF TOP OF SOD 2" BELOW TOP OF SIDEWALK AND CONCRETE HEADER CURB. SEE DETAIL D ON SHEET L7.
3. 7'-0" PARK CONCRETE WALKWAY, PATIO, BENCH & TABLE PADS. PROJECT TOTAL 2442 SF SEE DETAIL F ON SHEET L7.
4. SUBDIVISION 7'-0" CONCRETE WALKWAY BY DEVELOPER PROJECT TOTAL 3751 SF SEE DETAIL F ON SHEET L7.
5. 6"X12"CONCRETE HEADER CURB. PROJECT TOTAL 538' LF SEE DETAIL E ON SHEET L7.
6. 6'-8" RECESSED AREA FOR WATER HARVESTING PARKS AND RECREATION REPRESENTATIVE MUST APPROVE GRADING PRIOR TO INSTALLING SOD OR GRAVEL.
7. DUMOR TRASH RECEPTACLE 286-32-PTO PROJECT TOTAL 1 INSTALL PER MANUFACTURER'S RECOMMENDATIONS SEE DETAIL H ON SHEET L7.
8. 6'-0" DUMOR 54 SERIES BENCH SURFACE MOUNT. TOTAL - 3 INSTALL PER MANUF. RECOMMENDATIONS FOR ADA BENCH SEE DETAIL I ON SHEET L8.
9. SHADED ACCESSIBLE PICNIC TABLE - PROJECT TOTAL 1 CLASSIC RECREATION SYSTEMS HAWAIIAN 8X8 COVERED TABLE. 3 SEATS. SEE DETAIL J ON SHEET ON L8
10. SHADED ACCESSIBLE PICNIC TABLE - PROJECT TOTAL 1 CLASSIC RECREATION SYSTEMS HAWAIIAN 8X8 COVERED TABLE. 4 SEATS. SEE DETAIL J ON SHEET ON L8
11. PARK INFORMATION SIGN - LOCATION SHALL BE APPROVED BY PARKS DEPT REPRESENTATIVE. PROJECT TOTAL 2 SEE DETAIL K ON SHEET L8.
12. ENGINEERED FIBER WOOD CHIPS. INSTALL PER MANUFACTURER'S SPECIFICATIONS. PROJECT TOTAL 4240 SF PLACE 18" DEPTH OF CHIPS AND COMPACT TO 12" DEPTH.
13. 18" HT. ROCK WALL. PROJECT TOTAL 219 LF SEE DETAIL L ON SHEET L8.
14. ADA ACCESSIBLE PLAYGROUND RAMP. RAMPS VARY IN WIDTH SEE DETAIL M ON SHEET L8.
15. LIGHTING MUST BE INCLUDED INSIDE OF PLAYGROUND SHADE STRUCTURE. COORDINATE WITH MANUFACTURER AND ELEC. ENG. FOR CONDUIT INSIDE STRUCTURE. MUST OPERATE ON PHOTO CELL AND TIMER. SEE ENGINEER'S ILLUMINATION PLAN.
16. PLAY STRUCTURE - SEE SHEET L5 COLORS - TANGERINE, PLUM, LIMON, LIMON COLOR PALATTE. MUST BE APPROVED BY PARKS PRIOR TO ORDERING.
17. LANDSCAPE STRUCTURES - SADDLE SPINNER, DOUBLE BOBBLE AND SINGLE BOBBLE. COLORS - TANGERINE, PLUM, LIMON, LIMON COLOR PALATTE. MUST BE APPROVED BY PARKS PRIOR TO ORDERING. SEE SHEET L5 FOR MORE INFORMATION.
18. CLASSIC RECREATION "MESA" SHADE STRUCTURE 30 X 30 COLORS - SPECIFIED BY PARKS. FOOTINGS SHALL BE ENGINEERED BY THE MANUFACTURER AND DRAWINGS SHALL BE APPROVED BY PARKS PRIOR TO ORDERING. LIGHTING SHALL BE INSTALLED IN THE STRUCTURE. COORDINATE WITH MANUFACTURER AND ELEC. ENGINEER TO PROVIDE CONDUIT WITHIN THE STRUCTURE. FIXTURE MUST BE ON A PHOTO CELL AND A TIMER. SEE SHEET L12
19. SUPERIOR PET WASTE ELIMINATOR STATION - SKU# E3 WWW.PETWASTEELIMINATOR.COM QTY: 1 INSTALL PER MANUFACTURER'S INSTRUCTIONS. SEE DETAIL N ON SHEET L8
20. PARK MONUMENT SIGN SEE DETAIL H.5 ON SHEET L7
21. ELECTRIC METER LOCATED ON PUMP HOUSE
22. PUMP HOUSE SEE DETAILS ON SHEET L11

APPROVED FOR CONSTRUCTION

Parks & Recreation Department-Planning

KARLA CHAVEZ

SIGNATURE

2/22/2021

DATE

ALL EQUIPMENT AND FURNITURE COLORS MUST BE APPROVED BY THE PARKS REPRESENTATIVE PRIOR TO ORDERING.
LIGHT FIXTURE IN PLAYGROUND SHADE STRUCTURE MUST BE APPROVED.

PARK SITE NOTES

1. ALL PARK IMPROVEMENTS (SIDEWALKS, RAMPS, ETC.) AND PAVED HIKE/BIKE TRAILS (IF APPLICABLE) ARE TO BE COMPLIANT WITH REQUIRED ACCESSIBILITY CRITERIA AS SET FORTH IN ADAAG & TAS STANDARDS AS MANDATED BY FEDERAL AND STATE GOVERNMENTS.
2. UNSUITABLE SOIL CONDITION MITIGATION PER PARKS AND RECREATION STANDARDS

   DEVELOPER / CONTRACTOR SHALL OBTAIN SOIL SAMPLES (TAKEN FROM PROPOSED PARK SITE LOCATION FINISHED GROUND) & PROVIDE COMPLETE ANALYSIS REPORT (TEXTURAL, SOILS CLASSIFICATION, MINERALS AND NUTRIENTS AVAILABILITY, WATER INFILTRATION/PERCOLATION, DETAILED SALINITY, & PH CONDUCTIVITY TEST) WITH RECOMMENDATIONS FOR SOILS AMENDMENTS AND PREPARATION TO INSURE EXISTING SOIL CONDITIONS ARE SUITABLE FOR TURF, SHRUBS, AND TREE GROWTH. COORDINATE SITE VISIT WITH PARKS STAFF FOR COLLECTION OF SOIL SAMPLES.

   ANY UNSUITABLE SOIL CONDITIONS SHALL BE REMEDIED TO ELIMINATE HARD SOILS, STONY SOILS, HIGH CALICHE SOILS, CLAY SOILS AND CONTAMINATED SOILS TO A MINIMUM DEPTH OF 12 INCHES AND BY SHATTERING, IN TWO DIRECTIONS, OF HARD PAN CALICHE, CLAY SOILS, ROCKS TO A DEPTH OF 36 INCHES BELOW FINISHED GRADE AS REQUIRED FOR PROPER PLANTING AS PER PARK'S DESIGN & CONSTRUCTION STANDARDS FOR PARK FACILITIES APPROVED ON 6/26/2018.

   ANY UNSUITABLE SOIL MATERIALS NOT APPROVED BY PARKS DEPARTMENT AND/OR DEPARTMENT LIAISON/DESIGNEE ARE TO BE REMOVED, DISPOSED-OFF, AND REPLACED WITH APPROVED TOP SOIL.

PROJECT MUST BE COORDINATED WITH TDLR TO INSURE COMPLIANCE WITH TAS REQUIREMENTS TO INCLUDE INSPECTION AND CERTIFICATE OF SUBSTANTIAL COMPLETION. TABS REGISTRATION # TABS2021 00 7370

REVISIONS | DATE

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LAS CRUCES, NEW MEXICO 88007
(575) 621-3032

ARCHITECT'S SEAL

REGISTERED LANDSCAPE ARCHITECT LISA MCNELIS 1136 STATE OF TEXAS

1/13/21

SCALE
Horizontal:
Vertical:
Contour Interval: N/A

DATE:
DESIGN BY: LM
DRAWN BY: LM
CHKD. BY: LM
APPV'D. BY: LM
JOB No.

PROJECT TITLE

CUESTA DEL SOL PARK

12744 PERSISTENCE AVE.
LOT 10, BLOCK 31
CITY OF EL PASO, EL PASO, TEXAS 79928
AREA: 34769.48 SQ.FT.- .7981 ACRES

THE CITY OF EL PASO TEXAS

SHEET TITLE

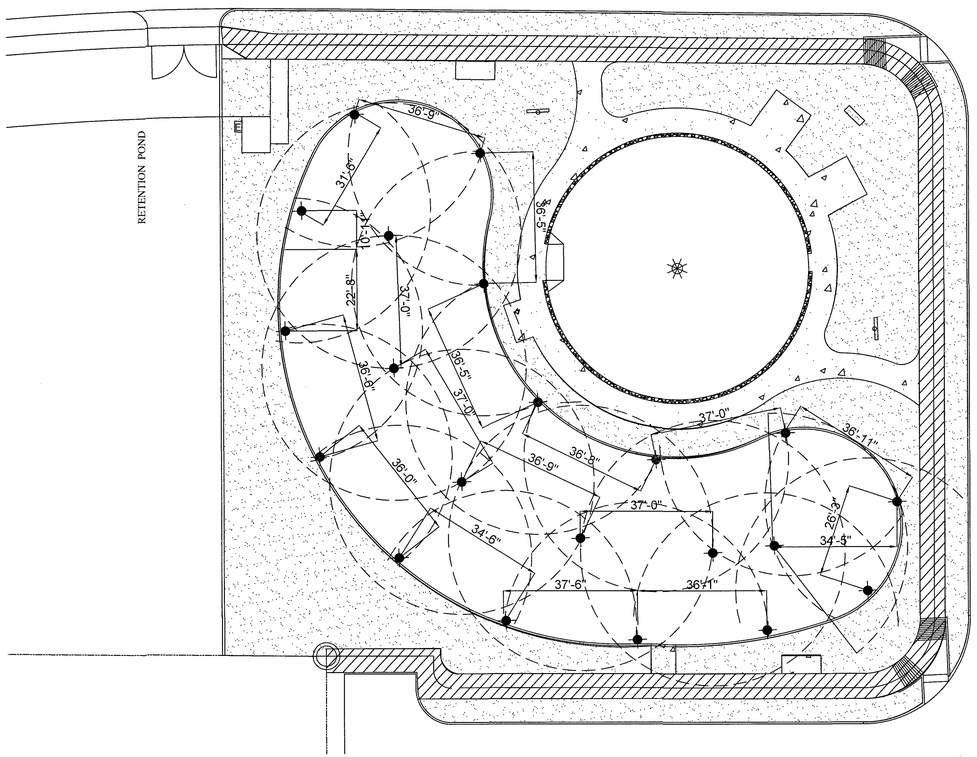
L2

PLANTING AND MATERIALS

SHEET 2 OF 12

APPROVED FOR CONSTRUCTION
Parks & Recreation Department-Planning

KARLA CHAVEZ
SIGNATURE
2/22/2021
DATE



PLAN VIEW - SPRAY PATTERN
SCALE: 1" = 20' - 0"

WATER AUDIT

CONTRACTOR IS RESPONSIBLE FOR OBTAINING AN IRRIGATION SYSTEM WATER AUDIT AFTER INSTALLATION IS COMPLETE.

AUDIT MUST BE PERFORMED BY A TEXAS CERTIFIED IRRIGATION WATER AUDITOR.

WATER AUDIT MUST BE PERFORMED IN ACCORDANCE TO THE EL PASO PARKS AND RECREATION DESIGN AND CONSTRUCTION STANDARDS FOR PARK FACILITIES.

STATE OF TEXAS
FAITH McNELIS
8947
REGISTERED
LICENSED IRRIGATOR
Faith McNelis 1/13/21

IRRIGATION IS REGULATED BY:

PO BOX 13087
AUSTIN, TEXAS 78711-3087
TCEQ 512-239-6719
CHAPTER 34, TEXAS WATER CODE

IRRIGATOR'S LIC. #8947

3 DAY WATERING SCHEDULE

STATION #	VALVE COMBINATION																	RUN TIME PER DAY	WATERING DAYS							RUN TIME PER WEEK	CLOCK START TIME
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		S	M	T	W	TH	F	S	
1D	X	X																	80 MIN		X		X		X		240 MIN	11:00 PM
2D	X	X																	80 MIN		X		X		X		240 MIN	11:00 PM
3P			X																14 MIN		X		X		X		42 MIN	12:21 AM
4F				X															31 MIN		X		X		X		91 MIN	12:36 AM
5P					X														14 MIN		X		X		X		42 MIN	1:08 AM
TOTAL RUN TIME PER DAY OF OPERATION - DRIP																			80 MIN / 1.33 HOURS								
TOTAL RUN TIME PER DAY OF OPERATION - ROTORS																			54 MIN / .90 HOURS								
TOTAL RUN TIME PER WEEK - ROTORS																			115 MIN / 2.42 HOURS								

4 DAY WATERING SCHEDULE

STATION #	VALVE COMBINATION																	RUN TIME PER DAY	WATERING DAYS							RUN TIME PER WEEK	CLOCK START TIME
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		S	M	T	W	TH	F	S	
1D	X	X																	80 MIN	X		X		X		X	240 MIN	11:00 PM
2D	X	X																	80 MIN	X		X		X		X	240 MIN	11:00 PM
3P			X																11 MIN	X		X		X		X	42 MIN	12:21 AM
4F				X															23 MIN	X		X		X		X	91 MIN	12:36 AM
5P					X														11 MIN								42 MIN	1:08 AM
TOTAL RUN TIME PER DAY OF OPERATION - DRIP																			60 MIN / 1 HOUR								
TOTAL RUN TIME PER DAY OF OPERATION - ROTORS																			45 MIN / .75 HOURS								
TOTAL RUN TIME PER WEEK - ROTORS																			115 MIN / 2.42 HOURS								

TURF IRRIGATION SYSTEM DESIGN CRITERIA

PERFORMANCE STATISTICS

1. THE FOLLOWING PERFORMANCE STATISTICS WERE CALCULATED BASED ON INFORMATION SHOWN ON THIS PLAN. CHANGES IN OPERATING PRESSURE, HEAD SPACING AND OR NOZZLE SELECTION WILL EFFECT RESULTS.

VALVES #3 AND #5
$\frac{24 \times 96.3}{(26 \times 37)} = \frac{2311.2}{962} = 2.4$ "/HR PART HEADS
.7 HR OR 42 MINS RUN TIME FOR 1" WATER

VALVE, #4
$\frac{15 \times 96.3}{(26 \times 37)} = \frac{1444.5}{962}$ X .5 = .66"/HR FOR FULL HEAD
1.51 HR 91 MIN RUN TIME FOR 1" WATER

DRIP IRRIGATION SYSTEM DESIGN CRITERIA

VALVES #1 AND #2 - 64.8 G/WEEK FOR TREES - .27 GPM SHRUBS AND GC PLANTS - 7.2 G/WEEK - .036PM AT 240 MINUTES PER WEEK CONTROLLER SETTING.

IRRIGATION NOTES

1. IRRIGATION PLAN IS DIAGRAMMATIC IN NATURE. CONTRACTOR SHALL BE RESPONSIBLE FOR ACCOMPLISHING FULL COVERAGE IN ALL AREAS WITH SPECIFIED EQUIPMENT. ANY DISCREPANCIES IN THE PLAN SHOULD BE BROUGHT TO THE PROJECT MANAGER'S ATTENTION DURING CONSTRUCTION.
2. ALL FITTINGS AND NECESSARY EQUIPMENT REQUIRED TO MAKE THIS IRRIGATION SYSTEM OPERATE PROPERLY AND TO COMPLY WITH LOCAL AND STATE CODES ARE INCIDENTAL TO THESE PLANS AND ARE THE CONTRACTOR'S RESPONSIBILITY.
3. CONTRACTOR WILL BE HELD LIABLE FOR GAINING ACCESS UNDER ALL PAVEMENTS.
4. SLEEVES SHOWN ON THE PLANS SHOULD BE VERIFIED FOR ACCESSIBILITY AND FEASIBILITY BEFORE BID IS MADE.
5. THE CONTRACTOR SHALL LOCATE AND VERIFY EACH WATER TAP TO WHICH THE IRRIGATION SYSTEM WILL CONNECT. ALL EQUIPMENT AND INSTALLATION METHODS SHALL COMPLY WITH THE STANDARDS OF THE CITY OF EL PASO AND THE SPECIFICATIONS.
6. CONTRACTOR IS RESPONSIBLE FOR ALL CONNECTIONS AND VALVES REQUIRED FOR THE FULL IMPLEMENTATION OF THE SYSTEM.
7. THE CONTRACTOR SHALL LOCATE AND VERIFY THE EXISTENCE OF ALL UTILITIES PRIOR TO INITIATING WORK.
8. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE OR INTERRUPTION IN SERVICE CAUSED BY HIS EXCAVATIONS AND/OR WORK.
9. EACH CONTROLLER WILL HAVE AN INDEPENDENT COMMON WIRE LOOPED TO THE VALVES CONNECTED TO IT.
10. REMOTE CONTROL VALVE WIRES ARE TO BE IN A SEPARATE TRENCH 5' FROM MAIN LINE ON NORTH OR WEST SIDE OF MAINLINE.
11. ALL REMOTE CONTROL VALVE WIRES NEED TO BE LABELED AT VALVE W/ WEATHER (WATER) PROOF LABELS AND AT CONTROLLER WITH CORRESPONDING LABEL. (LETTER AND/OR NUMBER TAGS IN SEQUENTIAL ORDER WILL BE PROVIDED).
12. SPLICING OF REMOTE CONTROL VALVE WIRES IS NOT ALLOWED BETWEEN CONTROLLER & VALVE BOX FOR WIRES MUST BE CONTINUOUS FROM CONTROLLER TO REMOTE CONTROL VALVE WITHOUT SPLICING.
13. ALL ROTOR SPRINKLER HEADS SHALL BE ON STAINLESS STEEL RISERS WITH CHECK VALVE.
14. CONTRACTOR SHALL PROVIDE SLEEVES FOR NEW IRRIGATION LINES CROSSING UNDER CONCRETE SIDEWALKS. SLEEVES SHALL BE 2 TIMES THE PIPE SIZE EXTENDED 24" BEYOND EDGE OF SURFACE, BE WRAPPED WITH MINIMUM 4 MIL PLASTIC AND TAPED WITH 3M BRAND HEAVY DUTY PLASTIC.

REVISIONS | DATE

LISA McNELIS
LANDSCAPE ARCHITECT
1900 FOXBORO
LAS CRUCES, NEW MEXICO 88007
(575) 621-3062

ARCHITECT'S SEAL
REGISTERED LANDSCAPE ARCHITECT
LISA McNELIS
1138
STATE OF TEXAS
1/13/21

SCALE
Horizontal:
Vertical:
Contour Interval: N/A

DATE:	
DESIGN BY:	LM
DRAWN BY:	LM
CHKD. BY:	LM
APPVD. BY:	LM
JOB No.	

PROJECT TITLE

CUESTA DEL SOL PARK

12744 PERSISTENCE AVE.
LOT 10, BLOCK 31
CITY OF EL PASO, EL PASO, TEXAS 79928
AREA: 34769.48 SQ.FT.- .7981 ACRES

THE CITY OF EL PASO TEXAS

SHEET TITLE

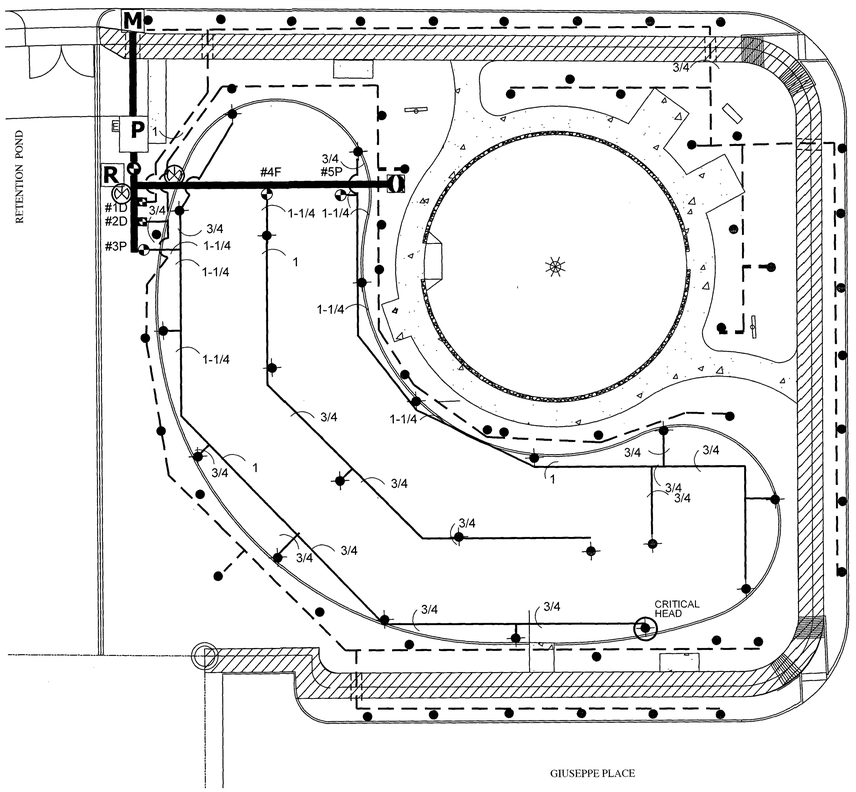
L3

IRRIGATION
SPRAY PATTERN

SHEET 3 OF 12

ELECTRICAL SERVICES MUST BE PROVIDED BY TEXAS LICENSED ELECTRICIAN. SKETCH/DRAWING OF PROPOSED WORK MUST BE SUBMITTED TO PARKS DEPT. OR DESIGNEE

WATER METER VAULT SHALL NOT BE INSTALLED WITHIN SIDEWALK. KNOCKOUTS SHALL BE SEALED WITH CONCRETE OR NON SHRINK MORTAR AND COPPER PIPE WRAPPED WERE IT ENTERS AND EXISTS THE BOX.



PLAN VIEW - PIPE SIZING AND LAYOUT

SCALE: 1" = 20' - 0"

1D	1"	2D	1"	3P	1.25"	4F	1.25"	5P	1.25"
6.48	24	7.06	26	24	8	15	5	24	8

STATIC PRESSURE - 62 PSI

PRESSURE LOSS CALCULATIONS

VALVE #3

	Length of Pipe (Feet)	Flow (Gal.)	Size (in.)	Pressure Loss Per 100 ft.	Pressure Loss This Item	Accumulated Pressure Loss
CLASS 200	57	3	3/4"	0.52	0.2964	0.2964
CLASS 200	38	6	3/4"	1.86	0.7068	1.0032
CLASS 200	35	9	1"	1.17	0.4095	1.4127
CLASS 200	36	12	1"	1.98	0.7128	2.1255
CLASS 200	37	15	1.25"	1.07	0.3959	2.5214
CLASS 200	23	18	1.25"	1.33	0.3059	2.4314
CLASS 200	12	24	2"	2.26	0.2712	2.3967
CLASS 200	0	0	0	0.00	0.0000	2.5214
Section Pressure Losses (Sub-Total)						2.5214
Remaining Pressure Losses						
Item			Size (in.)	Pressure Loss Per 100 Ft.	Pressure Loss This Item	Accumulated Pressure Loss
Section Valve		24	1.5		3.0000	5.5214
Mainline SCH40	28	24	1.5	1.6	0.4480	5.9694
	0	0	0	0	0.0000	5.9694
Backflow			1.5		13.0000	18.9694
Water Meter			1.2		3.3000	22.2694
Copper Supply	50	24	1.5	2.58	1.2900	23.5594
Total Pressure Loss to the City Main						23.5594
Minimum Required Head Pressure					30.0000	30.0000
STATIC PRESSURE 62 HEAD PRESSURE W/O PUMP 38.4406						
DESIGN Pressure - STATIC PLUS PUMP 20 +62						82.0000
Actual Head Pressure						58.4406

IRRIGATION IS REGULATED BY:

PO BOX 13087
AUSTIN, TEXAS 78711-3087
TCEQ 512-239-6719
CHAPTER 34, TEXAS WATER CODE

IRRIGATOR'S LIC. #8947

STATE OF TEXAS · FAITH MCNELIS · 8947 · REGISTERED LICENSED IRRIGATOR

Faith McNelis 1/13/21

PRECIPITATION SCHEDULE FOR ROTOR VALVES								
VALVE #	VALVE SIZE	TOTAL GPM	RAIN BIRD PRECIP. RATE	CALCULATED PRECIP. RATE*	WATER REQUIREMENT	NOZZLE SIZE	# & TYPE OF HEADS	GPM PER HEAD	RUN TIME PER WEEK
1D	1"	0	N/A	N/A	N/A	N/A	24 EM. DEVICE	.27 PER DEVICE	240 MIN
2D	1"	0	N/A	N/A	N/A	N/A	26 EM. DEVICE	.27 PER DEVICE	240 MIN
3P	1.5"	24	.49 IN/HR	2.4 IN/HR	1"/ WEEK	#4	8 PART	3	42 MIN
4F	1.5"	15	.245 IN/HR	.66 IN/HR	1"/ WEEK	#4	5 FULL	3	91 MIN
5P	1.5"	21	.49 IN/HR	2.4 IN/HR	1"/ WEEK	#4	8 PART	3	42 MIN

TURF IRRIGATION SYSTEM DESIGN CRITERIA

PERFORMANCE STATISTICS

1. THE FOLLOWING PERFORMANCE STATISTICS WERE CALCULATED BASED ON INFORMATION SHOWN ON THIS PLAN. CHANGES IN OPERATING PRESSURE, HEAD SPACING AND OR NOZZLE SELECTION WILL EFFECT RESULTS.

VALVES #3 AND #5

$\frac{24 \times 96.3}{(26 \times 37)} = \frac{2311.2}{962} = 2.4$ "/HR PART HEADS
.7 HR OR 42 MINS RUN TIME FOR 1" WATER

VALVE #4

$\frac{15 \times 96.3}{(26 \times 37)} = \frac{1444.5}{962} \times .5 = .66$"/HR FOR FULL HEAD
1.51 HR 91 MIN RUN TIME FOR 1" WATER

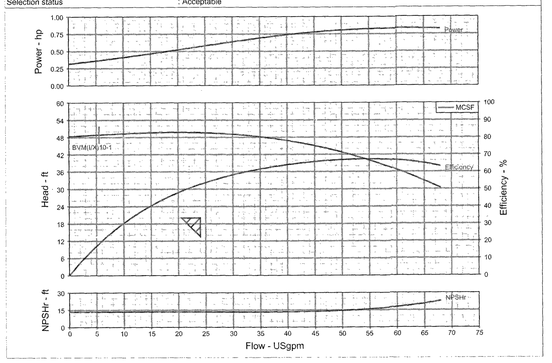
DRIP IRRIGATION SYSTEM DESIGN CRITERIA

VALVES #1 AND #2 - 64.8 G/WEEK FOR TREES - .27 GPM SHRUBS AND GC PLANTS - 7.2 G/WEEK - .036PM AT 240 MINUTES PER WEEK CONTROLLER SETTING.

PENTAIR BERKELEY — Pentair Electronic Catalog

Pump Performance Datasheet

Customer	:	Quote number	:
Customer reference	:	Size	: BVM(I/X)10-1
Item number	: Default	Stages	: 1
Service	:	Based on curve number	: BVM(I/X)10-1
Quantity	: 1	Basic model number	: BVM10; BVM110; BVMX10
		Date last saved	: 13 Jan 2021 12:15 PM
Operating Condition		**Liquid**	
Flow, rated	: 24.00 USgpm	Liquid type	: --Water
Differential head / pressure, rated (requested)	: 20.00 ft	Additional liquid description	:
Differential head / pressure, rated (actual)	: 49.64 ft	Solids diameter, max	: 0.00 in
Suction pressure, rated / max	: 0.00 / 0.00 psi.g	Solids concentration, by volume	: 0.00 %
NPSH available, rated	: Ample	Temperature, max	: 68.00 deg F
Site Supply Frequency	: 60 Hz	Fluid density, rated / max	: 1.000 / 1.000 SG
Performance		Viscosity, rated	: 1.00 cP
Speed criteria	: Synchronous	Vapor pressure, rated	: 0.00 psi.a
Speed, rated	: 3500 rpm	**Material**	
Impeller diameter, rated	: BVM(I/X)10-1	Material selected	: Not specified
Impeller diameter, maximum	: BVM(I/X)10-1	**Pressure Data**	
Impeller diameter, minimum	: BVM(I/X)10-1	Maximum working pressure	: 21.54 psi.g
Efficiency	: 52.83 %	Maximum allowable working pressure	: - psi.g
PEI (CL)	: 0.82	Maximum allowable suction pressure	: N/A
NPSH required / margin required	: 13.41 / 0.00 ft	Hydrostatic test pressure	: N/A
Ns (imp. eye flow) / Nss (imp. eye flow)	: 1,628 / 3,290 US Units	**Driver & Power Data (@ liquid density)**	
MCSF	: 5.50 USgpm	Driver sizing specification	: Rated power
Head, maximum, rated diameter	: 49.75 ft	Margin over specification	: 0.00 %
Head rise to shutoff	: -2.60 %	Service factor	: 1.15 (used)
Flow, best eff. point	: 54.83 USgpm	Power, hydraulic	: 0.30 hp
Flow ratio, rated / BEP	: 43.77 %	Power, rated	: 0.57 hp
Diameter ratio (rated / max)	: 100.00 %	Power, maximum, rated diameter	: 0.83 hp
Head ratio (rated dia / max dia)	: 100.00 %	Minimum recommended motor rating	: 0.75 hp / 0.56 kW (Fixed)
Cq/Cn/Ce/Cn [ANSI/HI 9.6.7-2010]	: 1.00 / 1.00 / 1.00 / 1.00		
Selection status	: Acceptable		



BERKELEY Pumps / Pentair Water · 293 Wright Street · Delavan, Wisconsin 53115
phone: (888)782-7483 · fax: (800)426-9446 · www.berkeleypumps.com

VALVE NUMBER AND FULL(F) OR PART(P) DRIP (D) → #1F | 1" ← VALVE SIZE
GALLONS PER MINUTE ON THIS VALVE → 107 | 8 ← NUMBER OF HEADS ON THIS VALVE

MATERIAL LEGEND AND DETAIL KEY:

- 1.5" PRESSURE MAIN PVC SCHEDULE 40, DEPTH 18" TO TOP OF PIPE. SEE DETAIL 1 ON L9.
- LATERAL PVC CLASS 200. DEPTH 12", TO TOP OF PIPE. SEE DETAIL 1 ON L9.
- DRIP LATERAL PVC CLASS 200. DEPTH 12", TO TOP OF PIPE. SEE DETAIL 1 ON L9.
- SCH 40 SLEEVING UNDER ALL PAVED AREAS WHERE LINES ARE RUN. SLEEVES SHALL EXTEND 12" PAST PAVING. CHISEL "I" MARK IN CONCRETE CURB OR WALK TO LOCATE SLEEVE AT EACH SIDE. SIZE 2X DIA. OF PIPE TO BE SLEEVED. SEE #10 UNDER GENERAL IRRIGATION NOTES ON L1.
- 2 WIRE SYSTEM FIELD WIRING SHALL BE IN THE MAIN TRENCH, 6" BELOW THE PIPE. WIRING SYSTEM SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS. SEE DETAIL 1 ON L9.
- RAIN BIRD FALCON 6504 PART CIRCLE - 6504-PC-22-HS NOZZLE #4, 31'R AT 30 PSI, 3 GPM, PRECIP RATE .49 PER MANUFACTURER, USE LASCO SWING JOINTS SEE DETAIL 7 ON L7.
- RAIN BIRD FALCON 6504 FULL CIRCLE - 6504-PC-22-HS NOZZLE #4, 31' R AT 30GPM PRECIP RATE .245 PER MANUFACTURER, USE LASCO SWING JOINTS SEE DETAIL 7 ON L7.
- DRIP EMITTER FOR TREES: RAINBIRD XERI-BIRD XBD-80 WITH FILTER USE 8 XB-20PC EMITTERS PER TREE. .27 GPM. LOCATE 5' AWAY ON WEST OR SOUTH SIDE OF TREE. SET IN EMITTER VALVE BOX. SEE DETAILS 2 AND 3 ON L9.
- DRIP EMITTER FOR PLANTS: RAINBIRD XERI-BIRD XBD-80 WITH FILTER USE 1 XB-20PC EMITTER PER PLANT. DO NOT EXCEED 20' OF MICRO TUBE. PLACE EMITTER ON UPHILL SIDE OF PLANT. SET IN EMITTER VALVE BOX. SEE DETAIL 2 ON L9.
- ELECTRIC REMOTE VALVE. WEATHERMATIC 8200CR-10 WITH XPR OPTION AND CUT-OFF BALL VALVE. SIZE ON PLAN. SEE DETAIL 4 , 5, 6, AND 9 ON L9.
- ELECTRIC REMOTE VALVE FOR DRIP. WEATHERMATIC 8200CR-10 WITH XPR OPTION AND CUT-OFF BALL VALVE. SIZE ON PLAN. SEE DETAIL 4, 5, 9 ON L9 AND 11 ON L10
- ISOLATION GATE VALVE IN LOCKING VALVE BOX. USE STANDARD VALVE BOX DETAILS. MUST BE LOCATED 10' FROM CONCENTRIC REDUCER ON 4" PIPE. ELSEWHERE AS SHOWN ON PLANS. SEE DETAIL 8 ON L9
- ELECTRIC MASTER REMOTE VALVE. WEATHERMATIC 2-1/2" 8200CR-10 SEE DETAIL 4 5 AND 6 ON L9.
- BUCKNER 1" QUICK COUPLER - DOUBLE LUG WITH LASCO SNAP LOK WITH MALE BRASS STABILIZER ELBOW WITH CUT OFF. TO BE SET IN 12"X14" LOCKING VALVE BOX. SEE DETAIL 12 ON L10.
- M — 1.5" METER. LOCATION ON THIS PLAN IS APPROXIMATE. FLOW 75 GPM. DO NOT SET IN SIDEWALK. DEVELOPER OR CONTRACTOR IS RESPONSIBLE FOR OBTAINING METER.
- BACKFLOW PREVENTION DEVICE: FEBCO MODEL LF860 1-1/2" REDUCED PRESSURE ZONE ASSEMBLY. LOCATED IN INSULATED PUMP ENCLOSURE. WALLS R.13. CEILING SHALL BE INSULATED TO R19. INSTALL TO MEET LOCAL CODES AND CITY OF EL PASO PARKS DEPT. REQUIREMENTS. SEE DETAILS 17 18 19 ON L11.
- C — RAINBIRD ESP-LXD2 CONTROLLER TO BE COMPATIBLE W/ 2 WIRE SYSTEMS USE RAIN BIRD IQ COMMUNICATIONS CARTRIDGE SEE DETAIL 16 ON L10 AND DETAIL 21 ON L11.
- P — BERKELEY BVM(I/X)10-1-HO2 FLANGED VERIFY SPECIFICATION PRIOR TO ORDERING. HOUSED IN 8'X12' TUFFSHED BRAND, PREMIER SERIES ENCLOSURE. INSTALL TO MEET LOCAL CODES AND CITY OF EL PASO REQUIREMENTS LOCATION APPROVED BY CITY OF EL PASO PARKS AND REC DEPARTMENT SEE DETAILS 17 - 21 ON L11
- R — RAIN CAN/ INTEGRATED CONTROL SENSOR INPUT DEVICE. MOUNTED ON POLE. SEE DETAIL 14 ON L10.

ALL COMPONENTS TO BE SET IN VALVE BOXES MUST CONFORM TO STANDARD INSTALLATION SEE DETAIL 4 ON L9.

COORDINATE THE LOCATION OF ALL EQUIPMENT WITH THE CITY OF EL PASO PARKS AND REC. DEPT.

(5" PIPE IS SPECIFIED FOR THIS PROJECT)

MINIMUM DISTANCE NEEDED TO AVOID INTERFERENCE BETWEEN COMPONENTS

INSTALL PER MANUFACTURER'S SPECIFICATIONS.

15" PER 1" PIPE DIAMETER MINIMUM. TO BE PLACED IN A STRAIGHT LINE. NO TURNS OR ELBOWS BETWEEN THESE COMPONENTS.

KEY:
BF - BACKFLOW/PUMP
MV - MASTER VALVE
FS - FLOW SENSOR
RS - 45° MUST BE STRAIGHT AFTER FS

MAXICOM/IQ CONTROL SYSTEM COMPONENTS SQUENCE AND SPACING
NOT TO SCALE

APPROVED FOR CONSTRUCTION
Parks & Recreation Department-Planning
KARLA CHAVEZ
SIGNATURE
2/22/2021
DATE

NOTE:

FOR FINAL ACCEPTANCE, THE IRRIGATION SYSTEM MUST DEMONSTRATE IT CAN COMMUNICATE WITH, AND BE OPERATED BY THE PARK'S MAXICOM/IQ CENTRAL CONTROL COMPUTER SUPPORTING UTILITY INFASTRUCTURE FOR THIS MUST BE INSTALLED. (MASTER VALVE; CELL SERVICE/DATA MODULE; PRESSURE REGULATOR; FLOW SENSOR; MOISTURE SENSOR; RAIN CAN IC-ID; ECT)

FIRE HYDRANT #11529 LOCATED AT AMEEN DR. AND DYER ST. - STATIC 78 PSI

MPR-35 ARE MATCHED PRECIPITATION RATE NOZZLES.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY WATER PRESSURE, WATER SOURCE AND FLOW IN THE FIELD PRIOR TO CONSTRUCTION. SHOULD A DISCREPANCY EXIST BETWEEN DESIGN PRESSURE AND FIELD PRESSURE OR FLOW, THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY.

THIS PLAN IS A SCHEMATIC AND DOES NOT SHOW EXACT LOCATION OR LENGTH OF PIPE.

REVISIONS | DATE

LISA McNELIS
LANDSCAPE ARCHITECT
1900 FOXBORO
LAS CRUCES, NEW MEXICO 88007
(575) 521-3052

ARCHITECT'S SEAL — REGISTERED LANDSCAPE ARCHITECT · FAITH MCNELIS · 1738 · STATE OF TEXAS
1/13/21

SCALE
Horizontal:
Vertical:
Contour Interval: N/A

DATE:	
DESIGN BY:	LM
DRAWN BY:	LM
CHKD. BY:	LM
APP'VD. BY:	LM
JOB No.	

PROJECT TITLE

CUESTA DEL SOL PARK

12744 PERSISTENCE AVE.
LOT 10, BLOCK 31
CITY OF EL PASO, EL PASO, TEXAS 79928
AREA: 34769.48 SQ.FT.- .7981 ACRES

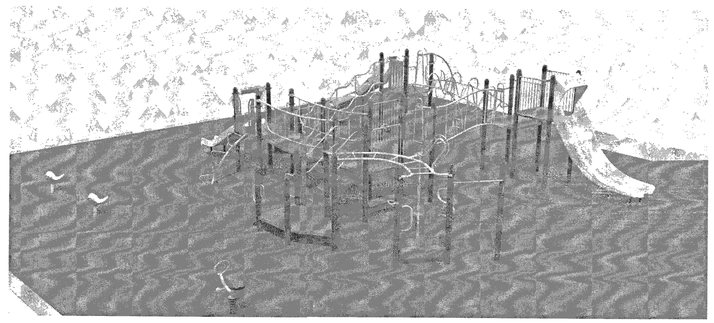
THE CITY OF EL PASO TEXAS

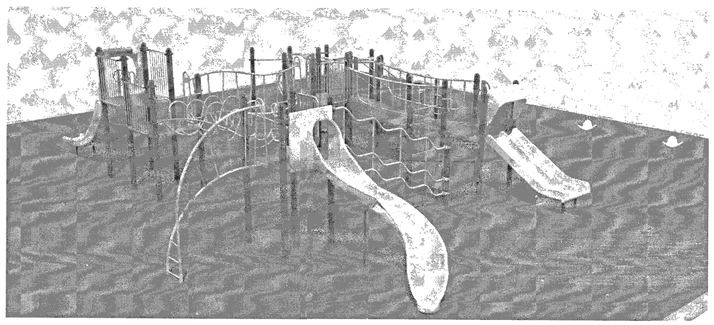
SHEET TITLE

L4

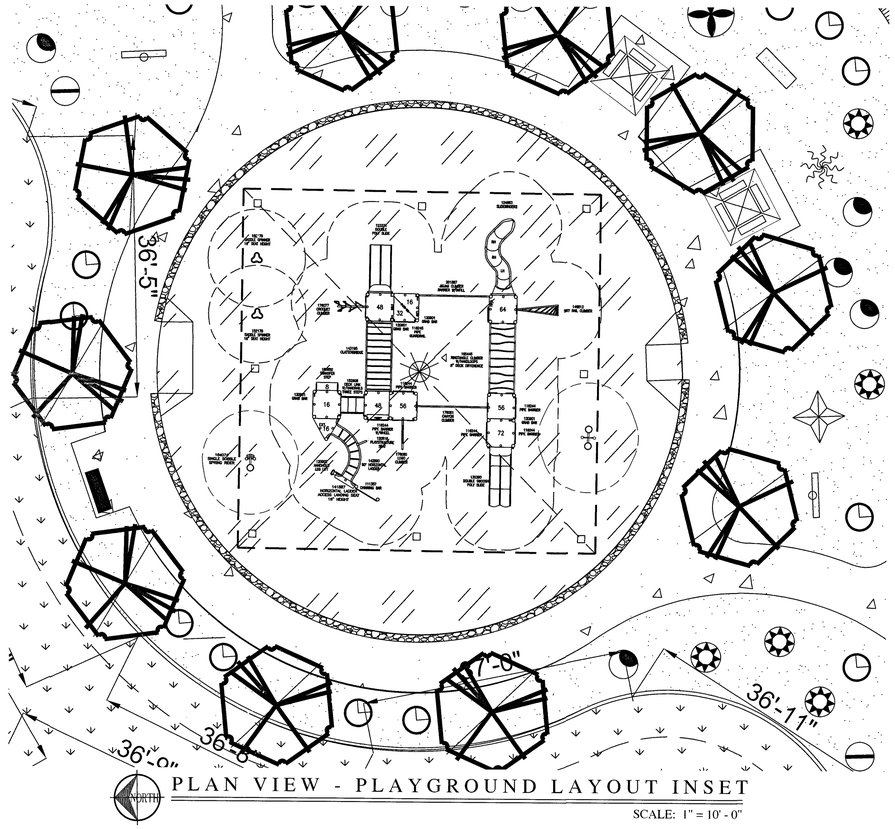
IRRIGATION PIPE SIZING

SHEET 4 OF 12





* ADDITIONAL DOUBLE BOBBLE NOT SHOWN IN 3D IMAGE.



PLAN VIEW - PLAYGROUND LAYOUT INSET

SCALE: 1" = 10' - 0"

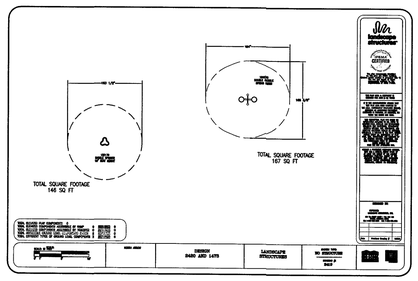
PLAYGROUND & SWING EQUIPMENT NOTES

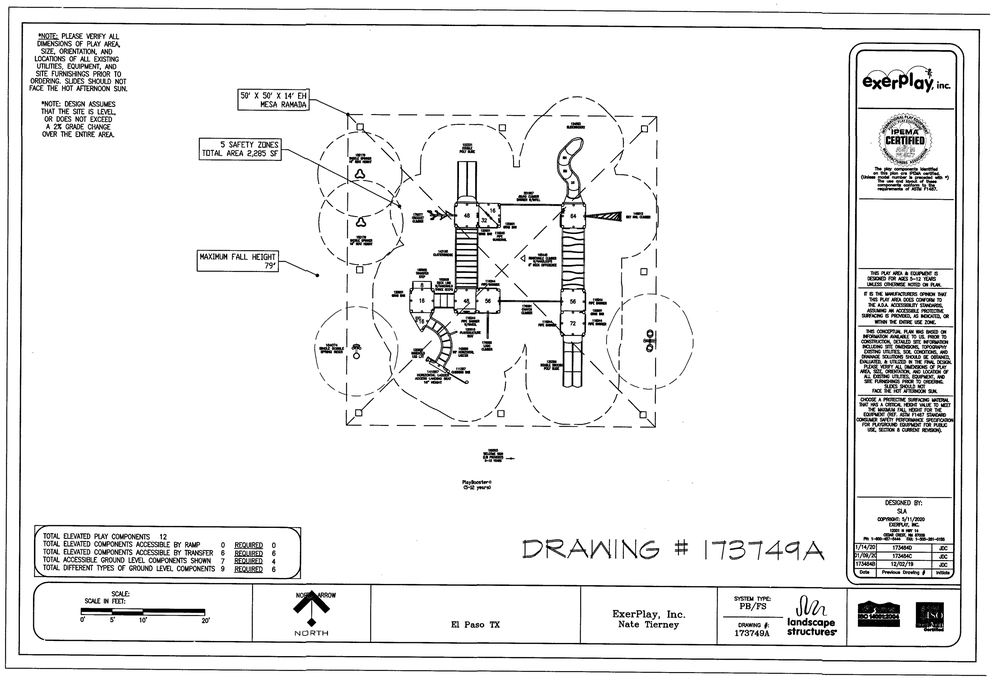
1. EQUIPMENT AND COMPONENTS TO BE IPEMA CERTIFIED.
2. EQUIPMENT MANUFACTURER TO COMPLY WITH ISO 9001.
3. EQUIPMENT MANUFACTURER TO PROVIDE CLEAR INSTALLATION MANUAL AND PROJECT LAYOUT AT THE COMPLETION OF PROJECT HARD COPY.
4. EQUIPMENT AND FALL SURFACING MUST COMPLY WITH CURRENT STANDARDS AND GUIDELINES.
5. EQUIPMENT TO CALLED OUT WITH LENGTHS FOR OVERHEAD ACTIVITIES, SPACING BETWEEN RAILS FOR CURLEY CLIMBERS, TRACK RIDES, ETC.
6. EQUIPMENT TO HAVE SAFETY TOP RAIL WITH A MINIMUM OF 72 INCHES AT CLIMBING OR SLIDING ELEMENTS.
7. EQUIPMENT MANUFACTURER SALES REPRESENTATIVE TO BE NPSI CERTIFIED.
8. EQUIPMENT INSTALLATION TO BE INSPECTED AND CERTIFIED FOR PROPER ASSEMBLY BY MANUFACTURER REPRESENTATIVE NPSI CERTIFIED.
9. EQUIPMENT MUST BE SUPERSEDED BY SUBMITTAL PACKETS THAT HAVE THE FOLLOWING INFORMATION FOR REVIEW AND RELEASE BY PROJECT DESIGNER AND PARK AND RECREATION STAFF:
   a. PROJECT SITE PLAN REFLECTING CONSTRUCTION DRAWINGS OR ACTUAL FIELD CONDITIONS.
   b. SITE PLAN WITH CONSTRUCTION POINTS.
   c. SITE PLAN WITH DIMENSIONS FOR ALL USE ZONES AND BETWEEN INDEPENDENT PIECES OF EQUIPMENT.
   d. LOCATION OF CONTAINMENT WALL OR CURB.
   e. LOCATION, LIMITS AND DIMENSIONS OF ACCESSIBLE PATH OF TRAVEL
   f. LOCATION OF ANY SHADE CANOPIES AS APPLICABLE.
   g. EQUIPMENT COLOR SELECTION CHART.
   h. EQUIPMENT INFORMATION INCLUDING INSTALLATION.
10. MANUFACTURER TO PROVIDE A SEALED MAINTENANCE KIT TO INCLUDE: TOOL BOX, SAND PAPER, OWNER'S MANUAL, HARDWARE (20 PIECES EACH MINIMUM) ASSORTED SIZES OF VANDAL PROOF NUTS, BOLTS, WASHERS, FASTENING TOOLS (ONE EACH SIZE - WRENCH AND CHUCK KEYS), 4CANS OF PRIMER , 2 CANS OF EACH COLOR OF TOUCHUP PAINT, PLASTIC REPAIR KIT, ANTI-GRAFFITI REMOVER.
11. EQUIPMENT INSTALLATION TO BE PERFORMED BY CONTRACTOR MEETING THE FOLLOWING REQUIREMENTS (a. AND b. ARE INSTALLATION EXPERIENCE REQUIREMENTS THAT MUST BE MET, c. AND d. ARE OPTIONAL REQUIREMENTS THAT MAY BE SUBSTITUTED FOR EITHER a. OR b.).
    a. MINIMUM 8 YEARS EXPERIENCE INSTALLING SAME EQUIPMENT.
    b. COMPLETE GOOD QUALITY INSTALLATION OF A MINIMUM OF 20 STRUCTURES OF SAME OR SIMILAR SIZE.
    c. TRAINING AND CERTIFICATION BY EQUIPMENT MANUFACTURER.
    d. NPSI CERTIFICATION.
12. EQUIPMENT AND FALL SURFACES TO BE AUDITED AND TESTED BY AN INDEPENDENT EQUIPMENT INVENTORY, AND PLAN VIEW WITH DIMENSIONS OF PLAYGROUND IMPROVEMENTS, EQUIPMENT MANUFACTURER, AND FALL SURFACES MANUFACTURER WITH TOLL FREE NUMBERS. ANY ITEMS FOUND DEFICIENT IN AUDIT MUST BE CORRECTED AND A RE-AUDIT OF CORRECTED ITEM TO INSURE THAT ALL DEFICIENT ITEMS ARE ADDRESSED.
13. PLAYGROUND AREA TO BE FENCED AND PROPERLY SECURED THROUGHOUT, COURSE OF CONSTRUCTION AND UP TO ACCEPTANCE OF PROJECT.
14. EQUIPMENT TO HAVE MINIMUM 72" SAFETY USE (FALL) ZONE ASTM1487-11.
15. CONSTRUCTION WORK ON PLAYGROUND AREA WILL NOT COMMENCE UNTIL ALL MATERIALS AND SUPPLIES ARE IN POSSESSION OF CONTRACTORS.
16. 16. CONTRACTOR WILL INSURE THAT WORK PROGRESS WILL BE ONGOING AND JOB SITE WILL NOT BE LEFT ABANDONED FOR ANY TIME PERIOD GREATER THAN 48 HOURS.
17. CONTRACTOR WILL INSURE THAT JOB SITE IS KEPT CLEAN AND CLEAR OF ANY CONSTRUCTION DEBRIS ON A DAILY BASIS.
18. CUSTOM SIGN TO BE FURNISHED BY PLAYGROUND MANUFACTURER WITH INFORMATION ON AGE APPROPRIATE USE, ADULT SUPERVISION RECOMMENDED, MANUFACTURER'S NAME AND 1-800 PHONE NUMBER, CITY OF EL PASO MAINTENANCE PHONE NUMBER OF (915) 621-6791 AND "WARNING" INSTALLATION OVER HARD SURFACE NOTICE. THE SPECIFIC VERBIAGE CAN BE WORKED OUT DURING PROJECT CONSTRUCTION.

APPROVED FOR CONSTRUCTION
Parks & Recreation Department-Planning

KARLA CHAVEZ
SIGNATURE
2/22/2021
DATE

FALL ZONE AREA 2285 SF
SAFETY SURFACING AREA 4520 SF





REVISIONS

DATE	

LISA McNELIS
LANDSCAPE ARCHITECT
1900 FOXBORO
LAS CRUCES, NEW MEXICO 88007
(575) 621-5062

ARCHITECT'S SEAL
REGISTERED LANDSCAPE ARCHITECT LISA McNELIS 1735 STATE OF TEXAS
1/13/21

SCALE
Horizontal:
Vertical:
Contour interval: N/A

DATE:	
DESIGN BY:	LM
DRAWN BY:	LM
CHKD. BY:	LM
APPVD. BY:	LM
JOB No.	

PROJECT TITLE

CUESTA DEL SOL PARK

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AREA: 34769.48 SQ.FT.- .7981 ACRES

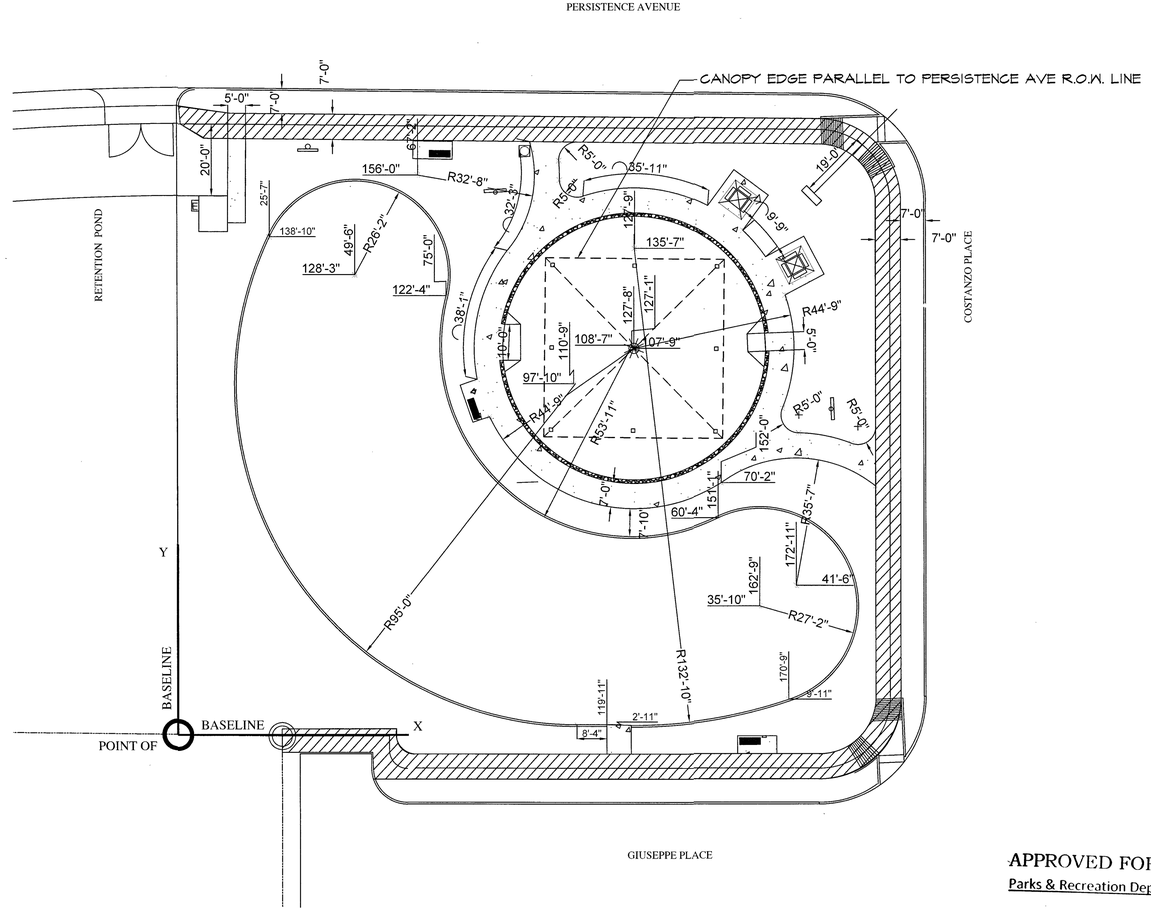
THE CITY OF EL PASO TEXAS

SHEET TITLE

L5

PARK PLAYGROUND

SHEET 5 OF 12



PLAN VIEW - LAYOUT

SCALE: 1" = 20' - 0"

APPROVED FOR CONSTRUCTION
Parks & Recreation Department Planning

KARLA CHAVEZ
SIGNATURE
2/22/2021
DATE

REVISIONS

DATE	

LISA McNELIS
LANDSCAPE ARCHITECT
1900 FOXBORO
LAS CRUCES, NEW MEXICO 88007
(575) 621-5052

ARCHITECT'S SEAL
REGISTERED LANDSCAPE ARCHITECT LISA McNELIS 1138 STATE OF TEXAS
1/13/21

SCALE
Horizontal:
Vertical:
Contour Interval: N/A

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CHKD. BY:	LM
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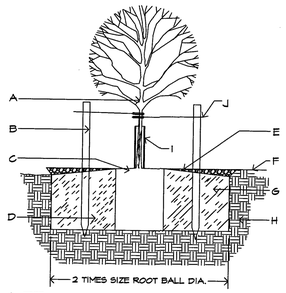
THE CITY OF EL PASO TEXAS U.S.A.

SHEET TITLE

L6

PARK LAYOUT



A. TREE
B. STAKING NEEDED
C. 4" SPACE BETWEEN MULCH AND TREE
D. SLOPE ON SIDES OF PLANTING HOLE
E. DEPTH OF BARK MULCH-SEE PLAN
F. FINISH SOIL GRADE
G. BACKFILL WITH EXISTING NATIVE SOIL
H. UNDISTURBED SOIL
I. TREEGUARD
J. TIES TO STAKES TO HAVE RUBBER HOSE TO PROTECT TREE TRUNK FROM DAMAGE BY WIRE. WIRE TIES TO BE LOOSE TO PROTECT TREE TRUNK FROM DAMAGE. WIRE TIES TO BE SET ON SAME TRUNK OR MAIN TRUNK.

STAKE 1" CALIPER TREES IN PARK PARKWAY.

1. KEEP SOIL BELOW ROOT BALL UNDISTURBED TO PREVENT TREE FROM SETTLING.
2. REMOVE ANY EXCESS SOIL FROM TOP OF ROOTBALL TO EXPOSE ROOT FLARE (WHERE TOP MOST ROOT EMERGES FROM THE TRUNK). PLANT WITH ROOT FLARE THAN FINISH GRADE 1"-2" HIGHER.
3. REMOVE CONTAINER AND CUT ANY ROOTS THAT ARE CIRCLING THE CONTAINER PRIOR TO SETTING TREE IN PLANTING HOLE (PIT).
4. TAMP SOIL FIRMLY AROUND BASE OF ROOTBALL WITH FOOT PRESSURE.
5. AT TIME OF PLANTING, ONLY PRUNE CO-DOMINANT LEADERS (DOES NOT APPLY TO MULTI-TRUNK SPECIMENS), CROSSOVER LIMBS, AND DEAD OR BROKEN BRANCHES.
6. DO NOT ALLOW MULCH IN CONTACT WITH TREE TRUNK, KEEP AT LEAST 4" AWAY FROM TRUNK.
7. INSTALL TREE GUARD. FOR TREES IN TURF AREAS. WWW.BENMEADOWS.COM
8. WHEN DONE, THOUROUGHLY WATER TO ELIMINATE AIR POCKETS.
9. STAKING IS NOT REQUIRED - STAKE TREES ONLY IF TREE CANNOT STAND ALONE AND WITH APPROVAL OF THE LANDSCAPE ARCHITECT. CONTRACTOR SHALL NOT STAKE ALL TREES INDISCRIMINANTELY, APPROVAL MUST BE OBTAINED TO STAKE TREES.
10. WITH APPROVAL, PROVIDE MIN. 3 STAKES/ TREE (TYP.) IN A TRIANGULAR PATTERN, STAKED INTO UNDISTURBED SOIL WITH CLARK'S TREE STAKE KIT OR APPROVED EQUAL, REMOVE AFTER ONE GROWING SEASON.
11. TOP OF ROOT BALL SHALL BE LEVEL WITH TOP OF MULCH OR BARK. MULCH SHALL BE FEATHERED TO FULL DEPTH.

GENERAL NOTES:

1. TREES PLANTED IN ROCKY, CALICHE AND CLAY SOILS TO HAVE PIT EXCAVATED 5 TIMES THE SIZE OF THE ROOTBALL.
2. TREES PLANTED IN ROCKY, CALICHE AND CLAY SOILS TO HAVE 1/3 TO 1/2 TOP SOIL BLENDED WITH CLAY SOIL AND USED AS BACKFILL.
3. TREES PLANTED IN ROCKY SOIL ARE TO HAVE ALL ROCKY MATERIAL LARGER THAN 1" IN SIZE REMOVED.

A TREE PLANTING DETAIL - SECTION
NOT TO SCALE

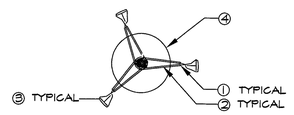
STAKING IS NOT REQUIRED BUT IF DEEMED NECESSARY THE STAKING DETAIL SHALL BE FOLLOWED. STAKING IS AT THE DISCRETION OF THE CONTRACTOR, LANDSCAPE ARCHITECT AND PARKS DEPT. BUT SHOULD TREES REQUIRE STAKING THE CONTRACTOR SHALL INCLUDE THE COST OF THE STAKING IN THE COST OF THE TREE.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE STAKES AT END OF THE GUARANTEE PERIOD AT NO COST TO THE OWNER.

TREES THAT ARE DAMAGED DUE TO IMPROPER OR LACK OF STAKING MUST BE REPLACED BY THE CONTRACTOR AT NO COST TO THE OWNER.

WIRES SHALL NOT BE TAUT BUT SHOULD ALLOW MOVEMENT OF 5 - 10 DEGREES FROM VERTICAL.

STAKES SHALL NOT BE DRIVEN INTO ROOTBALL OF TREES.

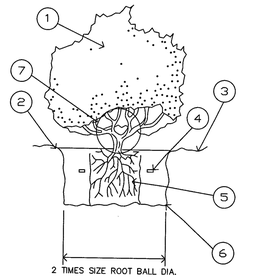


1. 2 STRAND TWIST 9 GUAGE WIRE
2. 1/2" RUBBER HOSE
3. 6' WOOD STAKE SET INTO GROUND 2'.
4. ROOTBALL

B TYPICAL TREE GUYING DETAIL - PLAN VIEW
NOT TO SCALE

APPROVED FOR CONSTRUCTION
Parks & Recreation Department Planning

KARLA CHAVEZ
SIGNATURE
2/22/2021
DATE

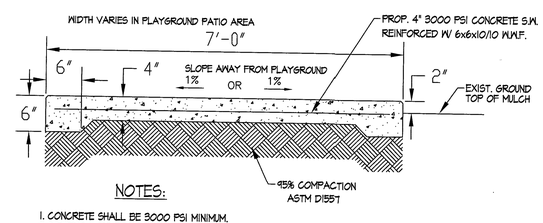


LEGEND

1. SHRUB OR VINE PER PLAN
2. EARTH WATERING BASIN (COVER WITH SPECIFIED MULCH ON PLAN).
3. FINISH GRADE
4. 7 GRAM PLANT TABLETS
   1 GAL = 3, 5 GAL = 6, 10-15 GAL = 9
5. ROOTBALL (SET CROWN FLUSH WITH FINISH GRADE) COVER 2" SPECIFIED MULCH.
6. UNDISTURBED NATIVE SOIL
7. DO NOT BURY PLANT BASE IN GRAVEL

EXCAVATE AND REPLACE WITH SAME SOIL. REMOVE STONES 2" OR LARGER.

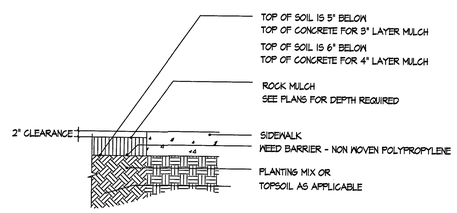
C SHRUB PLANTING DETAIL - SECTION
NOT TO SCALE



NOTES:

1. CONCRETE SHALL BE 3000 PSI MINIMUM.
2. CONTROL JOINT REQUIRED AT 5' O.C. FOR SIDEWALKS, CONTROL JOINTS SHALL BE 1/8" THICK AND 1" DEEP.
3. EXPANSION JOINT MATERIAL REQUIRED @ 20' O.C. FOR SIDEWALKS.
4. DO NOT CROSS REINFORCEMENT THRU EXPANSION MATERIAL.
5. PROVIDE EXPANSION JOINT MATERIAL WHERE SIDEWALKS MEET, EXISTING SIDEWALKS AND CURBS.

F TYPICAL CONCRETE SIDEWALK - SECTION
NOT TO SCALE



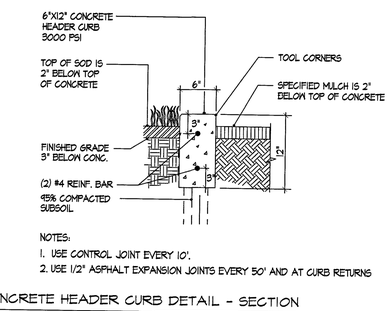
NOTE:
TOP OF ROCK MULCH IS 2" BELOW CONCRETE SURFACES.
WEED BARRIER MUST BE APPROVED BY CITY OF EL PASO PARKS DEPT.

WEED BARRIER MUST PINNED 120C ON SEAMS AND OVERLAPS AND 2'-0" OC THROUGHOUT.

G ROCK MULCH DEPTH AT CONCRETE - SECTION
NOT TO SCALE

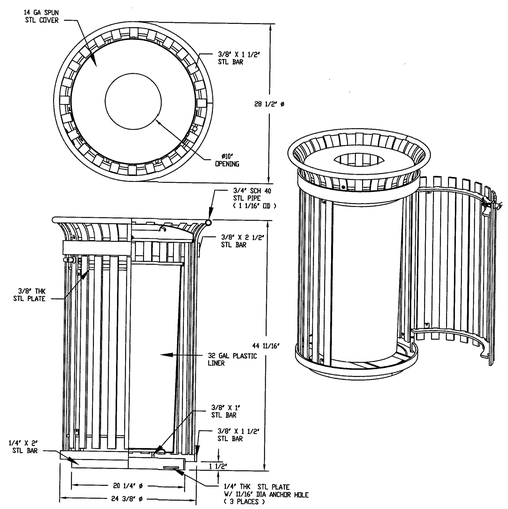
NOTES:
MOISTEN SOIL PRIOR TO LAYING SOD
ROLL IN TWO DIRECTIONS
SEE SOD SPECIFICATIONS FOR COMPLETE REQUIREMENTS.

D TYPICAL TURF AT CONCRETE DETAIL - SECTION
NOT TO SCALE



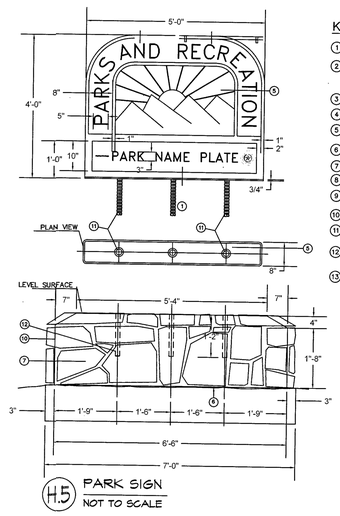
NOTES:
1. USE CONTROL JOINT EVERY 10'.
2. USE 1/2" ASPHALT EXPANSION JOINTS EVERY 50' AND AT CURB RETURNS

E CONCRETE HEADER CURB DETAIL - SECTION
NOT TO SCALE



NOTES:
1.) ALL STL. MEMBERS COATED W/ ZINC RICH EPOXY THEN FINISHED W/ POLYESTER POWDER COATING.
2.) 1/2" X 3 3/4" EXPANSION ANCHOR BOLTS PROVIDED.

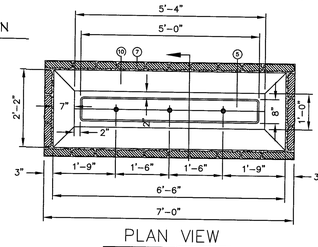
H DuMor 286-32-PTO HINGED TRASH RECEPTACLE
NOT TO SCALE



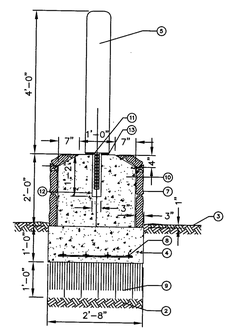
KEYED NOTES:

1. PARK NAME BY SIGN MANUF.
2. EXISTING GROUND TO REMAIN UNDISTURBED. DISTURBED GROUND TO BE COMPACTED TO 90% AS PER ASTM D1557.
3. FINISHED GRADE, SEE GRADING PLAN
4. CONTINUOUS CONCRETE FOOTING.
5. PRE-CAST CONCRETE SIGN BY WASAU TILE, REFER TO SPEC.
6. 3000 PSI CONCRETE BASE
7. 2" ROCK VENEER,MOUNT. FRANKLIN ROCK.
8. 4 # 4'S CONT. W/#4 @ 12" O.C.
9. 12" ENGINEERED FIELD COMPACTED TO MODIFIED PROCTOR TO 95%.
10. CONCRETE BASE BY SIGN MANUF.
11. S/S STUD ANCHOR PROVIDED BY SIGN MANUF.
12. 3" X 14" DEEP LEAVE-OUT FOR ANCHORING SIGN BY SIGN MANUF.
13. PROVIDE GROUT & CEMENT FOR LEVELING SIGN.

H.5 PARK SIGN
NOT TO SCALE



PLAN VIEW



PARK SIGN SECTION

REVISIONS | DATE

LISA McNELIS
LANDSCAPE ARCHITECT
1400 FOXBORO
LAS CRUCES, NEW MEXICO 88007
(575) 621-3032

ARCHITECT'S SEAL
REGISTERED LANDSCAPE ARCHITECT LISA McNELIS 1158 STATE OF TEXAS
1/13/21

SCALE
Horizontal: ___
Vertical: ___
Contour interval: N/A.

DATE:	
DESIGN BY:	LM
DRAWN BY:	LM
CHKD. BY:	LM
APPVD. BY:	LM
JOB No.	

PROJECT TITLE

CUESTA DEL SOL PARK

12744 PERSISTENCE AVE.
LOT 10, BLOCK 31
CITY OF EL PASO, EL PASO, TEXAS 79928
AREA: 347769.48 SQ.FT. - 7.981 ACRES

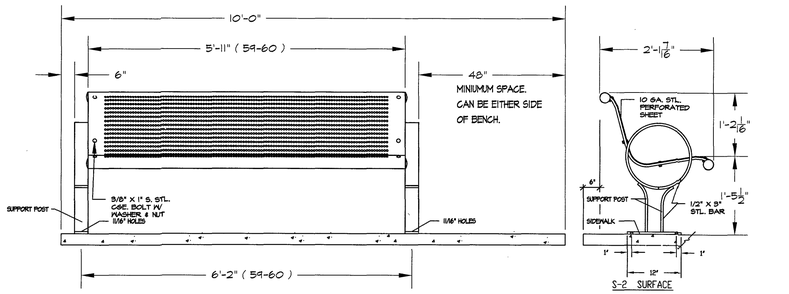
THE CITY OF EL PASO TEXAS

SHEET TITLE

L7

CONSTRUCTION DETAILS

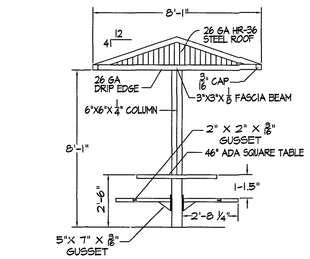
SHEET 7 OF 12



FRONT VIEW - SECTION/ELEVATION

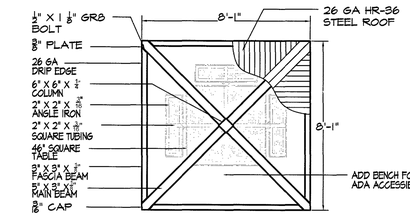
SIDE VIEW - SECTION/ELEVATION

(I) ADA BENCH DETAIL
NOT TO SCALE

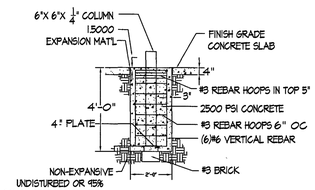


SECTION/ELEVATION - NO SCALE

OMIT COVER FOR OTHER SPECIFIED TABLES. SEE DETAIL N BELOW

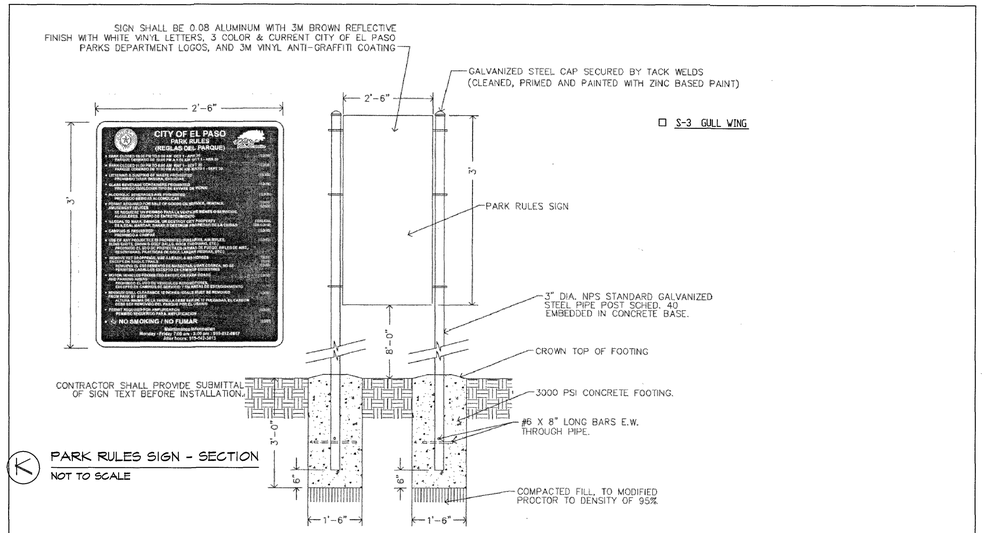


PLAN VIEW - NO SCALE



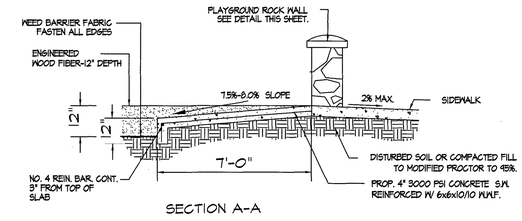
FOOTING - NO SCALE

(J) COVERED PICNIC TABLE
NOT TO SCALE

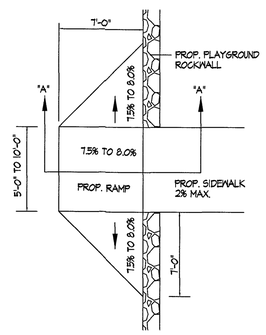


☐ S-3 GULL WING

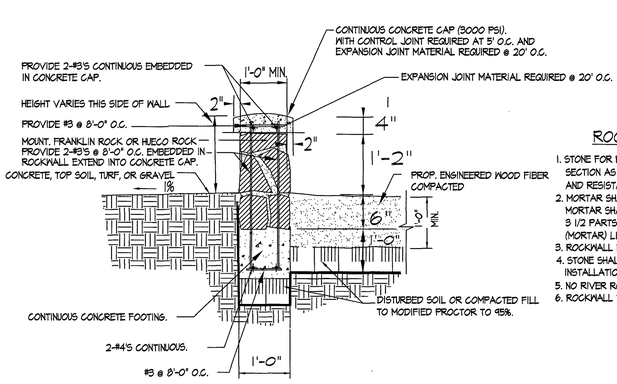
(K) PARK RULES SIGN - SECTION
NOT TO SCALE



SECTION A-A



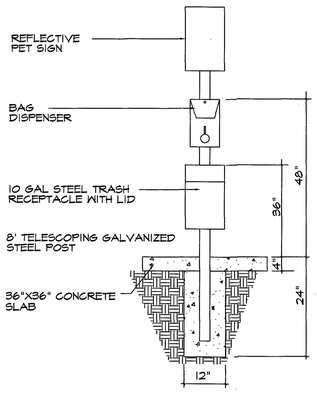
(M) ADA ACCESSIBILITY TO PLAYGROUND
NOT TO SCALE



ROCKWALL NOTES:

1. STONE FOR ROCKWALL SHALL BE AS NEARLY UNIFORM IN SECTION AS IS PRACTICABLE.THE STONE SHALL BE DENSE AND RESISTANT TO AIR AND WATER.
2. MORTAR SHALL BE TYPE "S" 1800 P.S.I. AS PER ASTM C270-73. MORTAR SHALL CONSIST BY VOLUME OF 1 PART PORTLAND CEMENT, 3 1/2 PARTS OF CLEAN, HARD, DURABLE SAND AND 1/4 PART (MORTAR) LIME THOROUGHLY MIXED WITH WATER.
3. ROCKWALL MORTAR JOINTS SHALL NOT EXCEED 3/4" TO 1 1/4".
4. STONE SHALL BE CLEANED, FREE OF DIRT PRIOR TO INSTALLATION.
5. NO RIVER ROCK SHALL BE ALLOWED FOR ROCKWALLS.
6. ROCKWALL TO BE EMBEDDED IN THE CONCRETE FOOTING.

(L) PLAYGROUND ROCK WALL WITH MORTAR CAP
NOT TO SCALE



(N) PET WASTE STATION
NOT TO SCALE

APPROVED FOR CONSTRUCTION

Parks & Recreation Department-Planning

KARLA CHAVEZ

SIGNATURE

2/22/2021

DATE

REVISIONS | DATE

LISA MCNELIS
LANDSCAPE ARCHITECT
1900 FOXBORO
LAS CRUCES, NEW MEXICO 88007
(575) 621-3092

ARCHITECT'S SEAL

REGISTERED LANDSCAPE ARCHITECT LISA MCNELIS 1136 STATE OF TEXAS

1/13/21

SCALE
Horizontal:
Vertical:
Contour Interval: N/A

DATE:
DESIGN BY: LM
DRAWN BY: LM
CHKD. BY: LM
APPV'D. BY: LM
JOB No.

PROJECT TITLE

CUESTA DEL SOL PARK

12744 PERSISTENCE AVE.
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THE CITY OF EL PASO TEXAS

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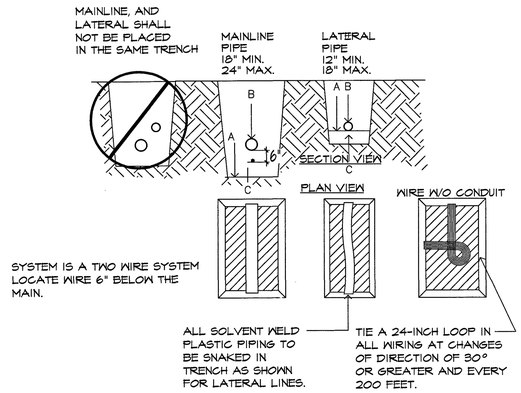
L8

CONSTRUCTION DETAILS

SHEET 8 OF 12



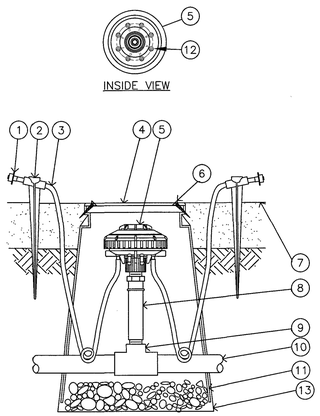
NOTES: A. BOTTOM OF EXCAVATED TRENCH WHERE NONE ROCKY SOILS ARE EXPOSED (ENCOUNTERED).
B. IRRIGATION SYSTEM PIPING.
C. MINIMUM 4" DEEP BEDDING SANDY SOILS MATERIAL WHERE ROCKY SOILS ARE EXPOSED.
D. IRRIGATION SYSTEM VALVE WIRING. LOCATE 6" BELOW MAIN PIPE
E. BACKFILL SOILS MATERIAL MAY BE NATIVE SOILS IF IT IS FREE OF CALICHE OR STONES LARGER THAN 1" IN SIZE AND ORGANIC MATTER OR WASTE DEBRIS. SOILS COMPACTION IN TURF AREAS TO BE 80% TO 85% DENSITY BY ASTM D-1557 STANDARD AND AT 95% DENSITY UNDER PAVED OR HARDSCAPE SURFACES.

1 TYPICAL PIPE AND WIRE TRENCHING DETAIL
NOT TO SCALE

LOCATE INNER RING EMITTER OUTLETS WITHIN 3' OF TREE TRUNK.
LOCATE OUTER RING EMITTER OUTLETS 8' FROM ROOTBALL.

DO NOT EXCEED 20' OF MICROTUBING.

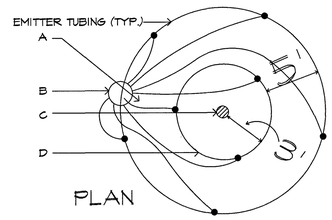
FOR SHRUBS AND GROUNDCOVER PLANTS PLACE EMITTER ON UPHILL SIDE SIDE OF PLANT 12" FROM STEM.



1. DIFFUSER BUG CAP: RAIN BIRD DBC-025 (1 OF 2 SHOWN, 8 POSSIBLE).
2. UNIVERSAL 1/4" TUBING STAKE: RAIN BIRD TS-025 (1 OF 2 SHOWN, 8 POSSIBLE).
3. 1/4" DISTRIBUTION TUBING: RAIN BIRD XQ TUBING (LENGTH AS REQUIRED)DO NOT EXCEED 20' (1 OF 2 SHOWN, 8 POSSIBLE).
4. SUBTERRANEAN EMITTER BOX: CARSON 910 SERI ES(GREEN IN TURF AREAS AND TAN IN ROCK LANDSCAPE AREAS).
5. MULTI-8-OUTLET EMISSION DEVICE: RAIN BIRD XERI-BIRD XBD-80.
6. INSTALL 2 #8, 2" LONG SELF TAPING BRASS SCREWS.
7. FINISH GRADE.
8. PVC SCH 80 IN LINE PRESSURE REGULATOR -050-30
9. PVC SCH 40 TEE OR ELL.
10. PVC LATERAL PIPE.
11. 3" MINIMUM DEPTH OF 3/4" WASHED PEA GRAVEL.
12. SINGLE-OUTLET BARB INLET X BARB OUTLET EMITTER: RAIN BIRD XERI-BUG EMITTER.
13. WEED BARRIER TAPED TO EMITTER BOX AND PIPE PENETRATION. TAPE TO BE 3M BRAND HEAVY DUTY PLASTIC TAPE.

NOTES:
1. COIL ADDITIONAL 9' OF TUBING IN EMITTER BOX TO FACILITATE MAINTENANCE.
2. RAIN BIRD XERI-BUG BARB X BARB EMITTERS ARE AVAILABLE IN THE FOLLOWING MODELS:
XB-05PC 0.5 GPH XB-10PC 1.0 GPH XB-20PC 2.0 GPH

2 DRIP EMITTER FOR TREES AND PLANTS RAIN BIRD XERI-BIRD & MULTI OUTLET EMISSION DEVICE
NOT TO SCALE



INSTALL (8) EMITTERS PER TREE, SPACE EVENLY AROUND ROOTBALL, IN OFFSET TRIANGULAR PATTERN FOR TREES, SEE IRRIGATION LEGEND FOR OUTLET EMITTER SIZE.

A. EMITTER TUBING.
B. MULTI OUTLET EMITTER DEVICE, INSTALL 5' FROM TREE TRUNK ON WEST SIDE.
C. TREE TRUNK.
D. TREE ROOTBALL.

3 EMITTER PLACEMENT FOR TREES
NOT TO SCALE

LOCATE INNER RING EMITTER OUTLETS WITHIN 3' OF TREE TRUNK.
LOCATE OUTER RING EMITTER OUTLETS 8' FROM ROOTBALL.

DO NOT EXCEED 20' OF MICROTUBING.

FOR SHRUBS AND GROUNDCOVER PLANTS PLACE EMITTER ON UPHILL SIDE SIDE OF PLANT 12" FROM STEM.

IRRIGATION IS REGULATED BY:

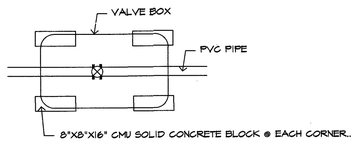
PO BOX 13087
AUSTIN, TEXAS 78711-3087
TCEQ 512 239-6719
CHAPTER 34, TEXAS WATER CODE

IRRIGATOR'S LIC. #8947

STATE OF TEXAS · FAITH MCNELIS · 8947 · REGISTERED LICENSED IRRIGATOR

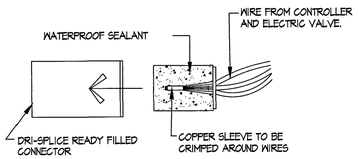
Faith McNelis 1/13/21

THIS DETAIL SHALL TAKE PRECEDENCE TO ANY OTHER DETAIL SHOWING VALVE BOX INSTALLATION.



NOTE: BLOCKS TO SIT ON WEED CLOTH ON UNDISTURBED SOIL. DISTURBED SOILS SHALL BE COMPACTED WITH TAMPER PRIOR TO SETTING WEED CLOTH & BLOCKS. VALVE BOX AND EXTENSIONS TO SIT ON BLOCKS. VALVE BOX AND EXTENSIONS TO HAVE A MINIMUM 2" CLEARANCE TO THE TOP OF PVC PIPE.

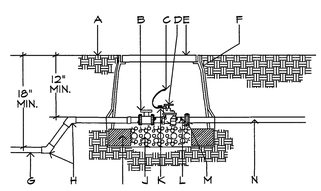
4 BLOCK PLACEMENT FOR VALVE BOXES
NOT TO SCALE



THREE STEP OPERATION DRI-SPLICE READY FILL CONNECTORS. ADD ADDITIONAL SILICONE TO SUFFICIENTLY SEAL WHEN ASSEMBLED - (AS REQUIRED).

TEST SYSTEM PRIOR TO INSTALLING THE CONNECTOR.

5 WIRE CONNECTORS
NOT TO SCALE



VALVES ARE ON A TWO WIRE SYSTEM
DECODERS MUST BE INSTALLED IN VALVE BOX WITH 3' OF SLACK WIRE. THE DECODERS SHALL BE INSTALLED WITHIN 100' OF THE SOLENOIDS THEY OPERATE. THE TWO WIRE PATH SHALL BE SURGE PROTECTED AND GROUNDED.

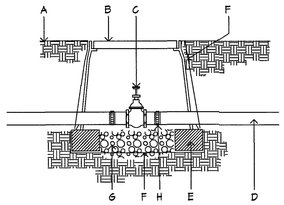
6 IRRIGATION CONTROL VALVE
NOT TO SCALE

NOTE: PVC PIPE TO BE CLEAR OF VALVE BOX AND SOLID CMU BLOCK.

A. FINISH GRADE.
B. BALL VALVE.
C. DRY SPLICE CONNECTOR OR EQUAL.
D. ELECTRIC VALVE -SEE IRRIGATION LEGEND.
E. CARSON PRODUCTS INC, 1414-18(ABS) VALVE BOX WITH BOLT DOWN FLAT LID COVER TO MATCH COLOR OF FINISHED MATERIAL AND 8" EXTENSIONS AS NECESSARY.
F. PROVIDE DEWITT PRO 5 WEED CLOTH ALONG SIDES AND BASE OF VALVE BOX INSTALLATION. TAPE TO ALL INLET AND OUTLET PIPE AND VALVE BOX WITH HEAVY DUTY PLASTIC 3M TAPE.
G. PVC MAINLINE-SEE IRRIGATION LEGEND.
H. SCH 80 - 45 DEGREE FITTING.
I. 8"X8"X16" SOLID CMU BLOCK @ EACH CORNER.
J. 4" DEPTH, 3/8" DIAMETER WASHED PEA GRAVEL.
K. 24" WIRE EXPANSION COIL, EXTEND WIRE 12" ABOVE VALVE BOX FOR SERVICE.
L. SCHEDULE 80 PVC CLOSE NIPPLE.
M. FLANGE (3" AND ABOVE) AND UNION (BELOW 3" PIPE SIZE)
N. LATERAL LINE.

APPROVED FOR CONSTRUCTION
Parks & Recreation Department Planning

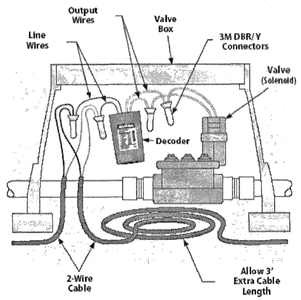
KARLA CHAVEZ
SIGNATURE
2/22/2021
DATE



A. FINISH GRADE.
B. CARSON PRODUCTS INC, 1414-18(ABS) VALVE BOX WITH BOLT DOWN FLAT LID COVER TO MATCH COLOR OF FINISH MATERIAL AND 8" EXTENSIONS AS NECESSARY.
C. BRASS ISOLATION VALVE- SEE IRRIGATION LEGEND.
D. IRRIGATION MAINLINE.
E. 8"X 8"X16" SOLID CMU SOLID BLOCK @ EACH CORNER.
F. PROVIDE DEWITT PRO 5 WEED CLOTH ALONG SIDES AND BASE OF VALVE BOX INSTALLATION. TAPE TO ALL INLET AND OUTLET PIPE AND VALVE BOX WITH HEAVY DUTY PLASTIC 3M TAPE.
G. 4" DEPTH, 3/8" WASHED PEA GRAVEL.
H. FLANGE (3" AND ABOVE) AND UNION (BELOW 3" PIPE SIZE)

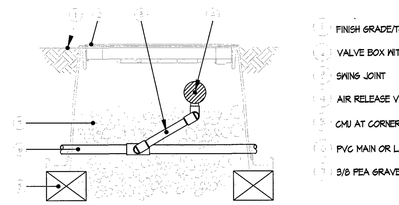
NOTE: PVC PIPE TO BE CLEAR OF VALVE BOX AND SOLID CMU BLOCK MUST BE LOCATED 10' FROM CONCENTRIC REDUCER ON 4" PIPE.

8 ISOLATION VALVE
NOT TO SCALE



NOTE: FOR SECONDARY WIRE RUN, THE DISTANCE BETWEEN THE FIELD DECODER AND THE SOLENOID (VALVE) CAN NOT EXCEED 450 FEET (137 METERS) USING 14 GAUGE WIRE.

9 DECODER INFO
NOT TO SCALE



INSTALL BRICK AT EACH CORNER OF VALVE BOX
3/8 PEA GRAVEL INSTALLED FLUSH WITH BOTTOM OF PIPE AND BASE OF VALVE.

AIR RELEASE VALVES SHALL BE INSTALLED AT HIGH POINTS OF THE MAIN LINE AND LATERALS. LOCATION TO BE DETERMINED IN THE FIELD

SEE ISOLATION VALVE DETAIL #8 ON L16 FOR STANDARD VALVE BOX INSTALLATION INFORMATION.

10 AIR RELEASE VALVE
NOT TO SCALE

REVISIONS | DATE

LISA MCNELIS
LANDSCAPE ARCHITECT
1900 FOXBORO
LAS CRUCES, NEW MEXICO 88007
(575) 621-3082

ARCHITECT'S SEAL
REGISTERED LANDSCAPE ARCHITECT · FAITH MCNELIS · 1136 · STATE OF TEXAS
1/13/21

SCALE
Horizontal: N/A
Vertical:
Contour Interval:

DATE:	
DESIGN BY:	LM
DRAWN BY:	LM
CHKD. BY:	LM
APPVD. BY:	LM
JOB No.	

PROJECT TITLE

CUESTA DEL SOL PARK
12744 PERSISTENCE AVE.
LOT 10, BLOCK 31
CITY OF EL PASO, EL PASO, TEXAS 79928
AREA: 34769.48 SQ.FT.- .7981 ACRES

THE CITY OF EL PASO · TEXAS

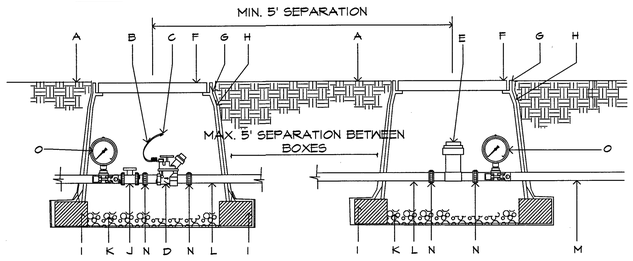
SHEET TITLE

L9

IRRIGATION DETAILS

SHEET 9 OF 12

DO NOT USE PRESSURE REGULATING BASKET FILTER



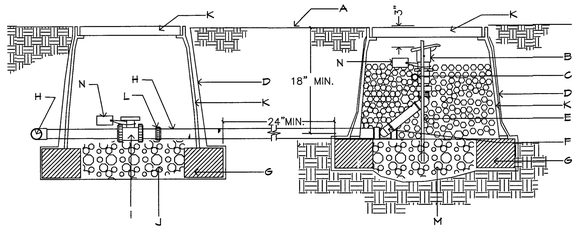
NOTE: PROVIDE 1 PRESSURE GAUGE ON MAIN LINE UPSTREAM OF BALL VALVE AND ANOTHER DOWNSTREAM OF BASKET FILTER. PROVIDE 5' SEPARATION BETWEEN BOXES. IF SPACE IS NOT AVAILABLE, PROVIDE A MIN. 5' SEPARATION AT CENTER LINES OF BOXES. SET GASES HORIZONTAL TO BE READABLE FROM ABOVE.

A. FINISH GRADE.
B. 24" WIRE LOOP.
C. DRY SPLICE CONNECTOR OR EQUAL.
D. AUTOMATIC VALVE. SEE IRRIGATION LEGEND.
E. RAINBIRD PRESSURE BASKET FILTER STRAINER SHALL BE INSTALLED TO PROVIDE ACCESS FOR MAINTENANCE AND REPLACEMENT
F. LOCKING VALVE BOX COVER FLAT LID WITH BOLT.
G. CARSON PRODUCTS INC. 1419-18 BODY (ABS) VALVE BOX W/BOLT DOWN COVER (COVER COLOR TO MATCH FINISH MATERIAL AND EXTENSION AS NECESSARY.
H. PROVIDE DEWITT PRO 5 WEED CLOTH ALONG SIDES AND BASE OF VALVE BOX AND BLOCKS TAPE TO ALL INLET & OUTLET PIPE WITH 3M HEAVY DUTY PLASTIC TAPE.
I. 8"X8"X16" CMU SOLID CONCRETE BLOCK @ EACH CORNER..
J. BALL VALVE, INCLUDED IN CONTROL ZONE KIT, SEE IRRIGATION LEGEND.
K. 4" LATER OF 3/8" WASHED PEA GRAVEL.
L. PVC PIPE SIZED PER PLAN WITH WELD ON THREADED FITTINGS ON EACH END.
M. LATERAL LINE
N. PROVIDE PVC UNION FOR PIPE SIZES LESS THAN THREE INCHES IN DIAMETER OR PROVIDE. FLANGES FOR PIPE SIZES THREE INCHES IN DIAMETER OR LARGER.
O. HORIZONTAL HYGIENIC PRESSURE GAUGE

VALVES ARE ON A TWO WIRE SYSTEM

VALVES ARE ON A TWO WIRE SYSTEM
DECODERS MUST BE INSTALLED IN VALVE BOXE WITH 5' OF SLACK WIRE. THE DECODERS SHALL BE INSTALLED WITHIN 100' OF THE SOLENOIDS THEY OPERATE. THE 2 WIRE PATH SHALL BE SURGE PROTECTED AND GROUNDED.

11 DRIP VALVE W/ BASKET FILTER
NOT TO SCALE

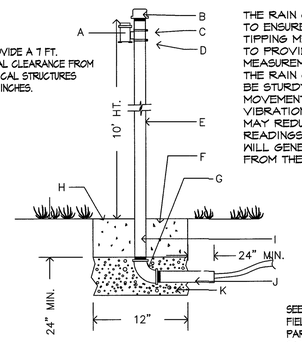


A. FINISH GRADE.
B. 1" BUCKNER QUICK COUPLER VALVE, DOUBLE SLOT, PURPLE TOP-MODEL QBSNPIO WITH LASCO SNAP-LOK W/MALE BRASS STABILIZER ELBOW.
C. MIN. 12" SECTION 1" DIA. PVC, SECTION SHOULD EXTEND BEYOND BOTH REBAR SECTION, STABILIZE IN GRAVEL.
D. PROVIDE DEWITT PRO 5 WEED CLOTH ALONG SIDES AND BASE OF VALVE BOX. TAPE TO ALL INLET AND OUTLET PIPE AND VALVE BOX WITH HEAVY DUTY 3M PLASTIC TAPE.
E. 1/2" OR 3/8" REBAR, MIN. 30" LENGTH, ONE ON EITHER SIDE OF QUICK COUPLER FOR STABILITY.
F. LASCO SWING JOINT (PRE-ASSEMBLED).
G. 8" X 8" X 16" SOLID CMU BLOCK
H. IRRIGATION MAINLINE
I. ISOLATION BALL VALVE, SEE IRRIGATION LEGEND.
J. 6" DEPTH OF 3/8" WASHED PEA GRAVEL
K. CARSON PRODUCTS INC. 1419-18 BODY (ABS) VALVE BOX AND EXTENSION(S) W/BOLT DOWN COVER (COVER COLOR TO BE PURPLE).
L. PROVIDE PVC UNION FOR PIPE SIZES LESS THAN THREE INCHES IN DIAMETER OR PROVIDE. FLANGES FOR PIPE SIZES THREE INCHES IN DIAMETER OR LARGER.
M. 3/8" WASHED PEA GRAVEL FILLED TO QUICK COUPLER FOR STABILITY.
N. WEATHER PROOF TAG THAT READS, "NON-PORTABLE WATER, NOT SAFE FOR DRINKING." FLANGES FOR PIPE SIZES THREE INCHES IN DIAMETER OR LARGER.

NOTE: INSTALL AN 8" X 8" X 16" SOLID CMU BLOCK AT EACH CORNER OF THE VALVE BOX. INSTALL 3/8" PEA GRAVEL BELOW THE 1419-18 VALVE BOX WITH BOLT DOWN COVER. EXTEND PEA GRAVEL UP TO COLLAR OF QUICK COUPLER VALVE. INSTALL A TEE, FLANGE & BALL VALVE OFF OF THE MAIN LINE IMMEDIATELY UPSTREAM OF THE QUICK COUPLER VALVE.

12 QUICK COUPLER
NOT TO SCALE

13 BLANK
NOT TO SCALE

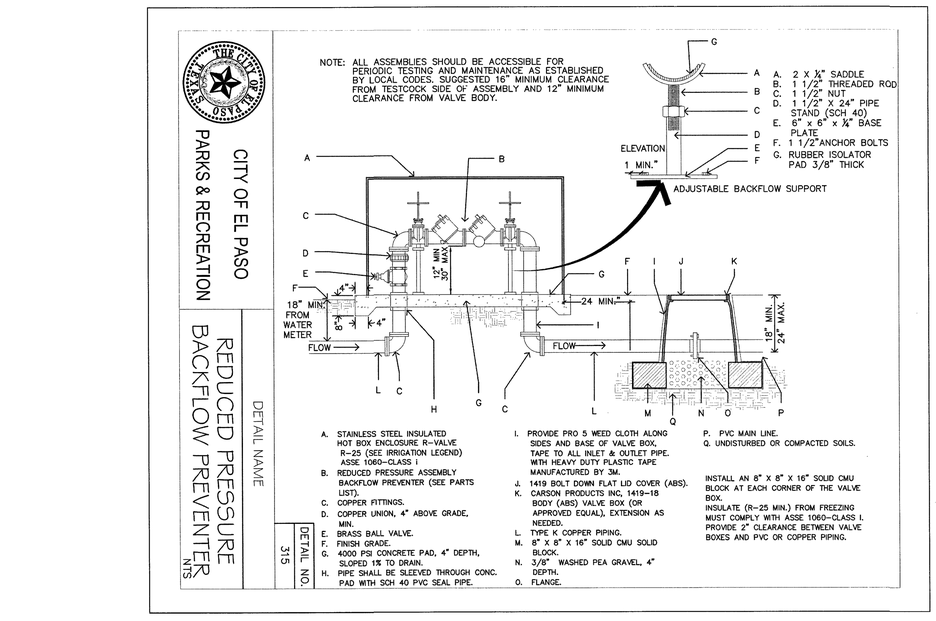


THE RAIN CAN MUST BE MOUNTED LEVEL TO ENSURE PROPER OPERATION OF THE TIPPING MECHANISM AND TO PROVIDE ACCURATE RAINFALL MEASUREMENTS. THE MOUNT ON WHICH THE RAIN CAN IS ATTACHED MUST BE STURDY ENOUGH TO PREVENT MOVEMENT IN WINDY CONDITIONS. VIBRATIONS FROM SMALL MOVEMENTS MAY REDUCE THE ACCURACY OF THE READINGS WHILE EXCESSIVE MOVEMENT WILL GENERATE FALSE READINGS FROM THE TIPPING ASSEMBLY.

SEE MANUFACTURER'S FIELD INSTALLATION INSTRUCTIONS. PARKS MAY REQUIRE ADDITIONAL FASTENERS OR MODIFICATION OF THIS DETAIL.

A. RAIN BIRD RAIN CAN
B. 2 ½" PIPE CAP WITH HOLE FOR WIRES AND SEAL WITH EXTERIOR GRADE SILICONE SEALANT.
C. CLAMPS
D. (2) MACHINE SCREWS WITH WASHER, LOCK WASHER AND NUT.
E. 2 1/2"" SCH 40 GALVANIZED PIPE-10 FT. HT. A.G.
F. 12"X12" CONCRETE BASE, MIN. 24" DEEP.
G. PIPE ELBOW.
H. FINISH GRADE
I. PIPE TO BE SEALED AFTER CABLE IS RUN, USE 4 MIL PLASTIC AND TAPED NIPPLE AND THE CABLE WITH HIGH GRADE 3M WEATHER PROOF PLASTIC TAPE.
J. NIPPLE. GALVANIZED PIPE IN CONCRETE FOOTING TO BE WRAPPED WITH WEATHER PROOF TAPE TO PROTECT FROM CORROSION.
K. 6" THICK, 3/8" DIAMETER WASHED PEA GRAVEL.

14 RAIN CAN
NOT TO SCALE



A. STAINLESS STEEL INSULATED HOT BOX ENCLOSURE R-VALVE R-25 (SEE IRRIGATION LEGEND) ASSE 1060-CLASS I
B. REDUCED PRESSURE ASSEMBLY BACKFLOW PREVENTER (SEE PARTS LIST).
C. COPPER FITTINGS.
D. COPPER UNION, 4" ABOVE GRADE, MIN.
E. BRASS BALL VALVE.
F. FINISH GRADE.
G. 4000 PSI CONCRETE PAD, 4" DEPTH, SLOPED 1% TO DRAIN.
H. PIPE SHALL BE SLEEVED THROUGH CONC. PAD WITH SCH 40 PVC SEAL PIPE.
I. PROVIDE PRO 5 WEED CLOTH ALONG SIDES AND BASE OF VALVE BOX, TAPE TO ALL INLET & OUTLET PIPE. WITH HEAVY DUTY PLASTIC TAPE MANUFACTURED BY 3M.
K. CARSON PRODUCTS INC, 1419-18 BODY (ABS) VALVE BOX (OR APPROVED EQUAL), EXTENSION AS NEEDED.
L. 1419 BOLT DOWN FLAT LID COVER (ABS).
L. TYPE K COPPER PIPING.
M. 8" X 8" X 16" SOLID CMU SOLID BLOCK.
N. 3/8" WASHED PEA GRAVEL, 4" DEPTH.
O. FLANGE.
P. PVC MAIN LINE.
Q. UNDISTURBED OR COMPACTED SOILS.

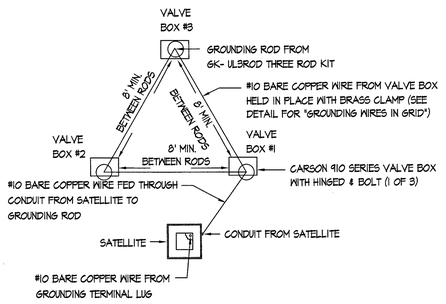
INSTALL AN 8" X 8" X 16" SOLID CMU BLOCK AT EACH CORNER OF THE VALVE BOX.
INSULATE (R-25 MIN.) FROM FREEZING MUST COMPLY WITH ASSE 1060-CLASS I. PROVIDE 2" CLEARANCE BETWEEN VALVE BOXES AND PVC OR COPPER PIPING.

USE THESE STANDARDS AS THEY APPLY TO THE BACKFLOW IN PUMP HOUSE DETAILS SEE SHEET L11

15 BACKFLOW
NOT TO SCALE

APPROVED FOR CONSTRUCTION
Parks & Recreation Department Planning

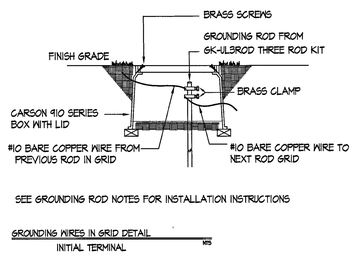
KARLA CHAVEZ
SIGNATURE
2/22/2021
DATE



PLAN VIEW

PLAN VIEW FOR LAYOUT ONLY. SEE GROUNDING ROD NOTES FOR INSTALLATION INSTRUCTIONS.

16 TRIANGULAR GROUNDING GRID DETAIL
NOT TO SCALE



SEE GROUNDING ROD NOTES FOR INSTALLATION INSTRUCTIONS

GROUNDING WIRES IN GRID DETAIL
INITIAL TERMINAL

GROUNDING ROD NOTES:

GROUNDING RODS SERVE AS ELECTRODES FOR DEVICES TO DISSIPATE THE SURGE INTO THE EARTH. CAREFULLY READ THE FOLLOWING INSTALLATION INSTRUCTIONS:
1. ALWAYS USE A 5/8" X 8' COPPER CLAD ROD.
2. RUN A #10 OF LARGER BARE COPPER WIRE FROM THE DEVICE TO THE ROD.
3. KEEP THE GROUND WIRES AS SHORT AND STRAIGHT AS POSSIBLE FROM THE DEVICE TO THE FIRST ROD.
4. CLAMP ALL WIRES TO THE GROUNDING ROD. DO NOT SOLDER OR TAPE THEM TO THE ROD.
5. TO INSTALL GROUNDING ROD, USE 6K-TOOLS ROD DRIVING SLEEVE.
6. SPACE THREE RODS IN A TRIANGULAR GRID AT LEAST 8' APART FROM THE OTHERS IN THE GRID. CONNECT ALL THREE RODS WITH A SOLID # 10 COPPER WIRE.
7. WHEN TESTED WITH THE PROPER EQUIPMENT, GRIDS SHOULD HAVE AN EARTH RESISTANCE NO GREATER THAN 15 OHMS.
8. WHENEVER MORE THEN ONE WIRE IS ATTACHED TO A GROUNDING ROD ALWAYS USE A SEPARATE CLAMP FOR EACH WIRE. TRYING TO INSTALL MORE THAN ONE WIRE PER CLAMP COULD CAUSE A POOR CONNECTION RESULTING IN HIGH RESISTANCE LEVELS.
9. GROUNDING RODS SERVE AS ELECTRODES FOR THE SURGE DEVICES TO DISSIPATE THE SURGE INTO THE EARTH REMEMBER THESE TIPS WHEN INSTALLING THEM.

IRRIGATION IS REGULATED BY:

PO BOX 13087
AUSTIN, TEXAS 78711-3087
TCEQ 512 239-6719
CHAPTER 34, TEXAS WATER CODE

IRRIGATOR'S LIC. #8947

STATE OF TEXAS
FAITH McNELIS
8947
REGISTERED
LICENSED IRRIGATOR

Faith McNelis 1/13/21

REVISIONS | DATE

LISA McNELIS
LANDSCAPE ARCHITECT
1900 FOXBORO
LAS CRUCES, NEW MEXICO 88007
(575) 621-2052

ARCHITECT'S SEAL
REGISTERED LANDSCAPE ARCHITECT LISA McNELIS 735 STATE OF TEXAS
1/13/21

SCALE
Horizontal:
Vertical:
Contour Interval: N/A
DATE:
DESIGN BY: LM
DRAWN BY: LM
CHKD. BY: LM
APPVD. BY: LM
JOB No.

PROJECT TITLE

CUESTA DEL SOL PARK
12744 PRESIDENCIA AVE.
LOT 10, BLOCK 31
CITY OF EL PASO, EL PASO, TEXAS 79928
AREA: 34769.48 SQ.FT.- .7981 ACRES

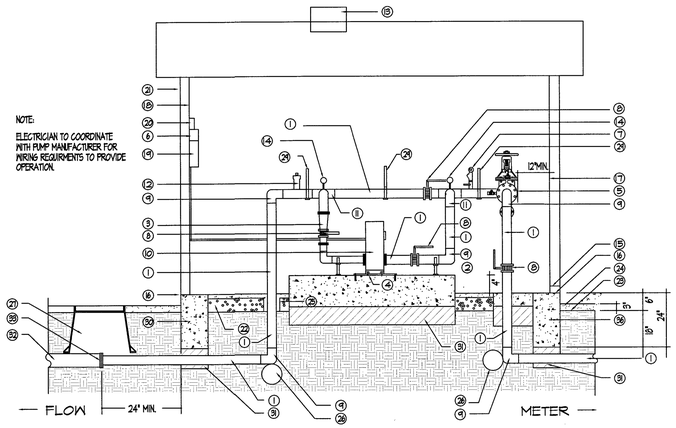
THE CITY OF EL PASO TEXAS

SHEET TITLE

L10

IRRIGATION DETAILS

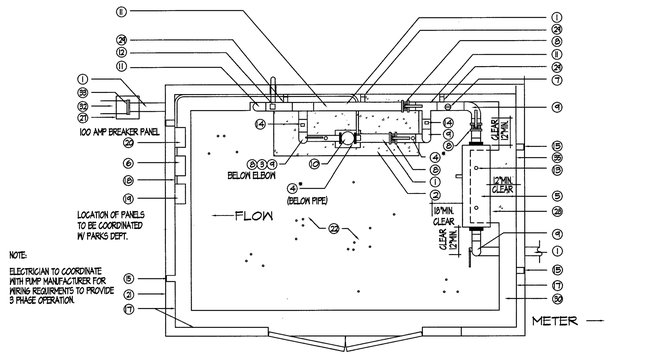
SHEET 10 OF 12



17 BOOSTER PUMP AND ENCLOSURE - SECTION/ELEVATION
NOT TO SCALE

KEYED NOTES FOR DETAILS 12 AND 13

1. TYPE K COPPER - SEE PLANS FOR SIZE
2. CONCRETE SLAB BELOW PUMP - 3000 PSI 4" HIGHER THAN BUILDING FOOTING
3. CONCENTRIC REDUCER IF PUMP OUTLET IS LESS THAN 3"
4. STEEL SUPPORTS WITH ISOLATORS BOLTED TO CONCRETE
5. BACKFLOW PREVENTER - SEE IRRIGATION MATERIALS LEGEND
6. PENTAIR VARIABLE FREQUENCY DRIVE
7. MERCOID DA SWITCH -HIGH/LOW CUT OFF SWITCH MUST BE VERTICAL AND LEVEL WIRE TO PUMP PANEL
8. LUG STYLE BUTTERFLY VALVE
9. COPPER ELBOW
10. BERKELEY VARIABLE FREQUENCY DRIVE PUMP W. 2 HP MOTOR, FLANGED, MOUNTED ON CONCRETE SLAB WITH 1/2" OR THICKER SOLE PLATE TAPPED FOR HOLD DOWN BOLTS. USE RUBBER ISOLATORS BETWEEN PUMP AND SOLE PLATE. REFER TO BERKELEY CENTRIFUGAL PUMP OWNER'S MANUAL P. 5
11. COPPER TEE
12. PRESSURE RELEASE VALVE VENT TO OUTSIDE OF PUMP HOUSE
13. METAL STATIC VENT
14. 100 PSI PRESSURE GUAGE
15. INSTALL KNOCK OUT DRAINS W/ STURDY METAL LOUVERS (N-I)
16. TOP OF SHED FOOTING
17. WAFER BOARD IN WALLS AND CEILING
18. 3/4" CDX PLYWOOD BEHIND CONTROLLER AND ELEC PANEL
19. CONTROLLER WITHIN 8' OF PUMP RELAYS. SEE DETAIL M SHEET L6
20. PUMP PANEL WITH NEMA 3R ENCLOSURE. REFER TO BERKELEY PUMP MANUFACTURER'S RECOMMENDED COMPONENTS FOR PUMP PROTECTION DURING OPERATION. MUST MEET ALL LOCAL ELEC. CODE REQUIREMENTS.
21. 8' X 12' PREMIER RANCH TUFF SHED. DOOR LOCATION APPROVED BY PARKS.
22. 4" MINIMUM DEPTH PEA GRAVEL
23. FINISHED GRADE
24. 3" LAYER OF GRAVEL (OUTSIDE SHED)
25. USE "LEAVE OUT" IN CONCRETE OR PVC SLEEVE.
26. THRUST BLOCK
27. JAMES CARSON BOX 18" DEPTH FOR INSPECTION
28. 4" SLAB BELOW BACKFLOW FOR STEEL SUPPORTS
29. UNISTRUT PIPE SUPPORT SYSTEM - DETAILS PROVIDED TO PARKS
30. 12"X24" CONCRETE FOOTING SEE T ON SHEET L12
31. UNDISTURBED SOIL OR COMPACTED FILL TO MODIFIED PROCTOR 95% BELOW ALL CONCRETE.
32. SCHEDULE 40 PVC MAIN
33. COPPER FLANGE TO PVC SCHEDULE 80 FLANGE



*NOTE:
DO NOT LET THE WEIGHT OF THE PIPE REST ON THE PUMP. INSTALL PIPE SUPPORTS AS SHOWN. ADD SUPPORTS IF NECESSARY.

TYPE K COPPER WILL BE USED FOR COPPER INSTALLED FROM SERVICE LINE THROUGH THE BACKFLOW AND PUMP.

SHED AND COMPONENTS MAY BE REORIENTED IN THE FIELD BASED ON WATER METER LOCATION. MAINTAIN CLEARANCES AND ORDER OF COMPONENTS

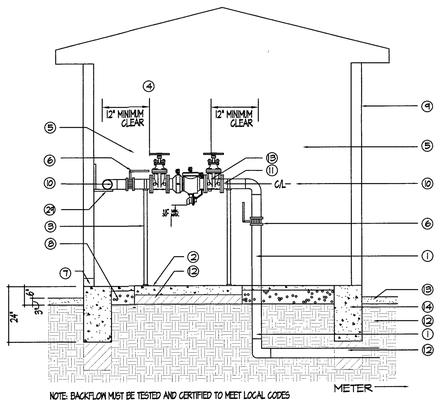
SHED MUST BE SET BEHIND BLDG SETBACKS.

8' X 12' PREMIER RANCH TUFF SHED. DOOR LOCATION APPROVED BY PARKS.

18 BOOSTER PUMP AND ENCLOSURE - PLAN VIEW
NOT TO SCALE

APPROVED FOR CONSTRUCTION
Parks & Recreation Department-Planning

KARLA CHAVEZ
SIGNATURE
2/22/2021
DATE

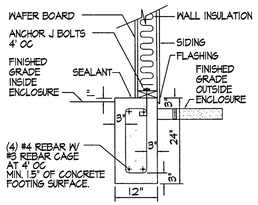


NOTE: BACKFLOW MUST BE TESTED AND CERTIFIED TO MEET LOCAL CODES
SEE DETAIL 'H' ON SHEET L6 AND DETAILS O AND P ON SHEET L7

1. TYPE K COPPER - SEE PLANS FOR SIZE
2. 4" CONCRETE SLAB BELOW BACKFLOW 3000 PSI CONCRETE. SAME POUR AS SHED FOOTING
3. STEEL SUPPORTS WITH RUBBER ISOLATORS BOLTED TO CONCRETE
4. UNISTRUT PIPE SUPPORT SYSTEM - DETAIL TO BE APPROVED BY PARKS.
5. BACKFLOW PREVENTER - SEE PLANS
6. BUTTERFLY VALVE
7. INSTALL KNOCK OUT DRAINS WITH STURDY METAL LOUVERS
8. 4" DEPTH OF PEA GRAVEL
9. 8' X 12' TUFF SHED. DOOR LOCATION TO BE APPROVED BY PARKS.
10. MUST ALIGN WITH BY-PASS ABOVE PUMP
11. COPPER UNION (FLANGED)
12. 12" UNDISTURBED SOIL OR COMPACTED FILL TO MODIFIED PROCTOR 95% BELOW ALL CONCRETE.
13. 3" LAYER OF GRAVEL OUTSIDE OF SHED
14. 12" X 24" CONCRETE FOOTING MINIMM SIZE BELOW WALLS. SEE DETAIL THIS SHEET.

PROVIDE CLEARANCES FOR BACKFLOW DEVICE OF:
12" ON BACKSIDE
12" ON SUPPLY AND DISCHARGE SIDES
18" ON FRONT SIDE (TEST SIDE)

19 BACKFLOW IN PUMP ENCLOSURE - SECTION/ELEVATION
NOT TO SCALE

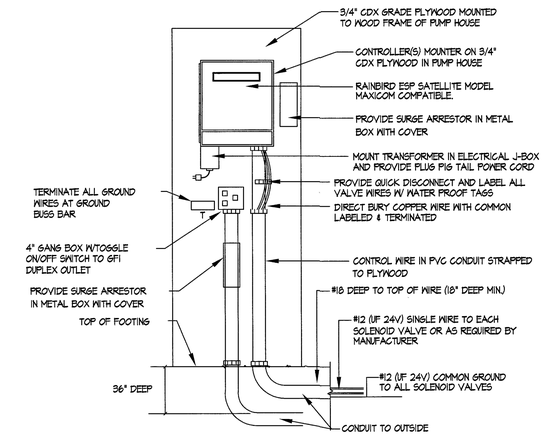


NOTES:
ALL SIDING AND TRIM WORK TO BE CAULKED THEN PRIMED, USE 2 COATES OF PAINT (COLOR SELECTED BY PARKS AND RECREATION DEPT).

INSTALL KNOCK-OUT DRAINS WITH STURDY METAL LOUVERS AT BASE OF PUMP HOUSE IN CASE OF LEAKS.

SEE DETAILS N, O AND P ON SHEETS L6 AND L7 FOR MORE INFORMATION.

20 PUMP ENCLOSURE FOOTING DETAIL - SECTION/ELEVATION
NOT TO SCALE



LABEL ALL WIRES AND EQUIPMENT WITH PERMANENT WATERPROOF TAGS.

CONTROLLER USES 2 WIRE SYSTEM.

21 WALL MOUNTED CONTROLLER MAXICOM COMPATIBLE
NOT TO SCALE

IRRIGATION IS REGULATED BY:

PO BOX 13087
AUSTIN, TEXAS 78711-3087
TCEQ 512 239-6719
CHAPTER 34, TEXAS WATER CODE

IRRIGATOR'S LIC. #8947

STATE OF TEXAS · FAITH MCNELIS · 8947 · REGISTERED LICENSED IRRIGATOR

Faith McNelis 1/13/21

REVISIONS | DATE

LISA McNELIS
LANDSCAPE ARCHITECT
1900 FOXBORO
LAS CRUCES, NEW MEXICO 88007
(575) 621-3032

ARCHITECT'S SEAL
REGISTERED LANDSCAPE ARCHITECT · LISA McNELIS · 1738 · STATE OF TEXAS
1/13/21

SCALE
Horizontal:
Vertical: N/A
Contour Interval:

DATE:	
DESIGN BY:	LM
DRAWN BY:	LM
CHKD. BY:	LM
APPVD. BY:	LM
JOB No.	

PROJECT TITLE

CUESTA DEL SOL PARK

12744 PERSISTENCE AVE.
LOT 10, BLOCK 31
CITY OF EL PASO, EL PASO, TEXAS 79928
AREA: 34769.48 SQ.FT.- .7981 ACRES

THE CITY OF EL PASO · TEXAS

SHEET TITLE

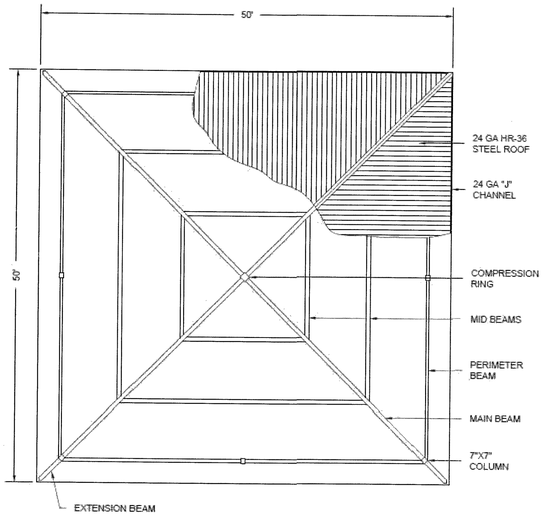
L11

IRRIGATION DETAILS

SHEET 11 OF 12

CRS, INC.

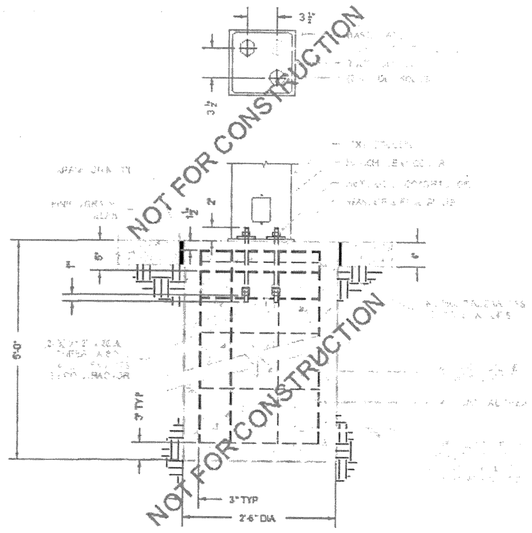
NOT FOR CONSTRUCTION



PLAN VIEW 50'X50' MESA MODEL
NTS

CRS, INC.

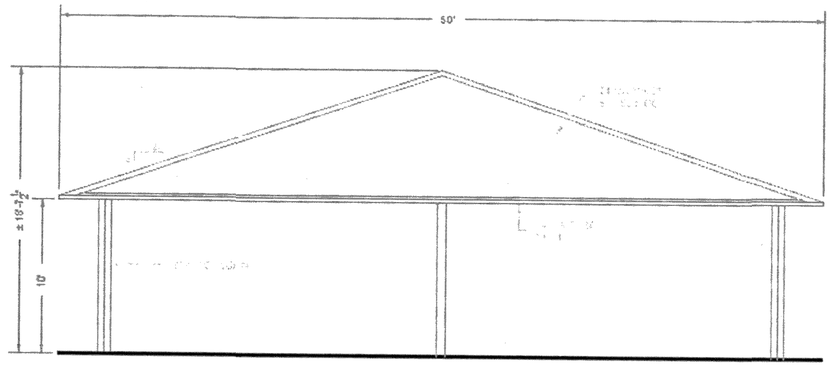
NOTE: FOR ILLUSTRATION ONLY!
FOOTING SIZE MAY CHANGE w/
STRUCTRAL ENGINEERING



2-BOLT SURFACE MOUNT CAISSON FOOTING
50'X50' MESA MODEL
NTS

NOT FOR CONSTRUCTION

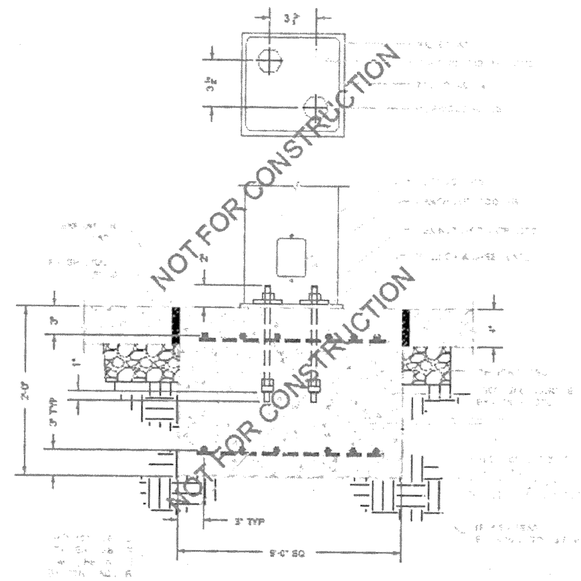
CRS, INC.



ELEVATION 50'X50' MESA MODEL
NTS

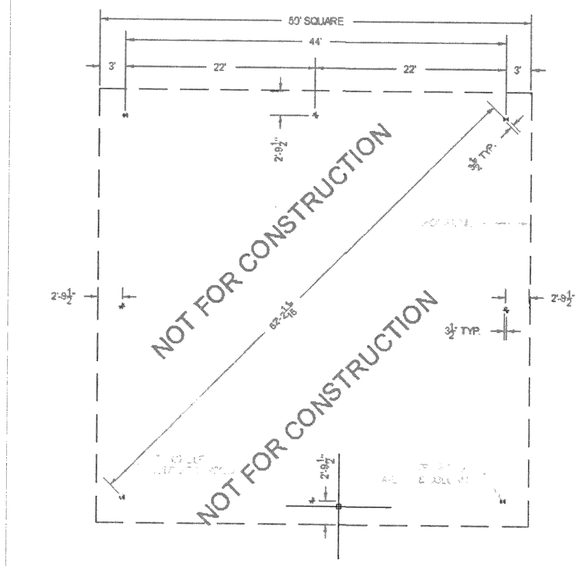
CRS, INC.

NOTE: FOR ILLUSTRATION ONLY!
FOOTING SIZE MAY CHANGE w/
STRUCTRAL ENGINEERING



2-BOLT SURFACE MOUNT SPREAD FOOTING
50'X50' MESA MODEL
NTS

CRS, INC.



LAYOUT PLAN 50'X50' MESA MODEL
NTS

APPROVED FOR CONSTRUCTION
Parks & Recreation Department Planning

KARLA CHAVEZ
SIGNATURE
2/22/2021
DATE

REVISIONS | DATE

LISA MENELLIS
LANDSCAPE ARCHITECT
1400 FOXBORO
LAS CRUCES, NEW MEXICO 88007
(575) 621-3092

ARCHITECT'S SEAL

SCALE
Horizontal:
Vertical: N/A
Contour Interval:

DATE:	
DESIGN BY:	LM
DRAWN BY:	LM
CHKD. BY:	LM
APPVD. BY:	LM
JOB No.	

PROJECT TITLE

CUESTA DEL SOL PARK

12744 PERSISTENCE AVE.
LOT 10, BLOCK 31
CITY OF EL PASO, EL PASO, TEXAS 79928
AREA: 34769.48 SQ.FT. - .7981 ACRES

THE CITY OF EL PASO TEXAS

SHEET TITLE

L12

SHELTER DETAILS

SHEET 12 OF 12

IRRIGATION NOTES

1. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL EXISTING AND PROPOSED UTILITIES, AND ALL SITE CONDITIONS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
2. USE DRI-SPLICE CONNECTORS FACTORY FILLED WITH SILICONE FOR ALL WIRE CONNECTIONS. USE 24V ELECTRIC CONTROL WIRE (#14G) AND COMMON GROUND (#12G) BESIDE THE PIPE RUNNING IN THE SAME TRENCH. (THIS DOES NOT APPLY TO BATTERY POWERED CONTROLLERS.)
3. ALL PIPING/WIRING RUNNING BENEATH PAVED SURFACES (DRIVES, WALKS, ETC.) SHALL BE INSTALLED IN SCHEDULE 40 PVC SLEEVES. SLEEVES SHALL BE SIZED SO THAT THE INSIDE DIAMETER OF THE SLEEVE IS AT LEAST 1" GREATER THAN THE COMBINED OUTER DIAMETER OF ALL ITEMS INSTALLED IN THE SLEEVES. IF 4 OR MORE WIRES ARE IN SLEEVE WITH PIPE THEY MUST BE RUN IN CONDUIT WITHIN THE SLEEVE. EXTEND SLEEVES 12" BEYOND EA. SIDE OF PAVING. SCORE PAVING AT EACH END OF SLEEVE.
4. ALL PIPE CUTS SHALL BE MITERED TO 90 DEGREES TO ASSURE PROPER SOLVENT WELD. ALL BURRS SHALL BE REMOVED PRIOR TO GLUING. PIPE THREE INCHES OR LARGER MUST HAVE FILED BEVELED EDGE A MINIMUM OF ONE FOURTH (1/4) THE WIDTH OF PIPE WALL. USE IPS WELD-ON PURPLE PRIMER P68 OR P70. USE IPS WELD-ON GRAY GLUE #711 HEAVY DUTY. WIPE OFF ALL EXCESS CEMENT AND LET SET PER MANUFACTURER'S RECOMMENDATIONS. INITIAL SET TIMES SHALL BE MINIMUM OF 5 MIN. FOR 1/2 TO 1-1/4" PIPE; 8 MIN. FOR 1-1/2" PIPE TO 2" PIPE; 2 HOURS FOR 2-1/2"TO 6" PIPE. CURE TIMES ARE 20 MIN FOR 1/2" TO 1-1/4" PIPE; 30 MIN. FOR 1-1/2" PIPE; 4 HOURS FOR 2-1/2" PIPE. WHEN HUMIDITY EXCEEDS 60% INCREASE CURE TIME BY 50%. ONCE WELD IS SET, PIPE SHALL NOT BE MOVED FOR ANY REASON UNTIL SET TIMES HAVE BEEN ACHIEVED. WATER SHALL NOT BE TURNED ON UNTIL ALL CURE TIMES HAVE BEEN ACHIEVED.
5. THE CONTRACTOR SHALL FINE TUNE AND ADJUST THE IRRIGATION SYSTEM SO THAT NO WATER WILL RUN ONTO THE STREET OR ROW WALKS
6. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH AS-BUILT DRAWINGS PRIOR TO APPROVAL OF FINAL PAYMENT.
7. THE FINISH GRADE OF ALL TRENCHED AREAS SHALL BE SMOOTH, EVEN AND CONSISTENT, FREE OF ANY HUMPS, DEPRESSIONS OR OTHER GRADING IRREGULARITIES. OVERFILL TRENCHES AND COMPACT SO NOT TO CRUSH THE PIPE. INSPECT TRENCHES FOR SETTLING AND BACKFILL AND REGRADE IF NECESSARY.
8. THE CONTRACTOR SHALL MAINTAIN ALL WORK UNTIL ALL WORK IS COMPLETE AND ACCEPTED BY THE OWNER.
9. LOCATION OF THE BACKFLOW, VALVES, AND QUICK COUPLER SHALL BE APPROVED BY PROJECT MANAGER.
10. IF PRESSURE IS MORE THAN 90 PSI DOWNSTREAM OF BACKFLOW, A COMMERCIAL GRADE PRESSURE REGULATOR MUST BE INSTALLED. TO BE APPROVED BY THE PROJECT MANAGER.
11. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY WATER PRESSURE, WATER SOURCE AND SIZE IN THE FIELD PRIOR TO CONSTRUCTION. SHOULD A DISCREPANCY EXIST BETWEEN DESIGN PRESSURE AND FIELD PRESSURE THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY.
12. AN OWNER'S REPRESENTATIVE MUST BE PRESENT DURING ALL FLUSHING, TESTING AND ADJUSTING. THE CONTRACTOR MUST PROVIDE 24 HRS NOTICE TO THE PROJECT MANAGER PRIOR TO CONDUCTING THE TESTS.
13. WATERING TIME: SEE IRRIGATION MATERIALS LEGEND. SET PER LOCAL WATERING CODES.
14. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS.
15. THE CONTRACTOR SHALL STAKE THE LOCATION OF ALL TREES PRIOR TO TRENCHING. TREE LOCATION TAKES PRECEDENCE. TRENCHING THROUGH ROOTBALLS IS NOT ALLOWED. TRENCHES MUST BE 36" MINIMUM AWAY FROM TREE TRUNKS.
16. IF POLY PIPE IS SPECIFIED, DO NOT EXCEED 300' RUN OF PE DRIP PIPE OR USE MORE THAN 4 GPM (240 GPH) ON 1/2" PIPE. DO NOT EXCEED 20' RUN OF MICRO-TUBING.
17. THIS DRAWING IS A SCHEMATIC AND DOES NOT SHOW EXACT PIPE LOCATION OR LENGTH.

GENERAL NOTES

THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL EXISTING AND PROPOSED UTILITIES, AND ALL SITE CONDITIONS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.

NO CHANGES SHALL BE MADE WITHOUT NOTIFICATION OF LANDSCAPE ARCHITECT OR OWNER.

THE FINISHED GRADES OF ALL PLANTING AREAS SHALL BE SMOOTH, EVEN AND FREE OF HUMPS, DEPRESSIONS OR IRREGULARITIES. SEE DETAILS TO DETERMINE FINISH GRADE ADJACENT TO CONCRETE AREAS AND WALKWAYS TO ALLOW FOR MULCH THICKNESS.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PREVENT PLANTS FROM FALLING OR BEING BLOWN OVER AND TO STRAIGHTEN OR REPLACE ALL PLANTS THAT ARE. PLANTS BLOWN OVER DUE TO LACK OF OR IMPROPER STAKING SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND NOT CAUSE ADDITIONAL EXPENSE TO THE OWNER.

CONTRACTOR SHALL PERFORM LANDSCAPE MAINTAINANCE ON PROJECT UNTIL COMPLETION AND ACCEPTANCE BY PASEO DEL ESTE M.U.D.

DEVELOPER IS AWARE OF THE MAINTENANCE RESPONSIBILITY AS STIPULATED UNDER PASEO DEL ESTE MUD GUIDELINES.

PROJECT GUARANTEE FOR PLANT MATERIAL AND IRRIGATION SHALL BE ONE YEAR FROM DATE OF ACCEPTANCE.

PLANTING NOTES

PROVIDE PLANTS TYPICAL OF THEIR SPECIES OR VARIETY, WITH NORMAL, DENSELY DEVELOPED BRANCHES AND VIGOROUS, FIBROUS ROOT SYSTEMS. PROVIDE ONLY SOUND, HEALTHY VIGOROUS PLANTS FREE FROM DEFECTS, DISFIGURATIONS, OR ABRASIONS. PLANTS SHALL BE FIRMLY ROOTED IN THEIR CONTAINERS BUT NOT POT BOUND WITH CIRCLING ROOTS. THE OWNER'S REPRESENTATIVE HAS FINAL APPROVAL OF ALL PLANT MATERIAL AND MAY REJECT PLANT MATERIAL AT THEIR DISCRETION.

TREES AND SHRUBS MUST MEET THE SIZE REQUIREMENTS INDICATED ON THE LEGEND. THE CONTRACTOR MAY SUBSTITUTE A LARGER SIZE DUE TO AVAILABILITY BUT AT NO ADDITIONAL EXPENSE TO THE OWNER.

SOIL FOR PLANTING MIX AND SOD BASE SHALL BE FERTILE, FRIABLE, SOIL OR COMPOST OF LOAMY MATERIAL FREE FROM CLAY, LUMPS, COARSE SAND, STONES, PLANT ROOTS, OR OTHER FOREIGN MATERIALS, WITH THE PH LEVEL BETWEEN 6.0 AND 8.0. IT SHALL BE TESTED TO DETERMINE THE PH FACTOR, FERTILITY, SOLUBLE SALTS AND PERCOLATION.

SET PLANT MATERIAL IN PLANTING PIT TO PROPER GRADE AND ALIGNMENT. SET PLANTS SO THAT THE ROOT BALL IS FLUSH WITH FINISHED GRADE.
REMOVE ALL WIRE, STRING, WIRE BACKETS, BURLAP, CONTAINERS, ETC. FROM THE ROOTBALL OF PLANTS BEFORE BACKFILLING THE PLANTING HOLE. WHEN BACKFILLING "WATER IN" TO PREVENT AIR POCKETS AND SETTLING.
FORM A RING OF SOIL AROUND PLANTS THAT ARE LOCATED ON A SLOPE TO RETAIN WATER.

SEE SHEET L4 FOR PLANTING AND MATERIAL PLACEMENT DETAILS.

LOCATION MAP
SCALE 1"=600'

SITE MAP
1:600

SHEET INDEX	
L1	SITE MAP, SHEET INDEX, NOTES
L2	PLANTING PLAN
L3	IRRIGATION PLAN
L4	CONSTRUCTION DETAILS

THE CITY OF EL PASO TEXAS

Oscar Villalobos 03/08/2021
BY DATE

IRRIGATION IS REGULATED BY:
PO BOX 13087
AUSTIN, TEXAS 78711-3087
TCEQ 512 239-6719
CHAPTER 34, TEXAS WATER CODE
IRRIGATOR'S LIC. #8947

STATE OF TEXAS · FAITH NICHOLS · 8947 · REGISTERED · LICENSED IRRIGATOR
2/2/21

DATE REFERENCES – BENCHMARKS

REVISIONS BY

LISA MCNELIS
LANDSCAPE ARCHITECT
1900 FOXBORO
LAS CRUCES, NEW MEXICO 88007
(575) 621-8092

ARCHITECT'S SEAL

REGISTERED LANDSCAPE ARCHITECT · LISA MCNELIS · 798 · STATE OF TEXAS
2/2/21

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

DATE:
DESIGN BY: LM
DRAWN BY: LM
CHKD. BY: LM
APPVD. BY: LM
JOB No. —

PROJECT TITLE

CUESTA DEL SOL SUBDIVISION
DOUBLE FRONTING LOTS
LANDSCAPE AND IRRIGATION

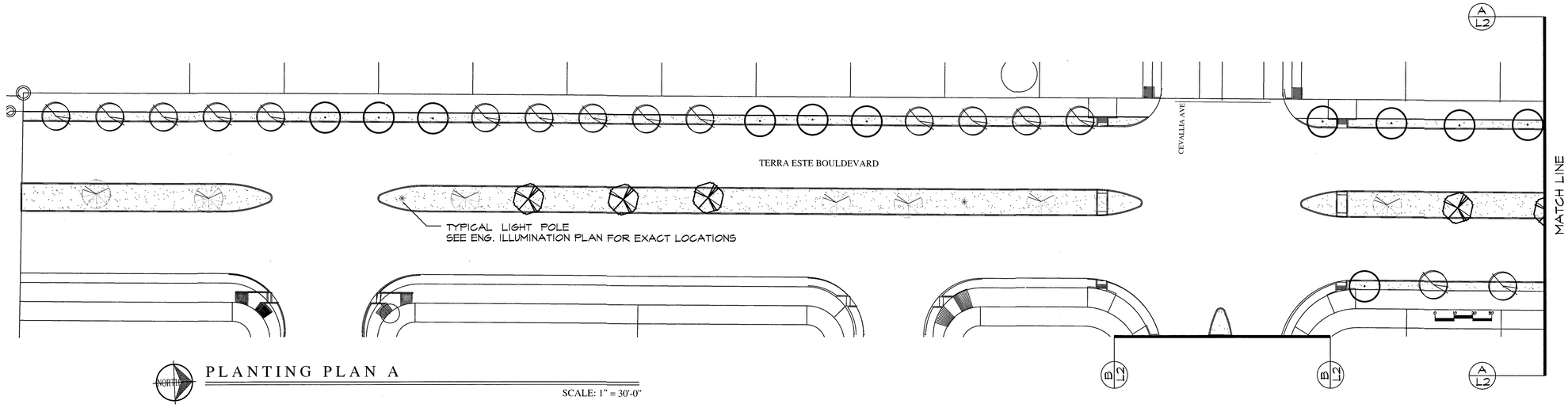
THE CITY OF EL PASO TEXAS

SHEET TITLE

L1

INDEX AND NOTES

SHEET 1 OF 4



NORTH

PLANTING PLAN A

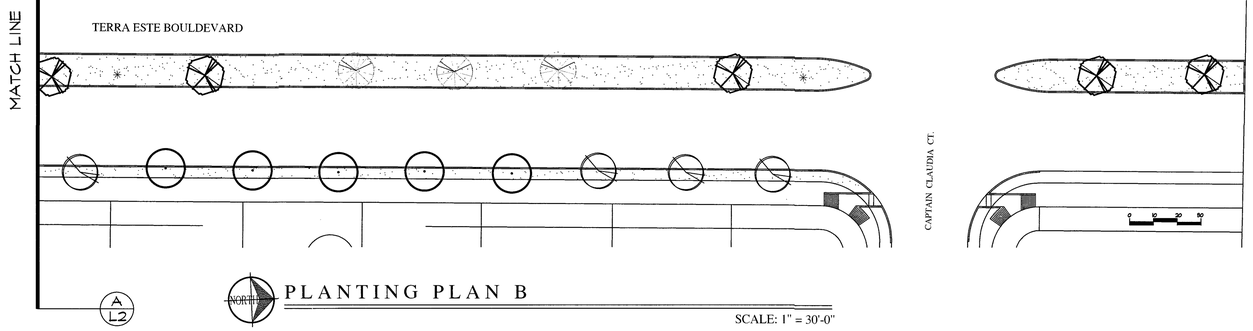
SCALE: 1" = 30'-0"

VERIFY QUANTITIES. PLAN TAKES PRECEDENCE.

MATERIAL LEGEND AND DETAIL KEY- PROJECT TOTALS:

1. 3/4" PADRE CANYON RED GRAVEL 3" DEPTH
   2" BELOW ALL CONCRETE SURFACES. USE NON WOVEN POLY FABRIC.
   PROJECT TOTAL - 29,922 SF
   SEE DETAIL B SHEET L4.

NOTE:
PIN ON 3' OC WITH "U" SHAPED PINS.
OVERLAP EDGES 2'-0"



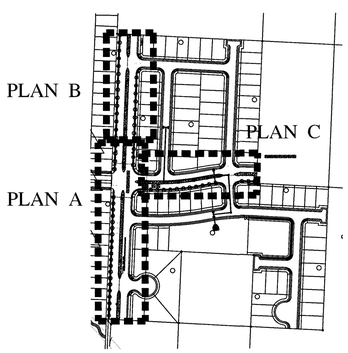
NORTH

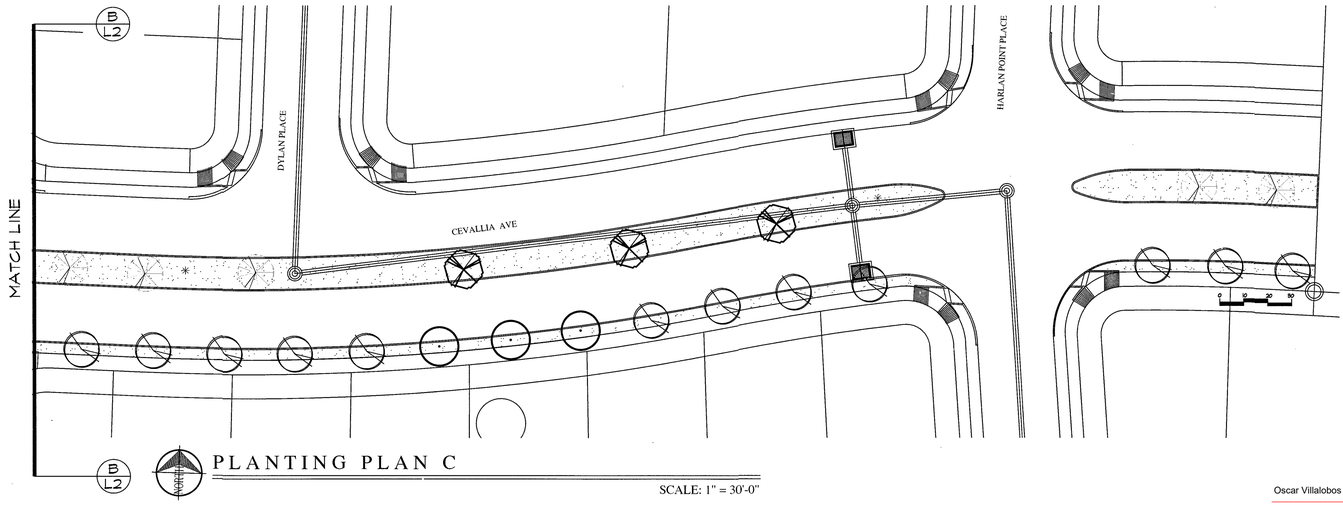
PLANTING PLAN B

SCALE: 1" = 30'-0"

TREE LEGEND/SCHEDULE PROJECT TOTAL

SYM	KEY	COMMON NAME	BOTANICAL NAME	CONT.	SIZE	QUANT.	REMARKS
	LET	LACEBARK ELM	ULMUS PARVIFOLIA	24"BOX	3" CAL-10'HT-6' SPREAD	12	SINGLE-FULL
	DVT	DESERT WILLOW	CHILOPSIS LINEARIS	24"BOX	3" CAL-10'HT-6' SPREAD	27	MAX 3 TRUNKS
	MET	HONEY MESQUITE	PROSOPIS GLANDULOSA	24"BOX	3" CAL-10'HT-6' SPREAD	38	SINGLE TRUNK
	CPT	CHINESE PISTACHE	PISTACIA CHINENSIS	24"BOX	3" CAL-10'HT-6' SPREAD	15	SINGLE-FULL





NORTH

PLANTING PLAN C

SCALE: 1" = 30'-0"

Oscar Villalobos 03/08/2021

BY DATE

DATE REFERENCES – BENCHMARKS

REVISIONS BY

LISA McNELIS
LANDSCAPE ARCHITECT
1900 FOXBORO
LAS CRUCES, NEW MEXICO 88007
(575) 621-3052

ARCHITECT'S SEAL

REGISTERED LANDSCAPE ARCHITECT LISA McNELIS 1136 STATE OF TEXAS

2/2/21

SCALE
Horizontal: N/A
Vertical:
Contour Interval:

DATE:	LM
DESIGN BY:	LM
DRAWN BY:	LM
CHKD. BY:	LM
APP'VD. BY:	LM
JOB No.	

PROJECT TITLE

CUESTA DEL SOL SUBDIVISION
DOUBLE FRONTING LOTS
LANDSCAPE AND IRRIGATION

THE CITY OF EL PASO TEXAS

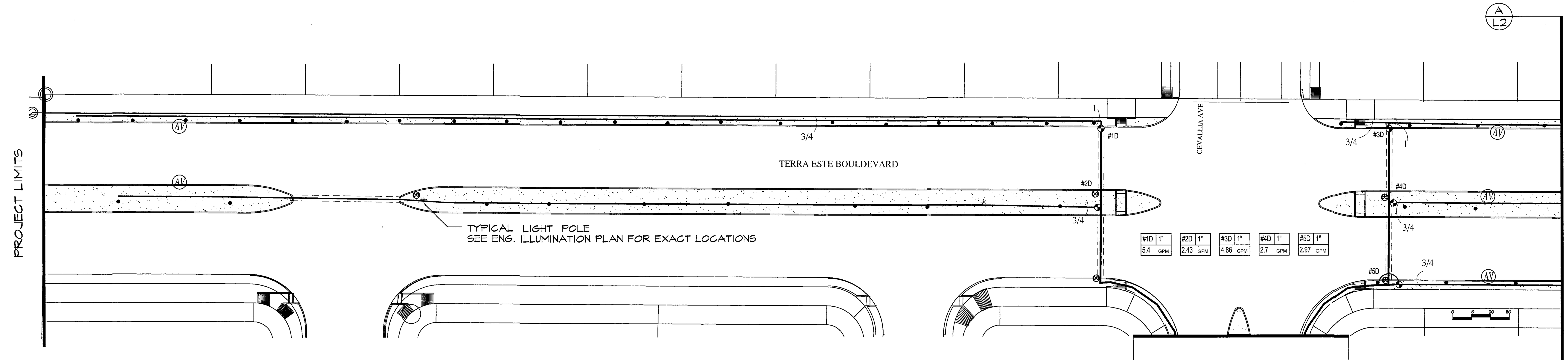
THE CITY OF EL PASO TEXAS

SHEET TITLE

L2

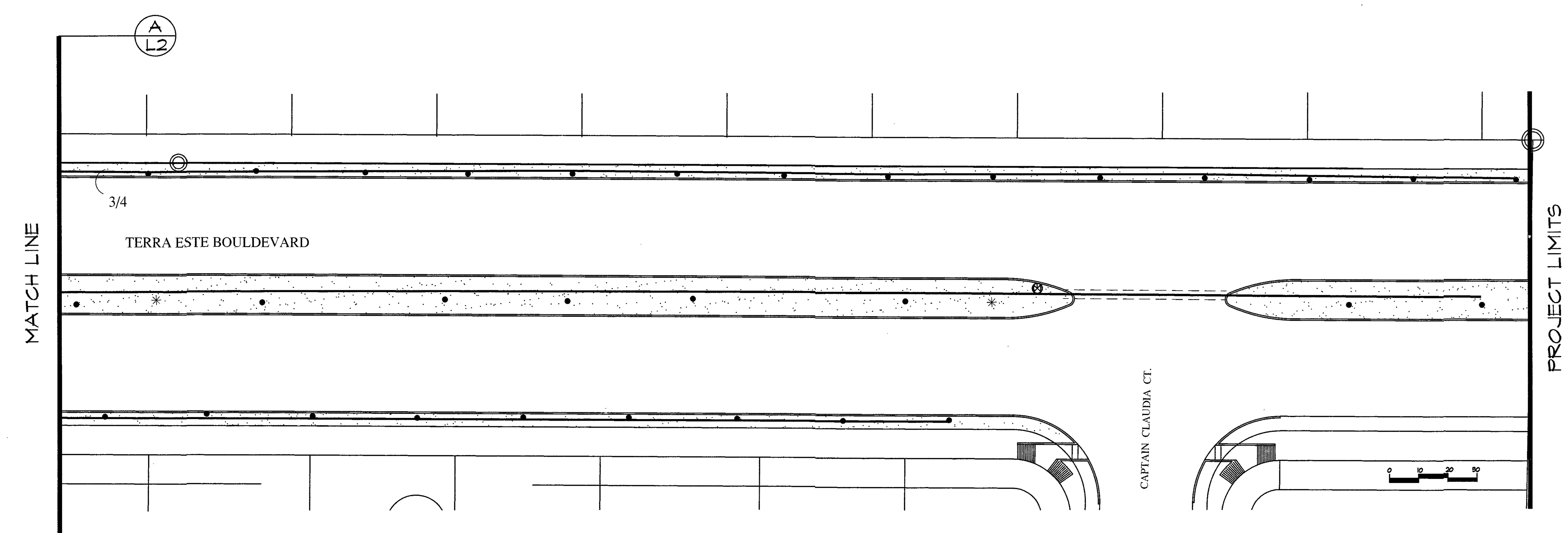
PLANTING AND MATERIALS

SHEET 2 OF 4



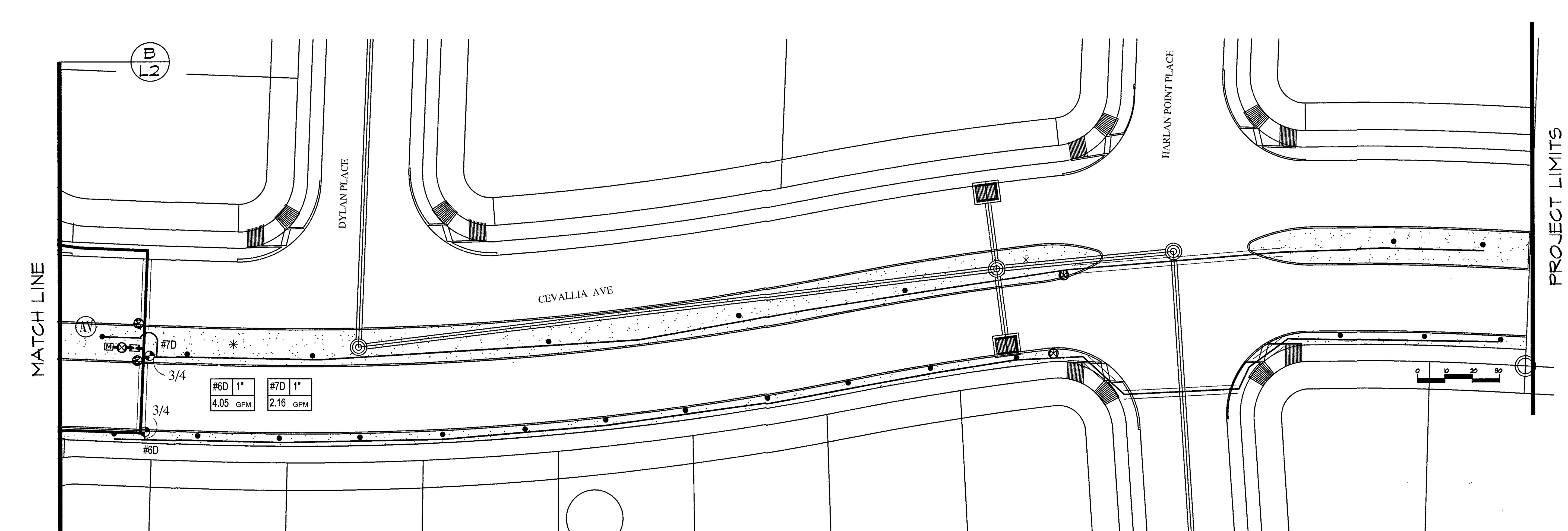
IRRIGATION PLAN A

SCALE: 1" = 30'-0"



IRRIGATION PLAN B

SCALE: 1" = 30'-0"



IRRIGATION PLAN C

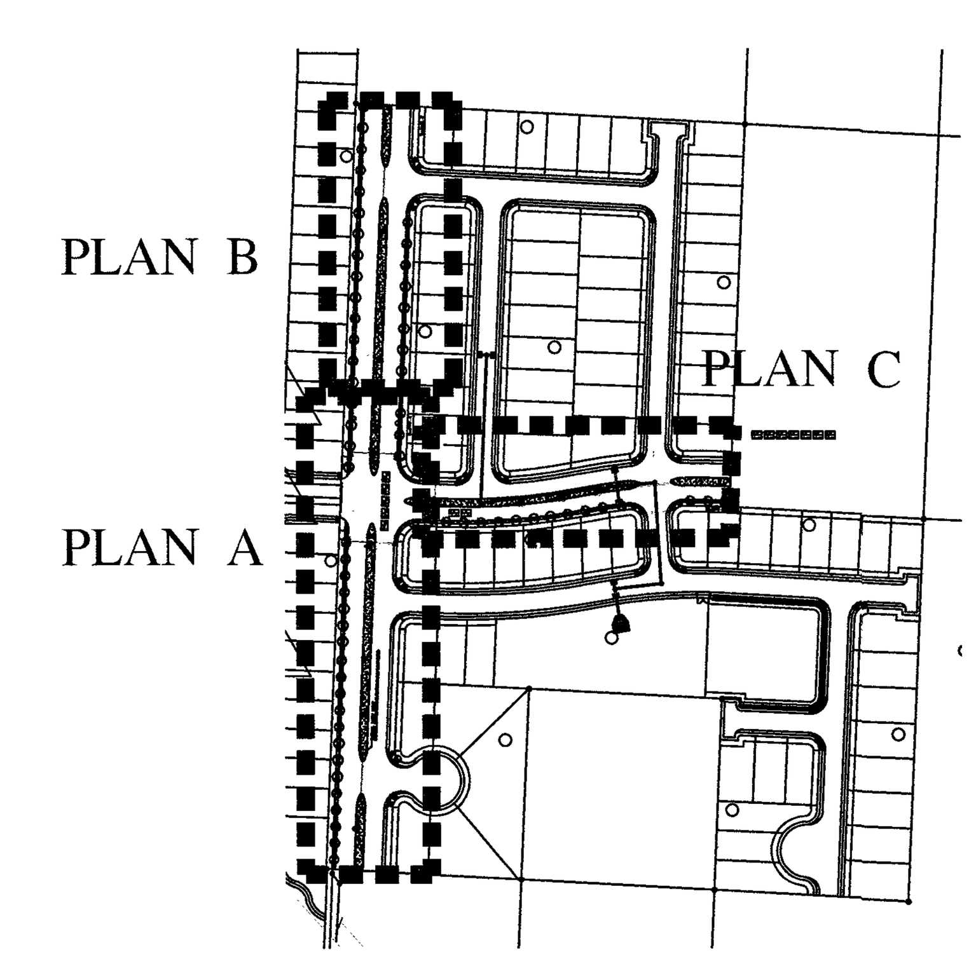
SCALE: 1" = 30'-0"

#1D | 1" — VALVE NUMBER AND DRIP(D) OR TURF(T) NOTATION — VALVE SIZE

14.55GPM — GALLONS PER MINUTE ON THIS VALVE.

MATERIAL LEGEND:

(heavy line)	1" PRESSURE MAIN PVC SCHEDULE 40, DEPTH 24" TO TOP OF PIPE. SEE DETAIL G ON SHEET L4
(thin line)	LATERAL PVC CLASS 200, DEPTH 16", TO TOP OF PIPE. SEE DETAIL G ON SHEET L4
(dashed line)	SCH 40 SLEEVING UNDER ALL PAVED AREAS WHERE LINES ARE RUN.
●	DRIP EMITTER FOR TREES: RAINBIRD XERI-BIRD XBD-80 WITH FILTER AND PRESSURE REGULATOR. USE 8 XB-20PC EMITTERS PER TREE. .27 GPM SEE DETAILS D AND E ON L4.
(valve symbol)	ELECTRIC REMOTE VALVE : HUNTER ICV. SIZE ON PLAN. WITH CUT OFF BALL VALVE, AND DC LATCHING SOLENOID IN LOCKING VALVE BOX. USE RAINBIRD NON PRESSURE REGULATING FILTER SEE DETAILS F AND H ON SHEET L4
(isolation valve symbol)	ISOLATION VALVE IN VALVE BOX
(AV)	CRISPIN AIR/VACUUM RELEASE VALVE. LOCATE AT HIGH POINT OF LATERAL DETERMINE LOCATION IN THE FIELD. LOCATION SHOW ON PLAN IS NOT ACCURATE. SEE DETAIL K ON SHEET L4.
M	3/4" METER WITH 3/4" SERVICE LINE. LOCATION ON THIS PLAN IS APPROXIMATE.
(backflow symbol)	BACKFLOW: FEBCO REDUCED PRESSURE 825Y 3/4" IN INSULATED LOCKING ENCLOSURE. SEE DETAIL J ON L4.
C	HUNTER XC HYBRID SOLAR POWERED CONTROLLER - IN STAINLESS STEEL BOX WITH POLE, SOLAR PANEL AND MOUNTING BRACKET. ALL DRIP STATIONS SHALL BE SET FOR 80 MIN 3 DAYS PER WEEK. FOR A TOTAL 240 MIN PER WEEK. OBSERVE PLANTS AND ADJUST AS NECESSARY. SEE DETAIL I ON L4.
	IF RUNOFF OCCURS THEN DURATION SHALL BE REDUCED BUT MULTIPLE RUN TIMES WITH 2 HOUR SOAK PERIODS BETWEEN RUN TIMES SHALL BE USED IN ORDER TO DELIVER REQUIRED AMOUNT OF WATER - 240 MIN/WEEK.
NOTE:	IF PRESSURE EXCEEDS 90 PSI DOWNSTREAM OF BACKFLOW CONTRACTOR MUST INSTALL PRESSURE REGULATOR.



STATE OF TEXAS — FAITH McNELIS — 8947 — REGISTERED LICENSED IRRIGATOR — 2/2/21

IRRIGATION IS REGULATED BY:
PO BOX 13087
AUSTIN, TEXAS 78711-3087
TCEQ 512 239-6719
CHAPTER 34, TEXAS WATER CODE
IRRIGATOR'S LIC. #8947

THE CITY OF EL PASO TEXAS

Oscar Villalobos — 03/08/2021

BY — DATE

DATE | REFERENCES – BENCHMARKS

REVISIONS | BY

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LANDSCAPE ARCHITECT
1900 FOXBORO
LAS CRUCES, NEW MEXICO 88007
(575) 621-3032

ARCHITECT'S SEAL
REGISTERED LANDSCAPE ARCHITECT — FAITH McNELIS — 1136 — STATE OF TEXAS
2/2/21

SCALE
Horizontal:
Vertical:
Contour Interval: N/A
DATE:
DESIGN BY: LM
DRAWN BY: LM
CHKD. BY: LM
APPVD. BY: LM
JOB No.

PROJECT TITLE

CUESTA DEL SOL SUBDIVISION
DOUBLE FRONTING LOTS
LANDSCAPE AND IRRIGATION

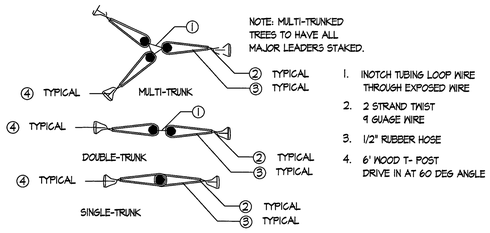
THE CITY OF EL PASO TEXAS

SHEET TITLE

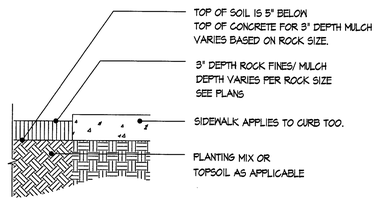
L3

IRRIGATION PLAN

SHEET 3 OF 4

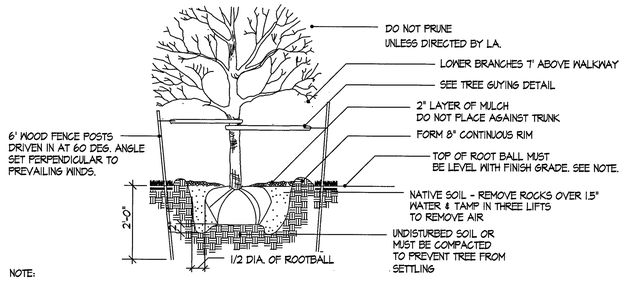


A TYPICAL TREE GUYING DETAIL - PLAN VIEW
NOT TO SCALE



NOTE:
TOP OF ROCK MULCH IS 2" BELOW CONCRETE SURFACES.

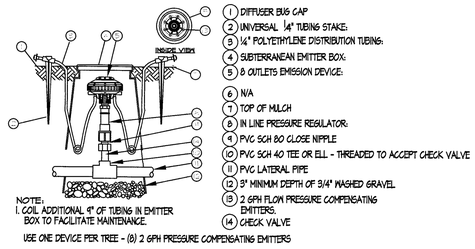
B GRAVEL MULCH AT CONCRETE DETAIL
NOT TO SCALE



NOTE:
TO DETERMINE TOP OF ROOT BALL FIND TOP ROOT ON BASE OF TRUNK AND SET IT AT THE SOIL SURFACE.

BURLAP AND WIRE SHALL BE REMOVED FROM THE SIDES OF THE ROOT BALL AFTER TREE IS SET.

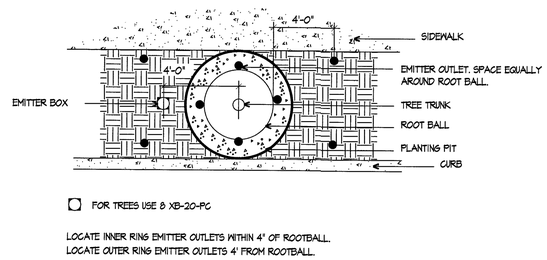
C TREE PLANTING DETAIL
NOT TO SCALE



NOTE:
1. COIL ADDITIONAL 9" OF TUBING IN EMITTER BOX TO FACILITATE MAINTENANCE.

USE ONE DEVICE PER TREE - (8) 2 GPH PRESSURE COMPENSATING EMITTERS

D RAINBIRD 8 MULTI-OUTLET DEVICE IN PLANTING AREAS
NOT TO SCALE

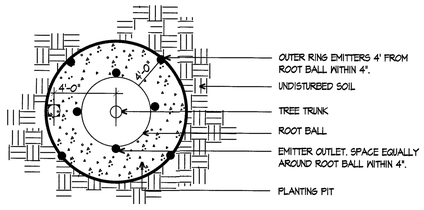


☐ FOR TREES USE 8 XB-20-PC

LOCATE INNER RING EMITTER OUTLETS WITHIN 4" OF ROOTBALL.
LOCATE OUTER RING EMITTER OUTLETS 4' FROM ROOTBALL.

DO NOT EXCEED 20' WITH MICROTUBING.

E TYPICAL EMITTER LAYOUT FOR PARKWAY TREES - PLAN VIEW
NOT TO SCALE



☐ FOR TREES USE 8 XB-20-PC

LOCATE INNER RING EMITTER OUTLETS WITHIN 4" OF ROOTBALL.
LOCATE OUTER RING EMITTER OUTLETS 4' FROM ROOTBALL.

DO NOT EXCEED 20' WITH MICROTUBING.

E-1 TYPICAL EMITTER LAYOUT FOR MEDIAN TREES - PLAN VIEW
NOT TO SCALE

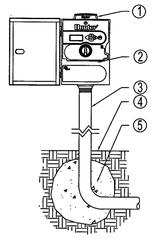
NOTE:
REFER TO LEGEND ON IRR SHEET FOR ADDITIONAL INSTRUCTIONS

SEE TBOS MODULE AND TRANSMITTER DETAIL

FOR VALVES WITH LESS THAN 10 GPM DEMAND TURN FLOW CONTROL KNOB DOWN 2 FULL TURNS FROM THE FULLY OPEN POSITION

1. FINISH GRADE - 3" DOWN FROM TOP OF MULCH
2. VALVE BOX WITH BOLT DOWN COVER:
3. 30-INCH LINEAR LENGTH OF WIRE, COILED
4. WATERPROOF CONNECTION:
5. BALL VALVE
6. WEED BARRIER CLOTH
7. HUNTER ICV WITH DC SOLENOID
8. N/A
9. PVC SCH 40 THREADED FITTING
10. LATERAL PIPE
11. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
12. PVC SCH 40 ELL
13. PVC SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND PVC SCH 40 ELL
14. PVC SCH 40 TEE OR ELL
15. MAINLINE PIPE
16. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
17. PVC SCH 80 NIPPLE, CLOSE
18. 200 MESH FILTER NON PRESSURE REGULATING
19. FEMALE THREADED FITTING

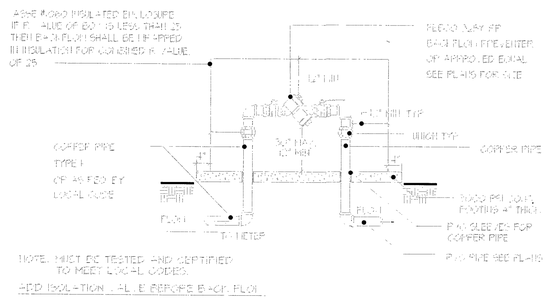
H CONTROL VALVE IN LOCKING VALVE BOX IN PLANTING AREAS
NOT TO SCALE



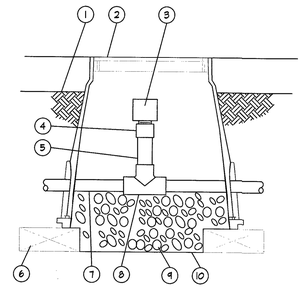
1. SOLAR PANEL
2. IRRIGATION CONTROLLER (XCH-SS) PER PLAN
3. STAINLESS STEEL POLE AND MOUNTING BRACKET
4. FINISHED GRADE
5. 2 CUFT CONCRETE

NOTE
CONTROLLER SHALL BE HARD-WIRED TO GROUNDED
110 VAC POWER SOURCE AS APPLIES

I HUNTER HYBRID CONTROLLER
NOT TO SCALE

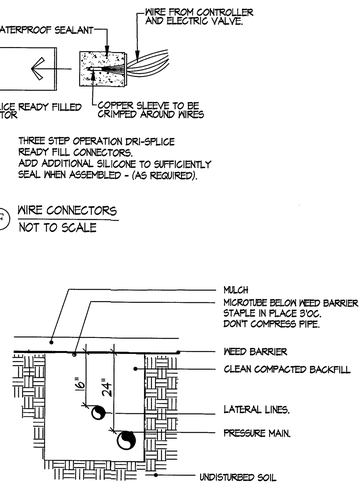


J REDUCED PRESSURE BACKFLOW PREVENTER
NOT TO SCALE



1. FINISH GRADE - 3" BELOW TOP OF MULCH
2. 6" VALVE BOX
3. CRISPIN 1/2 SERIES AIR/VACUUM RELEASE VALVE: SIZE - 1/4 DIAMETER OF THE PIPE TO BE INSTALLED AT HIGH POINTS IN LATERAL AND MAIN LINES.
4. PVC SCH 40 FEMALE ADAPTER
5. PVC SCH 80 RISER
6. BRICK (1 OF 2)
7. PVC HEADER PIPE
8. PVC SCH 40 TEE
9. 3" MINIMUM DEPTH OF 3/4" WASHED GRAVEL
10. WEED BARRIER CLOTH

K AIR VACUUM RELEASE VALVE IN LOCKING VALVE BOX
NOT TO SCALE



NOTE:
ALL PLASTIC PIPING SHALL BE SNAKED WITHIN TRENCH.

ALL MAINLINE PIPING TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS INSTALLATION SPECIFICATIONS.

G TYPICAL PIPE TRENCHING DETAIL FOR AREAS WITHOUT GRAVEL MULCH
NOT TO SCALE

STATE OF TEXAS
FAITH MCNELIS
8947
REGISTERED
LICENSED IRRIGATOR
Faith McNelis 2/2/21

IRRIGATION IS REGULATED BY:
TCEQ
PO BOX 13087
AUSTIN, TEXAS 78711-3087
512 239-6719
CHAPTER 34, TEXAS WATER CODE

IRRIGATOR'S LIC. #8947

THE CITY OF EL PASO TEXAS

Oscar Villalobos 03/08/2021
BY DATE

THREE STEP OPERATION DRI-SPLICE READY FILL CONNECTORS.
ADD ADDITIONAL SILICONE TO SUFFICIENTLY SEAL WHEN ASSEMBLED - (AS REQUIRED).

F WIRE CONNECTORS
NOT TO SCALE

DATE	REFERENCES - BENCHMARKS	REVISIONS	BY

LISA MCNELIS
LANDSCAPE ARCHITECT
1400 FOXBORO
LAS CRUCES, NEW MEXICO 88007
(575) 621-3032

ARCHITECT'S SEAL

REGISTERED LANDSCAPE ARCHITECT LISA MCNELIS 1136 STATE OF TEXAS
2/2/21

SCALE
Horizontal:
Vertical:
Contour Interval: N/A

DATE:		
DESIGN BY:	LM	
DRAWN BY:	LM	
CHKD. BY:	LM	
APPVD. BY:	LM	
JOB No.		

PROJECT TITLE

CUESTA DEL SOL SUBDIVISION
DOUBLE FRONTING LOTS
LANDSCAPE AND IRRIGATION

THE CITY OF EL PASO TEXAS

SHEET TITLE

L4

CONSTRUCTION DETAILS

SHEET 4 OF 4

ELECTRICAL GENERAL NOTES:

GENERAL
1. THESE ELECTRICAL GENERAL NOTES ARE APPLICABLE TO ALL ELECTRICAL SHEETS IN THIS PROJECT SET.

2. THE ELECTRICAL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE APPLICABLE AND ADOPTED PROVISIONS OF THE FOLLOWING CODES:
   - 2014 NATIONAL ELECTRICAL CODE
   - 2015 INTERNATIONAL BUILDING CODE
   - 2015 INTERNATIONAL PLUMBING CODE
   - 2015 INTERNATIONAL MECHANICAL CODE
   - 2015 INTERNATIONAL FIRE CODE
   - 2015 INTERNATIONAL FUEL CODE
   - 2015 INTERNATIONAL ENERGY CONSERVATION CODE

   AS ADOPTED AND INTERPRETED BY THE STATE OF TEXAS, CITY OF EL PASO AND THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) REGULATIONS, CURRENT ADOPTED EDITION REGARDING ELECTRICAL SYSTEMS, FIRE PROTECTION AND ALARM SYSTEMS AND ASSOCIATED MECHANICAL AND PLUMBING SYSTEMS. ALL LABOR AND MATERIALS NECESSARY TO COMPLY WITH RULES, REGULATIONS AND ORDINANCES SHALL BE PROVIDED. WHERE THE DRAWINGS INDICATE MATERIALS OR CONSTRUCTION IN EXCESS OF CODE REQUIREMENTS, THE DRAWINGS SHALL GOVERN. THE CONTRACTOR SHALL HOLD AND SAVE THE OWNER, ARCHITECT AND ENGINEER FREE AND HARMLESS FROM LIABILITY OF ANY NATURE OR KIND ARISING FROM HIS FAILURE TO COMPLY WITH ALL APPLICABLE CODES AND ORDINANCES.

3. THE CONTRACTOR SHALL COORDINATE WITH OWNER, ARCHITECT, AND ENGINEER ANY WORK THAT HAS THE POTENTIAL TO HINDER ELECTRICAL SERVICES TO AREAS OUTSIDE OF THIS CONTRACT. ALL SHUT-DOWNS OR TIE-INS RELATING TO THESE SYSTEMS SHALL BE SCHEDULED AND SUBMITTED IN WRITING TO BE APPROVED BY THE OWNER'S FACILITY MANAGEMENT, OWNER, ARCHITECT, OR ENGINEER. CONTRACTOR SHALL SUBMIT IN WRITING A SCHEDULE FOR PHASING OF CONSTRUCTION THAT INDICATES AREAS OF FIRST PRIORITY DURING EACH PHASE AND ANTICIPATED COMPLETION TIMES. SCHEDULES SHALL BE SUBMITTED A MINIMUM OF ONE WEEK PRIOR TO COMMENCING WORK. FACILITY MANAGEMENT, OWNER, ARCHITECT OR ENGINEER SHALL REVIEW THESE SCHEDULES AND NOTIFY CONTRACTOR OF ACCEPTANCE PRIOR TO COMMENCEMENT OF WORK.

4. ALL MATERIALS AND LABOR NECESSARY TO COMPLY WITH CODES AND RULES, REGULATIONS AND ORDINANCES SHALL BE PROVIDED. WHERE THE DRAWINGS AND/OR SPECIFICATIONS INDICATE MATERIALS OR CONSTRUCTION IN EXCESS OF CODE REQUIREMENTS, THE DRAWINGS AND/OR SPECIFICATIONS SHALL GOVERN. THE CONTRACTOR SHALL HOLD AND SAVE THE OWNER, ARCHITECT AND ENGINEERS FREE AND HARMLESS FROM LIABILITY OF ANY NATURE OR KIND ARISING FROM HIS FAILURE TO COMPLY WITH ALL APPLICABLE CODES AND ORDINANCES.

5. BIDDERS SHALL VISIT THE SITE AND SHALL BE RESPONSIBLE FOR HAVING ASCERTAINED PERTINENT LOCAL CONDITIONS SUCH AS LOCATION, ACCESSIBILITY AND GENERAL CHARACTER OF THE SITE, THE CHARACTER AND EXTENT OF THE WORK WITHIN THE BUILDING AND TO BECOME FAMILIAR WITH ALL OTHER WORK TO BE PERFORMED AT THIS TIME. NO ADDITIONAL COMPENSATION WILL BE ALLOWED DUE TO CONTRACTOR'S FAILURE TO DETERMINE ALL CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED.

6. BEFORE YOU DIG ALL EXISTING UTILITIES, I.E. WATER, SEWER, GAS, FIRE LINE, ELECTRICITY, CABLE, TELEPHONE, IRRIGATION LINES, SHALL BE LOCATED AND CLEARLY MARKED IN ORDER TO AVOID UNNECESSARY SHUT DOWNS AND EMERGENCY.

7. EACH CONTRACTOR SHALL GIVE ALL REQUISITE NOTICES AND FILLED OUT APPLICATIONS, OBTAIN AND PAY FOR ALL PERMITS, DEPOSITS AND FEES (INCLUDING UTILITY CONNECTIONS FEES, ANY UTILITY EXTENSION FEES, TAP FEES, DEVELOPMENT FEES, AND IMPACT FEES) NECESSARY FOR THE INSTALLATION OF WORK UNDER THESE NOTES. TWO (2) COPIES OF CERTIFICATES OF APPROVAL SHALL BE OBTAINED FROM ALL AUTHORITIES ISSUING SAME AND SHALL BE TURNED OVER TO OWNER, ARCHITECT, ENGINEER PRIOR TO FINAL ACCEPTANCE OF THE WORK.

8. REQUIRED INSURANCE SHALL BE PROVIDED BY THIS CONTRACTOR FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF WORK. CONTRACTOR SHALL SECURE AND PAY ALL PERMITS, FEES, INSPECTIONS, AND TESTS UNLESS OTHERWISE INDICATED. COORDINATE WITH ARCHITECT, ENGINEER OR OWNER. SUBSTITUTIONS REQUESTED BY THE CONTRACTOR SHALL BE PAID FOR BY THE CONTRACTOR.

9. ALL WORK SHALL CONFORM WITH FEDERAL, STATE, AND LOCAL CODES, RULES, AND REGULATIONS. ALL WORK SHALL BE PERFORMED BY A LICENSED CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE SYSTEMS SHALL BE INSTALLED COMPLETE AND FULLY OPERATIVE UNLESS OTHERWISE INDICATED.

10. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND PROVIDE A WRITTEN REPORT TO THE ARCHITECT AND THE ENGINEERING OFFICES. THIS REPORT SHALL DESCRIBE EXISTING DAMAGE OR OTHER CONDITIONS THAT MAY INTERFERE WITH THIS PROPOSED NEW WORK. THIS SITE SURVEY SHALL ALSO INCLUDE VERIFICATION OF SIZES, LOCATIONS, AND CONDITIONS OF EXISTING UTILITIES. QUESTIONS REGARDING THESE DRAWINGS SHALL BE ADDRESSED TO THE ENGINEER PRIOR TO THE AWARDING OF THE CONTRACT. OTHERWISE THE ENGINEER'S INTERPRETATION OF THE MEANING AND INTENT OF THE DRAWINGS SHALL BE FINAL.

11. DURING CONSTRUCTION IF THE CONTRACTOR ENCOUNTER AND DAMAGES THE EXISTING UNDERGROUND THE CONTRACTOR SHALL REPAIR THE INFRASTRUCTURE AT NO ADDITIONAL COST TO THE OWNER. WHERE STRUCTURE IS ALTERED OR DAMAGED DURING CONSTRUCTION, INSTALLATION AND REMOVAL OF EQUIPMENT OR FIXTURES, THE CONTRACTOR SHALL REPAIR THE AREA TO MATCH SURROUNDING AREA PER ARCHITECTURAL SPECIFICATIONS. CUTTING, TRENCHING, AND PENETRATIONS THROUGH FIRE WALL, CONCRETE AND OTHER STRUCTURES ARE A PART OF THIS PROJECT SCOPE AND SHALL BE INCLUDED IN THE CONTRACTOR'S BID. ALL EXCAVATION AND BACKFILLING REQUIRED FOR PLUMBING WORK IS ALSO INCLUDED AS PART OF THIS CONTRACT AND SHALL BE INCLUDED IN CONTRACTOR'S BID.

12. ALL SYSTEMS AND COMPONENTS SHALL BE APPROVED FOR THE PURPOSE FOR WHICH INSTALLED. ALL EQUIPMENT AND MATERIALS SHALL BE NEW AND FROM ESTABLISHED AMERICAN SUPPLIERS UNLESS OTHERWISE INDICATED.

13. ALL EQUIPMENT PARAMETERS SHOWN ARE FOR PERFORMANCE AT SITE ALTITUDE. SUPPLIERS SHALL SELECT AND DEMONSTRATE THAT THEIR EQUIPMENT MEETS THE DESIGN CONDITIONS AT SITE ALTITUDE.

14. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH MECHANICAL/ PLUMBING CONTRACTOR THE MECHANICAL/ PLUMBING EQUIPMENT'S ELECTRICAL REQUIREMENTS, INCLUDING POWER, CONTROL, COMMUNICATION, AND MONITORING, OF EACH DEVICE PROVIDED AND/OR INSTALLED BY MECHANICAL/PLUMBING CONTRACTOR.

15. SUPPORT SYSTEM FOR EQUIPMENT SUPPORTED BY THE BUILDING STRUCTURE SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER VIA ARCHITECT FOR APPROVAL PRIOR TO PURCHASE AND INSTALLATION. NO WIRE OR PERFORATED STRAP WILL BE PERMITTED FOR ANY HANGER OR SUPPORT.

16. THE CONTRACTOR SHALL NOT SCALE THE CONTRACT DOCUMENTS. THE CONTRACT DOCUMENTS ARE DIAGRAMMATIC IN NATURE AND DO NOT COMPLETELY DEPICT ALL EXISTING CONDITIONS IN THE AREA.

17. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOOK THROUGH ALL DRAWINGS ASSOCIATED WITH THIS PROJECT. WORK ASSOCIATED WITH THE ELECTRICAL CONTRACTOR'S TRADE MAY BE SHOWN ON OTHER DRAWINGS. ANY ADDITIONAL COSTS RESULTING FROM THE FAILURE TO INCLUDE THESE ITEMS SHOWN ON OTHER DRAWINGS WILL BE INCURRED BY THE CONTRACTOR. SHOULD THE CONTRACTOR ENCOUNTER ANY DISCREPANCIES OR INCONSISTENCIES IN THE CONSTRUCTION DOCUMENTS, THE MORE STRINGENT SHALL GOVERN.

18. CONTRACTOR SHALL FIELD VERIFY CONDITION OF EXISTING EQUIPMENT AND PROVIDE NECESSARY COMPONENTS TO ASSEMBLE AND TO START-UP COMPLETE AND FULLY OPERATIONAL SYSTEMS.

19. POSITIONING OF NEW LAY-IN FIXTURES TAKES PRECEDENCE OVER ARCHITECTURAL REFLECTED CEILING PLAN AND MECHANICAL DIFFUSERS PRIOR TO INSTALLATION OF FIXTURES. CONTRACTOR SHALL COORDINATE ACTUAL LOCATIONS OF LIGHTS WITH AIR DEVICES AND DUCTWORK, CEILING PANELS, JOIST SPACING AND ARCHITECTURAL REFLECTED CEILING PLAN (REF. MECHANICAL PLANS AND ARCHITECTURAL PLANS).

20. PROVIDE OWNER WITH THREE (3) COPIES OF ALL INSTALLATIONS INSTRUCTIONS, PRODUCT DATA SUBMITTAL INFORMATION, WARRANTIES, CONTACT INFORMATION DURING WARRANTY PERIOD AND BALANCING REPORTS IN 3-RING BINDERS AND CD VERSION.

21. FOR OUTDOOR EQUIPMENT ON GRADE AND INDOOR FLOOR MOUNTED EQUIPMENT, THE CONTRACTOR SHALL CONSTRUCT LEVEL 3000 PSI CONCRETE(28 DAY COMPRESSIVE STRENGTH) SLABS WITH FINISHED EDGES, WIRE REINFORCED MINIMUM 6X6 W1.4/1.4 OR HEAVIER PER ASTM A185, MINIMUM 3 1/2" THICK, AND MINIMUM 6" LARGER ON ALL SIDES THAN THE EQUIPMENT BEING SUPPORTED. THE PAD SHALL BE HAVE 2 COATS OF EPOXY SEALANT TO SEAL THE PAD.

22. CONTRACTOR SHALL MAKE NO PENETRATIONS WHATSOEVER OF WALLS FORMING PART OF A STAIRWELL, AN EXIT PASSAGEWAY, OR OTHER TWO-HOUR RATED WALLS. ALL CONDUITS SHALL RUN PARALLEL TO WALLS.

23. CONTRACTOR SHALL SAW CUT AND PATCH ASPHALT, CONCRETE OR OTHER MATERIAL ENCOUNTERED AS REQUIRED TO INSTALL NEW UNDERGROUND RACEWAY. REFER TO ARCHITECTURAL SPECIFICATIONS REGARDING PATCHING REQUIREMENTS.

24. CONTRACTOR SHALL PROVIDE AND INSTALL IDENTIFICATION TAGS FOR EQUIPMENT AND CONDUITS PER ASME 13.1 SCHEME OF IDENTIFICATION FOR PIPING. BURIED ELECTRICAL CONDUITS SHALL BE MARKED PER CODE REQUIREMENTS WITH UNDERGROUND WARNING TAPE 3" BELOW FINISHED GRADE. TAPE SHALL BE 4" WIDE COLORED RED WITH SUITABLE WARNING LEGEND PER ASME A13.1 SCHEME OF IDENTIFICATION FOR PIPING.

25. CONTRACTOR SHALL TAKE PRECAUTIONS PER THE ARCHITECT'S INSTRUCTIONS TO PROTECT EXISTING TREES AND /OR OTHER SITE VEGETATION.

26. CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR ALTERNATES AND ALLOWANCES FOR THIS PROJECT.

27. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND HAVE INSTALLED ANY ACCESS DOOR REQUIRED TO ACCESS NEW AND EXISTING ELECTRICAL EQUIPMENT THAT REQUIRES ACCESS BEHIND GYPBOARD OR HARD CEILINGS AND IN WALLS. THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE GENERAL CONTRACTOR WITH THESE ACCESS DOORS FOR INSTALLATION IN THE CEILING OR WALL. ACCESS DOORS SHALL BE RATED FOR THE WALL, FLOOR, OR CEILING TYPE AND [SHALL BE A MINIMUM SIZE OF 12"X12".] [OR SIZED PER SPECIFICATIONS.]

28. SITE VISIT REPORTS:
   DURING THE COURSE OF THE JOB, THE ENGINEER WILL MAKE SITE AND INSPECTION VISITS TO OBSERVE WORK IN PROGRESS AND WILL SUBSEQUENTLY PREPARE A WRITTEN SITE VISIT REPORT, WHICH WILL BE SENT TO THE CONTRACTOR AND TO WHOMEVER ELSE THE ENGINEER DESIRES. THE CONTRACTOR SHALL PROVIDE 48 HOUR WRITTEN NOTICE TO THE ENGINEER FOR ALL TESTING AND CITY INSPECTION SO THEY CAN ATTEND THESE INSPECTIONS. THE CONTRACTOR SHALL PREPARE A WRITTEN AND TYPED RESPONSE WITHIN SEVEN (7) CALENDAR DAYS OF HIS RECEIVING THE SITE VISIT REPORT. THE CONTRACTORS SHALL ACCOMPANY THE ENGINEER DURING THIS FINAL PUNCHLIST VISIT UPON THE REQUEST OF THE ENGINEER. THE GENERAL CONTRACTOR SHALL INCLUDE IN HIS RESPONSE THE FOLLOWING INFORMATION.
   1 DATE OF SITE VISIT BY THE ENGINEER,
   2 DATE OF RECEIPT OF THE SITE VISIT REPORT,
   3 NAME AND TITLE OF THE PREPARER OF THE RESPONSE,
   4 AN ITEM NUMBER REFERENCED TO THE SITE REPORT,
   5 A BRIEF THREE OR FOUR WORD DESCRIPTION OF THE ITEM,
   6 THE CONTRACTOR OR SUBCONTRACTOR AFFECTED,
   7 THE PROPOSED COURSE OF ACTION, AND
   8 AN EXPECTED TIME OF COMPLETION OF THE ACTION.

29. FINAL PUNCH REPORTS:
   AT THE COMPLETION OF THE JOB, THE ENGINEER WILL MAKE PUNCHLIST SITE VISITS TO OBSERVE COMPLETED WORK AND WILL SUBSEQUENTLY PREPARE A WRITTEN SITE VISIT PUNCHLIST REPORT, WHICH WILL BE SENT TO THE CONTRACTOR AND TO WHOMEVER ELSE THE ENGINEER DESIRES. THE CONTRACTOR, UPON COMPLETION OF THE LISTED PUNCHLIST ITEMS, SHALL PREPARE A TYPEWRITTEN RESPONSE TO THE LIST INDICATING COMPLETION OF EACH ITEM. THE CONTRACTOR SHALL INCLUDE IN HIS RESPONSE THE RESOLUTION OF EACH ITEM. THE CONTRACTORS SHALL ACCOMPANY THE ENGINEER DURING THIS FINAL PUNCHLIST VISIT UPON THE REQUEST OF THE ENGINEER.

30. ALL ELECTRICAL CONDUIT AND PANEL OPENINGS SHALL BE CAPPED DURING DEMOLITION AND CONSTRUCTION.

31. SUBSTITUTED PRODUCTS
   A. MATERIAL OR EQUIPMENT SPECIFIED BY MANUFACTURER'S NAME IS BEING USED AS A BASIS OF STANDARD. NO SUBSTITUTION IS ALLOWABLE WITHOUT ENGINEER'S WRITTEN APPROVAL TEN (10) DAYS PRIOR TO BID DUE DATE UNLESS THE MANUFACTURER IS LISTED ON THE DRAWINGS OR IN THE SPECIFICATION AS BEING A PREAPPROVED ALTERNATIVE MANUFACTURER. ANY SUBMITTAL RECEIVED WITHOUT SUCH WRITTEN APPROVAL OR PRIOR APPROVAL IS SUBJECT TO UNQUALIFIED REJECTION.
   B. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT SUBMITTED SUBSTITUTE EQUIPMENT WILL FIT IN SPACE AVAILABLE. THE CONTRACTOR'S SUBMITTAL FOR ACCEPTANCE OF THE SUBSTITUTE SHALL INCLUDE A WRITTEN STATEMENT OF WHETHER OR NOT SUCH ACCEPTANCE WOULD REQUIRE ANY SUBSEQUENT OR ASSOCIATED CHANGES TO THE DRAWINGS OR SPECIFICATIONS. ANY SUCH CHANGES SHALL BE DESCRIBED IN WRITING, BRIEFLY BUT COMPLETE.
   C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COSTS OF ANY SUCH MODIFICATIONS DUE TO SUBSTITUTION OF MATERIALS OR EQUIPMENT FOR THAT WHICH WAS SPECIFIED OR SCHEDULED. THE COST SHALL BE COMPLETE, THAT IS, IT SHALL INCLUDE THE COST EFFECT OF ANY AND ALL OTHER TRADES.
   D. THE ENGINEER MAY REQUEST DETAILED SHOP DRAWING OR PLAN LAYOUTS OF MECHANICAL ROOMS OR SYSTEMS OF THE SUBSTITUTED EQUIPMENT.
   E. SHOULD A SUBSTITUTION BE APPROVED BY THE ENGINEER (BASED UPON THE SUBSTITUTION SUBMITTAL REVIEW) AND ACCEPTED, AND SHOULD THE SUBSTITUTE MATERIAL OR EQUIPMENT PROVE DEFECTIVE, NOT MEETING DESIGN PARAMETERS, OR OTHERWISE UNSATISFACTORY FOR THE SERVICE INTENDED WITHIN THE GUARANTEE PERIOD, THIS MATERIAL OR EQUIPMENT SHALL BE REPLACED WITH THE MATERIAL OR EQUIPMENT SPECIFIED AT NO ADDITIONAL COST TO THE OWNER.

32. SUBMITTAL REQUIREMENTS:
   A. THE INTENT OF THIS SECTION IS TO GIVE GENERAL SUBMITTAL INFORMATION, REFER TO SPECIFIC SUBMITTAL INFORMATION IN THE SUBSEQUENT ELECTRICAL SECTIONS.
   B. WITHIN 10 DAYS AFTER AWARD OF THE CONTRACT, AND BEFORE ORDERS ARE PLACED, CONTRACTOR SHALL SUBMIT SPECIFIC INFORMATION ON LIST OF EQUIPMENT AND PRINCIPAL MATERIALS SPECIFIED. CONTRACTOR SHALL INDICATE AND/OR PROVIDE NAMES OF MANUFACTURERS, CATALOG AND MODEL NUMBERS, CUT SHEETS, AND SUCH OTHER SUPPLEMENTARY INFORMATION AS NECESSARY FOR EVALUATION. MINIMUM OF SIX (6) COPIES, OR AS DIRECTED BY THE ENGINEER, OF EACH SHALL BE SUBMITTED AND SHALL INCLUDE ALL ITEMS MENTIONED BY MODEL NUMBER AND/OR MANUFACTURER'S NAME IN THE SPECIFICATIONS OR IN SCHEDULES ON THE DRAWINGS.
   C. REQUIREMENTS FOR EACH SUBMITTAL:
      1. BEAR A DATED STAMP OR SPECIFIC WRITTEN INDICATION THAT THE CONTRACTOR HAS REVIEWED AND APPROVED ALL SUBMITTAL PRIOR TO SUBMISSION TO ENGINEER,
      2. HAVE ALL INFORMATION DELETED BY CONTRACTOR THAT PERTAINS TO THE MEANS AND METHODS OF CONSTRUCTION OR TO FABRICATION, ASSEMBLY, INSTALLATION, OR ERECTION (APPROVAL BY ENGINEER SHALL NOT EXTEND TO THESE AREAS UNLESS SPECIFICALLY NOTED BY ENGINEER),
      3. **BE CLEARLY AND SPECIFICALLY MARKED AS TO WHICH SPECIFIC PIECE OF EQUIPMENT IS BEING** SUBMITTED, BY USE OF A PERMANENT MARKER, STAMP, ETC., SO AS TO DISTINGUISH IT FROM OTHER PIECES OF EQUIPMENT THAT MAY OCCUR ON THE SAME PAGE.
      4. **BE CLEARLY AND SPECIFICALLY MARKED AS TO WHICH AVAILABLE OPTIONS ARE BEING SUBMITTED** THAT ARE ASSOCIATED WITH A PIECE OF EQUIPMENT, AND BE COMPLETE WITH RESPECT TO QUANTITIES, DIMENSIONS, SPECIFIC PERFORMANCE, MATERIALS, AND SIMILAR DATA TO ENABLE THE ENGINEER TO REVIEW THE PROPOSED EQUIPMENT.
      5. BE COMPLETE WITH RESPECT TO QUANTITIES, DIMENSIONS, SPECIFIC PERFORMANCE, MATERIALS, AND SIMILAR DATA TO ENABLE THE ENGINEER TO REVIEW THE PROPOSED EQUIPMENT
      6. **BE CLEARLY AND SPECIFICALLY MARKED AS TO ANY AND ALL SUBMITTAL DEVIATIONS FROM THE** DESIGN SPECIFICATION REQUIREMENTS SHALL BE PROVIDED IN WRITTEN FORM.
      7. OMISSION BY CONTRACTOR OF ANY OF THE ABOVE REQUIREMENTS OR SUBMITTALS WILL SUBJECT SUBMITTAL TO AUTOMATIC REJECTION WITHOUT REVIEW.
      8. ANY SUBMITTALS RECEIVED BY ENGINEER THAT WERE NOT REQUESTED SHALL BE RETURNED WITHOUT REVIEW OF ANY KIND. SUBMITTALS SHALL INDICATE MINIMUM ACCESS AND SERVICE CLEARANCES IF REQUIRED BY THE SUBMITTED EQUIPMENT.
   D. INSTALLATION INSTRUCTIONS – FOR CERTAIN PRODUCTS OR SYSTEMS AS IDENTIFIED IN SUBSEQUENT SPECIFICATIONS SECTIONS OR ON THE DRAWINGS, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE COPIES OF MANUFACTURER'S INSTALLATION INSTRUCTIONS WITH THE SUBMITTAL. WHEN REQUIRED AS SUCH, THE INSTALLATION INSTRUCTIONS ARE CONSIDERED PART OF THE SUBMITTAL AND THEIR OMISSION MAY RESULT IN AUTOMATIC REJECTION OF THE SUBMITTAL. WHERE MORE THAN ONE IDENTICAL DEVICE ARE SCHEDULED, ONLY ONE SET OF INSTALLATION INSTRUCTIONS NEEDS TO BE SUBMITTED, E.G. IF SEVEN 200A 208V/3P PANELS ARE SCHEDULED, ONLY ONE 200A 208V/3P PANELS INSTALLATION INSTRUCTION NEEDS TO BE SUBMITTED. SIMILARLY, IF ONE SET OF INSTALLATION INSTRUCTIONS IS IDENTIFIED BY THE MANUFACTURER AND ON THE INSTRUCTIONS TO BE APPLICABLE TO MORE THAN ONE TYPE OR SIZE OF DEVICES, E.G. IF ONE SET OF PANEL INSTRUCTIONS IS GOOD FOR 100A, 150, 200A, PANELS, THEN ONLY ONE INSTRUCTION SET IS REQUIRED FOR THESE DEVICES.
   E. THIS ENGINEER WILL REVIEW THE SUBMITTALS FOR APPROVAL TWICE. ANY ADDITIONAL REVIEWS THAT ARE REQUIRED BY THE ENGINEER FOR WHATEVER REASON AFTER THE INITIAL TWO REVIEWS WILL RESULT IN ADDITIONAL COMPENSATION FOR THE ENGINEER'S TIME BY THE SUBMITTING CONTRACTOR AT THE ENGINEER'S RATE.

33. REQUIRED SHOP DRAWING SUBMITTALS:
   A. LIGHTING FIXTURES (AS NOTED IN LIGHTING FIXTURE SCHEDULE)
   B. MAIN DISTRIBUTION PANEL INCLUDING CIRCUIT BREAKERS
   C. PANELBOARDS INCLUDING CIRCUIT BREAKERS
   D. RECEPTACLES AND COVER PLATES
   E. DISCONNECTS INCLUDING FUSES OR MAGNETIC STARTERS
   F. GROUNDING
   G. WIRING
   H. CONDUIT
   I. FIRE ALARM SYSTEM
   J. ACCESS CONTROL AND SECURITY SYSTEM COMPONENTS
   K. DATA CABLING, TELEPHONE WIRING, AUDIO-VISUAL CABLING
   L. JUNCTION BOXES AND ENCLOSURES

ELECTRICAL:
34. ALL EXPOSED CONDUIT SHALL BE PAINTED TO MATCH ADJACENT SURFACES.

35. PROVIDE BLANK METAL COVERPLATES OVER ALL UNUSED OUTLET BOXES. PAINT COVERPLATE TO MATCH ADJACENT SURFACES.

36. RECEPTACLE AND DATA OUTLET MOUNTING HEIGHTS INDICATED ON THE DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH OTHER TRADES FOR EXACT HEIGHT REQUIRED. THIS REQUIREMENT ALSO APPLIES TO SWITCHES, TELEPHONE OUTLETS, DATA OUTLETS, HVAC SENSORS, ETC.. ANY DEVICE THAT HAS TO BE RELOCATED DUE TO CONTRACTOR'S FAILURE TO COORDINATE LOCATION WITH COUNTERTOPS, CHALKBOARDS, TACKBOARDS, ETC. WILL BE DONE AT NO ADDITIONAL COST TO THE OWNER.

37. ALL RECEPTACLES TO BE 20A SPECIFICATION GRADE, IVORY. WALL PLATES TO MATCH. ISOLATED GROUND DUPLEX RECEPTACLES (IG) WILL BE ORANGE BODY AND FACE PLATE. EXTERIOR RECEPTACLES SHALL BE WEATHERPROOF GFCI AND SHALL HAVE WHILE IN USE METAL WEATHERPROOF COVERS.

38. COORDINATE WORK WITH ALL OTHER TRADES GIVING SPECIAL CONSIDERATION TO WORK DONE ABOVE CEILINGS, OUTLET LOCATIONS AT MILLWORK, AND SWITCH LOCATIONS IN REGARDS TO DOOR SWINGS.

39. WIRING SHALL BE THWN COPPER WITH MINIMUM SIZE OF #12, IN MINIMUM 3/4" (EMT) CONDUIT WITH CU. EGC., UNLESS NOTED OTHERWISE.

40. INSTALL WALL MOUNTED LIGHT FIXTURES, SWITCHES, OUTLETS, AND COMMUNICATION DEVICES IN STRICT COORDINATION WITH ARCHITECTURAL DETAILS, SECTIONS AND ELEVATIONS, AND ADA REQUIREMENTS.

41. FIRESTOPPING OF PENETRATIONS IN FIRE-RATED WALLS, FLOORS, ETC. SHALL BE DONE BY A FIRESTOPPING CONTRACTOR. ELECTRICAL CONTRACTOR SHALL MAKE REQUIRED PENETRATIONS IN RATED WALL, FLOORS, ETC. NEATLY AND WITH A CUTTING TOOL, THE CONTRACTOR SHALL MAKE THE PENETRATIONS NO LARGER THAN NECESSARY, AND THE CONTRACTOR SHALL COORDINATE ALL SUCH PENETRATIONS WITH THE FIRESTOPPING CONTRACTOR BEFORE SUCH PENETRATIONS ARE MADE.

42. REFER TO SPECIFICATIONS FOR ALL COMMUNICATION SYSTEM REQUIREMENTS. (IN LIEU OF SPECS: PROVIDE 3/4" C. W/ PULLCORD FROM COMMUNICATION OUTLETS TO 6" ABOVE LAY-IN CEILING.)

43. SUPPORT ALL FIXTURES FROM STRUCTURE ABOVE CEILING TILES OR PLASTER. CEILING SHALL NOT SUPPORT FIXTURES.

44. FINISHED FLOOR ELEVATIONS FOR OUTLETS AND OTHER DEVICES ARE TO CENTER OF BOX. WHERE MILLWORK IS PRESENT, BOTTOM OF BOX SHALL BE MINIMUM OF 2" ABOVE BACK-SPLASH, REGARDLESS OF DIMENSION SHOWN ON DRAWINGS.

45. DOUBLE SET SCREW FITTINGS ARE ACCEPTABLE FOR STEEL CONDUIT AND COUPLINGS ONLY.

46. BEFORE INSTALLATION, EQUIPMENT AND DEVICES INCLUDING, BUT NOT LIMITED TO, ANY DEVICE WITH ELECTRICAL CONNECTIONS, DUCTWORK, INSULATION, PIPING, VALVES, AIR DEVICES, ETC., SHALL NOT BE STORED DIRECTLY ON GRADE OR ON A SLAB OR FLOOR. BEFORE AND AFTER INSTALLATION, SUCH EQUIPMENT AND DEVICES SHALL BE PROTECTED FROM ENTRY OF DIRT, TRASH, WATER (EXCEPT AS REQUIRED), VERMIN, ETC.

47. DEVICES THAT MIGHT CAUSE OR OPERATE WITH VIBRATION OR NOISE SHALL BE ISOLATED PER MANUFACTURER'S RECOMMENDATIONS AND/OR PER SPECIFICATIONS.

48. SWITCHBOARDS, PANEL BOARDS AND TRANSFORMERS SHALL BE CUTLER-HAMMER, SQUARE-D, OR SIMILAR APPROVED BY THE ENGINEER.

49. USE THE FOLLOWING WIRING COLOR CODE:
   A. FOR WIRE SIZES 10 AWG AND SMALLER, INSTALL WIRE COLORS IN ACCORDANCE WITH THE FOLLOWING:
      1. BLACK AND RED FOR SINGLE PHASE CIRCUITS AT120/240 VOLTS.
      2. BLACK, RED, AND BLUE FOR CIRCUITS AT 120/208 VOLTS SINGLE OR THREE PHASE.
      3. ORANGE, BROWN, AND YELLOW FOR CIRCUITS AT 277/480 VOLTS SINGLE OR THREE PHASE.
   B. FOR WIRE SIZES 8 AWG AND LARGER, IDENTIFY WIRE WITH COLORED TAPE AT TERMINALS, SPLICES AND BOXES. COLORS ARE AS FOLLOWS:
      1. BLACK AND RED FOR SINGLE PHASE CIRCUITS AT 120/240 VOLTS.
      2. BLACK, RED, AND BLUE FOR CIRCUITS AT 120/208 VOLTS SINGLE OR THREE PHASE.
      3. BROWN, ORANGE, AND YELLOW FOR CIRCUITS AT 277/480 VOLTS SINGLE OR THREE PHASE.
   C. NEUTRAL CONDUCTORS: WHITE FOR 208/120V CIRCUITS. GREY FOR 480/277V CIRCUITS.
   D. BRANCH CIRCUIT CONDUCTORS: INSTALL THREE OR FOUR WIRE HOMERUNS WITH EACH PHASE UNIQUELY COLOR CODED.
   E. FEEDER CIRCUIT CONDUCTORS: UNIQUELY COLOR CODE EACH PHASE.
   F. GROUND CONDUCTORS:
      1. FOR 6 AWG AND SMALLER: GREEN.
      2. FOR 4 AWG AND LARGER: IDENTIFY WITH GREEN TAPE AT BOTH ENDS AND VISIBLE POINTS INCLUDING JUNCTION BOXES.

50. EACH 120 VOLT BRANCH CIRCUIT SHALL BE PROVIDED WITH A SEPARATE NEUTRAL, ONE FOR EACH PHASE WIRE. CIRCUIT BREAKER HANDLE TIES MAY BE USED INSTEAD OF SEPARATE NEUTRALS. COMPLY WITH ALL CODES.

51. PROVIDE ARC-FLASH LABELING ON ALL ELECTRICAL PANELS, BOTH NEW AND EXISTING. ALL LABELING SHALL BE DONE USING ANNEX H OF NFPA 70E, OR BY CALCULATIONS.

52. ALL STEP-DOWN TRANSFORMERS SHALL COMPLY WITH THE U.S. DOE 2016 LEGISLATION FOR ENERGY EFFICIENCY.

53. PROVIDE AN UN-SWITCHED PHASE WIRE FROM THE LINE SIDE OF THE ROOM'S LIGHT SWITCH TO THE EMERGENCY FIXTURE IN THAT ROOM.

SYMBOL LEGEND

SYMBOL	DESCRIPTION
WP	WEATHER PROOF
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
⊖	DUPLEX CONVENIENCE OUTLET OR ISOLATED GROUND DUPLEX OUTLET. UP 18" TO CENTER OF RECEPTACLE OR AS INDICATED.
$	SINGLE POLE WALL SWITCH. FLUSH MOUNTED UP 44" UNLESS OTHERWISE INDICATED
⊕	CANOPY LIGHTING FIXTURE. TYPE AS INDICATED IN FIXTURE SCHEDULE
	FLANGED OR SURFACE MOUNTED FLUORESCENT FIXTURE AND OUTLET. TYPE AS INDICATED IN FIXTURE SCHEDULE.
$OCC	OCCUPANCY SENSOR MOUNTED ON CEILING.
J	JUNCTION BOX.
T	TRANSFORMER AS NOTED.
	SPECIAL CABINET AS NOTED.
	PANELBOARD. SEE PANEL SCHEDULE FOR CHARACTERISTICS.
	SAFETY SWITCH, PROVIDED AND INSTALLED UNDER DIV. 16. TO HAVE POLES AND RATING REQUIRED. TO BE MOUNTED IN NEMA 3R IF INSTALLED OUTDOORS.
	BRANCH CIRCUIT IN WALLS OR CEILING.
X-X	HOME RUN TO PANEL WITH BRANCH CIRCUIT NUMBERS INDICATED. TIC MARKS REPRESENT NEUTRAL, HOT, SWITCH LEG, AND GROUND CONDUCTORS RESPECTIVELY. CONDUITS WITH NO TIC MARKS SHALL BE: "A HOT AND NEUTRAL", "A HOT AND SWITCH LEG", "A NEUTRAL AND SWITCH LEG", OR "HOT, NEUTRAL, AND GROUND OR ISOLATED GROUND", AS APPLICABLE.

NOTE: SOME SYMBOLS SHOWN MAY NOT BE USED ON THIS PROJECT.

UTILITY LOCATOR SERVICES

PASEO DEL ESTE MUNICIPAL UTILITY DISTRICT No. 1	(915) 852-1465
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
SPECTRUM	(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

WARNING ! BEFORE YOU DIG

CALL 811

FOR FIELD LOCATING EXISTING UTILITIES

ENERGY CODE NOT REQUIRED. NO HABITABLE SPACES AND PLAYGROUND EXEMPT.

APPROVED FOR CONSTRUCTION
Parks & Recreation Department Planning

KARLA CHAVEZ
SIGNATURE
2/22/2021
DATE

LIGHTING FIXTURE SCHEDULE

GENERAL LIGHTING

SYMBOL	MANUFACTURER NAME AND NUMBER	LAMPS	VOLTAGE	BALLAST	MOUNTING	DESCRIPTION	NOTES
A	DAYBRITE DWPE27L840UNV	16W LED	120	NA	SURFACE	2' WRAP, 2000 LUMEN CONTROL BY WET RATED OCC SENSOR	
B	LSI EXCURSION EXN D EGLED 8L T5W UNV DIM 40 BLK	60W LED 8230 LUMEN	240	NA	SURFACE	CANOPY LUMINAIRE VIA TIMER AND PHOTOCELL	

NOTES
1. LIGHT FIXTURES SHALL BE AS SPECIFIED AND NO SUBSTITUTIONS WILL BE ALLOWED UNLESS PRIOR APPROVED PER SPECIFICATIONS.
2. REFER TO PLAN FOR TYPES AND QUANTITIES USED. ALL TYPES LISTED ABOVE DO NOT NECESSARILY APPEAR ON PLAN.
3. UPON COMPLETION OF THE PROJECT THE CONTRACTOR IS TO PROVIDE LABOR TO ADJUST THE COMPLETE INTERIOR LIGHTING PER THE DIRECTION OF THE USER.

PANEL "M" SCHEDULE

TYPE: DELTA — SERVICE: 240/120 VOLT — 1 PHASE — 3 WIRE — SIC: 10,000 AIC — MAIN: 100 AMPS — TYPE: MCB — BUS: 100 AMPS — MAIN BUS: COPPER
LOCATION: ROOM
ENCLOSURE: NEMA 3R
TYPE: SURFACE MOUNTED
NEUTRAL BUS: COPPER
GROUNDING BUS: COPPER

WIRE / CONDUIT	CKT NO.	TYPE	SERVICE	POLE	AMP	VA	LOAD IN VA PH "A"	LOAD IN VA PH "C"	VA	AMP	POLE	SERVICE	TYPE	CKT NO.	WIRE / CONDUIT
#4 CU THWN WITH #8 CU GROUND	1	M	PUMP	2	80	6,000	6,050		50	20	2	PLAYGROUND LIGHT	C	2	
IN 1" CONDUIT	3	M				6,000		6,050	50				C	4	
	5	O	IRRIGATION CONTROLLER	1	20	500	500							6	
	7	C	PUMP HOUSE LIGHT	1	20	60		60						8	
	9	R	RECEPTACLES	1	20	360	360							10	
	11							0						12	

WIRING AND CONDUITS SHALL BE IN ACCORDANCE WITH E-1 ELECTRICAL GENERAL NOTES #32 AND #42, UNLESS NOTED OTHERWISE.
DEMAND LOADS MAY VARY FROM CONNECTED LOADS BECAUSE OF CODE DIVERSITIES

	PH "A"	PH "C"
CONNECTED VA	6,910	6,110
CONNECTED AMPS	57.6	50.9
TOTAL CONNECTED KVA	13.0	57.6 MAX AMPS / PH
DIVERSITY AMPS	54.4	
TOTAL DIVERSITY KVA	13.1	

UNBALANCE % 11.6

TYPE OF LOAD

	DESCRIPTION	VA	DEMAND FACTOR	DEMAND VA
C	CONTINUOUS	160	1.25	200
N	NON-CONTINUOUS	0	1.00	0
K	KITCHEN	0	0.65	0
R	RECEPTACLES	360	1.00	360 DIVERSITY PER 2014 NEC TABLE 220.44
O	OTHER	500	1.00	500
M	MECHANICAL	12,000	1.00	12,000
	TOTAL	13,020		13,060

EMC ENGINEERS

REFERENCES – BENCHMARKS
FOUND CITY MONUMENT AT THE CENTERLINE & INTERSECTION OF CEVALLIA AVENUE AND DOMINIC ANAKIN DRIVE.
ELEVATION: 3990.65' (CITY DATUM)

DATE	REVISIONS	BY

cea
813 N. Kansas St.
Suite 300
El Paso, TX 79902
915.544.5232
www.ceagroup.net
TEXAS REGISTERED ENGINEERING FIRM F-4564

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY ROBERT J. BLANCHETTE, P.E.#120820 OF EMC ENGINEERS (TEXAS FIRM REG. #F2491) ON DECEMBER 05 2021. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

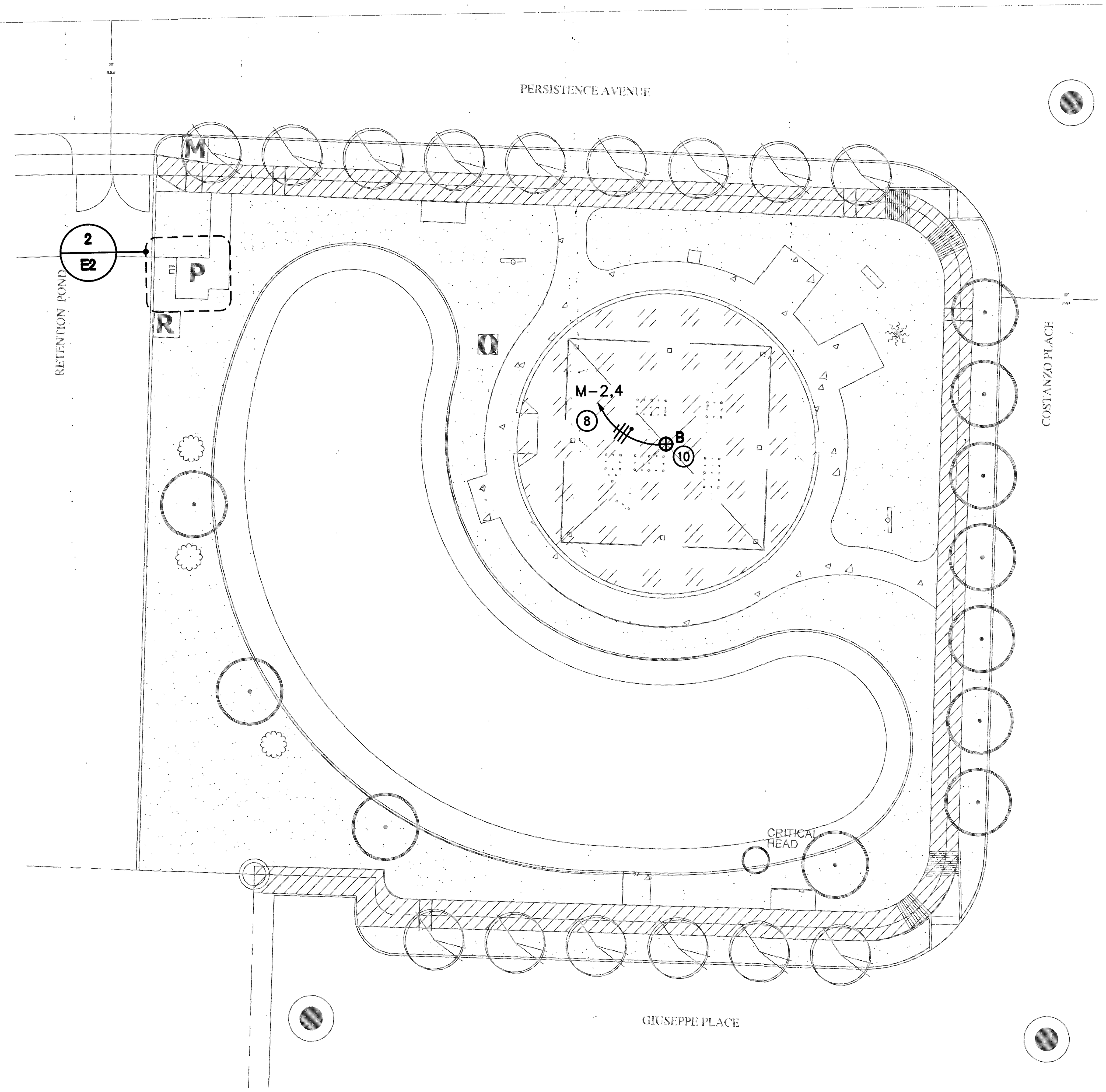
ENGINEER'S SEAL
STATE OF TEXAS — ROBERT J. BLANCHETTE — 120820 — PROFESSIONAL ENGINEER — LICENSED

SCALE
Horizontal: AS SHOWN
Vertical: AS SHOWN
Contour Interval: N/A
DATE: NOVEMBER 2020
DESIGN BY: EMC
DRAWN BY: L.C.B
CHKD. BY: B.B.
APPVD. BY: B.B.
JOB No. 3049-002

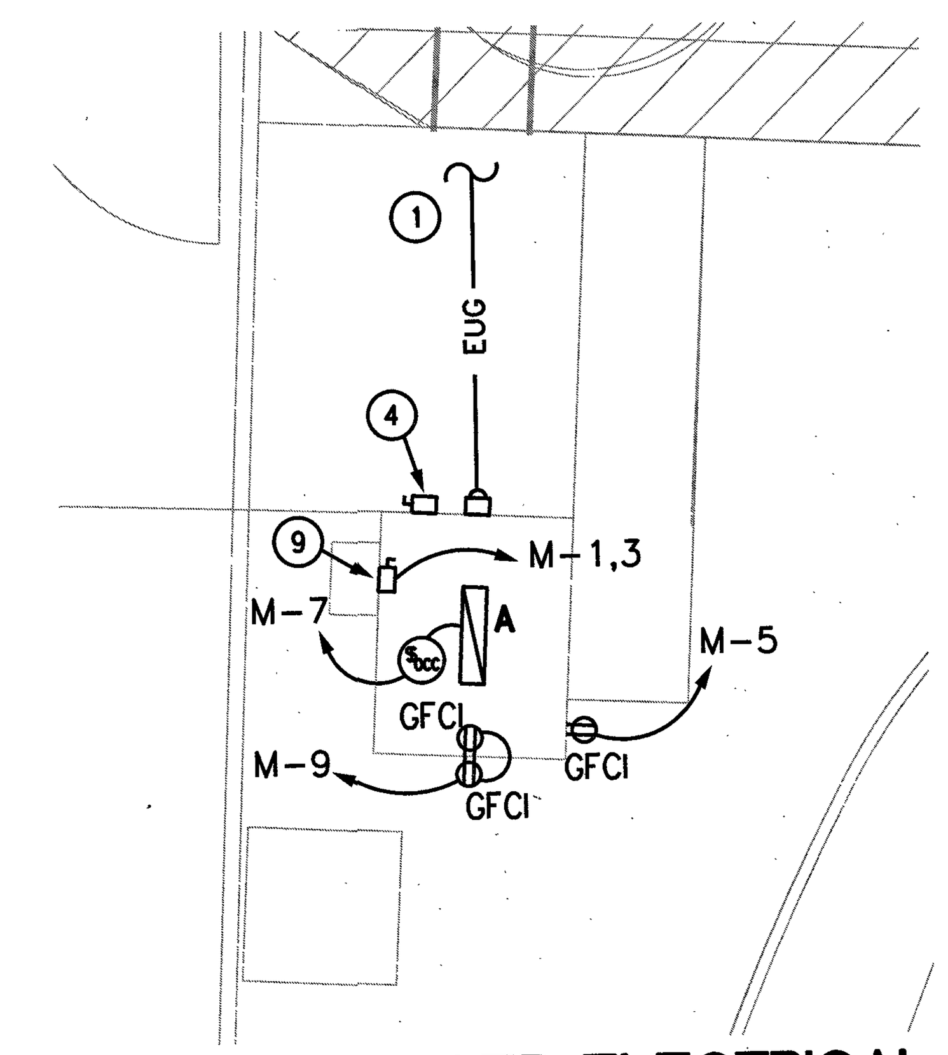
PROJECT TITLE
CUESTA DEL SOL
SUBDIVISION IMPROVEMENTS

SHEET TITLE
GENERAL NOTES LEGEND & SCHEDULES

SHEET NO.
E1



ELECTRICAL SITE PLAN
1 / E2
SCALE: 1" = 20'-0"
20 10 0 20 40



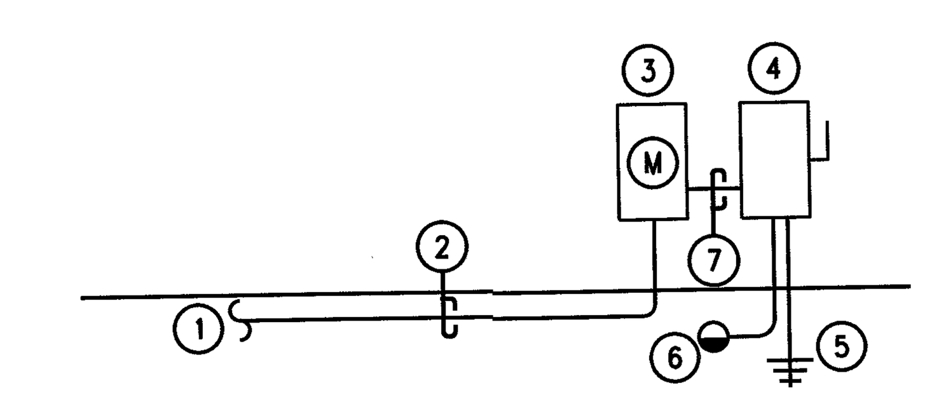
ENLARGED ELECTRICAL PUMP HOUSE PLAN
2 / E1

ELECTRICAL GENERAL NOTES:

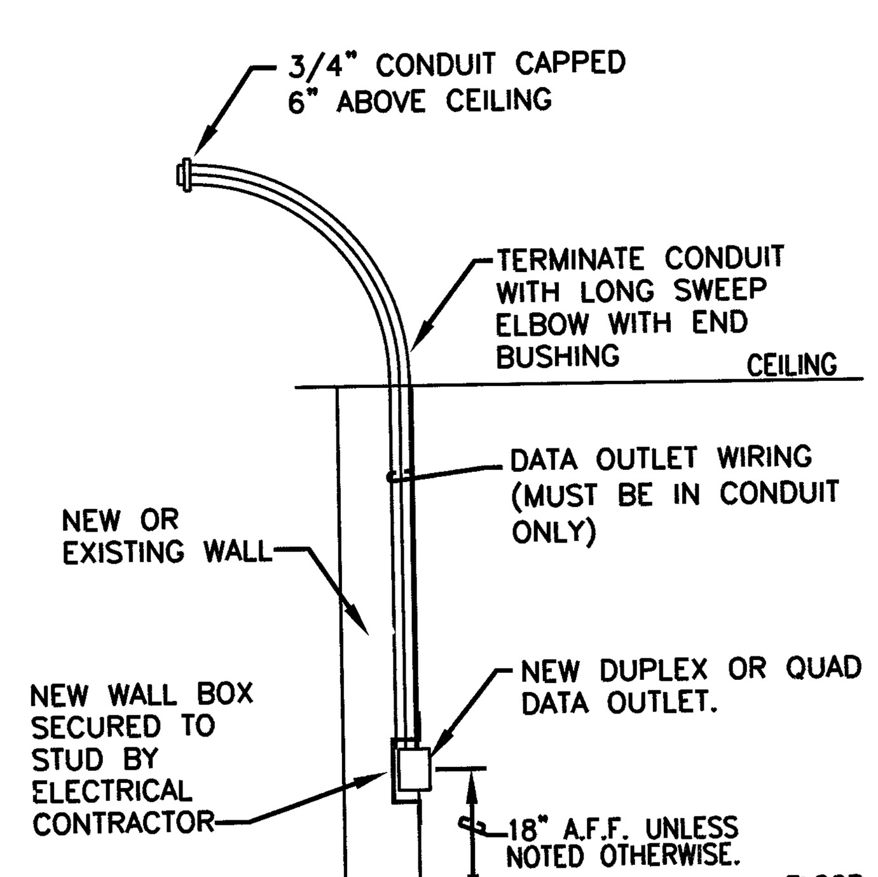
1 UNDERGROUND WIRING TO BE XHHW.

ELECTRICAL KEYED NOTES: ①

1. TO EPE SERVICE, 240/120V SINGLE PHASE. COORDINATE CONNECTION WITH EPE.
2. #4/0 TRIPLEX FROM EPE
3. METER PER EPE REQUIREMENTS
4. 100A 240/120V N3R PANEL/DISCONNECT
5. #8 CU TO 2 5/8"X8' COPPER CLAD GROUND RODS
6. #8 CU TO METALLIC COLD WATER PIPE
7. 3 #2 CU THWN AND #8 CU GROUND IN 1-1/4" CONDUIT.
8. VIA ASTRONOMICAL TIME CLOCK AND PHOTOCELL. PLACE TIMER AND PHOTOCELL AT PUMP HOUSE.
9. COORDINATE PUMP EQUIPMENT LOCATION PRIOR TO INSTALL.
10. RUN CONDUIT AND WIRING FOR LIGHT INSIDE COLUMN OF CANOPY. REFER TO STRUCTURAL DETAILS OF CANOPY FOR PLACEMENT OF CONDUIT IN FOOTING AND COLUMN.

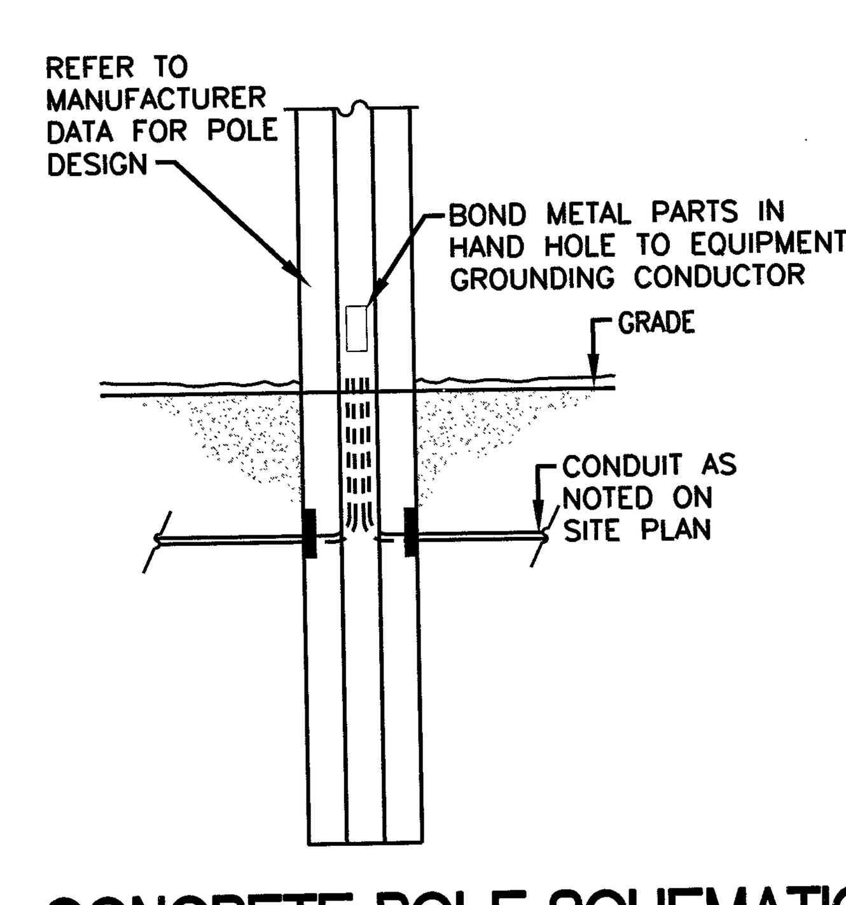


ELECTRICAL POWER RISER DIAGRAM
3 / E2
SCALE: NONE

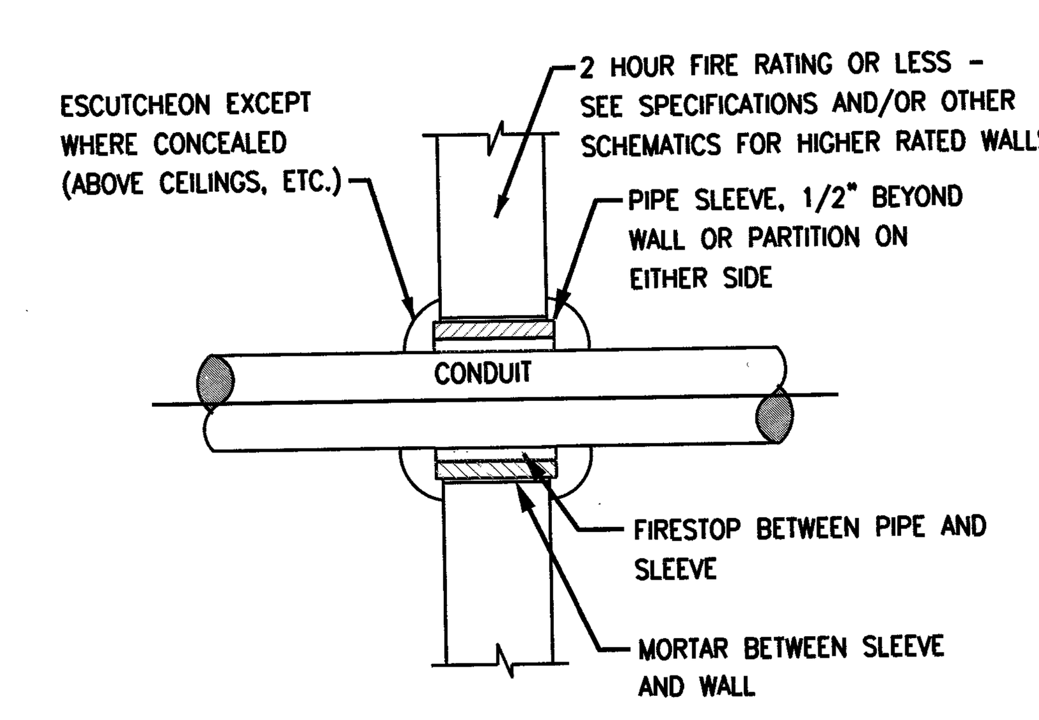


NOTE:
1. ELECTRICAL CONTRACTOR TO INSTALL CONDUIT AND PULL STRING FOR CONTROLS. CONTRACTOR TO INSTALL WIRE DEVICES.

DUPLEX OR QUAD, DATA OUTLET MOUNTING SCHEMATIC
4 / E2
SCALE: NONE



CONCRETE POLE SCHEMATIC
5 / E2
SCALE: NONE



INTERIOR WALL CONDUIT PENETRATION
6 / E2
SCALE: NONE

APPROVED FOR CONSTRUCTION
Parks & Recreation Department-Planning

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SIGNATURE
2/22/2021
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