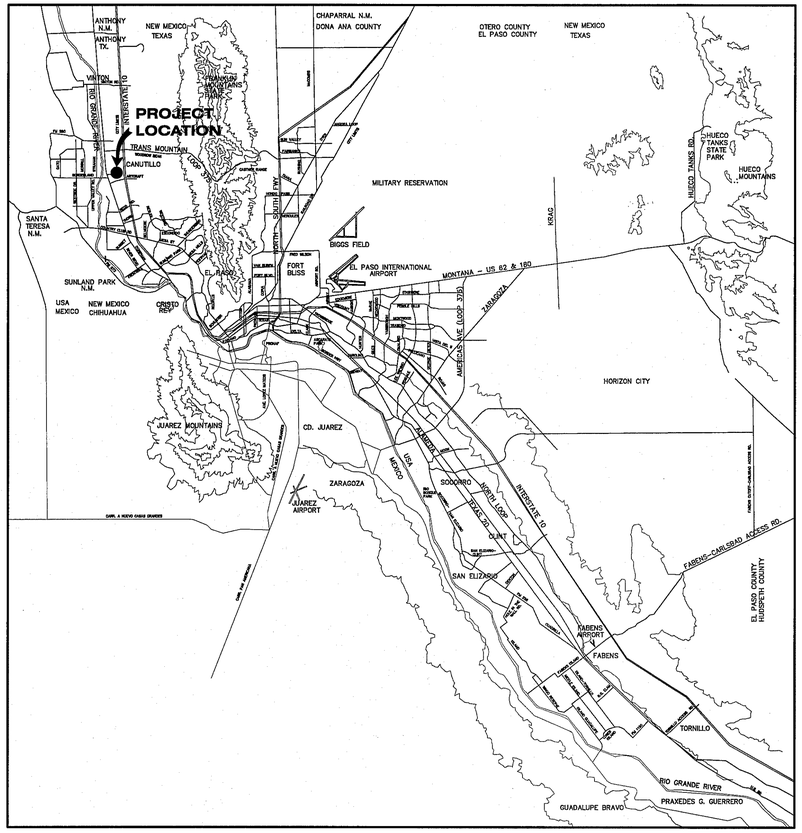
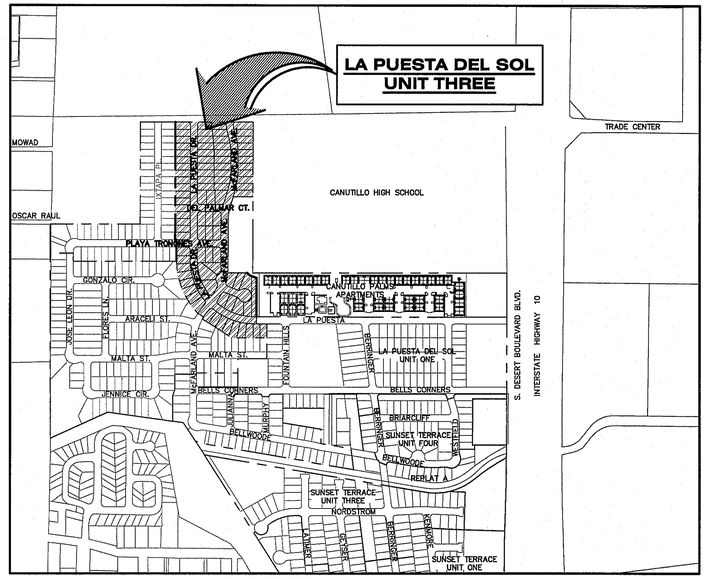
LA PUESTA DEL SOL UNIT THREE SUBDIVISION IMPROVEMENTS

A PORTION OF TRACT 3A2 , NELLIE D. MUNDY SURVEY NO. 240 , CITY OF EL PASO , EL PASO COUNTY , TEXAS CONTAINING 17.41± ACRES



VICINITY MAP
APPROXIMATE SCALE:
1" = 2 MILES

SHEET NUMBER	SHEET TITLE
CVR	COVER SHEET
C1.1	GENERAL INFORMATION
C2.1–C2.2	FINAL PLAT
C3.1	GRADING PLAN
C4.1	DRAINAGE PLAN
C5.1–C5.2	GRADING SECTIONS
C6.1–C6.7	STREET PLAN & PROFILES
C7.1–C7.2	STORM SEWER PLAN & PROFILES
C7.3	UTILITY CROSSINGS (SEWER)
C8.1–C8.2	STANDARD DETAILS
C9.1–C9.4	DRAINAGE DETAILS
C10.1–C10.2	ILLUMINATION PLAN / DETAILS
C11.1	WATER INDEX / GENERAL INFORMATION
C11.2–C11.5	WATER DETAILS
C12.1	SANITARY SEWER INDEX / GENERAL INFORMATION
C12.2–C12.4	SANITARY SEWER PLAN & PROFILES
C12.5–C12.7	SANITARY SEWER DETAILS
C13.1–C13.3	STORM WATER POLLUTION PREVENTION PLAN



LOCATION MAP
APPROXIMATE SCALE: 1" = 600'

STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER

10-28-19
JORGE L. AZCARATE, P.E. PROJECT MANAGER

cea group
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

CITY DEVELOPMENT DEPARTMENT
Reviewed For Conformance For Condition Related To:
- Subdivision
- Grading & Drainage
- Wheelchair Ramps
- On Site Parking Layout
- Driveways
- Retaining Rock Walls
- On Site Ponding of Storm Waters

Contractor Must Call 24 Hours Prior To Construction for Inspections
By 11/6/2019 Date

PRINCIPAL CONTACTS:

	NAME	ADDRESS	CITY & ZIP	PHONE	FAX
OWNER:	TROPICANA DEVELOPMENT INC.	4712 WOODROW BEAN DR. STE. A	EL PASO, TX 79924	(915) 757–1802	(915) 757–1827
ENGINEER:	CEA GROUP	4712 WOODROW BEAN DR. STE. F	EL PASO, TX 79924	(915) 544–5232	(915) 544–5233
SURVEYOR:	BARRAGAN & ASSOCIATES	10950 PELLICANO DR. BUILDING F	EL PASO, TX 79936	(915) 591–5709	(915) 591–5706

S:\2000\2000-210-La Puesta Del Sol Unit Three\DWGS\Construction Drawings\Improvement Plans\C0.0-CoverSheet.dwg, 11/4/2019 10:03:24 AM

GENERAL NOTES

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

LEGEND

- SUBDIVISION BOUNDARY
- ROW LINE
- CURB LINE
- PROPERTY LINE
- STREET CENTERLINE
- EASEMENT LINE
- MATCH LINE
- STORM SEWER LINE
- HIGH WATER MARK
- CURB AND GUTTER DROP INLET
- STORM SEWER MANHOLE
- 4000 — FINISHED GROUND CONTOUR ELEVATION (INDEX)
- FINISHED GROUND CONTOUR ELEVATION (INTERMEDIATE)
- —4000— EXISTING GROUND CONTOUR ELEVATION (INDEX)
- EXISTING GROUND CONTOUR ELEVATION (INTERMEDIATE)
- NEW RETAINING ROCKWALL (2'–3' IN HEIGHT)
- NEW RETAINING ROCKWALL (3'–9' IN HEIGHT)
- X / X — STANDARD DETAIL/SECTION NUMBER; SHEET NUMBER WHERE STANDARD/ SECTION DETAIL IS LOCATED
- 4000.00 — FINISHED SPOT ELEVATION
- FG 4000.00 — LOT FINISHED GROUND ELEVATION
- TC 4000.00 — TOP OF CURB ELEVATION
- TP 4000.00 — TOP OF PAVEMENT ELEVATION
- 1 (2) — SUBDIVISION LOT AND BLOCK NUMBER
- DRAINAGE FLOW
- HIGH POINT
- LOW POINT
- EXISTING HIGH POINT
- EXISTING LOW POINT
- HEADWALL WITH WINGWALLS
- DA–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 PROTRUDING THROUGH GROUND SURFACE; FILL DEPRESSIONS 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 NECESSARY TO FACILITATE NEW CONSTRUCTION. BURNING IS NOT PERMITTED 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

UTILITY LOCATOR SERVICES

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

WARNING ! BEFORE YOU DIG

CALL 811

FOR FIELD LOCATING EXISTING UTILITIES

INDEX OF DRAWINGS

THE CITY OF EL PASO TEXAS — Final Approval

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "DHQ" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
TEXAS REGISTERED ENGINEERING FIRM F-4594
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

ENGINEER'S SEAL

STATE OF TEXAS — JORGE L. ACEVEDO — 85075 — LICENSED PROFESSIONAL ENGINEER — 10-28-19

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

DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000–210

PROJECT TITLE

LA PUESTA DEL SOL UNIT THREE SUBDIVISION IMPROVEMENTS

SHEET TITLE

GENERAL INFORMATION

SHEET NO.

C1.1

S:\2000\2000-210-La Puesta Del Sol Unit Three\DWGS\Construction Drawings\Improvement Plans\C11-Typical General Notes.dwg, 11/4/2019 10:04:06 AM

LA PUESTA DEL SOL UNIT THREE

A PORTION OF TRACT 3A2, AND ALL OF TRACTS 3A2A AND 3A2B, NELLIE D. MUNDY SURVEY No. 240, CITY OF EL PASO, EL PASO COUNTY, TEXAS CONTAINING 17.41± ACRES

SHEET 1 OF 2

PLAT NOTES AND RESTRICTIONS:

1. THIS IS TO CERTIFY THAT WATER AND SEWER SERVICES WILL BE PROVIDED TO LA PUESTA DEL SOL UNIT THREE 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 FROM EXISTING FACILITIES LOCATED ON McFARLAND AVENUE, LA PUESTA DRIVE, JOSE LEON DRIVE, AND ISELA RUBALCAVA 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. 20190091766-767 DATE 11-27-19
3. RESTRICTIVE COVENANTS FOR THIS SUBDIVISION ARE FILED IN THE OFFICE OF THE COUNTY CLERK, DEED AND RECORD SECTION. INSTRUMENT No. 20190091768 DATE 11-27-19
4. SUBDIVISION IMPROVEMENTS AGREEMENT & GUARANTEE FOR THIS SUBDIVISION IS FILED IN THE OFFICE OF THE COUNTY CLERK, DEED AND RECORD SECTION. INSTRUMENT No. 20190091769 DATE 11-27-19
5. INTERIOR LOT CORNERS WILL BE SET UPON COMPLETION OF CONSTRUCTION OF ROADWAYS AND UTILITIES (BY OTHERS). SET 1/2" REBAR WITH CAP STAMPED "B&A INC" AT ALL EXTERIOR BOUNDARY CORNERS UNLESS OTHERWISE SHOWN.
6. "U.S. POSTAL SERVICE DELIVERY WILL BE PROVIDED THROUGH NEIGHBORHOOD DELIVERY AND COLLECTION BOX UNITS."
7. THIS SUBDIVISION LIES WITHIN ZONE "X" AND REVISED TO REFLECT LOMR EFFECTIVE: JANUARY 21, 2015. AS DESIGNATED IN PANEL NO. 480212–0125B & LOMR EFFECTIVE: SEPTEMBER 24, 2018. AS DESIGNATED IN PANEL NO. 480212–0025B.
8. ◉ DENOTES PROPOSED MONUMENT. (MAY BE SUBJECT TO RELOCATION AT TIME OF CONSTRUCTION. FOR EXACT LOCATION PLEASE CONTACT THE CITY OF TEL PASO).
9. △ DENOTES EXISTING MONUMENT.
10. DEED REFERENCE: DOCUMENT NO. 20130000519, DOCUMENT NO. 20090033119, DOCUMENT NO. 20070072034.
11. ◘ DENOTES PREVIOUSLY FOUND 5/8" REBAR WITH ALUMINUM CAP STAMPED "TX RPLS 2198" (DOC. NO. 20110035783 NOW OBLITERATED).
12. ALL UTILITY EASEMENT ARE 10' WIDE UNLESS OTHERWISE SPECIFIED ON DRAWINGS. (10' U.E.)
13. PROPERTY MAY BE SUBJECT TO EASEMENTS OR OTHER MATTERS WHETHER OF RECORD OR NOT, (NOT SHOWN). NO ADDITIONAL RESEARCH WAS PERFORMED BY B&A INC. FOR ANY RESERVATIONS, RESTRICTIONS, BUILDING LINES AND/OR EASEMENTS WHICH MAY OR MAY NOT AFFECT SUBJECT PARCEL.
14. THIS SURVEY WAS DONE WITHOUT THE BENEFIT OF A TITLE COMMITMENT.
15. LOT 5, BLOCK 23 SHALL BE MAINTAINED BY THE PROPERTY OWNER.
16. *R.P.R.E.P.C. = REAL PROPERTY RECORDS OF EL PASO COUNTY, TEXAS.
17. *P.R.E.P.C. = PLAT RECORDS OF EL PASO COUNTY, TEXAS.
18. C.O.S. = COMMON OPEN SPACE

LA PUESTA DEL SOL UNIT THREE

La Puesta Del Sol Unit Three 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 below. 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.

WESTSIDE SERVICE AREA

Meter Size	Meter Capacity Ratio	*Water ($)	Wastewater ($)
Less Than 1"	1.00	659.00	927.00
1"	1.67	1,101.00	1,548.00
1 1/2"	3.33	2,195.00	3,087.00
2"	5.33	3,514.00	4,941.00
3"	10.00	6,593.00	9,270.00
4"	16.67	10,990.00	15,453.00
6"	33.33	21,973.00	30,897.00
8"	53.33	35,158.00	49,437.00
10"	76.67	50,545.00	71,073.00
12"	143.33	94,490.00	132,867.00

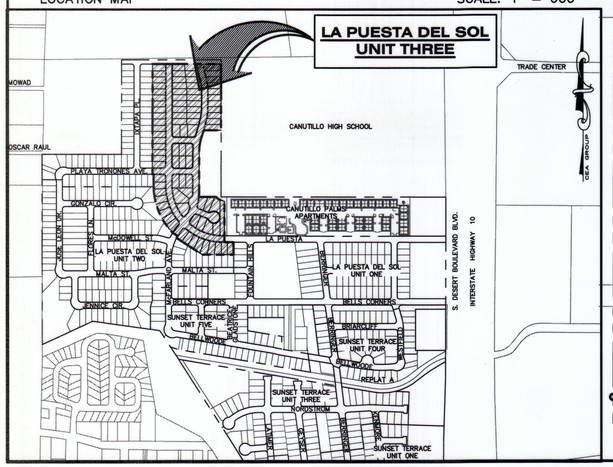
* Fees do not apply to water meter or connections made for standby fire protection service.

RESIDENTIAL LOTS	87
COMMON OPEN SPACE	1
TOTAL	88

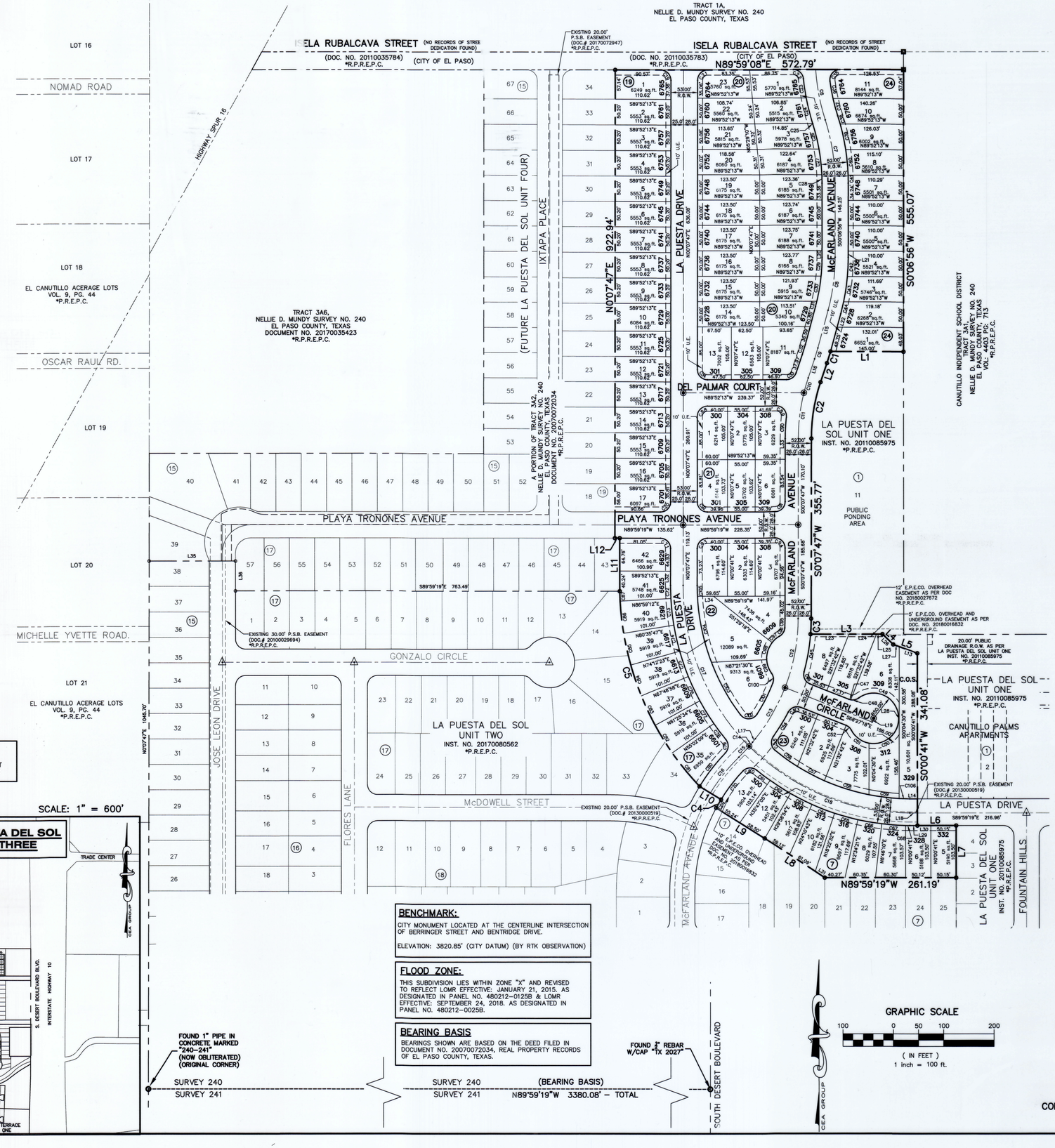
SCHOOL DISTRICT

CANUTILLO INDEPENDENT SCHOOL DISTRICT
7965 ARTCRAFT RD, EL PASO, TX 79932

LOCATION MAP



SCALE: 1" = 600'



BENCHMARK:

CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF BERRINGER STREET AND BENTRIDGE DRIVE.

ELEVATION: 3820.85' (CITY DATUM) (BY RTK OBSERVATION)

FLOOD ZONE:

THIS SUBDIVISION LIES WITHIN ZONE "X" AND REVISED TO REFLECT LOMR EFFECTIVE: JANUARY 21, 2015. AS DESIGNATED IN PANEL NO. 480212–0125B & LOMR EFFECTIVE: SEPTEMBER 24, 2018. AS DESIGNATED IN PANEL NO. 480212–0025B.

BEARING BASIS

BEARINGS SHOWN ARE BASED ON THE DEED FILED IN DOCUMENT NO. 20070072034, REAL PROPERTY RECORDS OF EL PASO COUNTY, TEXAS.

FOUND 1" PIPE IN CONCRETE, MARKED "240–241" (NOW OBLITERATED) (ORIGINAL CORNER)

SURVEY 240 / SURVEY 241

(BEARING BASIS) N89°59'19"W 3380.08' – TOTAL

FOUND 3" REBAR W/CAP "TX 2027"

SOUTH DESERT BOULEVARD

GRAPHIC SCALE

100 0 50 100 200

(IN FEET)
1 inch = 100 ft.

DEDICATION

Tropicana Development Inc., and Canutillo Palms, Ltd., 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 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 8th day of November 2019.

Tropicana Development Inc.
Gregory B. Bowling, Vice–President

Canutillo Palms, Ltd:
By: El Paso Canutillo, LLC.
Its: General Partner
R. L. Bowling, IV, Manager

ACKNOWLEDGEMENT

STATE OF TEXAS
COUNTY OF EL PASO

Before me, the undersigned authority, on this day personally appeared Gregory B. Bowling, 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 8th day of November 2019.

Notary Public in and for El Paso County — My Commission Expires 10-13-2021

NOEMI HERNANDEZ
Notary Public, State of Texas
Comm. Expires 10-13-2021

STATE OF TEXAS
COUNTY OF EL PASO

Before me, the undersigned authority, on this day personally appeared R. L. Bowling, IV 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 8th day of November 2019.

Notary Public in and for El Paso County — My Commission Expires 11-06-2020

MARLYN A. MARTINEZ
ID# 125065646
NOTARY PUBLIC
In and for the State of Texas
My commission expires
11-06-2020

CITY PLANNING COMMISSION

This subdivision is hereby approved as to the platting and as to the condition of the dedication in accordance with Chapter 212 of the Local Government Code of Texas this 12 day of SEPTEMBER 2019.

Chairperson — Executive Secretary

Approved for filing this 18 day of NOVEMBER 2019.

Planning and Inspections Director

FILING

Filed and recorded in the office of the County Clerk of El Paso County, Texas, this 27th day of November 2019, in File No. 20190091765 of the Plat Records.

County Clerk — by Deputy

FOR RECORDING PURPOSES ONLY

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

JORGE L. AZCARATE, P.E.
LICENSED PROFESSIONAL ENGINEER
TEXAS LICENSE NO. 85075

11-7-19

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

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

BENITO BARRAGAN, TX, R.P.L.S. NO. 5615

11/07/2019

STATE OF TEXAS — REGISTERED — BENITO BARRAGAN — 5615 — PROFESSIONAL LAND SURVEYOR

ENGINEER

cea group
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net
CONTACT: JORGE L. AZCARATE, P.E.

SURVEYOR

Barragan & Associates Inc.
LAND PLANNING & LAND SURVEYING
TBPELS FIRM # 10151200
10950 Pellicano Dr. Bldg. F – El Paso TX 79935
Phone (915) 591–5709 Fax (915) 591–5706
CONTACT: BENITO BARRAGAN, R.P.L.S.

DATE OF PREPARATION: SEPTEMBER 2019

LA PUESTA DEL SOL
UNIT THREE

A PORTION OF TRACT 3A2, AND ALL OF TRACTS 3A2A AND 3A2B,
NELLIE D. MUNDY SURVEY No. 240,
CITY OF EL PASO, EL PASO COUNTY, TEXAS
CONTAINING 17.41± ACRES
SHEET 2 OF 2

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	400.00'	24.10'	12.05'	24.10'	S16°58'50"W	003°27'07"
C2	350.00'	113.48'	57.24'	112.98'	S09°25'05"W	018°34'36"
C3	400.00'	30.89'	15.45'	30.88'	S02°20'31"W	004°25'28"
C4	350.00'	19.32'	9.66'	19.32'	N30°04'39"E	003°09'48"
C5	576.00'	426.65'	223.64'	416.96'	N22°17'50"W	042°26'23"
C6	400.00'	100.41'	50.47'	100.15'	S10°45'29"E	014°22'57"
C7	400.00'	126.12'	63.59'	125.60'	N08°55'01"W	018°03'54"
C8	400.00'	105.69'	53.15'	105.38'	N07°41'06"E	015°08'20"
C9	374.00'	22.53'	11.27'	22.53'	N16°58'50"E	003°27'07"
C10	376.00'	30.67'	15.35'	30.67'	S16°22'10"W	004°40'27"
C11	376.00'	91.23'	45.84'	91.01'	S07°04'52"W	013°54'09"
C12	374.00'	139.79'	70.72'	138.98'	N10°50'15"E	021°24'55"
C13	374.00'	116.63'	58.79'	116.16'	N30°28'44"E	017°52'03"
C14	375.00'	10.66'	5.33'	10.66'	N40°13'38"E	001°37'45"
C15	375.00'	29.72'	14.87'	29.71'	N43°18'44"E	004°32'27"
C16	375.00'	91.13'	45.79'	90.90'	S38°37'15"W	013°55'24"
C17	450.00'	352.89'	186.08'	343.92'	S22°20'09"E	044°55'53"
C18	450.00'	354.90'	187.26'	345.77'	S67°23'42"E	045°11'13"
C19	20.00'	31.47'	20.05'	28.32'	S44°56'32"E	090°08'39"
C20	20.00'	31.37'	19.96'	28.26'	N45°04'14"E	089°52'53"

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C21	20.00'	31.37'	19.95'	28.25'	S45°03'28"W	089°51'21"
C22	20.00'	29.40'	18.08'	26.83'	N47°53'45"W	084°14'13"
C23	426.00'	37.97'	19.00'	37.95'	S08°19'51"E	005°06'23"
C24	426.00'	51.67'	25.87'	51.64'	S14°21'32"E	006°57'00"
C25	426.00'	0.86'	0.43'	0.86'	S17°53'30"E	000°06'55"
C26	374.00'	50.85'	25.47'	50.81'	N14°03'15"W	007°47'26"
C27	374.00'	50.42'	25.25'	50.39'	N06°17'47"W	007°43'30"
C28	374.00'	16.64'	8.32'	16.64'	N01°09'33"W	002°32'58"
C29	374.00'	37.17'	18.60'	37.15'	N02°57'46"E	005°41'39"
C30	374.00'	50.74'	25.41'	50.71'	N09°41'48"E	007°46'26"
C31	374.00'	10.91'	5.45'	10.91'	N14°25'09"E	001°40'15"
C32	348.00'	20.97'	10.49'	20.96'	N16°58'50"E	003°27'07"
C33	20.00'	24.93'	14.38'	23.35'	N54°25'05"E	071°25'24"
C34	20.00'	31.42'	20.00'	28.28'	S44°52'13"E	090°00'00"
C35	20.00'	33.95'	22.71'	30.02'	S41°21'06"W	097°16'05"
C36	374.00'	34.69'	17.36'	34.68'	S09°56'23"E	005°18'53"
C37	374.00'	34.94'	17.48'	34.92'	S15°16'24"E	005°21'08"
C38	426.00'	17.07'	8.54'	17.07'	N16°48'05"W	002°17'46"
C39	426.00'	51.21'	25.64'	51.18'	N12°12'33"W	006°53'17"
C40	426.00'	50.26'	25.16'	50.23'	N05°23'07"W	006°45'36"

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C41	426.00'	15.77'	7.88'	15.77'	N00°56'41"W	002°07'15"
C42	426.00'	38.03'	19.03'	38.02'	N02°40'23"E	005°06'54"
C43	426.00'	50.59'	25.32'	50.56'	N08°37'57"E	006°48'13"
C44	426.00'	23.94'	11.97'	23.94'	N13°38'40"E	003°13'13"
C45	400.00'	75.68'	37.95'	75.57'	N09°58'27"E	010°50'24"
C46	20.00'	29.27'	17.96'	26.73'	S26°31'49"E	083°50'58"
C47	20.00'	3.80'	1.91'	3.80'	S73°54'16"E	010°53'56"
C48	20.00'	16.47'	8.74'	16.01'	N77°03'00"E	047°11'32"
C49	50.00'	110.50'	99.46'	89.35'	S63°14'08"E	126°37'16"
C50	50.00'	87.59'	59.98'	76.81'	S50°15'36"W	100°22'11"
C51	50.00'	45.28'	24.33'	43.75'	N53°36'42"W	051°53'14"
C52	20.00'	14.24'	7.44'	13.94'	N48°03'41"W	040°47'13"
C53	20.00'	29.27'	17.96'	26.73'	S69°37'13"W	083°50'58"
C54	400.00'	56.76'	28.43'	56.71'	N31°45'38"E	008°07'47"
C55	20.00'	30.16'	18.78'	27.38'	S07°22'43"E	086°24'28"
C56	422.00'	54.93'	27.50'	54.89'	S54°18'40"E	007°27'27"
C57	422.00'	60.58'	30.34'	60.53'	S62°09'09"E	008°13'32"
C58	422.00'	92.79'	46.58'	92.60'	S72°36'35"E	012°35'52"
C59	422.00'	60.49'	30.30'	60.44'	S83°00'55"E	008°12'47"
C60	20.00'	30.19'	18.81'	27.41'	S86°36'03"W	086°29'53"

LINE TABLE		
LINE	BEARING	LENGTH
L1	N89°52'13"W	145.00'
L2	S18°42'23"W	39.97'
L3	S89°59'04"E	142.78'
L4	S47°03'34"E	29.37'
L5	S70°00'24"E	50.87'
L6	S89°59'19"E	76.96'
L7	S00°00'45"W	103.50'
L8	N56°42'43"W	142.68'
L9	N57°49'05"W	113.74'
L10	N58°20'27"W	50.00'
L11	N00°00'41"E	105.00'
L12	N89°59'19"W	9.53'
L13	S70°00'24"E	38.12'
L14	S89°59'19"E	15.05'
L15	S15°15'16"W	77.43'

LINE TABLE		
LINE	BEARING	LENGTH
L16	N18°42'23"E	39.97'
L17	N39°24'45"E	8.77'
L18	S89°59'19"E	15.05'
L19	S21°32'42"W	8.00'
L20	S00°06'56"W	12.89'
L21	S00°06'56"W	12.02'
L22	S15°15'16"W	27.68'
L23	S89°59'04"E	76.19'
L24	S89°59'04"E	54.77'
L25	S89°59'04"E	11.83'
L26	S47°03'34"E	29.37'
L27	S70°00'24"E	12.75'
L28	S89°55'30"E	1.00'
L29	S89°59'19"E	15.05'
L30	N89°59'19"W	26.81'

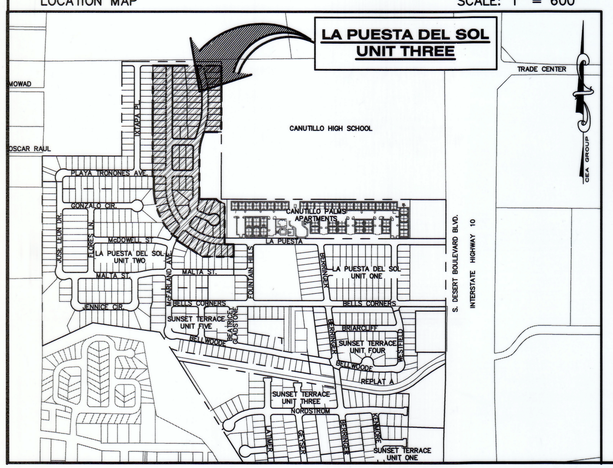
LINE TABLE		
LINE	BEARING	LENGTH
L31	S56°42'43"E	22.46'
L32	N00°07'47"E	28.11'
L33	N00°07'47"E	40.66'
L34	N89°59'19"W	31.84'
L35	S89°59'19"E	171.44'
L36	S00°00'41"W	59.15'

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C61	475.00'	33.70'	16.86'	33.69'	S52°10'58"E	004°03'54"
C62	475.00'	48.11'	24.08'	48.09'	S57°07'00"E	005°48'11"
C63	475.00'	48.11'	24.08'	48.09'	S62°55'11"E	005°48'11"
C64	475.00'	48.11'	24.08'	48.09'	S68°43'22"E	005°48'11"
C65	475.00'	48.11'	24.08'	48.09'	S74°31'33"E	005°48'11"
C66	475.00'	48.11'	24.08'	48.09'	S80°19'44"E	005°48'11"
C67	475.00'	47.78'	23.91'	47.76'	S86°06'43"E	005°45'46"
C68	475.00'	8.25'	4.13'	8.25'	S89°29'27"E	000°59'43"
C69	350.00'	19.32'	9.66'	19.32'	S30°04'39"W	003°09'48"
C70	350.00'	71.43'	35.84'	71.30'	S37°30'20"W	011°41'33"
C71	20.00'	31.46'	20.04'	28.31'	N44°55'46"W	090°07'07"
C72	475.00'	26.06'	13.03'	26.05'	S01°26'30"E	003°08'35"
C73	475.00'	52.98'	26.52'	52.95'	S06°12'30"E	006°23'24"
C74	475.00'	52.98'	26.52'	52.95'	S12°35'55"E	006°23'24"
C75	475.00'	52.98'	26.52'	52.95'	S18°59'19"E	006°23'24"
C76	475.00'	52.98'	26.52'	52.95'	S25°22'44"E	006°23'24"
C77	475.00'	52.98'	26.52'	52.95'	S31°46'08"E	006°23'24"
C78	475.00'	39.38'	19.70'	39.37'	S37°20'22"E	004°45'02"
C79	20.00'	29.12'	17.83'	26.62'	N02°00'09"E	083°26'03"
C80	400.00'	84.20'	42.25'	84.04'	S37°41'22"W	012°03'37"

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C81	576.00'	85.98'	43.07'	85.90'	S39°14'26"E	008°33'10"
C82	576.00'	64.24'	32.15'	64.21'	S31°46'08"E	006°23'24"
C83	576.00'	64.24'	32.15'	64.21'	S25°22'44"E	006°23'24"
C84	576.00'	64.24'	32.15'	64.21'	S18°59'19"E	006°23'24"
C85	576.00'	64.24'	32.15'	64.21'	S12°35'55"E	006°23'24"
C86	576.00'	64.24'	32.15'	64.21'	S06°12'30"E	006°23'24"
C87	576.00'	19.46'	9.73'	19.46'	S02°02'43"E	001°56'10"
C88	20.00'	31.42'	20.00'	28.28'	S45°07'47"W	090°00'00"
C89	20.00'	33.52'	22.22'	29.73'	N41°51'16"W	096°01'53"
C90	402.00'	42.32'	21.18'	42.30'	S03°08'44"W	006°01'53"
C91	20.00'	31.37'	19.96'	28.26'	N45°04'14"E	089°52'53"
C92	20.00'	31.46'	20.04'	28.31'	S44°55'46"E	090°07'07"
C93	20.00'	31.37'	19.96'	28.26'	S45°04'14"W	089°52'53"
C94	20.00'	31.46'	20.04'	28.31'	N44°55'46"W	090°07'07"
C95	348.00'	18.38'	9.19'	18.38'	N01°38'34"E	003°01'34"
C96	20.00'	20.20'	11.06'	19.36'	N32°05'44"E	057°52'45"
C97	50.00'	19.66'	9.96'	19.53'	S49°46'24"W	022°31'24"
C98	50.00'	35.91'	18.77'	35.15'	S17°56'06"W	041°09'13"
C99	50.00'	29.36'	15.12'	28.94'	S19°27'44"E	033°38'28"
C100	20.00'	20.20'	11.06'	19.36'	N07°20'35"W	057°52'45"

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C101	348.00'	68.59'	34.41'	68.48'	N27°14'34"E	011°17'34"
C102	20.00'	38.38'	28.54'	32.76'	N87°51'49"E	109°56'56"
C103	422.00'	118.87'	59.83'	118.48'	S29°05'33"E	016°08'20"
C104	422.00'	134.37'	67.76'	133.80'	S11°54'05"E	018°14'36"
C105	422.00'	21.43'	10.72'	21.43'	S01°19'30"E	002°54'34"
C106	422.00'	21.12'	10.56'	21.11'	S88°33'18"E	002°52'01"

LOCATION MAP SCALE: 1" = 600'



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

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

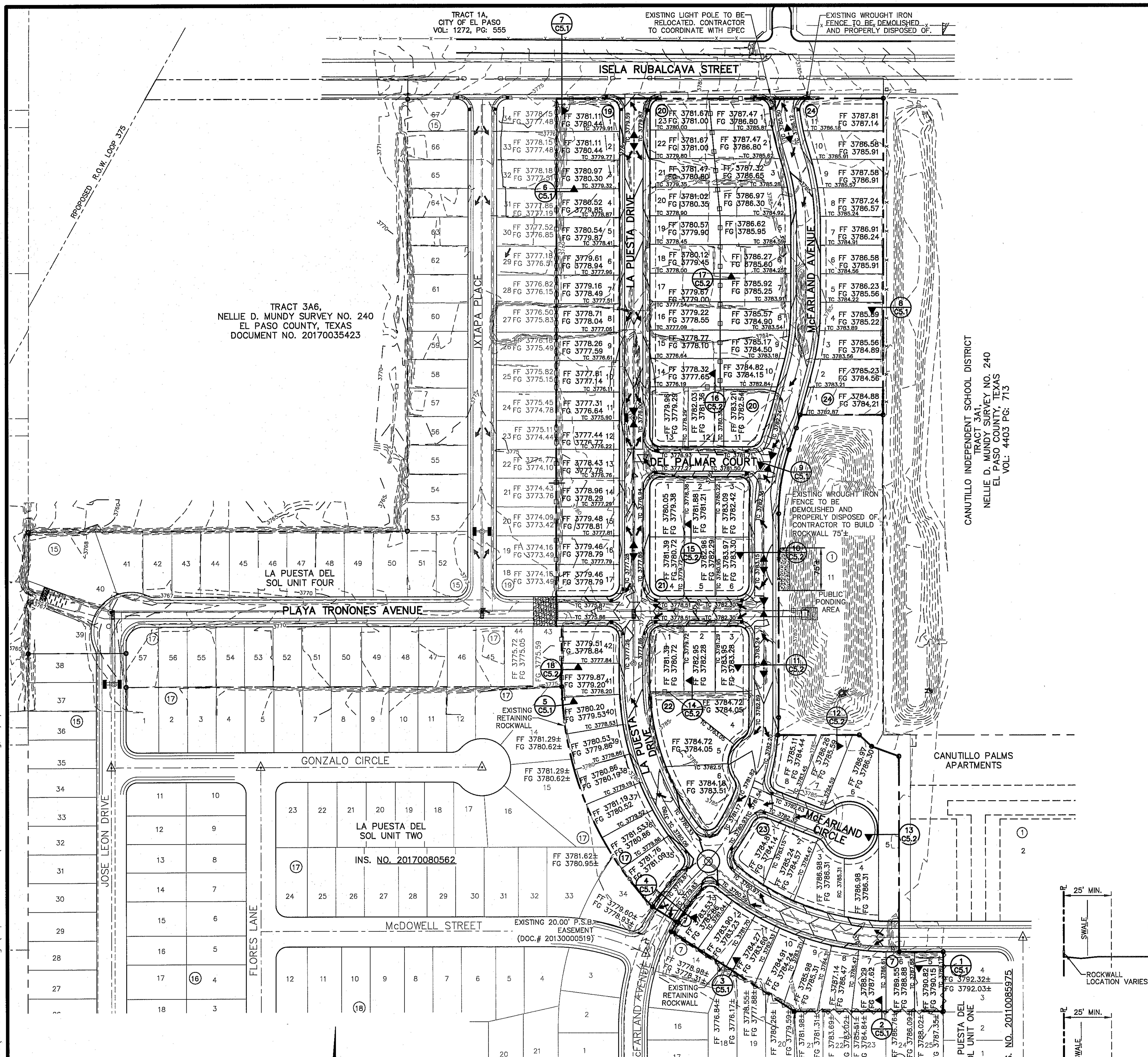
BENITO BARRAGAN, TX. R.P.L.S. NO. 5615 11/7/2019

STATE OF TEXAS REGISTERED PROFESSIONAL LAND SURVEYOR BENITO BARRAGAN 5615

ENGINEER
cea group
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net
CONTACT: JORGE L. AZCARATE, P.E.

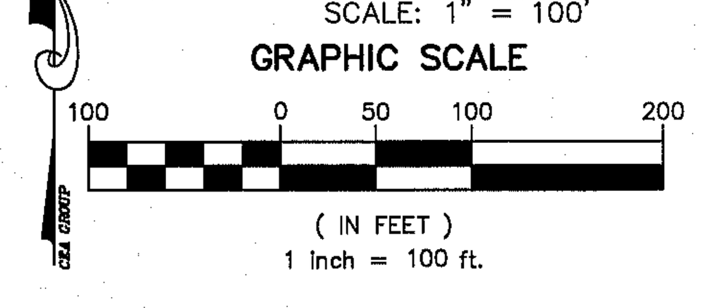
SURVEYOR
Barragan & Associates Inc.
LAND PLANNING & LAND SURVEYING
TBPELS FIRM # 10151200
10950 Pellicano Dr. Bldg. F – El Paso TX 79935
Phone (915) 591-5709 Fax (915) 591-5706
CONTACT: BENITO BARRAGAN, R.P.L.S.

DATE OF PREPARATION: SEPTEMBER 2019



GRADING PLAN

SCALE: 1" = 100'



18.44.090 – WARRANTY

ANY PERSON ISSUED A PERMIT SHALL AGREE WARRANT AND MAINTAIN THE AREA DESCRIBED IN THE PERMIT FOR A PERIOD OF TWO YEARS AFTER THE PERMIT IS CLOSED BY THE CITY PURSUANT TO SECTION 18.44.220, OR UNTIL A BUILDING PERMIT IS ISSUED FOR THE PURPOSE OF MAINTAINING A STABILIZED SITE IN ACCORDANCE WITH THE APPROVED GSP, WHICHEVER FIRST OCCURS (THE "WARRANTY" OR "WARRANTY PERIOD"). THE CITY MAY CONDUCT INSPECTIONS OF THE PERMITTED AREA THROUGHOUT THE WARRANTY PERIOD AND REQUIRE MAINTENANCE AND CORRECTION OF THE WORK BY THE PERMIT HOLDER. FAILURE OF THE PERMIT HOLDER TO CORRECT THE WORK SHALL CONSTITUTE A FAILURE TO COMPLY WITH THE PROVISIONS OF THIS CHAPTER.

(Ord. No. 17516, § 1, 3–29–2011)

18.44.220 – PERMIT CLOSEOUT PROCEDURE

AFTER THE PERMITTEE COMPLETES THE GRADING UNDER THE PERMIT, THE PERMIT SHALL BE CLOSED. AS PART OF THE CLOSEOUT PROCEDURE, THE APPLICANT MUST SUBMIT THE FOLLOWING TO THE CITY:

A.

A STATEMENT FROM THE ENGINEER OF RECORD THAT STATES, "THE GRADING OPERATION HAS BEEN SUBSTANTIALLY COMPLETED AND GENERALLY CONFORMS TO THE APPROVED SET OF PLANS". THE PERMITTEE SHALL CALL THE PERMIT OFFICIAL TO ESTABLISH THE BEGINNING OF THE WARRANTY PERIOD AND TO NOTIFY THE PERMIT OFFICIAL THAT THE GSP HAS BEEN IMPLEMENTED.

B.

A COPY OF THE NOTICE OF TERMINATION FILED WITH THE STATE OR DATED CONSTRUCTION SITE NOTICE, IF APPLICABLE, IN ACCORDANCE WITH CHAPTER 15.
THE CITY WILL ISSUE A LETTER STATING GENERAL CONFORMANCE TO THE PERMIT HAS BEEN MET AND THAT THE WARRANTY PERIOD REQUIREMENTS WILL CONTINUE TO BE IN EFFECT.

(Ord. No. 17516, § 1, 3–29–2011)

18.44.200 – ENGINEERING CONTROLS FOR GRADING

CONSTRUCTION ACTIVITY REQUIREMENTS:

1. NO ON–SITE PROCESSING OF MATERIAL FOR COMMERCIAL OR RETAIL SALE SHALL BE ALLOWED. ON–SITE PROCESSING OF MATERIALS TO BE USED FOR PREPARATION OR CONSTRUCTION OF IMPROVEMENTS WITHIN THE SITE COVERED BY THE GRADING PERMIT SHALL BE ALLOWED.
2. WORK SHALL BE CONDUCTED IN A MANNER THAT PRESERVES AND DOES NOT OBSTRUCT, IMPEDE OR INTERFERE WITH THE FLOW OF STORMWATER IN NATURAL DRAINAGE WAYS, UNIMPROVED CHANNELS OR WATERCOURSES, OR IMPROVED DITCHES, CHANNELS OR CANALS IN SUCH A MANNER AS THE CAUSE FLOODING WHERE IT WOULD NOT OTHERWISE OCCUR.
3. CONSTRUCTION EQUIPMENT AND FENCING SHALL BE KEPT OUT OF WATERCOURSES EXCEPT WHEN NECESSARY TO PERFORM WORK ON THE APPROVED PLANS. ADEQUATE BY–PASS MEASURES SHALL BE INSTALLED WHERE TEMPORARY DRAINAGE BLOCKAGES WILL OCCUR. WHERE WORK WITHIN A CHANNEL IS DESIGNATE ON APPROVED PLAN, PRECAUTIONS SHALL BE TAKEN TO STABILIZE THE WORK AREA DURING CONSTRUCTION TO MINIMIZE EROSION AS SHOWN ON THE PLANS. THE CHANNEL, INCLUDING BED AND BANKS, SHALL ALWAYS BE RESTORED/RESTABILIZED IMMEDIATELY AFTER WORK IN THE CHANNEL IS COMPLETED.
4. WHERE A DRAINAGE WAY WILL BE CROSSED BY CONSTRUCTION VEHICLES REGULARLY DURING CONSTRUCTION, A TEMPORARY CROSSING SHALL BE CONSTRUCTED AS REQUIRED IN THE APPROVED GRADING PLANS.
5. MATERIAL STOCKPILING SHALL NOT BE ALLOWED WHEN GRADING OPERATIONS ARE IDLE FOR MORE THAN SEVEN CONSECUTIVE CALENDAR DAYS. STOCKPILING SHALL BE LIMITED TO TEN FEET HIGH WHEN GRADING OPERATIONS ARE BEING CONDUCTED.
6. A TRAFFIC CONTROL PERMIT SHALL BE REQUIRED IF THE GRADING OPERATION WILL IMPACT TRAFFIC.
7. ANY USE OF VIBRATORY EQUIPMENT SHALL NOT BE ALLOWED, UNLESS APPROVED IN WRITING BY THE PERMIT OFFICIAL IN ADVANCE OF SUCH USE.
8. THE PERMIT OFFICIAL MUST BE NOTIFIED NO LATER THAN 4:00 PM THE DAY IN ADVANCE OF ANY GRADING WORK. ADDITIONAL ACTIVITY REQUIREMENTS/RESTRICTIONS MAY BE SPECIFIED BY THE DESIGN ENGINEER OF RECORD.

UTILITY LOCATOR SERVICES

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

WARNING ! BEFORE YOU DIG

CALL 811

FOR FIELD LOCATING EXISTING UTILITIES

LEGEND:

Symbol	Description
	NEW RETAINING ROCKWALL (2'–3' RETAINING HEIGHT)
	NEW RETAINING ROCKWALL (3'–9' RETAINING HEIGHT)
	EXISTING RETAINING ROCKWALL (2'–3' RETAINING HEIGHT)
	EXISTING RETAINING ROCKWALL (3'–9' RETAINING HEIGHT)
	EXISTING CHAINLINK FENCE
4000	PROPOSED MAJOR CONTOURS
	PROPOSED MINOR CONTOURS
4000	EXISTING MAJOR CONTOURS
	EXISTING MINOR CONTOURS
TC 4075.00	TOP OF CURB ELEVATION
FG 4075.00	FINISH GROUND ELEVATION
FF 4075.00	FINISH FLOOR ELEVATION
FG 4075.00	EXISTING FINISH GROUND ELEVATION
FF 4075.00	EXISTING FINISH FLOOR ELEVATION
	DRAINAGE FLOW
	HIGH POINT
	LOW POINT
XX / CX.X	CROSS SECTION SYMBOL
	DESILTING BASIN

NOTES:

1. RETAINING WALLS SHALL BE CONSTRUCTED FOR VERTICAL GRADES GREATER THAN 2–FEET.
2. SLOPED AREAS SHALL BE MAINTAINED BY THE PROPERTY OWNERS.
3. ALL RETAINING WALLS NOT SPECIFIED TO BE CONSTRUCTED BY DEVELOPER, SHALL BE BUILT BY BUILDER.
4. RETAINING ROCKWALLS (RETAINING PORTIONS ONLY) IN EXCESS OF 4' HIGH TO BE BUILT BY DEVELOPER.
5. DEVELOPER SHALL COMPLY WITH SECTION 13.08.170 (EXCESSIVE PAVING CUTS) OF THE EL PASO MUNICIPAL CODE.
6. IMPROVEMENTS SHALL NOT BE PLACED ON SIDEWALK (NDBCU's, SIGNS, POLES, FIRE HYDRANTS, ETC.) REFER TO STANDARD DETAIL SHEETS.
7. IMPROVEMENTS SHALL COMPLY WITH T.A.S./A.D.A.
8. WHEELCHAIR RAMPS WILL BE CONSTRUCTED BY DEVELOPER AS PART OF SUBDIVISION IMPROVEMENTS.

THE CITY OF EL PASO TEXAS

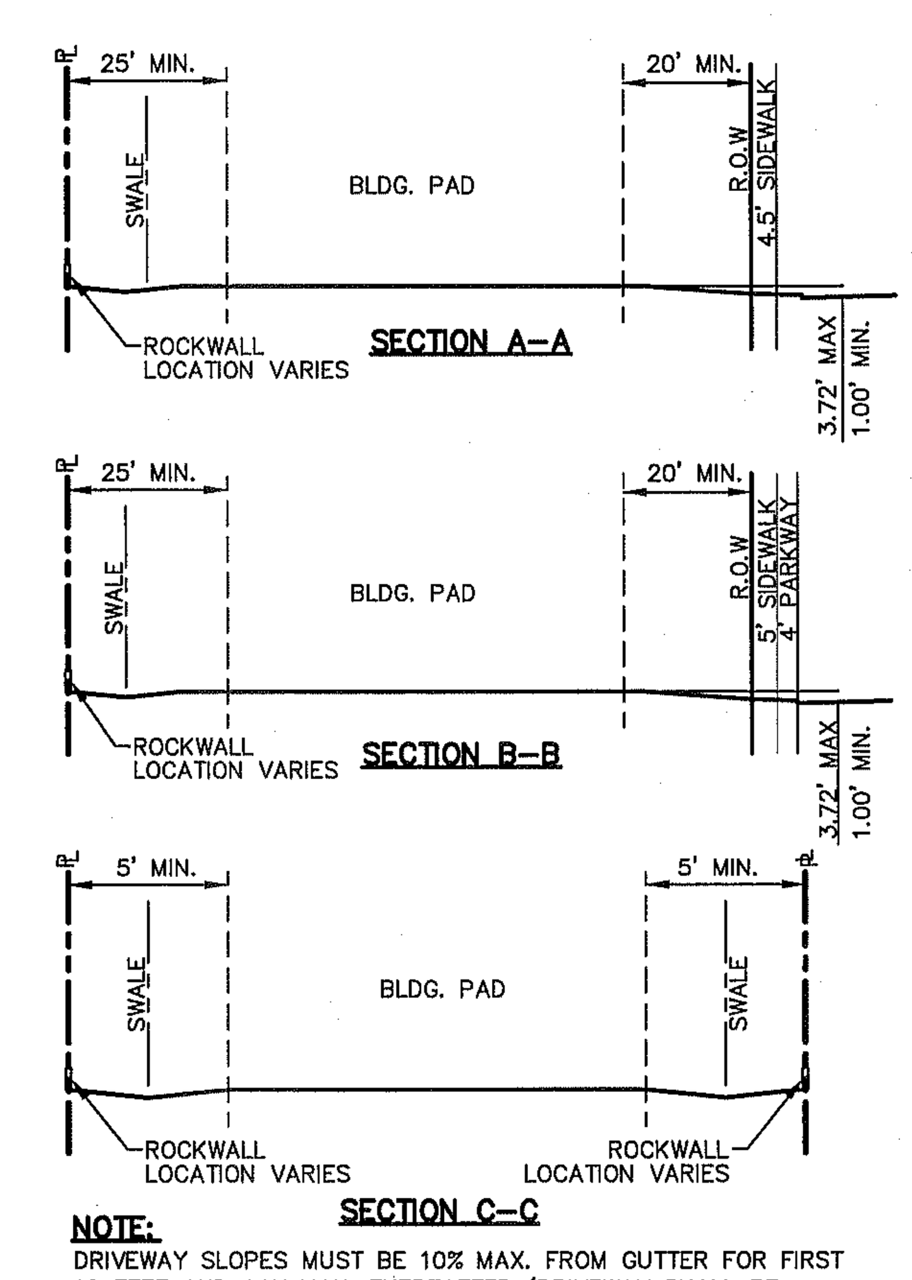
Final Approval

BENCHMARK

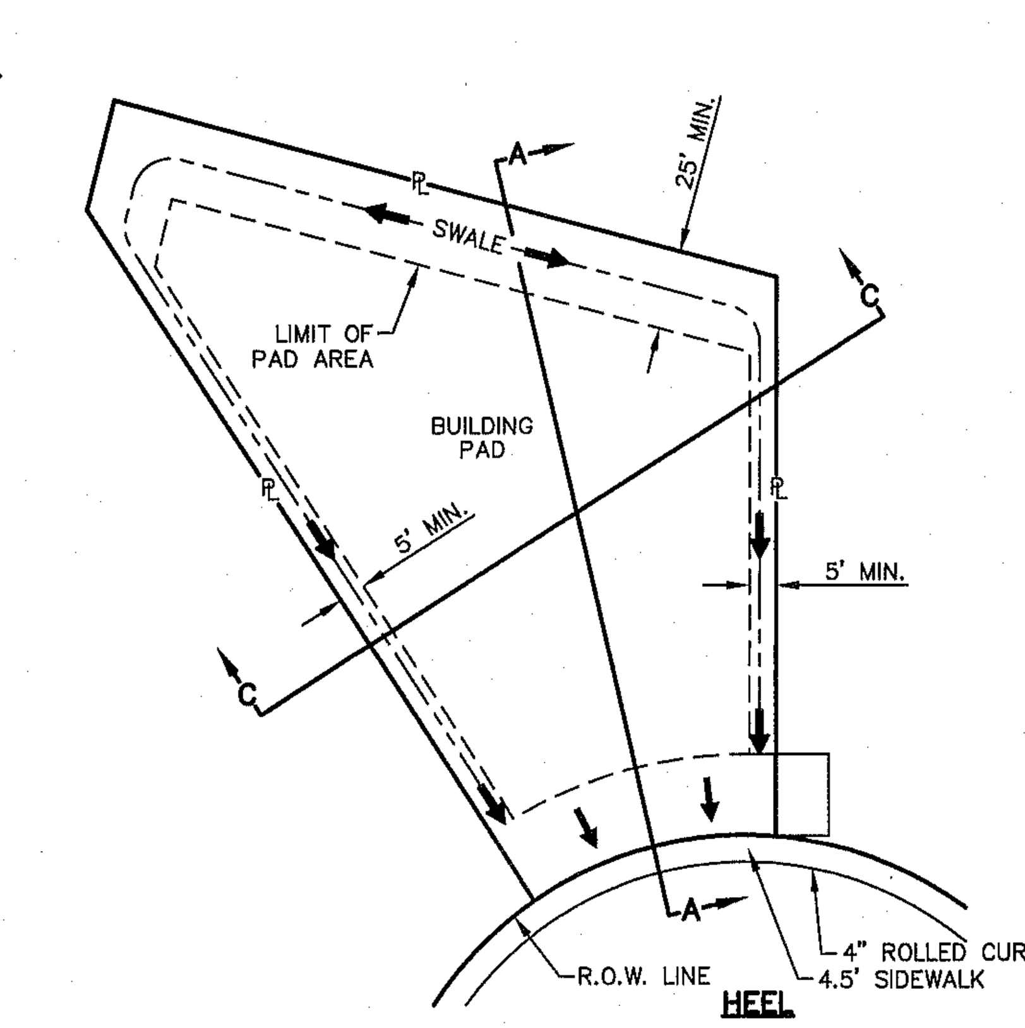
1. CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)
2. CITY MONUMENT AT THE INTERSECTION OF BERRINGER STREET AND BENTRIDGE DRIVE. ELEVATION = 3831.52'(NAVD 88) AND 3820.85'(CITY DATUM).

FLOOD ZONE:

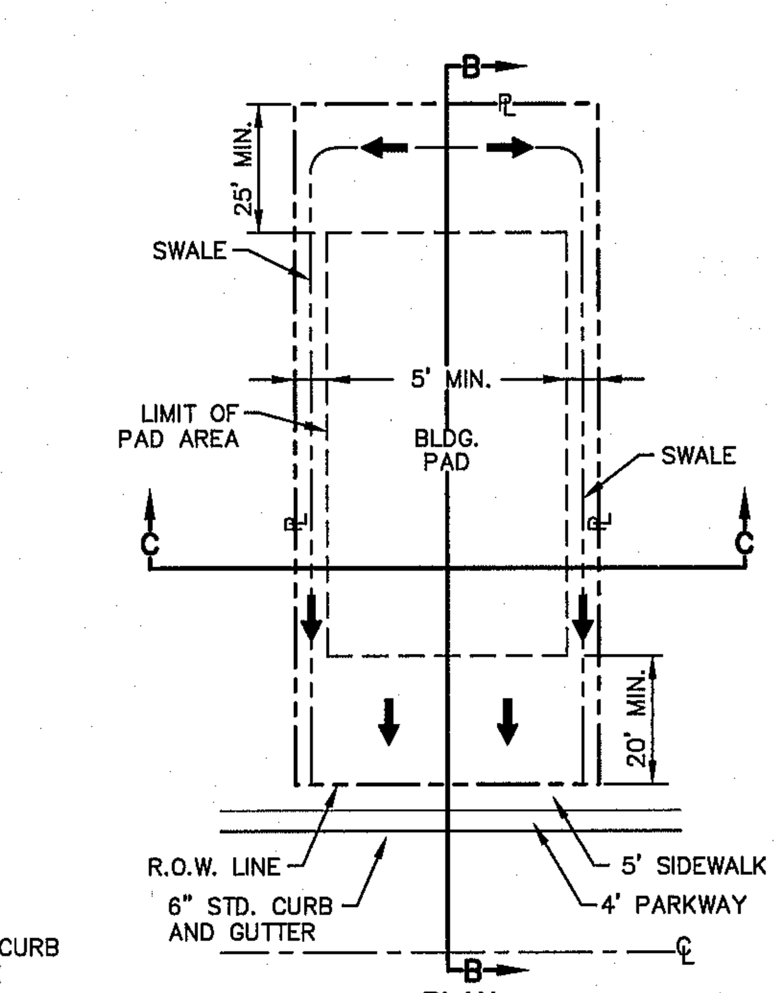
THIS SUBDIVISION LIES WITHIN ZONE "X" AS DESIGNATED IN PANEL NO. 480212–0025B EFFECTIVE SEPTEMBER 4, 1991. A LOMR WITH CASE NO. 14–06–0855P WITH A REVISED AREA EFFECTIVE: JANUARY 21, 2015 DESIGNATED IN PANEL NO. 480212–0125B INDICATES A ZONE "X". ZONE "X" IS CLASSIFIED AS AREAS OF MINIMAL FLOODING.



NOTE:
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)



TYPICAL LOT DETAIL AT HEEL
SCALE: NTS



TYPICAL LOT PLAN
SCALE: N.T.S.

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

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4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

ENGINEER'S SEAL

STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER
10–28–19

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

DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000–210

PROJECT TITLE

LA PUESTA DEL SOL UNIT THREE SUBDIVISION IMPROVEMENTS

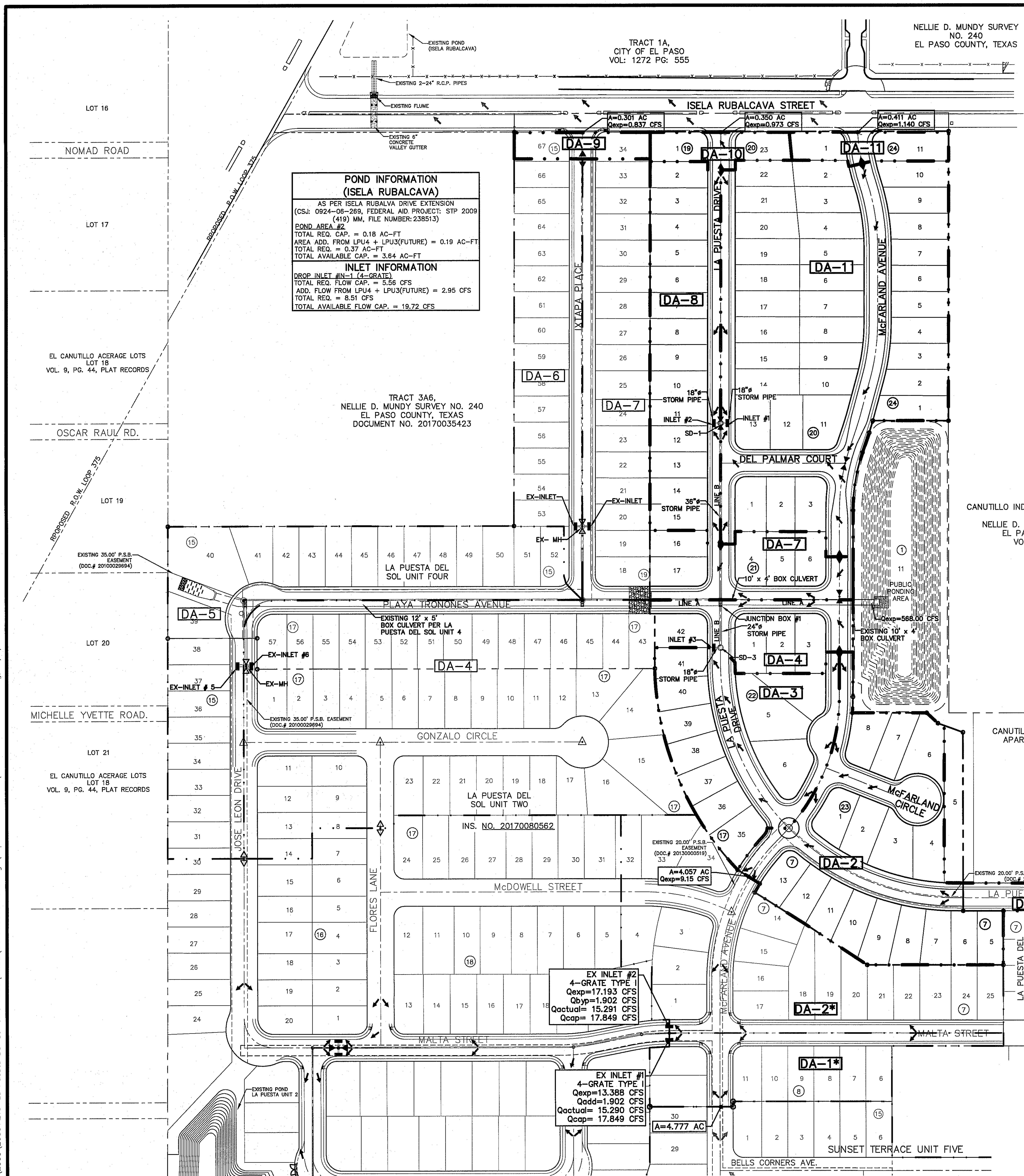
SHEET TITLE

GRADING PLAN

SHEET NO.

C3.1

S:\2000\2000–210–La Puesta Del Sol Unit Three\DWGS\Construction Drawings\Improvement Plans\C3.1 GRADING PLAN.dwg, 11/4/2019 10:05:18 AM



POND INFORMATION (ISELA RUBALCAVA)

AS PER ISELA RUBALVA DRIVE EXTENSION
(CSJ: 0924-06-269, FEDERAL AID PROJECT: STP 2009 (419) MM, FILE NUMBER: 238513)

POND AREA #2
TOTAL REQ. CAP. = 0.18 AC-FT
AREA ADD. FROM LPU4 + LPU3(FUTURE) = 0.19 AC-FT
TOTAL REQ. = 0.37 AC-FT
TOTAL AVAILABLE CAP. = 3.64 AC-FT

INLET INFORMATION

DROP INLET #IN-1 (4-GRATE)
TOTAL REQ. FLOW CAP. = 5.56 CFS
ADD. FLOW FROM LPU4 + LPU3(FUTURE) = 2.95 CFS
TOTAL REQ. = 8.51 CFS
TOTAL AVAILABLE FLOW CAP. = 19.72 CFS

UTILITY LOCATOR SERVICES

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

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FOR FIELD LOCATING EXISTING UTILITIES

STORM CALCULATIONS FOR WATERSHED AREAS

DRAINAGE AREA NO. (1)	DRAINAGE AREA (AC) (2)	DESIGN STORM INTENSITY (I50) (3)	TIME OF CONCENTRATION (4)	RUNOFF COEFF. (C) (5)	Q50 (CFS) (6)	DESIGN STORM INTENSITY (I100) (3)	Q100 (CFS) (6)	VLOLUME (50) AC/FT
DA-1	6.340	3.59	23.75	0.60	13.65	3.60	13.69	1.27
DA-2	4.057	3.76	22.00	0.60	9.15	3.77	9.18	0.81
DA-3	2.315	3.32	27.05	0.60	4.610	3.91	5.43	0.46
DA-4	8.962	3.36	26.64	0.60	18.06	3.37	18.12	1.79
DA-5	4.139	3.47	25.20	0.60	8.62	3.48	8.64	0.83
DA-6	2.210	3.42	25.80	0.60	4.53	3.43	4.55	0.44
DA-7	3.620	3.39	26.10	0.60	7.36	3.41	7.41	0.72
DA-8	2.220	3.50	24.60	0.60	4.66	3.53	4.70	0.44
DA-9	0.301	4.63	15.00	0.60	0.84	4.64	0.84	0.06
DA-10	0.350	4.63	15.00	0.60	0.97	4.64	0.97	0.07
DA-11	0.411	4.63	15.00	0.60	1.14	4.64	1.14	0.08
DA-1*	**6.312	3.53	24.48	0.60	13.37	3.55	13.45	1.26
DA-2 & DA-2*	**7.914	3.62	23.52	0.60	17.19	3.63	17.24	1.58

**TOTAL AREAS TO EXISTING INLETS 1 & 2 RESPECTIVELY

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

(1) WATERSHED AREA IDENTIFICATION

(2) AREA FROM DRAINAGE PLAN

(3) RAINFALL INTENSITY, 50 YEAR STORM => PLATE NO. 2-14

$$I = \frac{B}{(T_C + D)^E} \quad 50 \Rightarrow E = 0.900,\ B = 90,\ D = 12.0 \qquad 100 \Rightarrow E = 0.825,\ B = 65,\ D = 9.5$$

(4) TIME OF CONCENTRATION: TC= T (OVERLAND) + T (GUTTER)

(5) RUNOFF COEFFICIENT => PLATE NO. 2-10 TABLE A
RESIDENTIAL AREA = 0.60
OPEN AREA = 0.48

(6) Q = C X A X I

LEGEND:

- DRAINAGE AREA BOUNDARY
- OFF-SITE DRAINAGE AREA BOUNDARY
- DRAINAGE FLOW
- HIGH POINT
- LOW POINT
- DROP INLET
- STORM SEWER MANHOLE (SD)
- RCP
- THRUST BLOCK STRUCTURE
- DA-10 — DRAINAGE AREA
- DA-4 — OFF-SITE DRAINAGE AREA

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	13.656	0	3.656	10.00	19.267	0	2	I	SAG
2	4.620	3.656 (INLET #1)	0	8.276	17.749	0	2	III	SAG
3	4.610	0	0	4.610	5.836	0	2	I	ON GRADE

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

EXISTING DROP INLETS (AS PER LA PUESTA DEL SOL UNIT TWO)

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	13.388	1.902 (EX INLET #1)	0	15.291	17.695	0	4	I	ON-GRADE
*2	17.193	0	1.902	15.291	17.695	0	4	I	ON-GRADE
*5	8.620	4.720 FROM INLET 6	0	13.340	29.141	0	3	I	SAG
*6	18.060	0	0	13.340	29.141	4.720 TO INLET 5	3	I	SAG

THE EXPECTED FLOWS FROM LA PUESTA DEL SOL UNIT TWO HAVE BEEN UPDATED TO SHOW PROPOSED CONDITIONS FOR LA PUESTA DEL SOL UNIT THREE AND FOUR. INLET NUMBERS, CAPACITY, NUMBER OF GRATES, TYPE AND LOCATION HAVE NOT CHANGED.

STREET CAPACITIES

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	0.009	9.789	3.154		10.000	0.323	16.129	3.1706
32	0.00	0.18	5.76	32.36	0.1780	0.013	0.009	19.765	3.431					

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	0.009	9.789	3.154		8.276	0.300	15.024	3.0241
32	0.00	0.18	5.76	32.36	0.1780	0.013	0.009	19.765	3.431					

Inlet #3

Width	cross slope	Depth	Area	P	R	n	S	Q	V	Total Q	Q actual	Actual Depth	spread width	Actual Velocity
16	1.00	0.16	1.28	5.120256	0.2500	0.0066	0.0214	16.768	13.071		4.610	0.123	12.266	5.0882

EX INLET # 1-2

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	0.0065	8.319	2.680		15.291	0.402	20.103	3.1207
32	0.00	0.18	5.76	32.36	0.1780	0.013	0.0065	16.797	2.916	20.140				

EX INLET # 5-6

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	0.007	8.633	2.781		13.340	0.377	18.836	3.1010
32	0.00	0.18	5.76	32.36	0.1780	0.013	0.007	17.431	3.026	14.350				

EXISTING POND (LA PUESTA U2)

QT = (ARC)/12
QT = 6.371 AC-FT
A = 32.452
R = 4"
Cw = 0.589
QT X 25% = 1.593
6.371 + 1.593 = 7.964

SILT VOLUME = 0.389
0.012 AC-FT/AC
7.964 + 0.389 = 8.354 AC-FT

$TOTAL_{req}$ = 8.354 AC-FT

EXISTING POND (LA PUESTA U2)

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	8.354	11.546	76.050	0	3761.70	3753.00	2.30	3764.00

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

HGL = QT
HGL = 6.371 AC-FT
CONTOUR 3760, ACCUMULATED VOLUME=6.265 AC-FT
CONTOUR 3761, ACCUMULATED VOLUME=7.461 AC-FT
HYDRAULIC GRADE LINE ELEVATION=3760.09

HWSE = QT+SILT VOLUME+25% EMERGENCY
HWSE = 6.371+0.389+1.593=8.354 AC-FT
CONTOUR 3762, ACCUMULATED VOLUME=8.738 AC-FT
CONTOUR 3761, ACCUMULATED VOLUME=7.461 AC-FT
HIGH WATER SURFACE ELEVATION=3761.70

* THE CAPACITY OF THE EXISTING POND HAS NOT BEEN CHANGED. THE REQUIRED CAPACITY AND RELATED CALCULATIONS HAVE BEEN UPDATED TO SHOW PROPOSED CONDITIONS FOR LA PUESTA DEL SOL UNIT THREE AND FOUR. POND CAPACITY AND CONTOURS ELEVATIONS HAVE NOT CHANGED.

Final Approval

DRAINAGE PLAN

SCALE: 1" = 100'

GRAPHIC SCALE

100 0 50 100 200

(IN FEET)
1 inch = 100 ft.

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

ENGINEER'S SEAL
STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER
10-28-19

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

DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

PROJECT TITLE

LA PUESTA DEL SOL UNIT THREE SUBDIVISION IMPROVEMENTS

SHEET TITLE

DRAINAGE PLAN

SHEET NO.

C4.1

S:\2000\2000-210-La Puesta Del Sol Unit Three\DWGS\Construction Drawings\Improvement Plans\C4.1 DRAINAGE PLAN.dwg, 11/4/2019 10:06:25 AM

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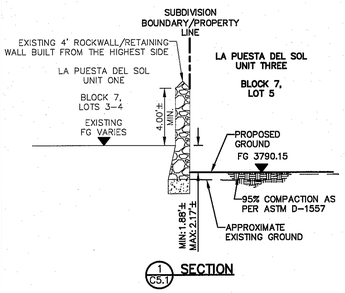

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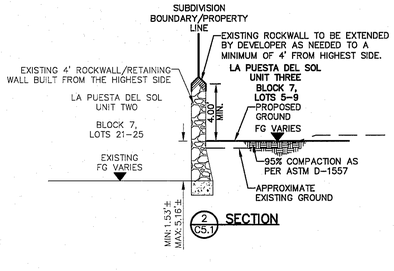

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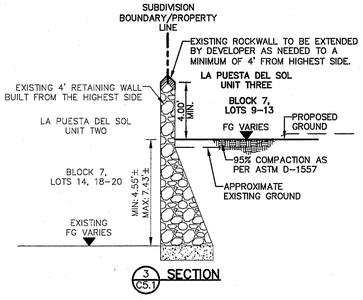

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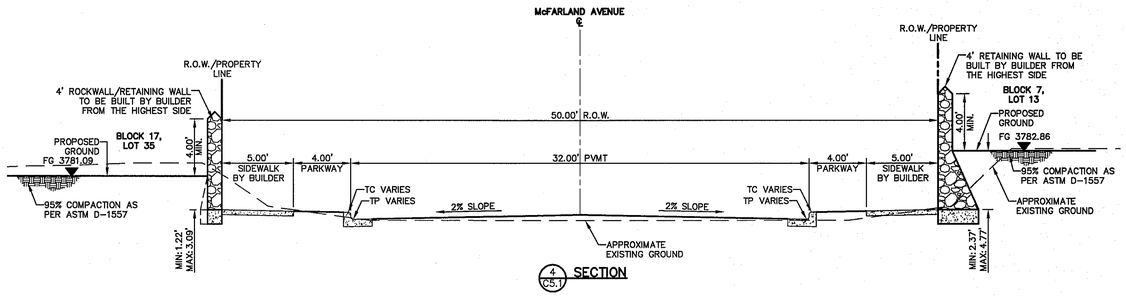

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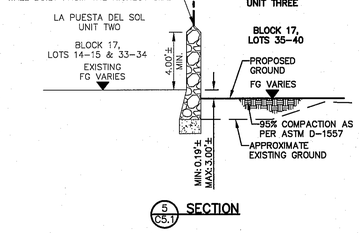

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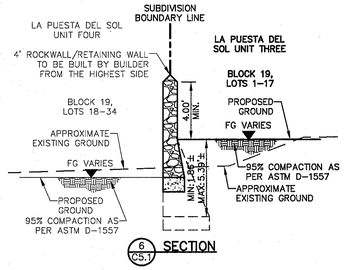

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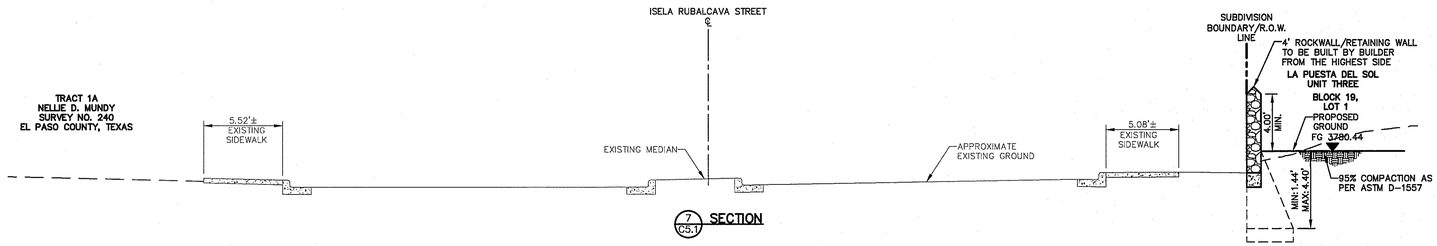

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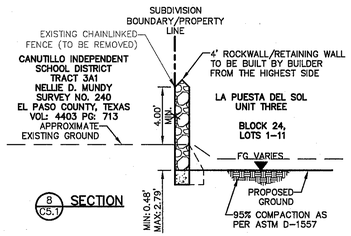

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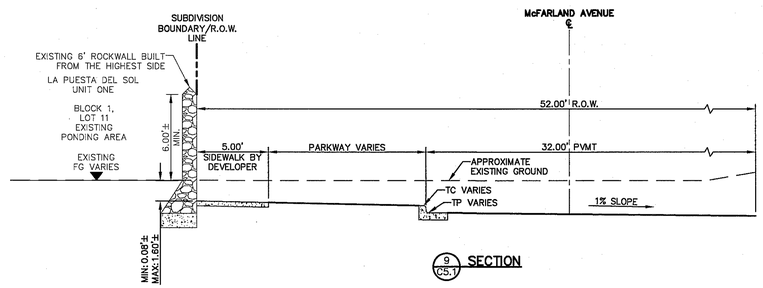

9 C5.1 SECTION

Final Approval

REFERENCES - BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT PHOMAS.
ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
TEXAS REGISTERED ENGINEERING FIRM F-454
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

ENGINEER'S SEAL
STATE OF TEXAS
JESSE L. ARMENDARIZ
85075
LICENSED PROFESSIONAL ENGINEER
10-28-19

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

DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

PROJECT TITLE

LA PUESTA DEL SOL UNIT THREE
SUBDIVISION IMPROVEMENTS

SHEET TITLE

GRADING SECTIONS

(SHEET 1 OF 2)

SHEET NO.

C5.1

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EL PASO ENERGY CORPORATION	(915) 496–5244
EL PASO WATER UTILITIES	(915) 594–5500
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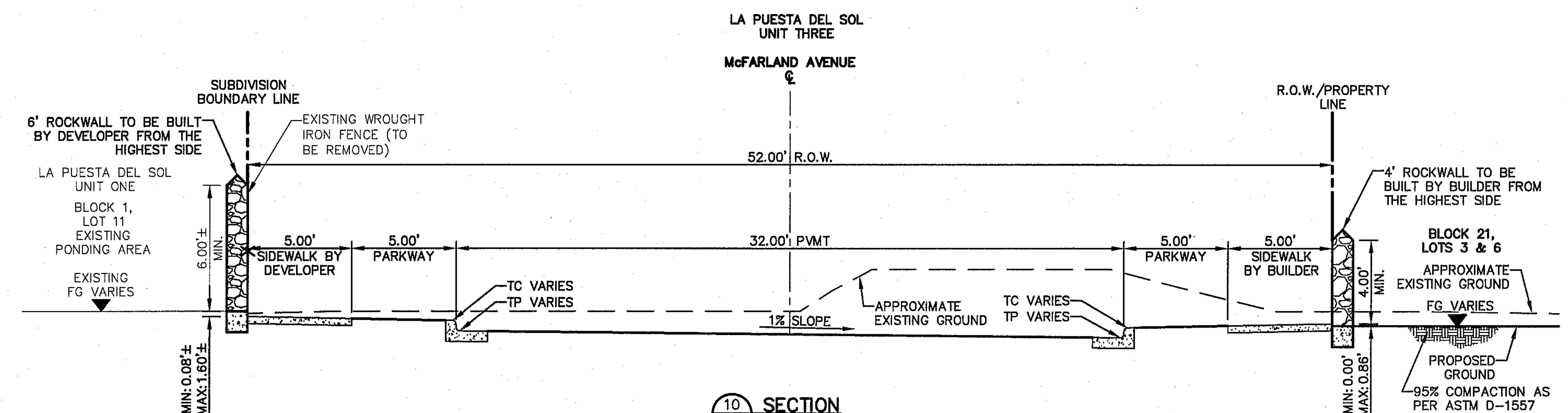

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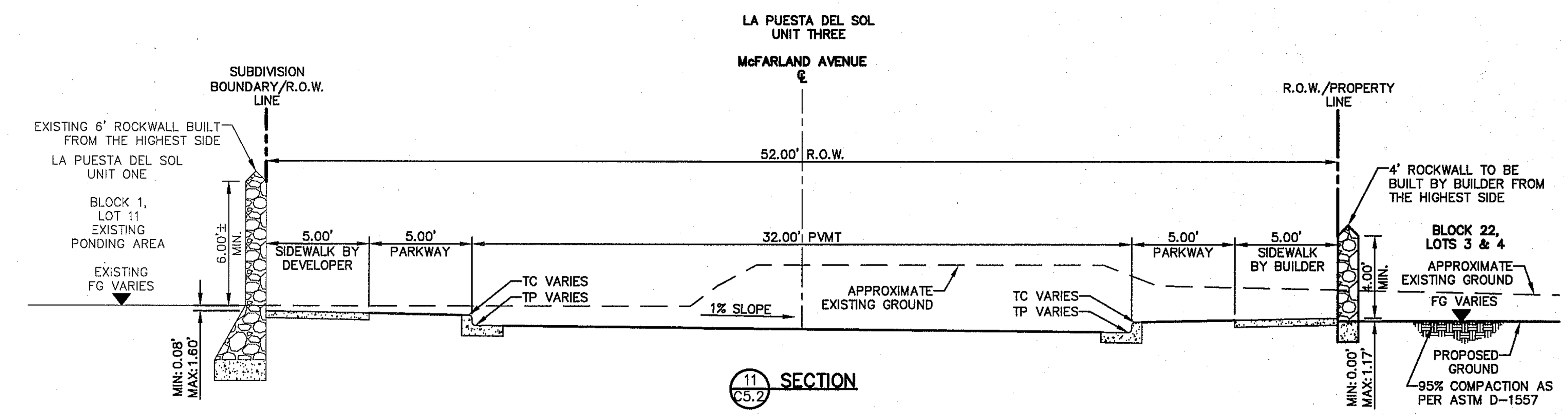

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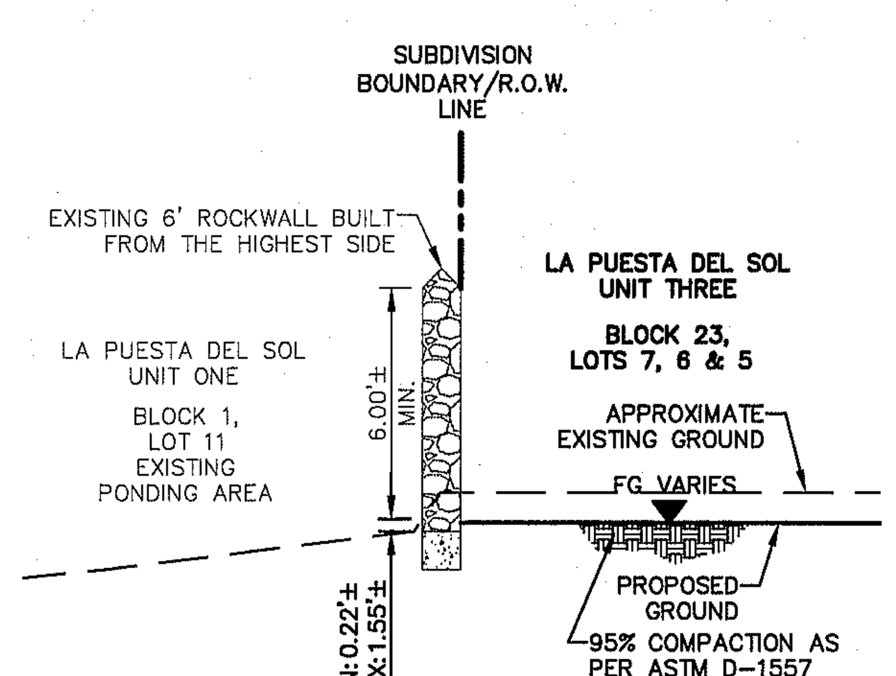

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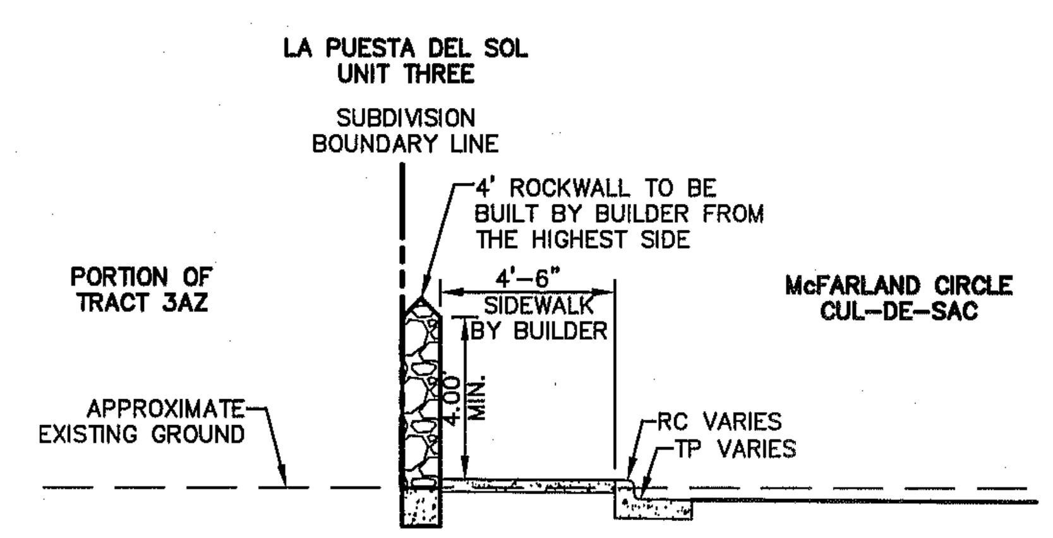

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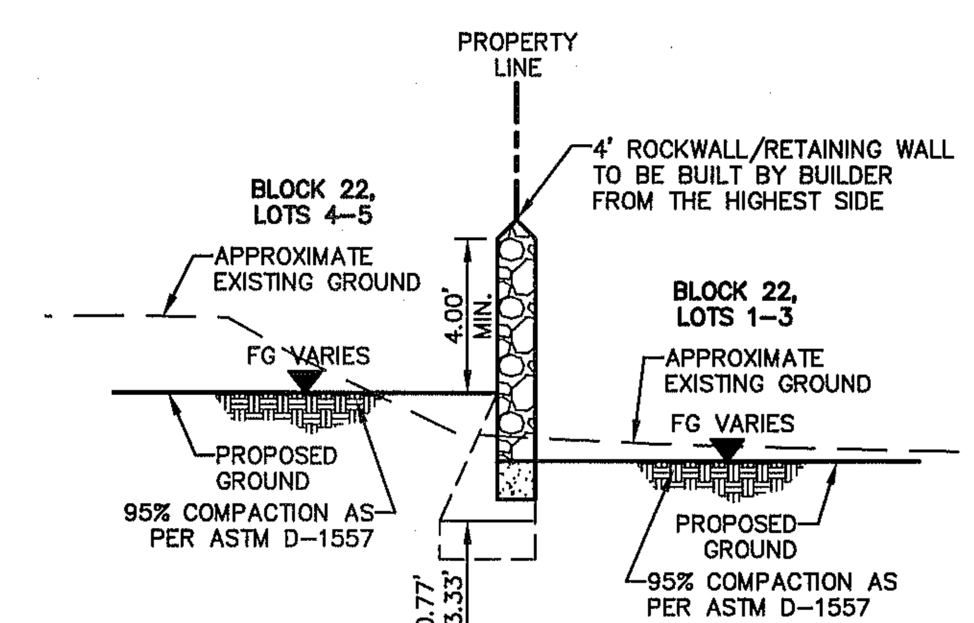

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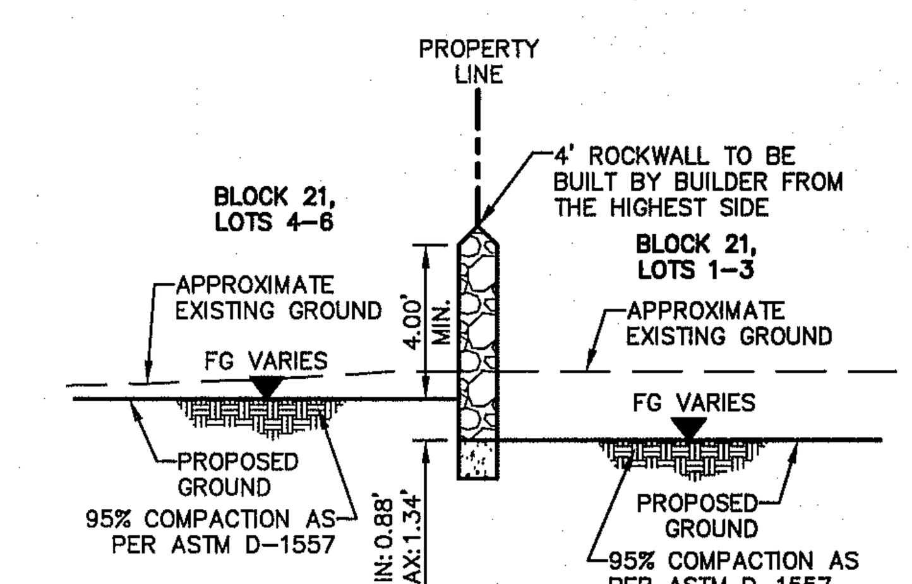

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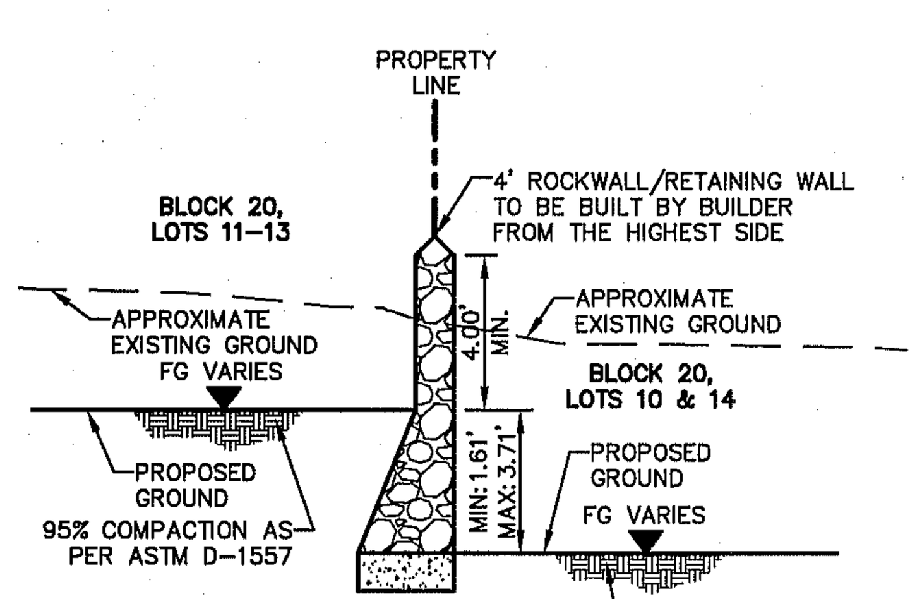

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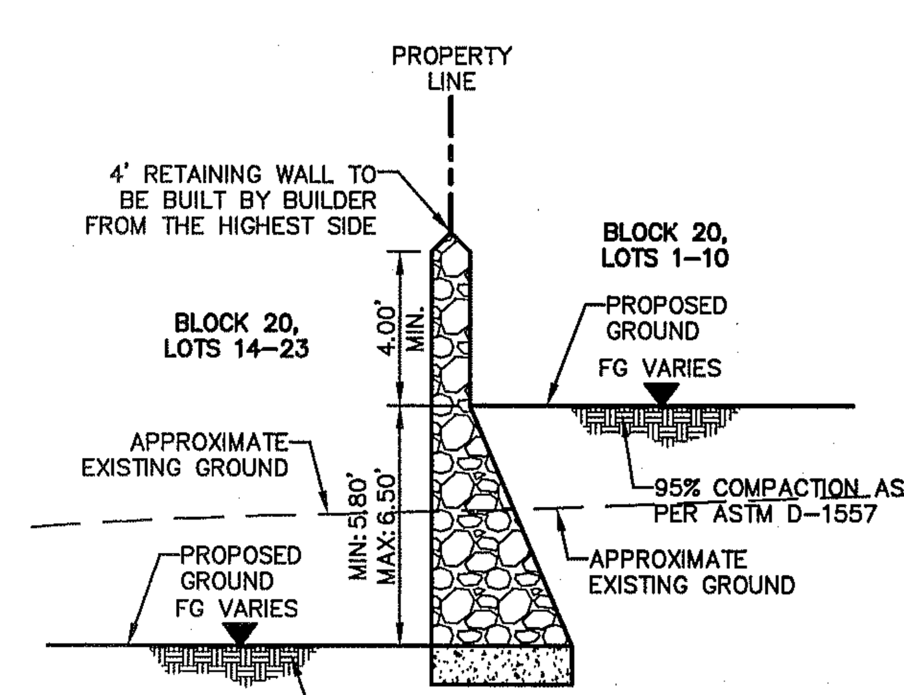

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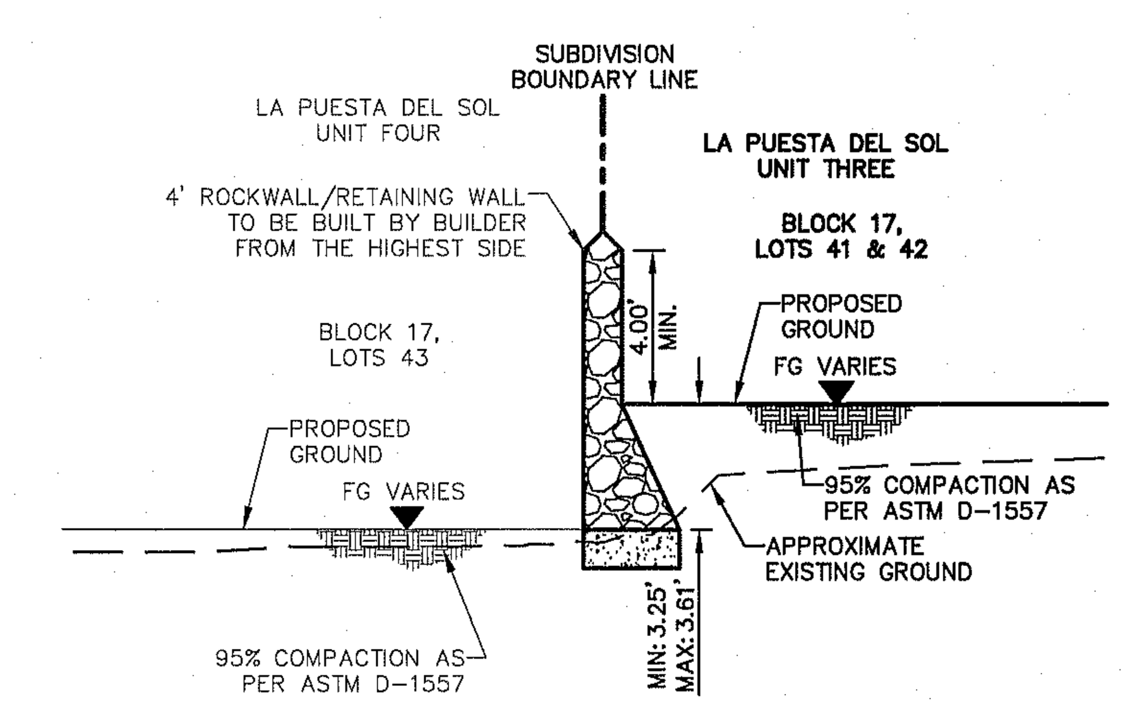

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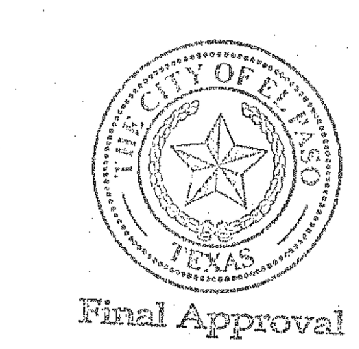

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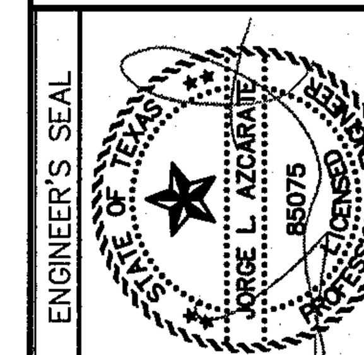

SCALE
Horizontal: 1"=5'
Vertical: 1"=5'
Contour Interval: N/A

DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000–210

PROJECT TITLE

LA PUESTA DEL SOL UNIT THREE SUBDIVISION IMPROVEMENTS

SHEET TITLE

GRADING SECTIONS

(SHEET 2 OF 2)

SHEET NO.

C5.2

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LINE TABLE		
LINE	BEARING	LENGTH
L1	S89°59'19"E	15.05'

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	450.00'	354.90'	187.26'	345.77'	S67°23'42"E	045°11'13"
C2	450.00'	352.89'	186.08'	343.92'	S22°20'09"E	044°55'53"

UTILITY LOCATOR SERVICES

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

WARNING ! BEFORE YOU DIG

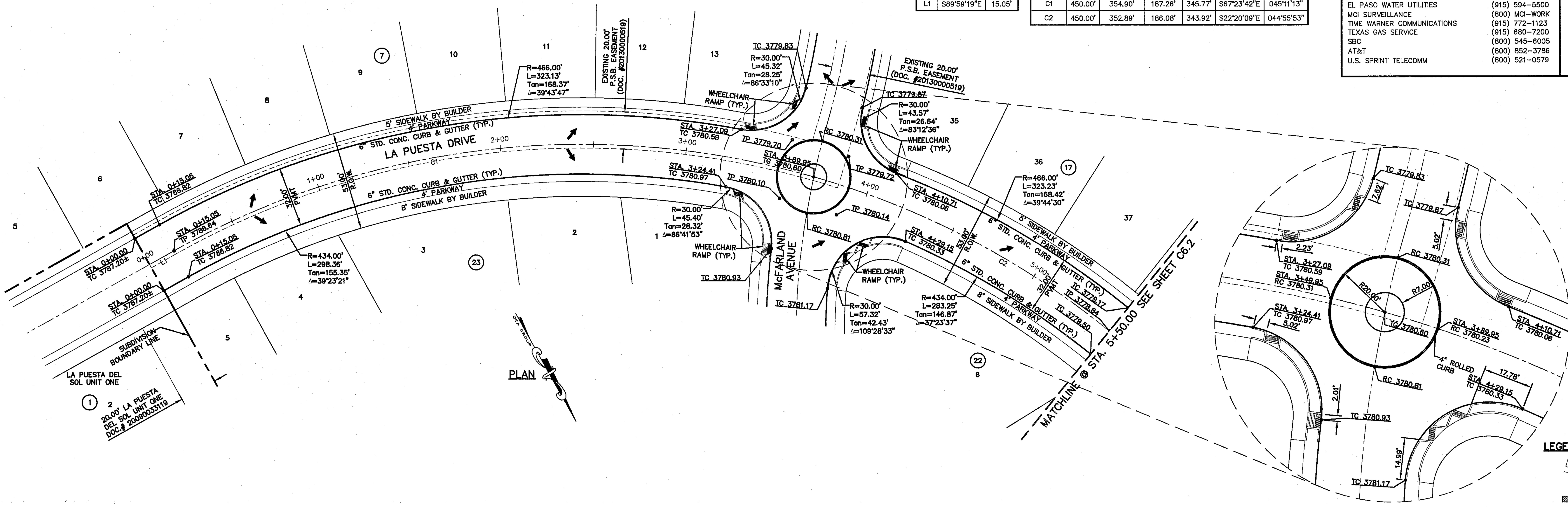
CALL 811

FOR FIELD LOCATING EXISTING UTILITIES

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

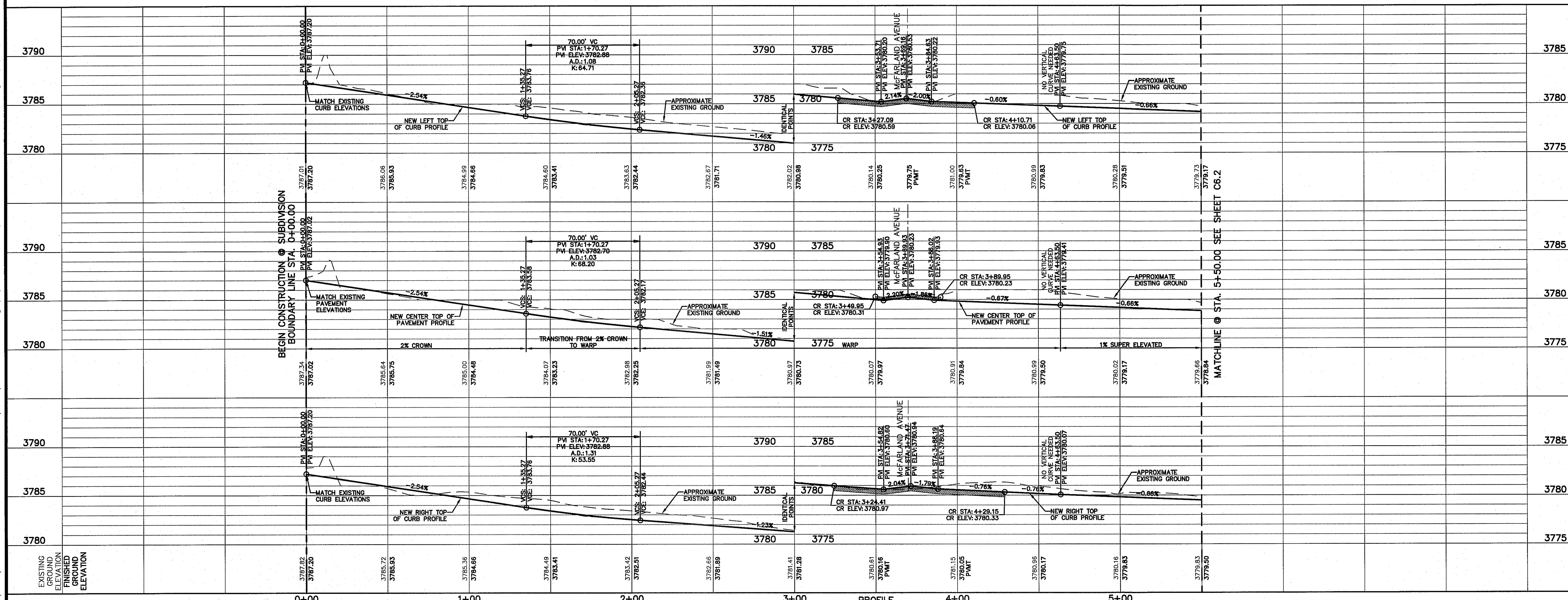


Final Approval

ENGINEER'S SEAL

JORGE L. AZCARATE 85075 10-28-19

cea group
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net



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

DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

PROJECT TITLE

LA PUESTA DEL SOL UNIT THREE SUBDIVISION IMPROVEMENTS

SHEET TITLE

LA PUESTA DRIVE PLAN & PROFILE FROM STA. 0+00.00 TO STA. 5+50.00

SHEET NO.

C6.1

S:\2000\2000-210-La Puesta Del Sol Unit Three\DWGS\Construction Drawings\Improvement Plans\C6.1-C6.3-La Puesta Drive P&P.dwg, 11/4/2019 10:09:45 AM

S:\2000\2000-210-La Puesta Del Sol Unit Three\DWGS\Construction Drawings\Improvement Plans\C6.1-C6.3-La Puesta Drive P&P.dwg, 11/4/2019 10:10:46 AM

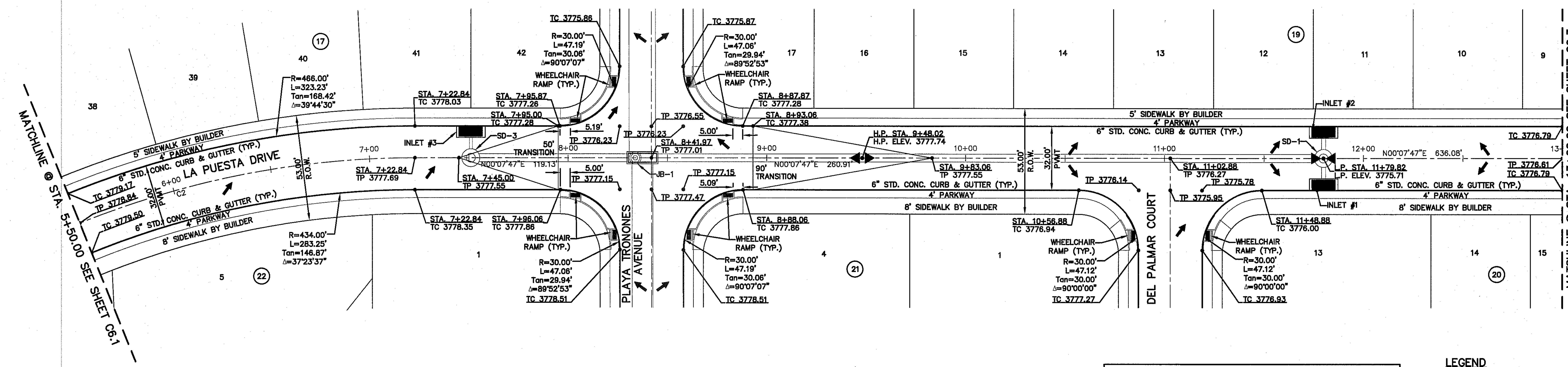
UTILITY LOCATOR SERVICES

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

WARNING ! BEFORE YOU DIG

CALL 811

FOR FIELD LOCATING EXISTING UTILITIES



PLAN

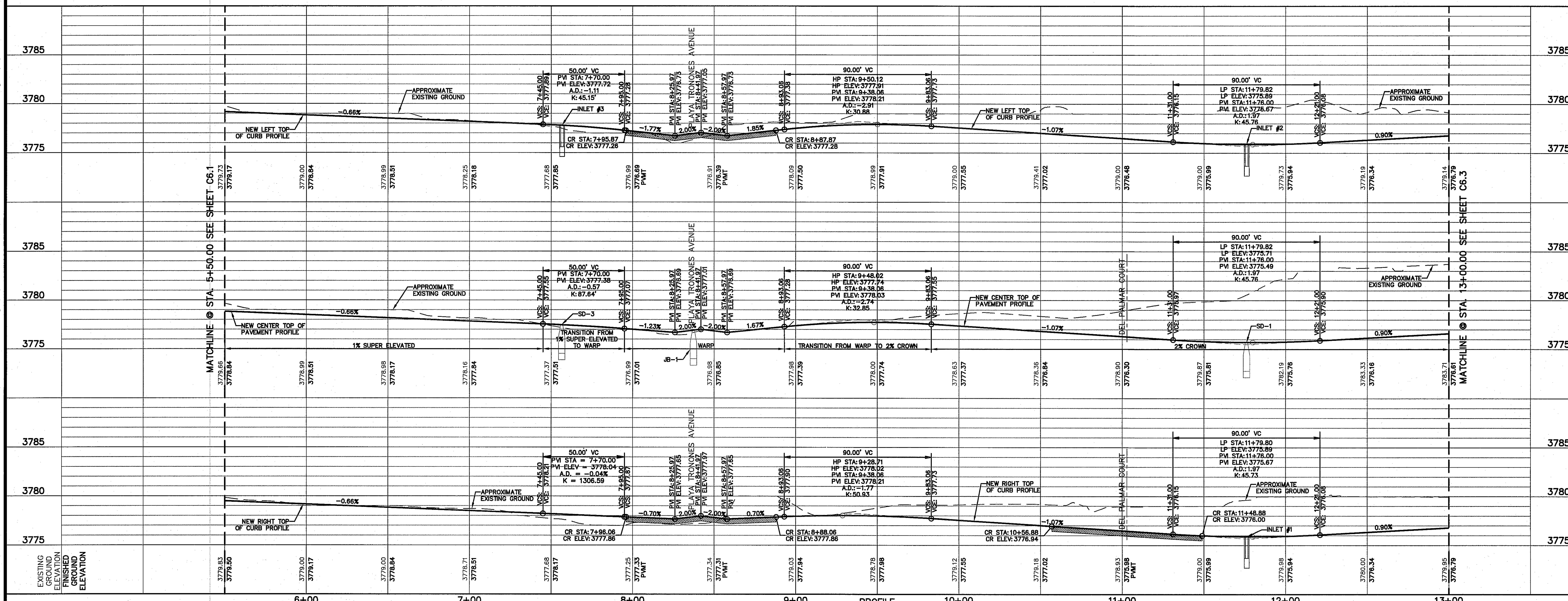
CURVE TABLE

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C2	450.00'	352.89'	186.08'	343.92'	S22°20'09"E	044°55'53"

LEGEND

DIRECTIONAL WHEELCHAIR RAMP BY DEVELOPER (TYP.)

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



PROFILE

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group

TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

Final Approval

ENGINEER'S SEAL

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

DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

PROJECT TITLE

LA PUESTA DEL SOL UNIT THREE SUBDIVISION IMPROVEMENTS

SHEET TITLE

LA PUESTA DRIVE PLAN & PROFILE FROM STA. 5+50.00 TO STA. 13+00.00

SHEET NO.

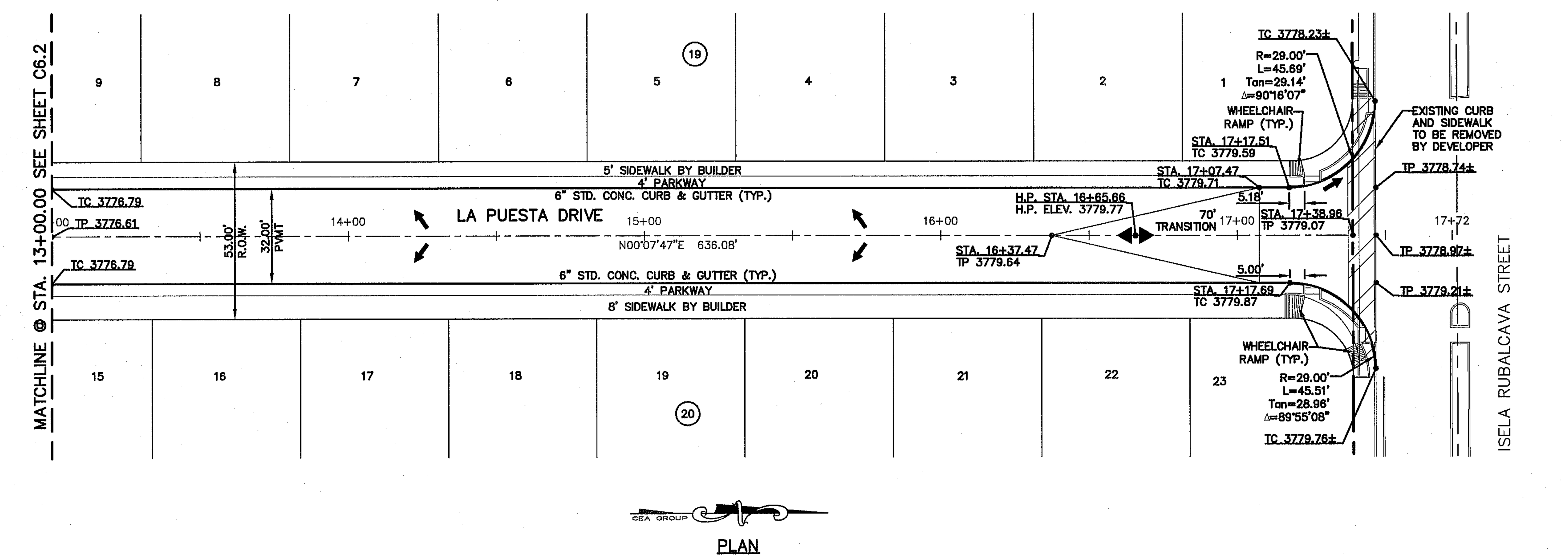
C6.2

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

WARNING! BEFORE YOU DIG

CALL 811

FOR FIELD LOCATING EXISTING UTILITIES



PLAN

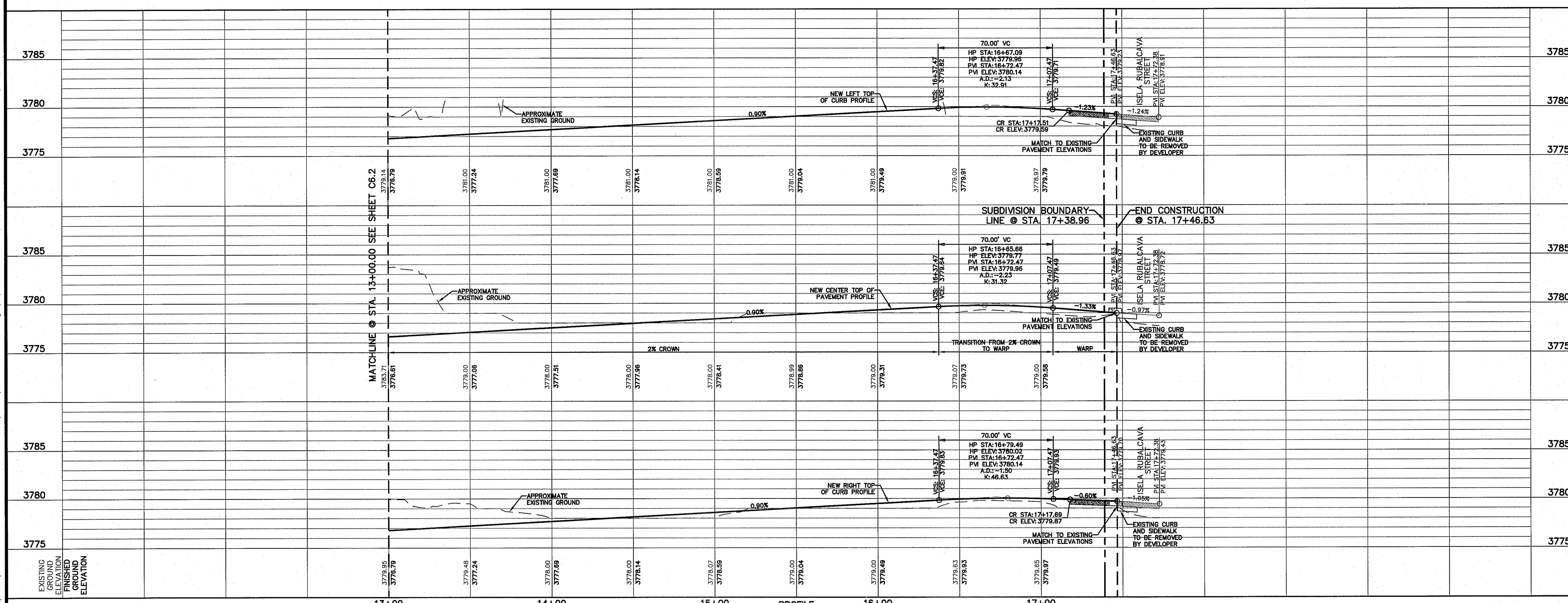
Final Approval

NOTE:
DEVELOPER TO DEMOLISH AND PROPERLY DISPOSED OFF. RE-CONSTRUCT CURB AND PAVEMENT IMPROVEMENTS.

LEGEND

DIRECTIONAL WHEELCHAIR RAMP BY DEVELOPER (TYP.)

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



REFERENCES - BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN, ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group

TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

ENGINEER'S SEAL

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

DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

PROJECT TITLE

LA PUESTA DEL SOL UNIT THREE SUBDIVISION IMPROVEMENTS

SHEET TITLE

LA PUESTA DRIVE PLAN & PROFILE FROM STA. 13+00.00 TO STA. 17+46.63

SHEET NO.

C6.3

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LINE TABLE		
LINE	BEARING	LENGTH
L1	N39°24'45"E	8.77'

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	375.00'	91.13'	45.79'	90.90'	S38°37'15"W	013°55'24"
C2	375.00'	29.72'	14.87'	29.71'	N43°18'44"E	004°32'27"
C3	375.00'	10.66'	5.33'	10.66'	N40°13'38"E	001°37'45"
C4	374.00'	116.63'	58.79'	116.16'	N30°28'44"E	017°52'03"
C5	374.00'	139.79'	70.72'	138.98'	N10°50'15"E	021°24'55"

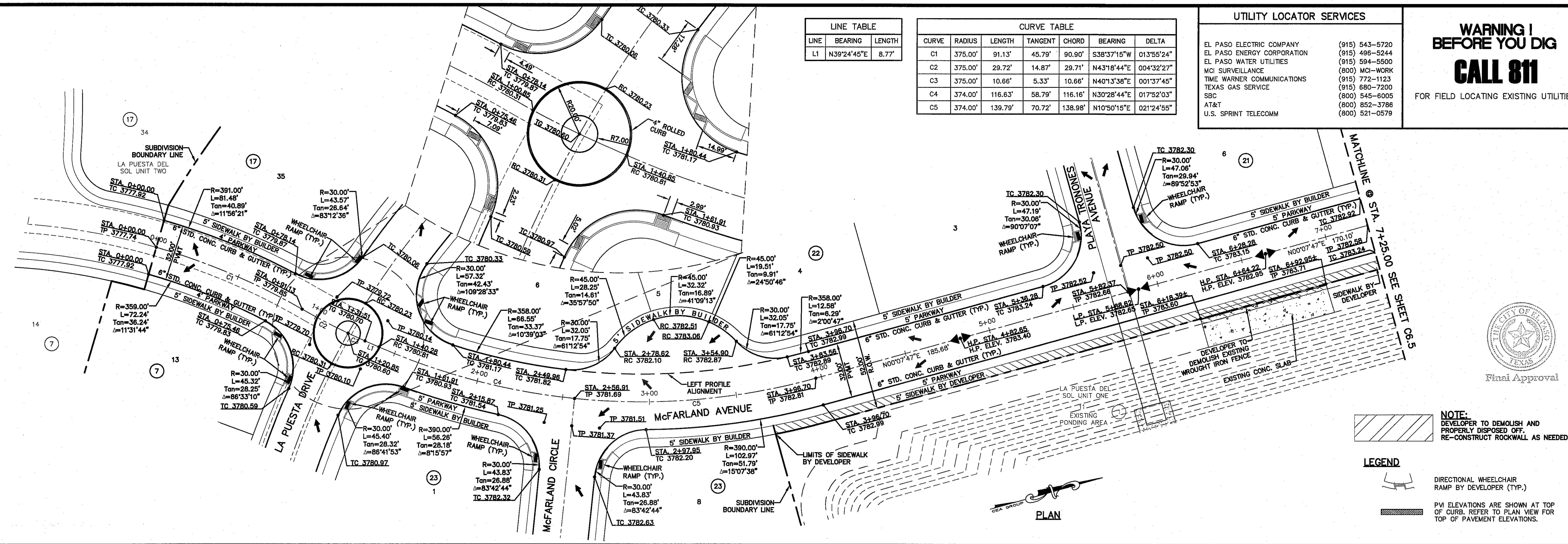
UTILITY LOCATOR SERVICES

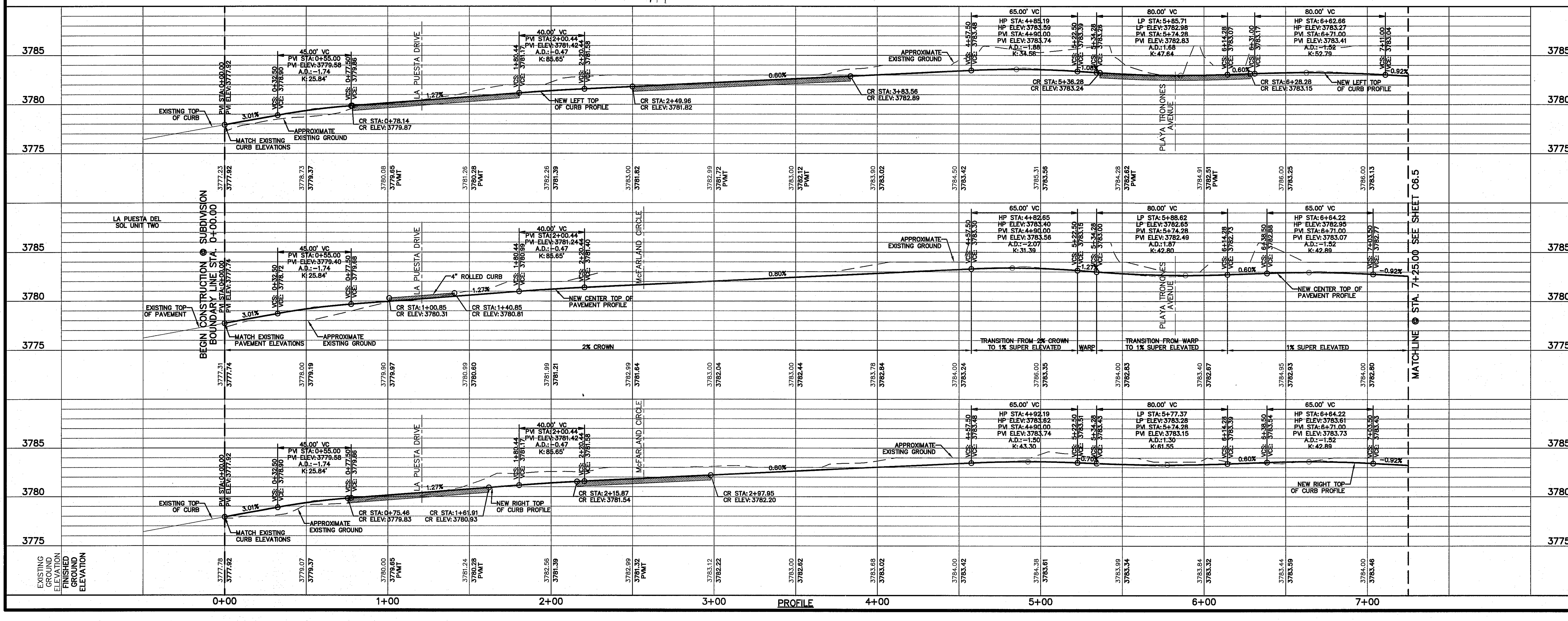
EL PASO ELECTRIC COMPANY	(915) 543–5720
EL PASO ENERGY CORPORATION	(915) 496–5244
EL PASO WATER UTILITIES	(915) 594–5500
MCI SURVEILLANCE	(800) MCI–WORK
TIME WARNER COMMUNICATIONS	(915) 772–1123
TEXAS GAS SERVICE	(915) 680–7200
SBC	(800) 545–6005
AT&T	(800) 852–3786
U.S. SPRINT TELECOMM	(800) 521–0579

WARNING ! BEFORE YOU DIG

CALL 811

FOR FIELD LOCATING EXISTING UTILITIES





REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group

TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

ENGINEER'S SEAL

STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER
10–28–19

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

DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000–210

PROJECT TITLE

LA PUESTA DEL SOL UNIT THREE SUBDIVISION IMPROVEMENTS

SHEET TITLE

McFARLAND AVENUE PLAN & PROFILE FROM STA. 0+00.00 TO STA. 7+25.00

SHEET NO.

C6.4

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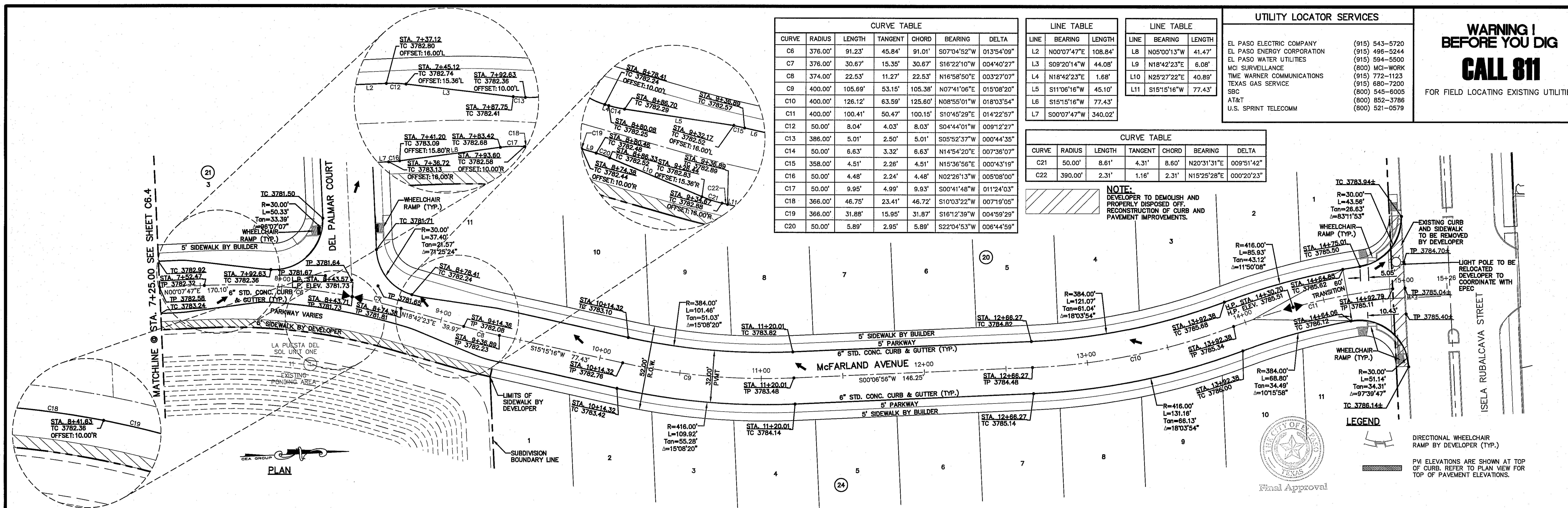


CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C6	376.00'	91.23'	45.84'	91.01'	S07°04'52"W	013°54'09"
C7	376.00'	30.67'	15.35'	30.67'	S16°22'10"W	004°40'27"
C8	374.00'	22.53'	11.27'	22.53'	N16°58'50"E	003°27'07"
C9	400.00'	105.69'	53.15'	105.38'	N07°41'06"E	015°08'20"
C10	400.00'	126.12'	63.59'	125.60'	N08°55'01"W	018°03'54"
C11	400.00'	100.41'	50.47'	100.15'	S10°45'29"E	014°22'57"
C12	50.00'	8.04'	4.03'	8.03'	S04°44'01"W	009°12'27"
C13	386.00'	5.01'	2.50'	5.01'	S05°52'37"W	000°44'35"
C14	50.00'	6.63'	3.32'	6.63'	N14°54'20"E	007°36'07"
C15	358.00'	4.51'	2.26'	4.51'	N15°36'56"E	000°43'19"
C16	50.00'	4.48'	2.24'	4.48'	N02°26'13"W	005°08'00"
C17	50.00'	9.95'	4.99'	9.93'	S00°41'48"W	011°24'03"
C18	366.00'	46.75'	23.41'	46.72'	S10°03'22"W	007°19'05"
C19	366.00'	31.88'	15.95'	31.87'	S16°12'39"W	004°59'29"
C20	50.00'	5.89'	2.95'	5.89'	S22°04'53"W	006°44'59"

LINE TABLE		
LINE	BEARING	LENGTH
L2	N00°07'47"E	108.84'
L3	S09°20'14"W	44.08'
L4	N18°42'23"E	1.68'
L5	S11°06'16"W	45.10'
L6	S15°15'16"W	77.43'
L7	S00°07'47"W	340.02'

LINE TABLE		
LINE	BEARING	LENGTH
L8	N05°00'13"W	41.47'
L9	N18°42'23"E	6.08'
L10	N25°27'22"E	40.89'
L11	S15°15'16"W	77.43'

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C21	50.00'	8.61'	4.31'	8.60'	N20°31'31"E	009°51'42"
C22	390.00'	2.31'	1.16'	2.31'	N15°25'28"E	000°20'23"

NOTE:
DEVELOPER TO DEMOLISH AND PROPERLY DISPOSED OFF. RECONSTRUCTION OF CURB AND PAVEMENT IMPROVEMENTS.

UTILITY LOCATOR SERVICES

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

WARNING ! BEFORE YOU DIG

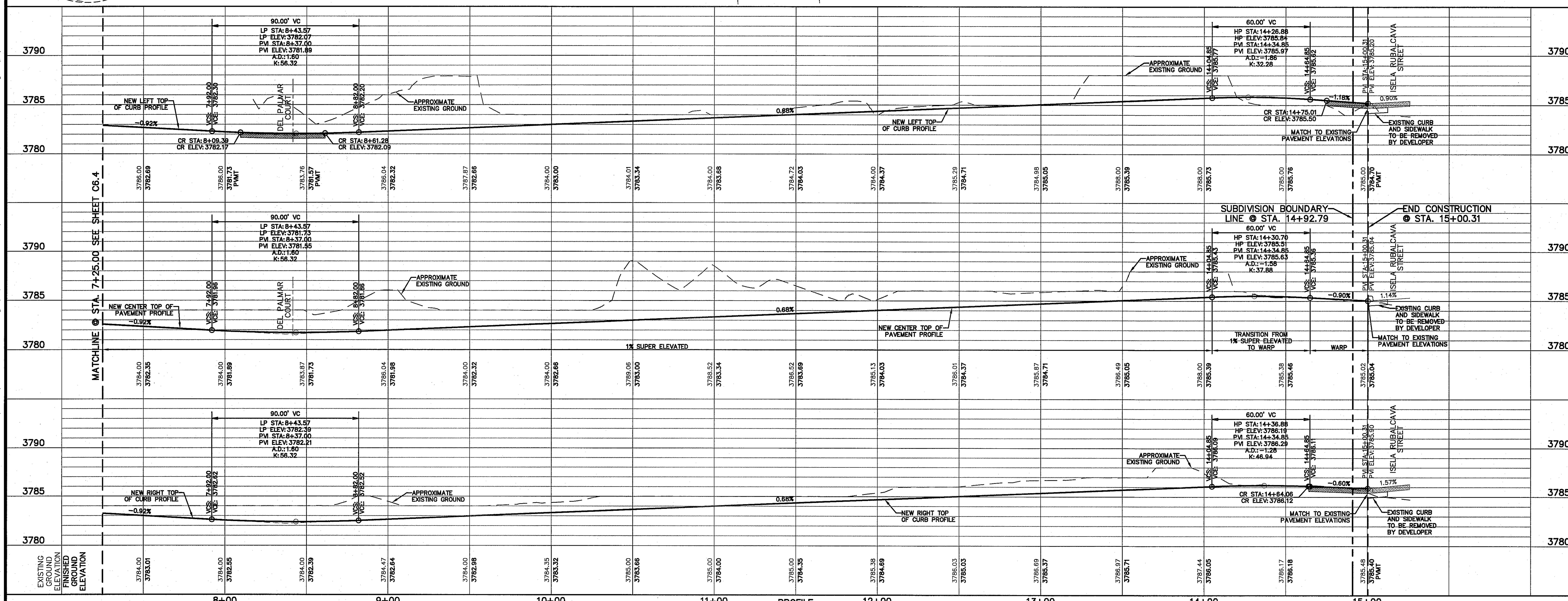
CALL 811

FOR FIELD LOCATING EXISTING UTILITIES

LEGEND

DIRECTIONAL WHEELCHAIR RAMP BY DEVELOPER (TYP.)

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



REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO"
ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

ENGINEER'S SEAL
STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER
10-28-19

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

DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

PROJECT TITLE

LA PUESTA DEL SOL UNIT THREE SUBDIVISION IMPROVEMENTS

SHEET TITLE

McFARLAND AVENUE PLAN & PROFILE FROM STA. 7+25.00 TO STA. 15+00.31

SHEET NO.

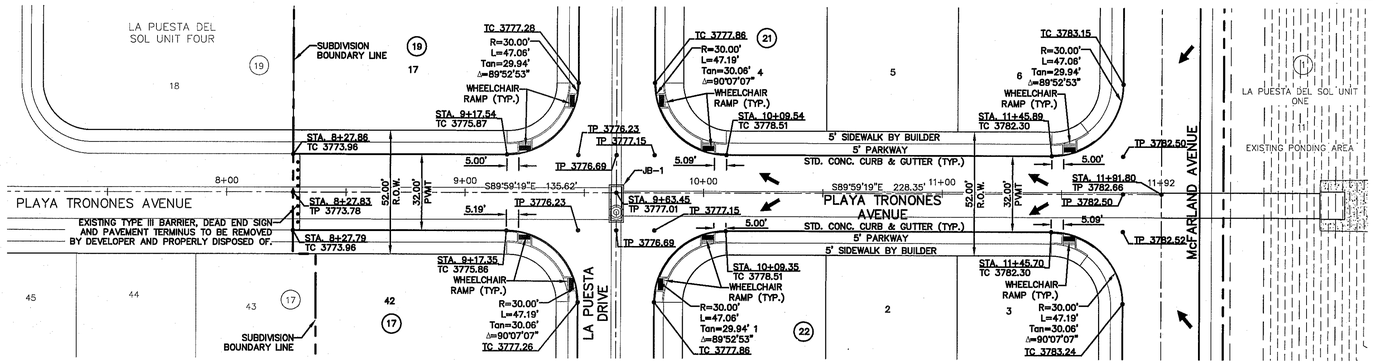
C6.5

S:\2000\2000-210-La Puesta Del Sol Unit Three\DWGS\Construction Drawings\Improvement Plans\C6.4-C6.5-McFarland Avenue P&P.dwg, 11/4/2019 10:14:23 AM

UTILITY LOCATOR SERVICES

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

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

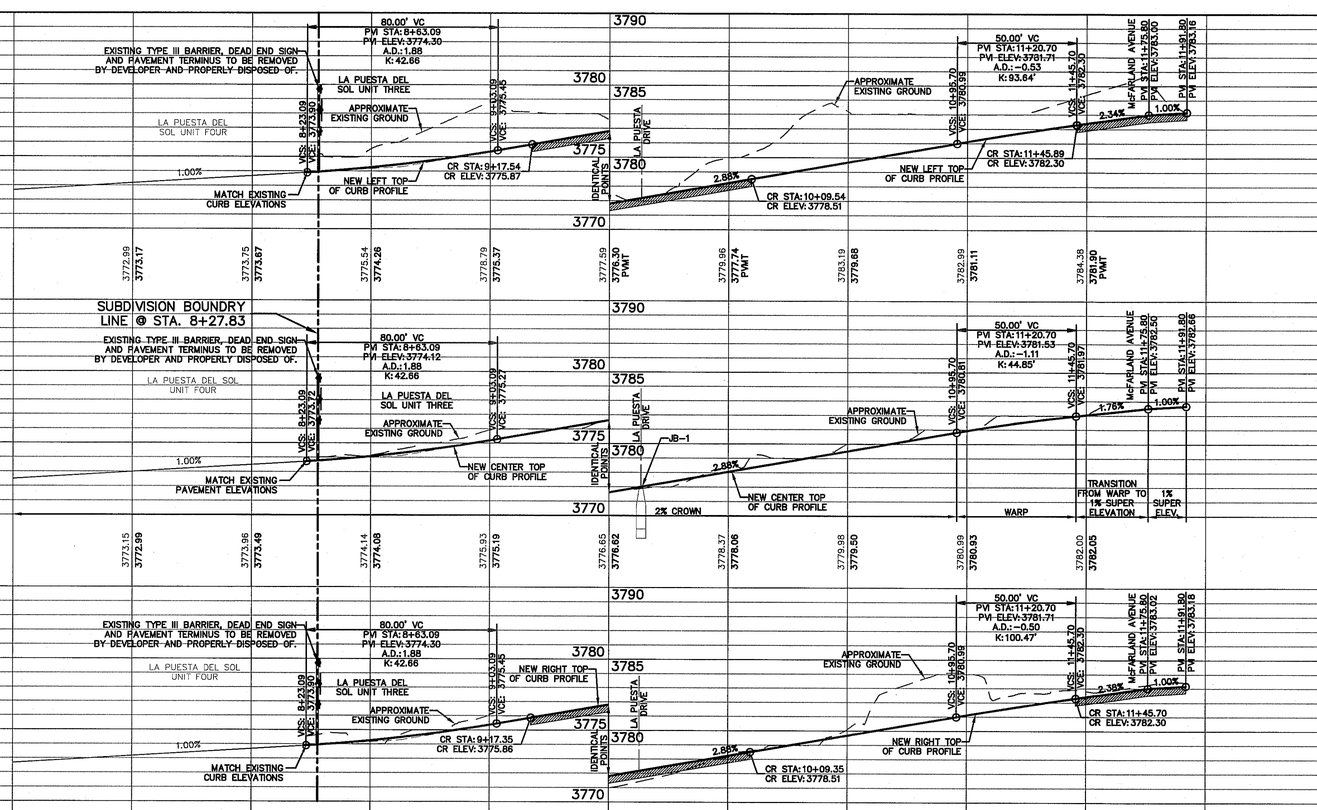


PLAN

LEGEND

WHEELCHAIR RAMP BY DEVELOPER (TYP.)

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



PROFILE

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
TEXAS REGISTERED ENGINEERING FIRM F-4804
4172 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.0232 | www.ceagroup.net

Final Approval

ENGINEER'S SEAL

JORGE L. AZCARATE 85075 — 10-28-19

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

DATE: JUNE 2019
DESIGN BY: J.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

PROJECT TITLE

LA PUESTA DEL SOL UNIT THREE
SUBDIVISION IMPROVEMENTS

SHEET TITLE

PLAYA TRONONES AVENUE PLAN & PROFILE FROM STA. 8+27.83 TO STA. 11+91.80

SHEET NO.

C6.6

S:\2000\2000-210-La Puesta Del Sol Unit Three\DWGS\Construction Drawings\Improvement Plans\C6.6-Playa Tronones Avenue P&P.dwg, 11/4/2019 10:15:31 AM

LINE TABLE		
LINE	BEARING	LENGTH
L1	S21°32'42"W	8.00'

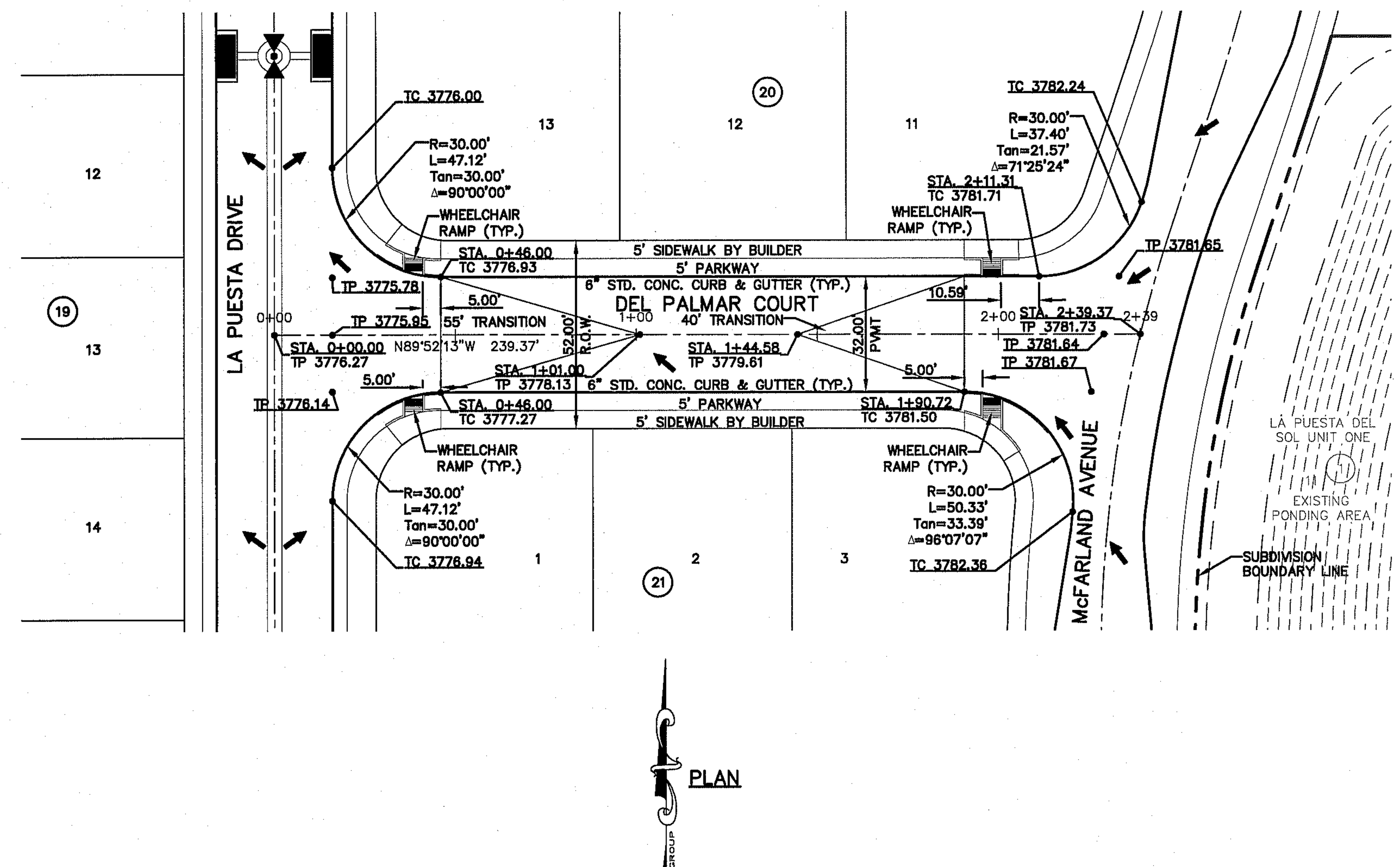
UTILITY LOCATOR SERVICES

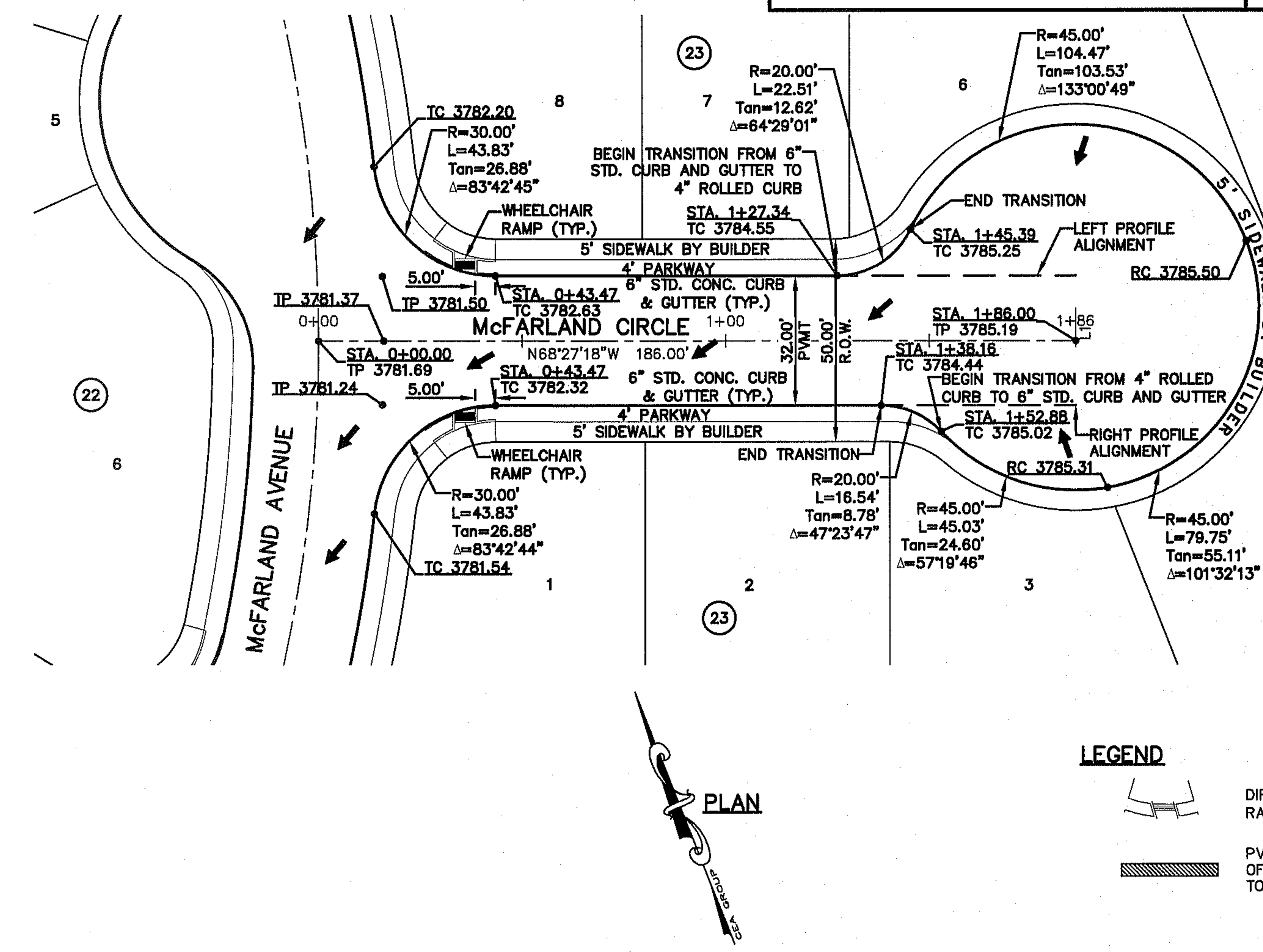
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579

WARNING ! BEFORE YOU DIG

CALL 811

FOR FIELD LOCATING EXISTING UTILITIES



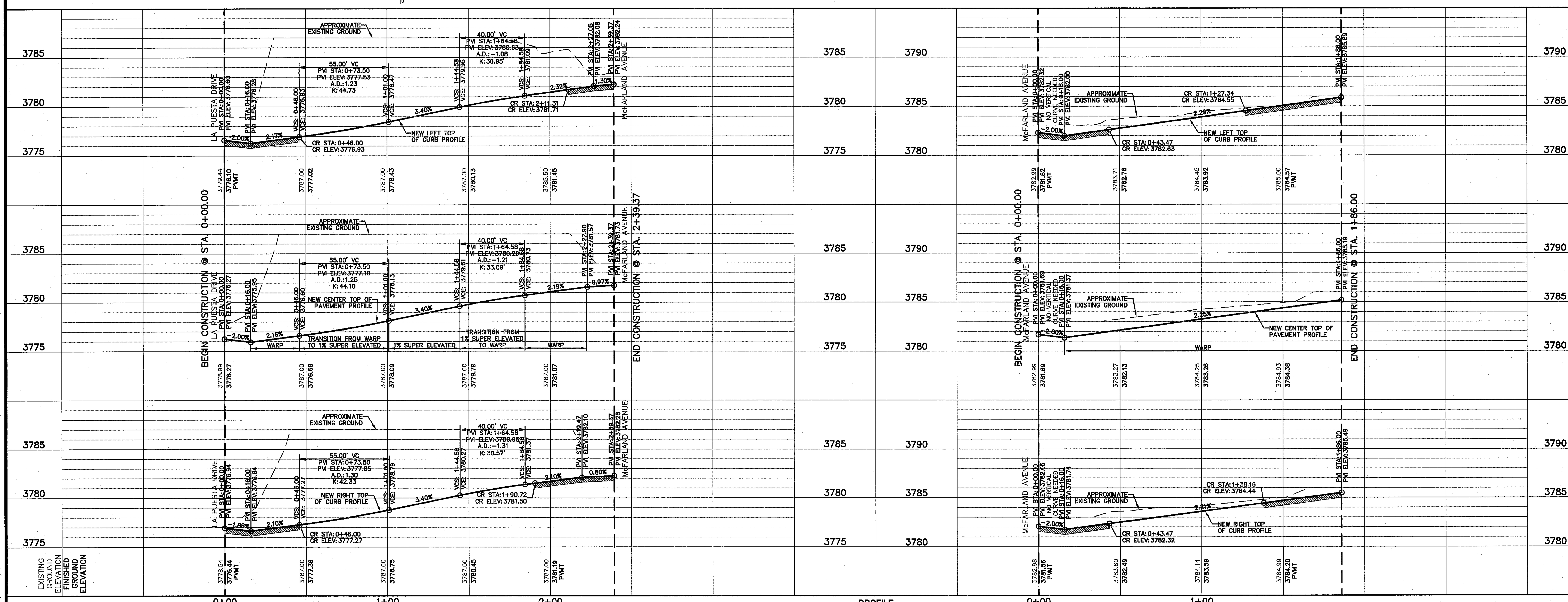


Final Approval

LEGEND

DIRECTIONAL WHEELCHAIR RAMP BY DEVELOPER (TYP.)

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



REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group

TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

ENGINEER'S SEAL

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

DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

PROJECT TITLE

LA PUESTA DEL SOL UNIT THREE SUBDIVISION IMPROVEMENTS

SHEET TITLE

DEL PALMAR COURT PLAN & PROFILE FROM STA. 0+00.00 TO STA. 2+39.37

McFARLAND CIRCLE PLAN & PROFILE FROM STA. 0+00.00 TO STA. 1+86.00

SHEET NO.

C6.7

S:\2000\2000-210-La Puesta Del Sol Unit Three\DWGS\Construction Drawings\Improvement Plans\C6.7-Del Palmar & McFarland Court P&P.dwg, 11/4/2019 10:16:40 AM

STORM PIPE LINE A OUTPUT INFORMATION						
PIPE	DOWNSTREAM INVERT ELEVATION (ft)	UPSTREAM INVERT ELEVATION (ft)	HYDRAULIC GRADE DOWNSTREAM (ft)	HYDRAULIC GRADE UPSTREAM (ft)	Q(50) EXPECTED (cfs)	Q(50) CAPACITY (cfs)
A-4	3963.00	3968.15	3768.77	3772.37	589.165 CFS	1394.54 CFS
A-5	3968.15	3971.49±	3774.47	3776.67	568.000 CFS	699.833 CFS

STRUCTURE OUTPUT INFORMATION		
STRUCTURE	HYDRAULIC GRADE DOWNSTREAM (ft)	HYDRAULIC GRADE UPSTREAM (ft)
SD-2	3772.37	3774.47

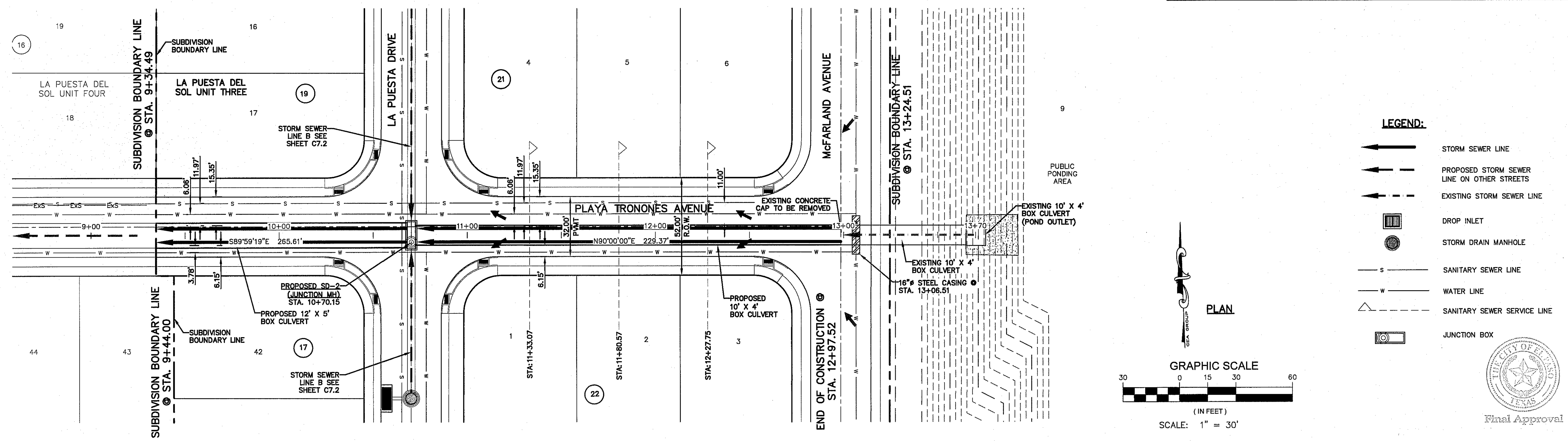
UTILITY LOCATOR SERVICES

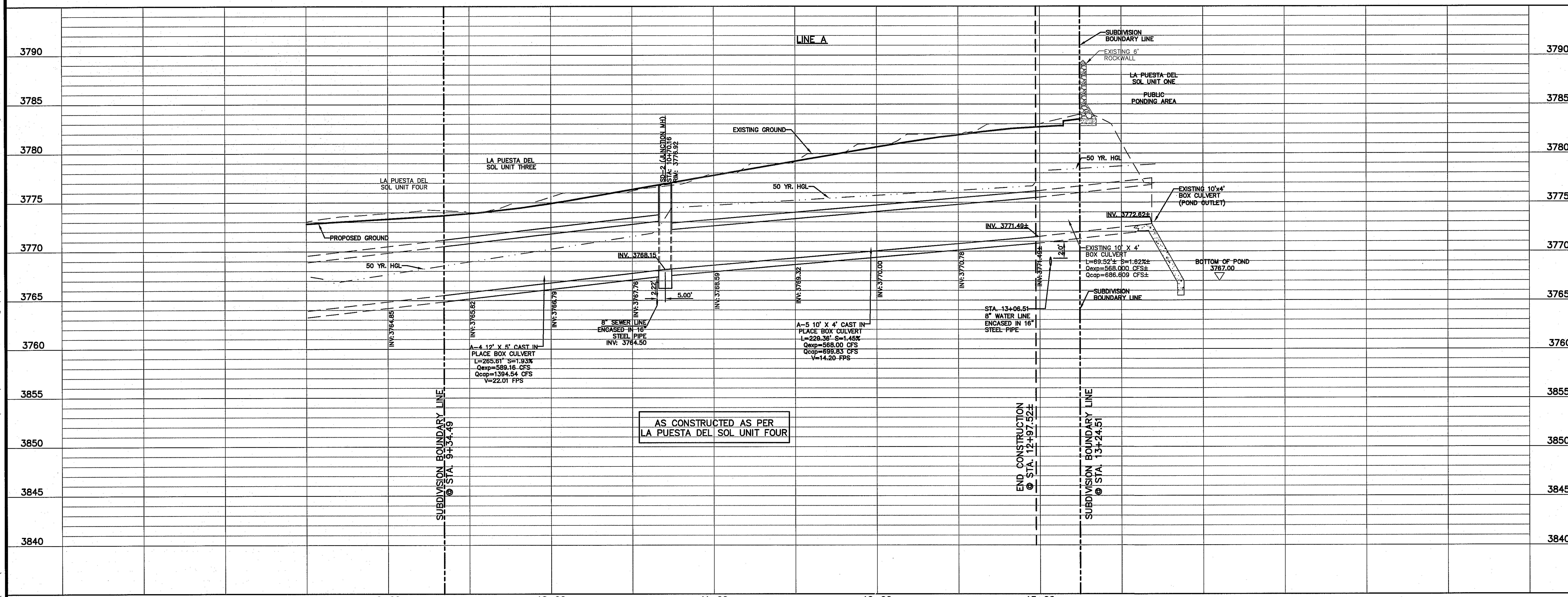
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579

WARNING ! BEFORE YOU DIG

CALL 811

FOR FIELD LOCATING EXISTING UTILITIES





REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

ENGINEER'S SEAL: STATE OF TEXAS, JORGE L. AZCARATE, 85075, LICENSED PROFESSIONAL ENGINEER, 10-28-19

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

DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

PROJECT TITLE

LA PUESTA DEL SOL UNIT THREE SUBDIVISION IMPROVEMENTS

SHEET TITLE

STORM SEWER PLAN & PROFILE LINE A FROM STA. 9+34.49 TO 13+70.04±

SHEET NO.

C7.1

S:\2000\2000-210-La Puesta Del Sol Unit Three\DWGS\Construction Drawings\Improvement Plans\C7.1-Line A Storm P&P.dwg, 11/4/2019 9:38:56 AM

STORM PIPE LINE A OUTPUT INFORMATION						
PIPE	DOWNSTREAM INVERT ELEVATION (ft)	UPSTREAM INVERT ELEVATION (ft)	HYDRAULIC GRADE DOWNSTREAM (ft)	HYDRAULIC GRADE UPSTREAM (ft)	Q(50) EXPECTED (cfs)	Q(50) CAPACITY (cfs)
B–1	3768.15	3772.50	3774.47	3774.51	4.644 CFS	50.755 CFS
B–2	3768.15	3770.05	3774.47	3774.72	18.212 CFS	50.301 CFS
C–1	3771.25	3772.06	3774.82	3774.92	8.446 CFS	26.633 CFS
C–2	3770.05	3772.06	3774.82	3774.96	10.000 CFS	37.229 CFS
C–3	3772.50	3772.84	3774.53	3774.57	4.655 CFS	15.312 CFS

STRUCTURE OUTPUT INFORMATION		
STRUCTURE	HYDRAULIC GRADE DOWNSTREAM (ft)	HYDRAULIC GRADE UPSTREAM (ft)
SD–1	3774.72	3774.82
SD–2	3772.37	3774.47
SD–3	3774.51	3774.53
INLET #1	3775.21	3774.96
INLET #2	3775.21	3774.92
INLET #3	3774.56	3774.62

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

WARNING ! BEFORE YOU DIG

CALL 811

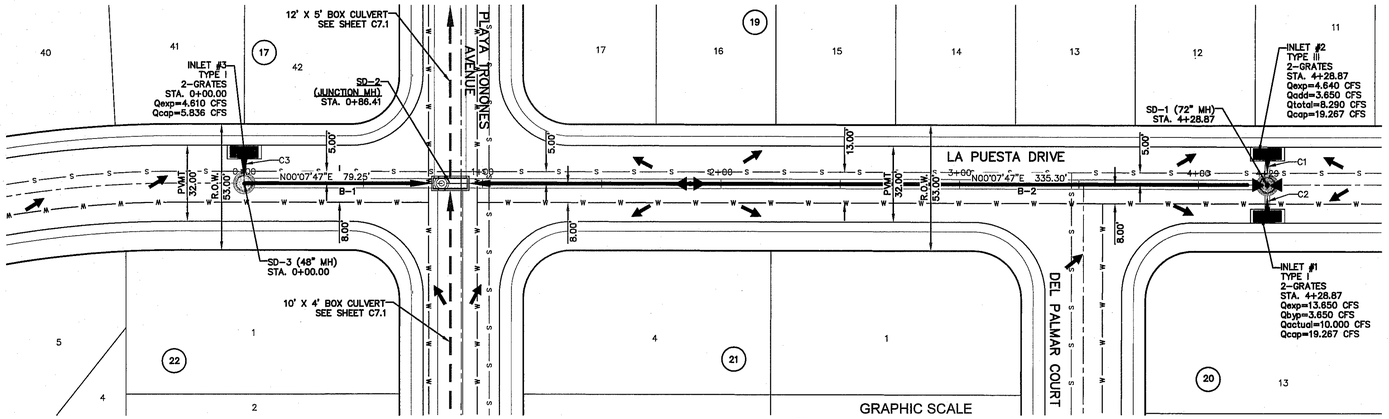
FOR FIELD LOCATING EXISTING UTILITIES

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

LINE B



PLAN

GRAPHIC SCALE

30 0 15 30 60

(IN FEET)

SCALE: 1" = 30'

LINE TABLE		
LINE	BEARING	LENGTH
C1	N89°52'13"W	16.00'
C2	S89°52'13"E	16.00'
C3	N89°49'51"W	16.00'

LEGEND:

- STORM SEWER LINE
- PROPOSED STORM SEWER LINE ON OTHER STREETS
- DROP INLET
- STORM DRAIN MANHOLE
- S — SANITARY SEWER LINE
- W — WATER LINE

Final Approval

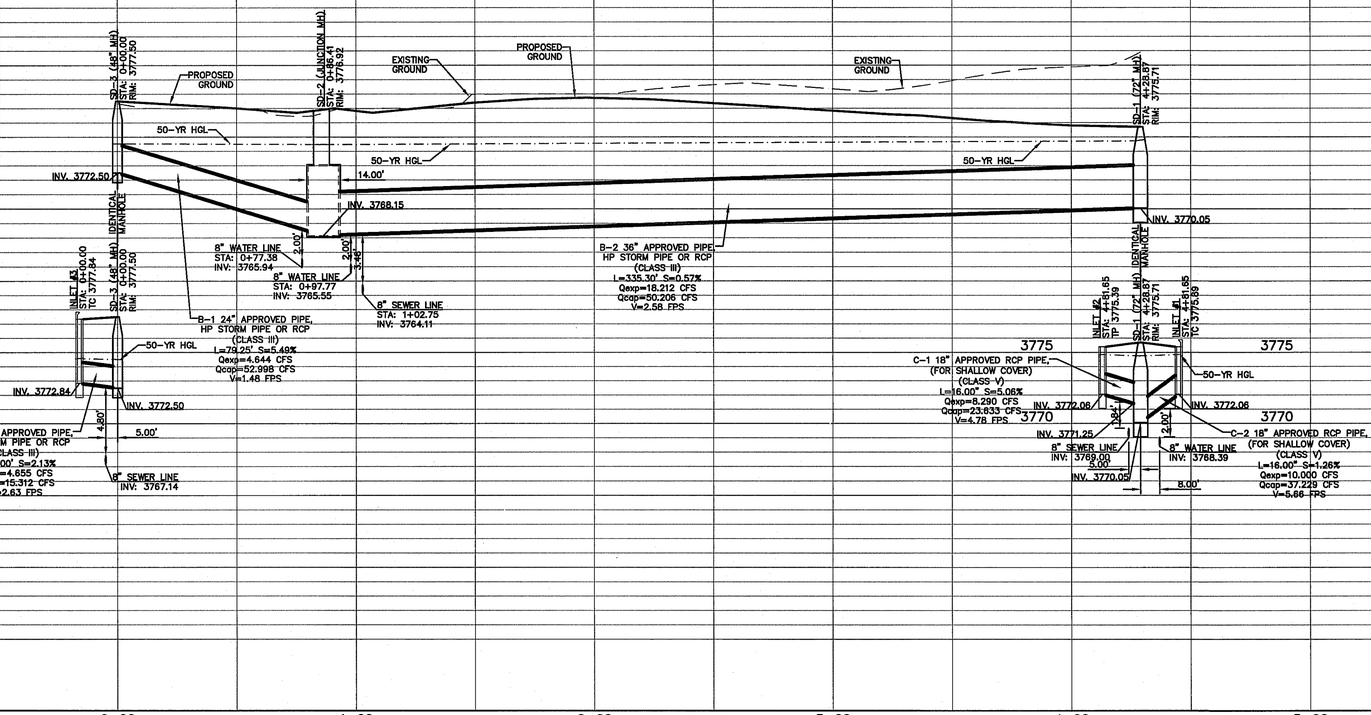
ENGINEER'S SEAL

THE STATE OF TEXAS — JORGE L. AZCARATE — 85075 — LICENSED PROFESSIONAL ENGINEER — 10-28-19

cea GROUP
TEXAS REGISTERED ENGINEERING FIRM F-4624
4712 Woodrow Bean Dr. | El Paso, TX 79924
915.544.5222 | www.ceagroup.net

LINE B

PROFILE



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Vertical:	1"=5'
Contour Interval:	N/A
DATE:	JUNE 2019
DESIGN BY:	C.S.
DRAWN BY:	M.R.S.
CHKD. BY:	J.L.A.
APPD. BY:	J.L.A.
JOB No.	2000–210

PROJECT TITLE

LA PUESTA DEL SOL UNIT THREE

SUBDIVISION IMPROVEMENTS

SHEET TITLE

STORM SEWER PLAN & PROFILE LINE B FROM STA. 0+00.00 TO 4+28.87

SHEET NO.

C7.2

S:\2000\2000–210–La Puesta Del Sol Unit Three\DWGS\Construction Drawings\Improvement Plans\C7.2–Line B Storm P&P.dwg, 11/4/2019 10:21:55 AM

NOTE:
FOR LOTS 1-3, BLOCK 22, AN 8" STEEL CASING SHALL BE INSTALLED AT SEWER SERVICE LINE UNDERNEATH THE CULVERT.

UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
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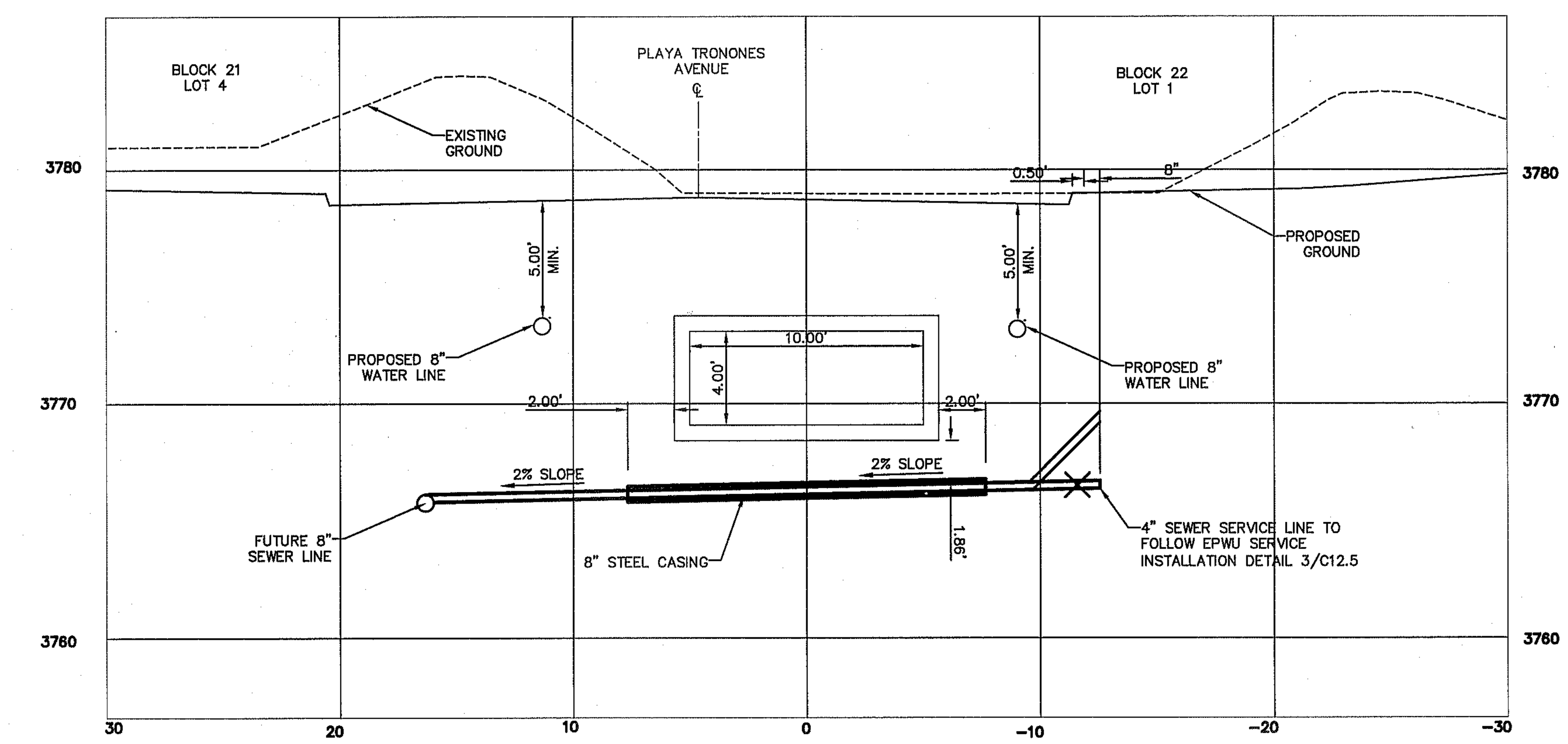
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579

WARNING ! BEFORE YOU DIG

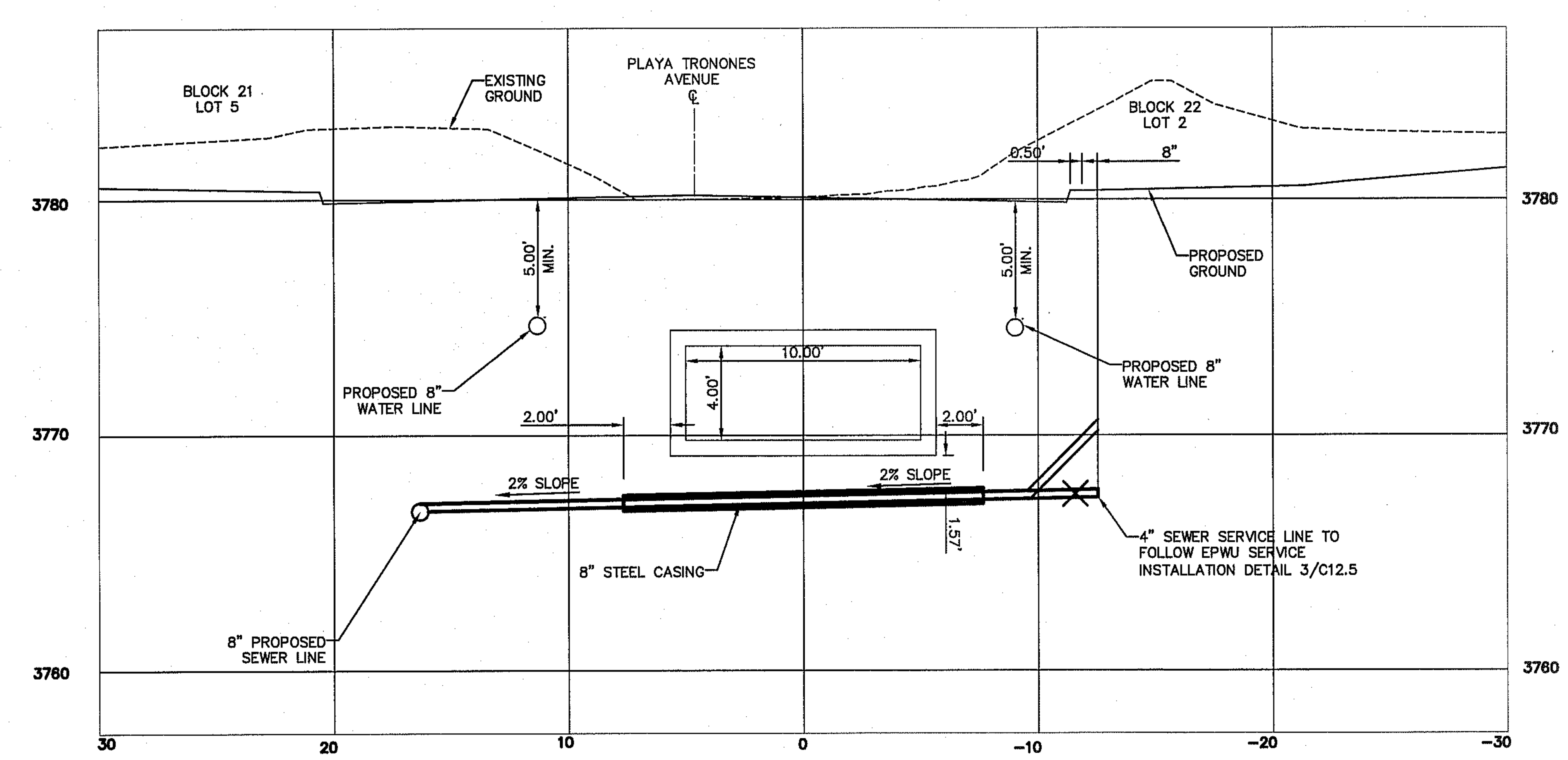
CALL 811

FOR FIELD LOCATING EXISTING UTILITIES

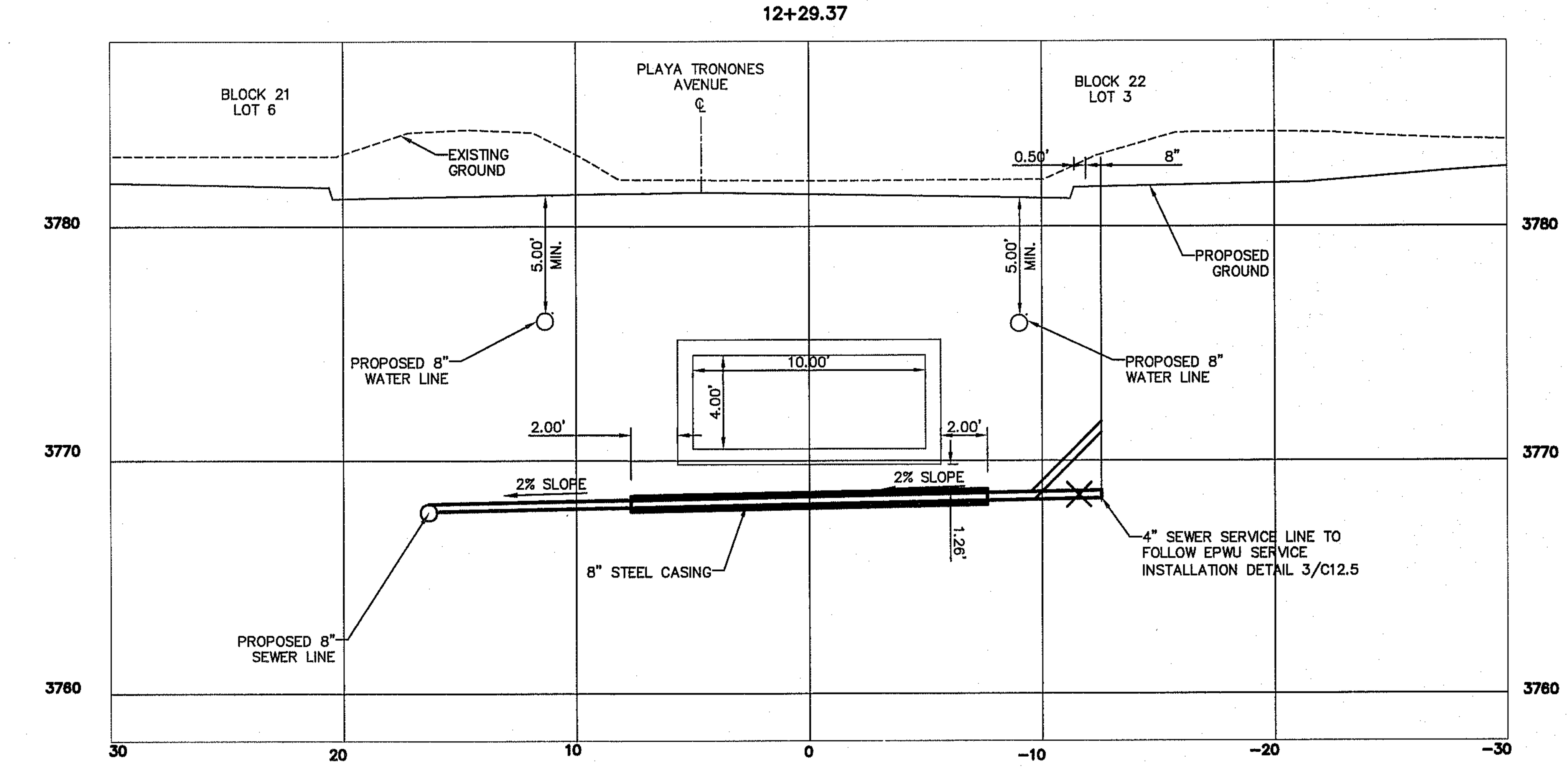
11+33.06



11+79.74



12+29.37



REFERENCES – BENCHMARKS

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DATE	REVISIONS	BY

cea group
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

ENGINEER'S SEAL

JORGE L. AZCARATE 85075 10-28-19

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

DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

PROJECT TITLE

LA PUESTA DEL SOL UNIT THREE SUBDIVISION IMPROVEMENTS

SHEET TITLE

UTILITY CROSSING (SEWER)

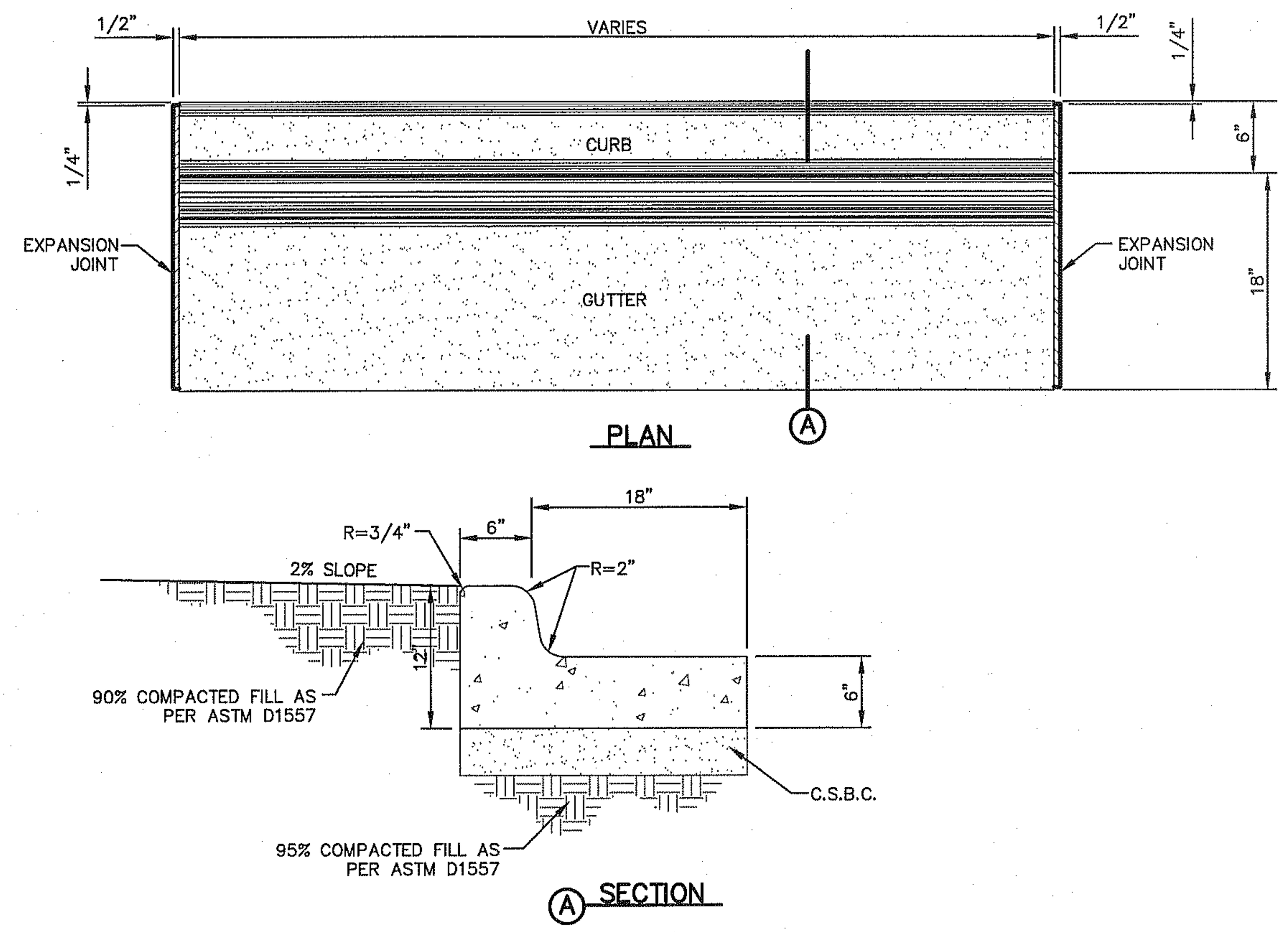
(SHEET 1 OF 1)

SHEET NO.

C7.3

Final Approval

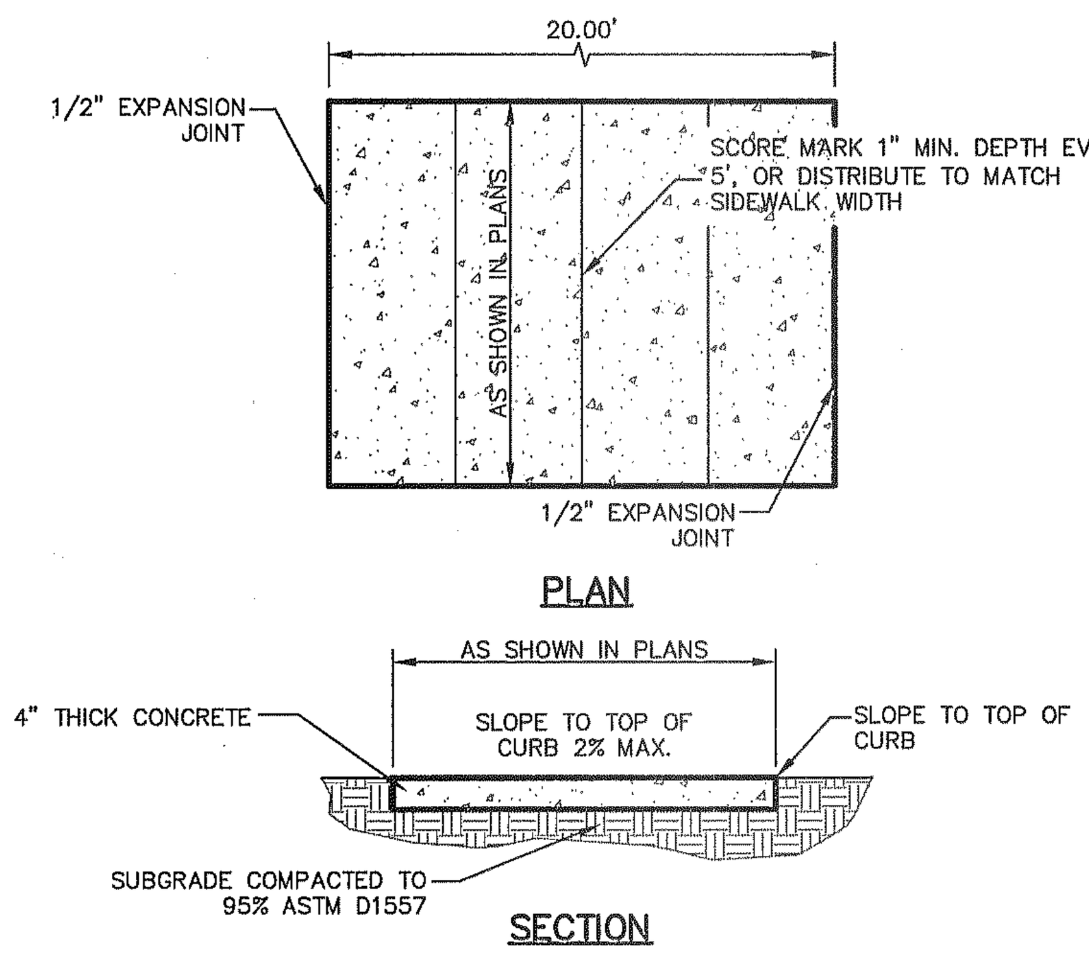
S:\2000\2000-210-La Puesta Del Sol Unit Three\DWGS\Construction Drawings\Improvement Plans\C7.3-StormSewerCrossings.dwg, 11/4/2019 10:26:09 AM



NOTES:

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

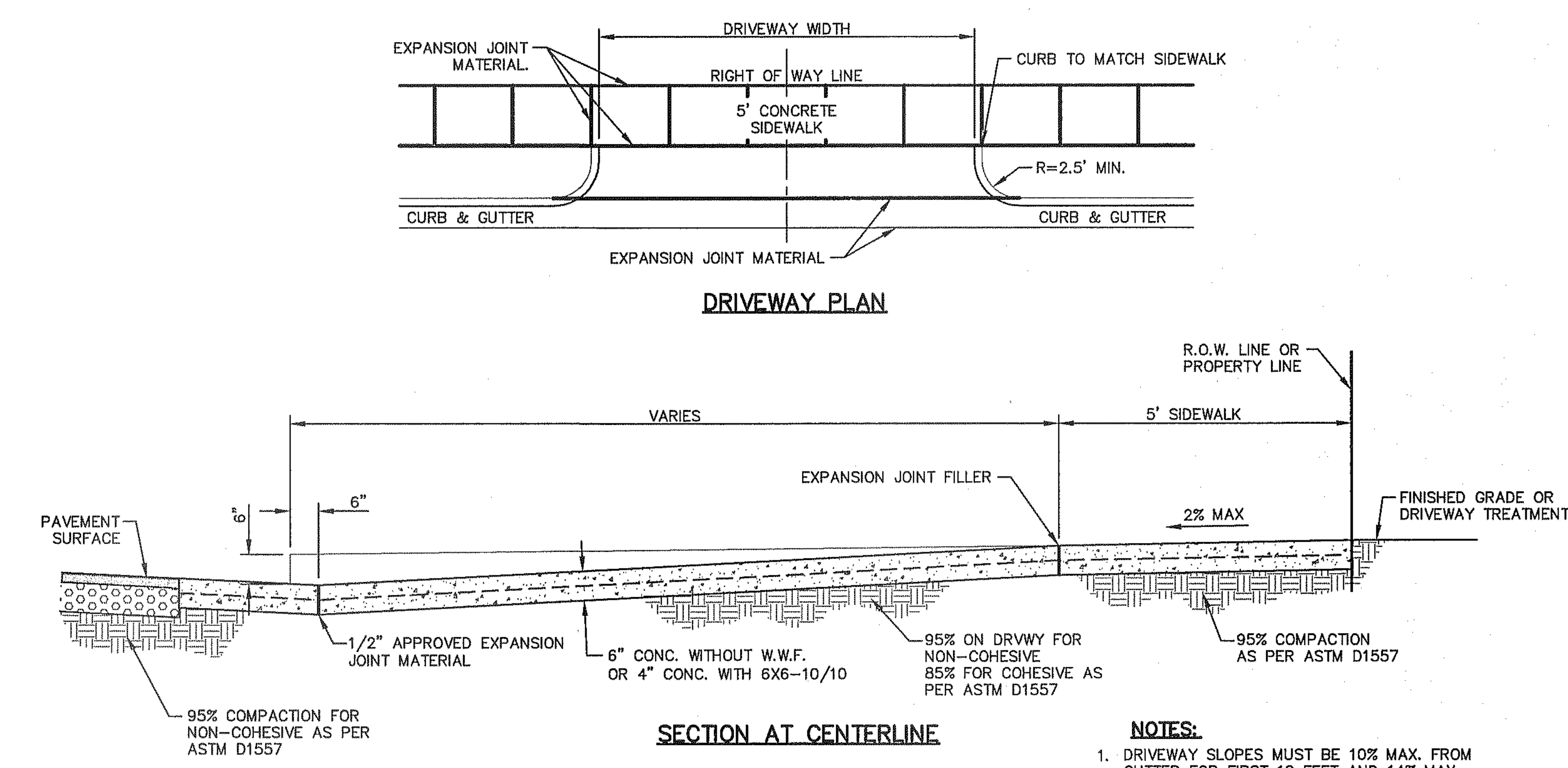
1 C8.1 **CURB & GUTTER DETAIL**
SCALE: 1" = 1'-0"



SIDEWALK NOTES:

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

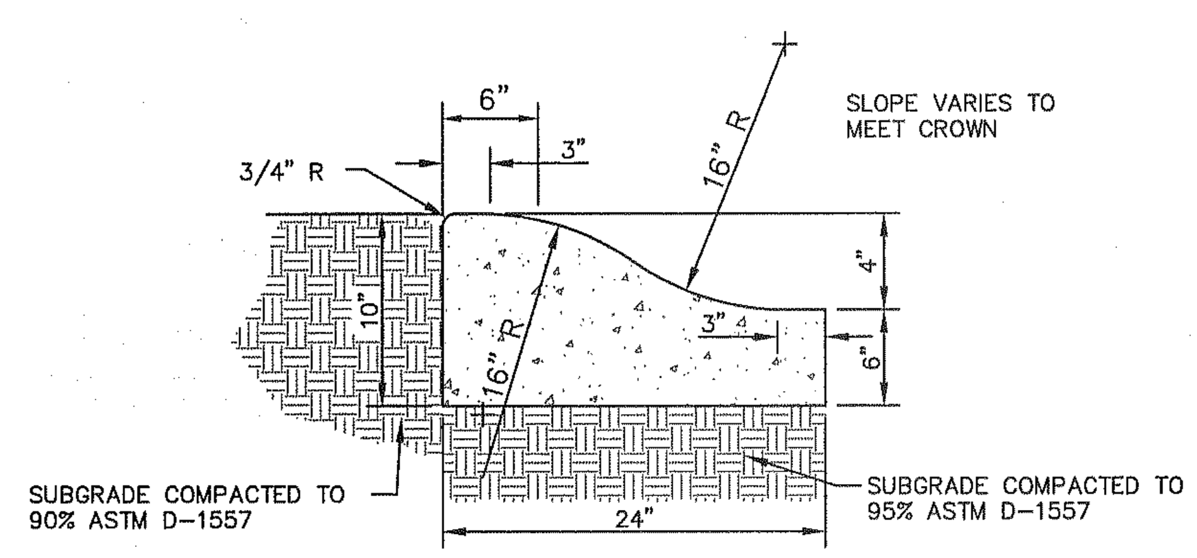
2 C8.1 **SECTION–SIDEWALK/SLAB**
SCALE: N.T.S.



3 C8.1 **TYPICAL DRIVEWAY DETAIL**
SCALE: N.T.S.

NOTES:

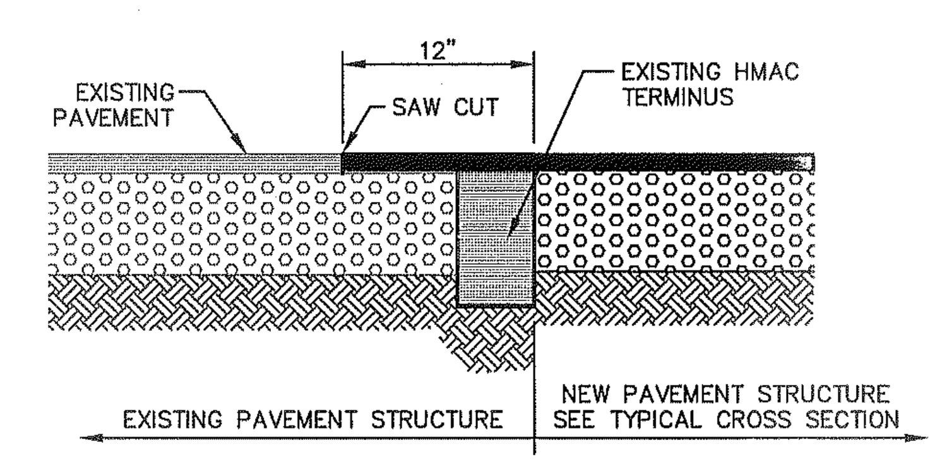
1. DRIVEWAY SLOPES MUST BE 10% MAX. FROM GUTTER FOR FIRST 12 FEET AND 14% MAX. THEREAFTER (DRIVEWAY SHALL BE LOCATED @ HIGH SIDE OF LOT UNLESS OTHERWISE COORDINATED WITH CITY OF EL PASO)
2. RESIDENTIAL
   6" CONCRETE WITHOUT W.W.F.
   4" CONCRETE WITH 6X6-10/10
3. COMMERCIAL
   6" CONCRETE WITH 6X6-6/6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



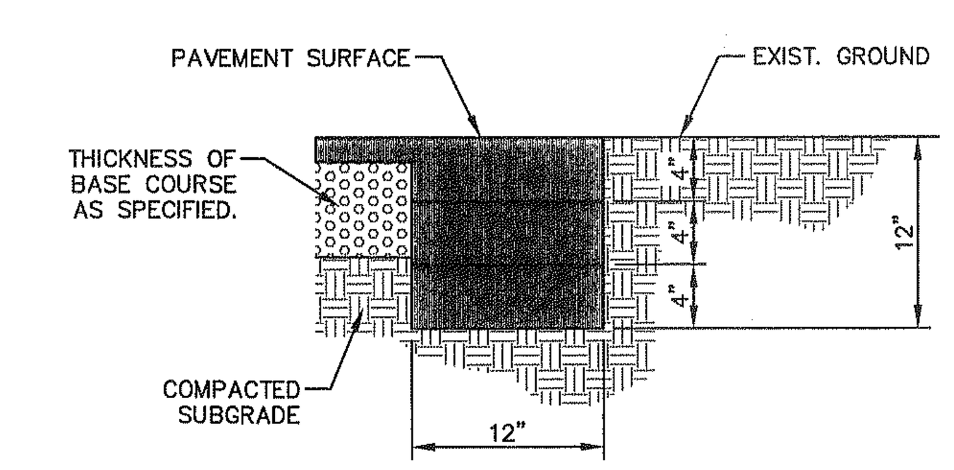
NOTES:

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

4 C8.1 **4" CONCRETE ROLLED CURB DETAIL**
SCALE: 1" = 1'-0"

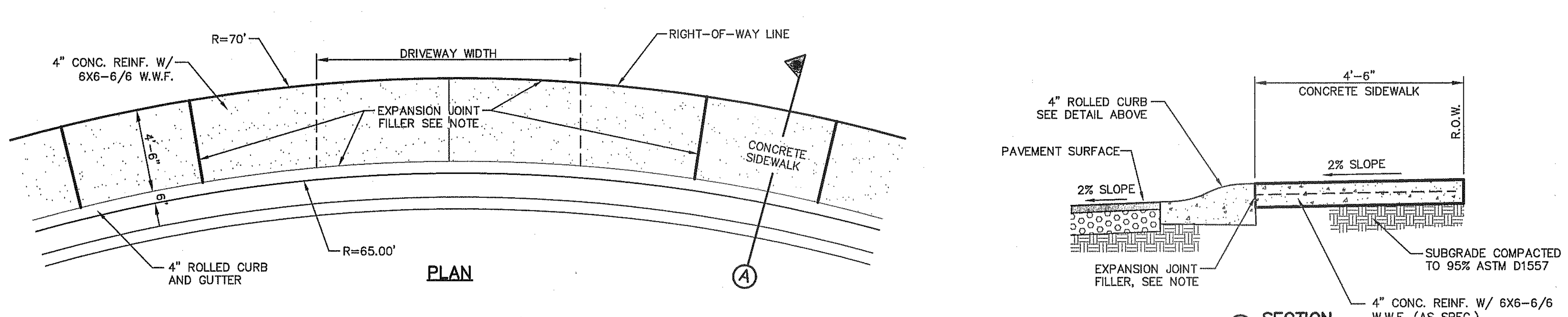


5 C8.1 **TYPICAL PAVEMENT JOINT SECTION**
SCALE: N.T.S.



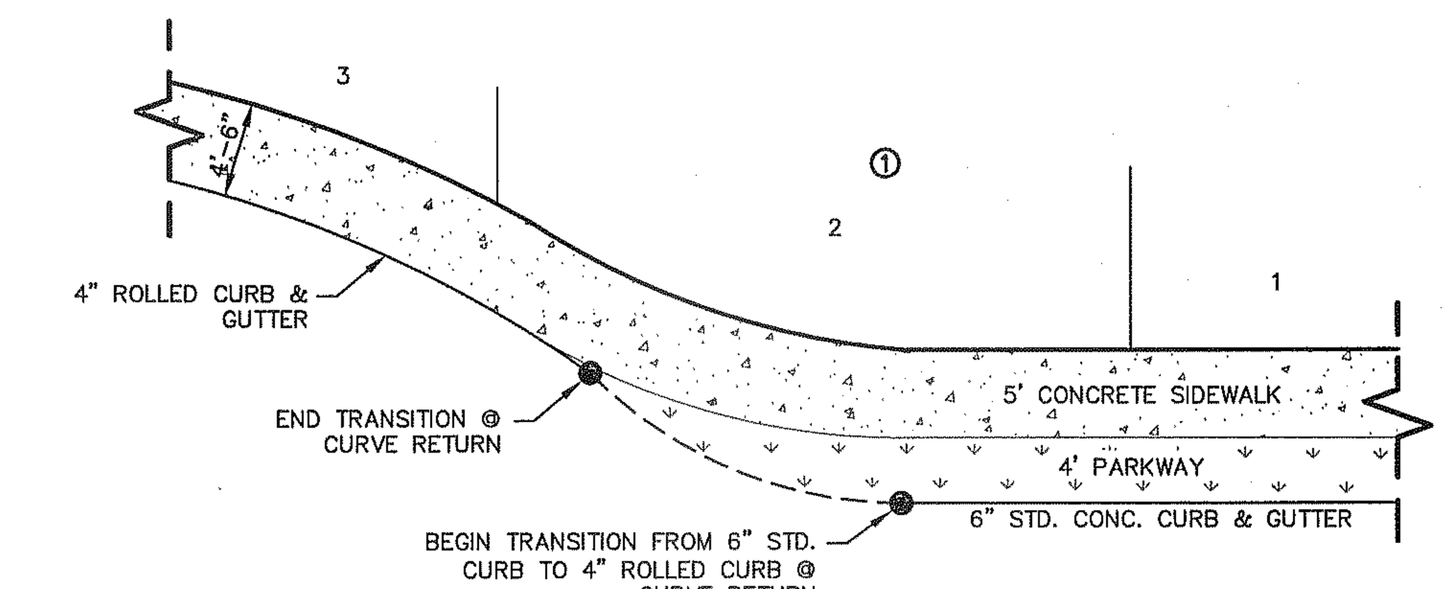
NOTE:
TERMINUS MUST BE CONSTRUCTED IN 4" LIFTS. FINAL LIFT MUST BE PLACED WITH FINAL PAVEMENT COURSE.

6 C8.1 **TERMINUS OF STREET**
SCALE: 1" = 1'-0"



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

7 C8.1 **HEEL (70' R) DRIVEWAY DETAIL**
SCALE: N.T.S.



8 C8.1 **TYPICAL HEEL/CUL-DE-SAC SIDEWALK TRANSITION**
SCALE: N.T.S.

THE CITY OF EL PASO TEXAS
Final Approval

REFERENCES – BENCHMARKS
CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN, ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

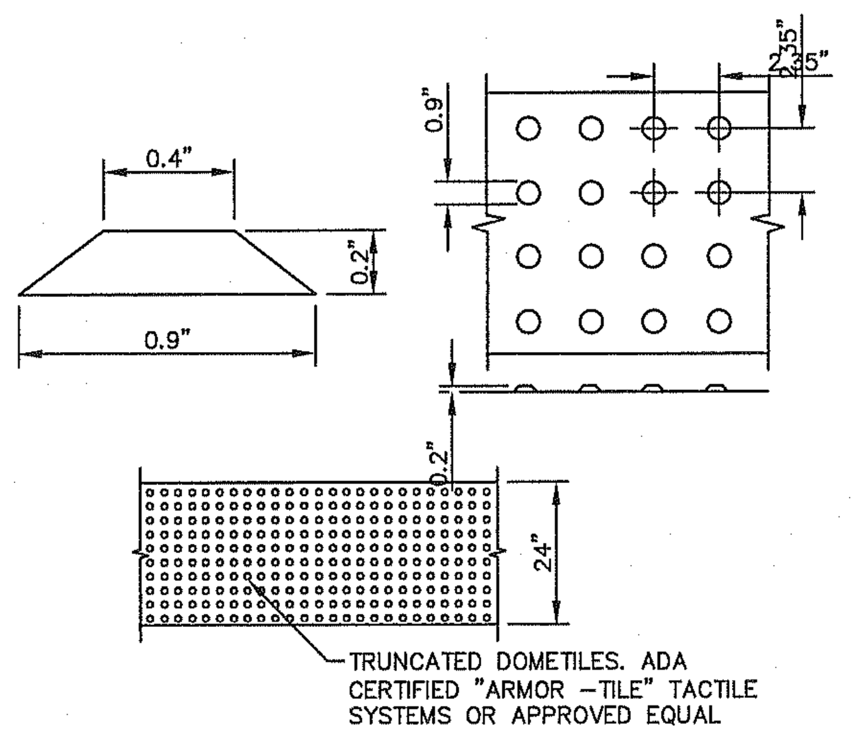
ENGINEER'S SEAL
STATE OF TEXAS
JORGE L. AZCARATE
85075
PROFESSIONAL ENGINEER
10-28-19

SCALE
Horizontal: N/A
Vertical: N/A
Contour Interval: N/A
DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

PROJECT TITLE
LA PUESTA DEL SOL UNIT THREE
SUBDIVISION IMPROVEMENTS

SHEET TITLE
STANDARD DETAILS
(SHEET 1 OF 2)
SHEET NO.
C8.1

S:\2000\2000-210-La Puesta Del Sol Unit Three\DWGS\Construction Drawings\Improvement Plans\C8.1-C8.2-Standard Details.dwg, 11/4/2019 10:27:15 AM



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

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

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

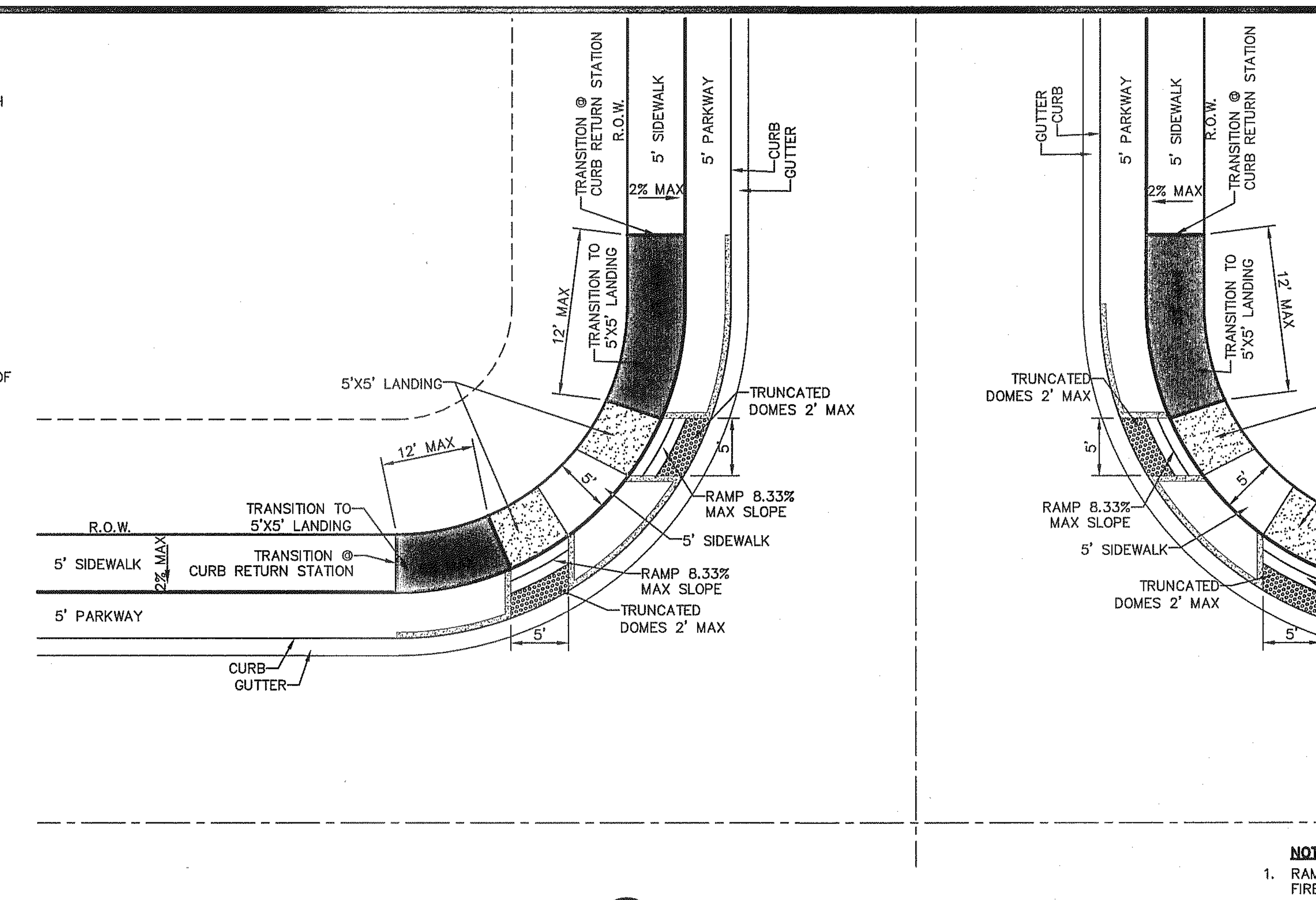
1/C8.2 TRUNCATED DOME SIZE AND SPACING
SCALE: N.T.S.

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 HAVE A COLOR CONTRAST VISUALLY WITH ADJOINING SURFACES.

GENERAL NOTES:

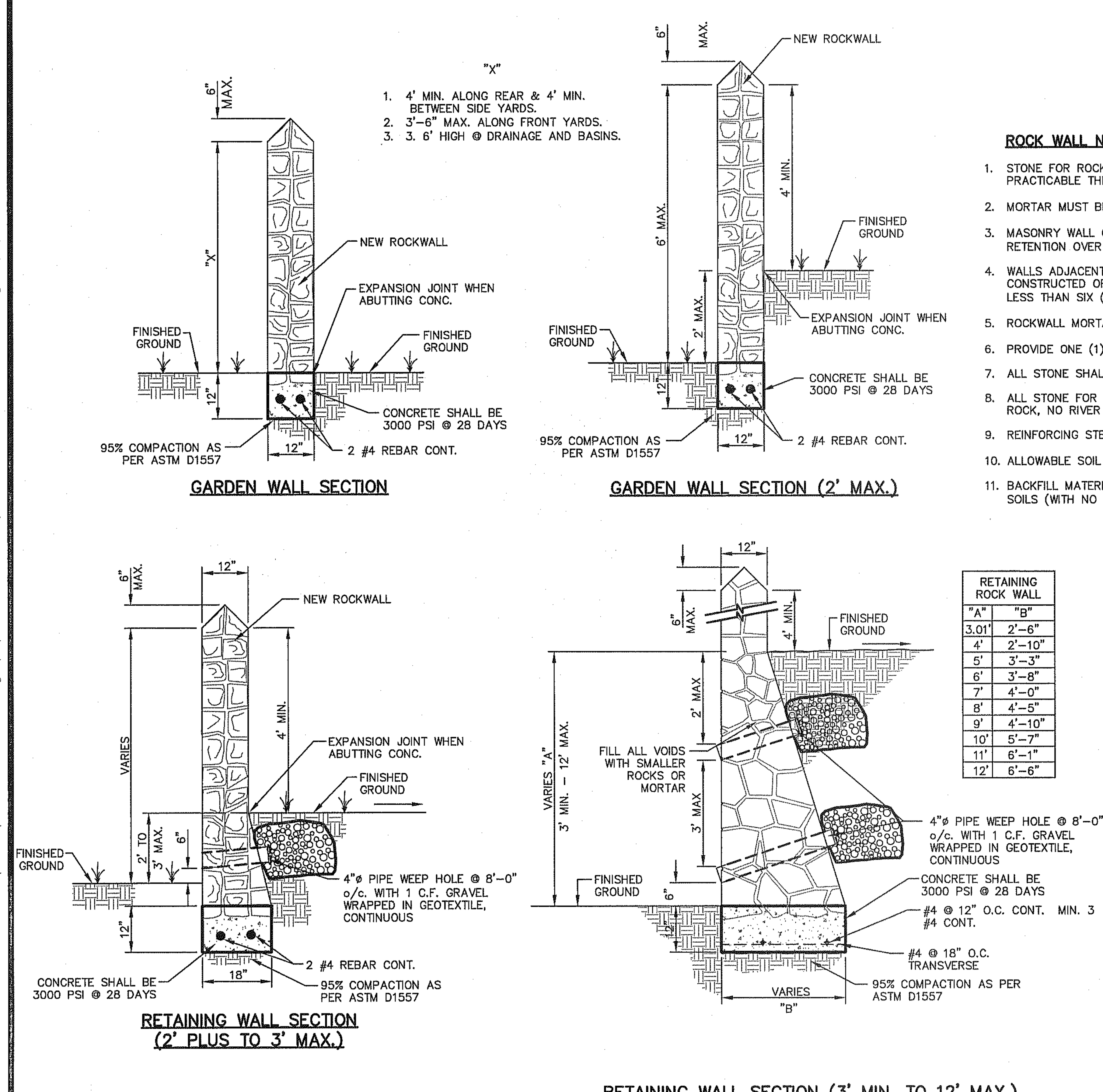
1. ALL SLOPES ARE MAXIMUM ALLOWABLE. THE LEAST POSSIBLE SLOPE THAT WILL STILL DRAIN PROPERLY SHOULD BE USED. RAMP LENGTH OR GRADE OF APPROACH SIDEWALKS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.
2. THE MINIMUM SIDEWALK WIDTH IS 5'. WHERE A 5' SIDEWALK CAN NOT BE PROVIDED DUE TO SITE CONSTRAINTS, A 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).



2/C8.2 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 STANDARDS.

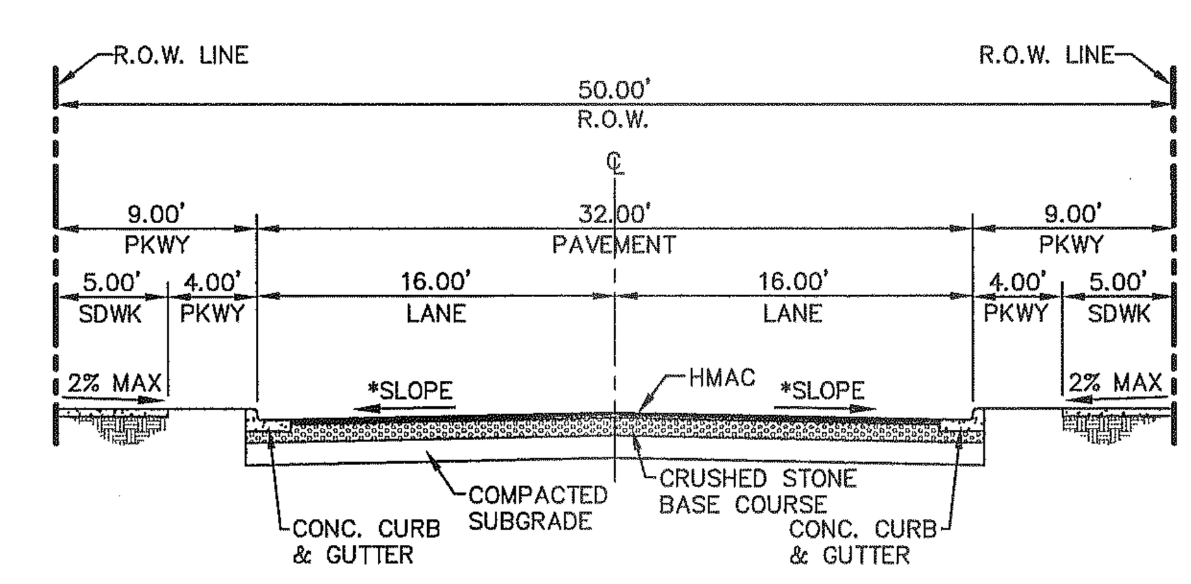


RETAINING ROCK WALL	
"A"	"B"
3.01'	2'–6"
4'	2'–10"
5'	3'–3"
6'	3'–8"
7'	4'–0"
8'	4'–5"
9'	4'–10"
10'	5'–7"
11'	6'–1"
12'	6'–6"

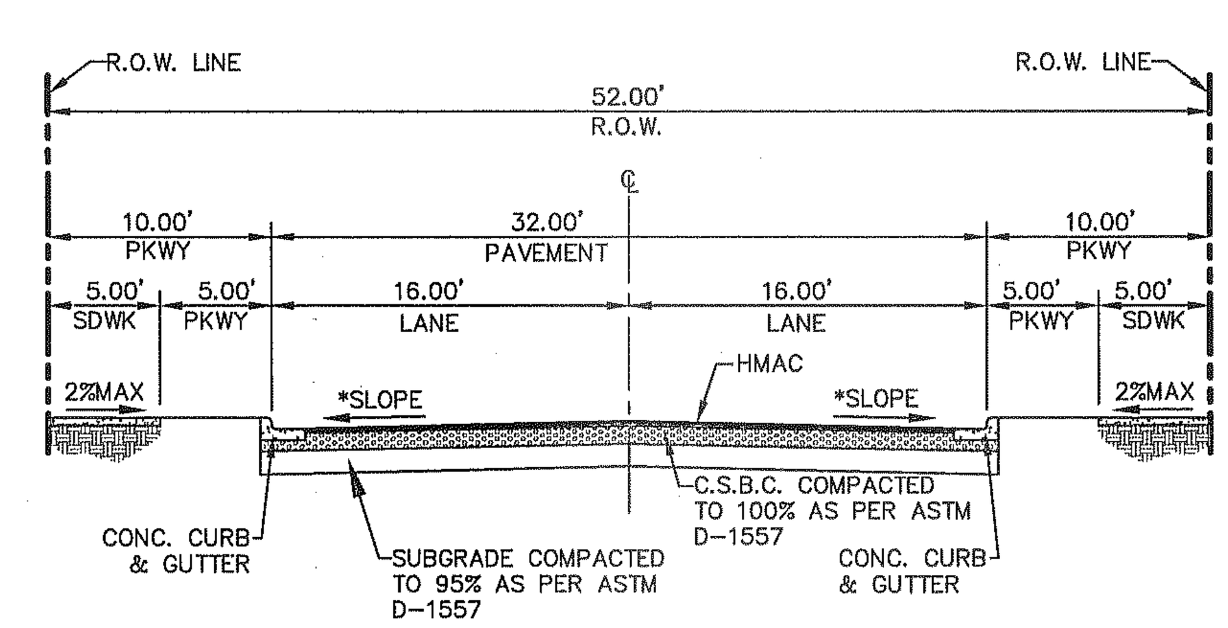
3/C8.2 TYPICAL ROCKWALL DETAILS
SCALE: 1" = 2'–0"

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).



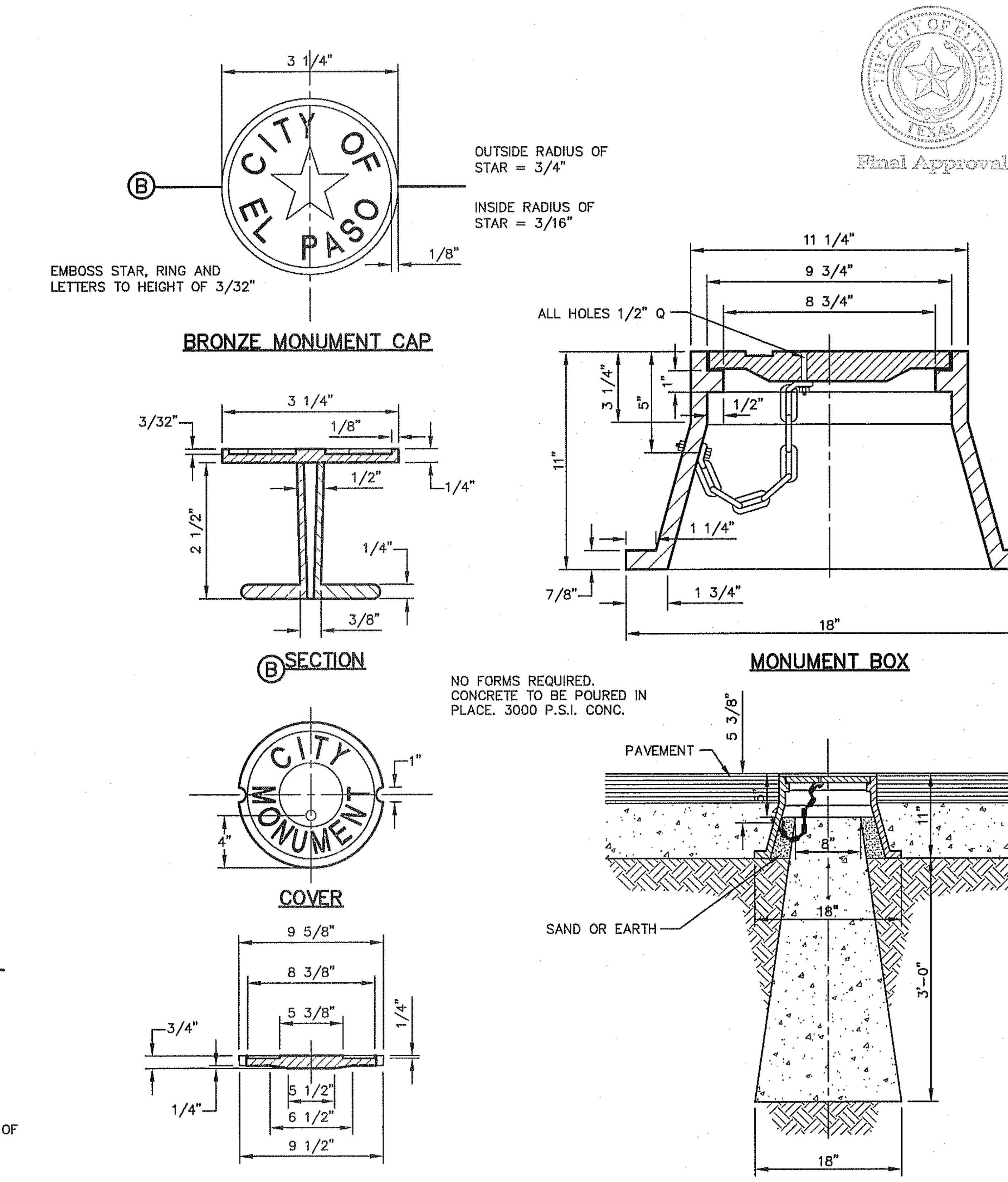
4/C8.2 TYPICAL 50' ROW STREET SECTION DETAIL
SCALE: N.T.S.



5/C8.2 TYPICAL 52' ROW STREET SECTIONS DETAIL
SCALE: N.T.S.

STREETS NOTES:

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



6/C8.2 CITY SURVEY MONUMENT DETAILS
SCALE: N.T.S.

Final Approval

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO"
ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

ENGINEER'S SEAL
STATE OF TEXAS — JORGE L. AZCARATE — 85075 — LICENSED PROFESSIONAL ENGINEER — 10–28–19

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

DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000–210

PROJECT TITLE

LA PUESTA DEL SOL UNIT THREE SUBDIVISION IMPROVEMENTS

SHEET TITLE

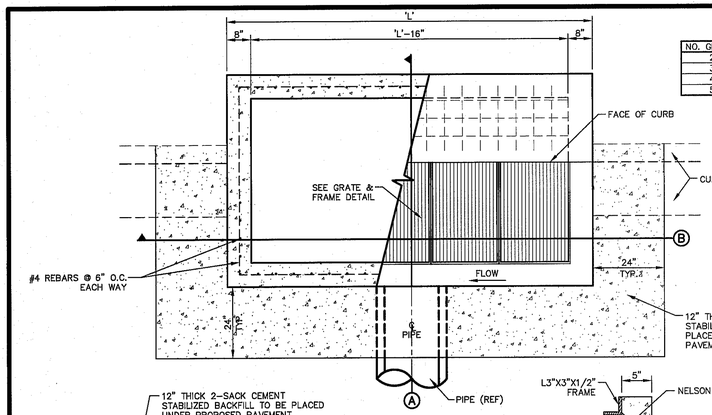
STANDARD DETAILS

(SHEET 2 OF 2)

SHEET NO.

C8.2

S:\2000\2000-210-La Puesta Del Sol Unit Three\DWGS\Construction Drawings\Improvement Plans\C8.1-C8.2-Standard Details.dwg, 11/4/2019 10:27:35 AM



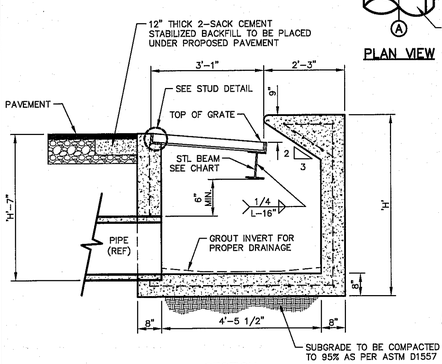
PLAN VIEW

NO. GRATES	CAPACITY	"L"	BEAM LENGTH	BEAM (MIN. SIZES)
2	19.63 CFS	5'-1 1/8"	4'-7 1/8"	W6x12, 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

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.



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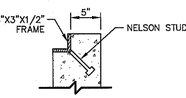
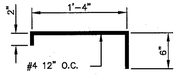
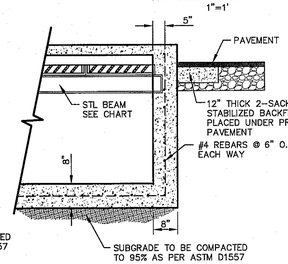


STUD DETAIL
1"=1'



BAR "I" DETAIL
1"=1'



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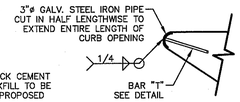
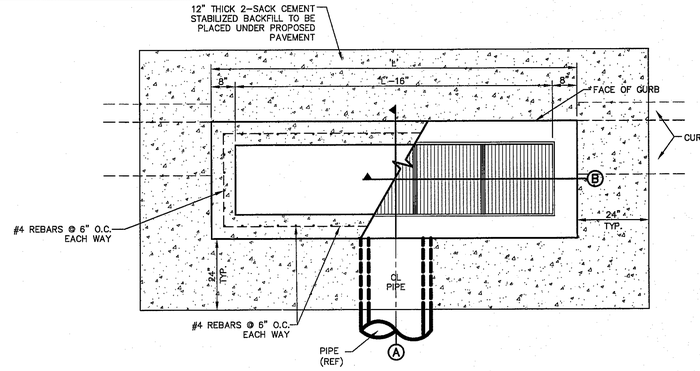


DETAIL "B"
1"=1'

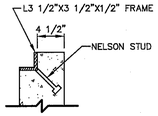
DROP INLET GENERAL NOTES:

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.

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



PLAN VIEW



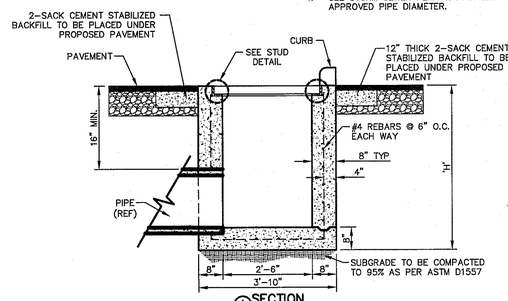
STUD DETAIL
N.T.S.

NOTES:

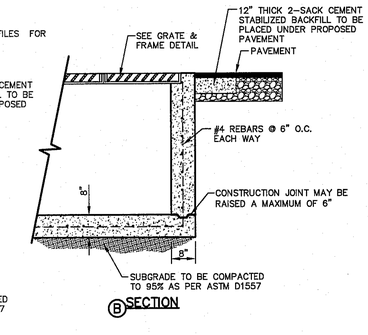
1. GRATES TO BE PERPENDICULAR TO TRAFFIC
2. CONCRETE TO BE 3,000 PSI (MIN.) CORE TEST @ 28 DAYS.
3. H=20' MAXIMUM
4. SEE STORM SEWER PLAN & PROFILES FOR APPROVED PIPE DIAMETER.

NUMBER OF GRATES	"L"	CAPACITY*
2	5'-1 1/8"	9.436 CFS
3	7'-1/8"	14.155 CFS
4	8'-9 7/8"	18.873 CFS
5	10'-8"	23.592 CFS

* THESE CAPACITIES CORRESPOND TO A CLOGGING FACTOR OF 0.5

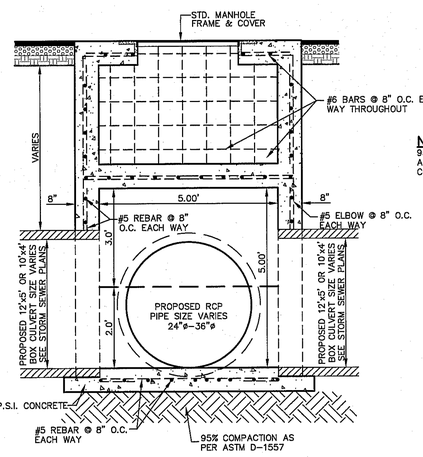


SECTION



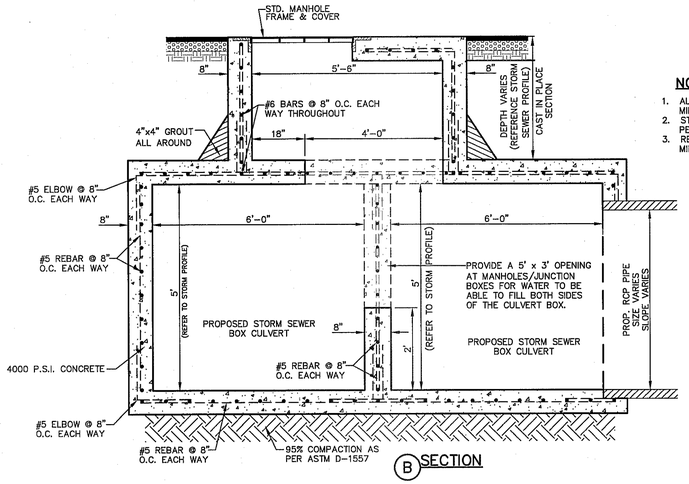
SECTION

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



SECTION

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

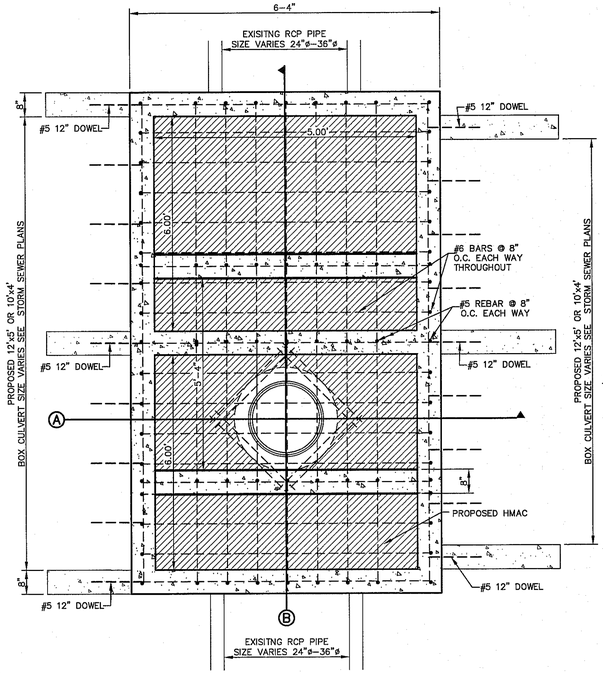


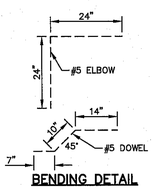
SECTION

NOTE:

1. ALL CONCRETE SHALL HAVE 4000 PSI MIN. @ 28 DAYS.
2. STRUCTURE TO BE CONSTRUCTED AS PER H20 LOADING REQUIREMENTS.
3. REINFORCED STEEL SHALL BE A MINIMUM OF GRADE 40.

3 / C9.1 MODIFIED CAST-IN PLACE JUNCTION MANHOLE DETAIL
SCALE: N.T.S.





BENDING DETAIL

THE CITY OF EL PASO TEXAS
Final Approval

REFERENCES - BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "LOMA". ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

oea group
TEXAS REGISTERED ENGINEERING FIRM F-454
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.oeagroup.net

ENGINEER'S SEAL

STATE OF TEXAS — JORGE L. ACOSTA — 85075 — LICENSED PROFESSIONAL ENGINEER — 10-28-19

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

DATE: JUNE 2019
DESIGN BY: C.O.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

PROJECT TITLE

LA PUESTA DEL SOL
UNIT THREE
SUBDIVISION IMPROVEMENTS

SHEET TITLE

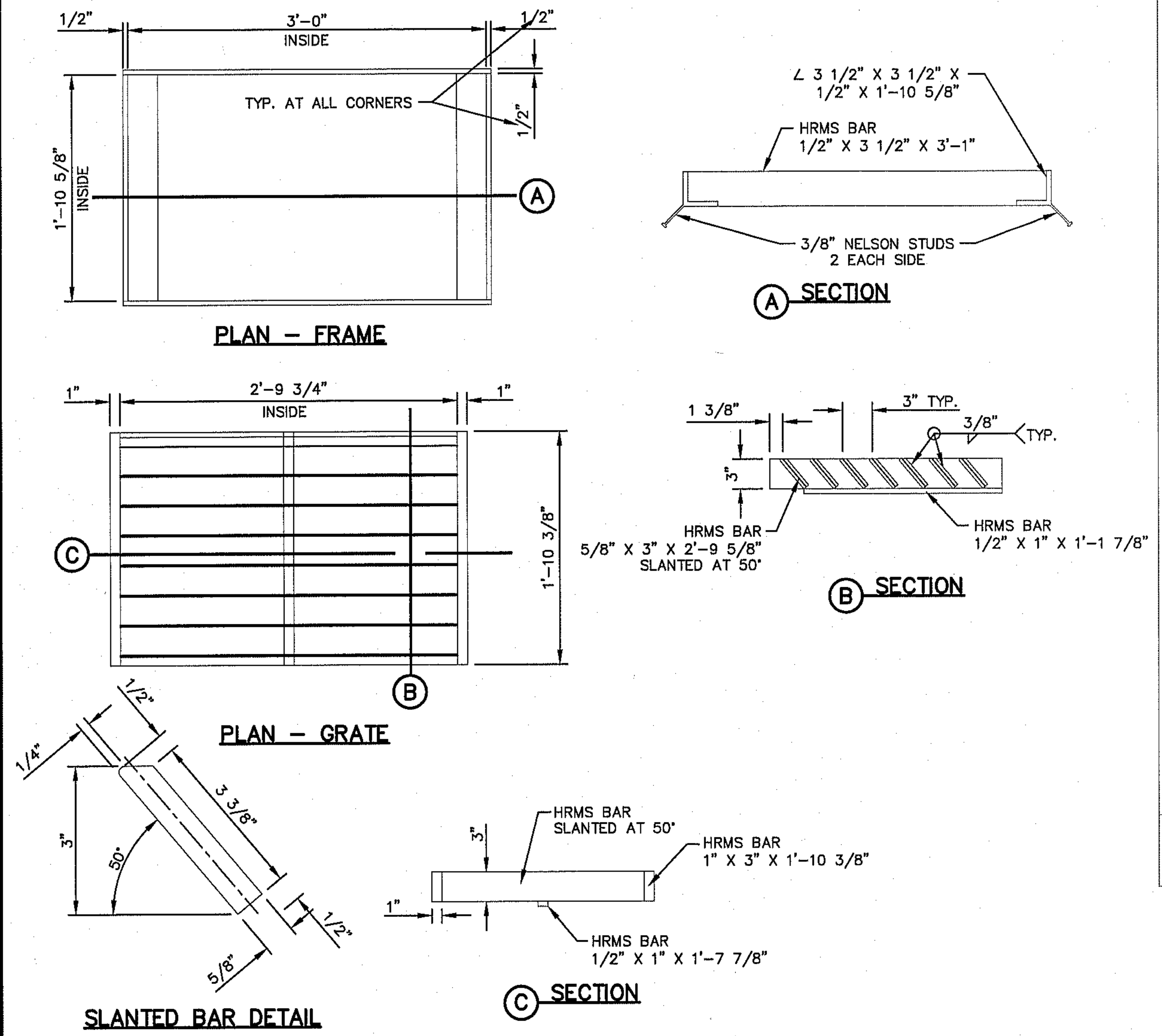
DRAINAGE DETAILS

(SHEET 1 OF 4)

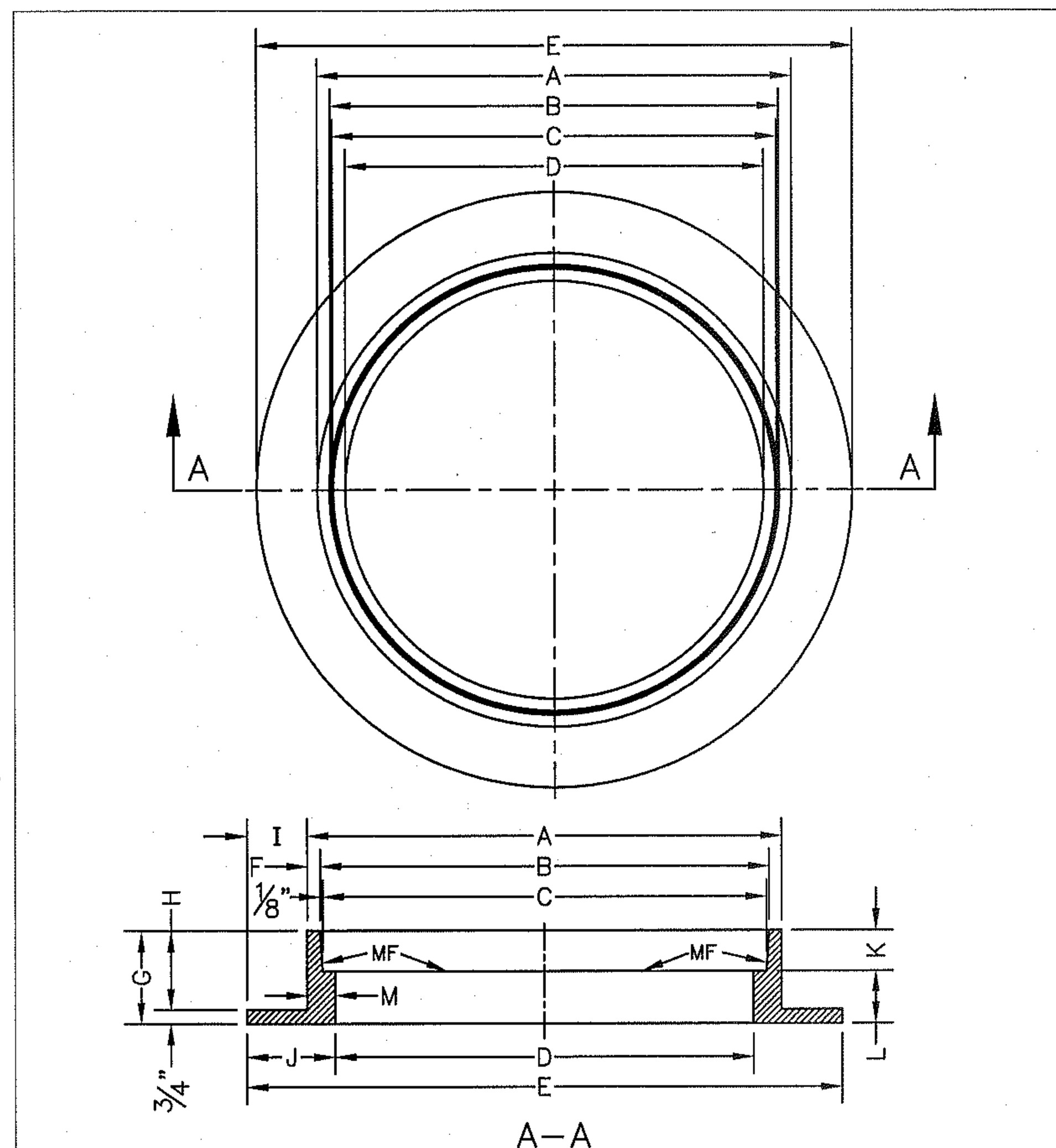
SHEET NO.

C9.1

S:\2000\2000-210-La Puesta Del Sol Unit Three\DWGS\Construction Drawings\Improvement Plans\C9.1-Drainage Details.dwg, 11/4/2019 10:28:26 AM



1 C9.2 GRATE AND FRAME DETAILS
SCALE: 1" = 1'-0"



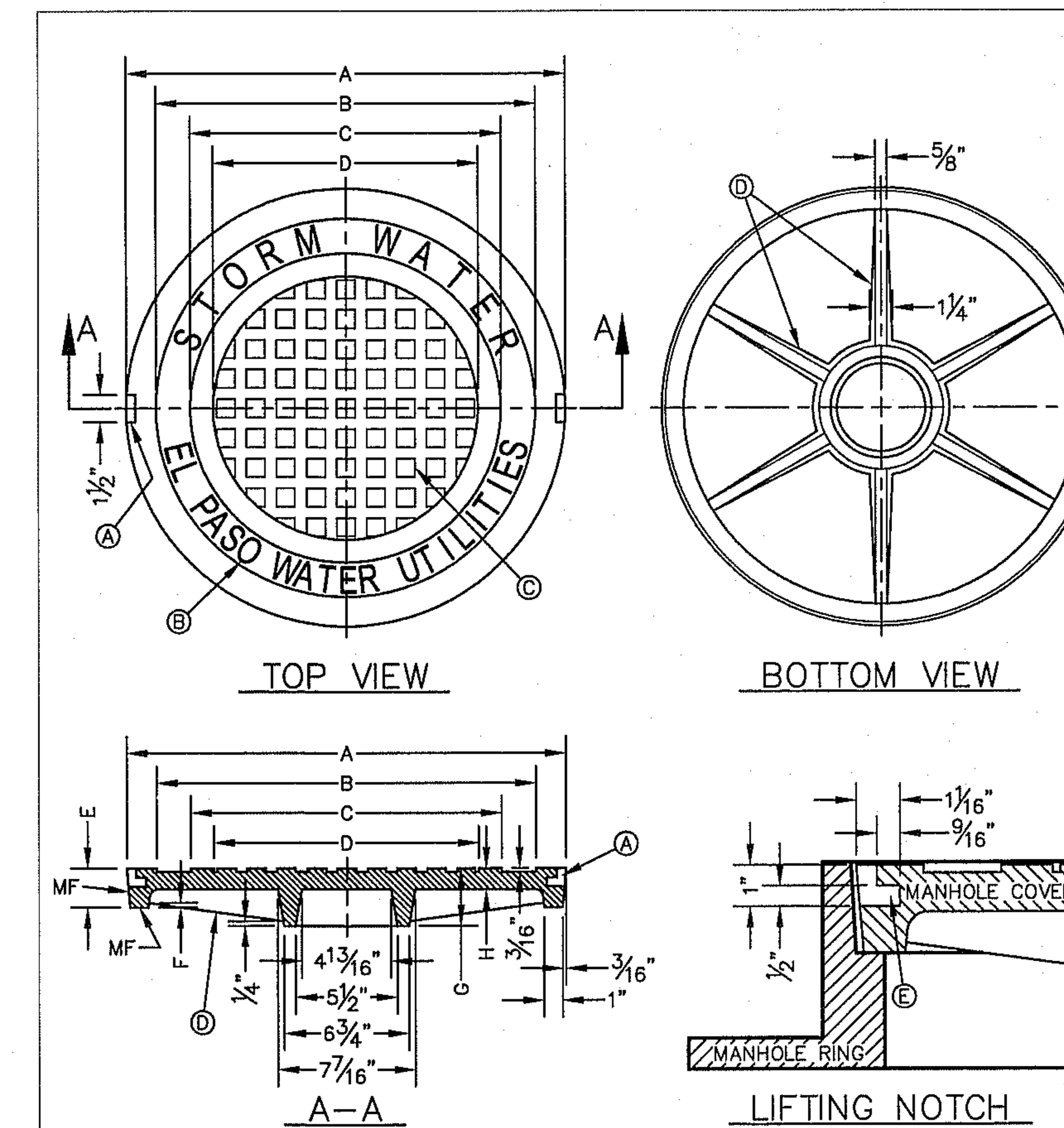
GENERAL NOTES:
1. MATCHING SURFACES MARKED "MF" TO BE FINISHED OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
2. CASTING TO BE SMOOTH & VOID OF AIR HOLES.
3. CASTING MUST MEET REQUIREMENTS OF AASHTO M306-07.
4. AS-CAST DIMENSIONS MAY VARY 1/16"±/ PER FOOT (AASHTO M306-07).
5. WEIGHT MAY VARY 5%±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

SEE NOTE 6

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

STANDARD DETAIL | DATE: 8/19/2009 REV: | STORMWATER MANHOLE RING | N.T.S. | EL PASO WATER UTILITIES PUBLIC SERVICE BOARD | DETAIL No. 916

2 C9.2 STORMWATER MANHOLE RING
N.T.S.



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

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

SEE NOTE 6

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

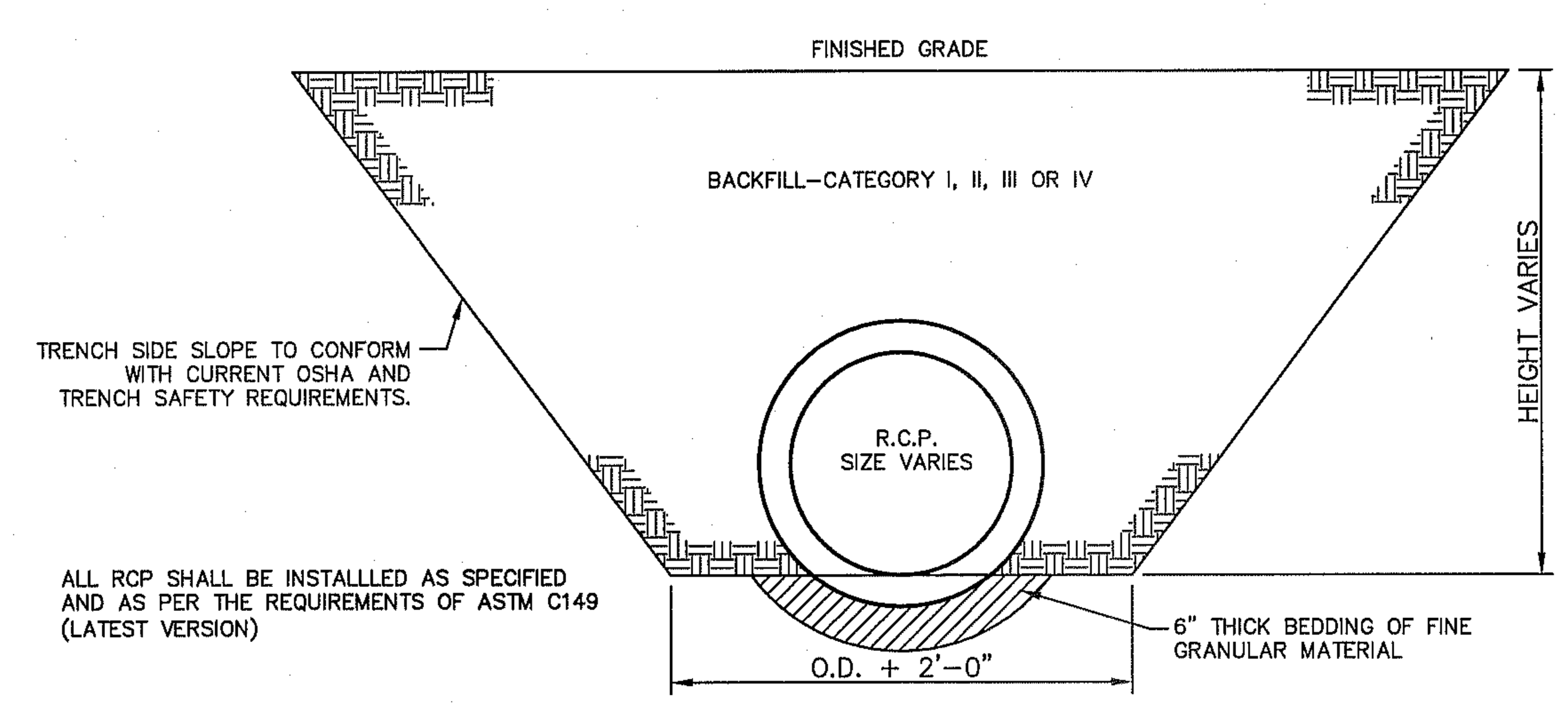
STANDARD DETAIL | DATE: 8/19/2009 REV: | STORMWATER MANHOLE COVER | N.T.S. | EL PASO WATER UTILITIES PUBLIC SERVICE BOARD | DETAIL No. 917

3 C9.2 STORMWATER MANHOLE COVER
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



ALL RCP SHALL BE INSTALLLED AS SPECIFIED AND AS PER THE REQUIREMENTS OF ASTM C149 (LATEST VERSION)

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.

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

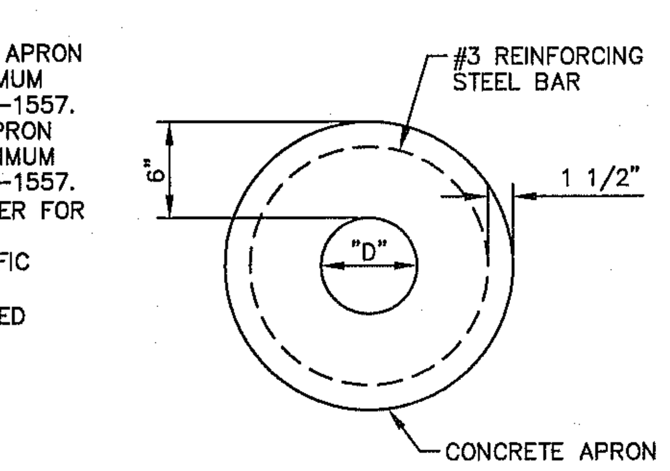
CONCRETE APRON FOR CIRCULAR PENETRATIONS IN ASPHALT PAVEMENTS				
"D" DIAMETER OF PENETRATION (INCHES)	"A" CONCRETE HORIZONTAL DIMENSION FROM PENETRATION (INCHES)	NUMBER OF NO. 3 REINFORCING STEEL BARS (QUANTITY)	"B" MINIMUM CLEARANCE FROM EDGE OF CONCRETE APRON TO CENTER OF NEAREST REBAR (INCHES)	"C"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

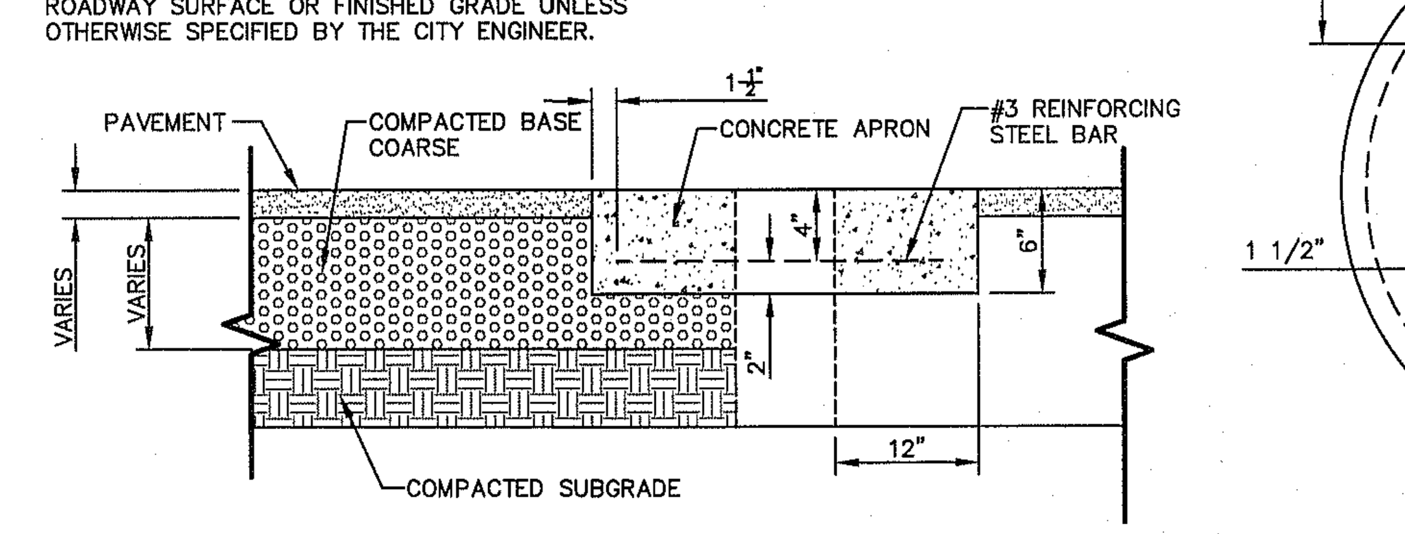
1. ANY DISTURBED SUBGRADE UNDER THE CONCRETE APRON SHALL BE COMPACTED TO 95% DENSITY ±3% OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D-1557.
2. ANY DISTURBED COARSE UNDER THE CONCRETE APRON SHALL BE COMPACTED TO 100% DENSITY ±2% OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D-1557.
3. PROVIDE 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:

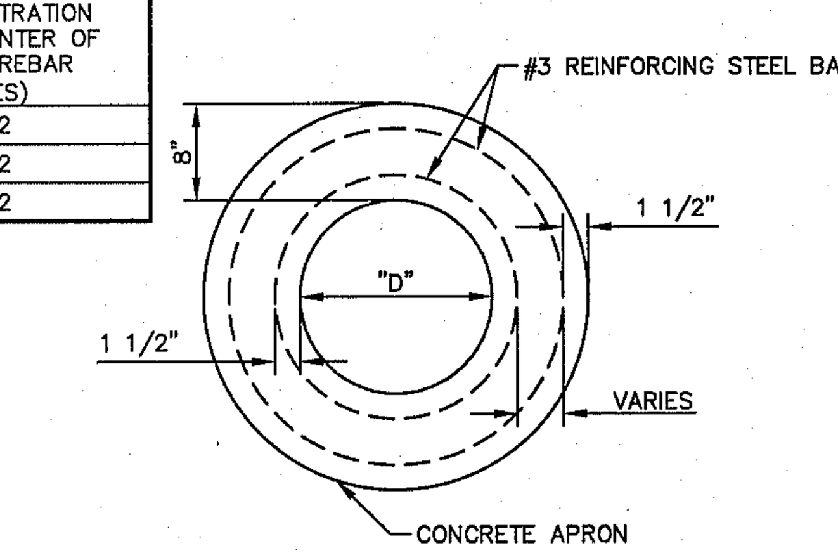
1. THE PENETRATION APRON SHOULD BE CAST IN-PLACE CONCRETE. (MINIMUM 28 DAY COMPRESSIVE STRENGTH 4000 PSI. HIGH EARLY CONCRETE IS REQUIRED).
2. TOPS OF PENETRATION APRON SHALL BE FLUSH WITH ROADWAY SURFACE OR FINISHED GRADE UNLESS OTHERWISE SPECIFIED BY THE CITY ENGINEER.



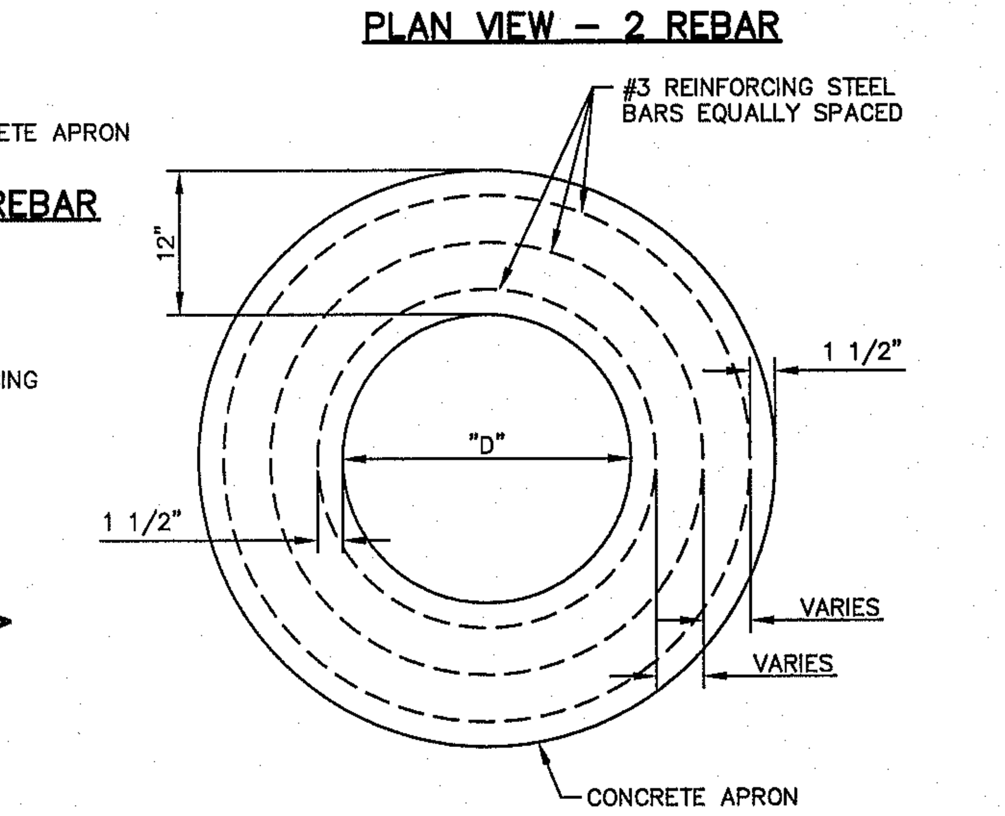
PLAN VIEW - SINGLE REBAR



SECTION



PLAN VIEW - 2 REBAR



PLAN VIEW - 3 REBAR

5 C9.2 PENETRATION APRON DETAILS
SCALE: N.T.S.

REFERENCES - BENCHMARKS
CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

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TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

ENGINEER'S SEAL
STATE OF TEXAS JORGE L. AZCARATE 85075 LICENSED PROFESSIONAL ENGINEER 10-28-19

SCALE
Horizontal: AS SHOWN
Vertical: N/A
Contour Interval: N/A
DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

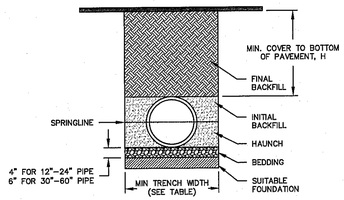
PROJECT TITLE
LA PUESTA DEL SOL UNIT THREE SUBDIVISION IMPROVEMENTS

SHEET TITLE
DRAINAGE DETAILS
(SHEET 2 OF 4)
SHEET NO.
C9.2

THE CITY OF EL PASO TEXAS
Final Approval

S:\2000\2000-210-La Puesta Del Sol Unit Three\DWGS\Construction Drawings\Improvement Plans\C9.1-Drainage Details.dwg. 11/4/2019 10:28:53 AM

PP TRENCH INSTALLATION DETAIL FOR STORM APPLICATIONS



PIPE DIAM.	CLASS I COMPACTED	CLASS II 95%	CLASS II 90%	CLASS III 95%	CLASS III 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" (1220mm)
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

PIPE DIAM.	SURFACE LIVE LOADING CONDITION H-25	SURFACE LIVE LOADING CONDITION 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

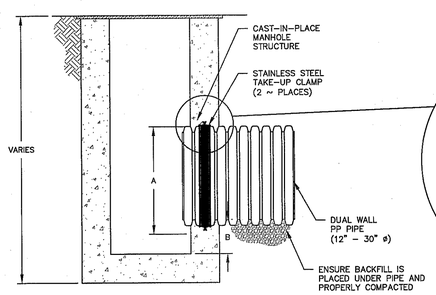
INSTALLATION DETAIL

ABC | DATE | ENG | NTS | OF

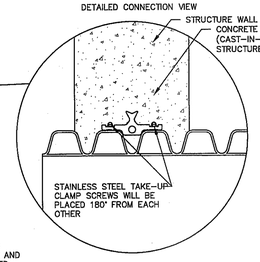
1 / C9.3 **#1–POLYPROPYLENE PIPE DETAIL FOR STORM SEWER APPLICATIONS (INSTILLATION DETAIL)**
SCALE: N.T.S.

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

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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

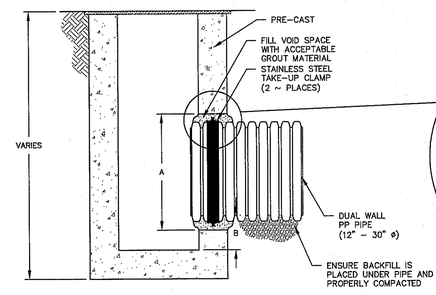
WATERSTOP GROUT RING CONNECTION DETAIL FOR CAST-IN-PLACE STRUCTURES

ABC | DATE | ENG | NTS | OF

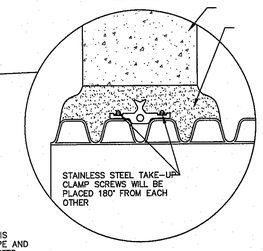
2 / C9.3 **#4–WATERSTOP 12"–30" DUEL WALL POLYPROPYLENE STORM DETAIL (WATERSTOP GROUT RING CONNECTION DETAIL FOR CAST–IN–PLACE STRUCTURES)**
SCALE: N.T.S.

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

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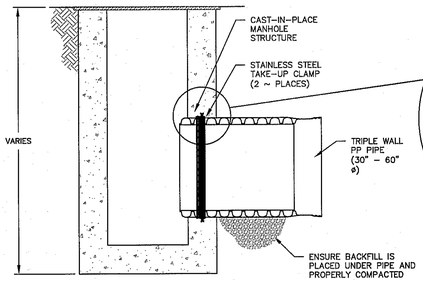
#2 - WATERSTOP 12"- 30" DUAL WALL POLYPROPYLENE STORM DETAIL

WATERSTOP GROUT RING CONNECTION DETAIL FOR PRECAST STRUCTURES

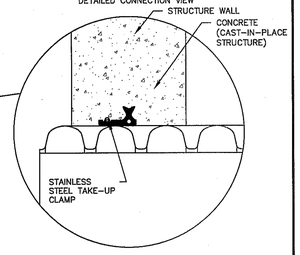
3 / C9.3 **#2–WATERSTOP 12"–30" DUAL WALL POLYPROPYLENE STORM DETAIL (WATERSTOP GROUT RING CONNECTION DETAIL FOR PRECAST STRUCTURES)**
SCALE: N.T.S.

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.

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

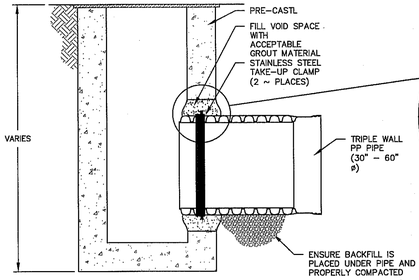
WATERSTOP GROUT RING CONNECTION DETAIL FOR CAST-IN-PLACE STRUCTURES

ABC | DATE | ENG | NTS | OF

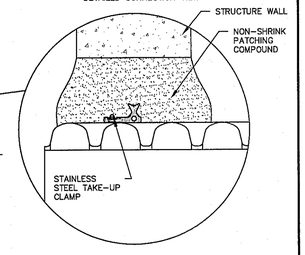
4 / C9.3 **#3–WATERSTOP TRIPLE WALL 30"–60" POLYPROPYLENE STORM DETAIL (WATERSTOP GROUT RING CONNECTION DETAIL FOR CAST–IN–PLACE STRUCTURES)**
SCALE: N.T.S.

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.

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

WATERSTOP GROUT RING CONNECTION DETAIL FOR PRECAST STRUCTURES

ABC | DATE | ENG | NTS | OF

5 / C9.3 **#5–WATERSTOP TRIPLE WALL 30"–60" POLYPROPYLENE STORM DETAIL (WATERSTOP GROUT RING CONNECTION DETAIL FOR PRECAST STRUCTURES)**
SCALE: N.T.S.

Final Approval

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "DOUGLAS RM 2" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
TEXAS REGISTERED ENGINEERING FIRM F-4594
4712 Woodrow Bean Ste F El Paso, TX 79924
915.544.2232 | www.ceagroup.net

ENGINEER'S SEAL

JORGE L. ACOSTA, 85075, LICENSED PROFESSIONAL ENGINEER, 10-28-19

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

DATE: JUNE 2019
DESIGN BY: J.L.A.
DRAWN BY: M.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

PROJECT TITLE

LA PUESTA DEL SOL UNIT THREE
SUBDIVISION IMPROVEMENTS

SHEET TITLE

DRAINAGE DETAILS

(SHEET 3 OF 4)

SHEET NO.

C9.3

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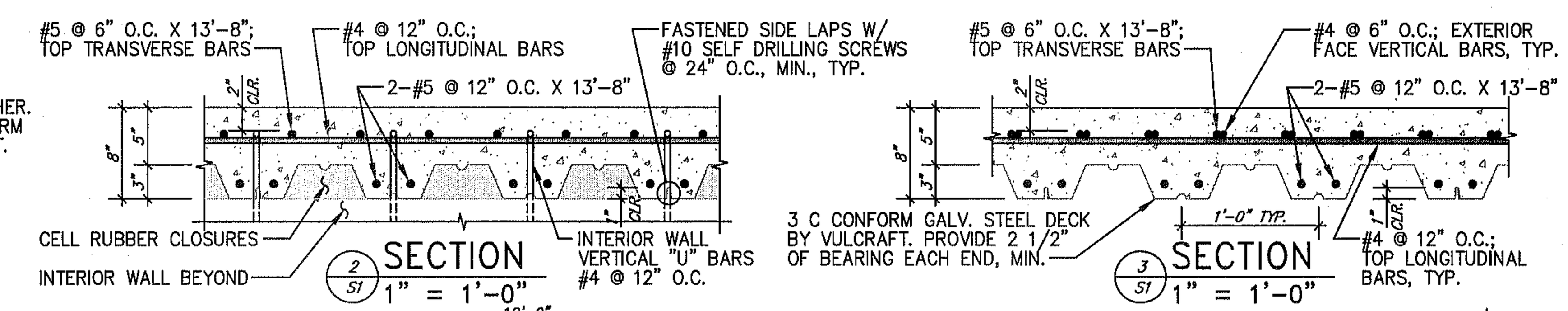
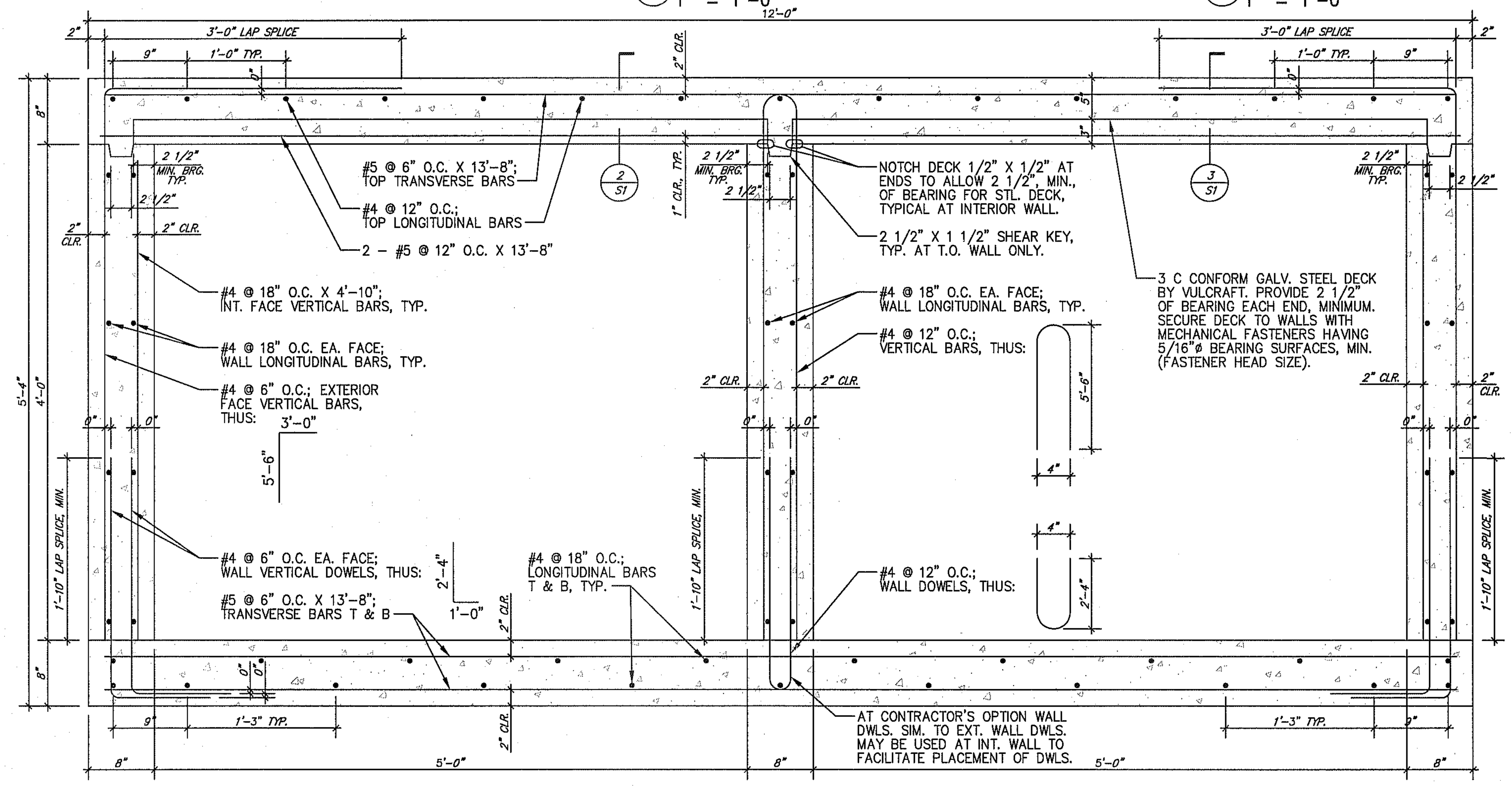
MATERIAL NOTES:

1. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.
2. ALL REINFORCING STEEL SHALL BE GRADE 60 OR HIGHER.
3. PERMANENT METAL FORM DECK SHALL BE 3 C CONFORM GALVINIZED STEEL DECK BY VULCRAFT OR EQUIVALENT.





10' x 4' REINFORCED CONCRETE BOX CULVERT

SCALE: N.T.S.

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group

TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

ENGINEER'S SEAL

STATE OF TEXAS JORGE L. AZCARATE 85075 LICENSED PROFESSIONAL ENGINEER 10-28-19

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

DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

PROJECT TITLE

LA PUESTA DEL SOL UNIT THREE SUBDIVISION IMPROVEMENTS

THE CITY OF EL PASO TEXAS Final Approval

SHEET TITLE

DRAINAGE DETAILS

(SHEET 4 OF 4)

SHEET NO.

C9.4

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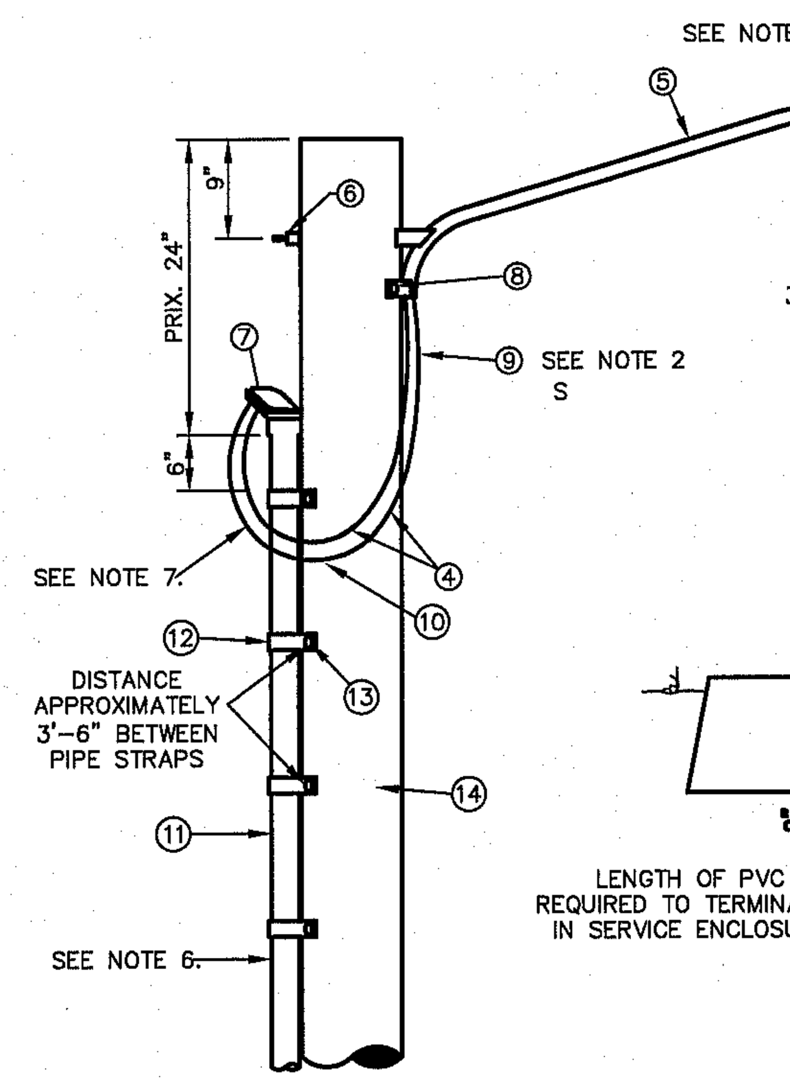
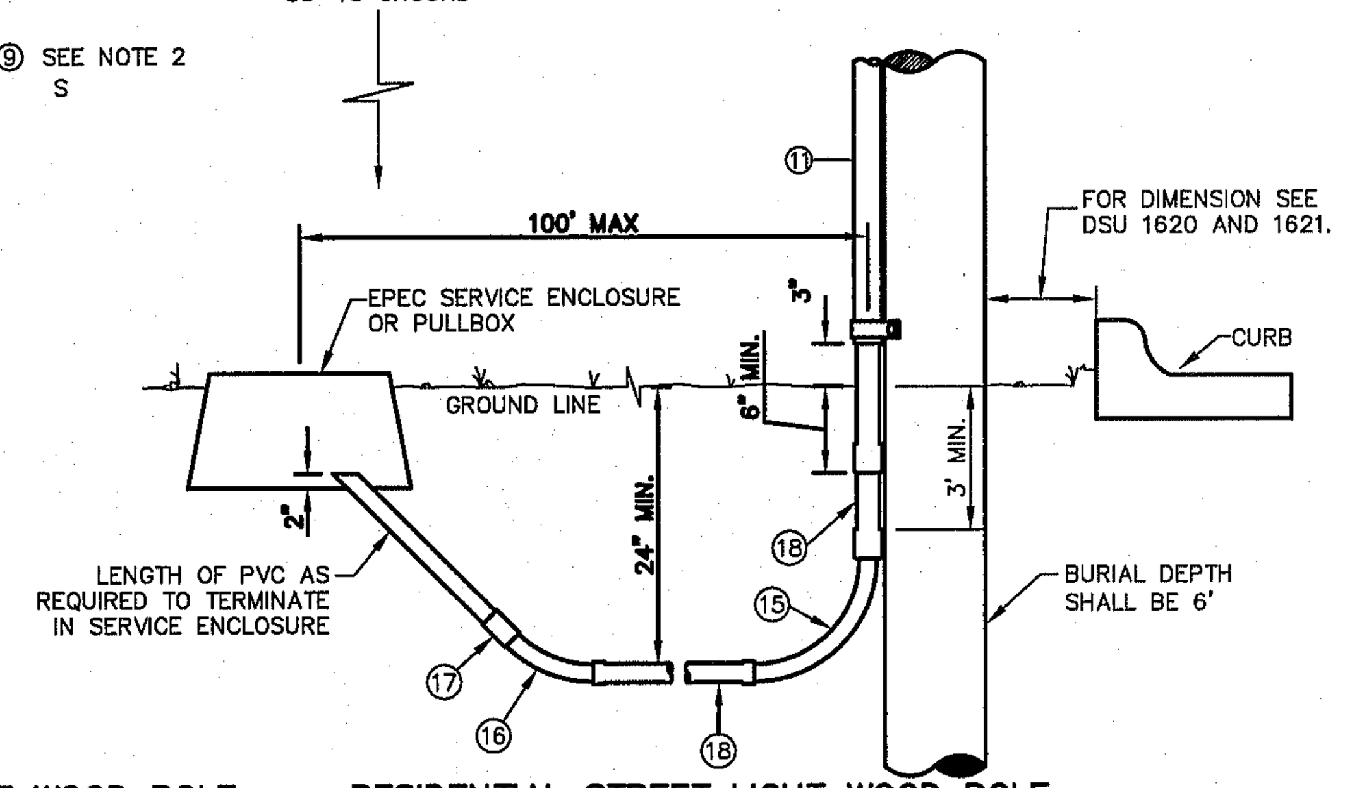
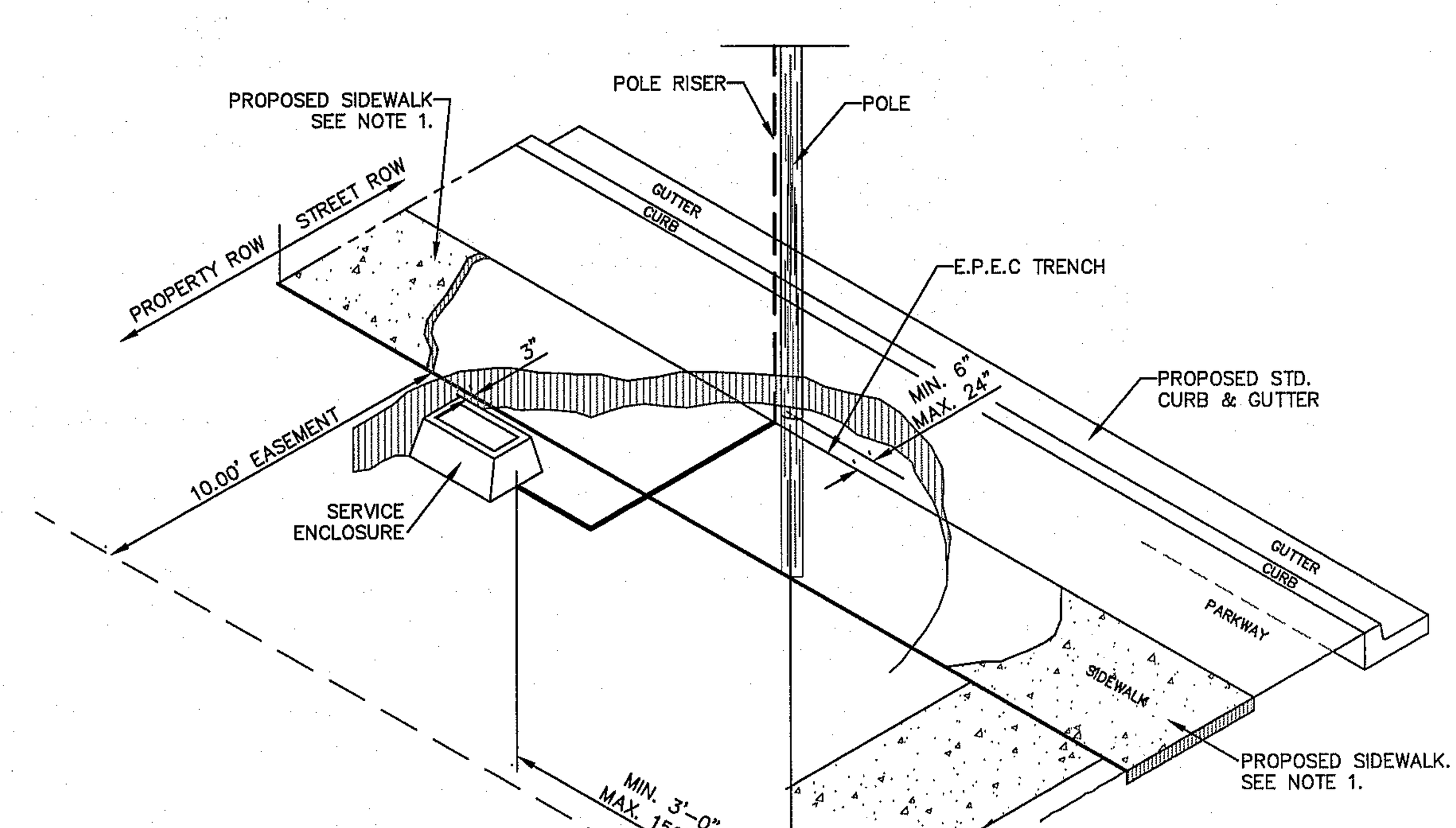


RESIDENTIAL STREET LIGHT WOOD POLE
SCALE: N.T.S.



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

ITEM NO.	DESCRIPTION	STOCK NO.	QTY.		
1	PHOTO CELL, 240 V–SEE NOTE 1	21–225	1	LCOBRAHD	LCOBRAUG
2	LED LAMP, 31W/32W L.E.D.	21–085	1		
3	LUMINARE, 31W/32W L.E.D.	21–335	1		
4	SLEEVES, #12–10	05–140	2	LSLV1210	
5	MAST ARM, 6" X 1 1/4"	21–200	1	LBRKT1*6	
6	MACHINE BOLT, 5/8" X 12"	02–470	1	LMB5/812	
	SQUARE GALV. WASHER, 2 1/4" X 2 1/4"	02–760	1		
	COIL SPRING WASHER, 5/8"	02–786	1		
	LOCK NUT, 5/8"	02–705	1		
7	SERVICE ENTRANCE CAP FOR 1" PVC CONDUIT	17–281	1	LSVCCAP1	
8	LAG BOLT, 3/8" X 3"	02–343	1	LLAG38*3	
9	CABLE, #10, 2 CONDUCTOR, 600V, UF	13–600	8'	L2C#10S	
10	COPPER CABLE, #12, SOLID, 600V, GREEN	13–702	60'	LC#12CU	
11	SCHEDULE 80 1" PVC CONDUIT	17–280	30'	LSCH801	
12	PIPE STRAP FOR 1" PVC CONDUIT, 2–HOLE	17–283	9'	LPVCSTRP	
13	NAIL, STAINLESS STEEL SCREW 2.5 IN.	14–427	.25#	LNAL14*2	
14	POLE, 35 FT. – CLASS 4	09–035	1	L354UG	
15	1" PVC 90 DEGREE ELBOW	17–297	1	LEL901	
16	1" PVC 45 DEGREE ELBOW	17–298	1	LEL451	
17	1" PVC COUPLING	17–296	1	LCPLG1	
18	1" PVC CONDUIT	17–299	AS REQ	LPVC1	



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

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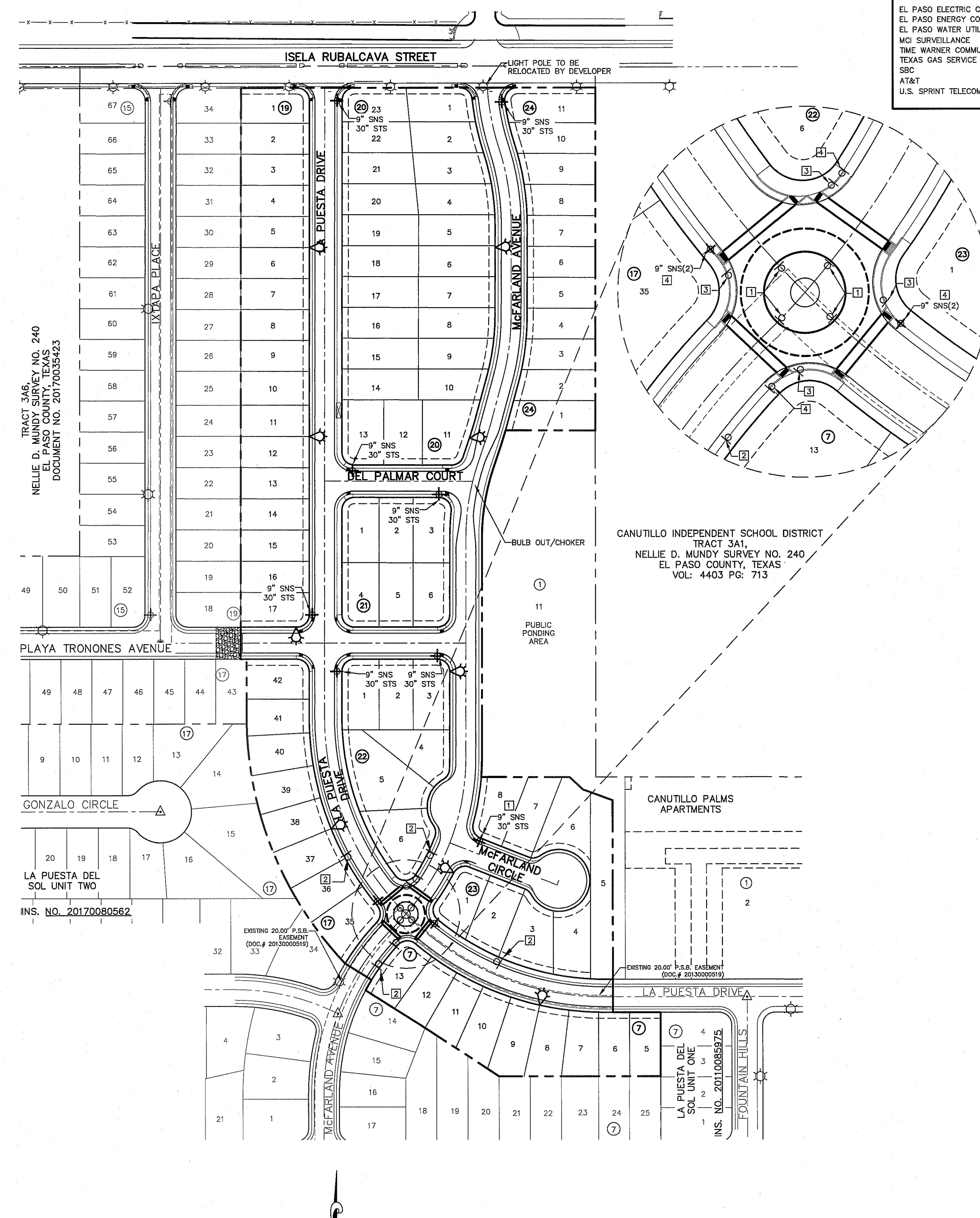


ILLUMINATION AND SIGNAGE PLAN
SCALE: 1" = 100'

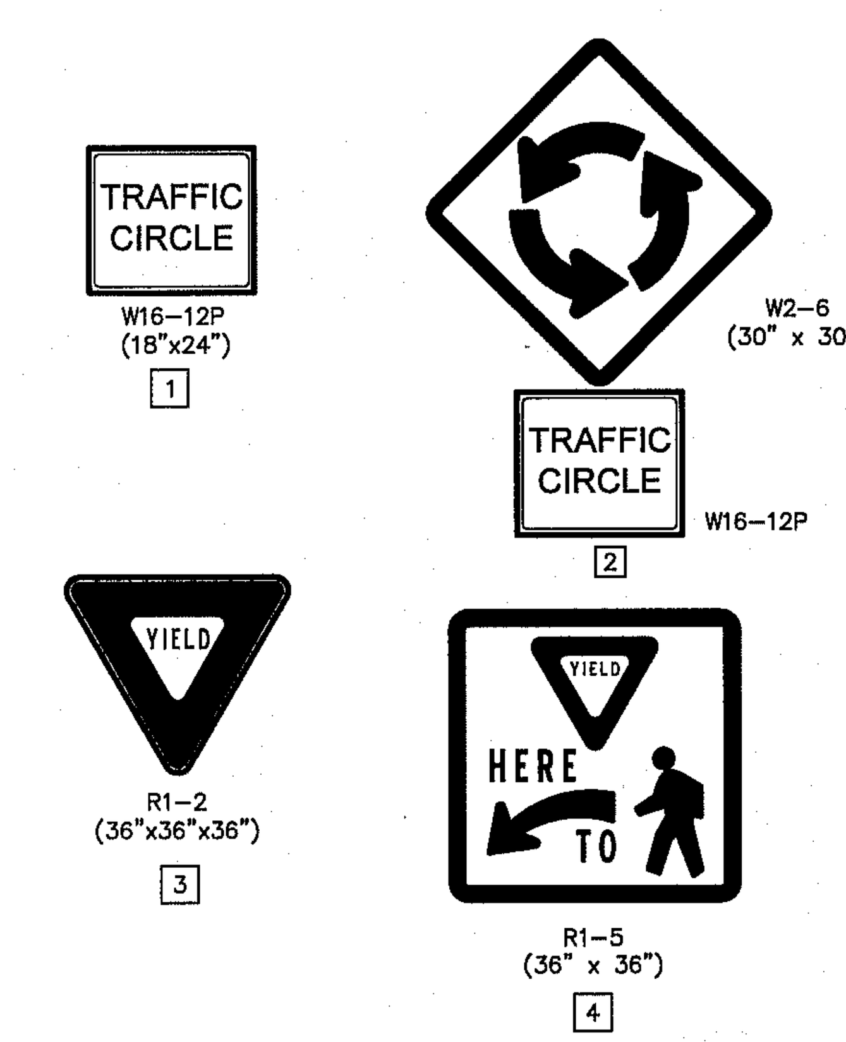
UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543–5720
EL PASO ENERGY CORPORATION	(915) 496–5244
EL PASO WATER UTILITIES	(915) 594–5500
MCI SURVEILLANCE	(800) MCI–WORK
TIME WARNER COMMUNICATIONS	(915) 772–1123
TEXAS GAS SERVICE	(915) 680–7200
SBC	(800) 545–6005
AT&T	(800) 852–3786
U.S. SPRINT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

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

LEGEND:
- PROPOSED RESIDENTIAL STREET LIGHT
- EXISTING RESIDENTIAL STREET LIGHT
- PROPOSED 9" STREET NAME SIGN (TWO SIGNS) AND 30" STOP SIGN
- NO OUTLET SIGN
- PROPOSED N.D.B.C.U. MAIL BOX
- PROPOSED TRAFFIC SIGN

NOTE:
1. POSTS MUST BE BREAK–AWAY TYPE AS SHOWN ON THIS SHEET.
2. TRAFFIC STREET SIGNS MUST BE OF HIGH INTENSITY REFLECTIVE SHEETING.

9 RESIDENTIAL STREET LIGHTS



SIGNS DETAILS
SCALE: N.T.S.

NOTE:
1. SIGNS SHOULD COMPLY WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
2. ALL PAVEMENT STRIPING SHALL BE THERMOPLASTIC AS PER TxDOT.

Final Approval

REFERENCES – BENCHMARKS
CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

REVISIONS | DATE | BY

cea group
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

ENGINEER'S SEAL
JORGE L. AZCARATE 85075

SCALE
Horizontal: 1"=100'
Vertical: N/A
Contour Interval: N/A
DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

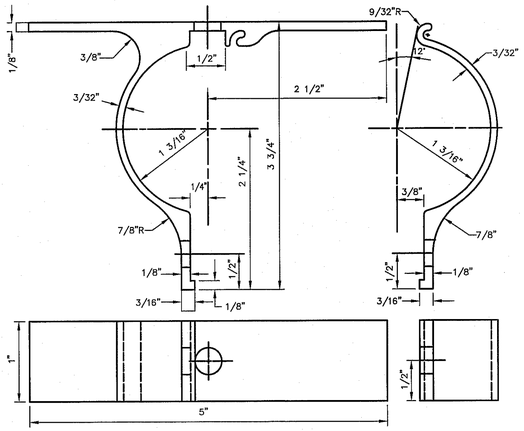
PROJECT TITLE
LA PUESTA DEL SOL UNIT THREE
SUBDIVISION IMPROVEMENTS

SHEET TITLE
ILLUMINATION AND SIGNAGE PLAN
(SHEET 1 OF 2)

SHEET NO.
C10.1

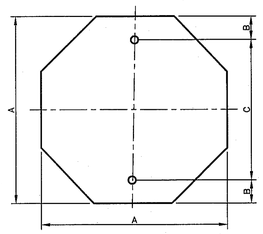
CITY OF EL PASO
SPECIFICATIONS FOR REFLECTORIZED STREET NAME SIGNS

1. COLOR OF SIGNS : THE FINISHED SIGN MUST HAVE A REFLECTORIZED GREEN BACKGROUND. THE GREEN MUST CONFORM WITH THE BUREAU OF PUBLIC ROADS HIGHWAY GREEN. THE LEGEND MUST BE REFLECTORIZED SILVER WHITE (GREEN 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 (HN). 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.



NOTES:
1. ALL HOLES 3/8" PUNCH
2. FILLETS & ROUNDS 1/16"=R
3. FURNISH THE FOLOWNG 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.

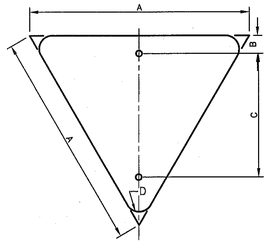
1 / C10.2 ALUMINUM SIGN CLAMP BRACKET FOR TRAFFIC CONTROL SIGNS
SCALE: N.T.S.



3/8" HOLE DIA.

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

OCTAGON
N.T.S.

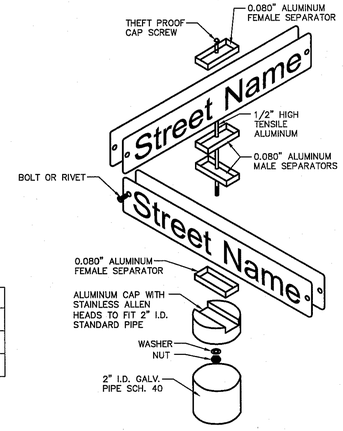


3/8" HOLE DIA.

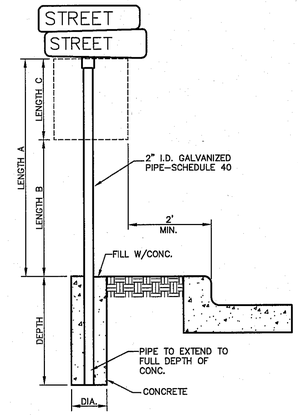
A	B	C	D
36	3	21	2
42	3	24	2 1/2
48	3	35	3

EQUILATERAL TRIANGLE
N.T.S.

2 / C10.2 D.H.T. BLANK STANDARDS
SCALE: N.T.S.



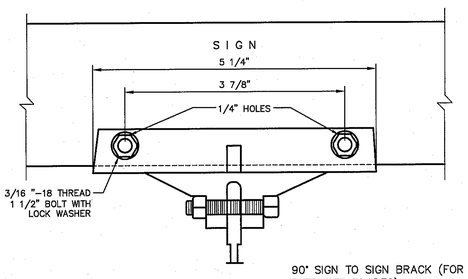
3 / C10.2 9" STREET NAME ASSEMBLY
SCALE: N.T.S.

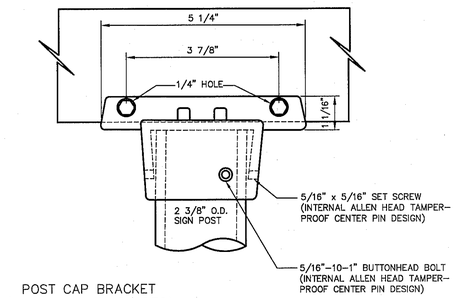


SIGN POST INSTALLATION

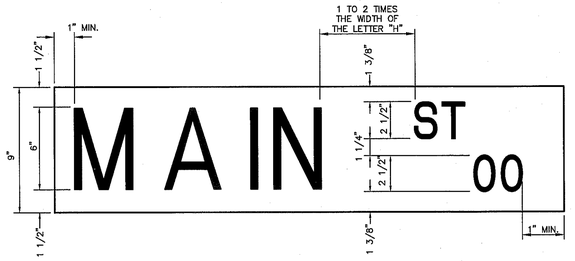
LENGTH A	LENGTH B	LENGTH C	DEPTH
10 FT	7 FT	LARGER THAN 24"	2 FT
9 FT	7 FT	SMALLER THAN 24"	1 1/2 FT

4 / C10.2 SIGN POST INSTALLATION
SCALE: N.T.S.



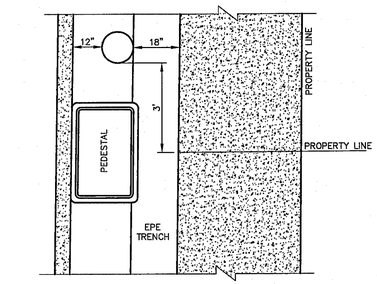


5 / C10.2 9" STREET NAME SIGN ASSEMBLY
SCALE: N.T.S.

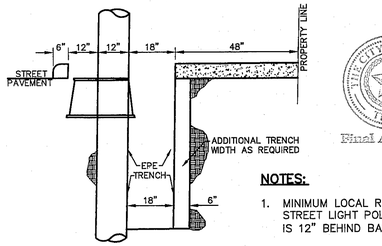


SIGN CLASS	SIGN LENGTH	PRIMARY LETTERS SIZE & SERIES	SUFFIX & BLOCK NUMBER SIZE & SERIES
9" ARTERIAL STREETS	36"	6" C,D SERIES	3" C SERIES
	42"	6" C,D SERIES	3" C SERIES
	48"	6" A,B,C,D SERIES	3" C SERIES

6 / C10.2 LAYOUT FOR 9" STREET NAME SIGNS
SCALE: N.T.S.



AERIAL VIEW



FRONT VIEW

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

7 / C10.2 TYPICAL EL PASO ELECTRIC TRENCH LOCATION ON LOCAL RESIDENTIAL STREET
EL PASO ELECTRIC CO. DISTRIBUTION STANDARD

THE CITY OF EL PASO TEXAS
Final Approval

UTILITY LOCATOR SERVICES

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

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FOR FIELD LOCATING EXISTING UTILITIES

REFERENCES - BENCHMARKS
CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT LOCATION AND ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
TEXAS REGISTERED ENGINEERING FIRM F-4624
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.2232 | www.ceagroup.net

ENGINEER'S SEAL
STATE OF TEXAS
JORGE L. ACEVEDO
85075
LICENSED PROFESSIONAL ENGINEER
10-28-19

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

DATE: JUNE 2019
DESIGN BY: M.R.G.
DRAWN BY: J.L.A.
CHKD. BY:
APPVD. BY: J.L.A.
JOB No. 2000-210

PROJECT TITLE
LA PUESTA DEL SOL
UNIT THREE
SUBDIVISION IMPROVEMENTS

SHEET TITLE
ILLUMINATION, SIGNAGE AND STRIPPING PLAN
(SHEET 2 OF 2)

SHEET NO.
C10.2

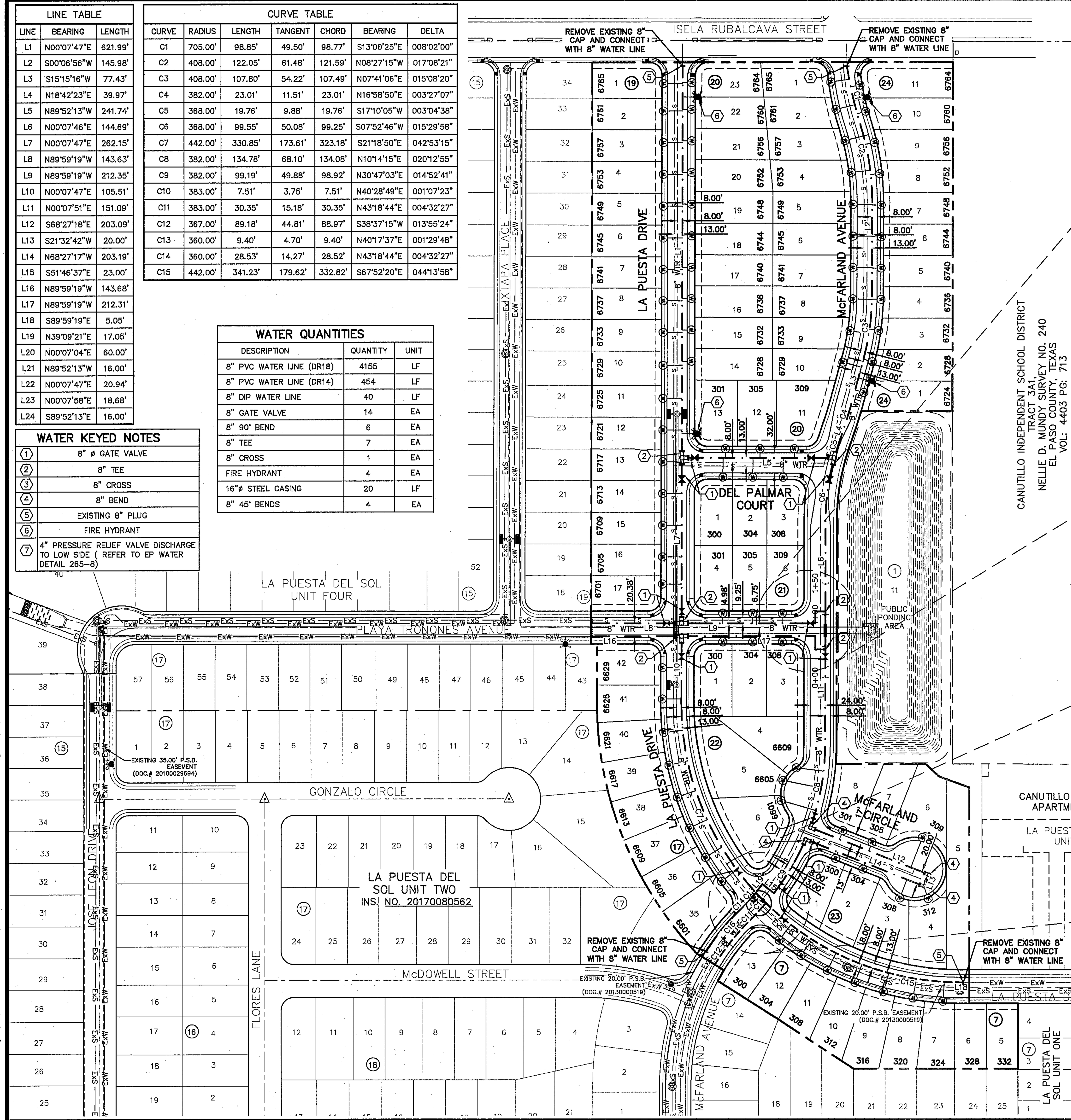
S:\2000\2000-210-La Puesta Del Sol Unit Three\DWGS\Construction Drawings\Improvement Plans\C10.1-C10.2-Illumination Plan REVISED.dwg, 11/4/2019 1:25:45 PM

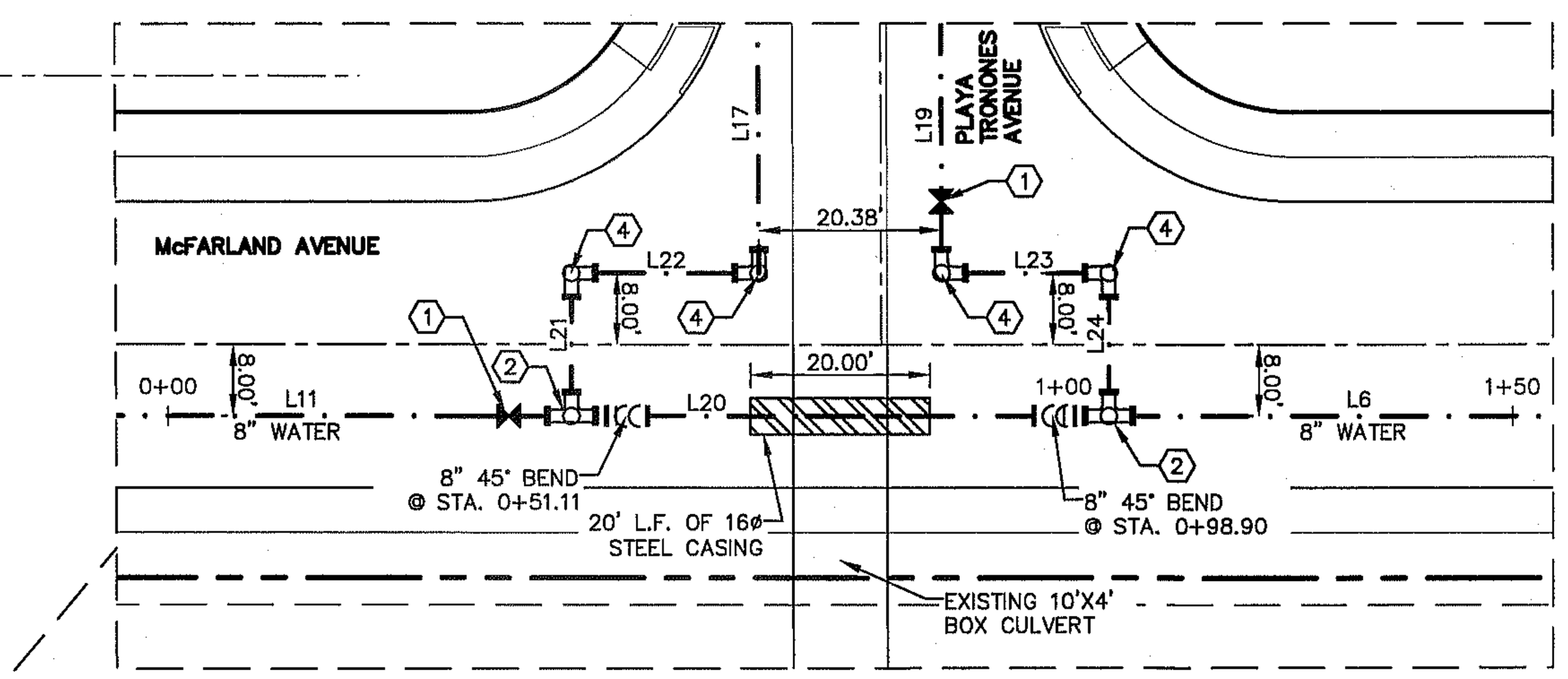
LINE TABLE		
LINE	BEARING	LENGTH
L1	N00°07'47"E	621.99'
L2	S00°06'56"W	145.98'
L3	S15°15'16"W	77.43'
L4	N18°42'23"E	39.97'
L5	N89°52'13"W	241.74'
L6	N00°07'46"E	144.69'
L7	N00°07'47"E	262.15'
L8	N89°59'19"W	143.63'
L9	N89°59'19"W	212.35'
L10	N00°07'47"E	105.51'
L11	N00°07'51"E	151.09'
L12	S68°27'18"E	203.09'
L13	S21°32'42"W	20.00'
L14	N68°27'17"W	203.19'
L15	S51°46'37"E	23.00'
L16	N89°59'19"W	143.68'
L17	N89°59'19"W	212.31'
L18	S89°59'19"E	5.05'
L19	N39°09'21"E	17.05'
L20	N00°07'04"E	60.00'
L21	N89°52'13"W	16.00'
L22	N00°07'47"E	20.94'
L23	N00°07'58"E	18.68'
L24	S89°52'13"E	16.00'

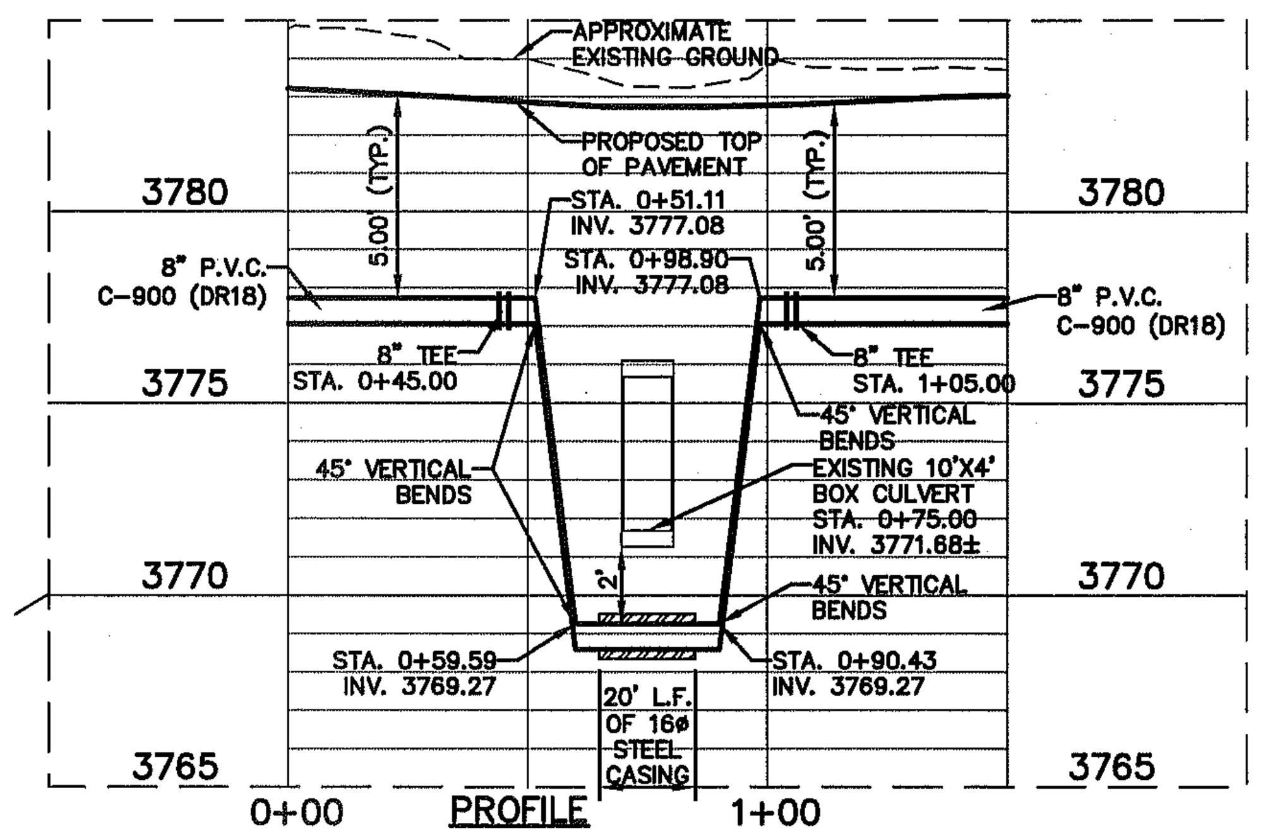
CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	705.00'	98.85'	49.50'	98.77'	S13°00'25"E	008°02'00"
C2	408.00'	122.05'	61.48'	121.59'	N08°27'15"W	017°08'21"
C3	408.00'	107.80'	54.22'	107.49'	N07°41'06"E	015°08'20"
C4	382.00'	23.01'	11.51'	23.01'	N16°58'50"E	003°27'07"
C5	368.00'	19.76'	9.88'	19.76'	S17°10'05"W	003°04'38"
C6	368.00'	99.55'	50.08'	99.25'	S07°52'46"W	015°29'58"
C7	442.00'	330.85'	173.61'	323.18'	S21°18'50"E	042°53'15"
C8	382.00'	134.78'	68.10'	134.08'	N10°14'15"E	020°12'55"
C9	382.00'	99.19'	49.88'	98.92'	N30°47'03"E	014°52'41"
C10	383.00'	7.51'	3.75'	7.51'	N40°28'49"E	001°07'23"
C11	383.00'	30.35'	15.18'	30.35'	N43°18'44"E	004°32'27"
C12	367.00'	89.18'	44.81'	88.97'	S38°37'15"W	013°55'24"
C13	360.00'	9.40'	4.70'	9.40'	N40°17'37"E	001°29'48"
C14	360.00'	28.53'	14.27'	28.52'	N43°18'44"E	004°32'27"
C15	442.00'	341.23'	179.62'	332.82'	S67°52'20"E	044°13'58"

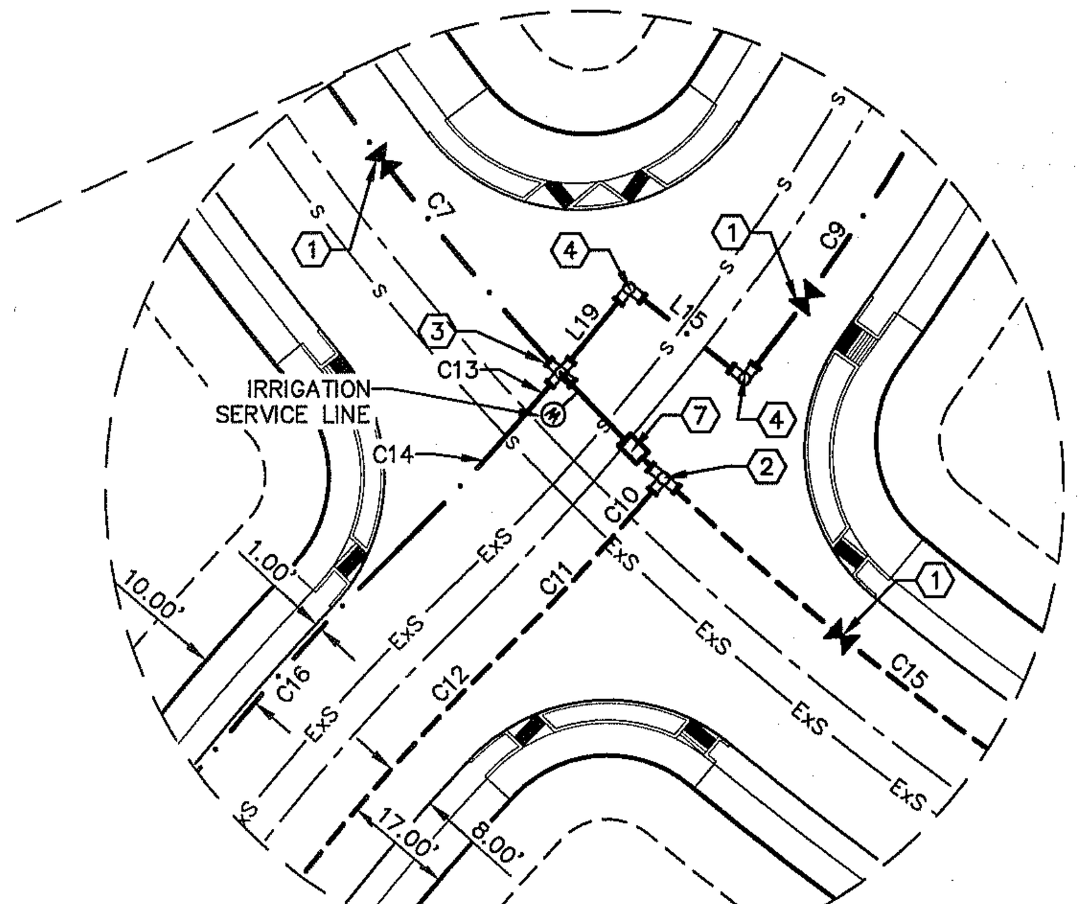
WATER QUANTITIES		
DESCRIPTION	QUANTITY	UNIT
8" PVC WATER LINE (DR18)	4155	LF
8" PVC WATER LINE (DR14)	454	LF
8" DIP WATER LINE	40	LF
8" GATE VALVE	14	EA
8" 90° BEND	6	EA
8" TEE	7	EA
8" CROSS	1	EA
FIRE HYDRANT	4	EA
16"ø STEEL CASING	20	LF
8" 45° BENDS	4	EA

WATER KEYED NOTES	
1	8" ø GATE VALVE
2	8" TEE
3	8" CROSS
4	8" BEND
5	EXISTING 8" PLUG
6	FIRE HYDRANT
7	4" PRESSURE RELIEF VALVE DISCHARGE TO LOW SIDE (REFER TO EP WATER DETAIL 265-8)









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

WATER INDEX MAP

SCALE: 1" = 100'

INDEX

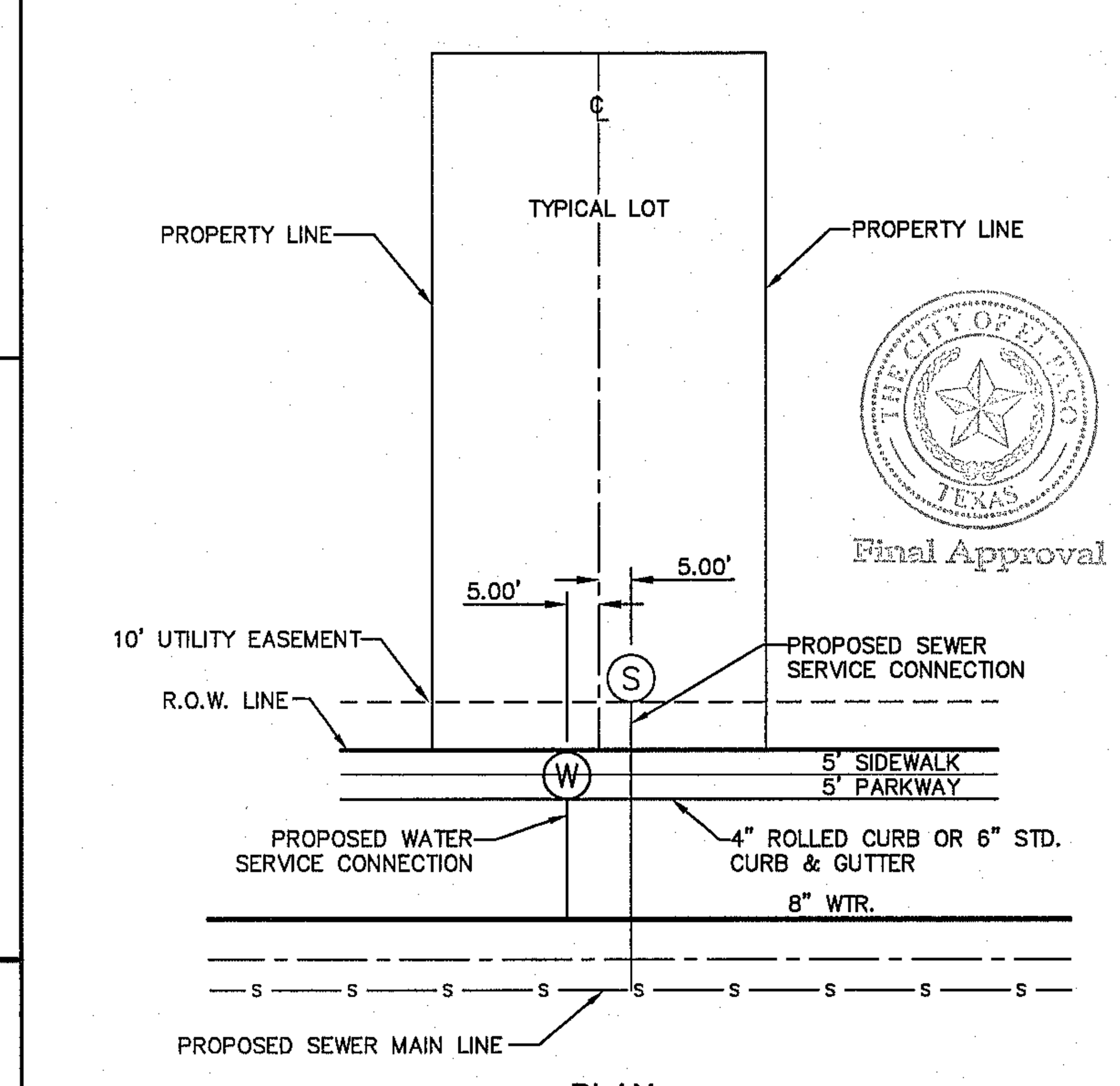
SHEET NO.	DESCRIPTION
C11.1	LA PUESTA DEL SOL UNIT THREE WATER MAIN PIPE LAYOUT
C11.2	WATER DETAILS
C11.3	WATER DETAILS
C11.4	WATER DETAILS
C11.5	WATER DETAILS

NOTES:

1. ALL LOTS SHALL BE PROVIDED WITH ONE SERVICE CONNECTION TO BE INSTALLED AT THE LOCATION AS SHOWN ON THE SERVICE LOCATION DETAIL.
2. VALLEY PRESSURE ZONE WATER LINES SHALL BE PVC C-900 (DR18).
3. SUNSET TERRACE SHALL BE INTERMEDIATE PVC C-900 (DR14).
4. REFERENCE WATER DETAILS FOR TYPICAL VALVE AND WATER LOCATIONS AT STREET INTERSECTIONS.
5. REFERENCE WATER DETAILS FOR WATER LINE CROSSING STORM SEWER.

LEGEND

SYMBOL	DESCRIPTION
8" WTR.	VALLEY PRESSURE ZONE PROPOSED 8" WATER LINE P.V.C. C-900 (DR18)
8" WTR.	SUNSET TERRACE INTERMEDIATE PRESSURE ZONE PROPOSED 8" WATER LINE P.V.C. C-900 (DR14)
	SUBDIVISION BOUNDARY LINE
	PROPERTY LINE
	STREET CENTER LINE
8" SWR	PROPOSED SEWER LINE (PLAN VIEW)
	PROPOSED STORM SEWER
	PROPOSED WATER CROSS CONNECTION
	PROPOSED WATER TEE CONNECTION
	PROPOSED WATER BEND CONNECTION
	PROPOSED SERVICE CONNECTION (PLAN VIEW)
	PROPOSED FIRE HYDRANT, KENNEDY OR MUELLER MODEL
	PROPOSED 8" PLUG
	PROPOSED GATE VALVE
	POINT OF TANGENCY
	REDUCER
	EXISTING GATE VALVE
	EXISTING FIRE HYDRANT
	EXISTING PLUG
ExS	EXISTING SEWER LINE
ExW	EXISTING WATER LINE



PLAN

SERVICE LOCATION DETAIL

SCALE: N.T.S.

GENERAL NOTES

1. UNLESS OTHERWISE SHOWN ON THE DRAWINGS, THE PROPOSED WATER MAINS SHALL BE INSTALLED NO LESS THAN 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
CASTNER CENTER @ TRANSMOUNTAIN
4712 WOODROW BEAN, STE. F
EL PASO, TX. 79924
(915) 544-5232
MR. JORGE L. AZCARATE, P.E.

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

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
CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO"
ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

ENGINEER'S SEAL

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

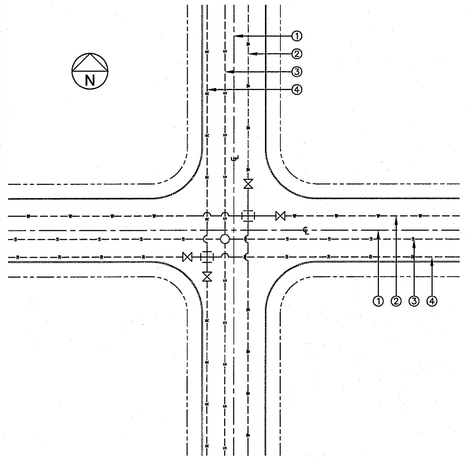
DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

PROJECT TITLE
LA PUESTA DEL SOL UNIT THREE SUBDIVISION IMPROVEMENTS

SHEET TITLE
WATER INDEX

SHEET NO.
C11.1

S:\2000\2000-210-La Puesta Del Sol Unit Three\DWGS\Construction Drawings\Improvement Plans\C11.1-Water Index - 10-30-19.dwg, 11/4/2019 10:44:42 AM



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.

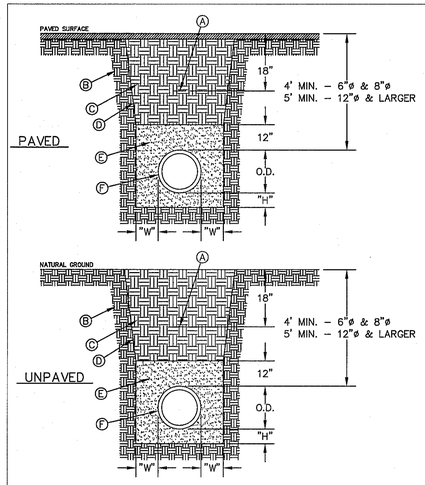
CONSTRUCTION KEY NOTES:
A. DISTANCES FROM CENTERLINE VARY AND SHALL BE ACCORDING TO THE FOLLOWING:

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 C11.2 LOCATION FOR UTILITY LINES
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.

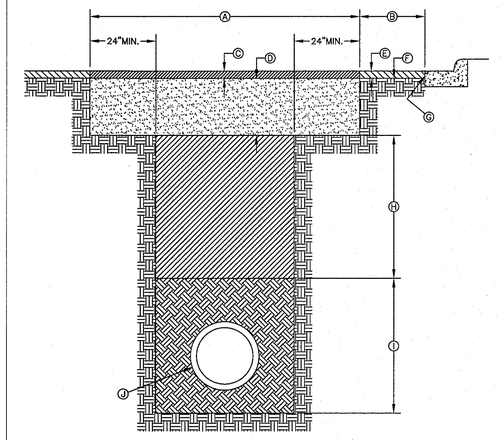
CONSTRUCTION KEY NOTES:
A. APPROVED MARKING TAPE.
B. UNDISTURBED STABLE MATERIAL.
C. NATIVE MATERIAL BACKFILL.
PAVED CONDITION: COMPACT TO 90% DENSITY PER ASTM D-1557 MODIFIED PROCTOR.
UNPAVED CONDITION: COMPACT TO 85% DENSITY PER ASTM D-1557 MODIFIED PROCTOR.
(*SEE NOTE #3 IF THESE PREVIOUS CONDITIONS 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

2 C11.2 BEDDING CLASS DETAILS FOR P.V.C. PRESSURE PIPE
SCALE: N.T.S.

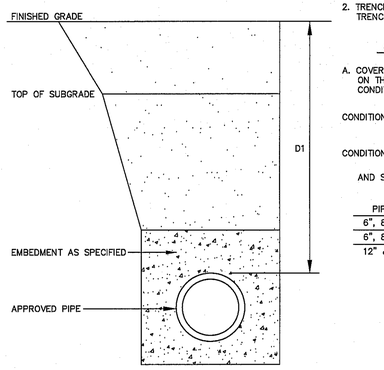


GENERAL NOTES:
1. ALL ASPHALT CUTS MUST BE SAW CUT.
2. SOIL CEMENT SLURRY SHALL BE ALLOWED TO CURE BEFORE PAVING OR OPENING TO ALL TRAFFIC.

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

STANDARD DETAIL	DATE: 10/1992 REV: 5/9/2011	PAVEMENT REPLACEMENT N.T.S.	el paso WATER	DETAIL No. 179

3 C11.2 PAVEMENT REPLACEMENT
SCALE: N.T.S.



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

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

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

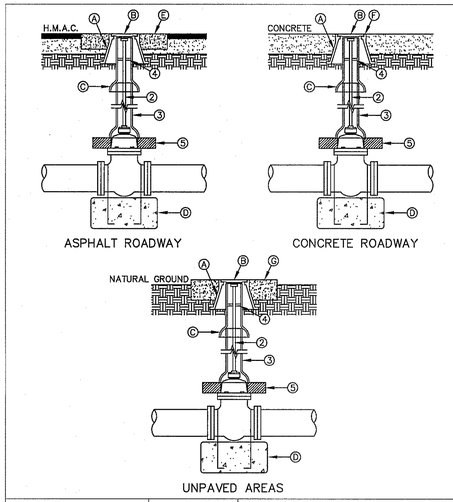
CONDITION B – NEW SUBDIVISIONS, NON-PAVED AREA

AND SHALL BE AS FOLLOWS.

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

STANDARD DETAIL	FEB. 1994 REV: 8/3/2006	COVER FOR WATER MAINS N.T.S.	el paso WATER	DETAIL No. 250

4 C11.2 COVER FOR WATER MAINS
SCALE: N.T.S.

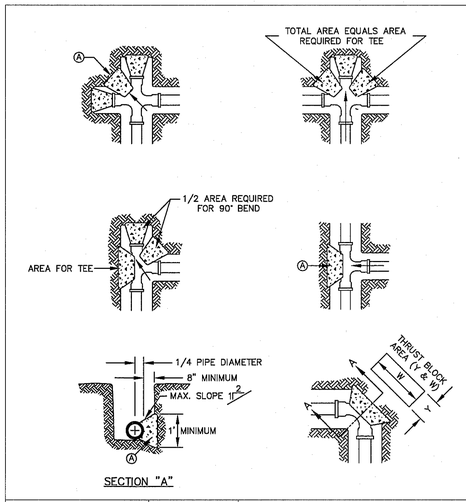


GENERAL NOTES:
1. VALVE TYPE AND VALVE ENDS SHALL BE AS SHOWN ON THE PLANS.
2. ALL BURIED VALVES 5' AND DEEPER SHALL BE PROVIDED WITH SOLID STEEL EXTENSION STEM OPERATOR WITH 2" SQUARE AWWA NUT WITHIN 36" OF VALVE BOX COVER. NUT IS TO INDICATE DIRECTION OF ROTATION TO OPEN VALVE.
3. 8" DIA. MINIMUM VITRIFIED CLAY OR SDR 35 P.V.C. PIPE, PIPE SHALL NOT REST ON VALVE BODY.
4. 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 C11.2 GATE VLAVE INSTALLATION
SCALE: N.T.S.



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' RECOMMENDATIONS) 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 C11.2 CONCRETE THRUST BLOCKING
SCALE: N.T.S.

THE CITY OF EL PASO TEXAS
Final Approval

REFERENCES – BENCHMARKS
CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (NGVD DATUM), THIS IS BASED ON NGS MONUMENT CHINO
ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
TEXAS REGISTERED ENGINEERING FIRM F-4594
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

ENGINEER'S SEAL
STATE OF TEXAS
ANGIE L. LAZCANO
85075
LICENSED PROFESSIONAL ENGINEER
10-28-19

SCALE
Horizontal: N/A
Vertical: N/A
Contour Interval: N/A
DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

PROJECT TITLE
LA PUESTA DEL SOL
UNIT THREE
SUBDIVISION IMPROVEMENTS

SHEET TITLE
WATER DETAILS
(SHEET 1 OF 4)
SHEET NO.
C11.2

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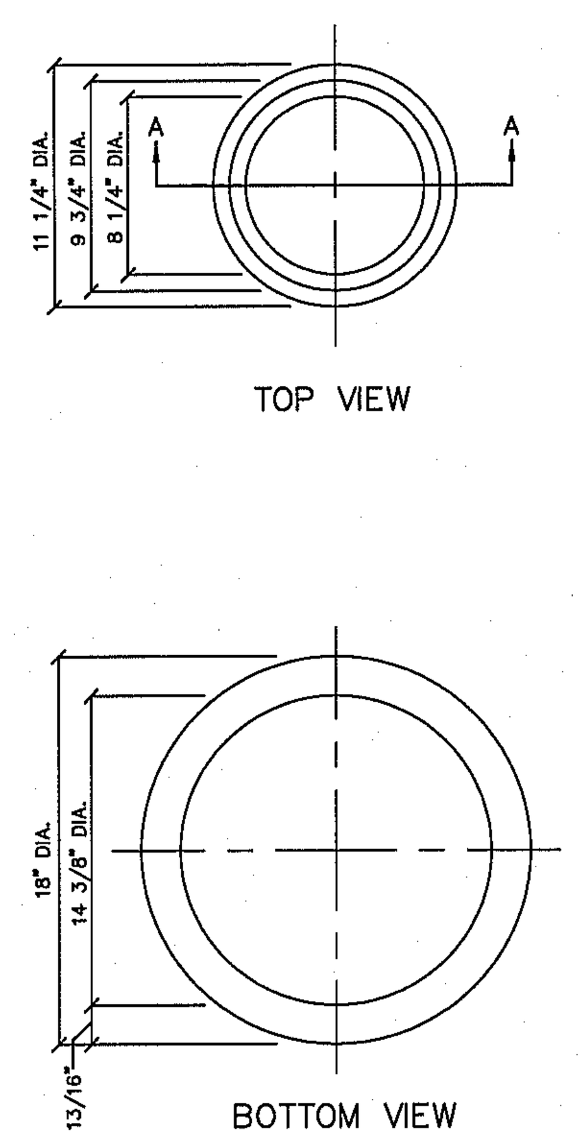
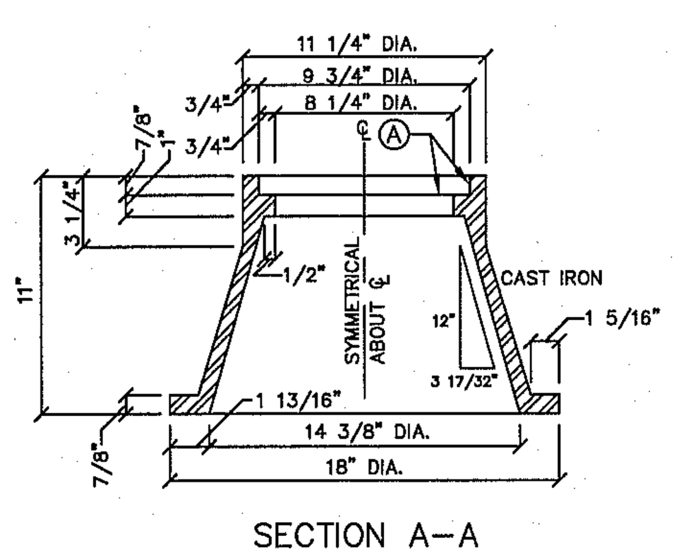
GENERAL NOTES:
1. CASTING TO BE SMOOTH AND VOID OF AIR HOLES.
2. WEIGHT OF BONNET BOX IS 95 POUNDS.

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

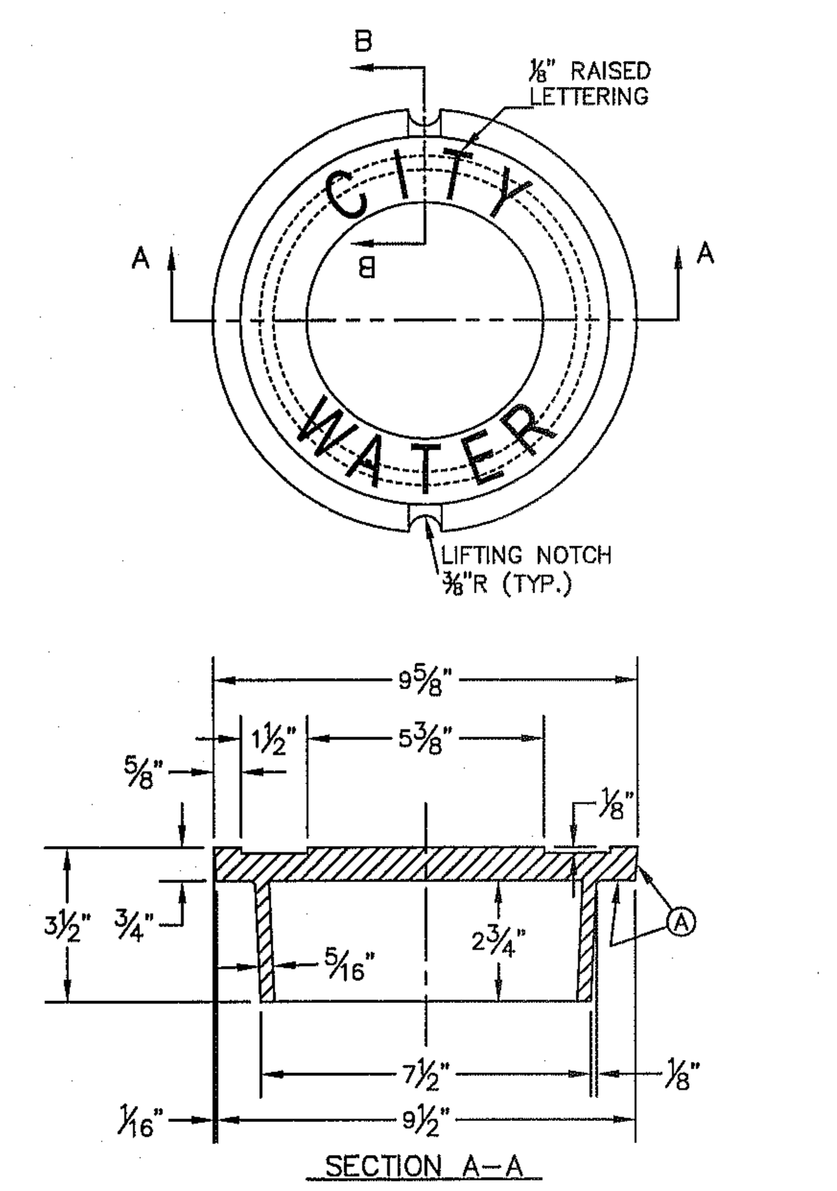

TOP VIEW

BOTTOM VIEW


SECTION A–A

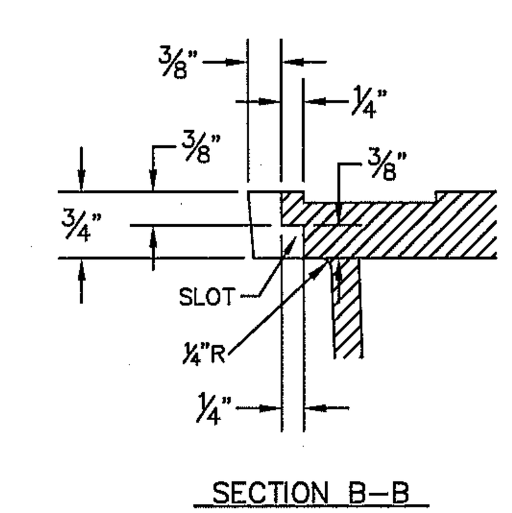
STANDARD DETAIL	DATE: 2/1994 REV:	BONNET BOX N.T.S.	el paso WATER	DETAIL No. 268

1 C11.3 BONNET BOX
SCALE: N.T.S.


SECTION A–A

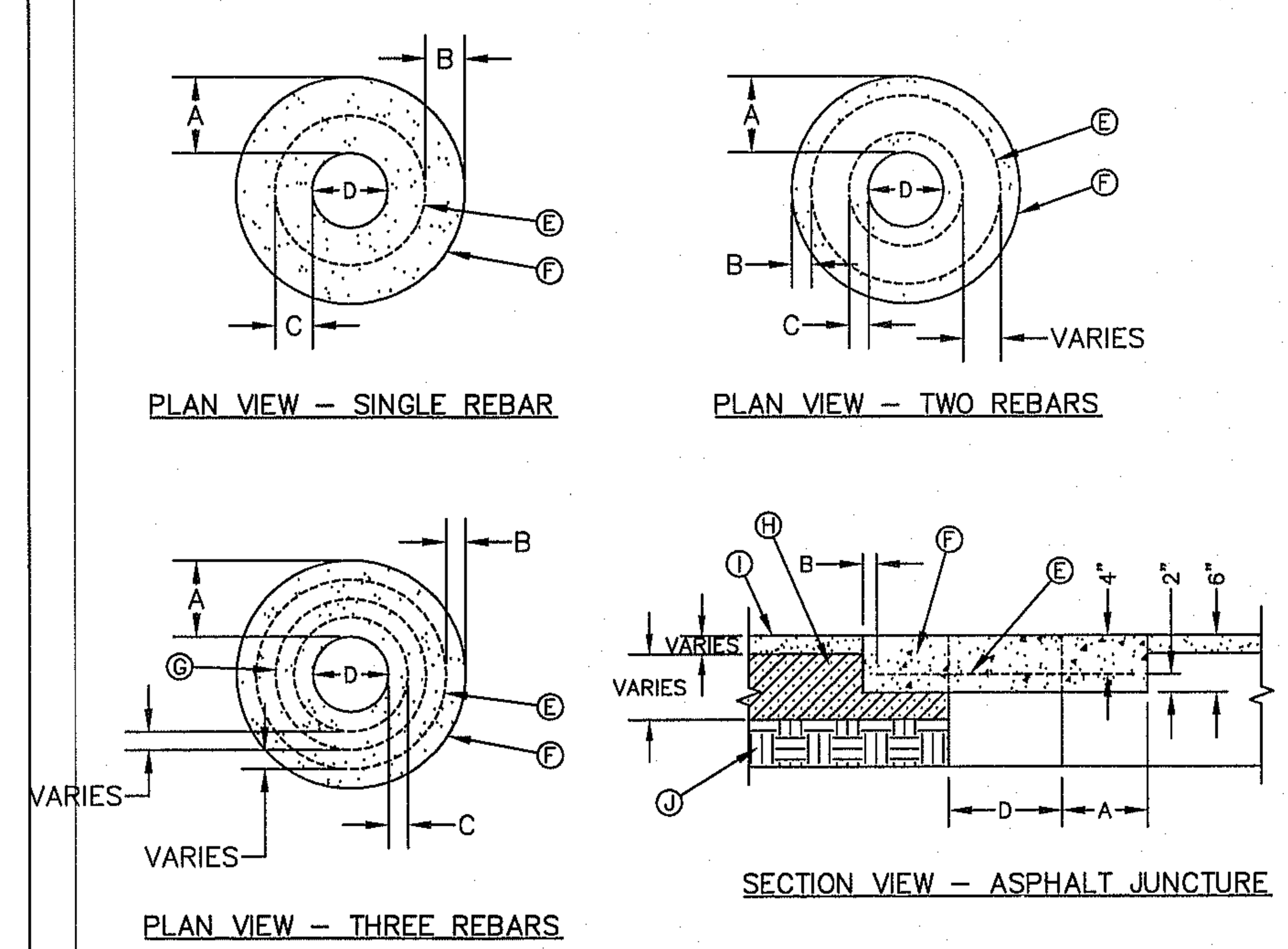
GENERAL NOTES:
1. CASTINGS TO SMOOTH AND VOID OF AIR HOLES.
2. WEIGHT OF COVER IS 18 POUNDS.

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


SECTION 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

2 C11.3 BONNET BOX COVER
SCALE: N.T.S.


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.

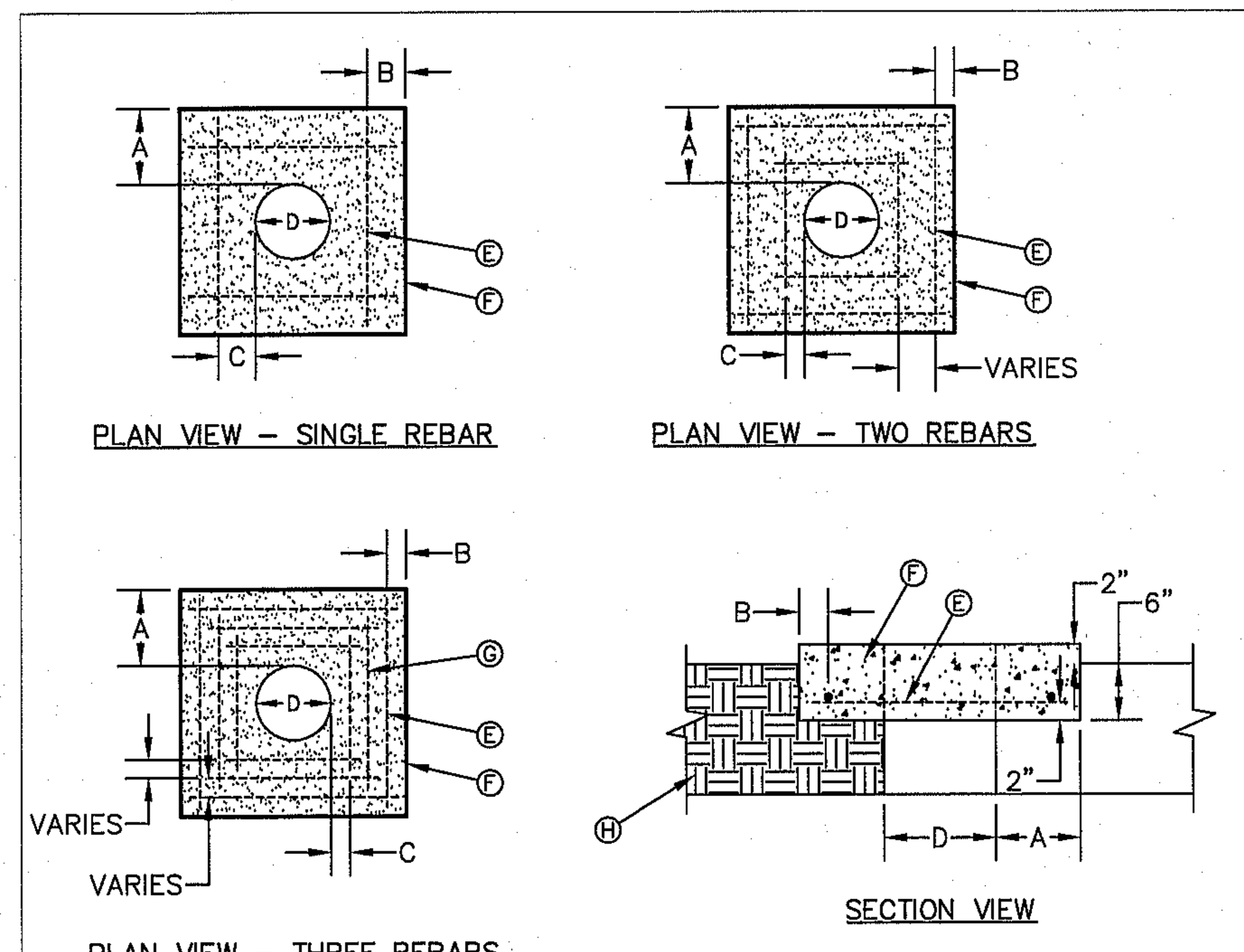
CONSTRUCTION KEY NOTES:
E. #3 REINFORCING STEEL TYP.
F. CONCRETE COLLAR.
G. #3 REINFORCING STEEL EQUALLY SPACED.
H. COMPACTED BASE COARSE.
I. PAVEMENT.
J. COMPACTED SUBGRADE.

"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"	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

3 C11.3 CONCRETE COLLAR INSTALLATION IN PAVED AREAS
SCALE: N.T.S.

Final Approval


PLAN VIEW – SINGLE REBAR

PLAN VIEW – TWO REBARS

PLAN VIEW – THREE REBARS

SECTION VIEW

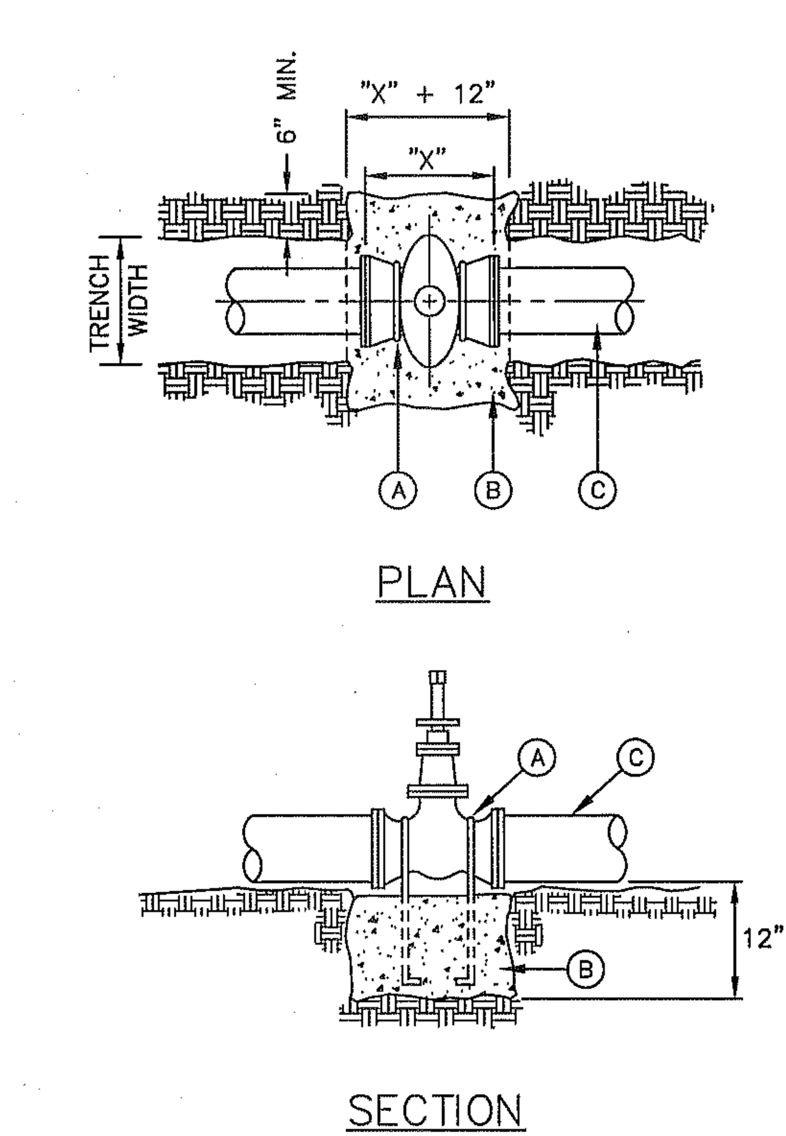
GENERAL NOTES:
1. THE CONCRETE APRON SHOULD BE CAST IN-PLACE CONCRETE. (MINIMUM 28 DAY COMPRESSIVE STRENGTH 4000 PSI. HIGH EARLY CONCRETE IS REQUIRED)
2. TOPS OF CONCRETE APRON SHALL BE FLUSH WITH ROADWAY SURFACE OR FINISHED GRADE UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.
3. PROVIDE A MINIMUM OF 1 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 C11.3 CONCRETE COLLAR INSTALLATION IN NON PAVED AREAS
SCALE: N.T.S.


PLAN

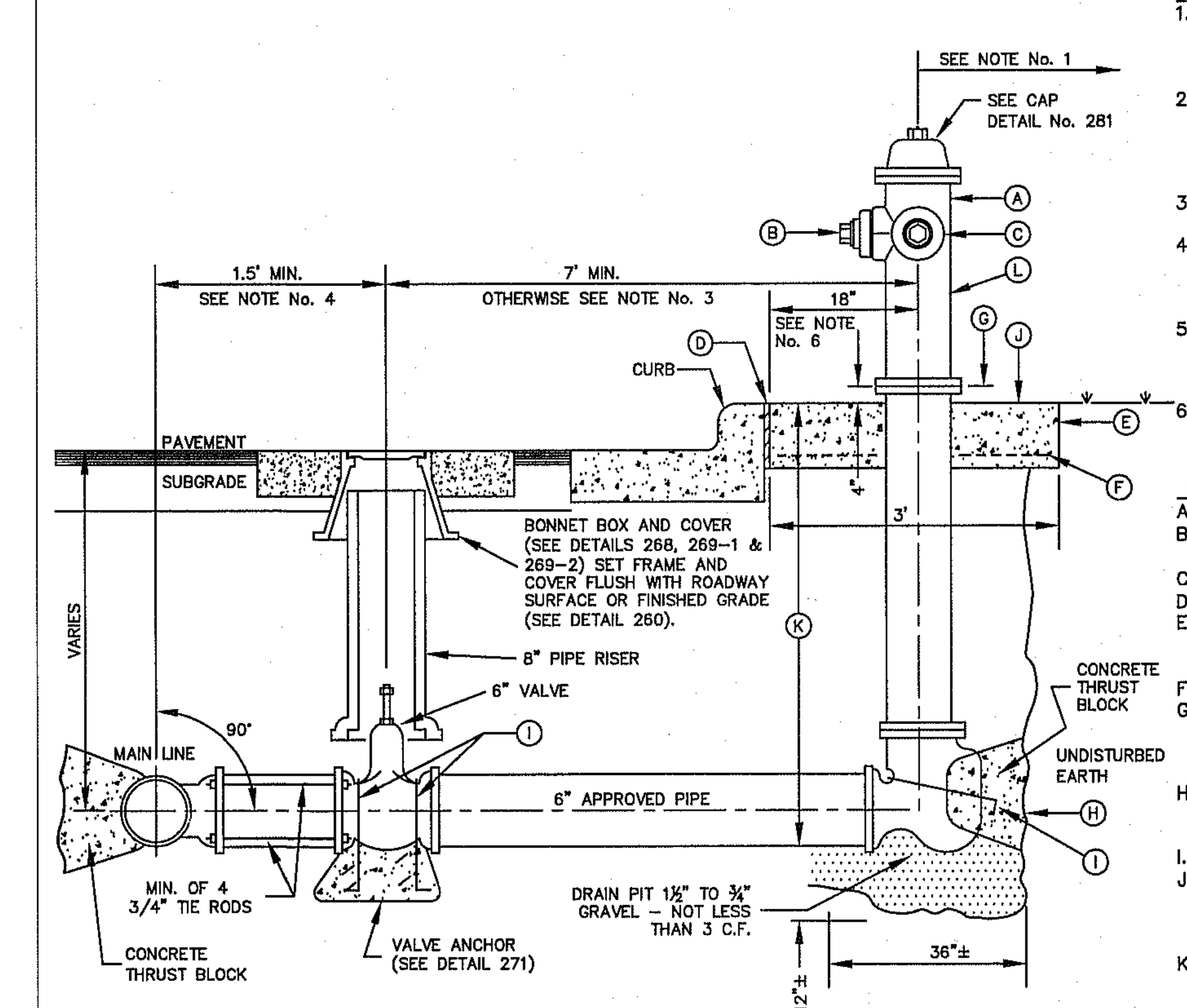
SECTION

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

5 C11.3 VALVE ANCHOR
SCALE: N.T.S.



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

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

STANDARD DETAIL	DATE: 2/1993 REV: 10/1/2013	FIRE HYDRANT INSTALLATION N.T.S.	el paso WATER	DETAIL No. 280–1

6 C11.3 FIRE HYDRANT INSTALLATION
SCALE: N.T.S.

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

ENGINEER'S SEAL
STATE OF TEXAS JORGE L. AZCARATE 85075 LICENSED PROFESSIONAL ENGINEER 10–28–19

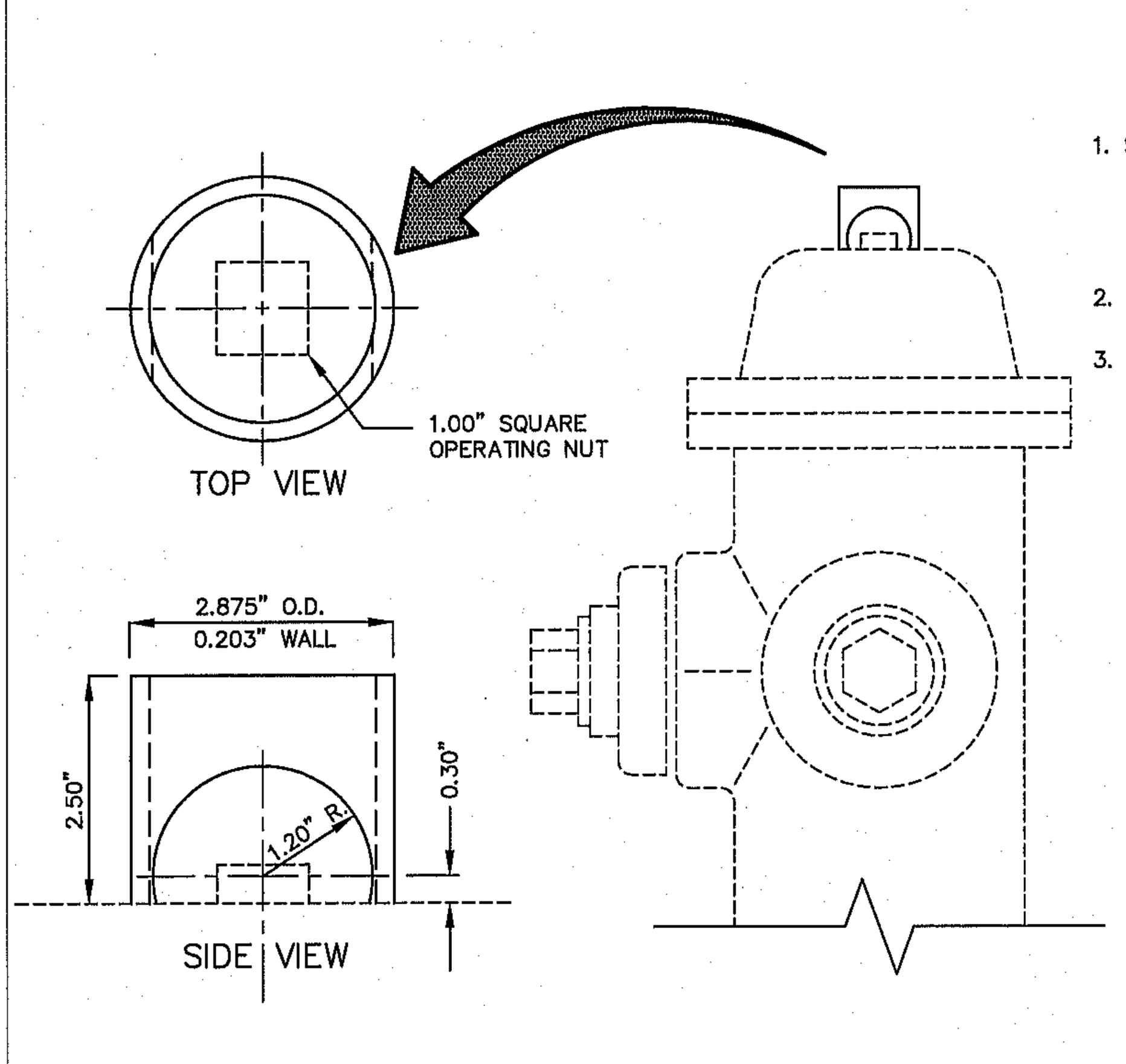
SCALE
Horizontal: N/A
Vertical: N/A
Contour Interval: N/A

DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000–210

PROJECT TITLE
LA PUESTA DEL SOL UNIT THREE
SUBDIVISION IMPROVEMENTS

SHEET TITLE
WATER DETAILS
(SHEET 2 OF 4)

SHEET NO.
C11.3

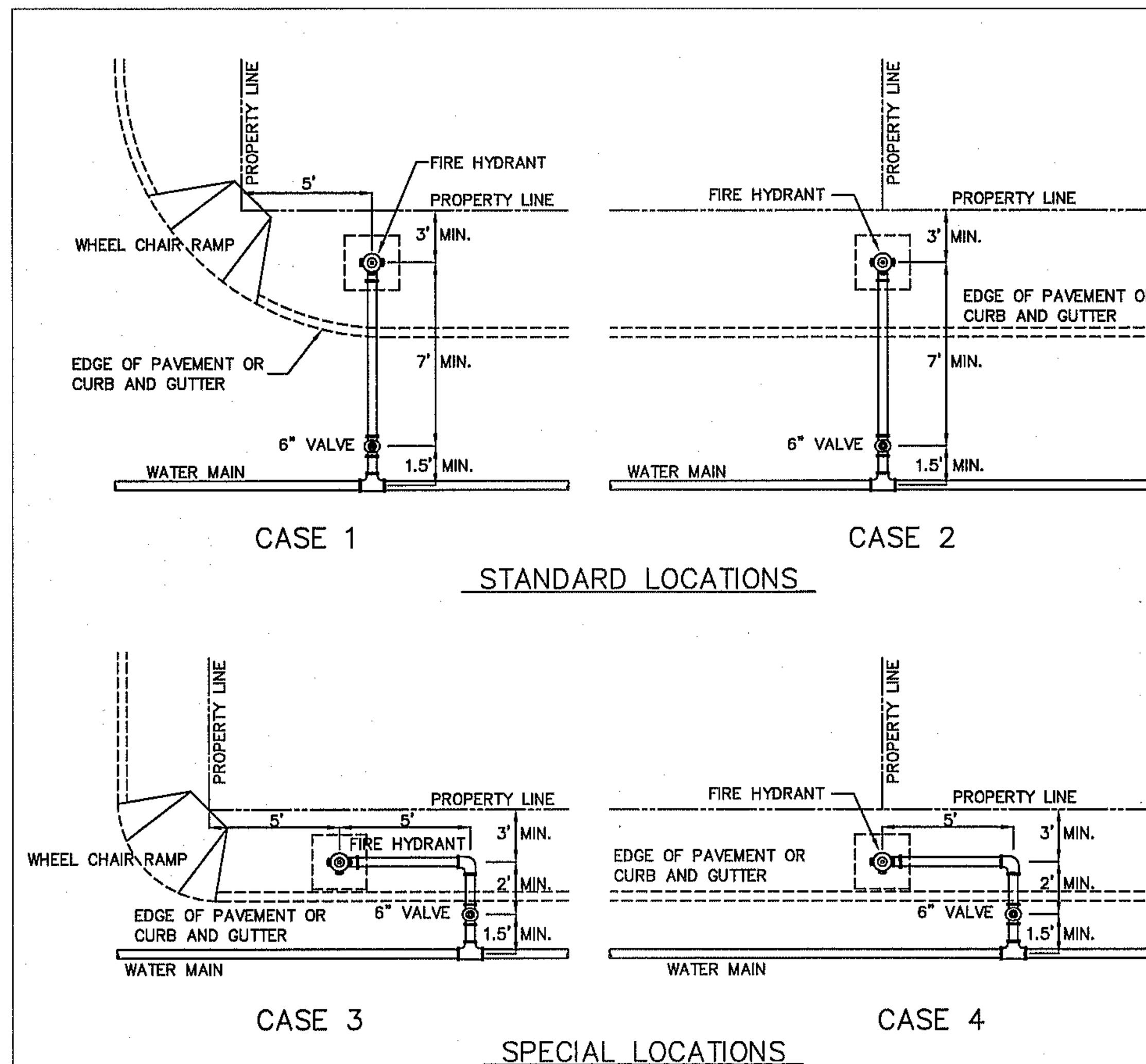


GENERAL NOTES:

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

1 (C11.4) FIRE HYDRANT CAP
SCALE: N.T.S.

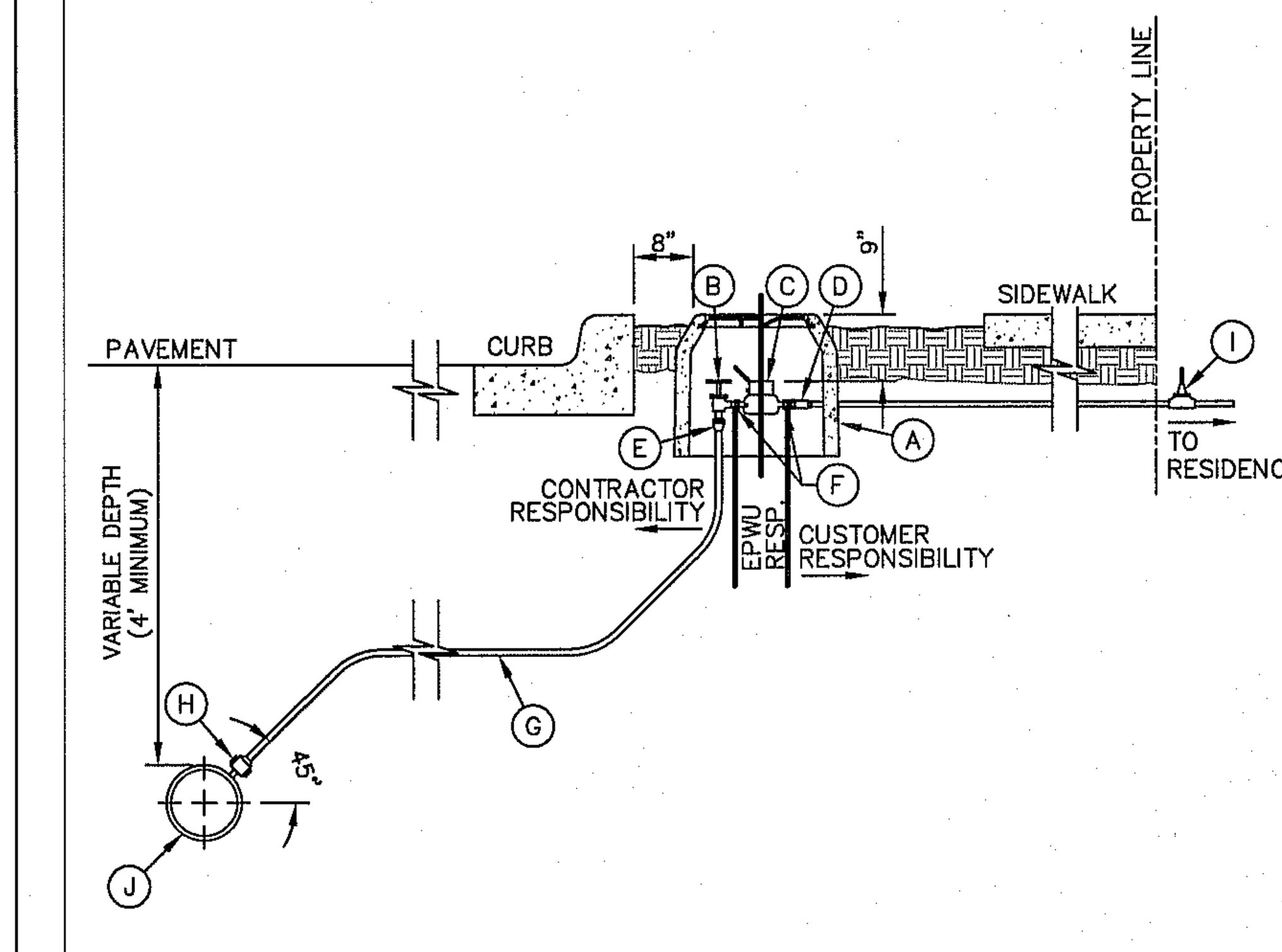


GENERAL NOTES:

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

STANDARD DETAIL	DATE: 5/1994 REV: 6/25/2007	FIRE HYDRANT LOCATIONS N.T.S.	el paso WATER	DETAIL No. 282

2 (C11.4) FIRE HYDRANT LOCATIONS
SCALE: N.T.S.



GENERAL NOTES:

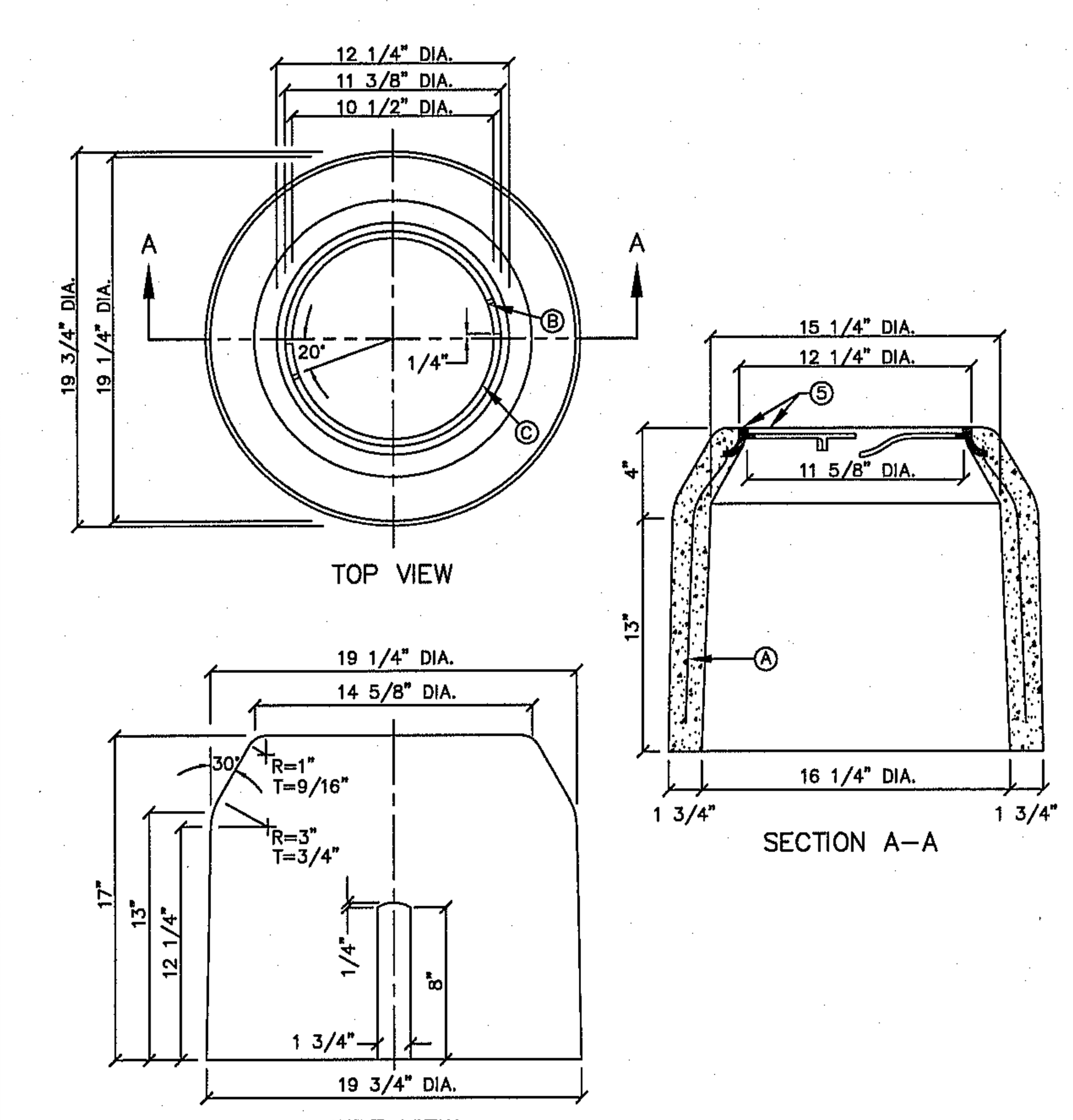
1. DETAIL SHOWN FOR A 3/4" SERVICE, 1" SERVICE INSTALLATION IS SIMILAR EXCEPT FOR SIZES OF PIPE, FITTING, METER AND BOX (TYPE "B").
2. WHERE NO CURB EXISTS, METER IS TO BE SET NEAR PROPERTY LINE OR AT DESIGNATED LOCATION.
3. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY PIPE, FITTINGS, AND METER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

CONSTRUCTION KEY NOTES:

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

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

3 (C11.4) SERVICE LINE 3/4" AND 1" INSTALLATION
SCALE: N.T.S.



GENERAL NOTES:

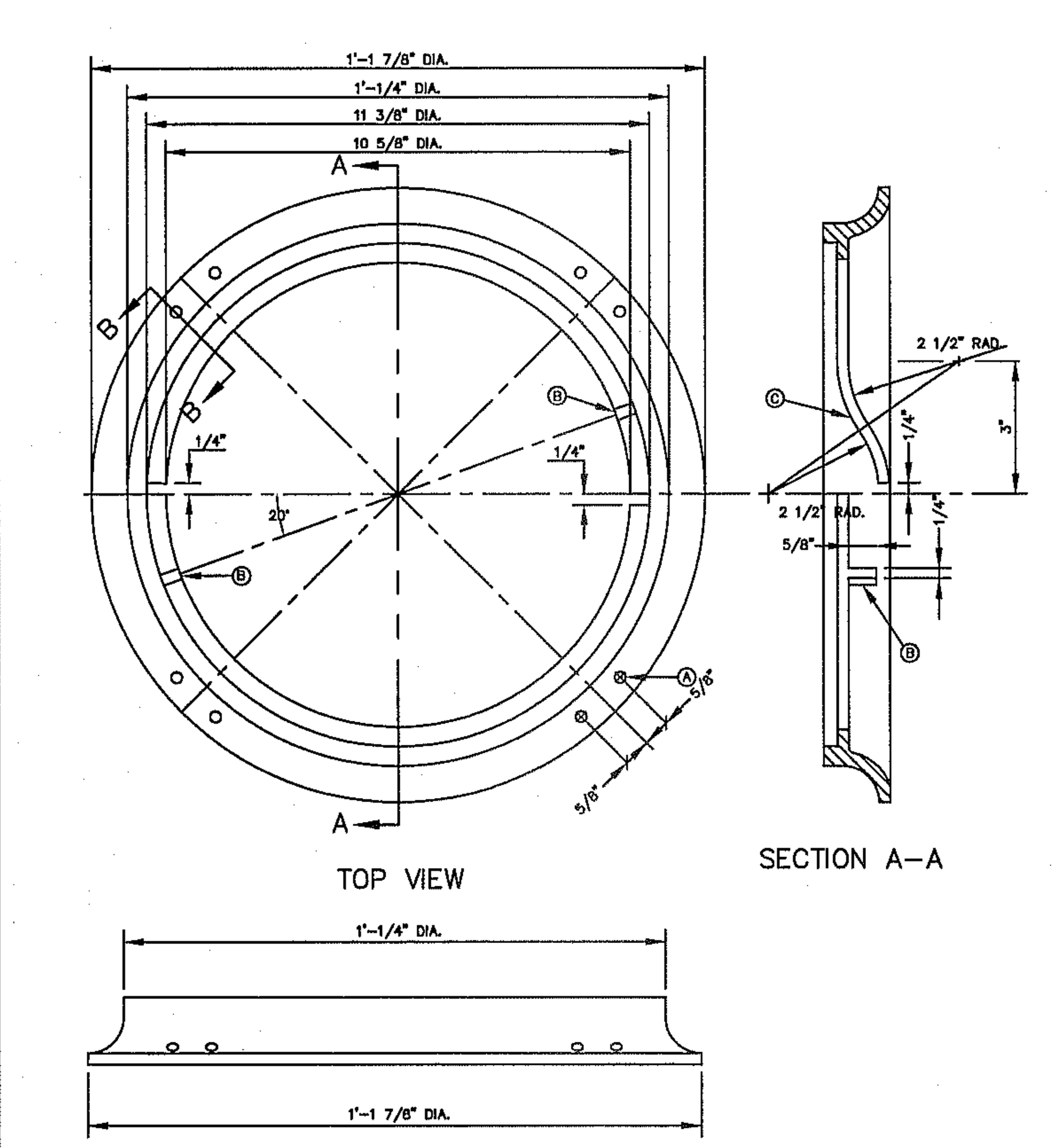
1. INSTALL TO GRADE MATCHING TOP OF CURB.
2. ANGLE VALVE SHALL BE IN LINE WITH THE INLET/OUTLET PORTS OF THE METER BOX.
3. METER BOXES SHALL NOT BE INSTALLED UNDER SIDEWALKS, DRIVEWAYS, OR PROPOSED ABOVE GROUND STRUCTURES.
4. WHERE NO CURBING EXIST, INSTALL BOXES IN ACCESSIBLE LOCATIONS BEYOND LIMITS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

CONSTRUCTION KEY NOTES:

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

STANDARD DETAIL	DATE: 4/1994 REV: 8/24/2006	METER BOX TYPE "A" FOR ¾" SERVICE INSTALLATION N.T.S.	el paso WATER	DETAIL No. 291

4 (C11.4) METER BOX TYPE "A" FOR 3/4" SERVICE INSTALLATION
SCALE: N.T.S.

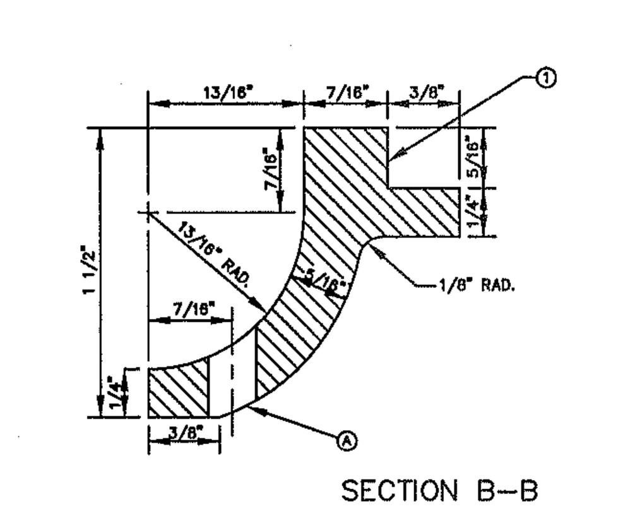


GENERAL NOTES:

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

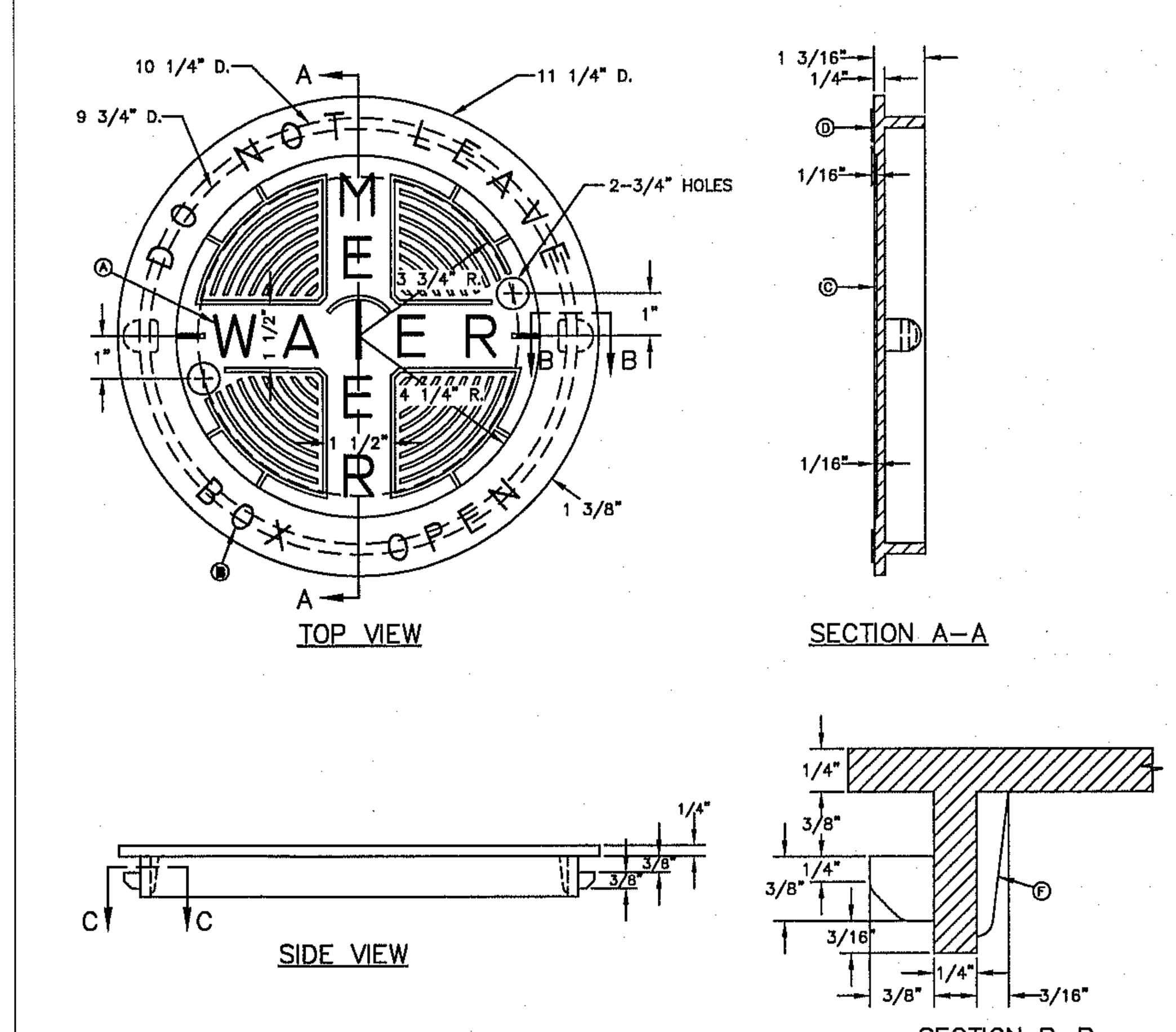
CONSTRUCTION KEY NOTES:

A. ¼" 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

5 (C11.4) METER BOX RING FOR TYPE "A" & "B" METER BOXES
SCALE: N.T.S.

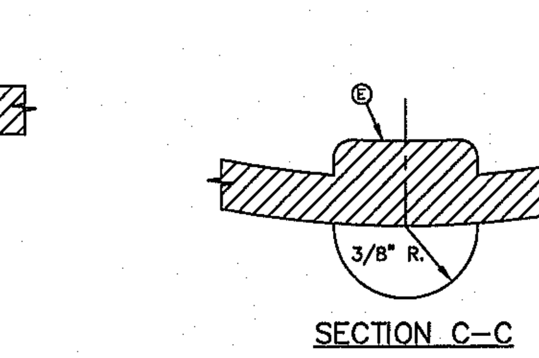


GENERAL NOTES:

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

CONSTRUCTION KEY NOTES:

A. LETTERS TO BE 1" HIGH, 3/4" WIDE, 1/8' THICK
B. LETTERS TO BE ¾" HIGH, ⅝" WIDE, ⅛ THICK
C. INSIDE LETTERS & RIBS 1/16" TALL
D. OUTSIDE LETTERS 1/16" 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

6 (C11.4) METER BOX COVER FOR TYPE "A" & "B" METER BOXES
SCALE: N.T.S.

REFERENCES - BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

ENGINEER'S SEAL
STATE OF TEXAS JORGE L. AZCARATE 85075 LICENSED PROFESSIONAL ENGINEER 10-28-19

THE CITY OF EL PASO TEXAS
Final Approval

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

DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

PROJECT TITLE
LA PUESTA DEL SOL UNIT THREE SUBDIVISION IMPROVEMENTS

SHEET TITLE
WATER DETAILS
(SHEET 3 OF 4)

SHEET NO.
C11.4

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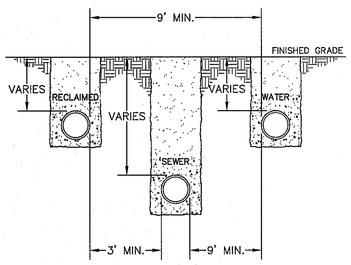
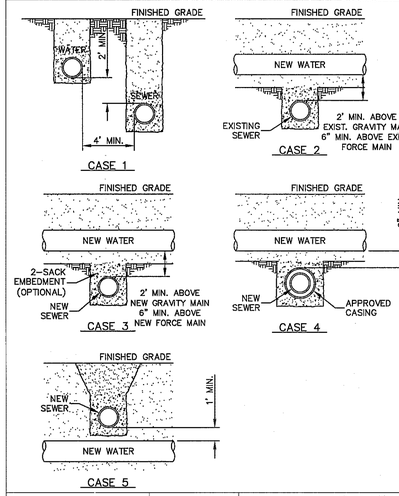


SECTION

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

STANDARD DETAIL	DATE: 8/3/2006 REV: 3/28/2007	SEPARATION DISTANCE POTABLE WATER, SANITARY SEWER AND RECLAIMED WATER N.T.S.	el paso WATER	DETAIL No. 160

1 / C11.5 SEPARATION DISTANCE POTABLE WATER, SANITARY SEWER AND RECLAIMED WATER
SCALE: N.T.S.



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

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

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

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

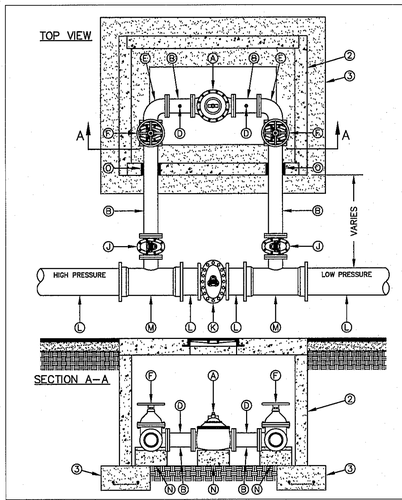
CASE 3. NEW POTABLE WATER MAIN CROSSING NEW GRAVITY SANITARY SEWER MAIN OR NEW FORCE MAIN (PER TCEQ §290.44(e)(4)(B)(ii)), §290.44(e)(4)(B)(v) AND §290.44(e)(4)(B)(vi)(I).
- LOCATION: WATER ABOVE SEWER OR FORCE MAIN.
- SEWER MATERIALS: NEW GRAVITY MAIN - PVC (150 PSI) or DI REQUIRED, CENTER UNDER WATER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

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

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

STANDARD DETAIL	DATE: 8/3/2006 REV: 8/21/2007	SEPARATION DISTANCE SANITARY SEWER AND POTABLE WATER (SPECIAL CONDITIONS) N.T.S.	el paso WATER	DETAIL No. 161

2 / C11.5 SEPARATION DISTANCE SANITARY SEWER AND POTABLE WATER (SPECIAL CONDITIONS) SCALE: N.T.S.



GENERAL NOTES:

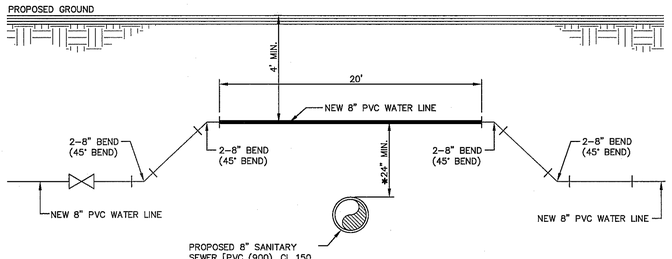
1. INSTALLATION SHOWN FOR A 6" VALVE. INSTALLATION OF OTHER SIZED VALVES IS SIMILAR.

2. VALVE VAULT SHALL BE TYPE "F", SEE DETAIL 295-2. FOR PRESSURE RELIEF VALVES LARGER THAN 6", VAULT SIZE SHALL BE INCREASED TO ACCOMMODATE LARGER APPURTENANCES. LARGER VAULT DIMENSIONS MUST BE APPROVED BY THE EPWU.
3. 12"x24" FOOTING WITH No.5 REBAR AT 12" ON CENTER EACH WAY IS REQUIRED.
4. TEST OUTLETS TO BE PLACED BEFORE AND AFTER PRESSURE RELIEF. SEE DETAIL 264-5 FOR TEST OUTLET DETAIL.

CONSTRUCTION KEY NOTES:
A. 6" FLANGED PRESSURE RELIEF VALVE.
B. 6" FLANGED DUCTILE IRON SPOOL.
D. ¾" TEST OUTLET WITH CORPORATION STOP
E. 6" FLANGED 90° BEND.
F. 6" FLANGED GATE VALVE WITH HANDWHEEL
J. 6" GATE VALVE WITH VALVE BONNET BOX AND COVER.
K. GATE VALVE (NORMALLY CLOSED) AND BONNET BOX, SIZE AS SPECIFIED.
L. MAINLINE, SIZE AS SPECIFIED.
M. MECHANICAL JOINT TEE WITH A 6" FLANGED BRANCH, MAINLINE SIZE AS SPECIFIED.
N. VALVES INSTALLED ON NATURAL GROUND WITH CONCRETE SUPPORTS AS REQUIRED.
O. WALL SLEEVES AND/OR GROUT.

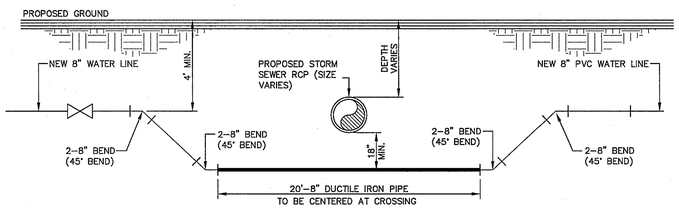
STANDARD DETAIL	DATE: 11/13/2006 REV: 7/20/2009	PRESSURE RELIEF 3" AND LARGER VALVE (BACK DISCHARGE TO LOW SIDE) BENEATH PAVING INSTALLATION N.T.S.	el paso WATER	DETAIL No. 265-8

3 / C11.5 PRESSURE RELIEF 3" AND LARGER VALVE (BACK DISCHARGE TO LOW SIDE) BENEATH PAVING INSTALLATION
SCALE: N.T.S.

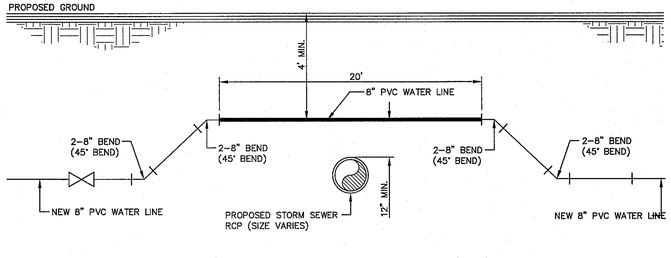


* IF DISTANCE BETWEEN PROPOSED SANITARY SEWER AND PROPOSED WATER LINE IS BETWEEN 6"(MIN.)-2'(MAX.), SANITARY SEWER MUST BE ENCASED IN DUCTILE IRON PIPE AS PER SEPARATION DISTANCE (SPECIAL CONDITION) DETAIL.

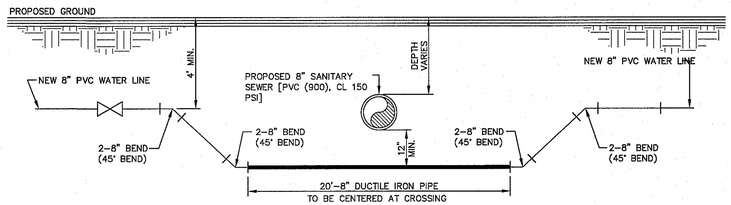
4 / C11.5 WATER LINE OVER SANITARY SEWER CROSSING DETAIL
SCALE: N.T.S.



5 / C11.5 WATER LINE UNDER STORM SEWER CROSSING DETAIL
SCALE: N.T.S.



6 / C11.5 WATER LINE OVER STORM SEWER CROSSING DETAIL
SCALE: N.T.S.



7 / C11.5 WATER LINE UNDER SANITARY SEWER CROSSING DETAIL
SCALE: N.T.S.

REFERENCES - BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT DATUM).
ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
TEXAS REGISTERED ENGINEERING FIRM F-4464
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

ENGINEER'S SEAL

STATE OF TEXAS — DANIEL L. ARCHULETA — 85075 — LICENSED PROFESSIONAL ENGINEER — 10-28-19

SCALE
Horizontal: N/A
Vertical: N/A
Contour Interval: N/A
DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APP'VD. BY: J.L.A.
JOB No. 2000-210

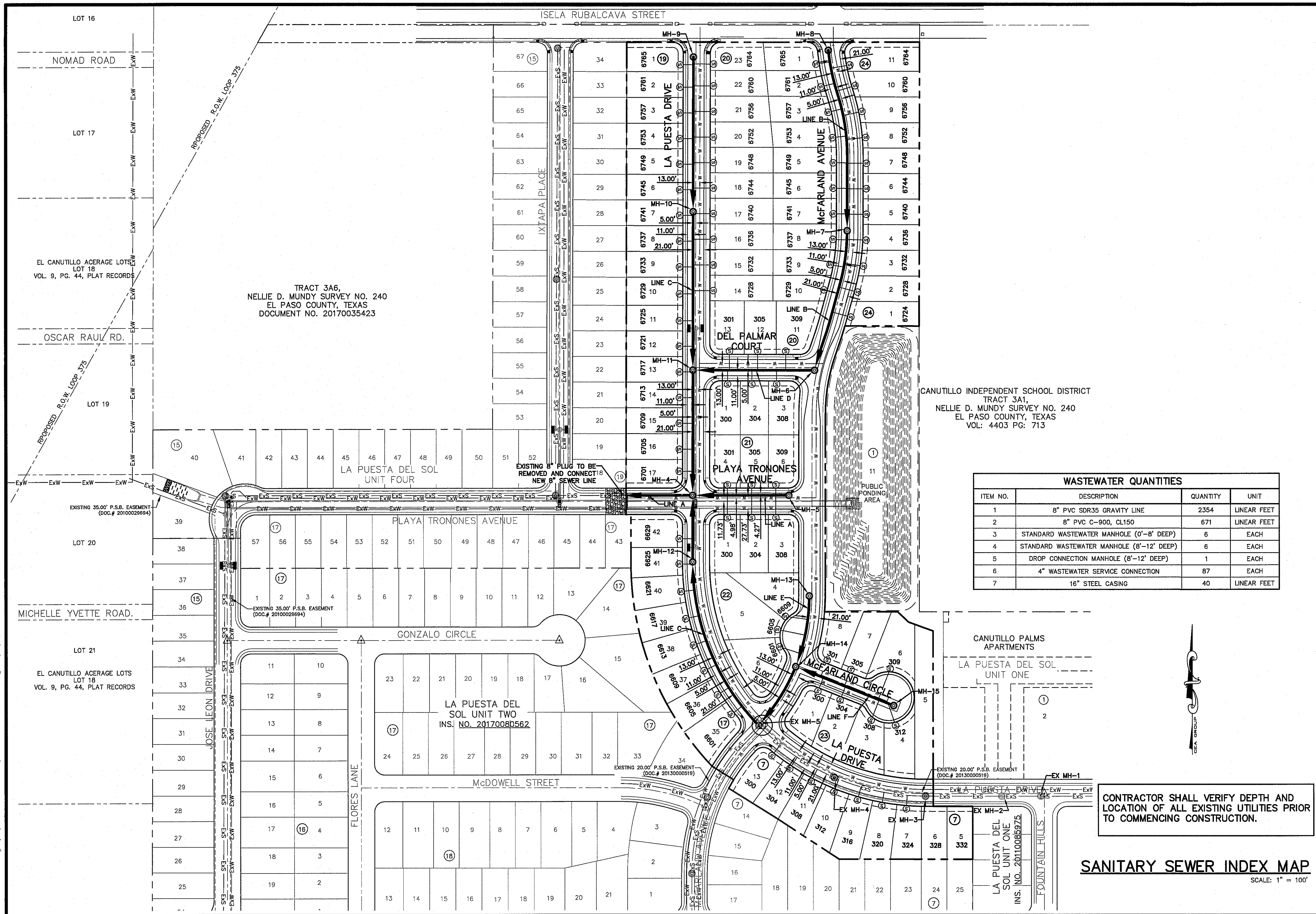
PROJECT TITLE
LA PUESTA DEL SOL
UNIT THREE
SUBDIVISION IMPROVEMENTS

SHEET TITLE
WATER DETAILS
(SHEET 4 OF 4)

SHEET NO.
C11.5

Final Approval

S:\2000\2000-210-La Puesta Del Sol Unit Three\DWGS\Construction Drawings\Improvement Plans\C11.2-C11.5-Water Details.dwg, 11/4/2019 10:47:20 AM



WASTEWATER QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
1	8" PVC SDR35 GRAVITY LINE	2354	LINEAR FEET
2	8" PVC C-900, CL150	671	LINEAR FEET
3	STANDARD WASTEWATER MANHOLE (0'-8' DEEP)	6	EACH
4	STANDARD WASTEWATER MANHOLE (8'-12' DEEP)	6	EACH
5	DROP CONNECTION MANHOLE (8'-12' DEEP)	1	EACH
6	4" WASTEWATER SERVICE CONNECTION	87	EACH
7	16" STEEL CASING	40	LINEAR FEET

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

SANITARY SEWER INDEX MAP

SCALE: 1" = 100'

GENERAL NOTES

1. UNLESS OTHERWISE SHOWN ON THE DRAWINGS, 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
CASTNER CENTER @ TRANSMOUNTAIN
4712 WOODROW BEAN, STE. F
EL PASO, TX. 79924
(915) 544-5232
MR. JORGE L. AZCARATE, P.E.

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

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

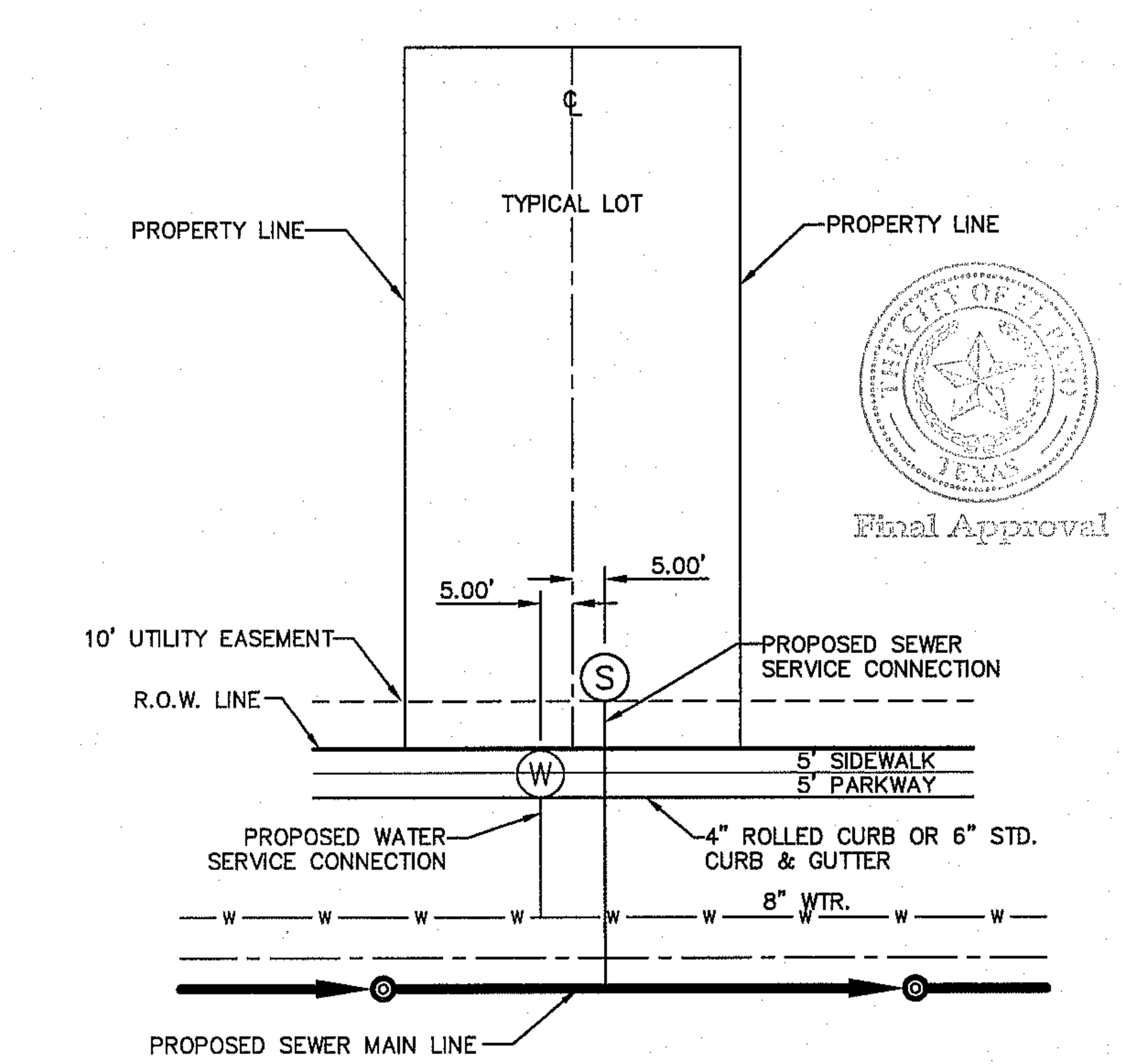
INDEX

NOTES:

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

LEGEND

SYMBOL	DESCRIPTION
	PROPOSED STORM SEWER
—ExW—	EXISTING WATER LINE
—ExS—	EXISTING SEWER LINE
	SUBD. BOUNDARY LINE
	PROPERTY LINE
	CENTER LINE
—W—	PROPOSED WATER LINE
	PROPOSED DOUBLE SEWER LINE (REFER TO PLAN & PROFILE) 12" LOWER LINE / 8" UPPER LINE
8" SEWER SDR35	PROPOSED SEWER LINE (PLAN VIEW)
	PROPOSED SEWER LINE ON ANOTHER SHEET (PLAN VIEW)
P.V.C. @ 0.33% 311 GPM	PROPOSED SEWER LINE (PROFILE VIEW)
	PROPOSED SEWER LINE (PROFILE VIEW)
Ⓢ	PROPOSED SERVICE CONNECTION (PLAN VIEW)
	EXISTING MANHOLE (PLAN VIEW)
	PROPOSED MANHOLE (PROFILE VIEW)
	EXISTING MANHOLE (PROFILE VIEW)



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

REFERENCES – BENCHMARKS
CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

ENGINEER'S SEAL
STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER
10-28-19

SCALE
Horizontal: 1"=100'
Vertical: N/A
Contour Interval: N/A
DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

PROJECT TITLE
LA PUESTA DEL SOL UNIT THREE
SUBDIVISION IMPROVEMENTS

THE CITY OF EL PASO TEXAS
Final Approval

SHEET TITLE
SEWER INDEX

SHEET NO.
C12.1

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UTILITY LOCATOR SERVICES

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

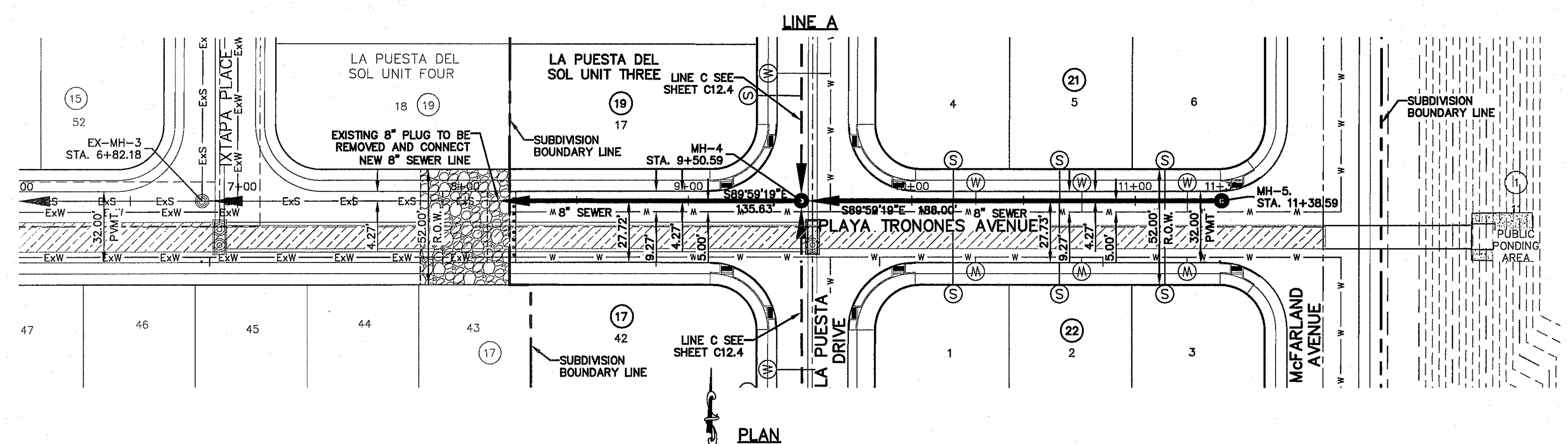
WARNING ! BEFORE YOU DIG

CALL 811

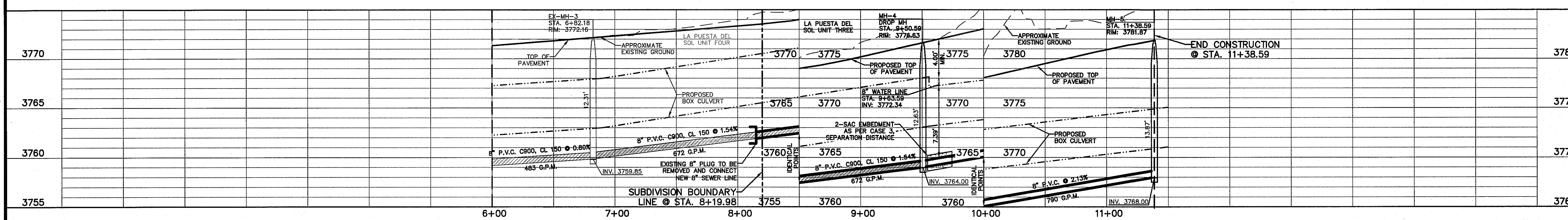
FOR FIELD LOCATING EXISTING UTILITIES

LEGEND:

- PROPOSED STORM SEWER LINE
- PROPOSED WATER LINE
- PROPOSED SEWER LINE ON ANOTHER SHEET (PLAN VIEW)
- PROPOSED SEWER LINE
- PROPOSED WATER SERVICE
- PROPOSED SEWER SERVICE
- PROPOSED SEWER MANHOLE
- PROPOSED BOX CULVERT
- C-900, CLASS 150 PVC PIPE



PLAN



REFERENCES – BENCHMARKS

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DATE	REVISIONS	BY

cea group
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

ENGINEER'S SEAL

STATE OF TEXAS — JORGE L. AZCARATE — 85075 — LICENSED PROFESSIONAL ENGINEER — 10-28-19

SCALE
Horizontal: 1"=40'
Vertical: 1"=5'
Contour Interval: N/A
DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

PROJECT TITLE

LA PUESTA DEL SOL UNIT THREE SUBDIVISION IMPROVEMENTS

SHEET TITLE

SANITARY SEWER PLAN & PROFILE LINE A

SHEET NO.

C12.2

THE CITY OF EL PASO TEXAS
Final Approval

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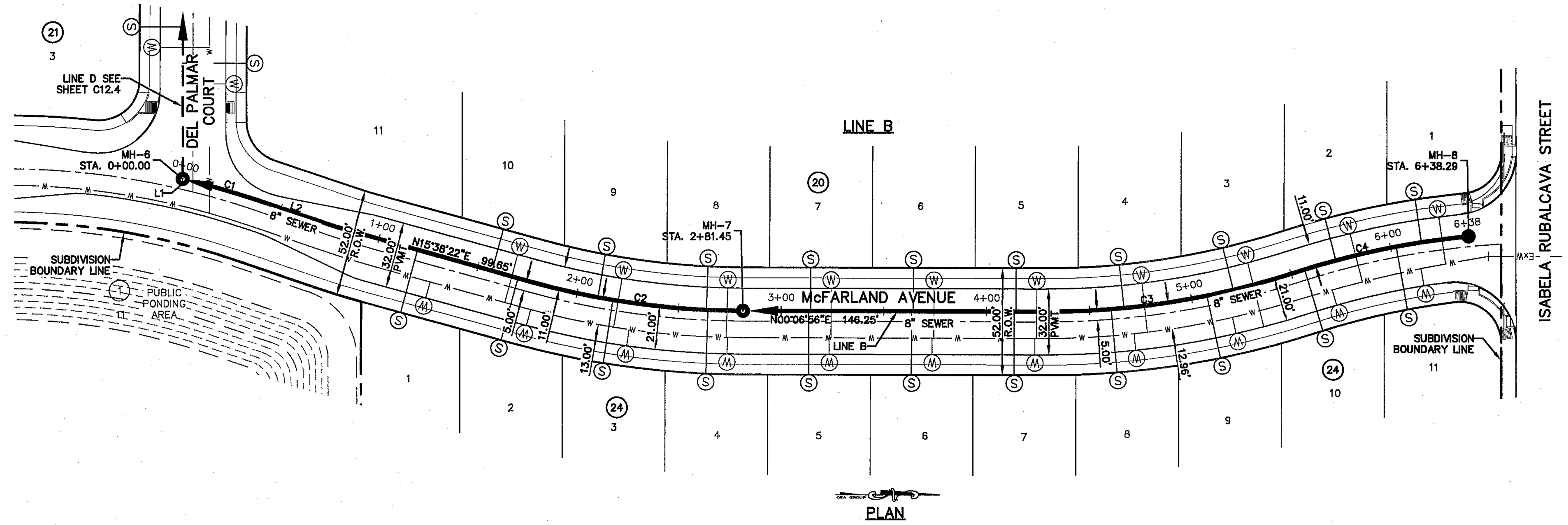
LINE TABLE		
LINE	BEARING	LENGTH
L1	N13°14'10"E	4.23'
L2	N18°42'23"E	39.97'

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	381.00'	33.22'	16.62'	33.21'	S16°12'31"W	004°59'46"
C2	395.00'	104.37'	52.49'	104.07'	N07°41'06"E	015°08'20"
C3	395.00'	124.54'	62.79'	124.03'	N08°55'01"W	018°03'54"
C4	405.00'	86.04'	43.18'	85.88'	S11°51'48"E	012°10'19"
C5	455.00'	182.92'	92.71'	181.69'	N78°28'17"W	023°02'04"
C6	455.00'	180.06'	91.23'	178.89'	N55°37'01"W	022°40'28"
C7	455.00'	352.67'	185.73'	343.91'	N22°04'30"W	044°24'34"



UTILITY LOCATOR SERVICES

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

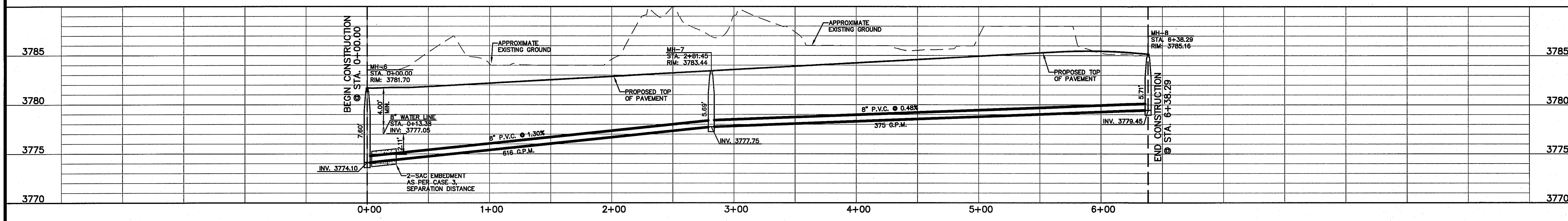
WARNING ! BEFORE YOU DIG

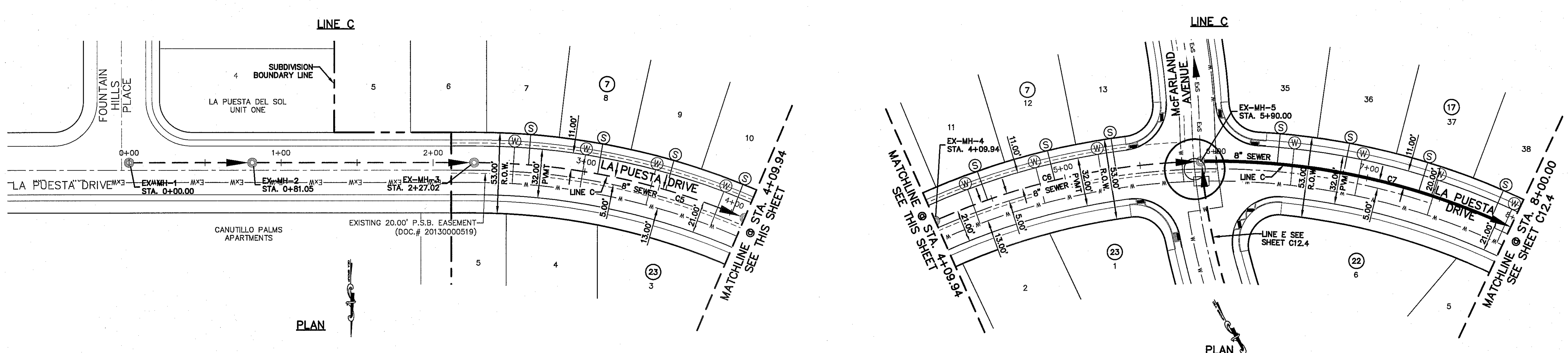
CALL 811

FOR FIELD LOCATING EXISTING UTILITIES

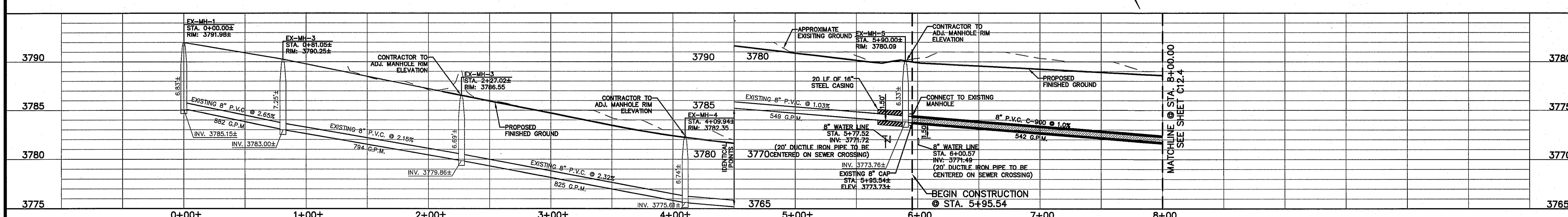
LEGEND:

- PROPOSED STORM SEWER LINE
- PROPOSED WATER LINE
- PROPOSED SEWER LINE ON ANOTHER SHEET (PLAN VIEW)
- PROPOSED SEWER LINE
- PROPOSED WATER SERVICE
- PROPOSED SEWER SERVICE
- PROPOSED SEWER MANHOLE
- C-900, CLASS 150 PVC PIPE





THE CITY OF EL PASO TEXAS
Final Approval



REFERENCES – BENCHMARKS

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cea group
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

ENGINEER'S SEAL
STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER
10-28-19

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

DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

PROJECT TITLE

LA PUESTA DEL SOL UNIT THREE SUBDIVISION IMPROVEMENTS

SHEET TITLE

SANITARY SEWER PLAN & PROFILE LINE B & C

SHEET NO.

C12.3

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C7	455.00'	352.67'	185.73'	343.91'	N22°04'30"W	044°24'34"
C8	404.17'	136.05'	68.68'	135.41'	N32°09'10"E	019°17'12"
C9	369.00'	140.92'	71.33'	140.06'	N11°04'13"E	021°52'52"

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
- C-900, CLASS 150 PVC PIPE

UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
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WARNING ! BEFORE YOU DIG

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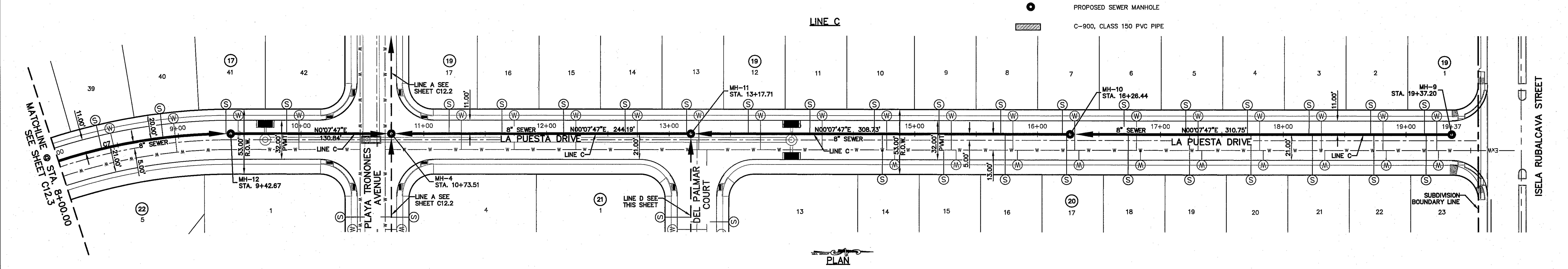
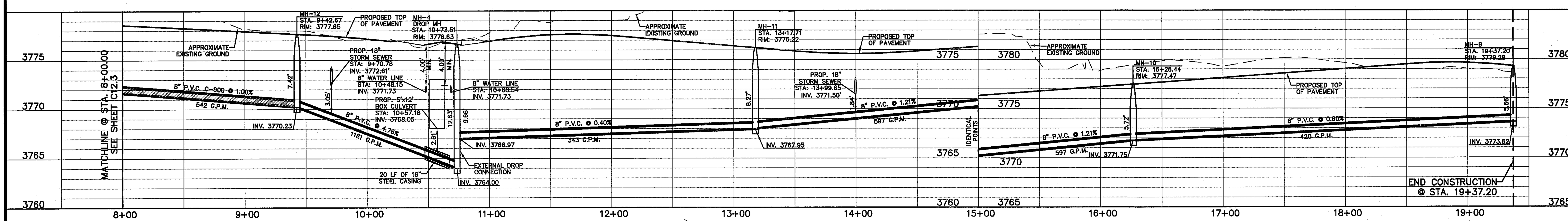
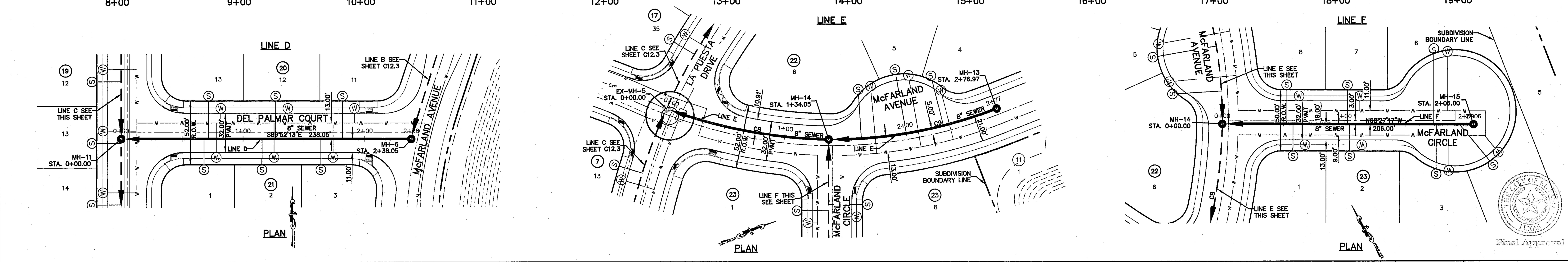
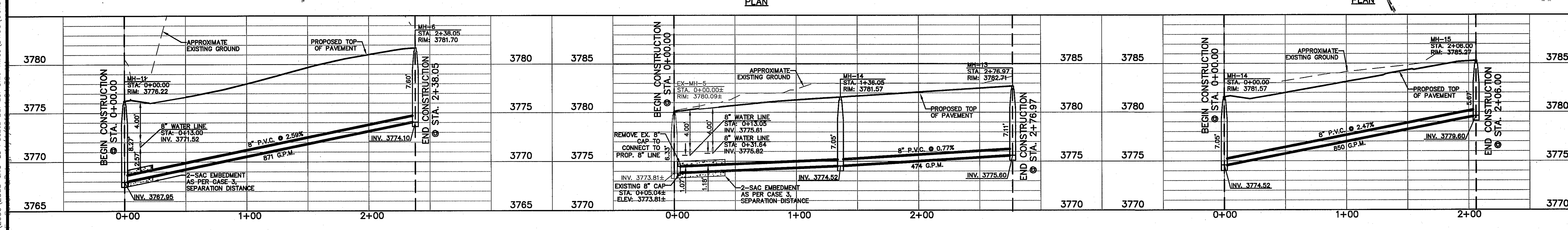
FOR FIELD LOCATING EXISTING UTILITIES









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cea group
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4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

ENGINEER'S SEAL: STATE OF TEXAS – JORGE L. AZCARATE – 85075 – LICENSED PROFESSIONAL ENGINEER – 10-28-19

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

DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

PROJECT TITLE

LA PUESTA DEL SOL UNIT THREE SUBDIVISION IMPROVEMENTS

SHEET TITLE

SANITARY SEWER PLAN & PROFILE LINE C, D, E, & F

SHEET NO.

C12.4

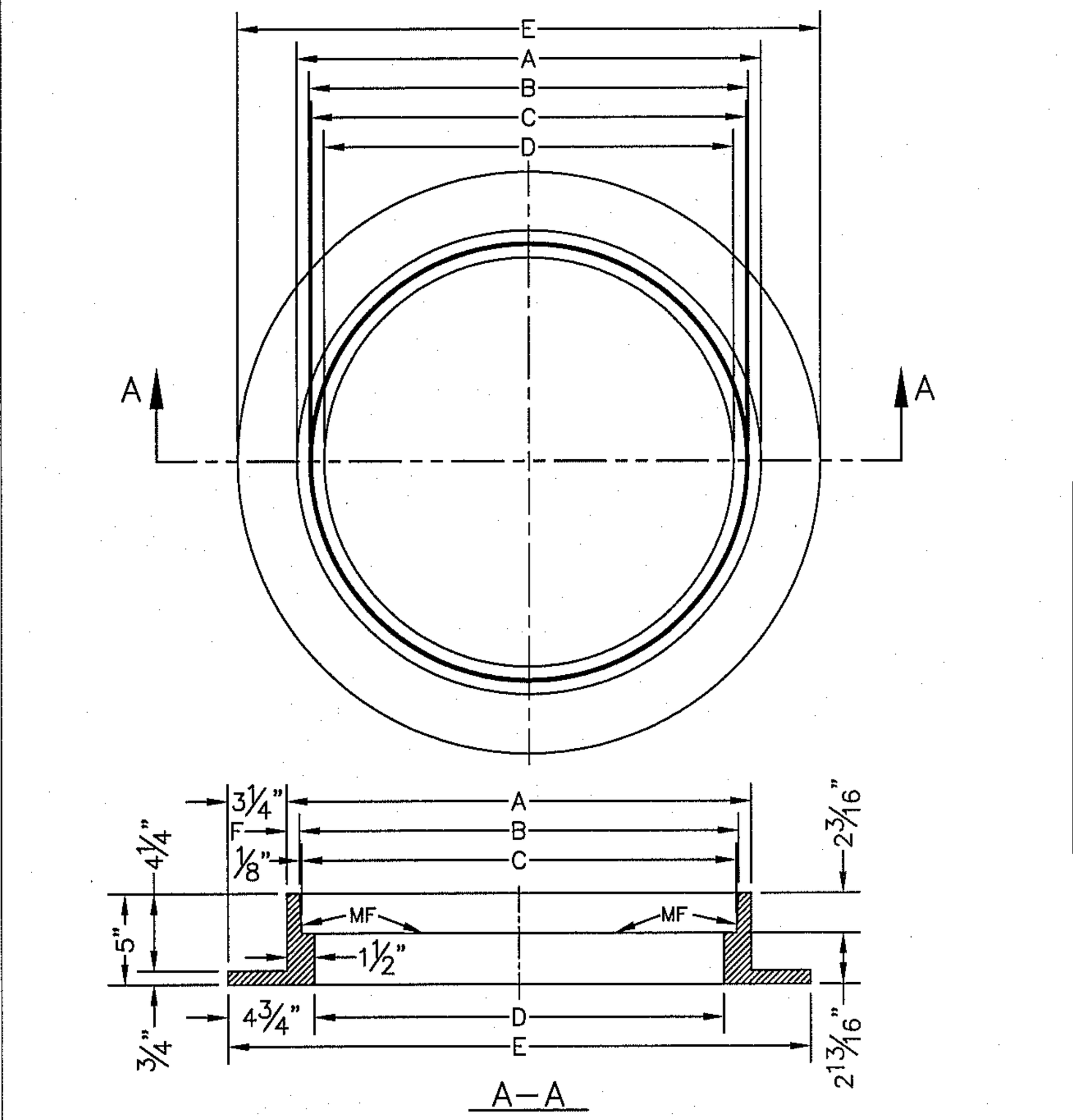
S:\2000\2000-210-La Puesta Del Sol Unit Three\DWGS\Construction Drawings\Improvement Plans\C12.4-Line C, D, E,

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

WARNING ! BEFORE YOU DIG

CALL 811

FOR FIELD LOCATING EXISTING UTILITIES



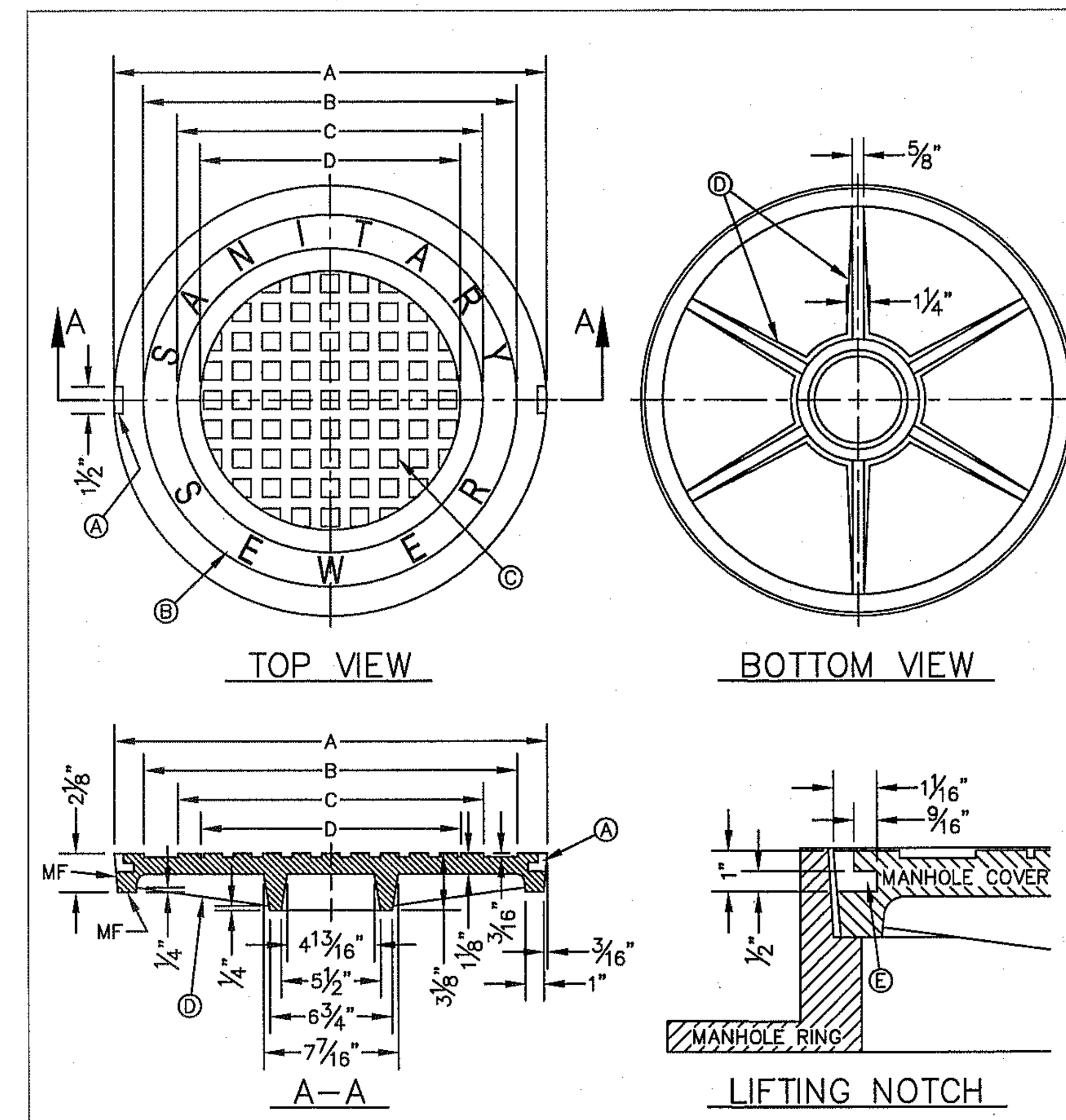
GENERAL NOTES:
1. MATCHING SURFACES MARKED "MF" TO BE FINISHED OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
2. CASTING TO BE SMOOTH & VOID OF AIR HOLES.
3. CASTING MUST MEET REQUIREMENTS OF AASHTO M306-07.
4. AS-CAST DIMENSIONS MAY VARY 1/16"±/ PER FOOT (AASHTO M306-07).
5. WEIGHT MAY VARY 5%±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

MANHOLE RING	MANHOLE - ALL TYPES	*MANHOLE TYPE A, A1, A2 & C
A	33"	25½"
B	31¾"	24⅛"
C	31½"	23⅞"
D	30"	22½"
E	39½"	32"
F	⅝"	1 1/16"
WEIGHT	205 lbs.	170 lbs.

*OBSOLETE -DO NOT USE (FOR REFERENCE ONLY)

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

1 / C12.5 STANDARD MANHOLE RING
SCALE: N.T.S.



GENERAL NOTES:
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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 1/16"±/ PER FOOT (AASHTO M306-07).
5. WEIGHT MAY VARY 5%± (AASHTO M306-07).

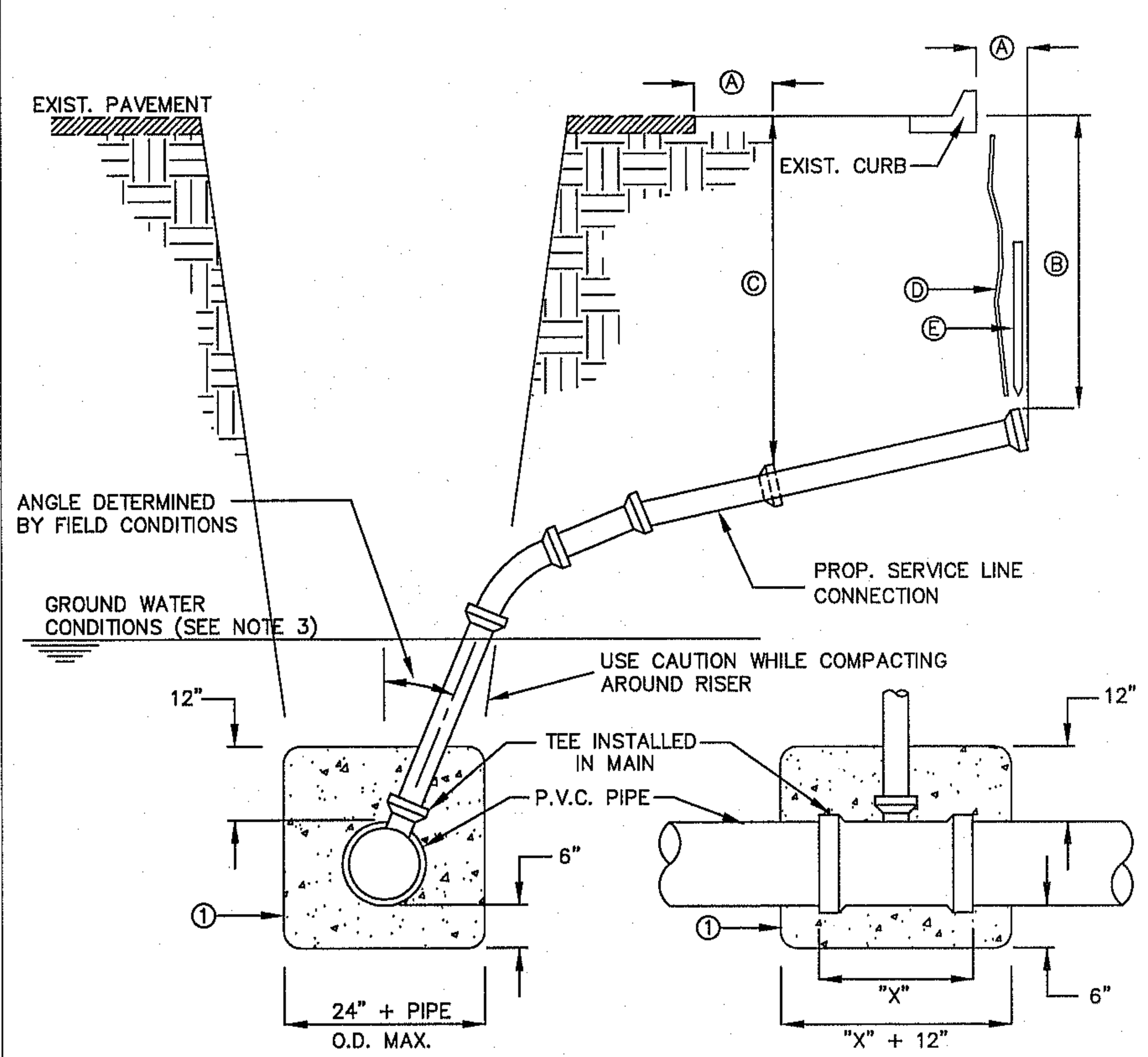
CONSTRUCTION KEY NOTES:
A. LIFTING NOTCH.
B. 3/16" RAISED LETTERING.
C. 1" SQUARES (3/16" TALL) WITH ⅝" SPACE BETWEEN.
D. REINFORCING RIBS.
E. SLOT.

MANHOLE COVER	MANHOLE - ALL TYPES	*MANHOLE TYPE A, A1, A2 & C
A	31⅜"	23⅞"
B	28⅛"	20⅝"
C	24⅜"	16⅞"
D	21⅞"	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 / C12.5 STANDARD COVER DETAIL
SCALE: N.T.S.

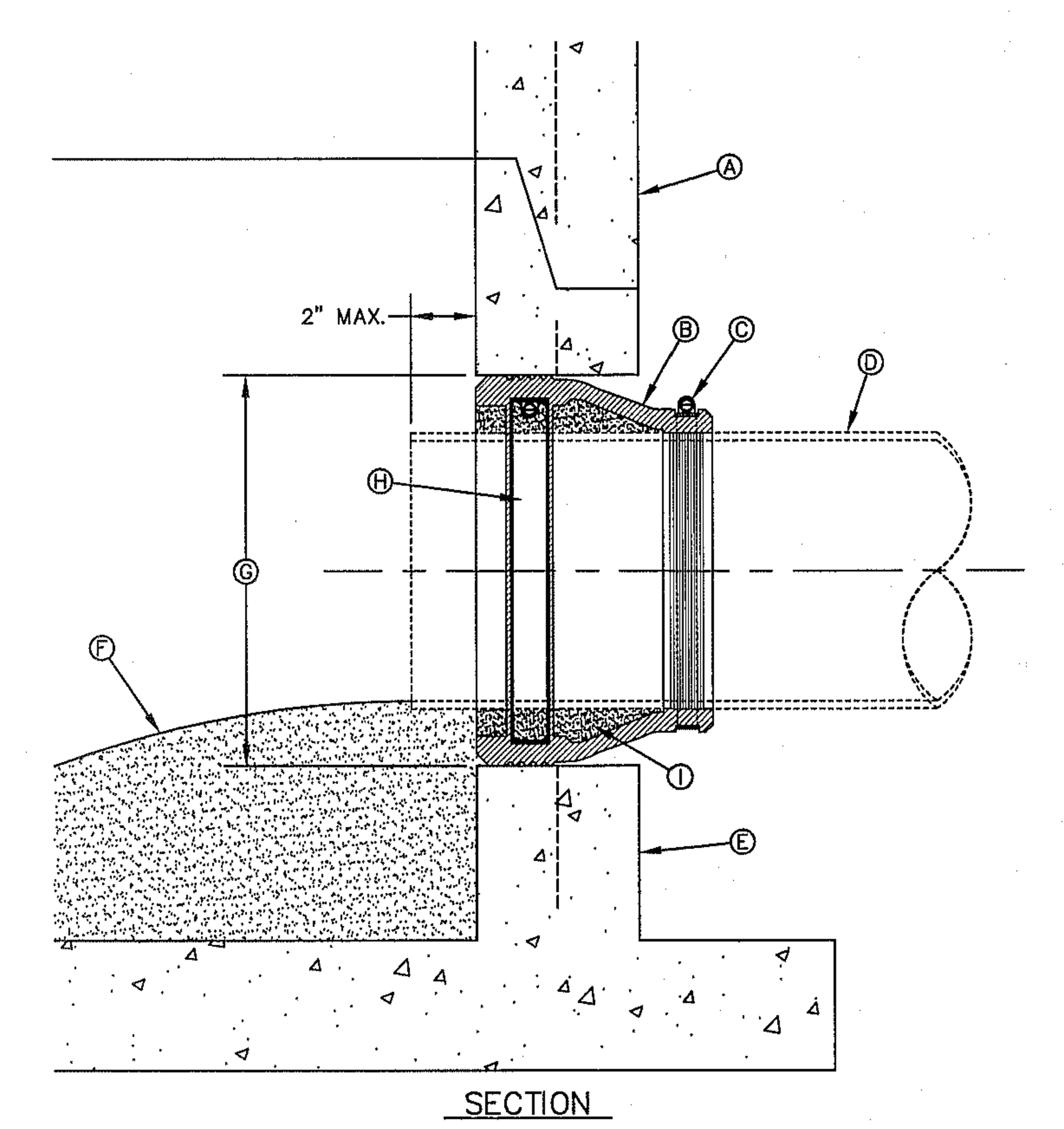


GENERAL NOTES:
1. IN GROUNDWATER CONDITIONS ONLY, P.V.C. SADDLES OR TEES ARE TO BE ENCASED WITH CLASS B CONCRETE.
2. UNDER CERTAIN CONDITIONS FIELD INVESTIGATIONS WILL BE REQUIRED TO DETERMINE THE ADEQUACY OF THE DEPTH ON THE LATERAL.
3. WHEN GROUND WATER IS ENCOUNTERED SERVICE RISER SHALL BE EXTENDED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

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

STANDARD DETAIL	DATE: 11/1992 REV: 1/23/2009	SEWER SERVICE RISER AND SERVICE LINE CONNECTION	N.T.S.	el paso WATER	DETAIL No. 391

3 / C12.5 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 / C12.5 PIPE CONNECTION TO MANHOLE
SCALE: N.T.S.

Final Approval

REFERENCES - BENCHMARKS
CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN, ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

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915.544.5232 | www.ceagroup.net

ENGINEER'S SEAL

SCALE
Horizontal: N/A
Vertical: N/A
Contour Interval: N/A
DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

PROJECT TITLE
LA PUESTA DEL SOL
UNIT THREE
SUBDIVISION IMPROVEMENTS

SHEET TITLE
SANITARY SEWER DETAILS
(SHEET 1 OF 3)

SHEET NO.
C12.5

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

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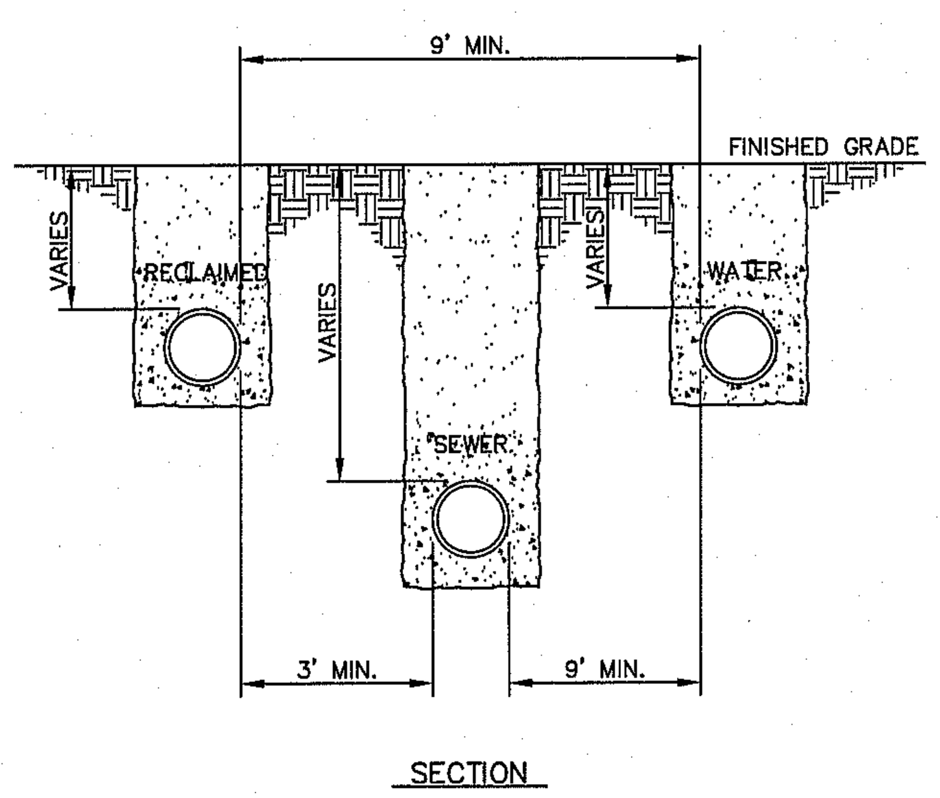
FOR FIELD LOCATING EXISTING UTILITIES

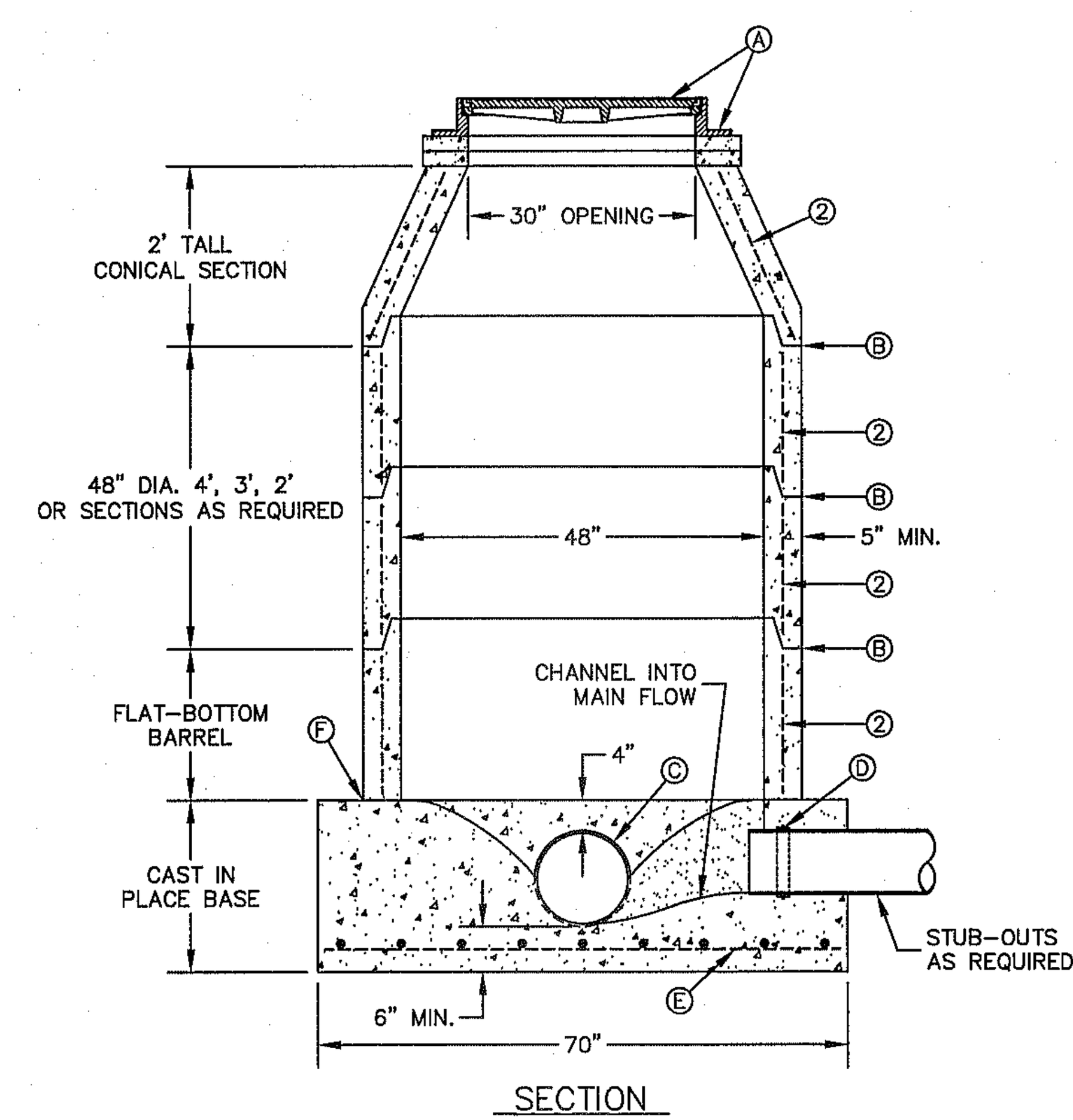


SECTION

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

(1 / C12.6) SEPARATION DISTANCE–POTABLE WATER, SANITARY SEWER AND RECLAIMED WATER
SCALE: N.T.S.



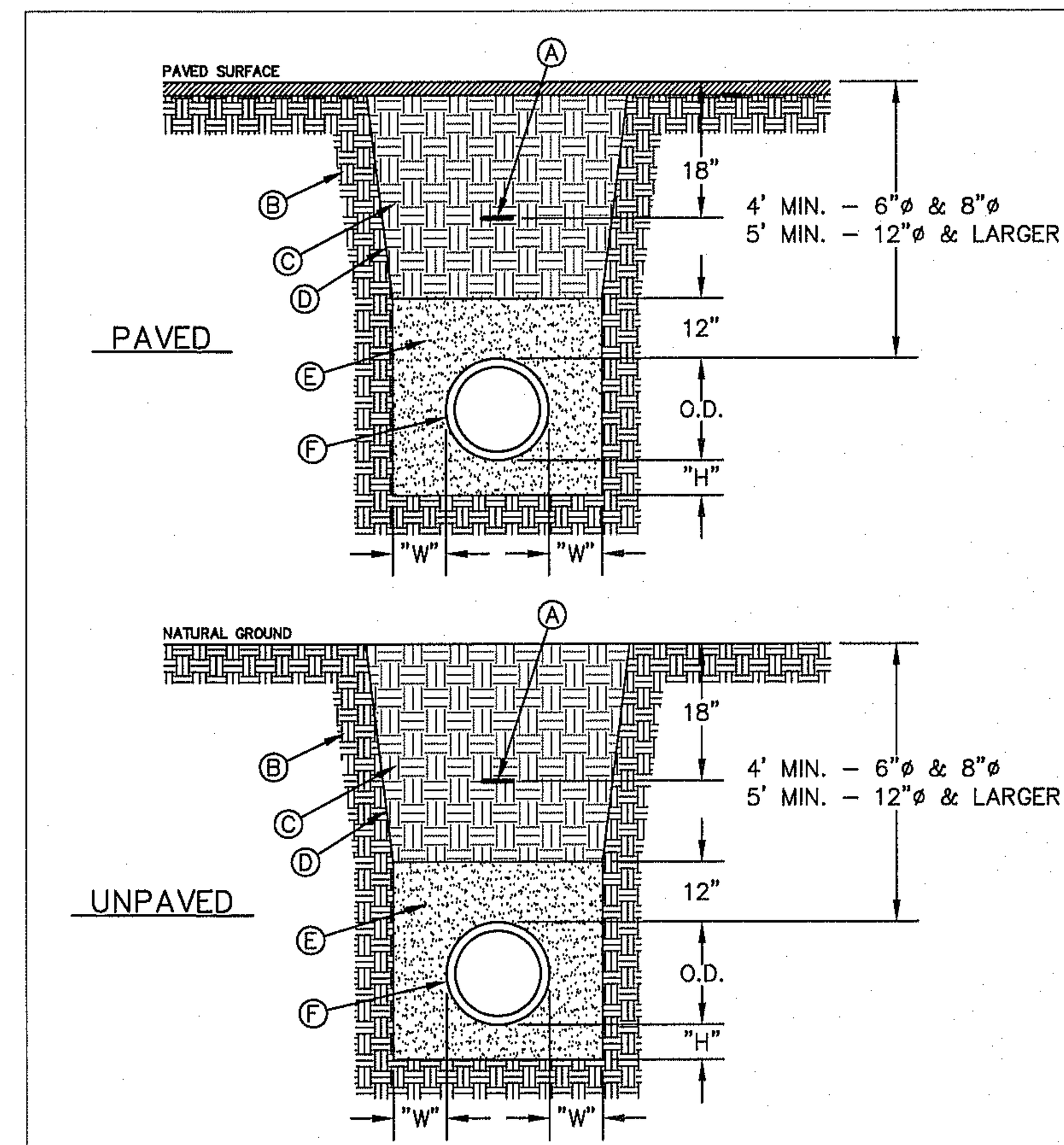
SECTION

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

(2 / C12.6) STANDARD MANHOLE TYPE "A1"
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:

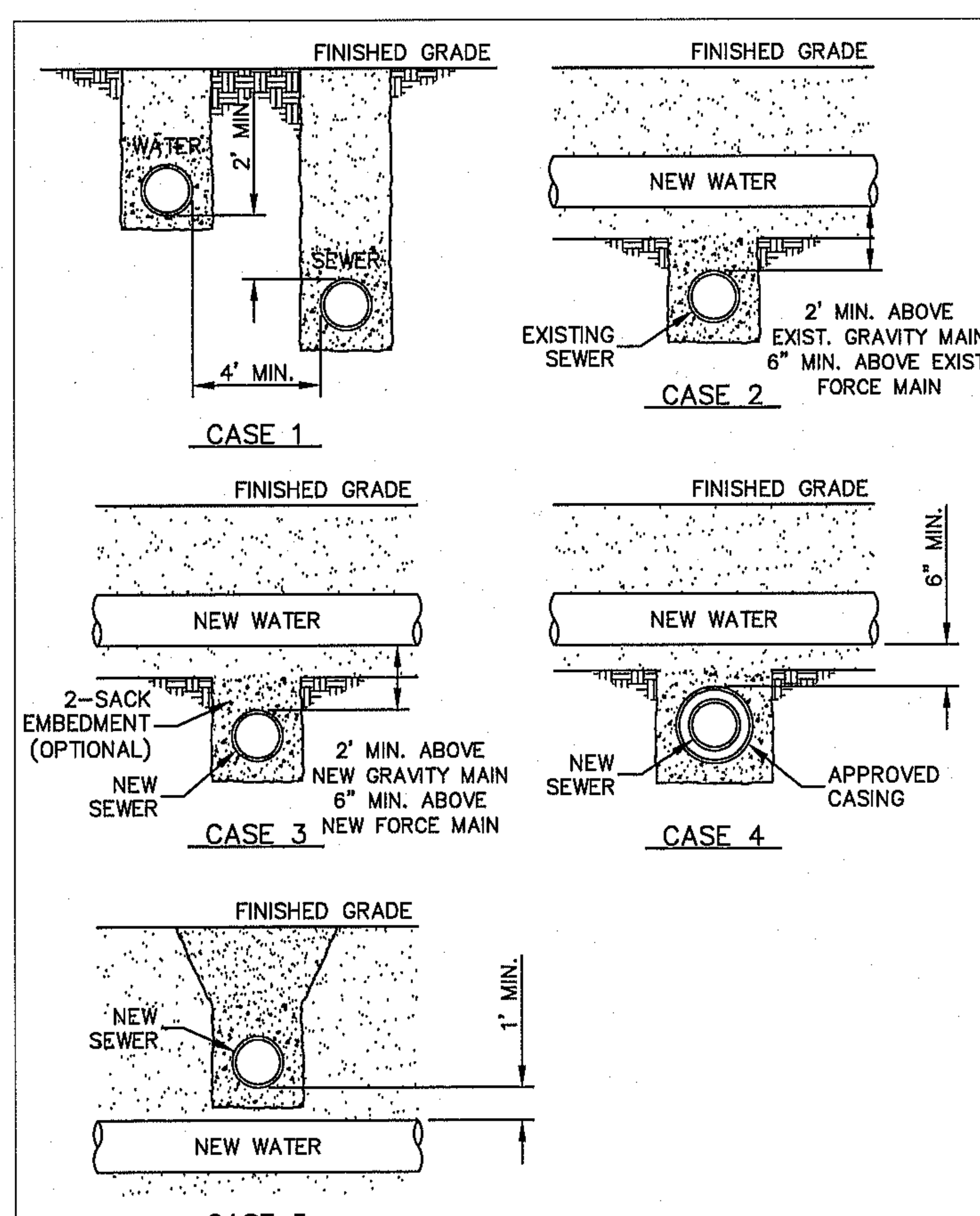
PIPE DIAMETER	"H"
6" – 30"	4"
GREATER THAN 30"	6"

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 / C12.6) BEDDING CLASS DETAILS FOR FOR P.V.C. PRESSURE PIPE
SCALE: N.T.S.

Final Approval



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

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

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

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

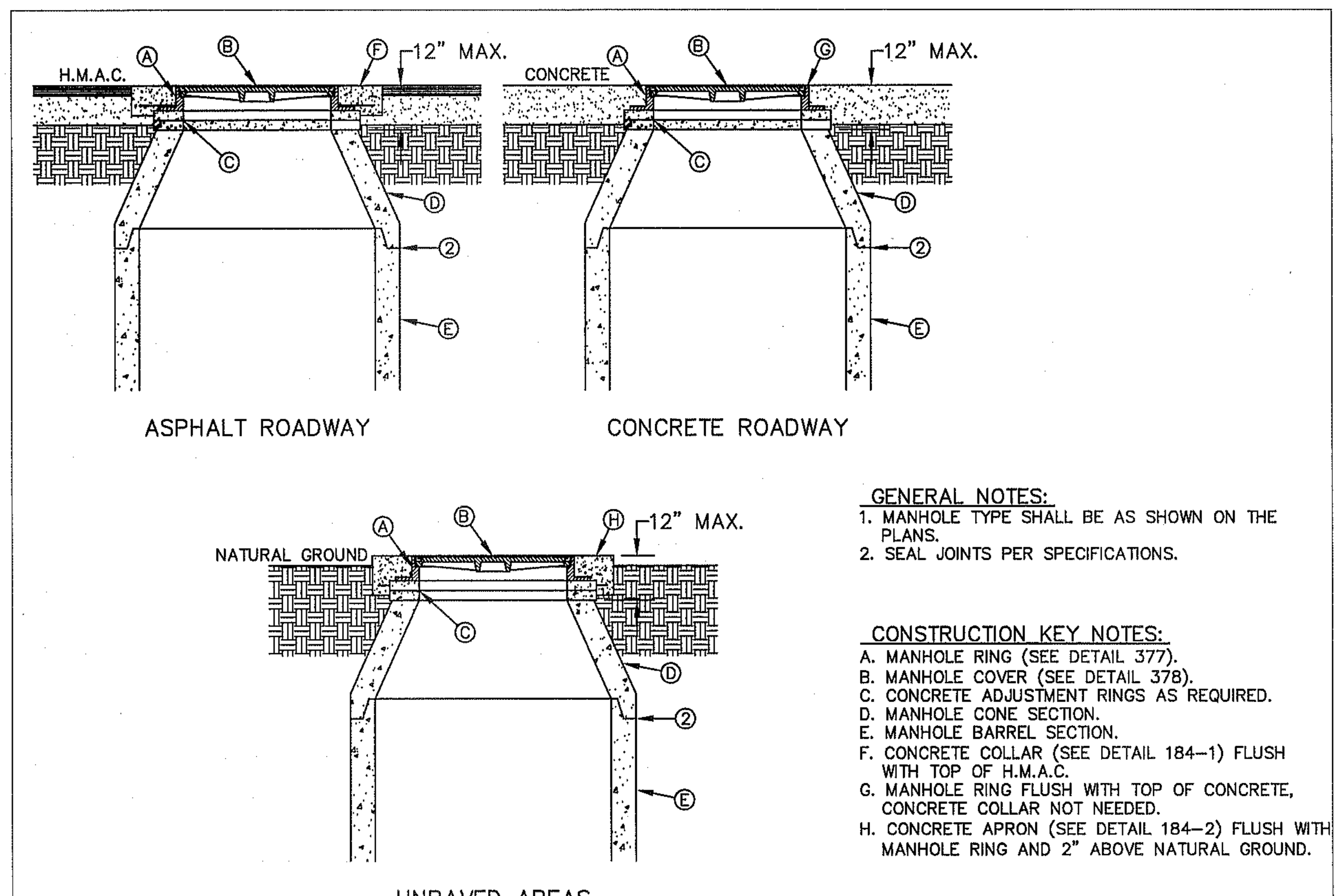
CASE 3. NEW POTABLE WATER MAIN CROSSING NEW GRAVITY SANITARY SEWER MAIN OR NEW FORCE MAIN (PER TCEQ §290.44(e)(4)(B)(iii), §290.44(e)(4)(B)(v) AND §290.44(e)(4)(B)(iv)(I).
- LOCATION: WATER ABOVE SEWER OR FORCE MAIN.
- SEWER MATERIALS: NEW GRAVITY MAIN - PVC (150 PSI) or DI REQUIRED, CENTER UNDER WATER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

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

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

STANDARD DETAIL	DATE: 8/3/2006 REV: 8/21/2007	SEPARATION DISTANCE SANITARY SEWER AND POTABLE WATER (SPECIAL CONDITIONS) N.T.S.	el paso WATER	DETAIL No. 161

(4 / C12.6) SEPARATION DISTANCE SANITARY SEWER AND POTABLE WATER (SPECIAL CONDITIONS)
SCALE: N.T.S.

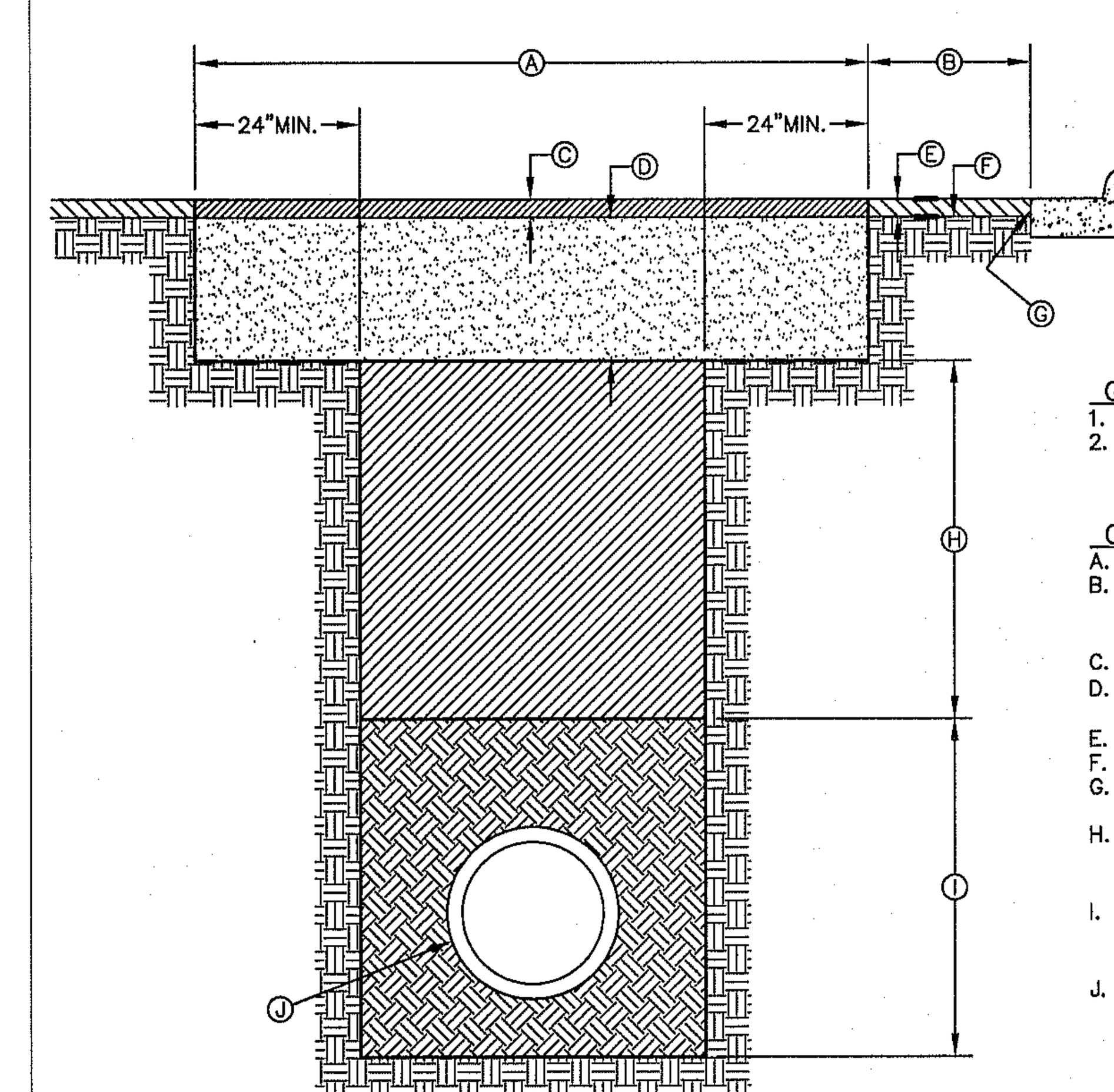


GENERAL NOTES:
1. MANHOLE TYPE SHALL BE AS SHOWN ON THE PLANS.
2. SEAL JOINTS PER SPECIFICATIONS.

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 / C12.6) 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 / C12.6) PAVEMENT REPAIR DETAIL
SCALE: N.T.S.

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

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4712 Woodrow Bean, Ste. F El Paso, TX 79924
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ENGINEER'S SEAL
STATE OF TEXAS JORGE L. AZCARATE 85075 LICENSED PROFESSIONAL ENGINEER 10-28-19

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

DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

PROJECT TITLE

LA PUESTA DEL SOL UNIT THREE SUBDIVISION IMPROVEMENTS

SHEET TITLE

SANITARY SEWER DETAILS

(SHEET 2 OF 3)

SHEET NO.

C12.6

S:\2000\2000-210-La Puesta Del Sol Unit Three\DMGS\Construction Drawings\Improvement Plans\C12.5-Sanitary Sewer Details.dwg, 11/4/2019 11:07:11 AM

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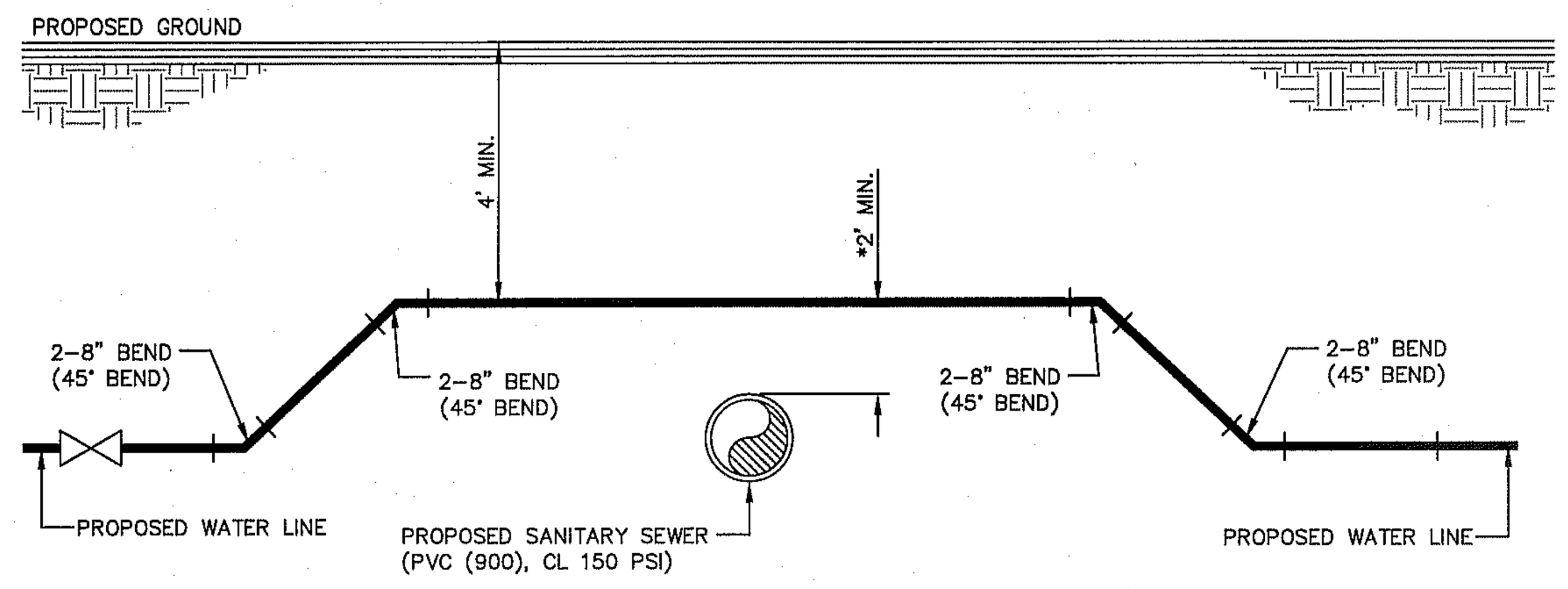
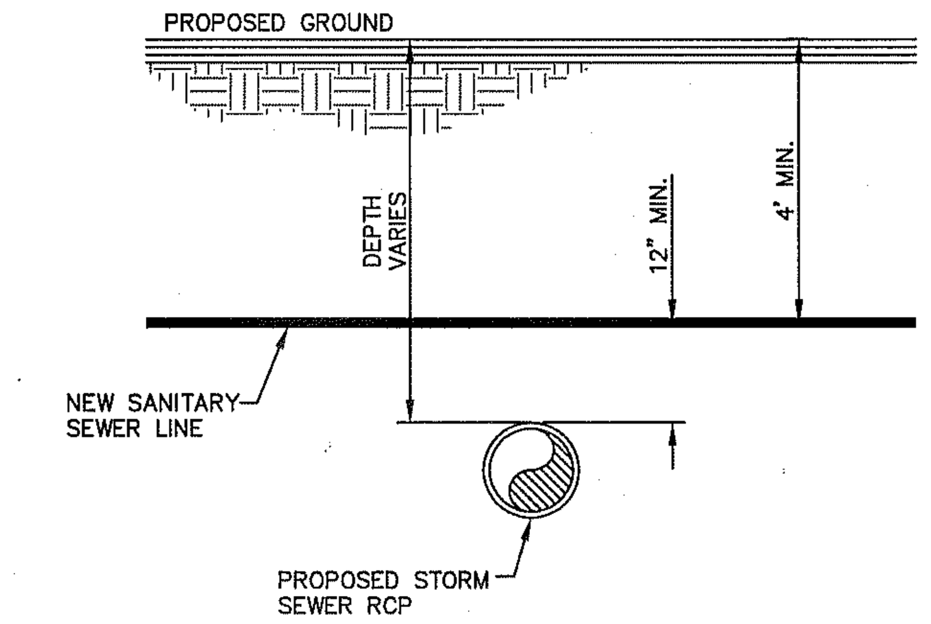
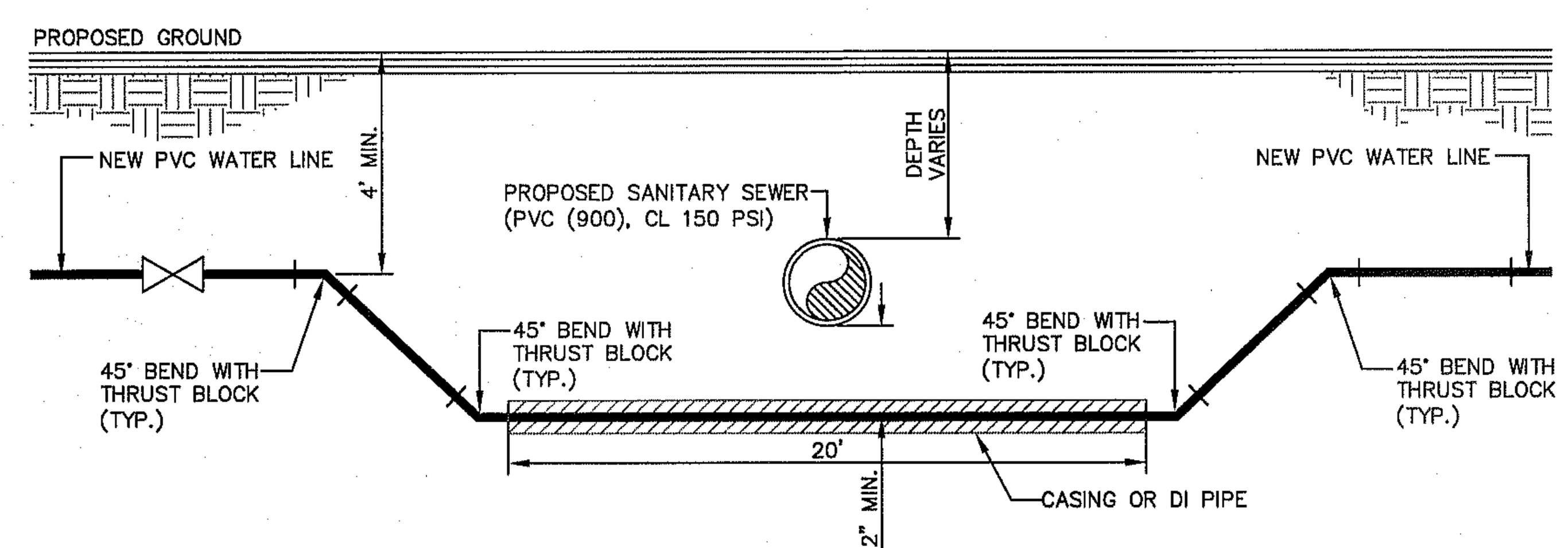


*NOTE:
IF DISTANCE BETWEEN PROPOSED SANITARY SEWER AND PROPOSED WATER LINE IS BETWEEN 6"(MIN.)-2'(MAX.), SANITARY SEWER MUST BE ENCASED IN DUCTILE IRON PIPE AS PER SEPERATION DISTANCE (SPECIAL CONDITION) DETAIL.

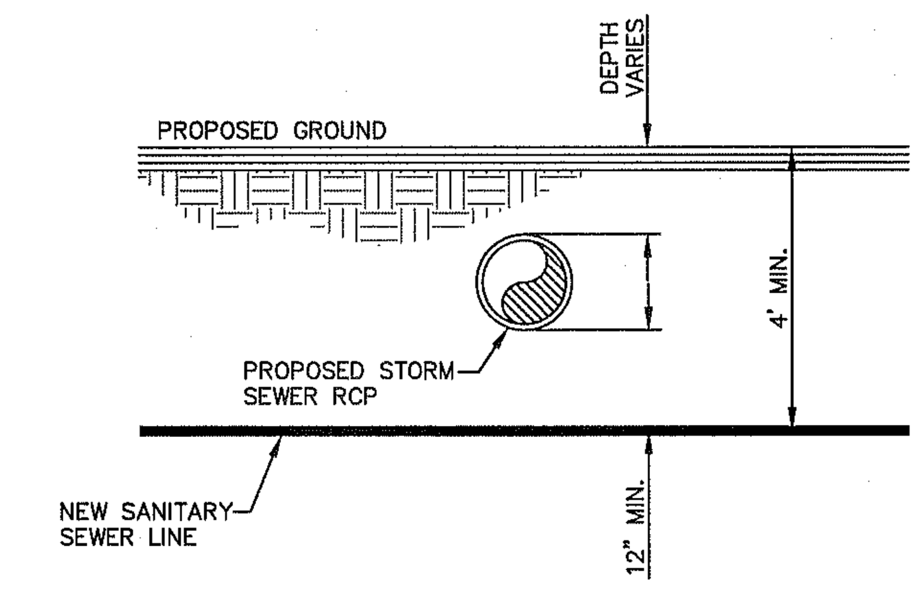
1 / C12.7 SANITARY SEWER CROSSING WATER LINE DETAIL
SCALE: N.T.S.



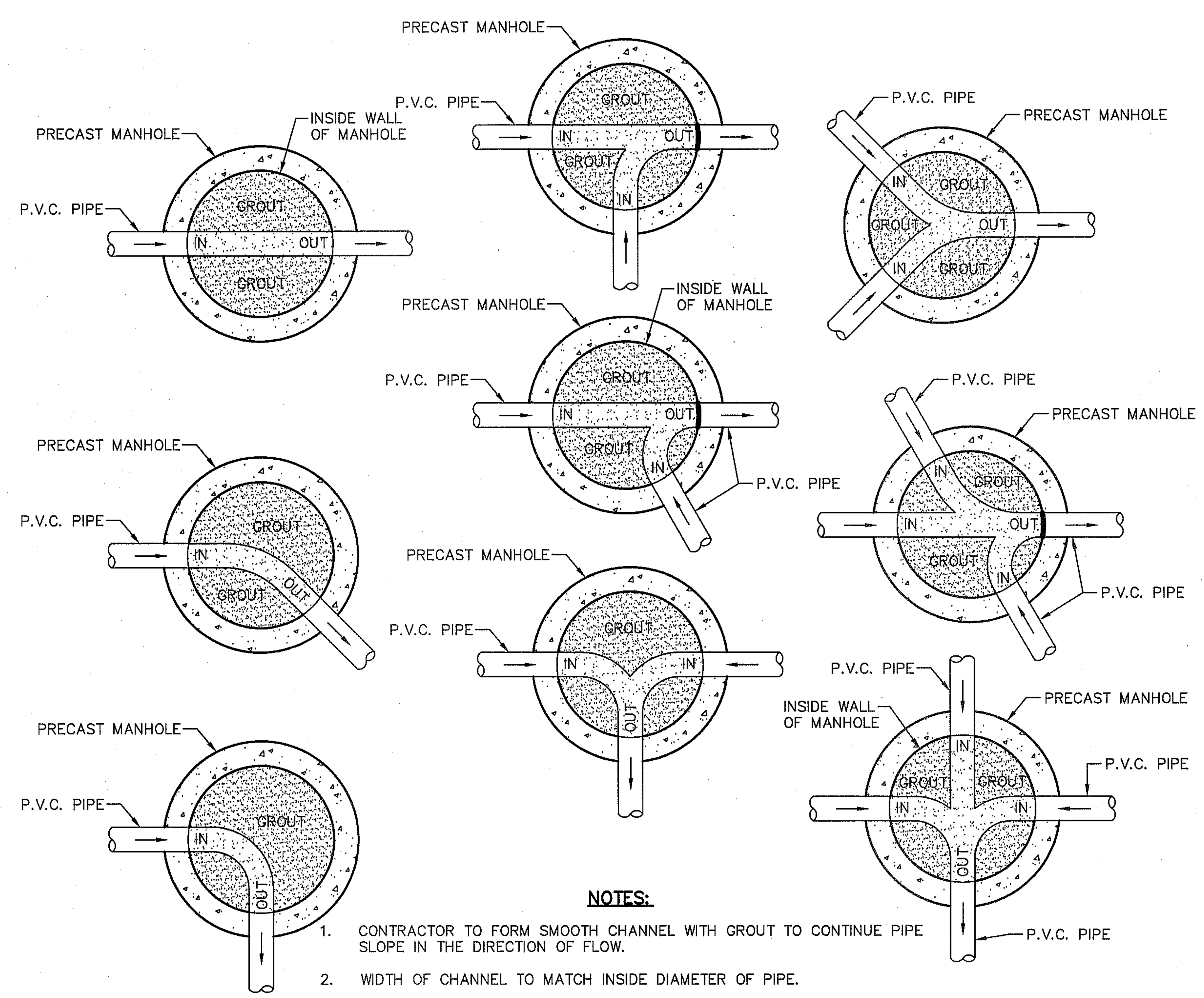
2 / C12.7 STORM SEWER CROSSING UNDER SANITARY LINE DETAIL
SCALE: N.T.S.



3 / C12.7 SANITARY SEWER CROSSING DETAIL
SCALE: N.T.S.



4 / C12.7 STORM SEWER CROSSING OVER SANITARY LINE 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.

5 / C12.7 TYPICAL MANHOLE INVERT PLANS
SCALE: N.T.S.

Final Approval

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3987.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
TEXAS REGISTERED ENGINEERING FIRM F-4664
4712 Woodrow Bean, Ste. F El Paso, TX 79924
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ENGINEER'S SEAL
STATE OF TEXAS — JORGE L. AZCARATE — 85075 — LICENSED PROFESSIONAL ENGINEER — 10-28-19

SCALE
Horizontal: N/A
Vertical: N/A
Contour Interval: N/A
DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

PROJECT TITLE

LA PUESTA DEL SOL
UNIT THREE
SUBDIVISION IMPROVEMENTS

SHEET TITLE

SANITARY SEWER DETAILS

(SHEET 3 OF 3)

SHEET NO.

C12.7

S:\2000\2000-210-La Puesta Del Sol Unit Three\DWGS\Construction Drawings\Improvement Plans\C12.5-Sanitary Sewer Details.dwg, 11/4/2019 11:08:48 AM

SITE DESCRIPTION

PROJECT NAME AND LIMITS: LA PUESTA DEL SOL UNIT THREE IS BORDERED BY A PORTION OF TRACT 1A, NELLIE D. MUNDY SURVEY NO. 240 TO THE NORTH, CANUTILLO HIGH SCHOOL, A PORTION OF 3A1, NELLIE D. MUNDY SURVEY NO. 240, CANUTILLO PALMS APARTMENT AND LA PUESTA DEL SOL UNIT ONE TO THE EAST, LA PUESTA DEL SOL UNIT TWO TO THE SOUTH, AND LA PUESTA DEL SOL UNIT FOUR AND A PORTION OF 3A, NELLIE D. MUNDY SURVEY NO. 240 TO THE WEST.

PROJECT DESCRIPTION: THE SITE FOR THE NEW SUBDIVISION WILL ENCOMPASS APPROXIMATELY 19.47± ACRES, AND WILL CONTAIN A TOTAL OF 88 RESIDENTIAL LOTS

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

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

TOTAL PROJECT AREA: 17.41±

TOTAL AREA TO BE DISTURBED: 17.41±

WEIGHTED RUNOFF COEFFICIENT (AFTER CONSTRUCTION): 0.684

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

NAME OF RECEIVING WATERS: LA PUESTA DEL SOL UNIT THREE SUBDIVISION WILL DISCHARGE INTO AN ON-SITE STORM SEWER INFRASTRUCTURE AND ULTIMATELY DISCHARGE INTO AN ON-SITE RETENTION BASIN.

CERTIFICATION

DEVELOPER/OWNER CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY NQUIRY OF THE PERSON OR PERSONS WHO MANAGES THE SYSTEM, OR THOSE PERSONS DIRECTLYRESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

OPERATOR: ____________________

SIGNATURE: ____________________

NAME (PRINT): ____________________

TITLE: ____________________

DATE: ____________________

CONTRACTOR'S CERTIFICATION

GENERAL CONTRACTOR

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY NQUIRY OF THE PERSON OR PERSONS WHO MANAGES THE SYSTEM, OR THOSE PERSONS DIRECTLYRESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

OPERATOR: ____________________

SIGNATURE: ____________________

NAME (PRINT): ____________________

TITLE: ____________________

DATE: ____________________

EROSION AND SEDIMENT CONTROL

SOIL STABILIZATION PRACTICES

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

OTHER: ____________________

STRUCTURAL PRACTICES:

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

OTHER: ____________________

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

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

SWPPP GENERAL NOTES:

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

BEST MANAGEMENT PRACTICES CONTROLS

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, STRUCTURAL CONTROLS, MATERIAL; STORAGE AREAS, VEHICLES ENTRANCE AND EXIST: ACTIONS TAKEN AND INSPECTORS NAME.
3. CONSTRUCTIONS SITE NOTICE WILL BE MAINTAINED ON SITE.
4. COPY OF SWPPP SHALL BE KEPT ON SITE.
5. PERIMETER MUST RAIN THE SWPPPS NOI AND INSPECTION LOG DO 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.

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

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

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

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

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

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

XI. **OFFSITE VEHICLE TRACKING:**
IN ADDITION TO THE STABILIZED CONSTRUCTION ENTRANCES, THE FOLLOWING MEASURES SHALL BE OBSERVED DURING CONSTRUCTION:
- HAUL ROADS SHALL BE DAMPENED FOR DUST CONTROL
- LOADED HAUL TRUCKS SHALL BE COVERED WITH TARPAULIN
- EXCESS DIRT ON ROAD SHALL BE REMOVED IMMEDIATELY
- STABILIZED CONSTRUCTION ENTRANCE
- OTHER: ____________________

THE CITY OF EL PASO TEXAS

Final Approval

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

ENGINEER'S SEAL

STATE OF TEXAS — JORGE L. AZCARATE — 85075 — LICENSED PROFESSIONAL ENGINEER — 10-28-19

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

DATE: JUNE 2019
DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

PROJECT TITLE

LA PUESTA DEL SOL UNIT THREE SUBDIVISION IMPROVEMENTS

SHEET TITLE

STORM SEWER POLLUTION PREVENTION PLAN: NOTES

SHEET NO.

C13.1

S:\2000\2000-210-La Puesto Del Sol Unit Three\DWGS\Construction Drawings\Improvement Plans\C13.1-SW3P Notes.dwg, 11/4/2019 11:09:39 AM

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

WARNING ! BEFORE YOU DIG

CALL 811

FOR FIELD LOCATING EXISTING UTILITIES

LEGEND:

- —X—X— SILT FENCE OR EARTHEN BERM
- STABILIZED CONSTRUCTION ENTRANCE
- S STAGING AREA
- P PORTABLE TOILETS
- W WASH OUT

TRACT 1A
CITY OF EL PASO
VOL. 1272 PG. 655

NELLIE D. MUNDY SURVEY
NO. 240
EL PASO COUNTY, TEXAS

ISELA RUBALCAVA STREET

PROPOSED R.O.W. LOOP 375

IXTAPA PLACE

LA PUESTA DRIVE

McFARLAND AVENUE

DEL PALMAR COURT

TRACT 3A6,
NELLIE D. MUNDY SURVEY NO. 240
EL PASO COUNTY, TEXAS
DOCUMENT NO. 20170035423

CANUTILLO INDEPENDENT SCHOOL DISTRICT
TRACT 3A1,
NELLIE D. MUNDY SURVEY NO. 240
EL PASO COUNTY, TEXAS
VOL: 4403 PG: 713

LA PUESTA DEL SOL UNIT FOUR

PLAYA IRONONES AVENUE

PUBLIC PONDING AREA

P.S.B. EASEMENT 29694)

EXISTING 35.00' P.S.B. EASEMENT (DOC.# 20100029694)

LA PUESTA DRIVE

CANUTILLO PALMS APARTMENTS

GONZALO CIRCLE

McFARLAND CIRCLE

LA PUESTA DEL SOL UNIT TWO

INS. NO. 20170080562

EXISTING 20.00' P.S.B. EASEMENT (DOC.# 20130000519)

JOSE LEON DRIVE

FLORES LANE

McDOWELL STREET

LA PUESTA DRIVE

McFARLAND AVENUE

FOUNTAIN HILLS

LA PUESTA DEL SOL UNIT ONE

INS. NO. 20110085975

AGE LOTS
RECORDS

ROAD.

RD.

SITE PLAN

SCALE: 1" = 100'

Final Approval

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN. ELEVATION = 3887.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "DWINDLE"
ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
TEXAS REGISTERED ENGINEERING FIRM F-4654
4712 Woodrow Bean Ste. F El Paso, TX 79924
915.544.5232 | www.ceagroup.net

ENGINEER'S SEAL

JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER
10-28-19

SCALE
Horizontal:
Vertical:
Contour Interval: N/A

DATE: JUNE 2019
DESIGN BY: M.R.G.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-210

PROJECT TITLE

LA PUESTA DEL SOL UNIT THREE
SUBDIVISION IMPROVEMENTS

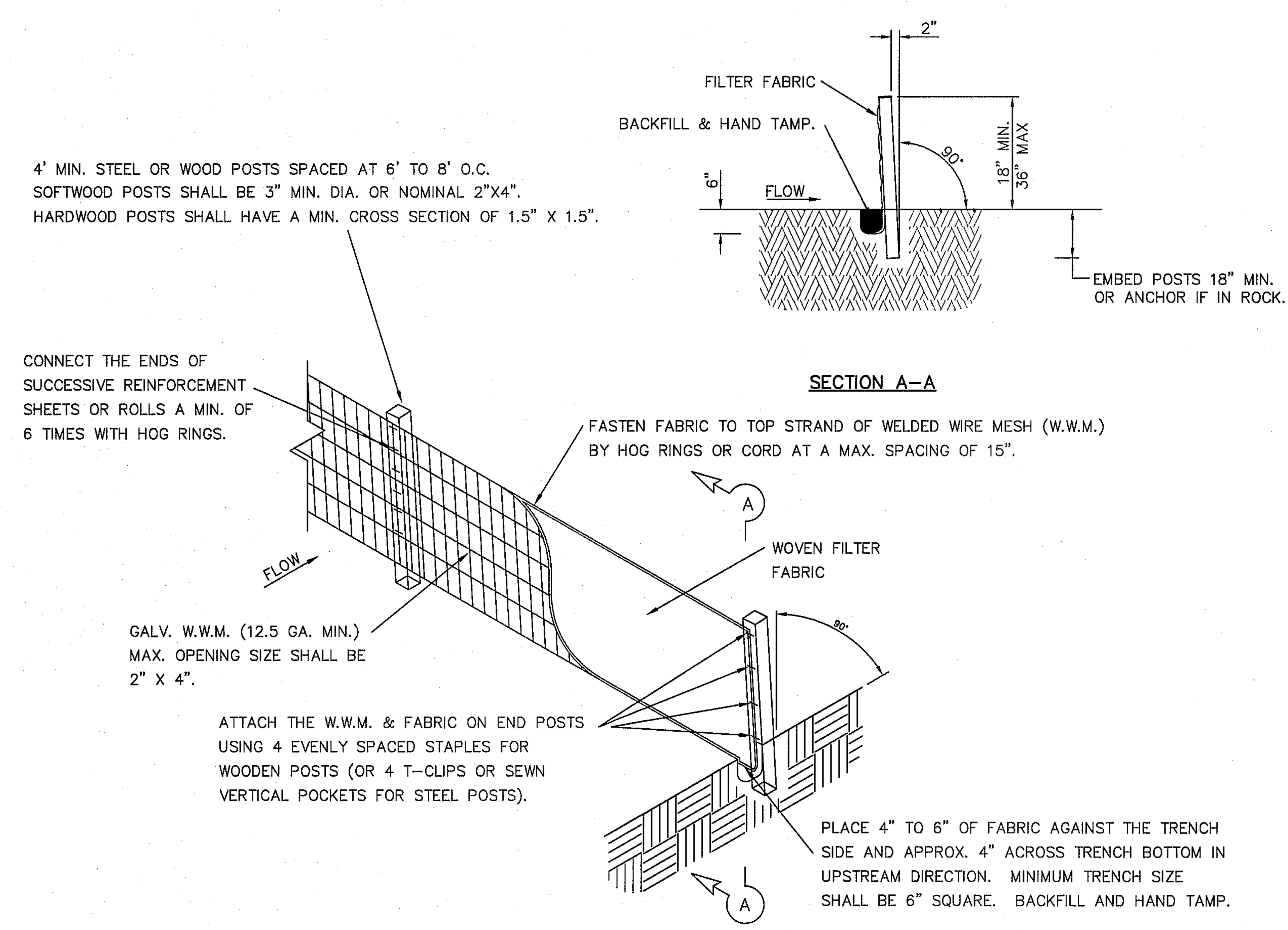
SHEET TITLE

STORM SEWER POLLUTION PREVENTION PLAN: SITE PLAN

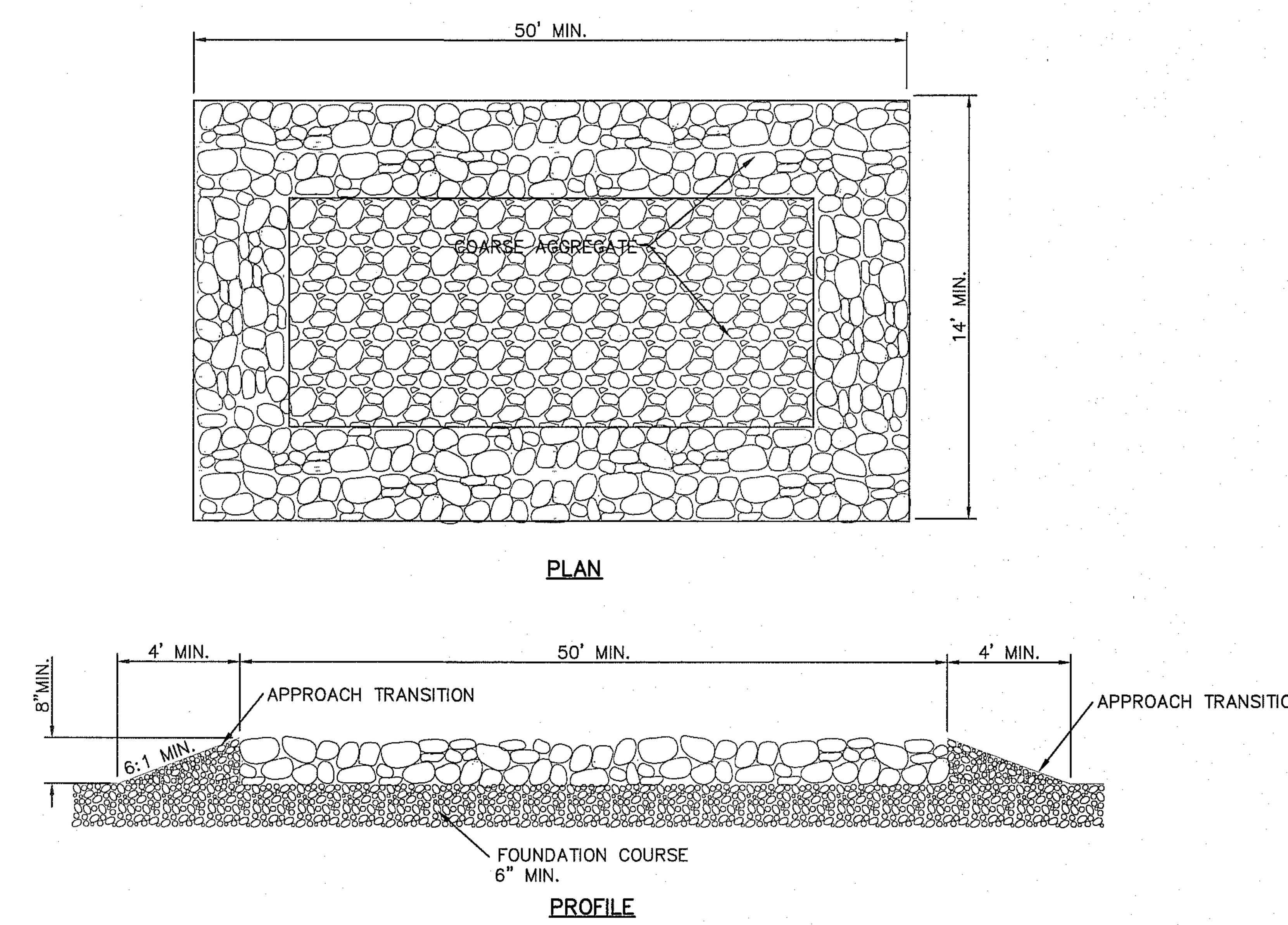
SHEET NO.

C13.2

S:\2000\2000-210-La Puesta Del Sol Unit Three\DWGS\Construction Drawings\Improvement Plans\C13.2-SW3P Site Plan.dwg, 11/4/2019 11:10:48 AM



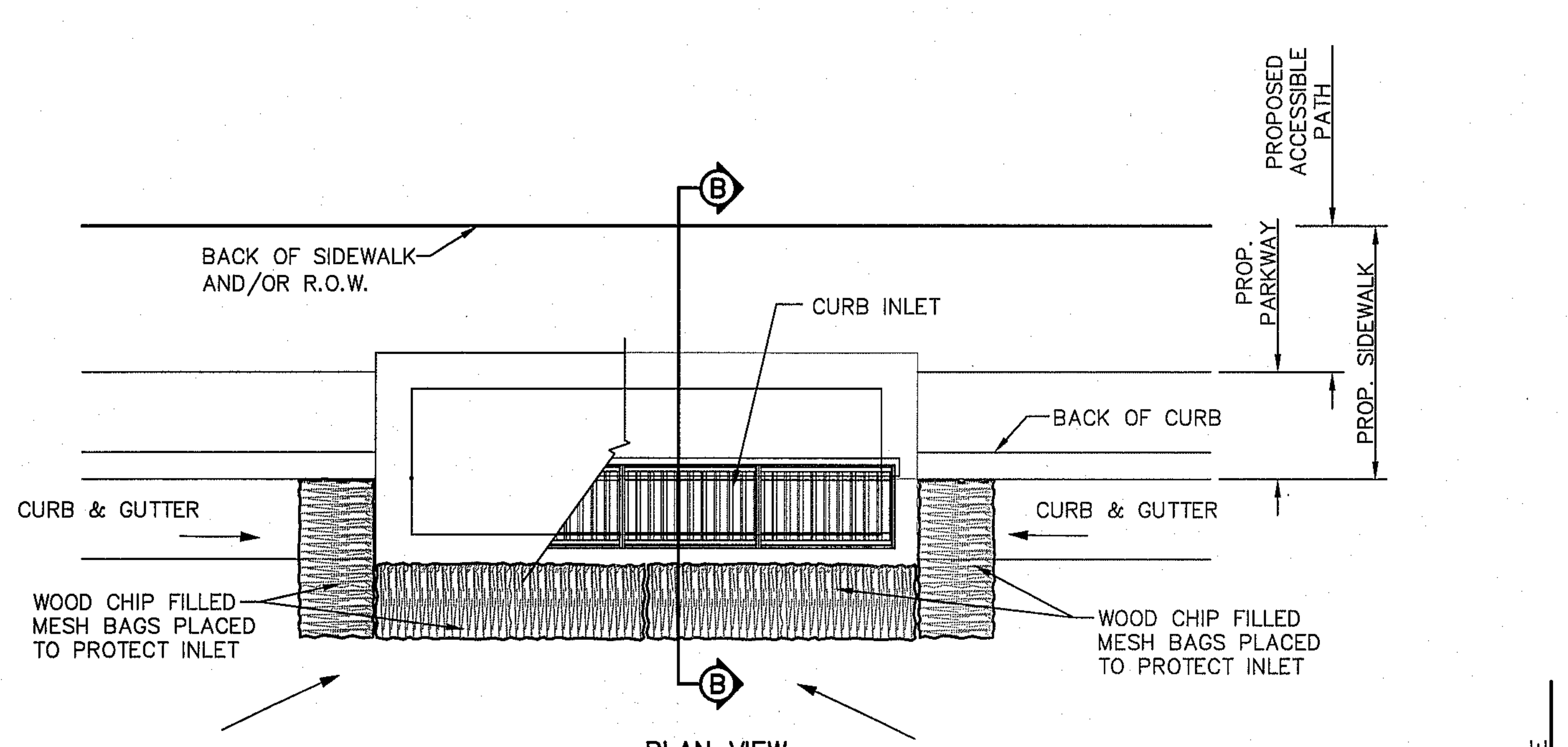
TEMPORARY SEDIMENT CONTROL FENCE



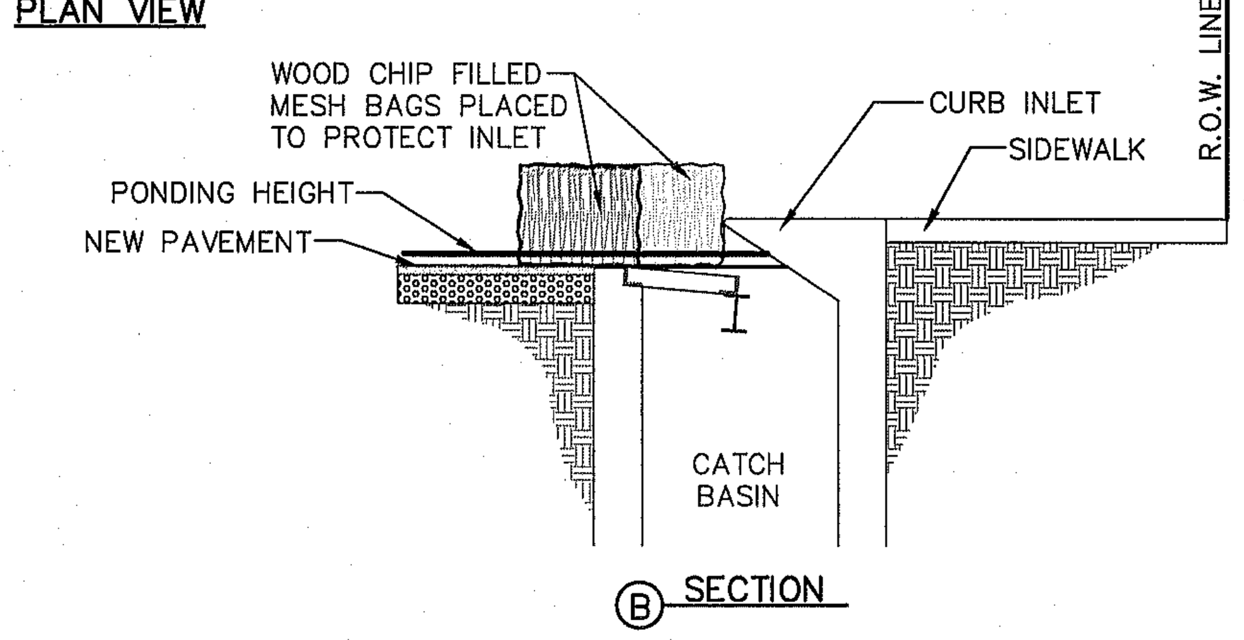
GENERAL NOTES

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

CONSTRUCTION EXIT (TYPE 1)



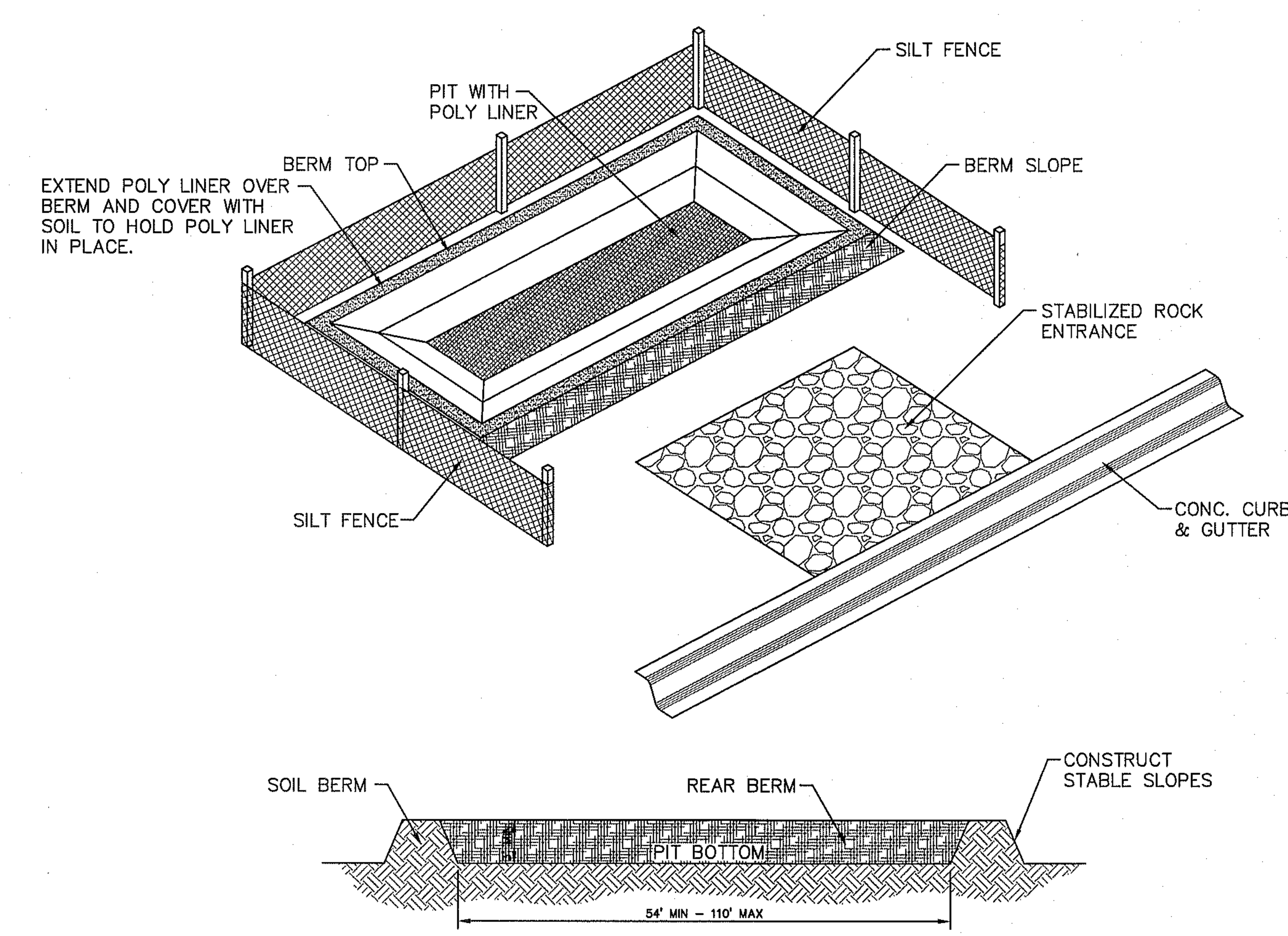
NOTE:
WOOD CHIP FILLED MESH BAGS SHALL CONSIST OF 30–40% WEED FREE COMPOST AND 60–70% PARTIALLY DECOMPOSED WOOD CHIPS.



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



CONCRETE WASHOUT AREA

Final Approval

REFERENCES – BENCHMARKS

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ENGINEER'S SEAL
JORGE L. AZCARATE 85075 LICENSED PROFESSIONAL ENGINEER 10–28–19

SCALE
Horizontal:
Vertical:
Contour Interval: N/A
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DESIGN BY: C.J.
DRAWN BY: M.R.G.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000–210

PROJECT TITLE

LA PUESTA DEL SOL
UNIT THREE
SUBDIVISION IMPROVEMENTS

SHEET TITLE

STORM SEWER POLLUTION PREVENTION PLAN: DETAILS

SHEET NO.

C13.3

S:\2000\2000-210-La Puesto Del Sol Unit Three\DWGS\Construction Drawings\Improvement Plans\C13.3-SW3P Details.dwg, 11/4/2019 11:32:32 AM