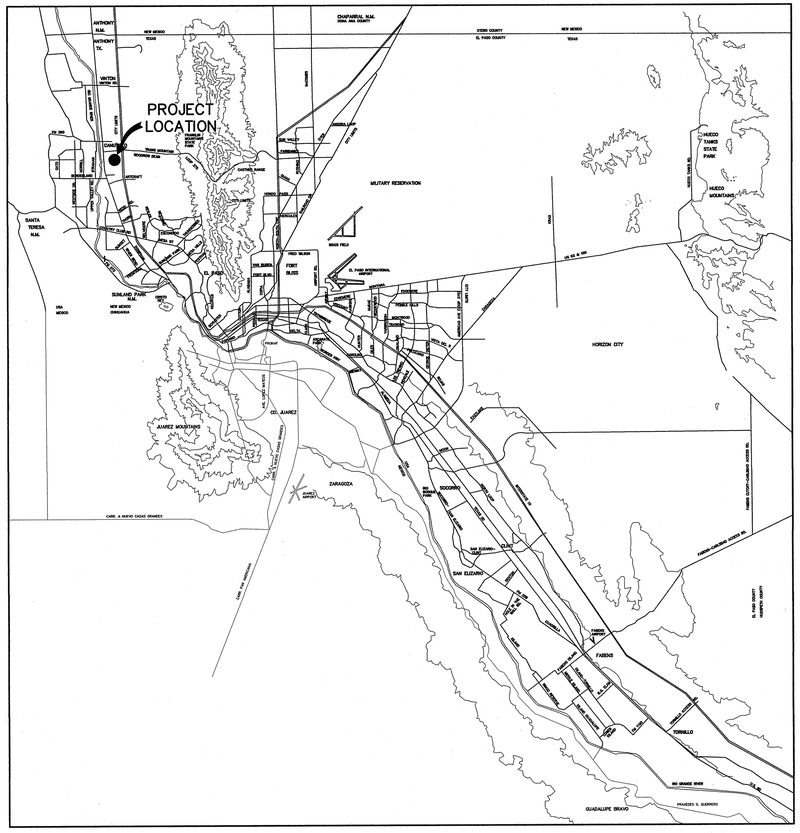
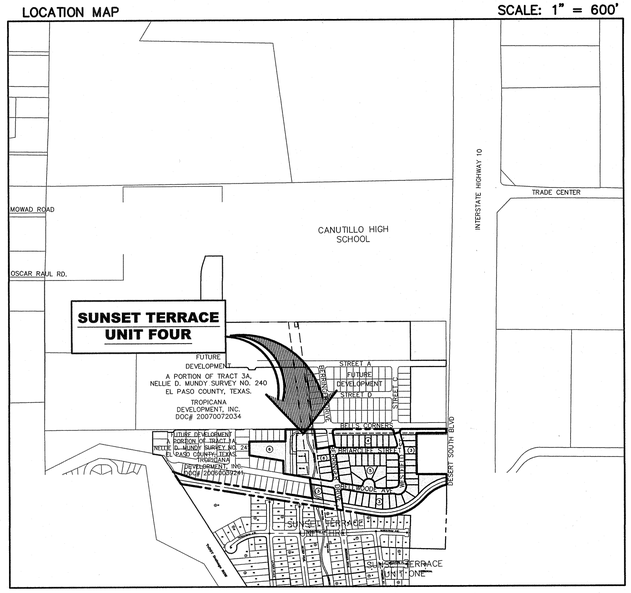
SUNSET TERRACE
UNIT FOUR
SUBDIVISION IMPROVEMENTS

A PORTION OF TRACT 3A, NELLIE D. MUNDY SURVEY 240,
A PORTION OF TRACT 1B, NELLIE D. MUNDY SURVEY 241, AND
A REPLAT OF LOT 2, BLOCK 1, ARTCRAFT COMMERCIAL UNIT THREE,
CITY OF EL PASO, EL PASO COUNTY, TEXAS
CONTAINING 19.473± ACRES



SHEET NUMBER	SHEET TITLE
CVR, C1.1	COVER SHEET – HEADING WITH LEGAL DESCRIPTION AND NUMBER OF ACRES; INDEX OF SHEETS; VICINITY MAP, LOCATION MAP; PRINCIPAL CONTACTS, TITLE – REVISION BLOCK AND ENGINEER'S SEAL.
C2.1	FINAL PLAT – HEADING WITH LEGAL DESCRIPTION OF SUBDIVISION AND NUMBER OF ACRES; OWNER'S DEDICATION, CERTIFICATION, AND ATTESTATION; SUBDIVISION MEETS AND BOUNDS WITH SURVEYORS CERTIFICATION; NOTARY SEAL; CITY APPROVAL CERTIFICATE; COUNTY APPROVAL CERTIFICATE; COUNTY CLERK RECORDING CERTIFICATE; LOCATION MAP AND ETJ STATUS; PLAT NOTES AND RESTRICTIONS; PLAT MAP WITH UTILITY EASEMENTS, LOT AND BLOCK NUMBERS, LOT SIZE, NUMBER OF LOTS, ADDRESSES FOR EACH LOT, LOTS AND ROADS DIMENSIONS, PRINCIPAL CONTACT, TITLE – REVISION BLOCK AND ENGINEER'S SEAL.
	FINAL ENGINEER'S REPORT – HEADING WITH LEGAL DESCRIPTION OF SUBDIVISION AND NUMBER OF ACRES; MAP OF WATER DISTRIBUTION SYSTEM, AND SEWAGE FACILITIES AND DISTRIBUTION SYSTEM; MAP OF POST – DEVELOPMENT TOPOGRAPHY AND DRAINAGE; STREET INFORMATION; WATER AND SEWAGE FACILITY INFORMATION AND CERTIFICATION; DESCRIPTION IN SPANISH OF WATER AND SEWER FACILITIES AND OPERABILITY DATE (SPANISH TRANSLATION OF PARTS OF FINAL ENGINEERING REPORT); DRAINAGE REPORT CERTIFICATION; PRINCIPAL CONTACTS; TITLE – REVISION BLOCK AND ENGINEER'S SEAL.
C3.1	GRADING PLAN
C4.1	DRAINAGE PLAN
C5.1-C5.2	GRADING SECTIONS
C6.1-C6.4	STREET PLAN & PROFILES
C7.1-C7.2	STORM SEWER PLAN & PROFILES
C7.3-C7.10	CHANNEL PLAN & PROFILES, & CHANNEL CROSS SECTIONS
C8.1	POND PLAN
C9.1-C9.2	HIKE & BIKE TRAIL PLANS
C10.1-C10.3	STANDARD DETAILS
C11.1-C11.3	DRAINAGE DETAILS
C12.1	ILLUMINATION PLAN
C13.1	WATER INDEX / GENERAL INFORMATION
C13.2-C13.3	WATER LINE PLAN & PROFILES
C13.4-C13.7	WATER DETAILS
C14.1	SANITARY SEWER INDEX / GENERAL INFORMATION
C14.2-C14.3	SANITARY SEWER PLAN & PROFILES
C14.4-C14.6	SANITARY SEWER DETAILS
C15.1-C15.3	SWPPP
S1.0	2–13'X6' C.I.P. REINF. CONC. BOX CULVERTS

LOCATION MAP SCALE: 1" = 600'



STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER

12/6/11
JORGE L. AZCARATE, P.E.
PROJECT MANAGER

DEVELOPMENT SERVICES DEPARTMENT
SITE PLAN REVIEW
Reviewed For Conformance For Conditions Related To:

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

Contractor Must Call 24 Hours Prior To Construction For Inspection
BY: DATE 12/8/2011

LOCATION MAP
SCALE: 1" = 600'

VICINITY MAP
APPROXIMATE SCALE:
1" = 2 MILES

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

PRINCIPAL CONTACTS:

	NAME	ADDRESS	CITY & ZIP	PHONE	FAX
OWNER:	NORTHTOWNE VILLAGE JOINT VENTURE	4655 COHEN DRIVE	EL PASO, 79924	(915) 821–3550	(915) 821–3556
ENGINEER:	CEA GROUP	4712 TRANSMOUNTAIN RD. STE. F	EL PASO, 79924	(915) 544–5232	(915) 544–5233
SURVEYOR:	BROCK & BUSTILLOS	417 EXECUTIVE CENTER BLVD.	EL PASO, 79902	(915) 542–4900	(915) 542–2867

SUNSET TERRACE UNIT FOUR				
COVER SHEET				
DATE PREPARED	DRAWN BY:	DESIGN BY:	CHECKED BY:	APPROVED BY:
OCTOBER 2011	ARTURO BERNAL	JORGE GRAJEDA	JORGE L. AZCARATE	JORGE L. AZCARATE
REVISION NUMBER	SHEET NAME OR NUMBER	DESCRIPTION OF REVISION	DATE OF REVISION	REVISION APPROVED BY:

OCTOBER 2011

GENERAL NOTES

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

LEGEND

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

GRADING SPECIFICATIONS

1. CLEARING AND GRUBBING: CLEAR SITE OF TREES, SHRUBS AND OTHER VEGETATION; COMPLETELY REMOVE STUMPS, ROOTS AND OTHER DEBRIS PROTUDING THROUGH GROUND SURFACE; FILL DEPPRESIONS CAUSED BY CLEARING AND GRUBBING OPERATIONS WITH SATISFACTORY FILL MATERIAL, UNLESS FURTHER EXCAVATION OF EARTHWORK IS INDICATED; REMOVE EXISTING ABOVE–GRADE AND BELOW–GRADE IMPROVEMENTS AS INDICATED AND AS NECCESSARY TO FACILITATE NEW CONSTRUCTION. BURNING IS NOT PERMITED ON OWNER'S PROPERTY. REMOVE WASTE MATERIALS FROM OWNER'S PROPERTY.
2. SATISFACTORY FILL MATERIALS: FILL MATERIALS SHALL BE FREE OF ANY ORGANIC OR DELETERIOUS SUBSTANCE AND SHALL NOT CONTAIN ROCKS OR LUMPS OVER 3 INCHES IN GREATEST DIMENSION AND SHALL BE DEFINED AS THOSE COMPLYING WITH ASTM D2487 SOIL CLASSIFICATION GROUPS GW, GP,GM, GC, SM, SP, SM, AND SC.
3. UNSATISFACTORY FILL MATERIAL: ARE DEFINED AS THOSE COMPLYING WITH ASTM D2487 SOIL CLASSIFICATION GROUPS ML, MH, CL, CH, OL, OH, AND PT, OR WHERE THE PLASTICITY INDEX EXCEEDS 12, UNLESS OTHERWISE APPROVED BY ENGINEER, M.U.D. ENGINEER OR COUNTY 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 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 D1557.
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
1–800–DIG–TESS
1–800–344–8377
FOR FIELD LOCATING EXISTING UTILITIES

INDEX OF DRAWINGS

DRAWING NAME	SHEET NO.
COVER	–
GENERAL INFORMATION	C1.1
PLAT (SHEET 1 OF 2)	C2.1
PLAT (SHEET 2 OF 2)	C2.2
GRADING PLAN	C3.1
DRAINAGE PLAN	C4.1
GRADING SECTIONS (SHEET 1 OF 2)	C5.1
GRADING SECTIONS (SHEET 2 OF 2)	C5.2
WESTFIELD DRIVE PLAN & PROFILE FROM STA. 0+58.86 TO STA. 5+34.69 BELLWOODE AVENUE PLAN & PROFILE FROM STA. 5+34.69 TO STA. 7+05.00	C6.1
BELLWOODE AVENUE PLAN & PROFILE FROM STA. 7+05.00 TO STA. 12+99.77	C6.2
BERRINGER STREET PLAN & PROFILE FROM STA. 0+00.00 TO STA. 5+42.23	C6.3
BRIARCLIFF STREET PLAN & PROFILE FROM STA. 0+00.00 TO STA. 5+79.74	C6.4
LINE A PLAN & PROFILE FROM STA. 0+00.00 TO STA. 4+50.14 LINE B PLAN & PROFILE FROM STA. 0+00.00 TO STA. 0+45.85	C7.1
LINE C PLAN & PROFILE FROM STA. 0+00.00 TO STA. 1+84.18 LINE D PLAN & PROFILE FROM STA. 0+00.00 TO STA. 1+07.72	C7.2
CHANNEL PLAN & PROFILE FROM STA. 0+00.00 TO STA. 13+00.00	C7.3
CHANNEL PLAN & PROFILE FROM STA. 13+00.00 TO STA. 23+87.01	C7.4
CHANNEL CROSS SECTIONS (SHEET 1 OF 6)	C7.5
CHANNEL CROSS SECTIONS (SHEET 2 OF 6)	C7.6
CHANNEL CROSS SECTIONS (SHEET 3 OF 6)	C7.7
CHANNEL CROSS SECTIONS (SHEET 4 OF 6)	C7.8
CHANNEL CROSS SECTIONS (SHEET 5 OF 6)	C7.9
CHANNEL CROSS SECTIONS (SHEET 6 OF 6)	C7.10
POND PLAN	C8.1
HIKE & BIKE TRAIL PLAN (SHEET 1 OF 2)	C9.1
HIKE & BIKE TRAIL PLAN (SHEET 2 OF 2)	C9.2
STANDARD DETAILS (SHEET 1 OF 3)	C10.1
STANDARD DETAILS (SHEET 2 OF 3)	C10.2
STANDARD DETAILS (SHEET 3 OF 3)	C10.3
DRAINAGE DETAILS (SHEET 1 OF 3)	C11.1
DRAINAGE DETAILS (SHEET 2 OF 3)	C11.2
DRAINAGE DETAILS (SHEET 3 OF 3)	C11.2
ILLUMINATION	C12.1
WATER LINE INDEX	C13.1
WATER LINE PLAN – BERRINGER DR, BRIARCLIFF ST, BELLS CORNERS AVE.	C13.2
WATER LINE PLAN – BELLWOODE AVE, WESTFIELD DR.	C13.3
WATER DETAILS (SHEET 1 OF 4)	C13.4
WATER DETAILS (SHEET 2 OF 4)	C13.5
WATER DETAILS (SHEET 3 OF 4)	C13.6
WATER DETAILS (SHEET 4 OF 4)	C13.7
SANITARY SEWER INDEX	C14.1
SANITARY SEWER PLAN & PROFILE: LINE A, B, G	C14.2
SANITARY SEWER PLAN & PROFILE: LINE C, D, E, F	C14.3
SANITARY SEWER DETAILS (SHEET 1 OF 3)	C14.4
SANITARY SEWER DETAILS (SHEET 2 OF 3)	C14.5
SANITARY SEWER DETAILS (SHEET 3 OF 3)	C14.6
STORM WATER POLLUTION PREVENTION PLAN: GENERAL NOTES	C15.1
STORM WATER POLLUTION PREVENTION PLAN: SITE PLAN	C15.2
STORM WATER POLLUTION PREVENTION PLAN: DETAILS	C15.3
2–13'X6' C.I.P. REINF. CONC. BOX CULVERTS	S1.0

REFERENCES – BENCHMARKS
CITY MONUMENT AT THE INTERSECTION OF PASEO & MONTWOOD DRIVE (ELEVATION = 3937.39 "L" CHISELED ON NW HEADWALL)
(CITY DATUM) (NAVD 88 DATUM)
"CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4464
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office 915.544.5232 Fax 915.544.5233 www.ceagroup.net

ENGINEER'S SEAL
STATE OF TEXAS — JORGE L. AZCARATE — 85075 — LICENSED PROFESSIONAL ENGINEER — 12/1/11

SCALE
Horizontal: N/A
Vertical: N/A
Contour Interval: N/A
DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000–123–LD

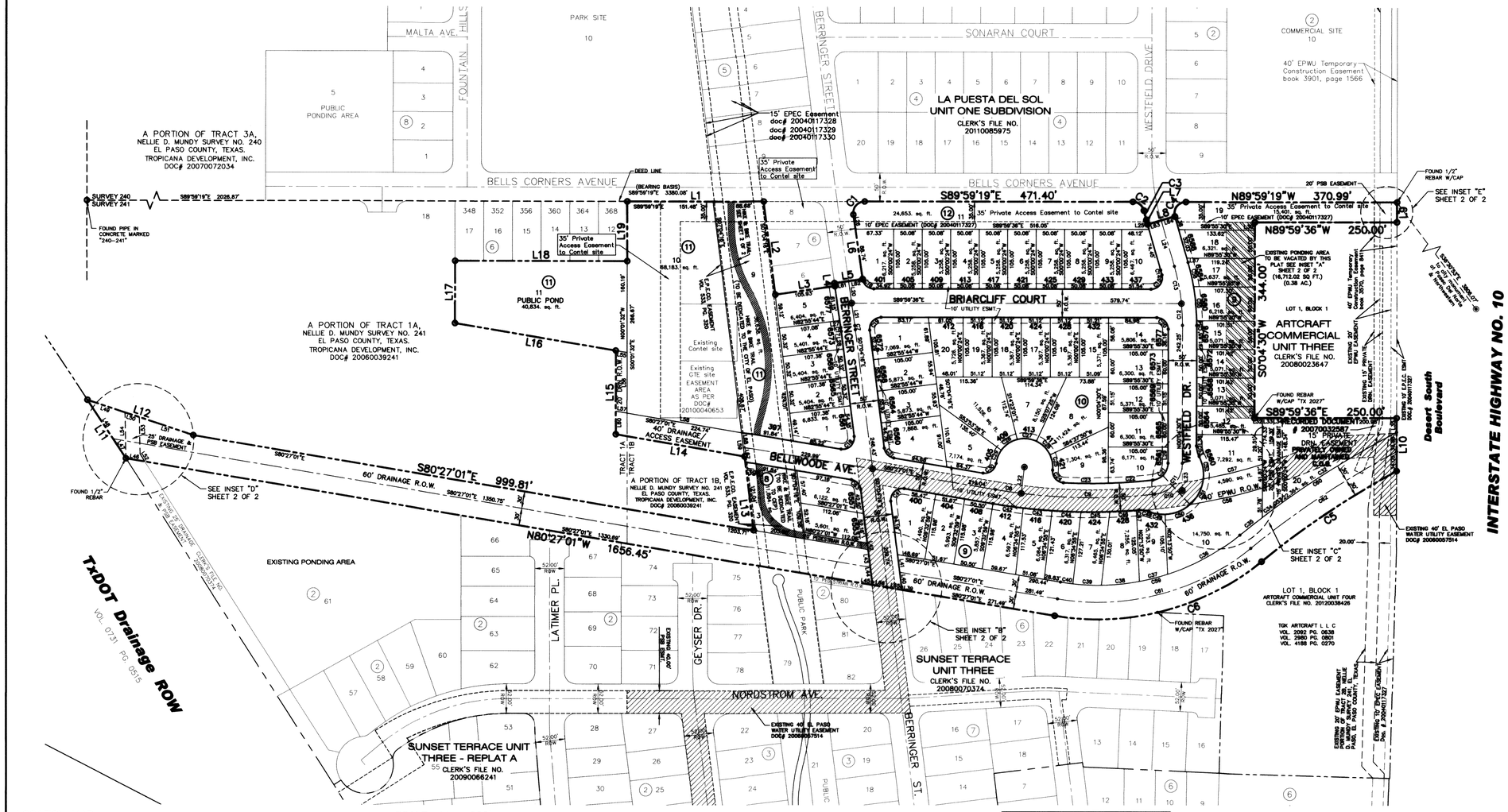
PROJECT TITLE
SUNSET TERRACE
UNIT FOUR
SUBDIVISON IMPROVEMENTS

SHEET TITLE
GENERAL INFORMATION

SHEET NO.
C1.1

SUNSET TERRACE UNIT FOUR

A PORTION OF TRACT 1A AND 1B, NELLIE D. MUNDY SURVEY 241, AND A REPLAT OF LOT 2, BLOCK 1, ARTCRAFT COMMERCIAL UNIT THREE, CITY OF EL PASO, EL PASO COUNTY, TEXAS
CONTAINING 19.473 ACRES ±
SHEET 1 OF 2



DEDICATION

Tropicana Development Inc., property owner of this land does hereby present this plat and dedicates, if not previously dedicated, its respective portion of said property to the use of the public, the streets, hike & bike trail, drainage and access easement, public pond, drainage R.O.W., 10' pedestrian R.O.W., EPWU R.O.W., PSB easement, and utility easements, as hereon laid down and designated, including easements for overhang of service wires, conduits and pipes for underground utilities, the right to ingress and egress for service and construction, and the right to trim interfering trees and shrubs.

Witness our signature this 29th day of November 2012.

TROPICANA DEVELOPMENT INC.

ACKNOWLEDGEMENT

STATE OF TEXAS
COUNTY OF EL PASO

Before me, the undersigned authority, on this day personally appeared R. L. Bowling, III, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and considerations herein expressed.

Given under my hand and seal of office this 29th day of November 2012.

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

MICHELLE SIQUEIROS
My Commission Expires
January 8, 2015

CITY PLAN COMMISSION

This subdivision is hereby approved as to the platting and as to the condition of the dedication in accordance with Chapter 212 of the Local Government Code of Texas this 13th day of Dec. 2012, A.D.

Executive Secretary — Chairperson

Approved for filing this 19th day of December 2012.

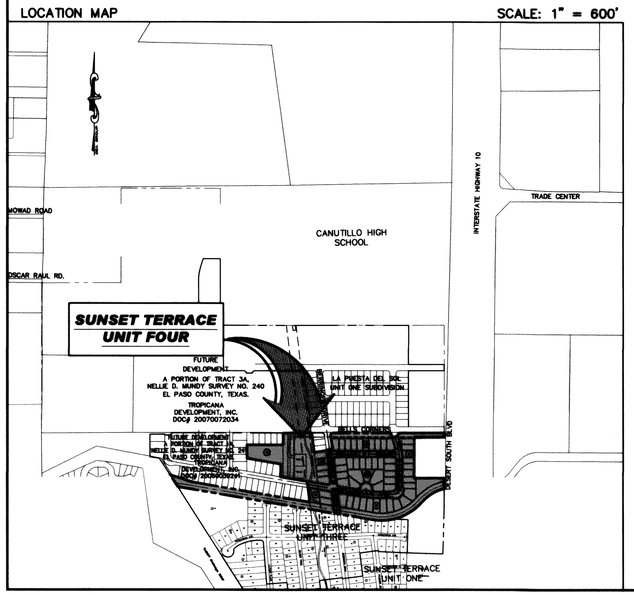
City Development Director

FILING

Filed and recorded in the office of the County Clerk of El Paso County, Texas, this 19th day of January 2012 A.D. in Document No. 20130006944 of the Plat Records.

FOR RECORDING PURPOSES ONLY — County Clerk — By Deputy

LOCATION MAP — SCALE: 1" = 600'



SCHOOL DISTRICT

CANUTILLO INDEPENDENT SCHOOL DISTRICT
7665 ARTCRAFT RD. EL PASO, TX 79932

NOTES

THIS IS TO CERTIFY THAT WATER AND SEWER SERVICES WILL BE PROVIDED TO SUNSET TERRACE UNIT FOUR BY THE EL PASO WATER UTILITIES/PUBLIC SERVICE BOARD IN ACCORDANCE WITH THEIR RULES AND REGULATIONS AND WITH SECTION 16.343 OF THE TEXAS WATER CODE. WATER AND SEWER SERVICES WILL BE EXTENDED TO THE SUBDIVISION FROM EXISTING FACILITIES LOCATED ON BERRINGER DRIVE, DESERT SOUTH BOULEVARD, AND EXISTING E.P.W.U. EASEMENTS AND WILL BE CONSTRUCTED TO SERVE THE SUBDIVISION.

TAX CERTIFICATE(S) FOR THIS SUBDIVISION ARE IN THE OFFICE OF THE COUNTY CLERK, DEED AND RECORD SECTION, INSTRUMENT No. 20130006945/46 DATE: 1/29/13

RESTRICTIVE COVENANTS FOR THIS SUBDIVISION ARE FILED IN THE OFFICE OF THE COUNTY CLERK, DEED AND RECORD SECTION. INSTRUMENT No. 20130006947 DATE: 1/29/13

INTERIOR LOT CORNERS WILL BE SET UPON COMPLETION OF CONSTRUCTION OF ROADWAYS AND UTILITIES.

"U.S. POSTAL SERVICE DELIVERY WILL BE PROVIDED THROUGH NEIGHBORHOOD DELIVERY AND COLLECTION BOX UNITS."

SUBJECT PROPERTY SHOWN HEREON IS LOCATED IN ZONE "A2", "B" AND "C" PER F.I.R.M. PANNEL NUMBER 480214 0016 C DATED FEBRUARY 5, 1986 AND IN ZONE "X" AND "A" PER F.I.R.M. PANNEL NUMBER 480212 0125 B, DATED SEPTEMBER 4, 1991.

SUBDIVISION IMPROVEMENTS AGREEMENT & GUARANTEE FOR THIS SUBDIVISION IS FILED IN THE OFFICE OF THE COUNTY CLERK, DEED AND RECORD SECTION. INSTRUMENT No. 20130006948 DATE: 1/29/13

SUBJECT PROPERTY IS LOCATED WITHIN THE WESTSIDE IMPACT FEE AREA. CHAPTER 395 OF THE TEXAS LOCAL GOVERNMENT CODE AUTHORIZES THE CITY OF EL PASO TO ADOPT AND IMPOSE WATER AND WASTEWATER IMPACT FEES.

THE SUBJECT PROPERTY IS LOCATED WITHIN AN INTERMEDIATE PRESSURE ZONE. THE LOT/HOME BUYER SHALL ACQUIRE OWNERSHIP OF THE WATER PRESSURE REGULATING DEVICE TO BE LOCATED AT THE DISCHARGE SIDE OF THE WATER METER ON THEIR PROPERTY AND SHALL BE RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE WATER PRESSURE REGULATING DEVICE.

THIS SUBDIVISION LIES WITHIN THE CANUTILLO INDEPENDENT SCHOOL DISTRICT 7665 ARTCRAFT RD. EL PASO, TX 79932

SET 1/2" REBAR WITH CAP STAMPED "B&A INC" AT ALL EXTERIOR LOT CORNERS UNLESS OTHERWISE NOTED.

DEED REFERENCES: DOC NO. 20060039241, VOL. 2092, PG. 0638, VOL. 2980, PG. 0801, VOL. 4188, PG. 0270.

BEARINGS SHOWN ARE BASED ON THE DEED FILED IN DOC# 20070072034, REAL PROPERTY RECORDS OF EL PASO COUNTY TEXAS.

LOT 19, BLOCK 9, AND LOT 11, BLOCK 12 SHALL BE MAINTAINED BY CONTEL.

LOT 3, BLOCK 8, AND LOT 9, BLOCK 11, SHALL BE MAINTAINED BY OWNER, WITH THE EXCEPTION OF THE DEDICATED HIKE & BIKE TRAIL.

LEGEND

- 1 (3) — LOT AND BLOCK NUMBER
- ● — PROPOSED CITY MONUMENT (MAY BE SUBJECT TO RELOCATION AT TIME OF CONSTRUCTION, FOR EXACT LOCATION CONTACT THE CITY OF EL PASO)
- AREA TO BE VACATED BY THIS PLAT
- EXISTING 40' EL PASO WATER UTILITY EASEMENT DOC# 20060057514
- IMPROVED HIKE & BIKE TRAIL (TO BE DEDICATED)

Sunset Terrace Unit Four Notes:

Sunset Terrace Unit Four Subdivision is subject to impact fees and they shall be calculated based on the table below.

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

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.

SCALE: 1"=100'

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

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

11/28/12

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

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 Land Survey Professional and Technical Standards.

12/3/2012

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

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

OWNER

TROPICANA DEVELOPMENT
4655 COHEN DRIVE
EL PASO, TEXAS 79924
VOICE (915) 821-3550
FAX (915) 821-3556
CONTACT: MR. R.L. BOWLING, III

ENGINEER

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

SURVEYOR

Barragan & Associates Inc.
LAND PLANNING & LAND SURVEYING
10950 Pellicano Dr. Bldg. F - El Paso TX 79935
Phone (915) 591-5709 Fax (915) 591-5706
CONTACT: BENITO BARRAGAN, R.P.L.S.
DATE OF PREPARATION: JANUARY, 2012

SUNSET TERRACE UNIT FOUR

A PORTION OF TRACT 1A AND 1B, NELLIE D. MUNDY SURVEY 241, AND A REPLAT OF LOT 2, BLOCK 1, ARTCRAFT COMMERCIAL UNIT THREE, CITY OF EL PASO, EL PASO COUNTY, TEXAS
CONTAINING 19.473 ACRES ±

SHEET 2 OF 2

LINE TABLE

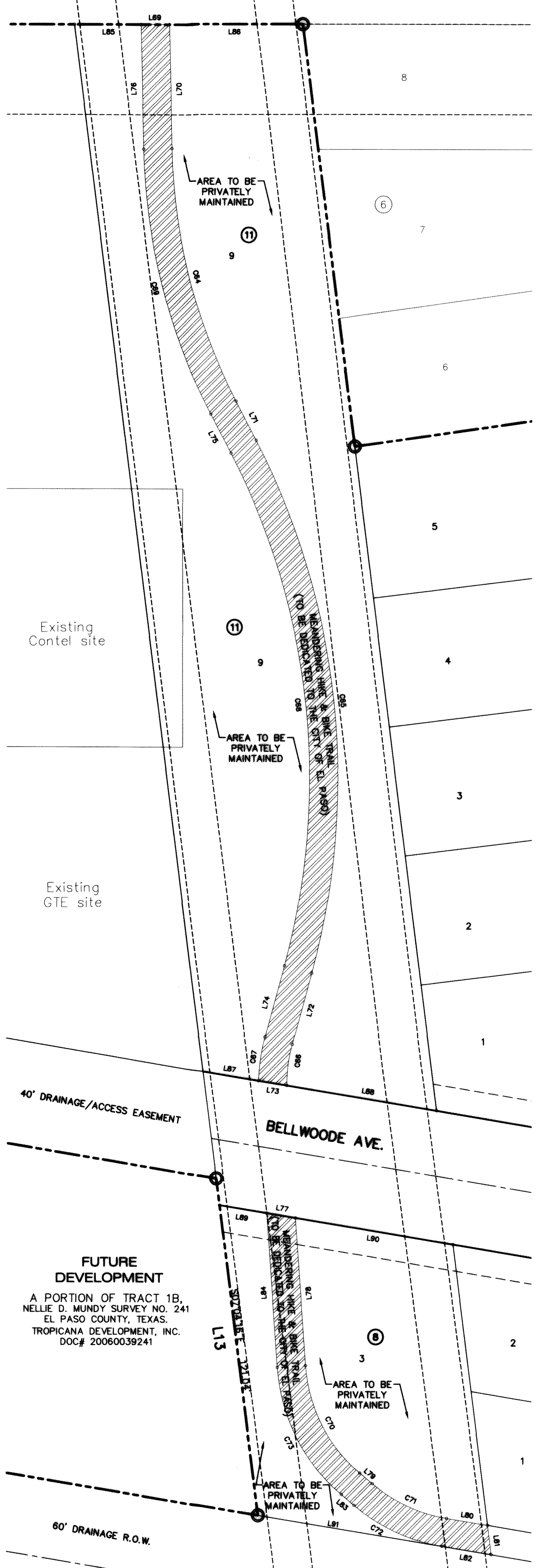
LINE	LENGTH	BEARING
L1	240.16'	S89°59'19"E
L2	164.77'	S07°04'16"E
L3	105.93'	N81°50'22"E
L4	5.14'	N08°09'38"W
L5	50.00'	N81°50'22"E
L6	114.58'	N08°09'38"W
L7	7.77'	S15°58'05"E
L8	50.00'	N74°01'55"E
L9	35.00'	S00°04'30"W
L10	92.87'	S00°04'30"W
L11	122.72'	N33°26'32"W
L12	196.07'	S71°43'08"E
L13	131.47'	N07°04'16"W
L14	229.93'	N80°27'01"W
L15	147.05'	N00°01'32"W
L16	287.14'	N80°27'01"W
L17	109.25'	N00°00'41"E
L18	303.06'	S89°59'19"E
L19	105.00'	N00°01'32"W
L20	39.00'	S08°09'33"E
L21	39.93'	S08°09'33"E
L22	46.71'	S06°57'45"W
L23	47.93'	N00°04'30"E
L24	83.92'	N15°58'05"W
L25	17.23'	S15°58'05"E
L26	25.83'	S08°09'38"E
L27	12.64'	S08°09'38"E
L28	31.03'	S07°04'16"E
L29	28.24'	N00°04'30"E
L30	13.49'	N00°04'30"E
L31	20.51'	S00°04'30"W
L32	14.02'	S89°59'36"E
L33	20.00'	S89°59'36"E
L34	15.00'	S89°59'36"E
L35	24.96'	S00°04'30"W
L36	19.91'	S00°04'30"W
L37	8.12'	S15°58'05"E
L38	23.78'	S15°58'05"E
L39	5.61'	N17°20'44"W
L40	26.09'	S07°04'16"E
L41	31.31'	N07°04'16"W
L42	11.48'	S07°04'16"E
L43	31.31'	S07°04'16"E
L44	26.07'	S07°04'16"E
L45	5.04'	N04°22'17"E
L46	33.70'	S80°27'01"E
L47	41.01'	S33°26'32"E
L48	81.71'	S33°26'32"E
L49	69.61'	S71°43'08"E
L50	26.50'	S71°43'08"E

LINE TABLE

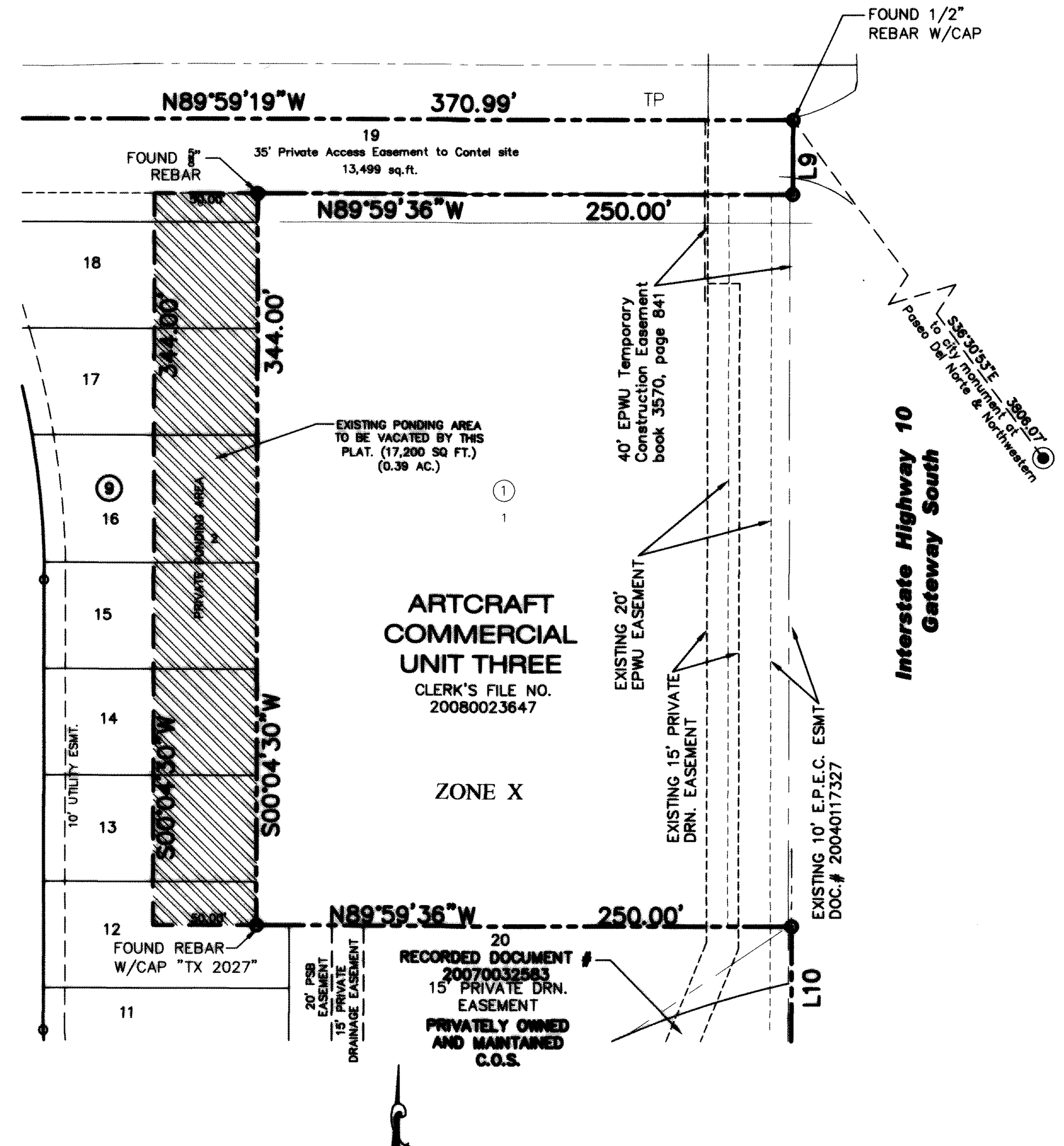
LINE	LENGTH	BEARING
L51	99.97'	S71°43'08"E
L52	15.56'	N32°34'13"W
L53	64.75'	N01°05'34"W
L54	80.58'	N01°05'34"W
L55	20.28'	S80°27'01"E
L56	106.48'	N00°01'32"W
L57	20.28'	N80°27'01"W
L58	204.46'	N80°27'01"W
L59	41.74'	S07°04'16"E
L60	40.57'	S00°01'32"E
L61	25.00'	N81°50'22"E
L62	25.00'	N81°50'22"E
L63	25.00'	N74°01'55"E
L64	25.00'	N74°01'55"E
L65	27.13'	S80°27'01"E
L66	27.13'	S80°27'01"E
L67	26.09'	N07°04'16"W
L68	26.09'	N07°04'16"W
L69	11.00'	S89°59'19"E
L70	47.95'	S01°12'56"E
L71	17.00'	N27°18'11"W
L72	28.60'	N15°15'06"E
L73	11.13'	N80°27'01"W
L74	28.60'	N15°15'06"E
L75	17.00'	N27°18'11"W
L76	48.19'	N01°12'56"W
L77	11.31'	S80°27'01"E
L78	57.29'	S03°55'57"E
L79	6.36'	S49°41'14"E
L80	16.09'	S80°27'01"E
L81	11.48'	S07°04'16"E
L82	19.37'	S80°27'01"E
L83	6.36'	S49°41'14"E
L84	59.93'	S03°55'57"E
L85	25.96'	S89°58'48"E
L86	51.71'	S89°59'34"E
L87	21.85'	S80°27'01"E
L88	58.85'	S80°27'01"E
L89	18.60'	S80°27'01"E
L90	61.92'	S80°27'01"E
L91	72.46'	S80°27'01"E
L92	20.00'	S89°59'19"E
L93	10.00'	S89°59'19"E
L94	35.00'	S00°04'30"W
L95	10.00'	N89°59'36"W
L96	20.00'	N89°59'36"W
L97	34.79'	N00°04'30"E
L98	34.78'	N00°04'30"E

Curve Table

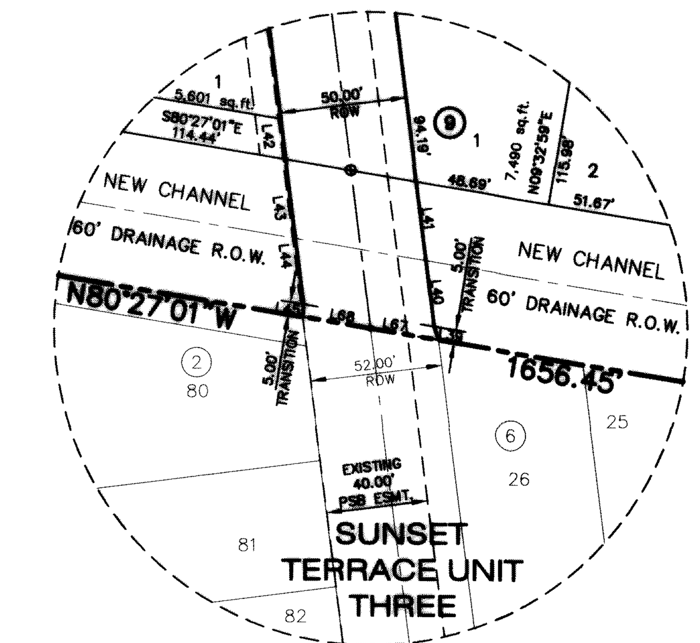
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	20.00'	34.27'	23.08'	30.23'	N40°55'31"E	098°10'19"
C2	20.00'	26.69'	15.76'	24.75'	S51°45'28"E	076°27'49"
C3	400.00'	17.05'	8.53'	17.05'	S14°44'49"E	002°26'33"
C4	20.00'	36.99'	26.53'	31.94'	N37°01'18"E	105°58'46"
C5	1525.00'	286.21'	143.52'	285.79'	S56°10'30"W	010°45'11"
C6	455.00'	387.15'	206.16'	375.57'	S75°10'27"W	048°45'05"
C7	375.00'	7.13'	3.57'	7.13'	N07°36'57"W	001°05'22"
C8	1010.00'	45.61'	22.81'	45.60'	S81°44'38"E	002°35'14"
C9	1010.00'	234.88'	117.97'	234.35'	S89°41'59"E	013°19'29"
C10	1010.00'	49.30'	24.65'	49.29'	N82°14'22"E	002°47'48"
C11	55.00'	80.21'	49.14'	73.29'	N41°51'23"E	083°33'46"
C12	375.00'	38.42'	19.23'	38.40'	N02°51'35"W	005°52'11"
C13	375.00'	66.59'	33.38'	66.50'	N10°52'53"W	010°10'25"
C14	350.00'	8.70'	4.35'	8.70'	N15°15'21"W	001°25'29"
C15	20.00'	36.49'	25.85'	31.64'	N37°43'54"E	104°33'00"
C16	20.00'	28.57'	17.33'	26.20'	S49°04'37"E	081°49'58"
C17	350.00'	6.66'	3.33'	6.66'	N07°36'57"W	001°05'22"
C18	20.00'	37.22'	26.84'	32.08'	N46°14'22"E	106°37'15"
C19	20.00'	33.89'	22.64'	29.98'	S41°28'04"W	097°04'40"
C20	20.00'	31.44'	20.02'	28.30'	N44°57'33"W	090°04'06"
C21	30.00'	43.75'	26.81'	39.98'	N41°51'23"E	083°33'46"
C22	985.00'	78.59'	39.32'	78.57'	N85°55'25"E	004°34'17"
C23	985.00'	78.97'	39.51'	78.95'	S89°29'38"E	004°35'37"
C24	20.00'	32.63'	21.25'	29.13'	S40°27'26"E	093°28'46"
C25	50.00'	27.62'	14.17'	27.27'	N09°32'37"W	031°39'07"
C26	50.00'	34.48'	17.96'	33.80'	N45°07'23"W	039°30'25"
C27	50.00'	34.48'	17.96'	33.80'	N84°37'48"W	039°30'25"
C28	50.00'	34.48'	17.96'	33.80'	S55°51'47"W	039°30'25"
C29	50.00'	25.10'	12.82'	24.84'	S21°43'38"W	028°45'52"
C30	20.00'	32.19'	20.78'	28.82'	N53°26'50"E	092°12'17"
C31	20.00'	25.61'	14.90'	23.90'	S43°45'38"E	073°22'45"
C32	1585.00'	236.02'	118.23'	235.80'	S58°27'28"W	008°31'55"
C33	1585.00'	18.58'	9.29'	18.58'	S53°51'22"W	000°40'17"
C34	1585.00'	25.02'	12.51'	25.02'	S53°04'05"W	000°54'16"
C35	1585.00'	50.28'	25.14'	50.28'	S51°42'26"W	001°49'03"
C36	395.00'	145.43'	73.55'	144.61'	N61°20'46"E	021°05'45"
C37	395.00'	51.18'	25.63'	51.15'	N75°36'23"E	007°25'28"
C38	395.00'	67.16'	33.66'	67.08'	N84°11'21"E	009°44'29"
C39	395.00'	50.29'	25.18'	50.25'	S87°17'34"E	007°17'40"
C40	395.00'	22.03'	11.02'	22.03'	S82°02'53"E	003°11'43"
C41	20.00'	37.22'	26.84'	32.08'	S46°14'22"W	106°37'15"
C42	1035.00'	53.61'	26.81'	53.60'	S81°56'03"E	002°58'04"
C43	1035.00'	51.03'	25.52'	51.03'	S84°49'50"E	002°49'30"
C44	1035.00'	50.96'	25.48'	50.95'	S87°39'13"E	002°49'15"
C45	1035.00'	50.53'	25.27'	50.52'	N89°32'15"E	002°47'49"
C46	1035.00'	47.04'	23.52'	47.04'	N86°50'13"E	002°36'14"
C47	1035.00'	3.86'	1.93'	3.86'	N85°25'41"E	000°12'50"
C48	40.00'	18.34'	9.33'	18.18'	N81°32'36"W	026°16'16"
C49	70.00'	29.10'	14.77'	28.90'	S80°19'09"E	023°49'21"
C50	70.00'	47.83'	24.89'	46.91'	N68°11'38"E	039°09'04"
C51	70.00'	51.86'	27.18'	50.68'	N27°23'46"E	042°26'39"
C52	70.00'	40.97'	21.09'	40.39'	N10°35'34"W	033°32'01"
C53	40.00'	19.15'	9.76'	18.97'	S13°38'32"E	027°26'04"
C54	400.00'	8.35'	4.17'	8.35'	N00°31'22"W	001°11'44"
C55	400.00'	60.34'	30.23'	60.28'	N05°26'30"W	008°38'33"
C56	400.00'	43.32'	21.68'	43.30'	N12°51'56"W	006°12'18"
C57	996.00'	107.03'	53.57'	106.98'	N75°33'06"E	006°09'25"
C58	1036.00'	130.45'	65.31'	130.37'	S76°46'41"W	007°12'52"
C59	395.00'	336.09'	178.98'	326.05'	N75°10'27"E	048°45'05"
C60	1585.00'	329.90'	165.55'	329.30'	S56°45'40"W	011°55'32"
C61	425.00'	361.62'	192.57'	350.81'	N75°10'27"E	048°45'05"
C62	1555.00'	308.10'	154.55'	307.59'	S56°28'28"W	011°21'08"
C63	20.00'	25.61'	14.90'	23.90'	N43°45'38"W	073°22'45"
C64	224.00'	101.99'	51.90'	101.11'	S14°15'34"E	026°05'16"
C65	286.00'	212.42'	111.38'	207.57'	N06°01'33"W	042°33'17"
C66	60.00'	16.15'	8.12'	16.10'	S07°32'24"W	015°25'23"
C67	71.00'	17.23'	8.66'	17.19'	S08°17'56"W	013°54'20"
C68	275.00'	204.25'	107.09'	199.59'	N06°01'33"W	042°33'17"
C69	235.00'	107.00'	54.44'	106.08'	S14°15'34"E	026°05'16"
C70	60.00'	47.91'	25.32'	46.65'	S26°48'36"E	045°45'17"
C71	60.00'	32.21'	16.51'	31.83'	S65°04'08"E	030°45'47"
C72	71.00'	38.12'	19.53'	37.66'	S65°04'08"E	030°45'47"
C73	71.00'	56.70'	29.96'	55.20'	S26°48'36"E	045°45'17"



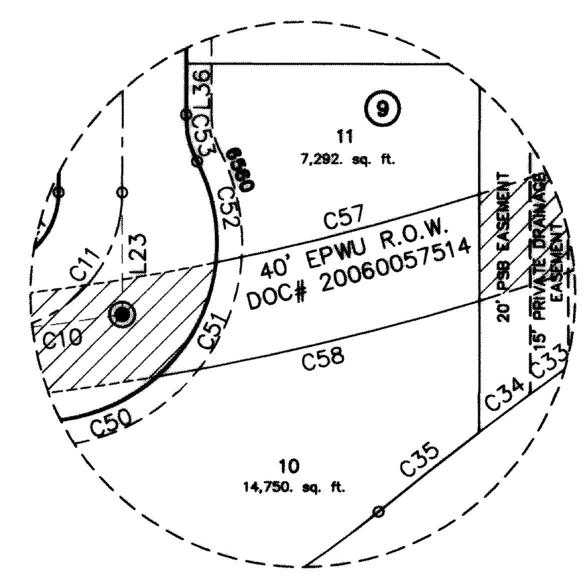
HIKE & BIKE TRAIL
SCALE: 1"=30'



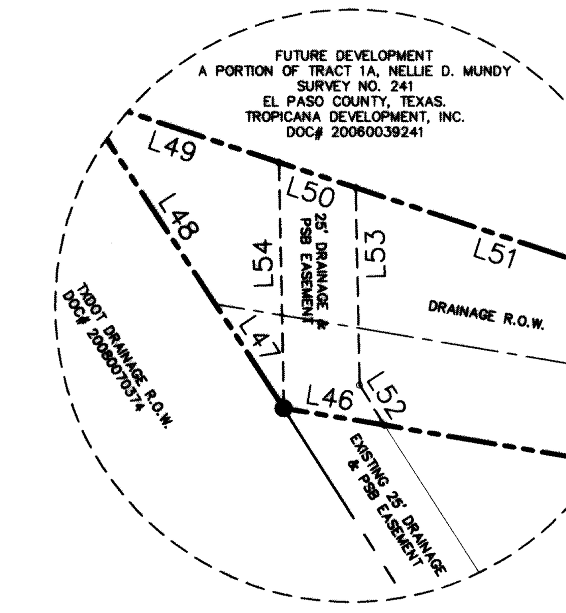
INSET "A"
SCALE: 1"=60'



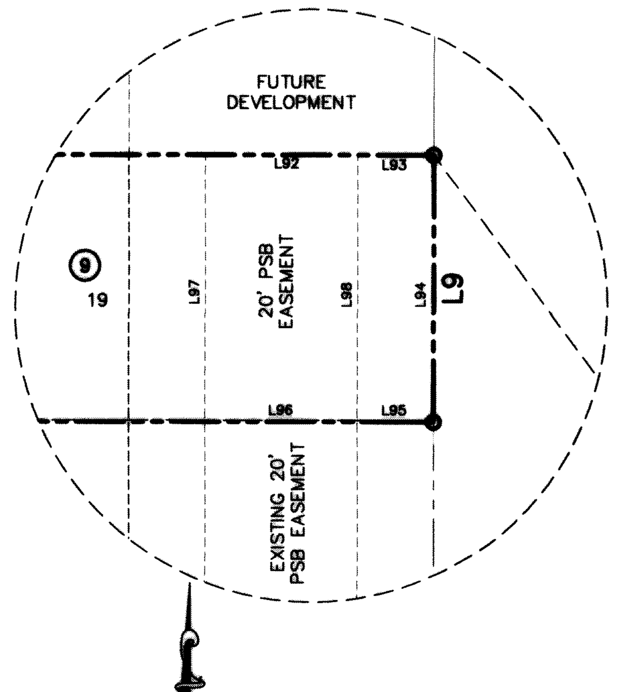
INSET "B"
SCALE: 1"=60'



INSET "C"
SCALE: 1"=60'



INSET "D"
SCALE: 1"=50'



INSET "E"
SCALE: 1"=20'

SCHOOL DISTRICT
CANUTILLO INDEPENDENT SCHOOL DISTRICT
7665 ARTCRAFT RD. EL PASO, TX 79932

LEGEND

- 1 (3) LOT AND BLOCK NUMBER
- PROPOSED CITY MONUMENT (FOR EXACT LOCATION CONTACT THE CITY OF EL PASO)
- AREA TO BE VACATED BY THIS PLAT
- EXISTING 40' EL PASO WATER UTILITY EASEMENT DOC# 20060057514
- IMPROVED HIKE & BIKE TRAIL (TO BE DEDICATED)

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

12/3/2012
Benito Barragan TX R.P.L.S. No. 5615

OWNER
TROPICANA DEVELOPMENT
4655 COHEN DRIVE
EL PASO, TEXAS 79924
VOICE (915) 821-3550
FAX (915) 821-3556
CONTACT: MR. R.L. BOWLING, III

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

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

DATE OF PREPARATION: JANUARY, 2012

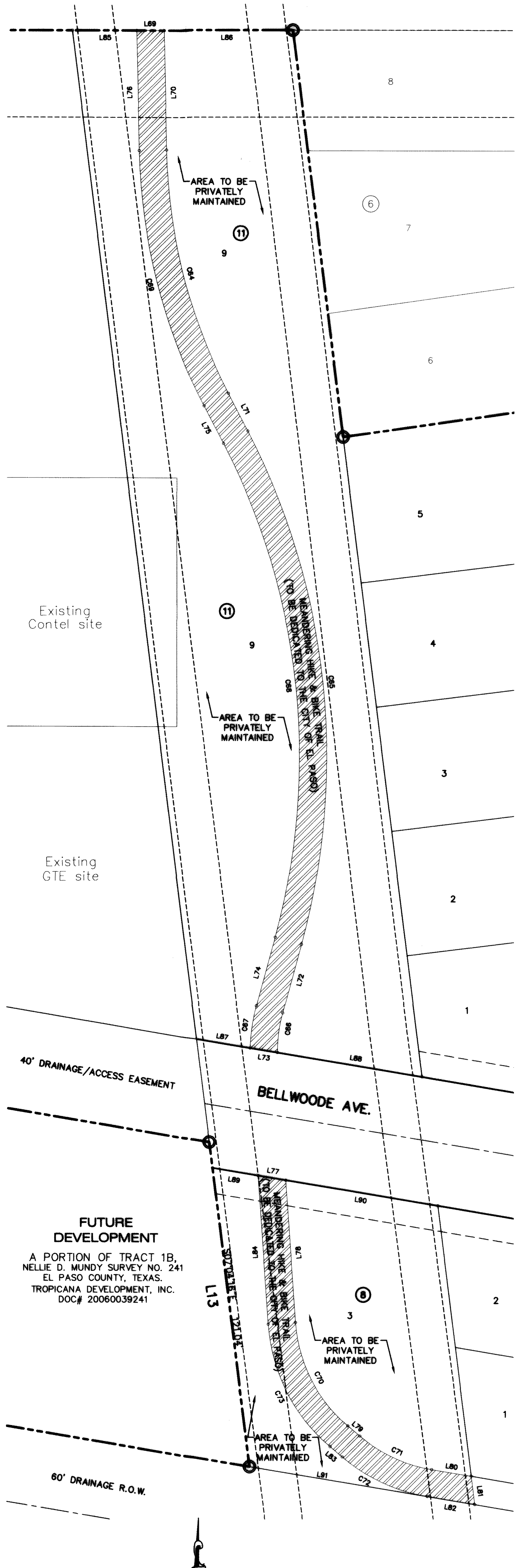
SUNSET TERRACE
UNIT FOUR

A PORTION OF TRACT 1A AND 1B, NELLIE D. MUNDY SURVEY 241, AND A REPLAT OF LOT 2, BLOCK 1, ARTCRAFT COMMERCIAL UNIT THREE, CITY OF EL PASO, EL PASO COUNTY, TEXAS
CONTAINING 19.473 ACRES ±

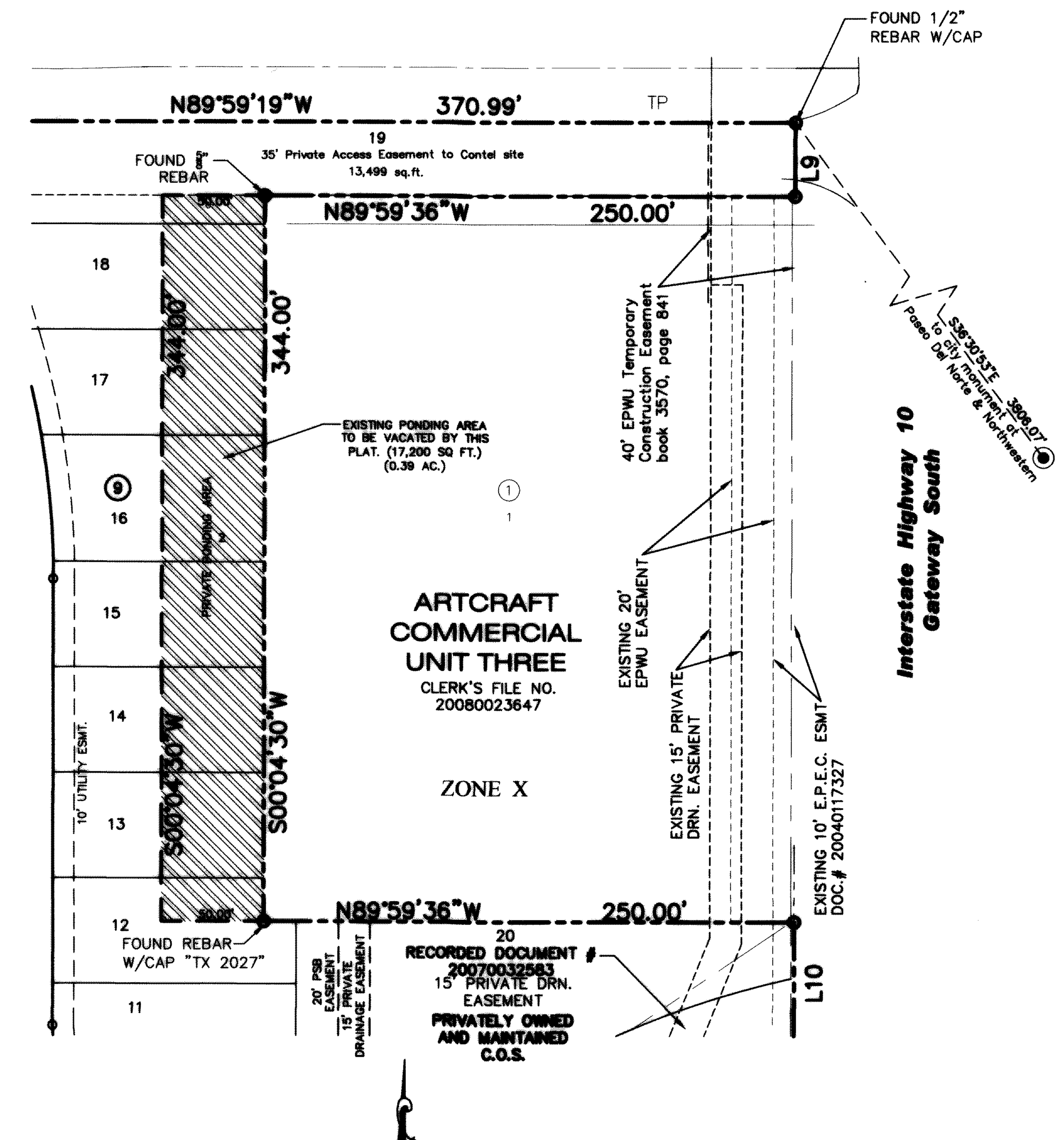
LINE TABLE		
LINE	LENGTH	BEARING
L1	240.16'	S89°59'19"E
L2	164.77'	S07°04'16"E
L3	105.93'	N81°50'22"E
L4	5.14'	N08°09'38"W
L5	50.00'	N81°50'22"E
L6	114.58'	N08°09'38"W
L7	7.77'	S15°58'05"E
L8	50.00'	N74°01'55"E
L9	35.00'	S00°04'30"W
L10	92.87'	S00°04'30"W
L11	122.72'	N33°26'32"W
L12	196.07'	S71°43'08"E
L13	131.47'	N07°04'16"W
L14	229.93'	N80°27'01"W
L15	147.05'	N00°01'32"W
L16	287.14'	N80°27'01"W
L17	109.25'	N00°00'41"E
L18	303.06'	S89°59'19"E
L19	105.00'	N00°01'32"W
L20	39.00'	S08°09'33"E
L21	39.93'	S08°09'33"E
L22	46.71'	S06°57'45"W
L23	47.93'	N00°04'30"E
L24	83.92'	N15°58'05"W
L25	17.23'	S15°58'05"E
L26	25.83'	S08°09'38"E
L27	12.64'	S08°09'38"E
L28	31.03'	S07°04'16"E
L29	28.24'	N00°04'30"E
L30	13.49'	N00°04'30"E
L31	20.51'	S00°04'30"W
L32	14.02'	S89°59'36"E
L33	20.00'	S89°59'36"E
L34	15.00'	S89°59'36"E
L35	24.96'	S00°04'30"W
L36	19.91'	S00°04'30"W
L37	8.12'	S15°58'05"E
L38	23.78'	S15°58'05"E
L39	5.61'	N17°20'44"W
L40	26.09'	S07°04'16"E
L41	31.31'	N07°04'16"W
L42	11.48'	S07°04'16"E
L43	31.31'	S07°04'16"E
L44	26.07'	S07°04'16"E
L45	5.04'	N04°22'17"E
L46	33.70'	S80°27'01"E
L47	41.01'	S33°26'32"E
L48	81.71'	S33°26'32"E
L49	69.61'	S71°43'08"E
L50	26.50'	S71°43'08"E

LINE TABLE		
LINE	LENGTH	BEARING
L51	99.97'	S71°43'08"E
L52	15.56'	N32°34'13"W
L53	64.75'	N01°05'34"W
L54	80.58'	N01°05'34"W
L55	20.28'	S80°27'01"E
L56	106.48'	N00°01'32"W
L57	20.28'	N80°27'01"W
L58	204.46'	N80°27'01"W
L59	41.74'	S07°04'16"E
L60	40.57'	S00°01'32"E
L61	25.00'	N81°50'22"E
L62	25.00'	N81°50'22"E
L63	25.00'	N74°01'55"E
L64	25.00'	N74°01'55"E
L65	27.13'	S80°27'01"E
L66	27.13'	S80°27'01"E
L67	26.09'	N07°04'16"W
L68	26.09'	N07°04'16"W
L69	11.00'	S89°59'19"E
L70	47.95'	S01°12'56"E
L71	17.00'	N27°18'11"W
L72	28.60'	N15°15'06"E
L73	11.13'	N80°27'01"W
L74	28.60'	N15°15'06"E
L75	17.00'	N27°18'11"W
L76	48.19'	N01°12'56"W
L77	11.31'	S80°27'01"E
L78	57.29'	S03°55'57"E
L79	6.36'	S49°41'14"E
L80	16.09'	S80°27'01"E
L81	11.48'	S07°04'16"E
L82	19.37'	S80°27'01"E
L83	6.36'	S49°41'14"E
L84	59.93'	S03°55'57"E
L85	25.96'	S89°58'48"E
L86	51.71'	S89°59'34"E
L87	21.85'	S80°27'01"E
L88	58.85'	S80°27'01"E
L89	18.60'	S80°27'01"E
L90	61.92'	S80°27'01"E
L91	72.46'	S80°27'01"E
L92	20.00'	S89°59'19"E
L93	10.00'	S89°59'19"E
L94	35.00'	S00°04'30"W
L95	10.00'	N89°59'36"W
L96	20.00'	N89°59'36"W
L97	34.79'	N00°04'30"E
L98	34.78'	N00°04'30"E

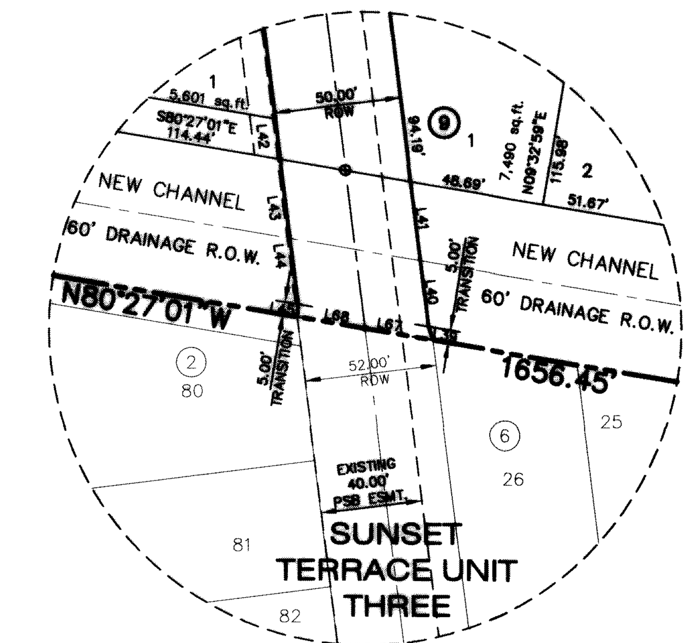
Curve Table						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	20.00'	34.27'	23.08'	30.23'	N40°55'31"E	098°10'19"
C2	20.00'	26.69'	15.76'	24.75'	S51°45'28"E	076°27'49"
C3	400.00'	17.05'	8.53'	17.05'	S14°44'49"E	002°26'33"
C4	20.00'	36.99'	26.53'	31.94'	N37°01'18"E	105°58'46"
C5	1525.00'	286.21'	143.52'	285.79'	S56°10'30"W	010°45'11"
C6	455.00'	387.15'	206.16'	375.57'	S75°10'27"W	048°45'05"
C7	375.00'	7.13'	3.57'	7.13'	N07°36'57"W	001°05'22"
C8	1010.00'	45.61'	22.81'	45.60'	S81°44'38"E	002°35'14"
C9	1010.00'	234.88'	117.97'	234.35'	S89°41'59"E	013°19'29"
C10	1010.00'	49.30'	24.65'	49.29'	N82°14'22"E	002°47'48"
C11	55.00'	80.21'	49.14'	73.29'	N41°51'23"E	083°33'46"
C12	375.00'	38.42'	19.23'	38.40'	N02°51'35"W	005°52'11"
C13	375.00'	66.59'	33.38'	66.50'	N10°52'53"W	010°10'25"
C14	350.00'	8.70'	4.35'	8.70'	N15°15'21"W	001°25'29"
C15	20.00'	36.49'	25.85'	31.64'	N37°43'54"E	104°33'00"
C16	20.00'	28.57'	17.33'	26.20'	S49°04'37"E	081°49'58"
C17	350.00'	6.66'	3.33'	6.66'	N07°36'57"W	001°05'22"
C18	20.00'	37.22'	26.84'	32.08'	N46°14'22"E	106°37'15"
C19	20.00'	33.89'	22.64'	29.98'	S41°28'04"W	097°04'40"
C20	20.00'	31.44'	20.02'	28.30'	N44°57'33"W	090°04'06"
C21	30.00'	43.75'	26.81'	39.98'	N41°51'23"E	083°33'46"
C22	985.00'	78.59'	39.32'	78.57'	N85°55'25"E	004°34'17"
C23	985.00'	78.97'	39.51'	78.95'	S89°29'38"E	004°35'37"
C24	20.00'	32.63'	21.25'	29.13'	S40°27'26"E	093°28'46"
C25	50.00'	27.62'	14.17'	27.27'	N09°32'37"W	031°39'07"
C26	50.00'	34.48'	17.96'	33.80'	N45°07'23"W	039°30'25"
C27	50.00'	34.48'	17.96'	33.80'	N84°37'48"W	039°30'25"
C28	50.00'	34.48'	17.96'	33.80'	S55°51'47"W	039°30'25"
C29	50.00'	25.10'	12.82'	24.84'	S21°43'38"W	028°45'52"
C30	20.00'	32.19'	20.78'	28.82'	N53°26'50"E	092°12'17"
C31	20.00'	25.61'	14.90'	23.90'	S43°45'38"E	073°22'45"
C32	1585.00'	236.02'	118.23'	235.80'	S58°27'28"W	008°31'55"
C33	1585.00'	18.58'	9.29'	18.58'	S53°51'22"W	000°40'17"
C34	1585.00'	25.02'	12.51'	25.02'	S53°04'05"W	000°54'16"
C35	1585.00'	50.28'	25.14'	50.28'	S51°42'26"W	001°49'03"
C36	395.00'	145.43'	73.55'	144.61'	N61°20'46"E	021°05'45"
C37	395.00'	51.18'	25.63'	51.15'	N75°36'23"E	007°25'28"
C38	395.00'	67.16'	33.66'	67.08'	N84°11'21"E	009°44'29"
C39	395.00'	50.29'	25.18'	50.25'	S87°17'34"E	007°17'40"
C40	395.00'	22.03'	11.02'	22.03'	S82°02'53"E	003°11'43"
C41	20.00'	37.22'	26.84'	32.08'	S46°14'22"W	106°37'15"
C42	1035.00'	53.61'	26.81'	53.60'	S81°56'03"E	002°58'04"
C43	1035.00'	51.03'	25.52'	51.03'	S84°49'50"E	002°49'30"
C44	1035.00'	50.96'	25.48'	50.95'	S87°39'13"E	002°49'15"
C45	1035.00'	50.53'	25.27'	50.52'	N89°32'15"E	002°47'49"
C46	1035.00'	47.04'	23.52'	47.04'	N86°50'13"E	002°36'14"
C47	1035.00'	3.86'	1.93'	3.86'	N85°25'41"E	000°12'50"
C48	40.00'	18.34'	9.33'	18.18'	N81°32'36"W	026°16'16"
C49	70.00'	29.10'	14.77'	28.90'	S80°19'09"E	023°49'21"
C50	70.00'	47.83'	24.89'	46.91'	N68°11'38"E	039°09'04"
C51	70.00'	51.86'	27.18'	50.68'	N27°23'46"E	042°26'39"
C52	70.00'	40.97'	21.09'	40.39'	N10°35'34"W	033°32'01"
C53	40.00'	19.15'	9.76'	18.97'	S13°38'32"E	027°26'04"
C54	400.00'	8.35'	4.17'	8.35'	N00°31'22"W	001°11'44"
C55	400.00'	60.34'	30.23'	60.28'	N05°26'30"W	008°38'33"
C56	400.00'	43.32'	21.68'	43.30'	N12°51'56"W	006°12'18"
C57	996.00'	107.03'	53.57'	106.98'	N75°33'06"E	006°09'25"
C58	1036.00'	130.45'	65.31'	130.37'	S76°46'41"W	007°12'52"
C59	395.00'	336.09'	178.98'	326.05'	N75°10'27"E	048°45'05"
C60	1585.00'	329.90'	165.55'	329.30'	S56°45'40"W	011°55'32"
C61	425.00'	361.62'	192.57'	350.81'	N75°10'27"E	048°45'05"
C62	1555.00'	308.10'	154.55'	307.59'	S56°28'28"W	011°21'08"
C63	20.00'	25.61'	14.90'	23.90'	N43°45'38"W	073°22'45"
C64	224.00'	101.99'	51.90'	101.11'	S14°15'34"E	026°05'16"
C65	286.00'	212.42'	111.38'	207.57'	N06°01'33"W	042°33'17"
C66	60.00'	16.15'	8.12'	16.10'	S07°32'24"W	015°25'23"
C67	71.00'	17.23'	8.66'	17.19'	S08°17'56"W	013°54'20"
C68	275.00'	204.25'	107.09'	199.59'	N06°01'33"W	042°33'17"
C69	235.00'	107.00'	54.44'	106.08'	S14°15'34"E	026°05'16"
C70	60.00'	47.91'	25.32'	46.65'	S26°48'36"E	045°45'17"
C71	60.00'	32.21'	16.51'	31.83'	S65°04'08"E	030°45'47"
C72	71.00'	38.12'	19.53'	37.66'	S65°04'08"E	030°45'47"
C73	71.00'	56.70'	29.96'	55.20'	S26°48'36"E	045°45'17"



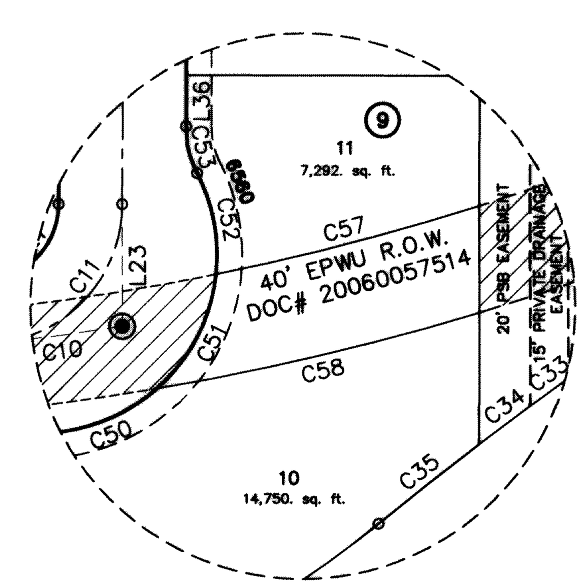
HIKE & BIKE TRAIL
SCALE: 1"=30'



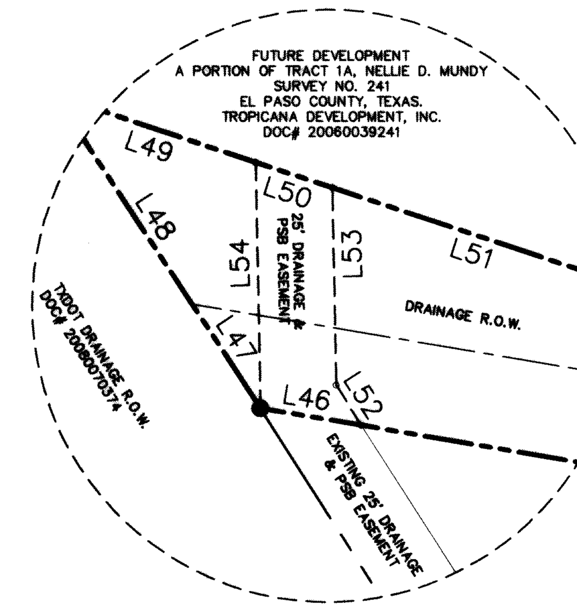
INSET "A"
SCALE: 1"=60'



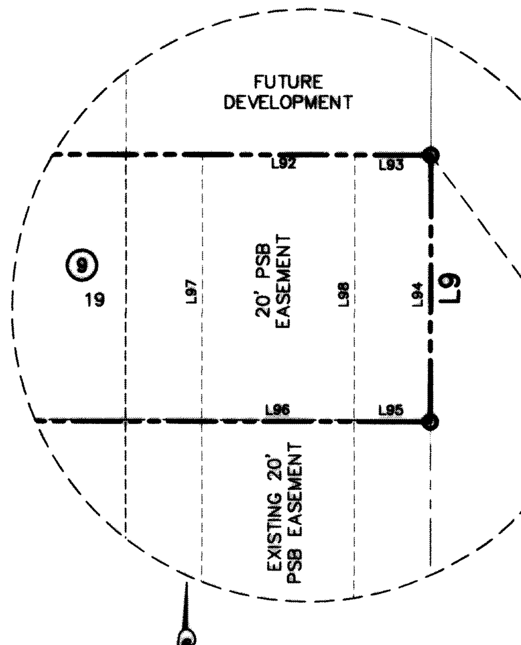
INSET "B"
SCALE: 1"=60'



INSET "C"
SCALE: 1"=60'



INSET "D"
SCALE: 1"=50'



INSET "E"
SCALE: 1"=20'

SCHOOL DISTRICT
CANUTILLO INDEPENDENT SCHOOL DISTRICT
7665 ARTCRAFT RD. EL PASO, TX 79932

LEGEND

1 (3) LOT AND BLOCK NUMBER

PROPOSED CITY MONUMENT (FOR EXACT LOCATION CONTACT THE CITY OF EL PASO)

AREA TO BE VACATED BY THIS PLAT

EXISTING 40' EL PASO WATER UTILITY EASEMENT DOC# 20060057514

IMPROVED HIKE & BIKE TRAIL (TO BE DEDICATED)

STATE OF TEXAS REGISTERED BENITO BARRAGAN 5615 PROFESSIONAL LAND SURVEYOR

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

[signature] 12/3/2012
Benito Barragan TX R.P.L.S. No. 5615

OWNER
TROPICANA DEVELOPMENT
4655 COHEN DRIVE
EL PASO, TEXAS 79924
VOICE (915) 821-3550
FAX (915) 821-3556
CONTACT: MR. R.L. BOWLING, III

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

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

DATE OF PREPARATION: JANUARY, 2012

S:\2000\2000-123LD\SUB-CONSULTANTS\Surveyor\Barragan & Associates\plats\Final-Pre-Cloth-11-26-12\FinalPlatRevised -- ForMylar-112012.dwg, Layout2, 11/28/2012 10:09:53 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

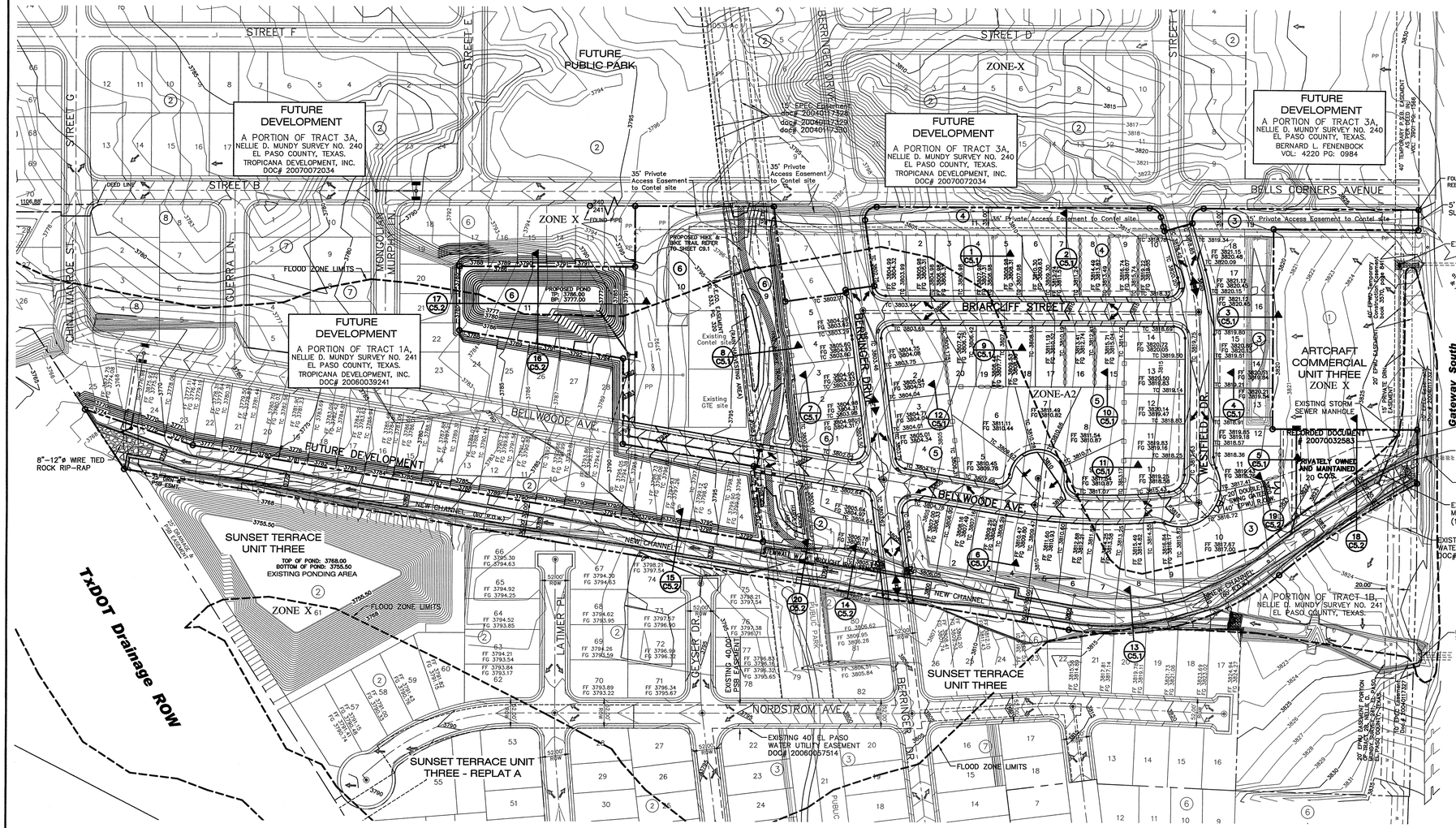
WARNING ! BEFORE YOU DIG
CALL
1-800-DIG-TESS
1-800-344-8377
FOR FIELD LOCATING EXISTING UTILITIES

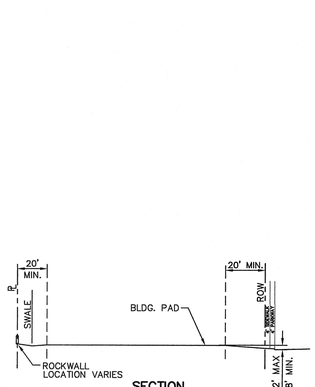
LEGEND:
- NEW RETAINING ROCKWALL (2'-3' IN HEIGHT)
- NEW RETAINING ROCKWALL (3'-9' IN HEIGHT)
- 3963 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- 4005 PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- HIKE & BIKE TRAIL
- 8"-12"ø WIRE TIED ROCK RIP-RAP

NOTES:
1. RETAINING WALLS SHALL BE CONSTRUCTED FOR VERTICAL GRADES GREATER THAN 2-FEET.
2. SLOPED AREAS WHITHIN RESIDENTIAL LOTS SHALL BE MAINTAINED BY THE PROPERTY OWNERS.
3. ALL RETAINING WALLS NOT SPECIFIED TO BE CONSTRUCTED BY DEVELOPER, SHALL BE BUILT BY BUILDER.
4. IMPROVEMENTS SHALL NOT BE PLACED ON SIDEWALK (NDBCU's, SIGNS, POLES, FIRE HYDRANTS, ETC.)
5. IMPROVEMENTS SHALL COMPLY WITH T.A.S./A.D.A. STANDARDS
6. ALL RETAINING WALLS OVER 4' IN DEPTH SHALL BE BUILT BY DEVELOPER. REMAINING ROCKWALL SECTIONS TO BE BUILT BY BUILDER.
7. DEVELOPER SHALL COMPLY WITH SECTION 13.08.170 (EXCESSIVE PAVING CUTS) OF THE EL PASO MUNICIPAL CODE.
8. REFERENCE SHEETS C7.3-C7.10 FOR CHANNEL DESIGN GRADING AND CROSS SECTIONS.
9. ALL ROCKWALLS ABUTTING THE 60' DRAINAGE R.O.W. TO BE BUILT BY DEVELOPER, UNLESS OTHERWISE CONSTRUCTED BY EXISTING LOT BUILDER.
10. ALL ROCKWALLS ABUTTING THE 60' DRAINAGE R.O.W. ALONG SUNSET TERRACE UNIT THREE SUBDIVISION BOUNDARY LINE SHALL BE 6' HIGH FROM HIGHEST SIDE, AND BE BUILT BY DEVELOPER, IF LOT BUILDER FOR SUNSET TERRACE UNIT THREE HAS NOT CONSTRUCTED THE ROCKWALLS.

FLOOD ZONE:
THIS SUBDIVISION LIES WITHIN ZONE "A2", "B" AND "C" PER F.I.R.M. PANNEL NUMBER 480214 0016 C DATED FEBRUARY 5, 1986 AND IN ZONE "X" AND "A" PER F.I.R.M. PANNEL NUMBER 480212 0125 B, DATED SEPTEMBER 4, 1991.

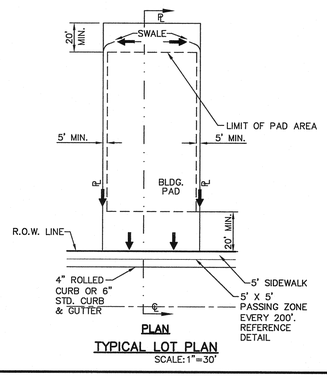
BENCHMARK:
CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN ELEVATION = 3887.39 (CITY DATUM) THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)





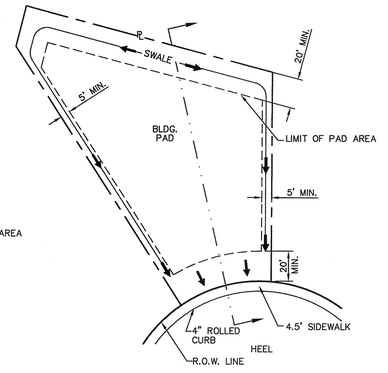
SECTION

NOTES:
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 COUNTY OF EL PASO)



PLAN

TYPICAL LOT PLAN
SCALE: 1"=30'



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
SCALE: NTS

GRADING PLAN
SCALE: 1" = 100'

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
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4504
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5232 Fax: 915.544.5233 www.ceagroup.net

ENGINEER'S SEAL
JORGE L. ACCARATE
85075
REGISTERED PROFESSIONAL ENGINEER
11-1-11

SCALE
Horizontal: 1"=100'
Vertical: N/A
Contour Interval: N/A
DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-LD

PROJECT TITLE
SUNSET TERRACE UNIT FOUR SUBDIVISON IMPROVEMENTS

SHEET TITLE
GRADING PLAN

SHEET NO.
C3.1

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

WARNING ! BEFORE YOU DIG
CALL
1-800-DIG-TESS
1-800-344-8377
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
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5222 Fax: 915.544.5233 www.ceagroup.net

ENGINEER'S SEAL
STATE OF TEXAS
JORGE L. ACARATE
85075
LICENSED PROFESSIONAL ENGINEER
7-1-11

SCALE
Horizontal: 1"=100'
Vertical: N/A
Contour Interval: N/A
DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-LD

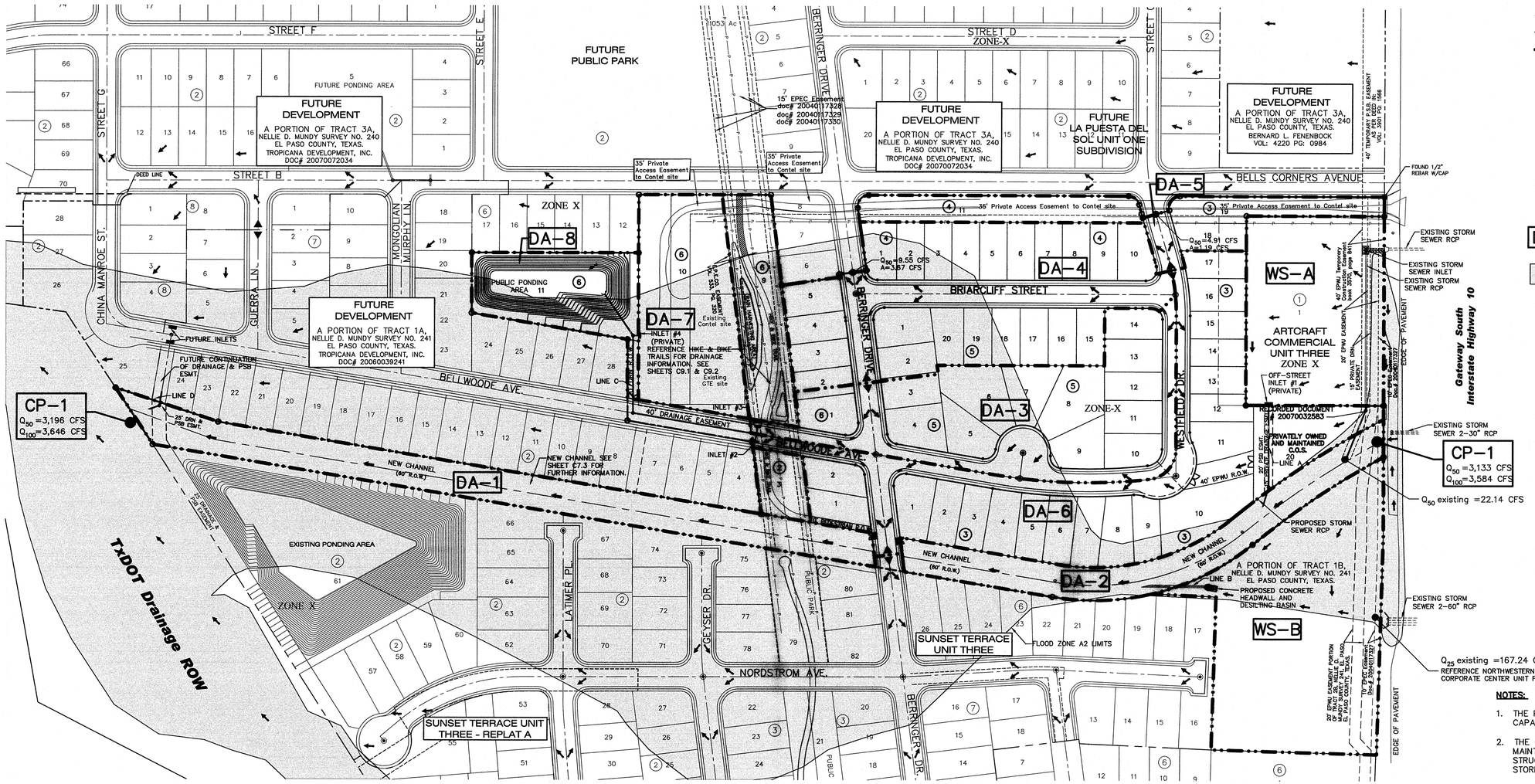
PROJECT TITLE
SUNSET TERRACE UNIT FOUR SUBDIVISON IMPROVEMENTS

SHEET TITLE
DRAINAGE PLAN

SHEET NO.
C4.1

LEGEND:

- SUBDIVISION BOUNDARY LINE
- DRAINAGE AREA BOUNDARY
- DRAINAGE FLOW
- EXISTING DRAINAGE FLOW
- HIGH POINT
- LOW POINT
- PROPOSED DROP INLET
- FUTURE DROP INLET
- STORM DRAIN MANHOLE
- RCP
- DA-1 DRAINAGE AREA
- EXISTING FLOODPLAIN. THIS PORTION LIES WITHIN FLOOD ZONE "A2"



PROPOSED POND							
BASIN NO.	REQUIRED CAPACITY (AC.-FT.)	AVAILABLE CAPACITY (AC.-FT.)	PEAK INFLOW (CFS)	OUTLET TOWER FLOW (CFS)	HIGH WATER SURFACE ELEV. (FT.)	BOTTOM ELEVATION	FREE BOARD (FT.)
1	2.656	3.613	18.481	0	3783.28±	3777.00	2.72

NOTES FOR PROPOSED POND:

1. THE HWSE REFLECTS THE ELEVATION AS REQUIRED BY THE CITY OF EL PASO. THE HWSE DOES NOT INCLUDE 25% EMERGENCY STORAGE. HOWEVER, THE TOTAL DESILTING BASIN CAPACITY SHALL HOLD THE TOTAL REQUIRED STORM WATER RUNOFF AND PROVIDE A MIN. 1FT FREEBOARD.
   HWSE = QT + SILT VOLUME
   HWSE = 2.029 + 0.120 = 2.149 AC-FT
   CONTOUR 3785, ACCUMULATED VOLUME = 2.497 AC-FT
   CONTOUR 3784, ACCUMULATED VOLUME = 2.011 AC-FT
   HIGH WATER SURFACE ELEVATION = 3783.28

DROP INLETS						
NO.	REQ. FLOW CAPACITY Q REQ (CFS)	AVAIL. FLOW CAPACITY Q AVAIL. (CFS)	ADDITIONAL FLOW (CFS)	FLOW BYPASS (CFS)	# OF GRATES	TYPE OF INLET	INLET LOCATION
1	7.435	23.824	0	0	2	Off-Street	SUMP
2	10.965	10.489	0	0.476	3	TYPE I	ON-GRADE
3	8.264	9.424	0	0	3	TYPE I	ON-GRADE
4	2.878	23.824	0	0	2	Off-Street	SUMP

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

MOMENTUM COMPUTATION			
LOCATION @ INLET (1)	DEPTH (2) FT	VELOCITY (3) FPS	PRODUCT NUMBER (4) FT^2/S
1	0.25	3.100	0.775
2	0.30	4.035	1.211
3	0.27	3.760	1.015
4	0.14	3.703	0.518

NEW PONDING AREA CALCULATIONS

QT = (ARC)/12
QT = 2.029
*A = 10.010 AC
R = 4"
C = 0.608
QT X 25% = 0.507
2.029 + 0.507 = 2.536

SILT VOLUME = 0.120
(0.012 AC-FT/AC)
QT + 25% + SILT VOLUME
2.029 + 0.507 + 0.120 = 2.656 AC-FT

$TOTAL_{req}$ = 2.656 AC-FT
$TOTAL_{cap}$ = 3.613 AC-FT

*AREAS
DA-3 = 3.073 AC
DA-6 = 4.400 AC
DA-7 = 1.565 AC
DA-8 = 0.972 AC
TOTAL = 10.010 AC

PROPOSED POND AREAS	
CONTOUR	ACCUMULATED VOLUME (AC-FT.)
3786.00	3.613
3785.00	3.031
3784.00	2.497
3783.00	2.011
3782.00	1.571
3781.00	1.174
3780.00	0.821
3779.00	0.508
3778.00	0.235
3777.00	0.000

50 YEAR STORM CALCULATIONS FOR WATERSHED AREAS					
DRAINAGE AREA NO. (1)	DRAINAGE AREA (AC) (2)	DESIGN STORM INTENSITY (I50) (3)	TIME OF CONCENTRATION (4)	RUNOFF COEFF. (C) (5)	Q50 (CFS) (6)
DA-1	1.917	5.573	10.00	0.950	10.149
DA-2	1.311	5.573	10.00	0.950	6.941
DA-3	3.073	3.920	20.52	0.686	8.264
DA-4	3.672	3.869	21.00	0.672	9.547
DA-5	1.187	4.795	14.00	0.863	4.912
DA-6	4.400	3.920	20.52	0.630	10.965
DA-7	1.565	5.573	10.00	0.330	2.878
DA-8	0.972	5.573	10.00	0.330	1.788
*WS-A	1.974	5.573	10.00	0.850	9.351
*WS-B	3.082	5.573	10.00	0.850	14.600

*NOTE: WS-A AND WS-B Q'S REFLECT DEVELOPED CONDITIONS.

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

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

NOTES:

1. THE PONDING AREA IS DESIGNED FOR STORAGE CAPACITY FOR DA-3, DA-6, DA-7 AND DA-8 ONLY.
2. THE OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR MAINTENANCE OF ALL OFF-SITE DRAINAGE STRUCTURES, INCLUDING OFF-SITE SECTIONS OF STORM SEWER LINE B AND D.
3. RUNOFF FROM DA-4 & DA-5 WILL BE CONVEYED TO A PROPOSED OFF-SITE RETENTION BASIN LOCATED AT LA PUESTA DEL SOL UNIT ONE SUBDIVISION.

BENCHMARK

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)

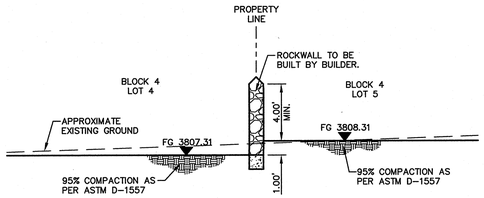
FLOOD ZONE:

THIS SUBDIVISION LIES WITHIN ZONE "A2", "B" AND "C" PER F.I.R.M. PANNEL NUMBER 480214 0016 C DATED FEBRUARY 5, 1986 AND IN ZONE "X" AND "A" PER F.I.R.M. PANNEL NUMBER 480212 0125 B, DATED SEPTEMBER 4, 1991.

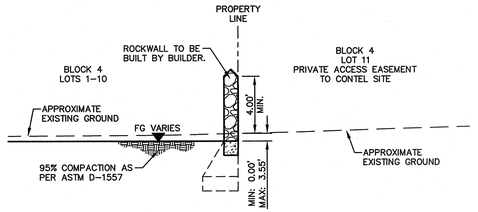
DRAINAGE PLAN
SCALE: 1" = 100'

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

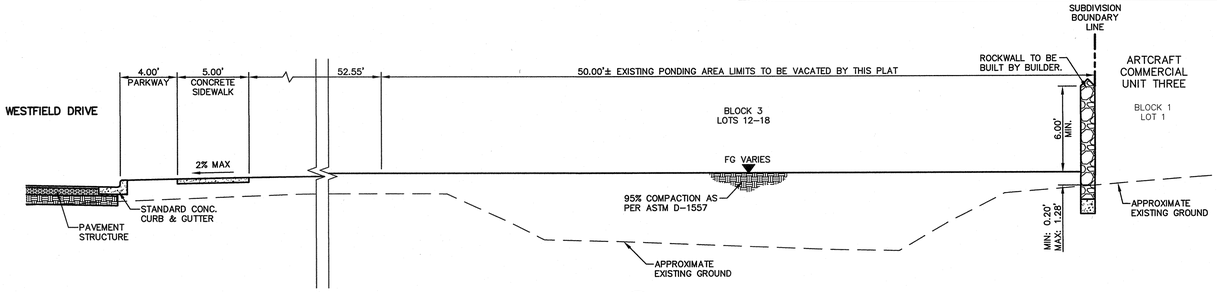
WARNING !
BEFORE YOU DIG
CALL
1-800-DIG-TESS
1-800-344-8377
FOR FIELD LOCATING EXISTING UTILITIES



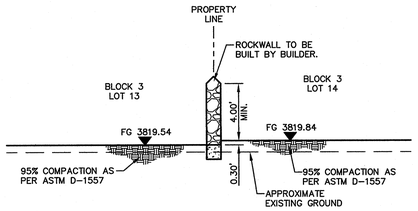
1 C5.1 **SECTION** SCALE:1"=5'



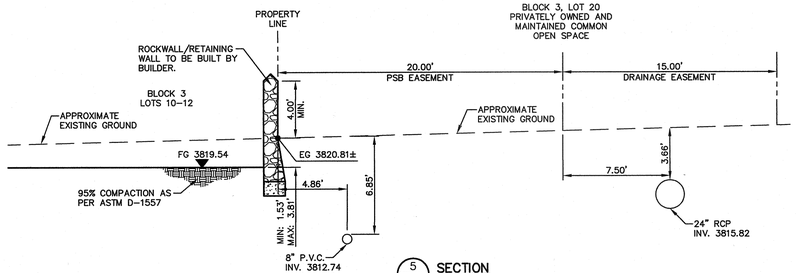
2 C5.1 **SECTION** SCALE:1"=5'



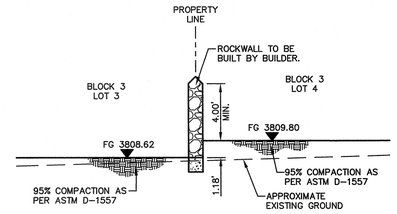
3 C5.1 **SECTION** SCALE:1"=5'



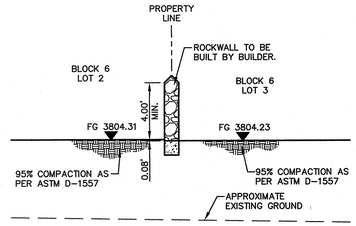
4 C5.1 **SECTION** SCALE:1"=5'



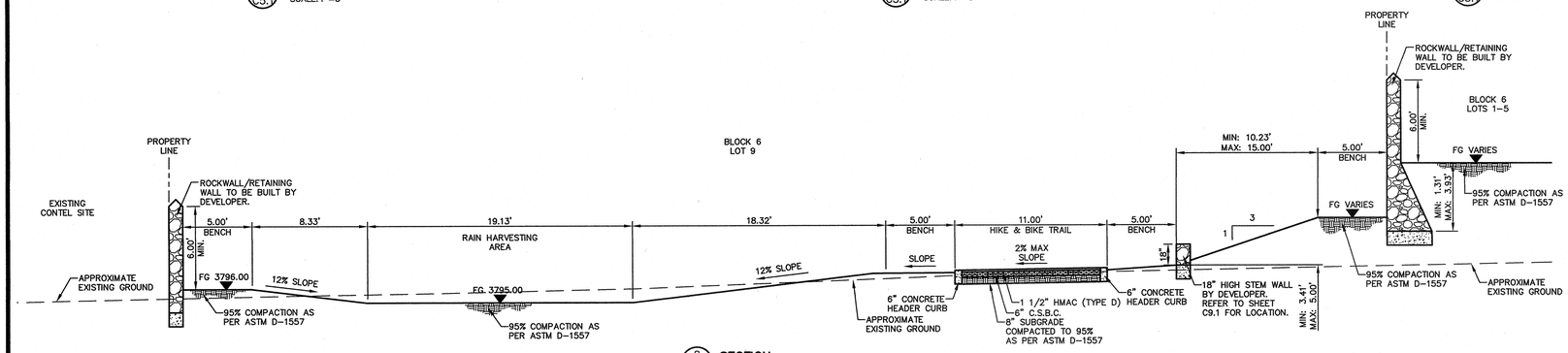
5 C5.1 **SECTION** SCALE:1"=5'



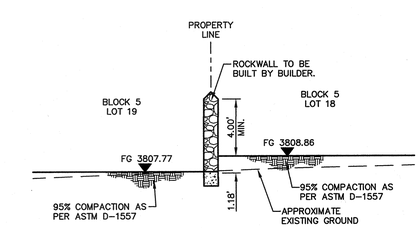
6 C5.1 **SECTION** SCALE:1"=5'



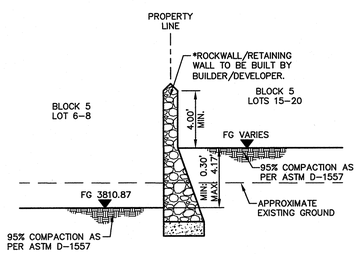
7 C5.1 **SECTION** SCALE:1"=5'



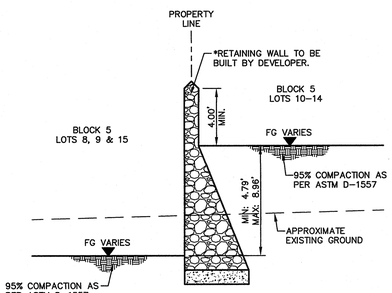
8 C5.1 **SECTION** SCALE:1"=5'



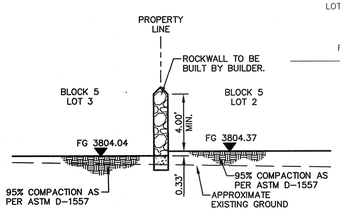
9 C5.1 **SECTION** SCALE:1"=5'



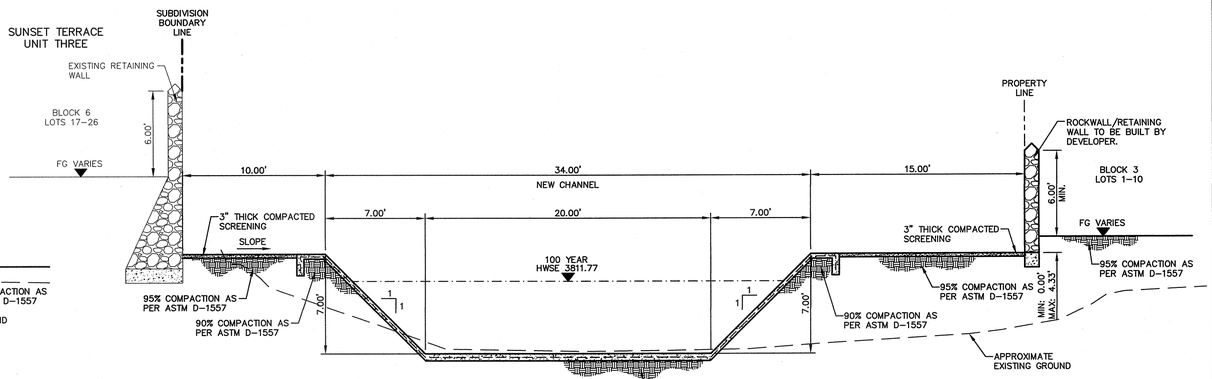
10 C5.1 **SECTION** SCALE:1"=5'



11 C5.1 **SECTION** SCALE:1"=5'



12 C5.1 **SECTION** SCALE:1"=5'



13 C5.1 **SECTION** SCALE:1"=5'

***NOTE:**
ALL RETAINING WALLS OVER 4' IN DEPTH SHALL BE BUILT BY DEVELOPER

NOTES:

1. ALL ROCKWALLS ABUTTING THE 60' DRAINAGE R.O.W. TO BE BUILT BY DEVELOPER, UNLESS OTHERWISE CONSTRUCTED BY EXISTING LOT BUILDER.
2. ALL ROCKWALLS ABUTTING THE 60' DRAINAGE R.O.W. ALONG SUNSET TERRACE UNIT THREE SUBDIVISION BOUNDARY LINE SHALL BE 6' HIGH FROM HIGHEST SIDE, AND BE BUILT BY DEVELOPER, IF LOT BUILDER FOR SUNSET TERRACE UNIT THREE HAS NOT CONSTRUCTED THE ROCKWALLS.

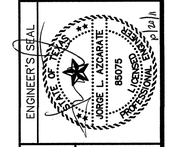
REFERENCES - BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE AND MESA STREET, ELEVATION = 3937.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

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

ENGINEER'S SEAL



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

DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APP'VD. BY: J.L.A.
JOB No. 2000-123-LD

PROJECT TITLE

SUNSET TERRACE UNIT FOUR SUBDIVISON IMPROVEMENTS

SHEET TITLE

GRADING SECTIONS

SHEET NO.

C5.1

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

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

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN ELEVATION = 3887.39 "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

caa group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4504
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office 915.544.5232 Fax 915.544.5233 www.caagroup.net

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

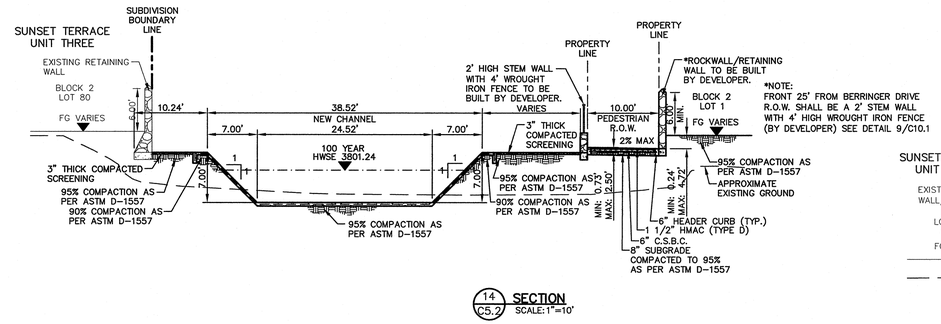
SCALE
Horizontal: 1"=10'
Vertical: N/A
Contour Interval: N/A

DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-LD

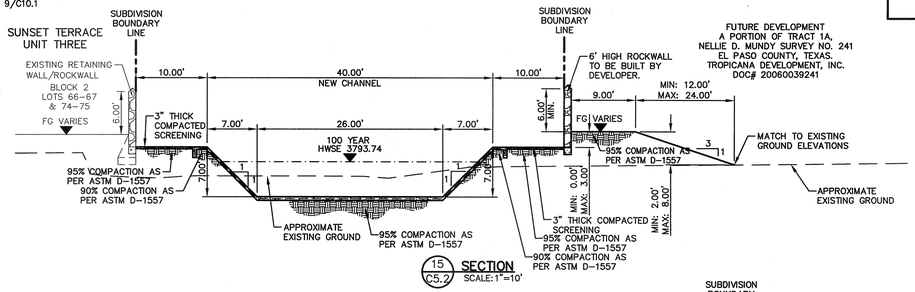
PROJECT TITLE
SUNSET TERRACE UNIT FOUR SUBDIVISON IMPROVEMENTS

SHEET TITLE
GRADING SECTIONS

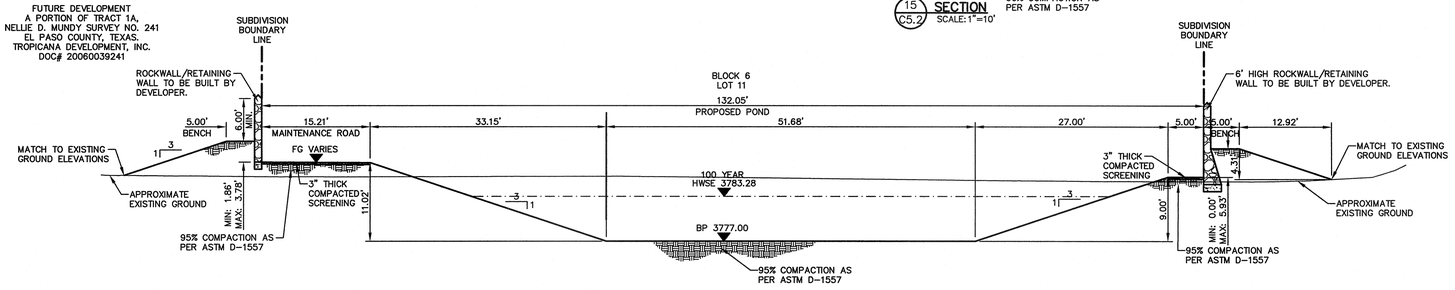
SHEET NO.
C5.2



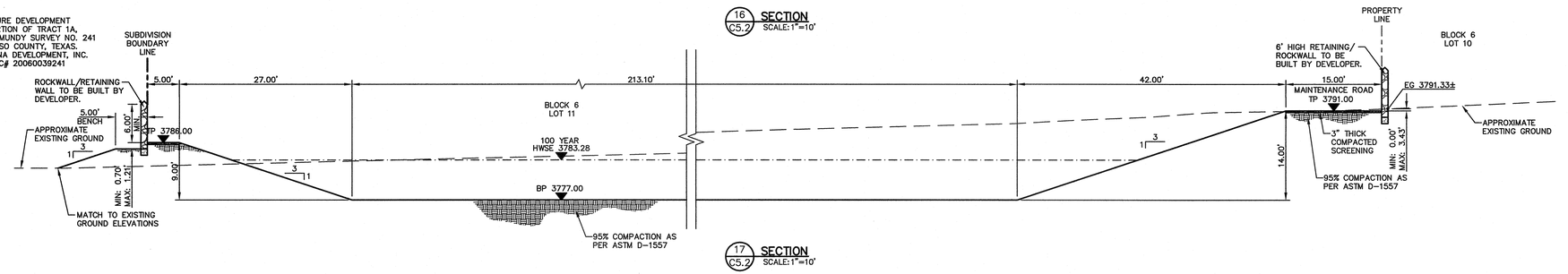
14 C5.2 SECTION
SCALE: 1"=10'



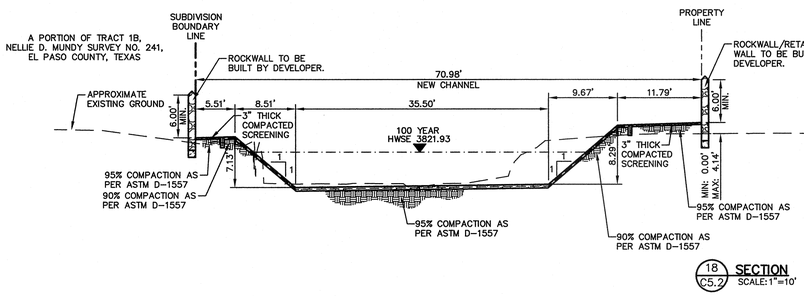
15 C5.2 SECTION
SCALE: 1"=10'



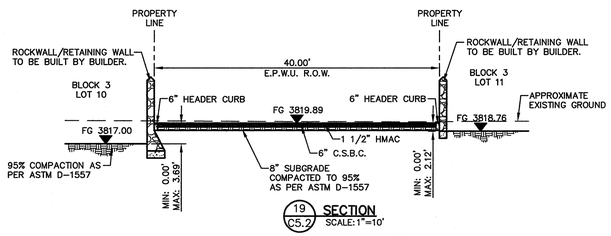
16 C5.2 SECTION
SCALE: 1"=10'



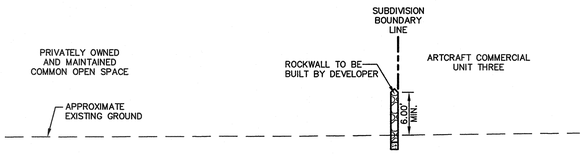
17 C5.2 SECTION
SCALE: 1"=10'

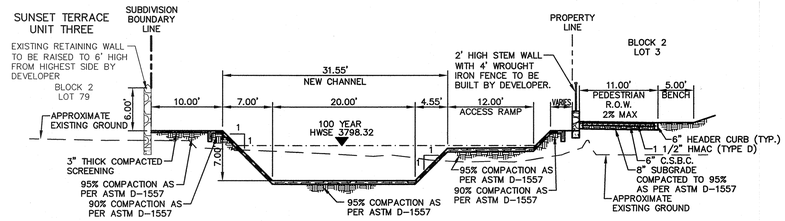


18 C5.2 SECTION
SCALE: 1"=10'



19 C5.2 SECTION
SCALE: 1"=10'





20 C5.2 SECTION
SCALE: 1"=10'

NOTE:
ALL RETAINING WALLS OVER 4' IN DEPTH SHALL BE BUILT BY DEVELOPER

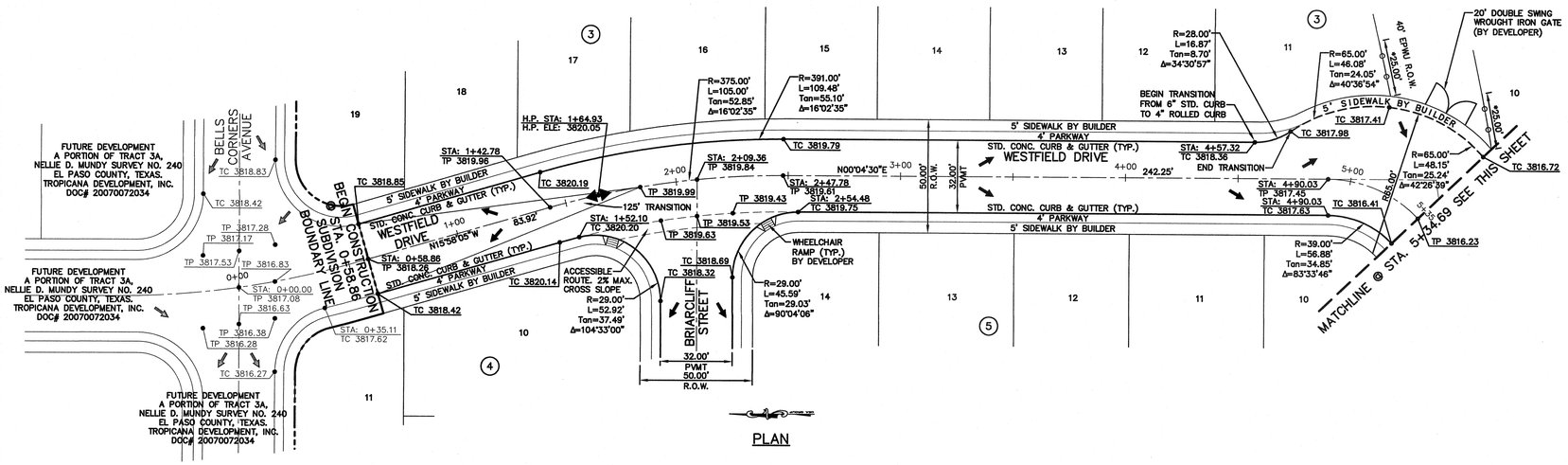
NOTES:

1. ALL ROCKWALLS ABUTTING THE 60' DRAINAGE R.O.W. TO BE BUILT BY DEVELOPER, UNLESS OTHERWISE CONSTRUCTED BY EXISTING LOT BUILDER.
2. ALL ROCKWALLS ABUTTING THE 60' DRAINAGE R.O.W. ALONG SUNSET TERRACE UNIT THREE SUBDIVISION BOUNDARY LINE SHALL BE 6' HIGH FROM HIGHEST SIDE, AND BE BUILT BY DEVELOPER, IF LOT BUILDER FOR SUNSET TERRACE UNIT THREE HAS NOT CONSTRUCTED THE ROCKWALLS.

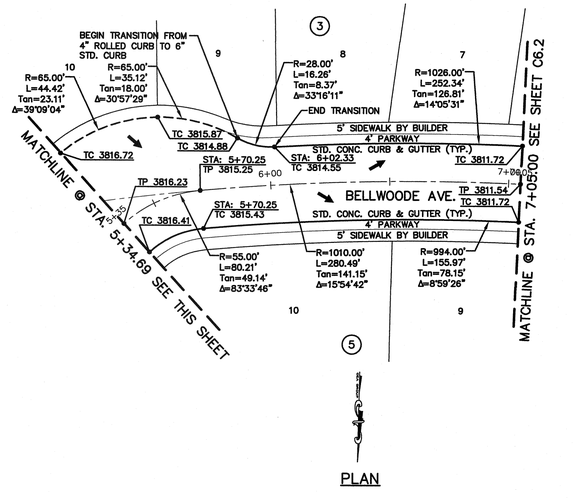
UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT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

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

*NOTE:
FRONT 25.00' TO BE 2' STEM WALL WITH 4' HIGH WROUGHT IRON FENCE.

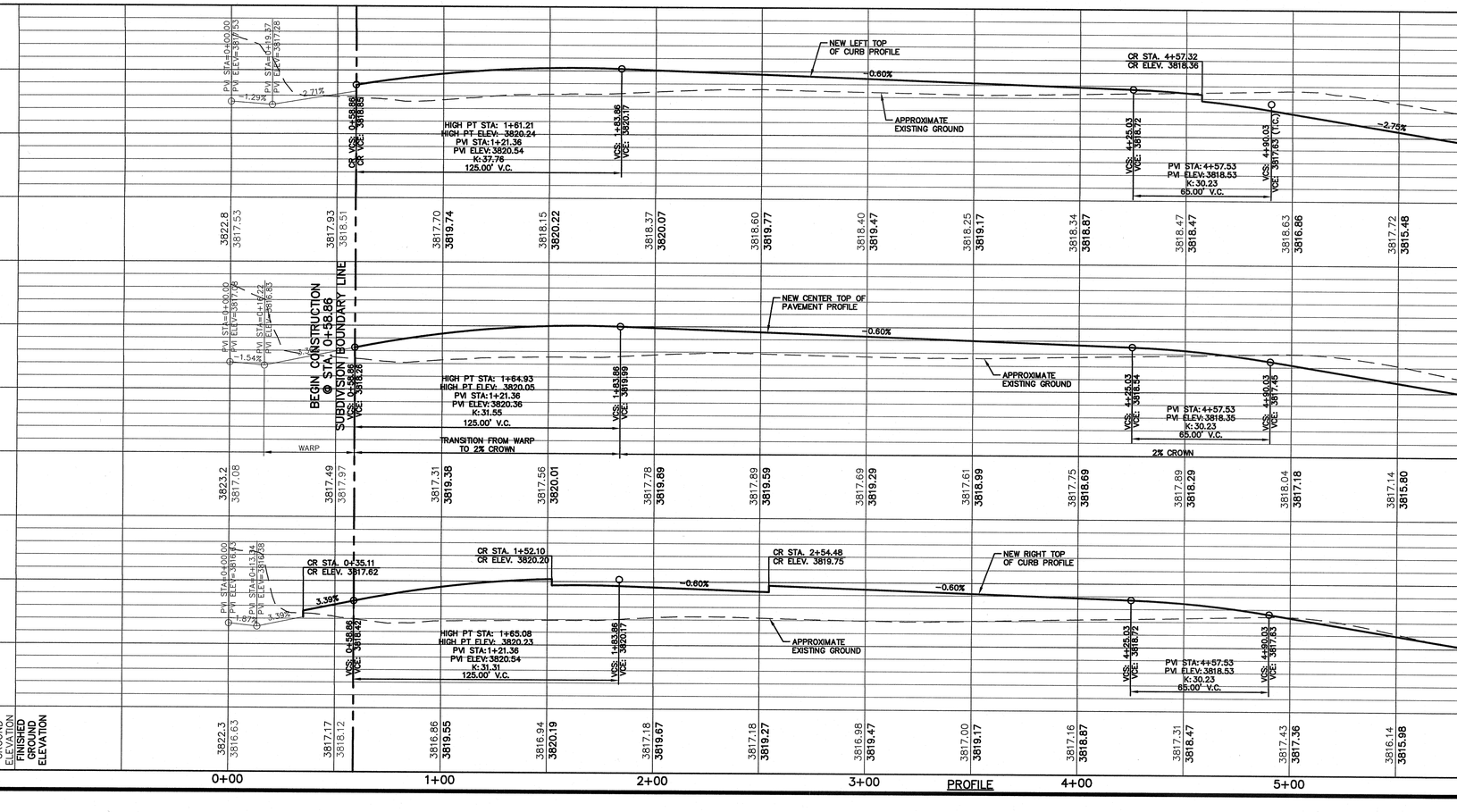


PLAN



PLAN

NOTE:
ALL WHEELCHAIR RAMPS TO BE CONSTRUCTED BY DEVELOPER, UNLESS OTHERWISE NOTED.



PROFILE

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Beam, Ste. F El Paso, TX 79924
Office 915.544.2232 Fax 915.544.2230 www.ceagroup.net

REFERENCES – BENCHMARKS
CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE/GATEWAY EAST. ELEVATION = 3897.39 (CITY DATUM) THIS IS BASED ON NAVD MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

ENGINEER'S SEAL
STATE OF TEXAS — JORGE L. AZCARATE — 85075 — LICENSED PROFESSIONAL ENGINEER
9/24/11

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

DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-10

PROJECT TITLE
SUNSET TERRACE
UNIT FOUR
SUBDIVISON IMPROVEMENTS

SHEET TITLE
WESTFIELD DR. PLAN & PROFILE FROM STA. 0+58.86 TO STA. 5+34.69
BELLWOODE AVE. PLAN & PROFILE FROM STA. 5+34.69 TO STA. 7+05.00

SHEET NO.
C6.1

UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3788
U.S. SPRINT TELECOMM	(800) 521-0579

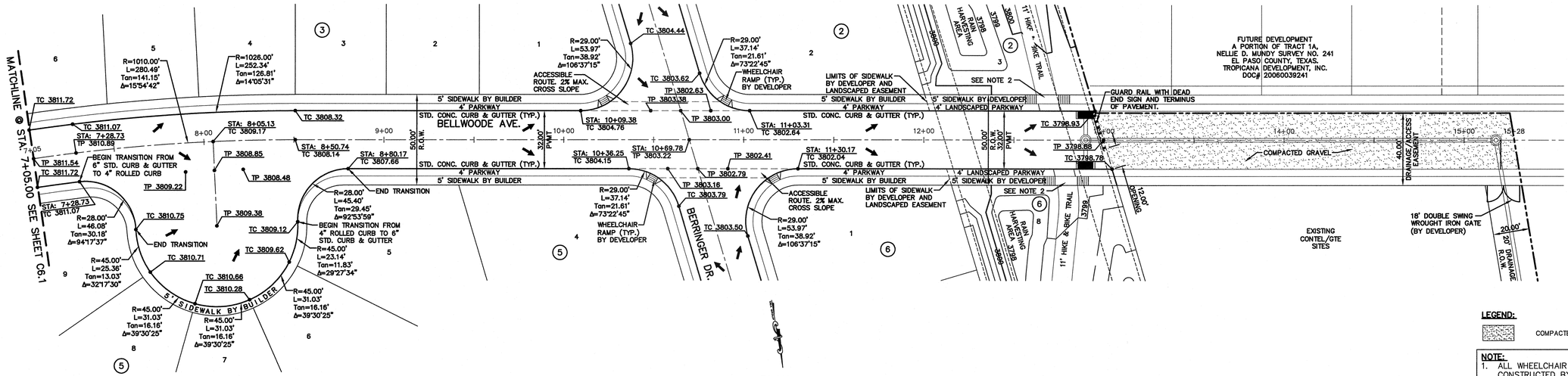
WARNING ! BEFORE YOU DIG

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

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN ELEVATION = 3887.39 (NAVD 88) CONVERTED TO GEOID 09 ELEVATION = 3935.48 (CITY DATUM)

BY	REVISIONS	DATE



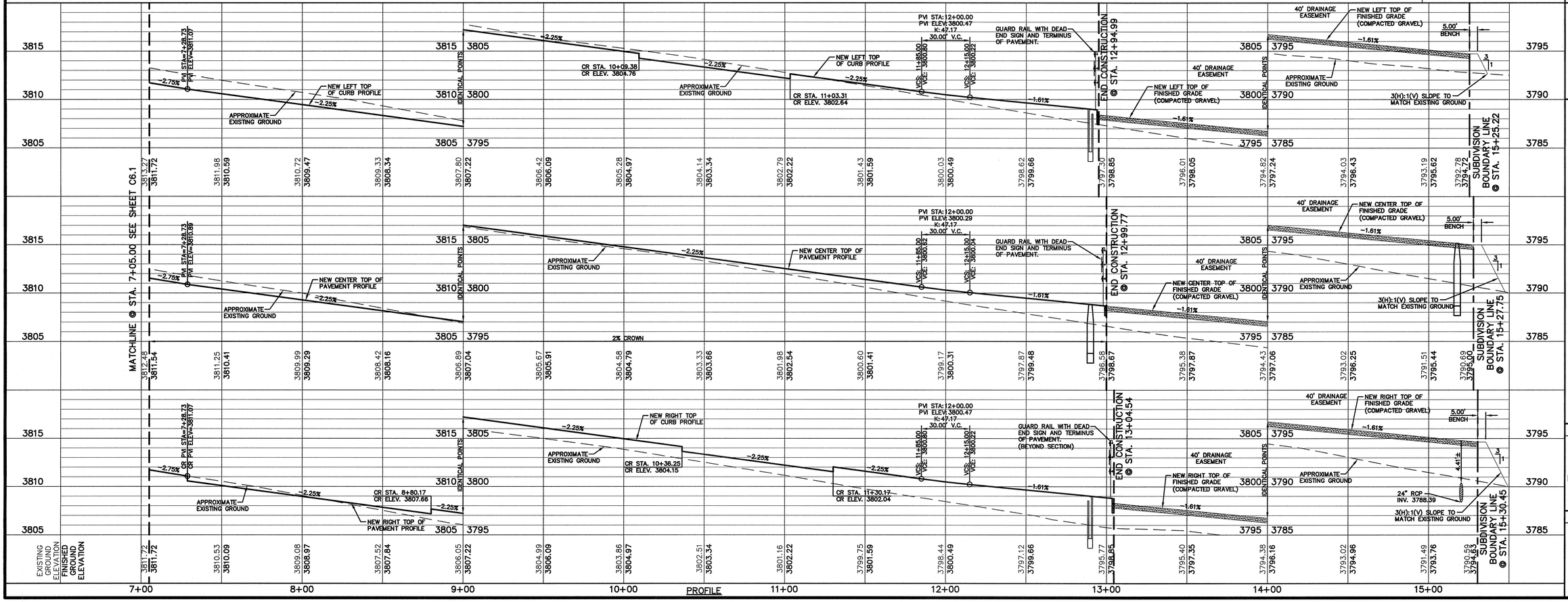
PLAN

LEGEND:

COMPACTED GRAVEL

NOTE:

1. ALL WHEELCHAIR RAMPS TO BE CONSTRUCTED BY DEVELOPER, UNLESS OTHERWISE NOTED.
2. SIDEWALK FRONTING THE HIKE & BIKE TRAIL SHALL BE 6" THICK WITH FIBER GLASS MESH REINFORCEMENT.



PROFILE

caa group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4504
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office 915.544.5232 Fax 915.544.5233 www.caagroup.net

ENGINEER'S SEAL

JOSE L. AZCARATE 85075 LICENSED PROFESSIONAL ENGINEER 7-14-11

SCALE	
Horizontal:	1"=30'
Vertical:	1"=5'
Contour Interval:	N/A
DATE:	OCTOBER 2011
DESIGN BY:	J.G.
DRAWN BY:	A.B.
CHKD. BY:	J.L.A.
APPVD. BY:	J.L.A.
JOB No.	2000-123-LD

PROJECT TITLE

SUNSET TERRACE UNIT FOUR SUBDIVISON IMPROVEMENTS

SHEET TITLE

BELLWOODE AVE. PLAN & PROFILE FROM STA. 7+05.00 TO STA. 12+99.77

SHEET NO.

C6.2

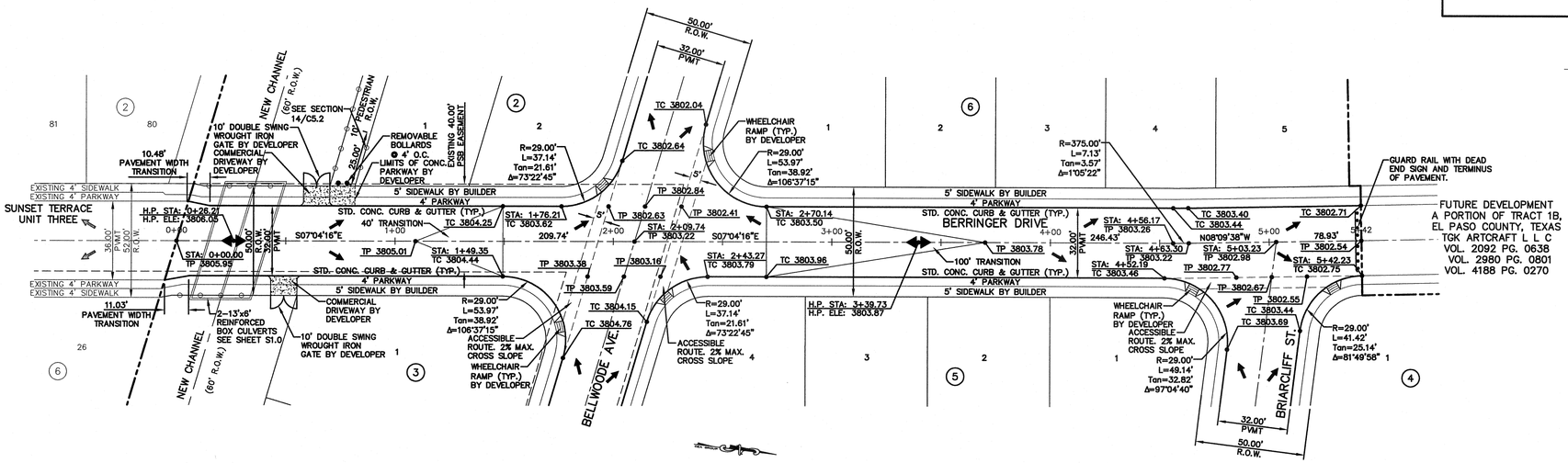
UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT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

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

REFERENCES – BENCHMARKS

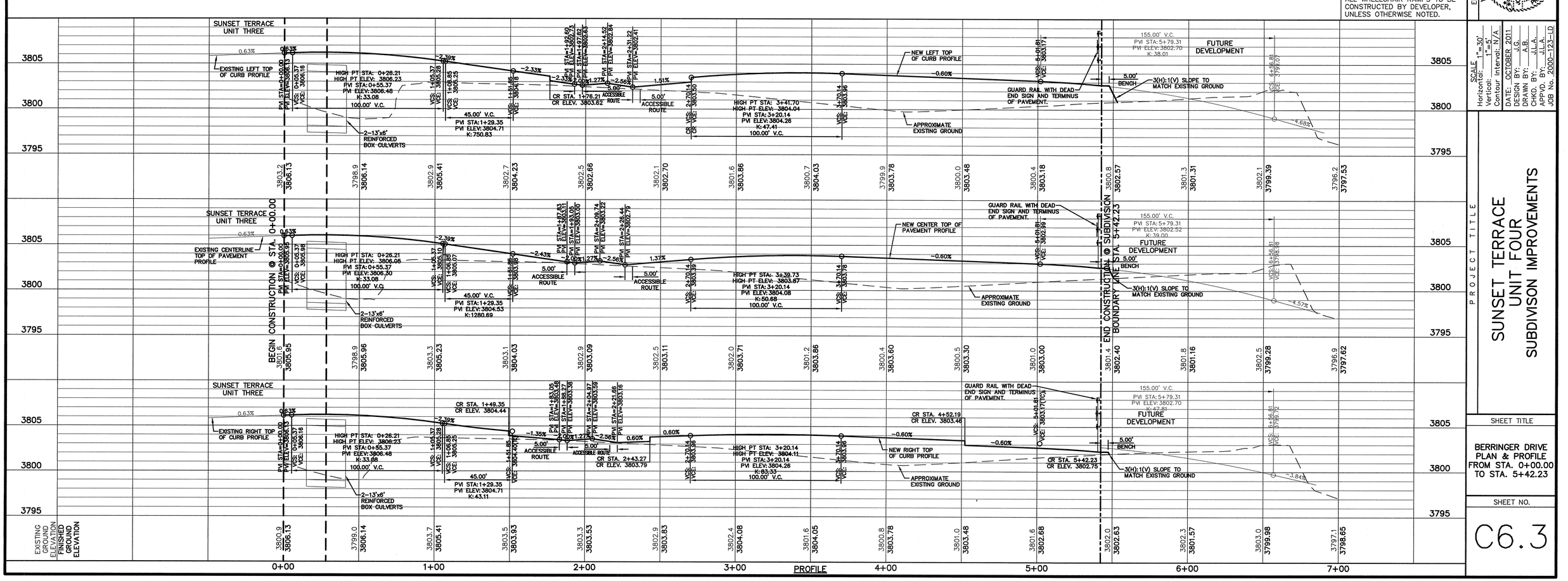
CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN ELEVATION = 3887.39 (CITY DATUM) USING U.S.C.&G.S. MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY



PLAN

NOTE:
ALL WHEELCHAIR RAMPS TO BE CONSTRUCTED BY DEVELOPER, UNLESS OTHERWISE NOTED.



PROFILE

ENGINEER'S SEAL
STATE OF TEXAS
JORGE L. ACCARATE
85075
LICENSED PROFESSIONAL ENGINEER
11-10-11

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

SCALE
Horizontal: 1"=30'
Vertical: 1"=5'
Contour Interval: N/A
DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: JLLA.
APPVD. BY: JLLA.
JOB No. 2000-123-LD

PROJECT TITLE

SUNSET TERRACE UNIT FOUR SUBDIVISON IMPROVEMENTS

SHEET TITLE

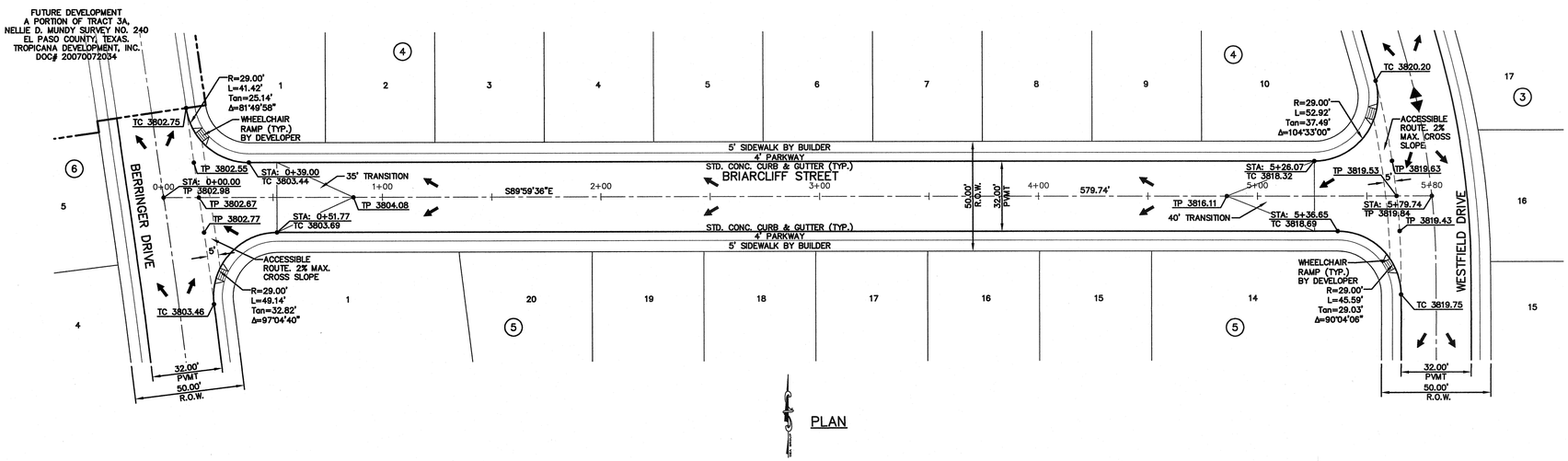
BERRINGER DRIVE PLAN & PROFILE FROM STA. 0+00.00 TO STA. 5+42.23

SHEET NO.

C6.3

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



PLAN

NOTE:
ALL WHEELCHAIR RAMPS TO BE CONSTRUCTED BY DEVELOPER, UNLESS OTHERWISE NOTED.

REFERENCES – BENCHMARKS

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

DATE	REVISIONS	BY

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

ENGINEER'S SEAL

STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER
10/01/11

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

DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-LD

PROJECT TITLE

SUNSET TERRACE UNIT FOUR SUBDIVISON IMPROVEMENTS

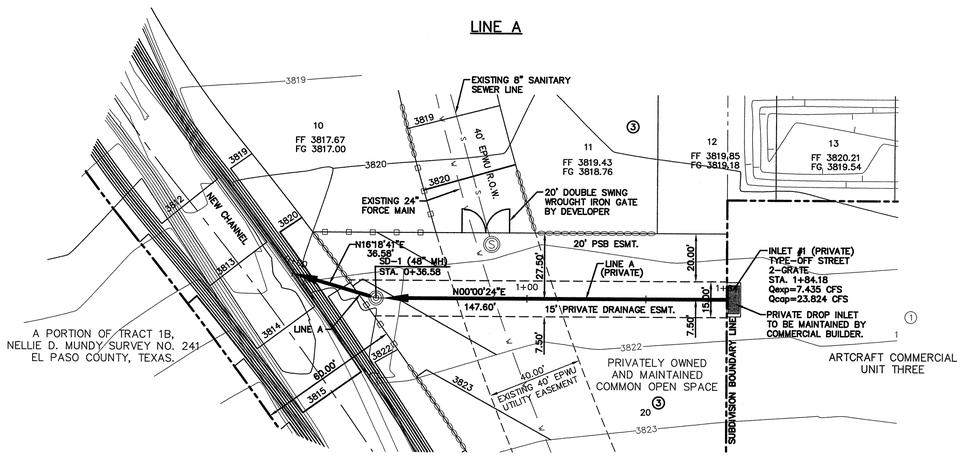
SHEET TITLE

BRIARCLIFF STREET PLAN & PROFILE FROM STA. 0+00.00 TO STA. 5+79.74

SHEET NO.

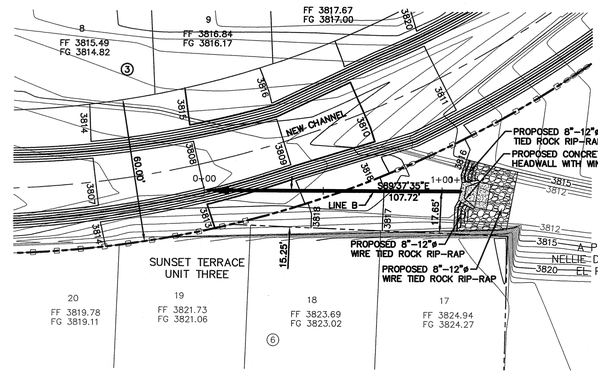
C6.4

LINE A



PLAN

LINE B



PLAN

NOTE:

THE OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR MAINTENANCE OF ALL OFF-SITE DRAINAGE STRUCTURES, INCLUDING OFF-SITE SECTIONS OF STORM SEWER LINE B AND D.

LEGEND

- STORM SEWER LINE
- DROP INLET
- MANHOLE
- EXISTING 24" WATER MAIN
- EXISTING SANITARY SEWER LINE
- EXISTING SANITARY SEWER MANHOLE

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

REFERENCES - BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN ELEVATION = 3887.39 (CITY DATUM) (USGS DATUM = 3889.87) "CHINO" ELEVATION = 3935.48 (CITY DATUM)

BY	DATE	REVISIONS

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.3232 Fax: 915.544.3233 www.ceagroup.net

ENGINEER'S SEAL

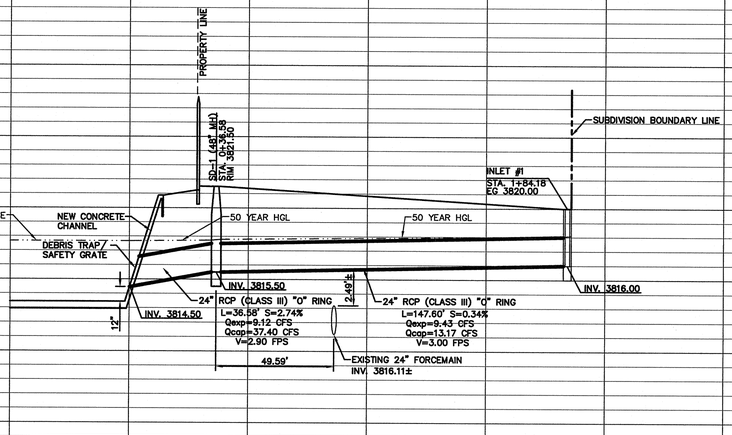
JORGE L. ACCARATE 85075 LICENSED PROFESSIONAL ENGINEER

SCALE
Horizontal: 1"=30'
Vertical: 1"=5'
Contour Interval: N/A.
DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-10

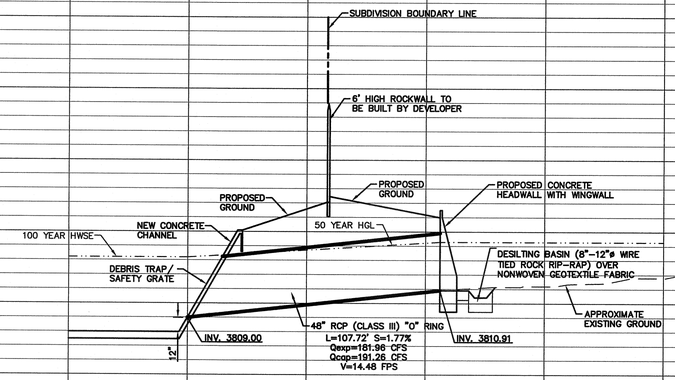
PROJECT TITLE

SUNSET TERRACE UNIT FOUR SUBDIVISON IMPROVEMENTS

LINE A (PRIVATE)



LINE B



PROFILE

SHEET TITLE

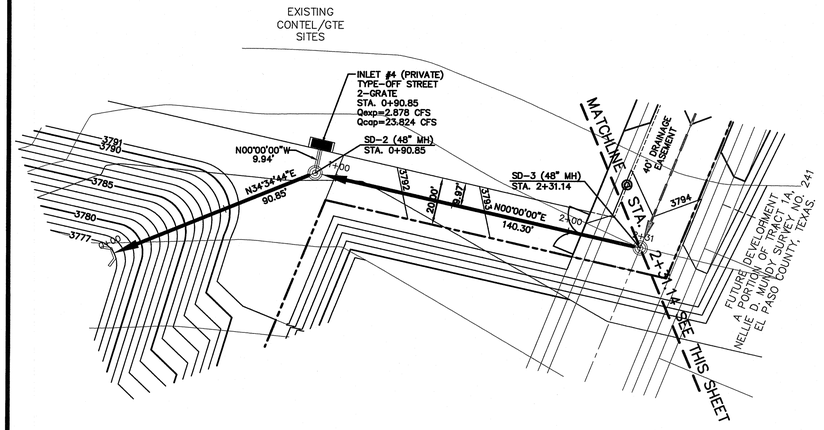
LINE A
PLAN & PROFILE
FROM STA. 0+00.00
TO STA. 2+11.94

LINE B
PLAN & PROFILE
FROM STA. 0+00.00
TO STA. 1+07.72

SHEET NO.

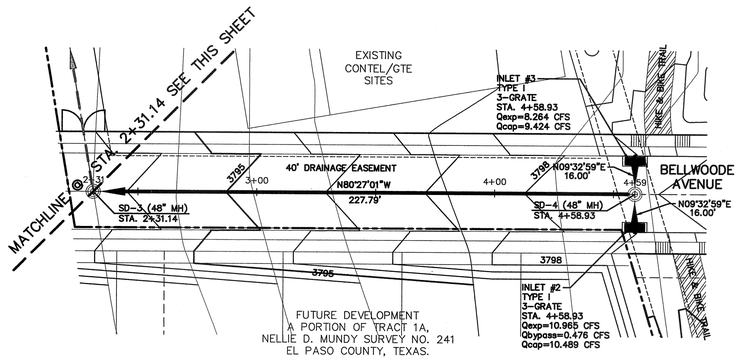
C7.1

LINE C



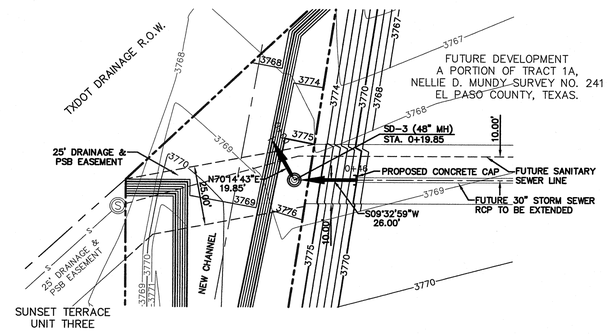
PLAN

LINE C



PLAN

LINE D



PLAN

NOTE:

THE OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR MAINTENANCE OF ALL OFF-SITE DRAINAGE STRUCTURES, INCLUDING OFF-SITE SECTIONS OF STORM SEWER LINE B AND D.

LEGEND

- STORM SEWER LINE
- DROP INLET
- MANHOLE
- EXISTING 24" WATER MAIN
- EXISTING SANITARY SEWER LINE
- EXISTING SANITARY SEWER MANHOLE

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

REFERENCES - BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN ELEVATION = 3887.39 (CITY DATUM) CITY MONUMENT AT THE INTERSECTION OF "CHINO" ELEVATION = 3935.48 (CITY DATUM)

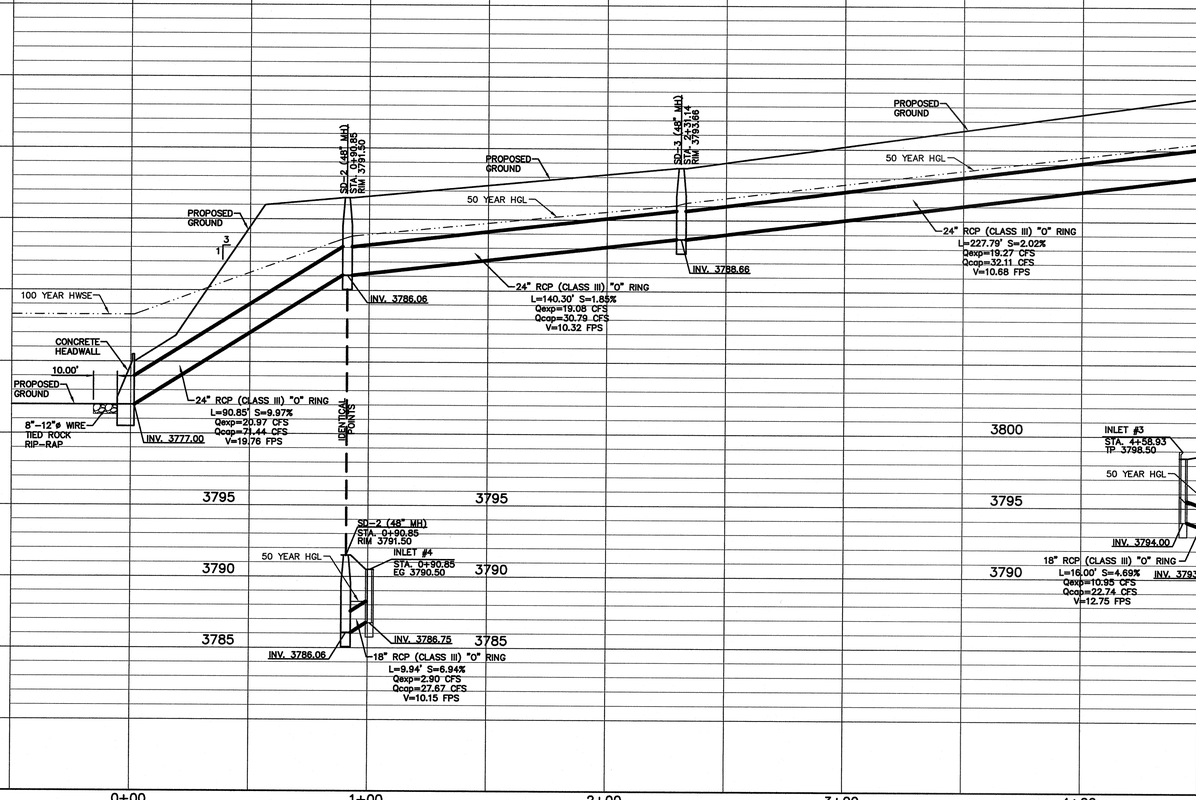
DATE	REVISIONS	BY

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4664
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5222 Fax: 915.544.5233 www.ceagroup.net

ENGINEER'S SEAL

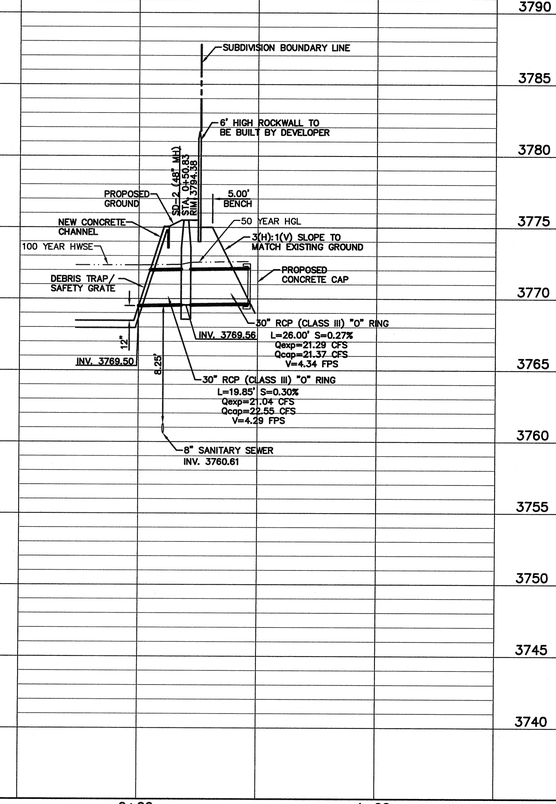
THE STATE OF TEXAS — JORGE L. AZCARATE — 85075 — LICENSED PROFESSIONAL ENGINEER — 11-10-11

LINE C



PROFILE

LINE D



PROFILE

PROJECT TITLE

SUNSET TERRACE UNIT FOUR SUBDIVISON IMPROVEMENTS

SCALE	
Horizontal:	1"=30'
Vertical:	1"=5'
Contour Interval:	N/A
DATE:	OCTOBER 2011
DESIGN BY:	J.G.
DRAWN BY:	A.B.
CHKD. BY:	J.L.A.
APPVD. BY:	J.L.A.
JOB No.	2000-123-LD

SHEET TITLE

LINE C
PLAN & PROFILE
FROM STA. 0+00.00
TO STA. 4+50.14

LINE D
PLAN & PROFILE
FROM STA. 0+00.00
TO STA. 0+45.85

SHEET NO.

C7.2

NOTES:

1. ALL ROCKWALLS ABUTTING THE 60' DRAINAGE R.O.W. TO BE BUILT BY DEVELOPER, UNLESS OTHERWISE CONSTRUCTED BY EXISTING LOT BUILDER.
2. ALL ROCKWALLS ABUTTING THE 60' DRAINAGE R.O.W. ALONG SUNSET TERRACE UNIT THREE SUBDIVISION BOUNDARY LINE SHALL BE 6' HIGH FROM HIGHEST SIDE, AND BE BUILT BY DEVELOPER, IF LOT BUILDER FOR SUNSET TERRACE UNIT THREE HAS NOT CONSTRUCTED THE ROCKWALLS.

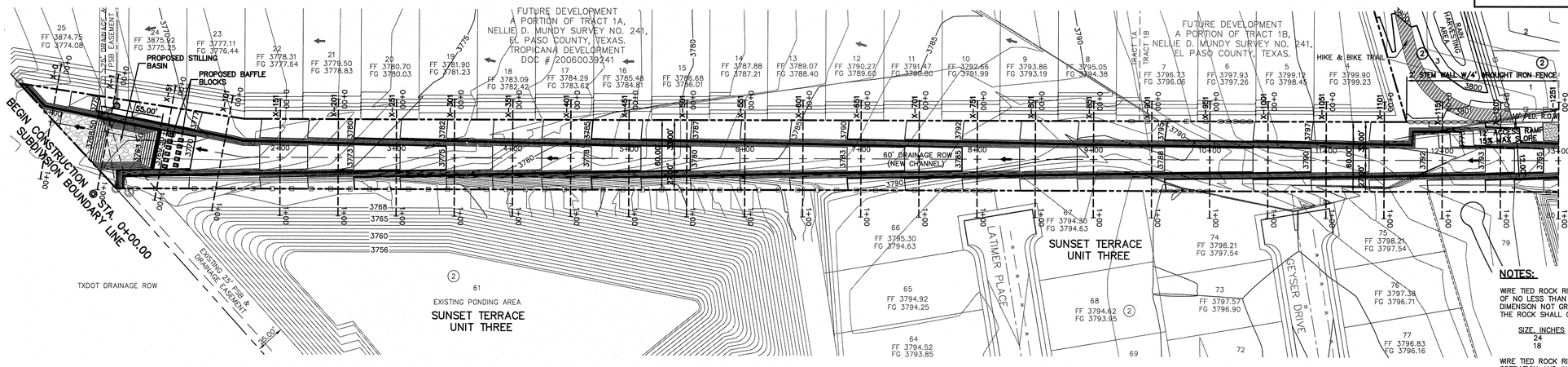
LEGEND:

- MAINTENANCE ROAD WITH 3" COMPACTED SCREENING
- 18"ø–24"ø WIRE TIED ROCK RIP–RAP. PLACED OVER GEOTEXTILE FABRIC (SEE NOTES BELOW).

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



LEGEND:

- 100 YR–WSEL
- 50 YR–WSEL
- W — EXISTING 24" WATER MAIN LINE
- W — EXISTING WATER MAIN LINE
- S — EXISTING 8" SEWER LINE
- P — EXISTING OVERHEAD POWER LINE
- EXISTING UTILITY POLE
- EXISTING SEWER MANHOLE
- EXISTING STORM DRAIN MANHOLE
- TC — TOP OF CHANNEL ELEVATION
- BC — BOTTOM OF CHANNEL INVERT ELEVATION
- COMMERCIAL DRIVEWAY WITH GATE
- ROCKWALL/RETAINING WALL BY DEVELOPER

NOTES:

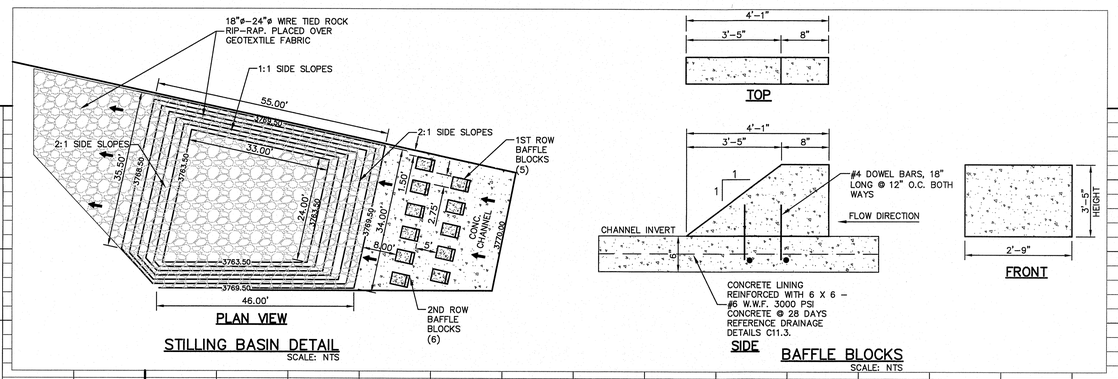
WIRE TIED ROCK RIP–RAP SHALL BE SOUND, DENSE AND DURABLE WITH A BULK SPECIFIC GRAVITY OF NO LESS THAN 2.5. ROCK SHALL BE ANGULAR TO SUBROUNDED IN SHAPE WITH THE GREATEST DIMENSION NOT GREATER THAN 2 TIMES THE LEAST DIMENSION.
THE ROCK SHALL CONFORM TO THE GRADING LIMITS GIVEN BELOW UNLESS OTHERWISE SPECIFIED.

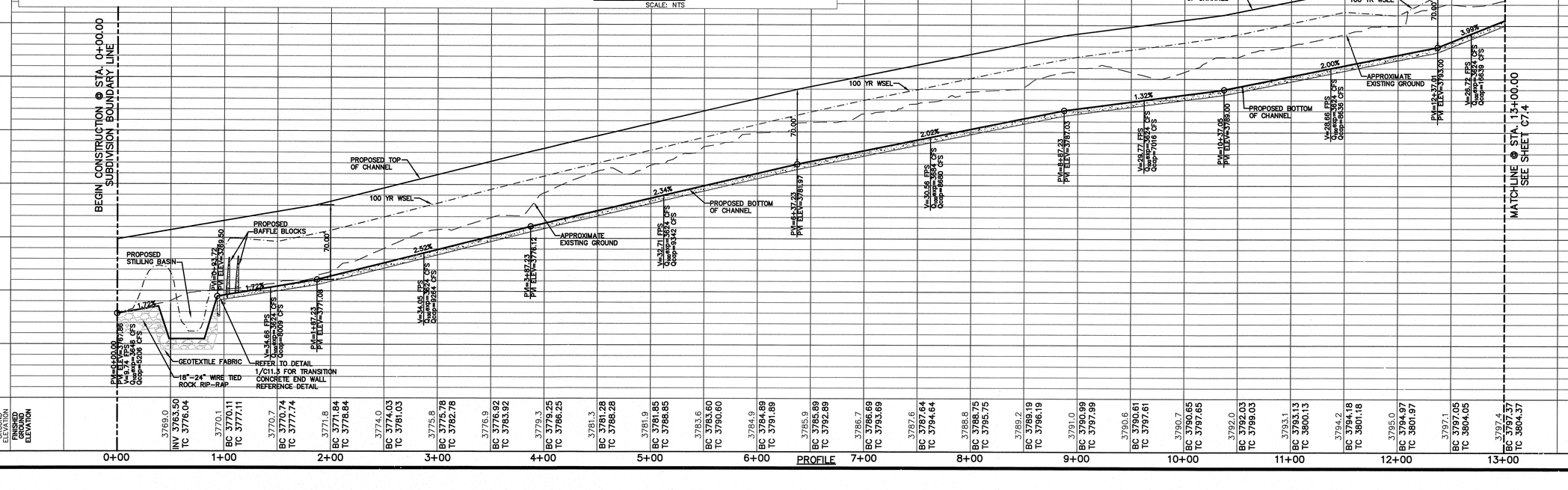
SIZE, INCHES	PERCENT PASSING
24	75
18	50

WIRE TIED ROCK RIP–RAP SHALL BE CONSTRUCTED TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF THE UNDERLYING MATERIALS. THE ROCK SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL INSURE THAT THE RIP–RAP IN PLACE SHALL BE REASONABLY HOMOGENEOUS WITH THE LARGER ROCK UNIFORMLY DISTRIBUTED AND FIRMLY IN CONTACT ONE ANOTHER WITH THE SMALLER ROCKS AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER ROCKS.

WIRE TIED ROCK RIP–RAP SHALL BE PLACED IN A MANNER TO PREVENT DAMAGE TO THE STRUCTURES. HAND PLACING WILL BE REQUIRED TO THE EXTENT NECESSARY TO PREVENT DAMAGE TO THE PERMANENT WORKS AND TO ACHIEVE THE FINISHED SURFACE PLACEMENT.

ROCKS SHALL BE SECURELY BEDDED FIRMLY IN CONTACT ONE ANOTHER. SPACES BETWEEN THE LARGER ROCKS SHALL BE FILLED WITH SMALLER ROCKS AND SPALLS. SMALLER ROCKS SHALL NOT BE GROUPED AS A SUBSTITUTE FOR LARGER ROCKS. FLAT SLAB ROCK SHALL BE LAID ON EDGE.





cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4664
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office 915.544.5232 Fax: 915.544.5233 www.ceagroup.net

REFERENCES – BENCHMARKS
CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN (NAD 83 NORTHING = 3867.39 EASTING = 3935.48 (CITY DATUM) "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

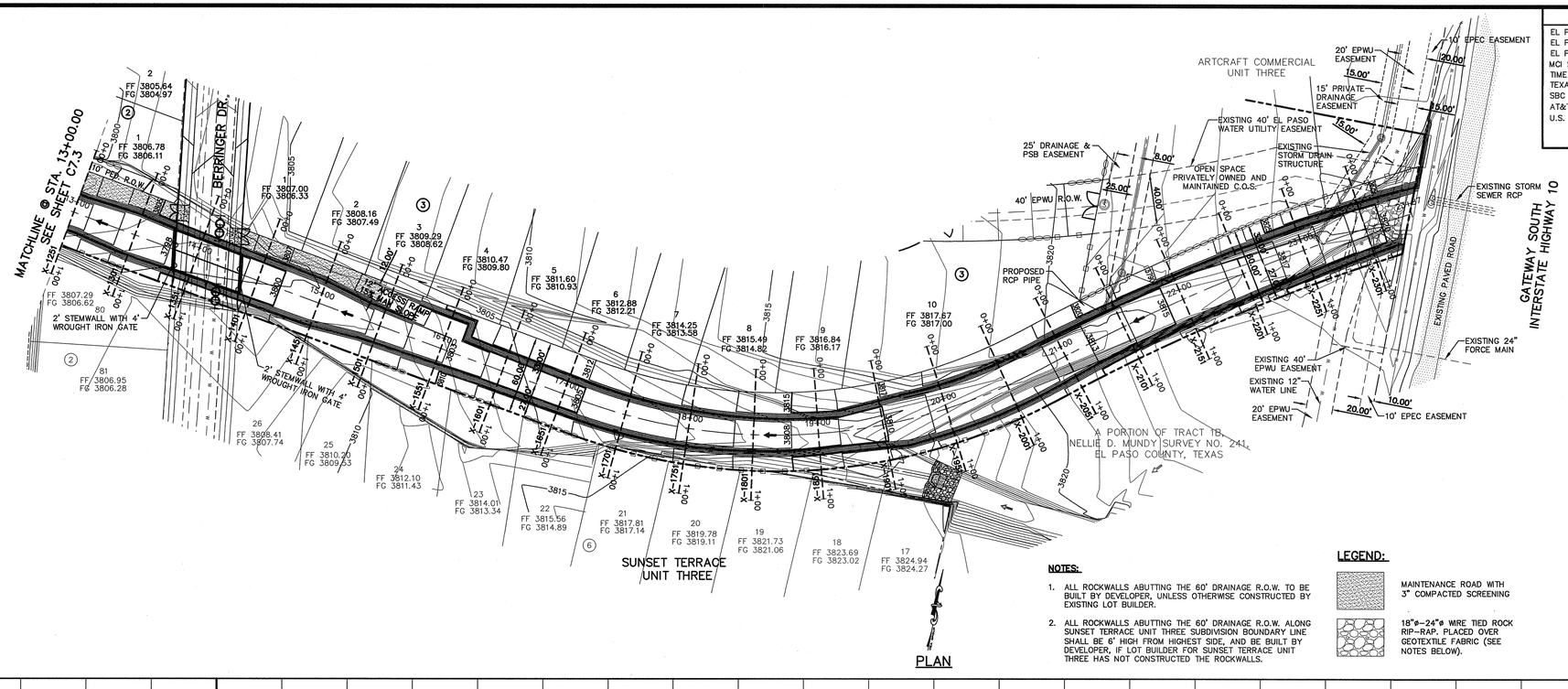
ENGINEER'S SEAL
STATE OF TEXAS
JORGE L. ACCARATE
85075
REGISTERED PROFESSIONAL ENGINEER

SCALE
Horizontal: 1"=50'
Vertical: 1"=5'
Contour Interval: N/A
DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-LD

PROJECT TITLE
SUNSET TERRACE
UNIT FOUR
SUBDIVISON IMPROVEMENTS

SHEET TITLE
CHANNEL
PLAN & PROFILE
FROM STA. 0+00.00
TO STA. 13+00.00
SHEET 1 OF 2

SHEET NO.
C7.3



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

LEGEND:

- 100 YR-WSEL
- 50 YR-WSEL
- W — EXISTING 24" WATER MAIN LINE
- W — EXISTING WATER MAIN LINE
- S — EXISTING 8" SEWER LINE
- P — EXISTING OVERHEAD POWER LINE
- EXISTING UTILITY POLE
- EXISTING SEWER MANHOLE
- EXISTING STORM DRAIN MANHOLE
- TC — TOP OF CHANNEL ELEVATION
- BC — BOTTOM OF CHANNEL INVERT ELEVATION
- COMMERCIAL DRIVEWAY WITH GATE
- ROCKWALL/RETAINING WALL BY DEVELOPER

NOTES:

1. ALL ROCKWALLS ABUTTING THE 60' DRAINAGE R.O.W. TO BE BUILT BY DEVELOPER, UNLESS OTHERWISE CONSTRUCTED BY EXISTING LOT BUILDER.
2. ALL ROCKWALLS ABUTTING THE 60' DRAINAGE R.O.W. ALONG SUNSET TERRACE UNIT THREE SUBDIVISION BOUNDARY LINE SHALL BE 6' HIGH FROM HIGHEST SIDE, AND BE BUILT BY DEVELOPER, IF LOT BUILDER FOR SUNSET TERRACE UNIT THREE HAS NOT CONSTRUCTED THE ROCKWALLS.

LEGEND:

- MAINTENANCE ROAD WITH 3" COMPACTED SCREENING
- 18"ø-24"ø WIRE TIED ROCK RIP-RAP. PLACED OVER GEOTEXTILE FABRIC (SEE NOTES BELOW).

NOTES:

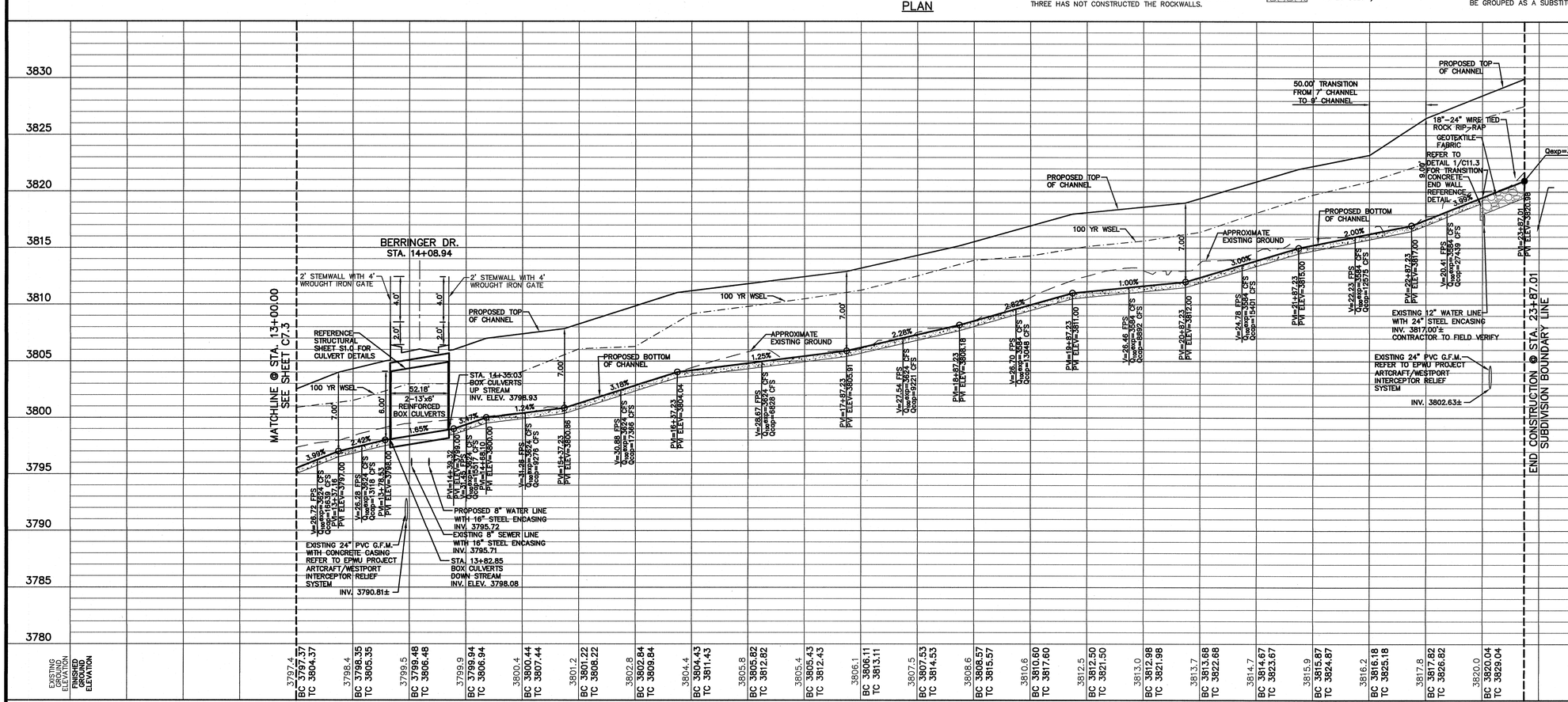
WIRE TIED ROCK RIP-RAP SHALL BE SOUND, DENSE AND DURABLE WITH A BULK SPECIFIC GRAVITY OF NO LESS THAN 2.5. ROCK SHALL BE ANGULAR TO SUBROUNDED IN SHAPE WITH THE GREATEST DIMENSION NOT GREATER THAN 2 TIMES THE LEAST DIMENSION. THE ROCK SHALL CONFORM TO THE GRADING LIMITS GIVEN BELOW UNLESS OTHERWISE SPECIFIED.

SIZE, INCHES	PERCENT PASSING
24	75
18	50

WIRE TIED ROCK RIP-RAP SHALL BE CONSTRUCTED TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF THE UNDERLYING MATERIALS. THE ROCK SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL INSURE THAT THE RIP-RAP IN PLACE SHALL BE REASONABLY HOMOGENEOUS WITH THE LARGER ROCK UNIFORMLY DISTRIBUTED AND FIRMLY IN CONTACT ONE ANOTHER WITH THE SMALLER ROCKS AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER ROCKS.

WIRE TIED ROCK RIP-RAP SHALL BE PLACED IN A MANNER TO PREVENT DAMAGE TO THE STRUCTURES. HAND PLACING WILL BE REQUIRED TO THE EXTENT NECESSARY TO PREVENT DAMAGE TO THE PERMANENT WORKS AND TO ACHIEVE THE FINISHED SURFACE PLACEMENT.

ROCKS SHALL BE SECURELY BEDDED FIRMLY IN CONTACT ONE ANOTHER. SPACES BETWEEN THE LARGER ROCKS SHALL BE FILLED WITH SMALLER ROCKS AND SPALLS. SMALLER ROCKS SHALL NOT BE GROUPED AS A SUBSTITUTE FOR LARGER ROCKS. FLAT SLAB ROCK SHALL BE LAID ON EDGE.



REFERENCES - BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE AND BERRINGER DR. "CHINO" ELEVATION = 3935.48 (CITY DATUM)

BY	DATE	REVISIONS

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.3233 Fax: 915.544.3233 www.ceagroup.net

ENGINEER'S SEAL

JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS

SCALE
Horizontal: 1"=50'
Vertical: 1"=5'
Contour Interval: N/A

DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-LD

PROJECT TITLE

SUNSET TERRACE UNIT FOUR SUBDIVISON IMPROVEMENTS

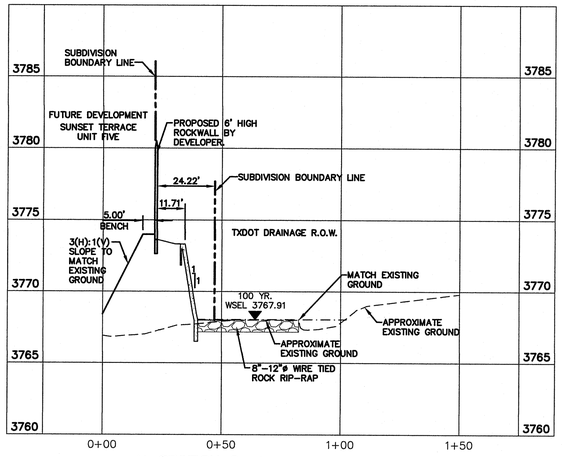
SHEET TITLE

CHANNEL PLAN & PROFILE FROM STA. 13+00.00 TO STA. 23+87.01

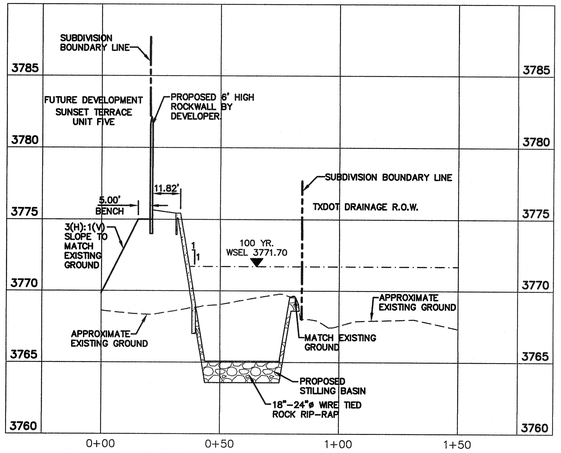
SHEET 2 OF 2

SHEET NO.

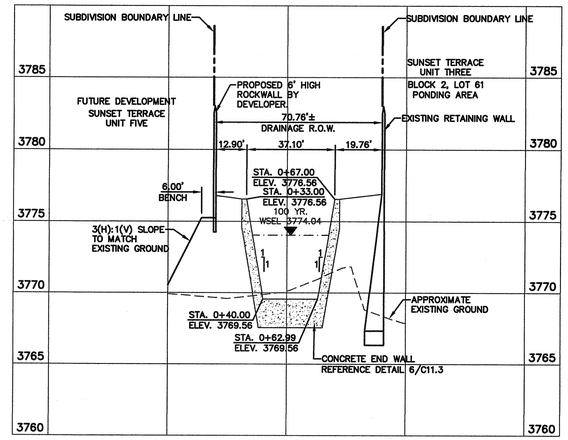
C7.4



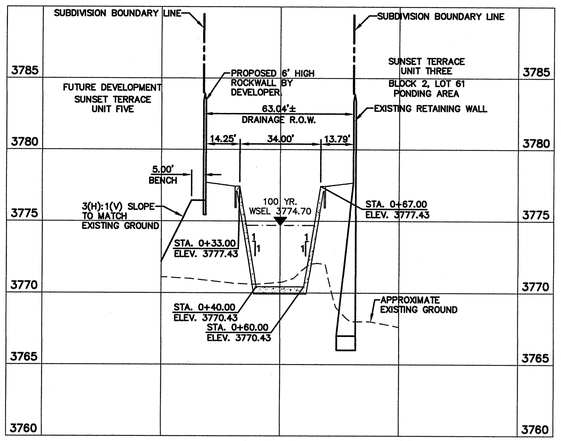
X-SECTION 0 (CENTERLINE STA. 0+00.00)



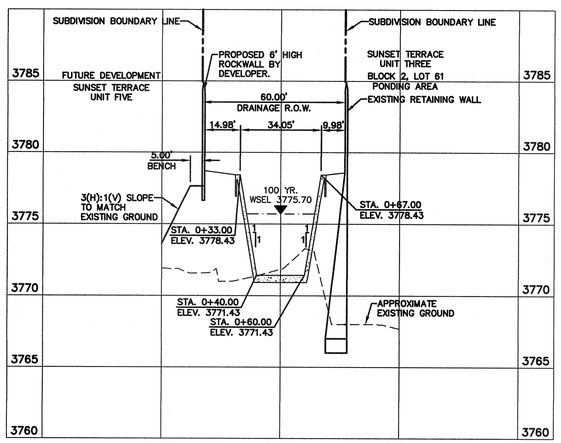
X-SECTION 01 (CENTERLINE STA. 0+50.00)



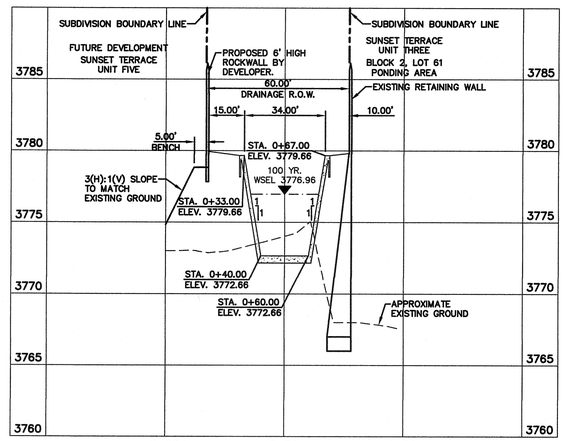
X-SECTION 51 (CENTERLINE STA. 1+00.00)



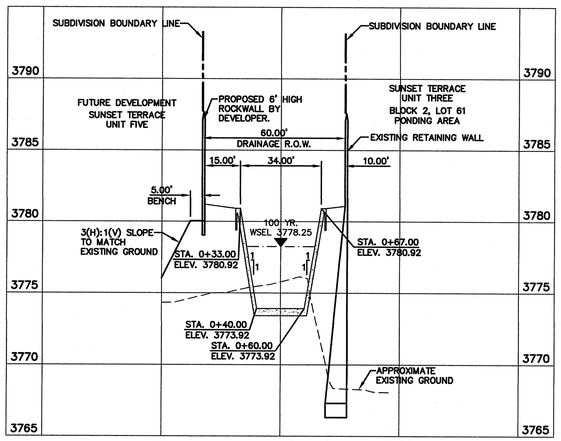
X-SECTION 101 (CENTERLINE STA. 1+50.00)



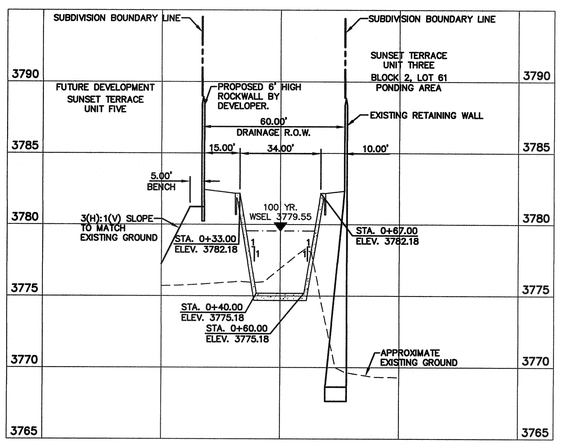
X-SECTION 151 (CENTERLINE STA. 2+00.00)



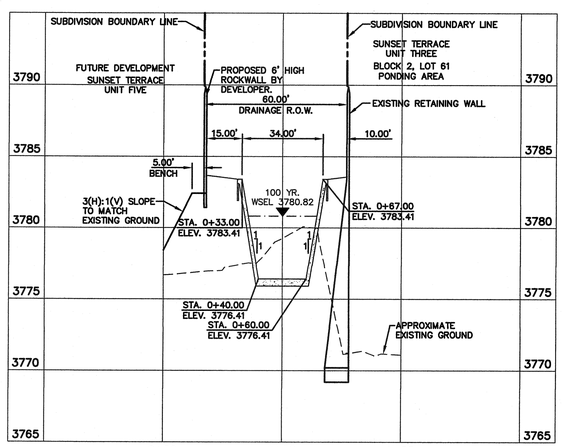
X-SECTION 201 (CENTERLINE STA. 2+50.00)



X-SECTION 251 (CENTERLINE STA. 3+00.00)



X-SECTION 301 (CENTERLINE STA. 3+50.00)



X-SECTION 351 (CENTERLINE STA. 4+00.00)

NOTES:

1. ALL ROCKWALLS ABUTTING THE 60' DRAINAGE R.O.W. TO BE BUILT BY DEVELOPER, UNLESS OTHERWISE CONSTRUCTED BY EXISTING LOT BUILDER.
2. ALL ROCKWALLS ABUTTING THE 60' DRAINAGE R.O.W. ALONG SUNSET TERRACE UNIT THREE SUBDIVISION BOUNDARY LINE SHALL BE 6' HIGH FROM HIGHEST SIDE, AND BE BUILT BY DEVELOPER, IF LOT BUILDER FOR SUNSET TERRACE UNIT THREE HAS NOT CONSTRUCTED THE ROCKWALLS.

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN ELEVATION = 3887.39 (CITY DATUM) USED TO ESTABLISH BENCHMARK "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4604
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5228 Fax: 915.544.5233 www.ceagroup.net

ENGINEER'S SEAL

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

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

DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-LD

PROJECT TITLE

SUNSET TERRACE UNIT FOUR SUBDIVISON IMPROVEMENTS

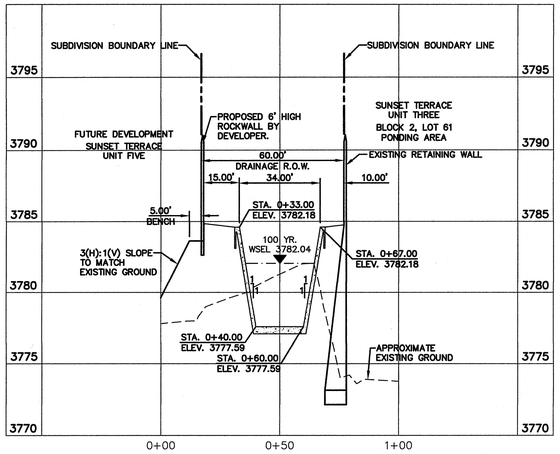
SHEET TITLE

CHANNEL CROSS SECTIONS

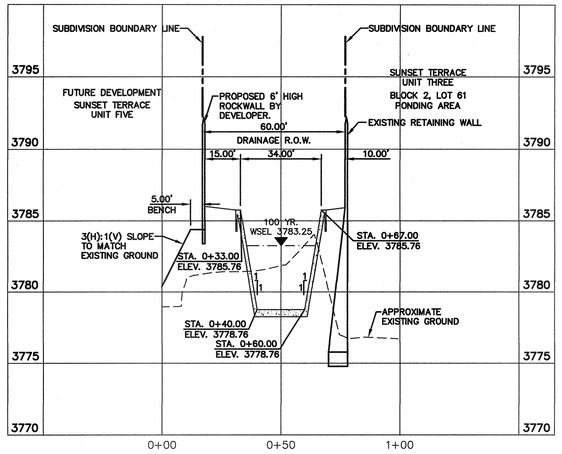
SHEET 1 OF 6

SHEET NO.

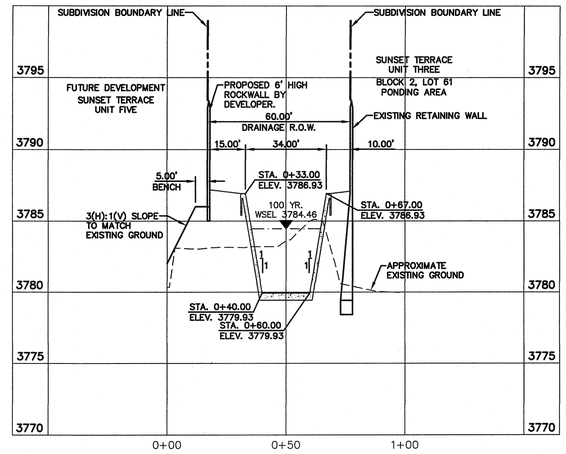
C7.5



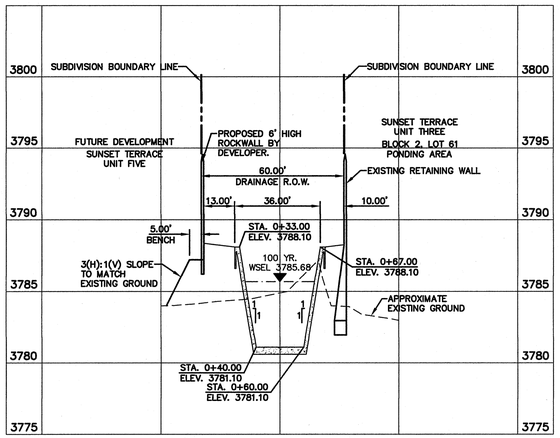
X-SECTION 401 (CENTERLINE STA. 4+50.00)



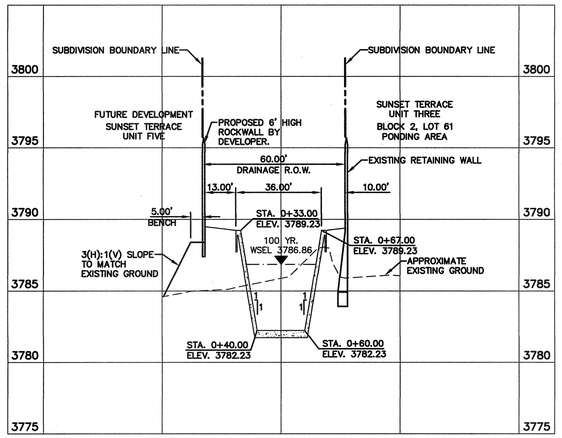
X-SECTION 451 (CENTERLINE STA. 5+00.00)



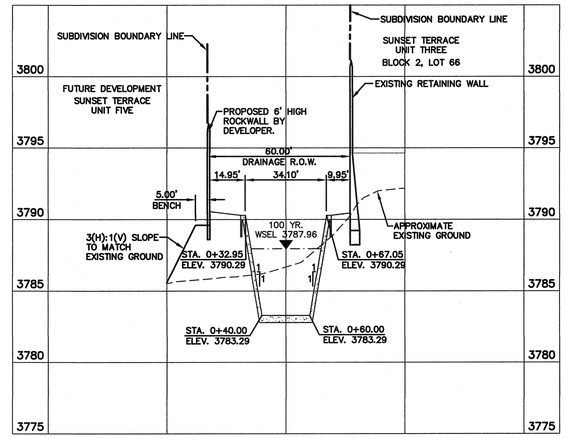
X-SECTION 501 (CENTERLINE STA. 5+50.00)



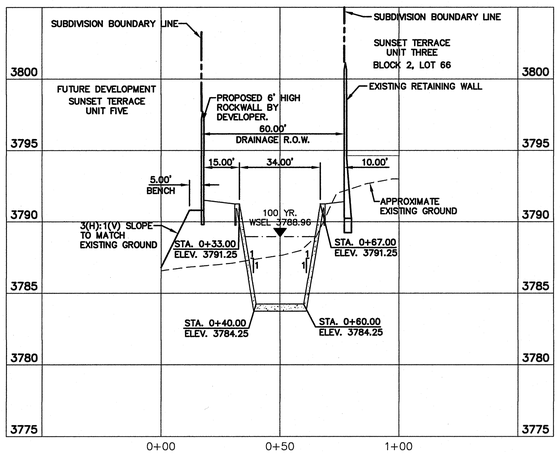
X-SECTION 551 (CENTERLINE STA. 6+00.00)



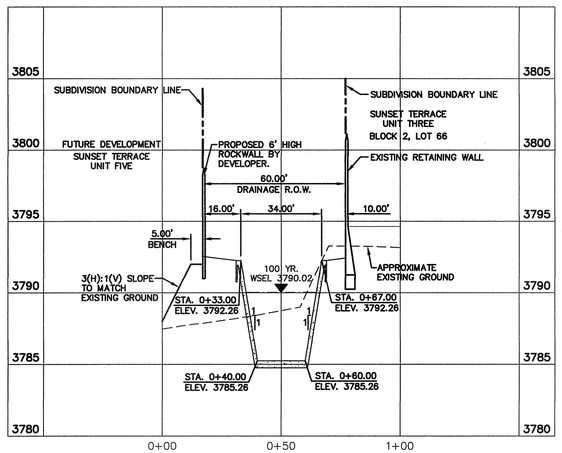
X-SECTION 601 (CENTERLINE STA. 6+50.00)



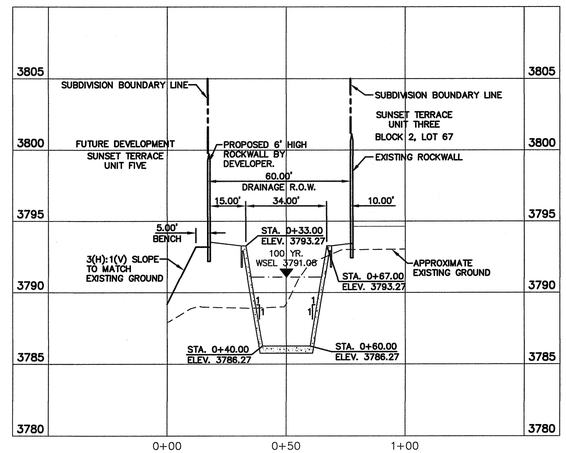
X-SECTION 651 (CENTERLINE STA. 7+00.00)



X-SECTION 701 (CENTERLINE STA. 7+50.00)



X-SECTION 751 (CENTERLINE STA. 8+00.00)



X-SECTION 801 (CENTERLINE STA. 8+50.00)

NOTES:

1. ALL ROCKWALLS ABUTTING THE 60' DRAINAGE R.O.W. TO BE BUILT BY DEVELOPER, UNLESS OTHERWSE CONSTRUCTED BY EXISTING LOT BUILDER.
2. ALL ROCKWALLS ABUTTING THE 60' DRAINAGE R.O.W. ALONG SUNSET TERRACE UNIT THREE SUBDIVISION BOUNDARY LINE SHALL BE 6' HIGH FROM HIGHEST SIDE, AND BE BUILT BY DEVELOPER, IF LOT BUILDER FOR SUNSET TERRACE UNIT THREE HAS NOT CONSTRUCTED THE ROCKWALLS.

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO ARROYO & HARRISON ELEVATION = 3897.39 (CITY DATUM) THIS BENCHMARK WAS BASED ON "CHINO" ELEVATION = 3935.48 (CITY DATUM)

BY	REVISIONS	DATE

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

ENGINEER'S SEAL

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

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

DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-LD

PROJECT TITLE

SUNSET TERRACE UNIT FOUR SUBDIVISON IMPROVEMENTS

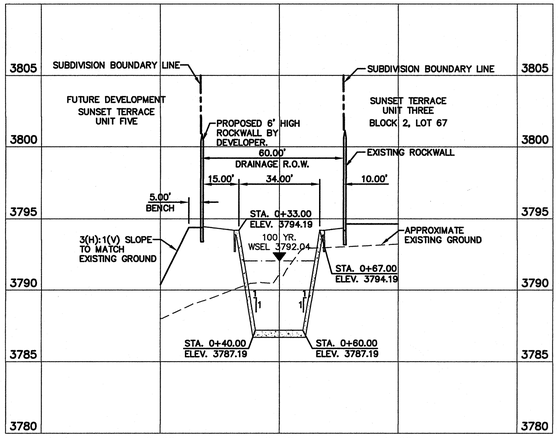
SHEET TITLE

CHANNEL CROSS SECTIONS

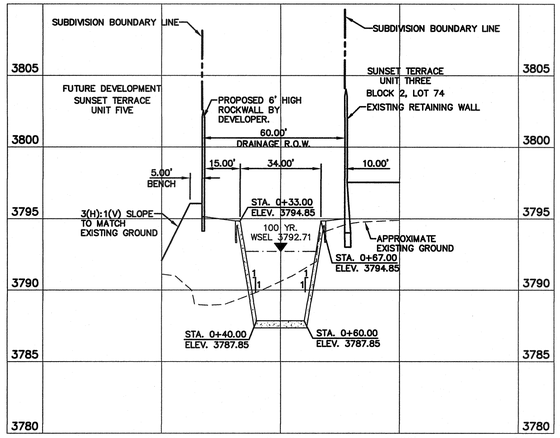
SHEET 2 OF 6

SHEET NO.

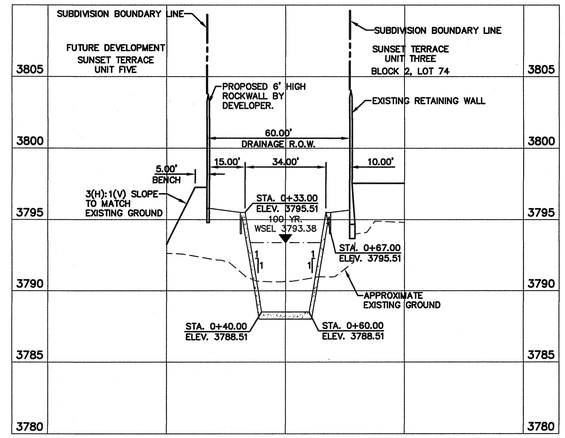
C7.6



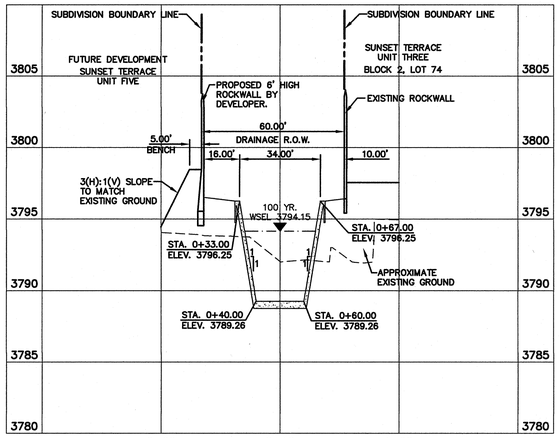
X-SECTION 851 (CENTERLINE STA. 9+00.00)



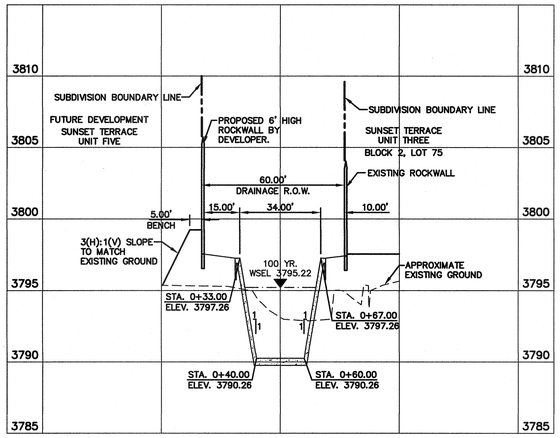
X-SECTION 901 (CENTERLINE STA. 9+50.00)



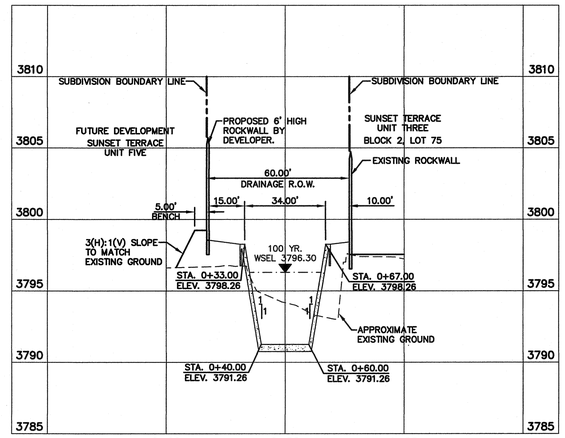
X-SECTION 951 (CENTERLINE STA. 10+00.00)



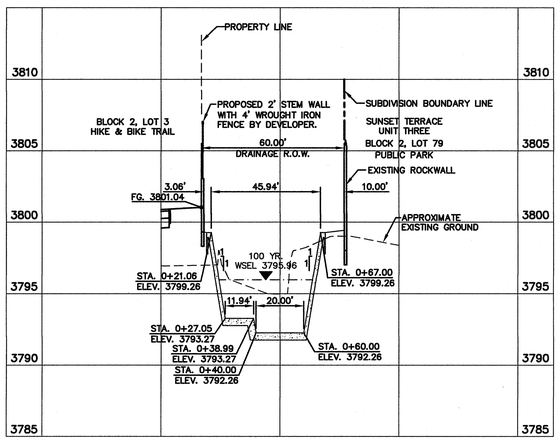
X-SECTION 1001 (CENTERLINE STA. 10+50.00)



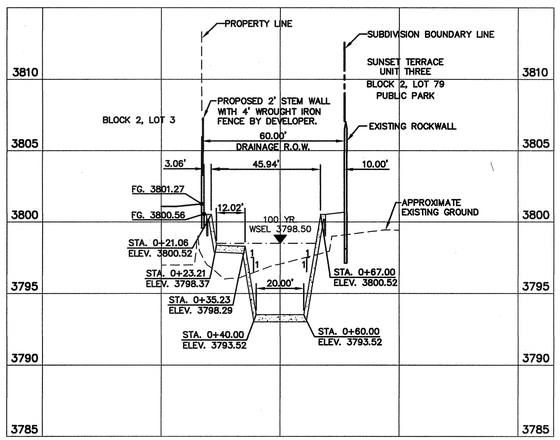
X-SECTION 1051 (CENTERLINE STA. 11+00.00)



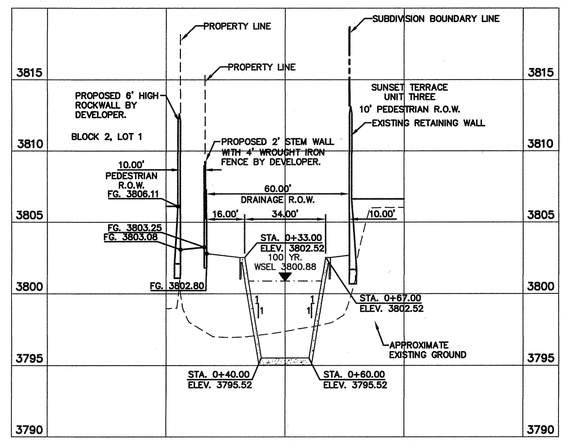
X-SECTION 1101 (CENTERLINE STA. 11+50.00)



X-SECTION 1151 (CENTERLINE STA. 12+00.00)



X-SECTION 1201 (CENTERLINE STA. 12+50.00)



X-SECTION 1251 (CENTERLINE STA. 13+00.00)

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE AND MESA HILLS DRIVE. N = 13907.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.3232 Fax: 915.544.3233 www.ceagroup.net

ENGINEER'S SEAL

STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER

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

DATE: OCTOBER 2011
DESIGN BY: J.C.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-LD

PROJECT TITLE

SUNSET TERRACE UNIT FOUR SUBDIVISON IMPROVEMENTS

SHEET TITLE

CHANNEL CROSS SECTIONS

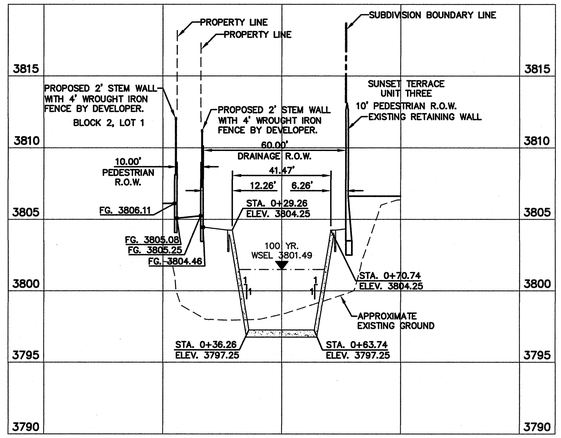
SHEET 3 OF 6

SHEET NO.

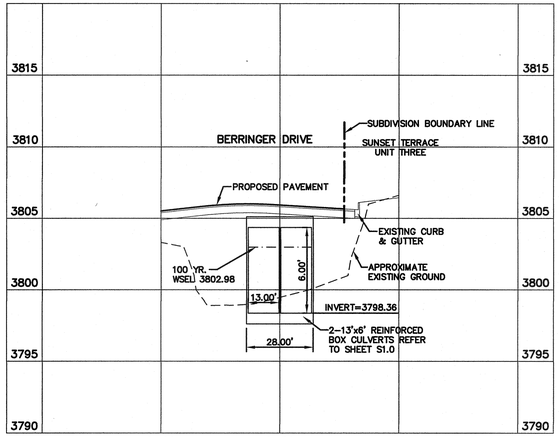
C7.7

NOTES:

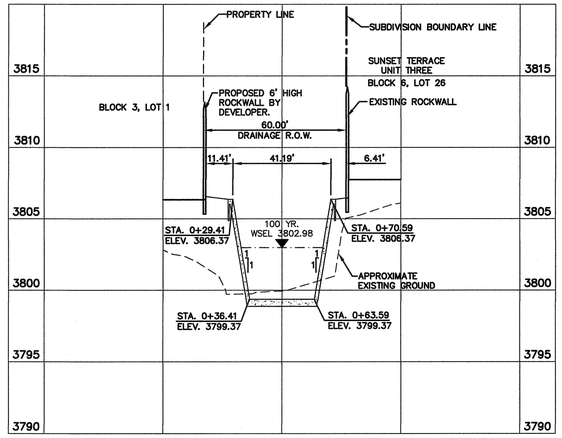
1. ALL ROCKWALLS ABUTTING THE 60' DRAINAGE R.O.W. TO BE BUILT BY DEVELOPER, UNLESS OTHERWISE CONSTRUCTED BY EXISTING LOT BUILDER.
2. ALL ROCKWALLS ABUTTING THE 60' DRAINAGE R.O.W. ALONG SUNSET TERRACE UNIT THREE SUBDIVISION BOUNDARY LINE SHALL BE 6' HIGH FROM HIGHEST SIDE, AND BE BUILT BY DEVELOPER, IF LOT BUILDER FOR SUNSET TERRACE UNIT THREE HAS NOT CONSTRUCTED THE ROCKWALLS.



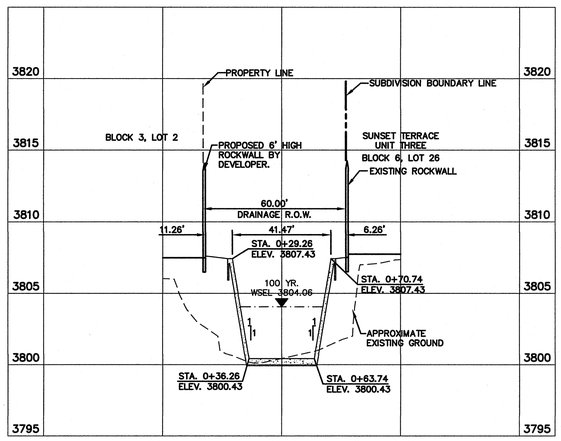
X-SECTION 1301 (CENTERLINE STA. 13+50.00)



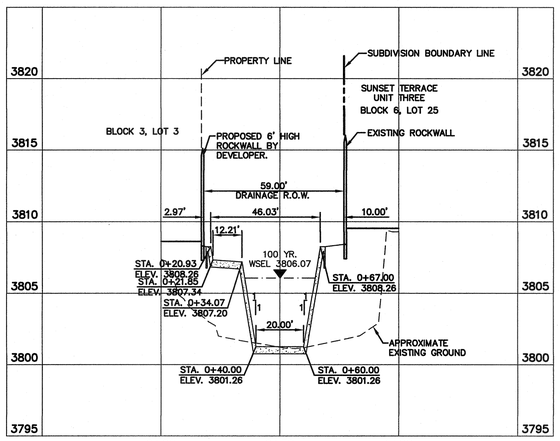
X-SECTION 1351 (CENTERLINE STA. 14+00.00)



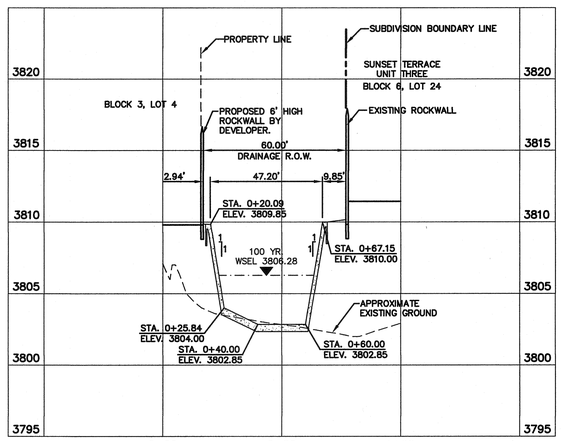
X-SECTION 1401 (CENTERLINE STA. 14+50.00)



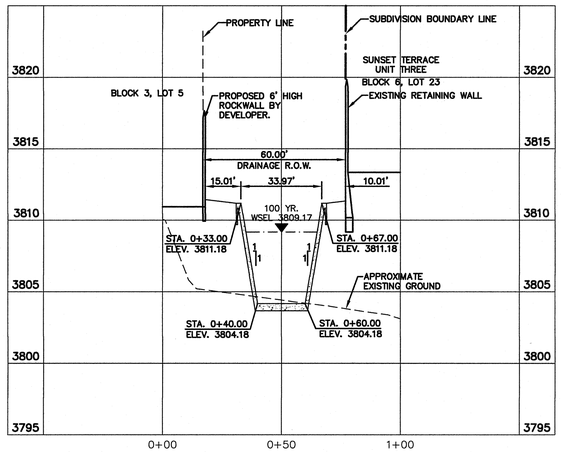
X-SECTION 1451 (CENTERLINE STA. 15+00.00)



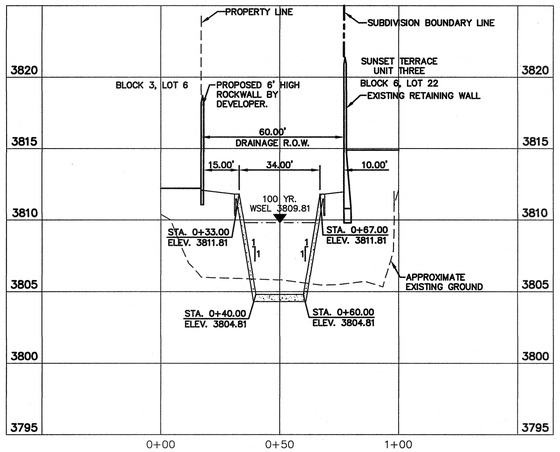
X-SECTION 1501 (CENTERLINE STA. 15+50.00)



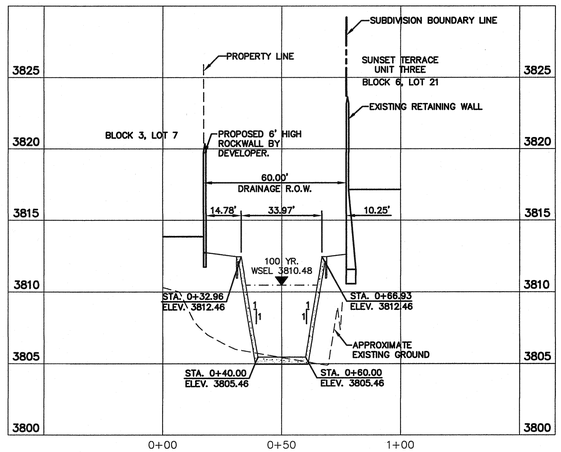
X-SECTION 1551 (CENTERLINE STA. 16+00.00)



X-SECTION 1601 (CENTERLINE STA. 16+50.00)



X-SECTION 1651 (CENTERLINE STA. 17+00.00)



X-SECTION 1701 (CENTERLINE STA. 17+50.00)

NOTES:

1. ALL ROCKWALLS ABUTTING THE 60' DRAINAGE R.O.W. TO BE BUILT BY DEVELOPER, UNLESS OTHERWISE CONSTRUCTED BY EXISTING LOT BUILDER.
2. ALL ROCKWALLS ABUTTING THE 60' DRAINAGE R.O.W. ALONG SUNSET TERRACE UNIT THREE SUBDIVISION BOUNDARY LINE SHALL BE 6' HIGH FROM HIGHEST SIDE, AND BE BUILT BY DEVELOPER, IF LOT BUILDER FOR SUNSET TERRACE UNIT THREE HAS NOT CONSTRUCTED THE ROCKWALLS.

REFERENCES - BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE AND MESA HILLS DRIVE, ELEV. = 3937.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office 915.544.3232 Fax 915.544.3233 www.ceagroup.net

ENGINEER'S SEAL

STATE OF TEXAS — JORGE L. AZCARATE — #85075 — REGISTERED — 07-31-2012

SCALE Horizontal: 1"=30' Vertical: 1"=5' Contour Interval: N/A
DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-LD

PROJECT TITLE

SUNSET TERRACE UNIT FOUR SUBDIVISON IMPROVEMENTS

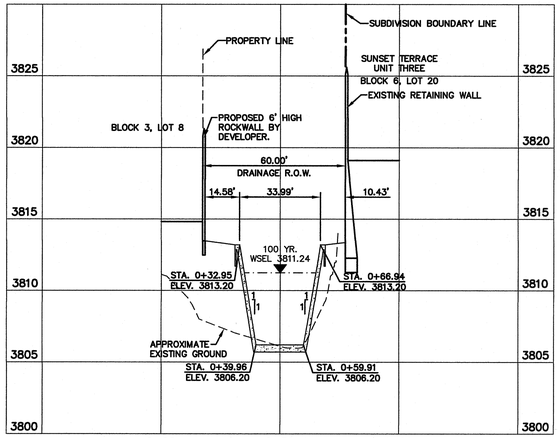
SHEET TITLE

CHANNEL CROSS SECTIONS

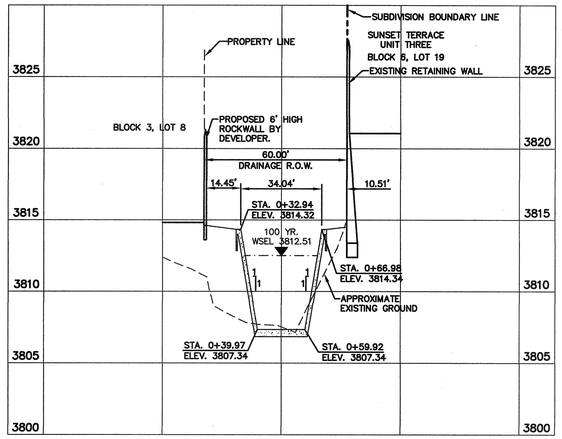
SHEET 4 OF 6

SHEET NO.

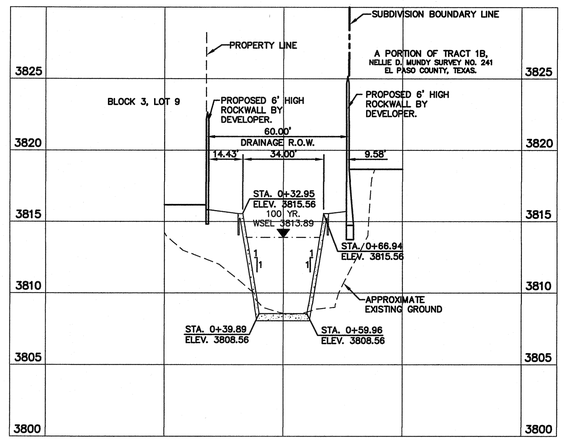
C7.8



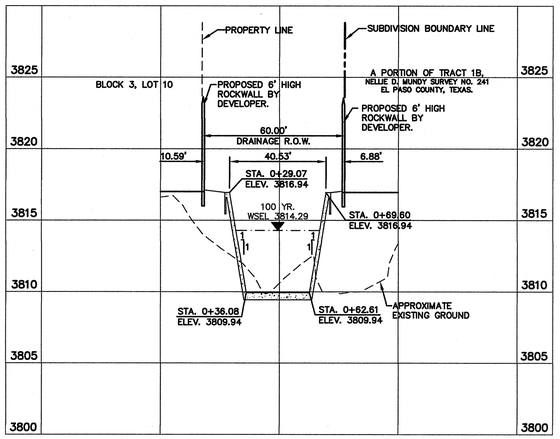
X-SECTION 1751 (CENTERLINE STA. 18+00.00)



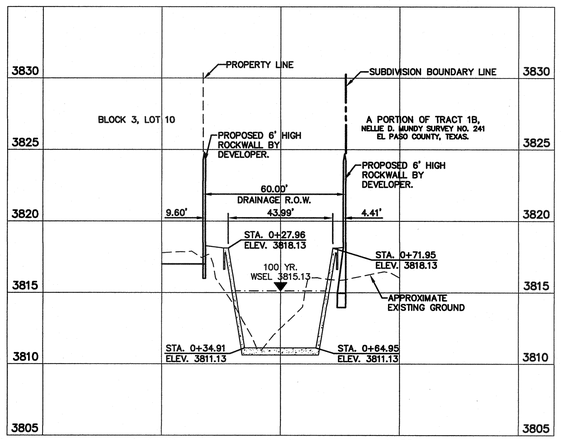
X-SECTION 1801 (CENTERLINE STA. 18+50.00)



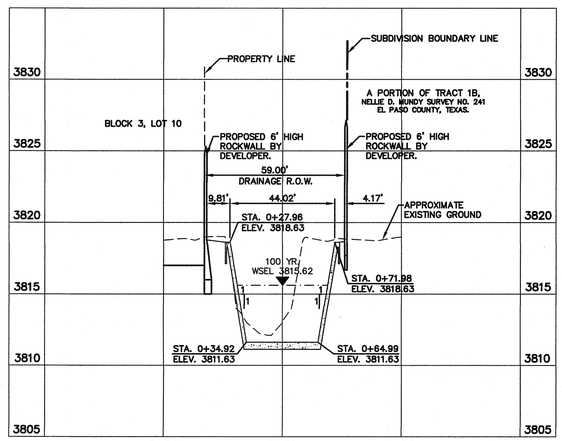
X-SECTION 1851 (CENTERLINE STA. 19+00.00)



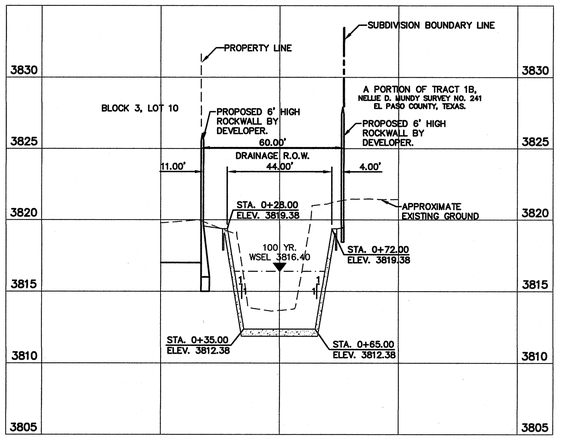
X-SECTION 1901 (CENTERLINE STA. 19+50.00)



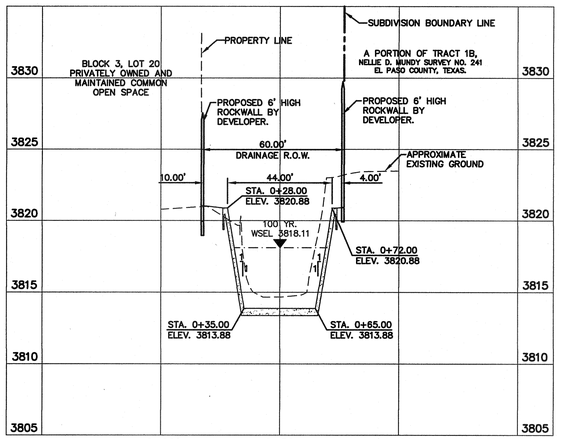
X-SECTION 1951 (CENTERLINE STA. 20+00.00)



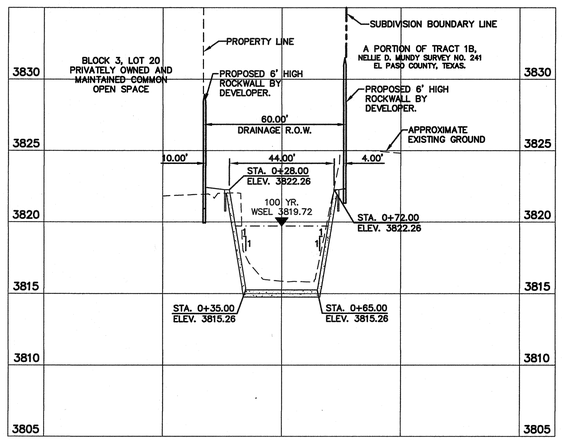
X-SECTION 2001 (CENTERLINE STA. 20+50.00)



X-SECTION 2051 (CENTERLINE STA. 21+00.00)



X-SECTION 2101 (CENTERLINE STA. 21+50.00)



X-SECTION 2151 (CENTERLINE STA. 22+00.00)

NOTES:

1. ALL ROCKWALLS ABUTTING THE 60' DRAINAGE R.O.W. TO BE BUILT BY DEVELOPER, UNLESS OTHERWISE CONSTRUCTED BY EXISTING LOT BUILDER.
2. ALL ROCKWALLS ABUTTING THE 60' DRAINAGE R.O.W. ALONG SUNSET TERRACE UNIT THREE SUBDIVISION BOUNDARY LINE SHALL BE 6' HIGH FROM HIGHEST SIDE, AND BE BUILT BY DEVELOPER, IF LOT BUILDER FOR SUNSET TERRACE UNIT THREE HAS NOT CONSTRUCTED THE ROCKWALLS.

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN ELEVATION = 3887.39 (CITY DATUM) NGS BENCHMARK "D 1307 RESET" "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

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

ENGINEER'S SEAL

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

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

DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-LD

PROJECT TITLE

SUNSET TERRACE UNIT FOUR SUBDIVISON IMPROVEMENTS

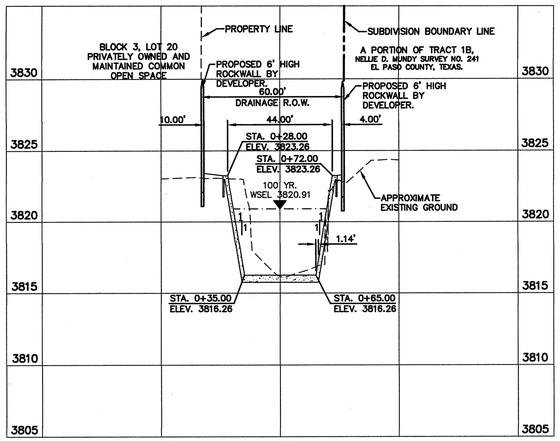
SHEET TITLE

CHANNEL CROSS SECTIONS

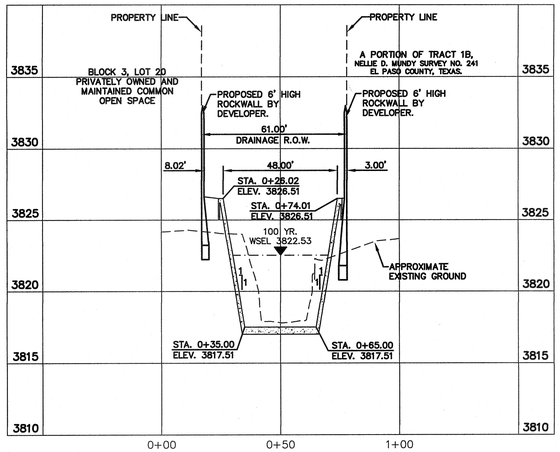
SHEET 5 OF 6

SHEET NO.

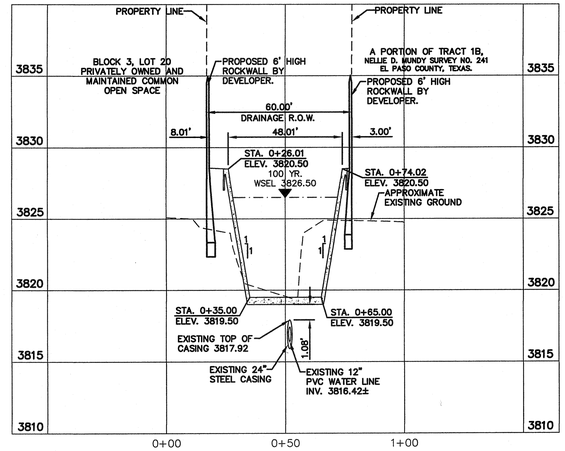
C7.9



X-SECTION 2201 (CENTERLINE STA. 22+50.00)



X-SECTION 2251 (CENTERLINE STA. 23+00.00)



X-SECTION 2301 (CENTERLINE STA. 23+50.00)

NOTES:

1. ALL ROCKWALLS ABUTTING THE 60' DRAINAGE R.O.W. TO BE BUILT BY DEVELOPER, UNLESS OTHERWISE CONSTRUCTED BY EXISTING LOT BUILDER.
2. ALL ROCKWALLS ABUTTING THE 60' DRAINAGE R.O.W. ALONG SUNSET TERRACE UNIT THREE SUBDIVISION BOUNDARY LINE SHALL BE 6' HIGH FROM HIGHEST SIDE, AND BE BUILT BY DEVELOPER, IF LOT BUILDER FOR SUNSET TERRACE UNIT THREE HAS NOT CONSTRUCTED THE ROCKWALLS.

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

ENGINEER'S SEAL

STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED
PROFESSIONAL ENGINEER
10/10/11

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

DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-LD

PROJECT TITLE

SUNSET TERRACE UNIT FOUR SUBDIVISON IMPROVEMENTS

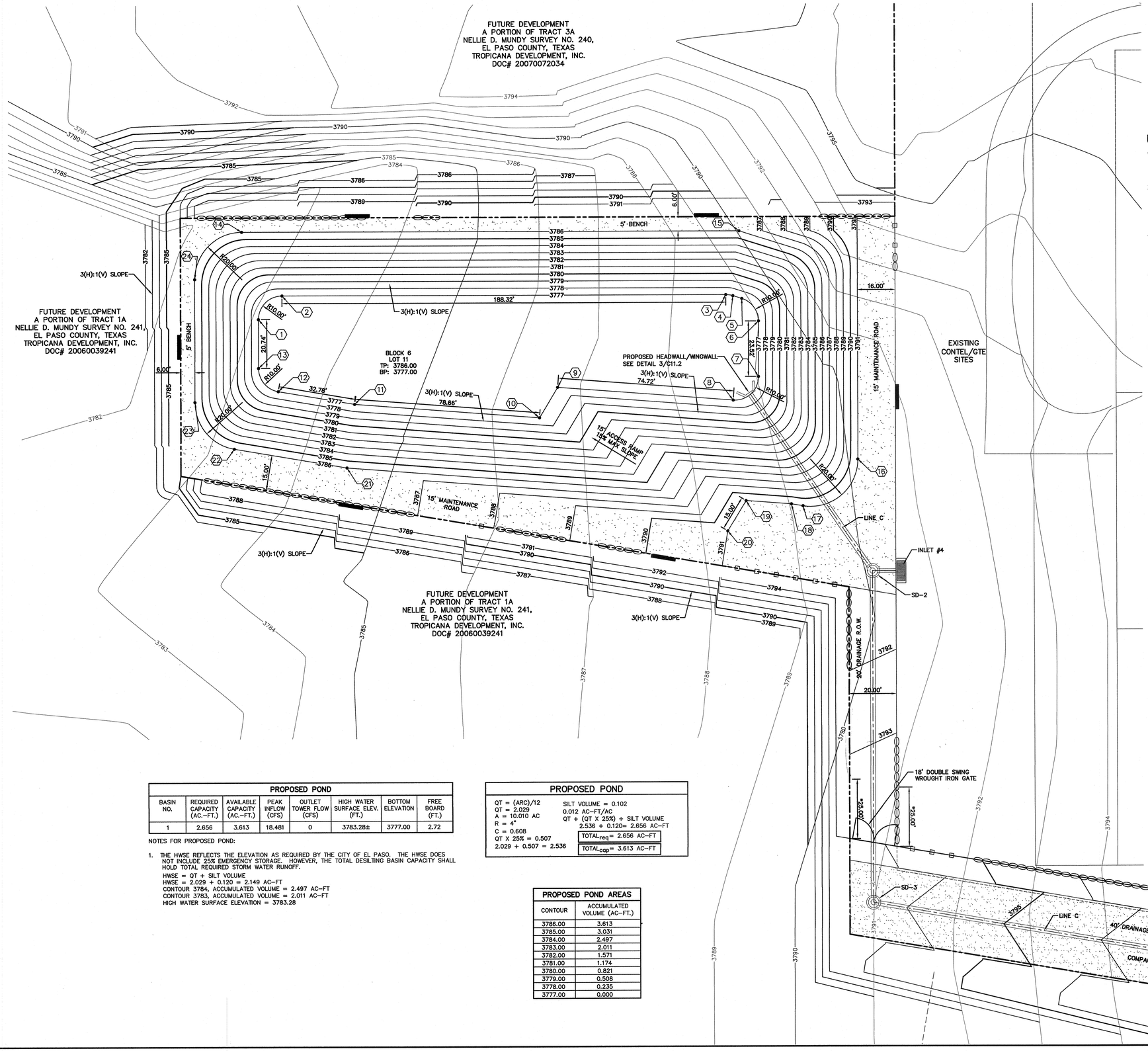
SHEET TITLE

CHANNEL CROSS SECTIONS

SHEET 6 OF 6

SHEET NO.

C7.10



PROPOSED POND PLAN
SCALE: 1"=20'

PROPOSED POND							
BASIN NO.	REQUIRED CAPACITY (AC.-FT.)	AVAILABLE CAPACITY (AC.-FT.)	PEAK INFLOW (CFS)	OUTLET TOWER FLOW (CFS)	HIGH WATER SURFACE ELEV. (FT.)	BOTTOM ELEVATION	FREE BOARD (FT.)
1	2.656	3.613	18.481	0	3783.28±	3777.00	2.72

NOTES FOR PROPOSED POND:

1. THE HWSE REFLECTS THE ELEVATION AS REQUIRED BY THE CITY OF EL PASO. THE HWSE DOES NOT INCLUDE 25% EMERGENCY STORAGE. HOWEVER, THE TOTAL DESILTING BASIN CAPACITY SHALL HOLD TOTAL REQUIRED STORM WATER RUNOFF.
   HWSE = QT + SILT VOLUME
   HWSE = 2.029 + 0.120 = 2.149 AC-FT
   CONTOUR 3784, ACCUMULATED VOLUME = 2.497 AC-FT
   CONTOUR 3783, ACCUMULATED VOLUME = 2.011 AC-FT
   HIGH WATER SURFACE ELEVATION = 3783.28

PROPOSED POND
QT = (ARC)/12 QT = 2.029 A = 10.010 AC R = 4" C = 0.608 QT X 25% = 0.507 2.029 + 0.507 = 2.536 SILT VOLUME = 0.102 0.012 AC-FT/AC QT + (QT X 25%) + SILT VOLUME 2.536 + 0.120= 2.656 AC-FT TOTAL$_{req}$= 2.656 AC-FT TOTAL$_{cap}$= 3.613 AC-FT

PROPOSED POND AREAS	
CONTOUR	ACCUMULATED VOLUME (AC-FT.)
3786.00	3.613
3785.00	3.031
3784.00	2.497
3783.00	2.011
3782.00	1.571
3781.00	1.174
3780.00	0.821
3779.00	0.508
3778.00	0.235
3777.00	0.000

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

***NOTE:**

1. FRONT 25' SHALL BE A 2' STEM WALL WITH 4' WROUGHT IRON FENCE.

NOTES:

1. THE PONDING AREA IS DESIGNED FOR STORAGE CAPACITY FOR DA-3, DA-6, DA-7 AND DA-8 ONLY.
2. THE OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR MAINTENANCE OF ALL OFF-SITE DRAINAGE STRUCTURES, INCLUDING OFF-SITE SECTIONS OF STORM SEWER LINE B AND D.
3. RUNOFF FROM DA-4 & DA-5 WILL BE CONVEYED TO A PROPOSED OFF-SITE RETENTION BASIN LOCATED AT LA PUESTA DEL SOL UNIT ONE SUBDIVISION.
4. 15' WIDE POND ACCESS RAMP SHALL HAVE A MINIMUM P.I. OF 8 WITH NO LOOSE MATERIAL AND A MINIMUM 95% COMPACTION PER ASTM-D1557.
5. POND ROCKWALL/RETAINING WALL SHALL BE BUILT TO A 6' MIN. HEIGHT FROM THE HIGHEST GROUND BY DEVELOPER.
6. PROPOSED ROCKWALLS & RETAINING WALL LOCATIONS SHALL BE CONSTRUCTED ACCORDING TO GRADING SECTIONS AND RELATED DETAILS.

KEY #	NORTH	EAST
1	N 10704244.8096	E 377978.5008
2	N 10704254.8076	E 377988.5028
3	N 10704254.7702	E 378176.8249
4	N 10704254.3111	E 378179.8182
5	N 10704253.1279	E 378183.5870
6	N 10704243.5917	E 378190.5917
7	N 10704220.0756	E 378190.6026
8	N 10704210.0993	E 378179.8498
9	N 10704215.7243	E 378105.3432
10	N 10704202.8726	E 378097.5981
11	N 10704208.7641	E 378019.1626
12	N 10704214.2022	E 377986.8377
13	N 10704224.0656	E 377978.4967
14	N 10704281.8110	E 377971.5082
15	N 10704281.7691	E 378182.4980
16	N 10704185.0600	E 378232.6190
17	N 10704165.3279	E 378209.3009
18	N 10704166.1548	E 378204.3852
19	N 10704167.6048	E 378185.1796
20	N 10704154.7575	E 378177.4371
21	N 10704181.9327	E 378015.9049
22	N 10704189.9624	E 377968.1758
23	N 10704209.6892	E 377951.4939
24	N 10704261.8150	E 377951.5042

LEGEND:

- NEW 6' HIGH RETAINING ROCKWALL (2'-3' RETAINING HEIGHT)
- NEW 6' HIGH RETAINING ROCKWALL (3'-4' RETAINING HEIGHT)
- NO TRESPASSING SIGN
- NEW 8"-12"ø LOOSE ROCK RIP-RAP
- HIKE & BIKE TRAIL
- 3" THICK COMPACTED SCREENING

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

DATE	REVISIONS	BY

group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4504
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5222 Fax: 915.544.5233 www.oagroup.net

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

SCALE
Horizontal: 1"=20'
Vertical: N/A
Contour Interval: N/A
DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-LD

PROJECT TITLE
SUNSET TERRACE
UNIT FOUR
SUBDIVISON IMPROVEMENTS

SHEET TITLE
PROPOSED
POND PLAN

SHEET NO.
C8.1

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

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

KEY #	NORTH	EAST
1	N 10704239.9502	E 378439.2682
2	N 10704220.0866	E 378449.2932
3	N 10704215.8460	E 378450.8610
4	N 10704159.4746	E 378464.7069
5	N 10704154.0531	E 378465.2736
6	N 10704091.5580	E 378463.2386
7	N 10704085.8015	E 378462.1950
8	N 10704077.3016	E 378459.3204
9	N 10704077.8934	E 378453.5013
10	N 10704238.2292	E 378433.6127
11	N 10704032.0994	E 378513.2631
12	N 10703992.6918	E 378518.1514
13	N 10703990.4656	E 378515.8845
14	N 10703992.6922	E 378500.2536
15	N 10703995.1245	E 378498.5875
16	N 10704006.2317	E 378501.1660
15	N 10704009.5043	E 378503.3616
16	N 10704032.3019	E 378509.3293

FF 3804.29
FG 3803.62

FF 3805.60
FG 3804.93

FF 3804.90
FG 3804.23

FF 3804.98
FG 3804.31

FF 3804.98
FG 3804.31

FUTURE DEVELOPMENT
A PORTION OF TRACT 3A,
NELLIE D. MUNDY SURVEY NO. 240
EL PASO COUNTY, TEXAS.
TROPICANA DEVELOPMENT, INC.
DOC# 20070072034

A=0.141 AC
Q_{25}=0.206 CFS

FUTURE DEVELOPMENT
A PORTION OF TRACT 1A,
NELLIE D. MUNDY SURVEY NO. 241
EL PASO COUNTY, TEXAS.
TROPICANA DEVELOPMENT, INC.
DOC# 20060039241

FUTURE DEVELOPMENT
A PORTION OF TRACT 1B,
NELLIE D. MUNDY SURVEY NO. 241,
EL PASO COUNTY, TEXAS.

HIKE & BIKE TRAIL (TO BE DEDICATED TO CITY OF EL PASO)

RAIN HARVESTING AREA #1

RAIN HARVESTING AREA #2

RAIN HARVESTING AREA #3

AREA TO BE PRIVATELY MAINTAINED

ROCKWALL/RETAINING WALL BY DEVELOPER

6' HIGH ROCKWALL FROM HIGHEST SIDE BY DEVELOPER

EXISTING CONTEL SITE

EXISTING GTE SITE

BELLWOODE AVE.

5' SIDEWALK BY BUILDER
4' PARKWAY
6" STD. CONC. CURB & GUTTER
4' PARKWAY
5' SIDEWALK BY DEVELOPER

LIMITS OF SIDEWALK BY DEVELOPER

ACCESSIBLE RAMP BY DEVELOPER

REMOVABLE BOLLARDS WITH SLEEVE

6' HIGH RC FROM HIGH BY DEVELO

3(H):1(V) SLOPE

6(H):1(V) SLOPE

NATURAL GROUND

18" STEMWALL

EG 3798.14
EG 3798.99
EG 3797.45
EG 3798.31
EG 3797.45
EG 3799.30
EG 3796.61

SW 3794.77
SW 3794.62
SW 3799.19
SW 3799.60
SW 3799.42

HC 3796.87
HC 3796.75
HC 3796.11
HC 3796.05
HC 3795.95
HC 3795.89
HC 3796.58
HC 3795.71
HC 3798.81
HC 3798.65
HC 3800.24
HC 3800.41

C1 L=224.00' R=275.00' Δ=046°40'12"
C2 L=224.00' R=286.00' Δ=044°53'41"
C3 L=64.45' R=286.00' Δ=012°54'56"
C4 L=16.15' R=60.00' Δ=015°25'23"
C5 L=17.23' R=71.00' Δ=013°54'20"
C6 L=204.25' R=275.00' Δ=042°33'17"
C7 L=67.61' R=235.00' Δ=016°29'04"
C8 L=39.39' R=235.00' Δ=009°36'12"
C9 L=37.54' R=224.00' Δ=009°36'12"
C12 L=64.22' R=224.00' Δ=016°29'04"

L1 L=11.00' S89°59'19"E
L2 L=47.95' S01°12'56"E
L3 L=17.00' S27°18'11"E
L4 L=28.60' S15°15'06"W
L5 L=11.13' N80°27'01"W
L6 L=28.60' N15°15'06"E
L7 L=17.00' N27°18'11"W
L8 L=48.19' N01°12'56"W
L10 L=17.00' S01°12'56"E

1 C9.1
2 C9.2

RAIN HARVESTING AREA #1

QT = (ARC)/12
QT = 0.067
A = 0.61 AC
R = 4"
C = 0.33

SILT VOLUME = 0.007
0.012 AC-FT/AC
QT + SILT VOLUME
0.067 + 0.007= 0.074 AC-FT

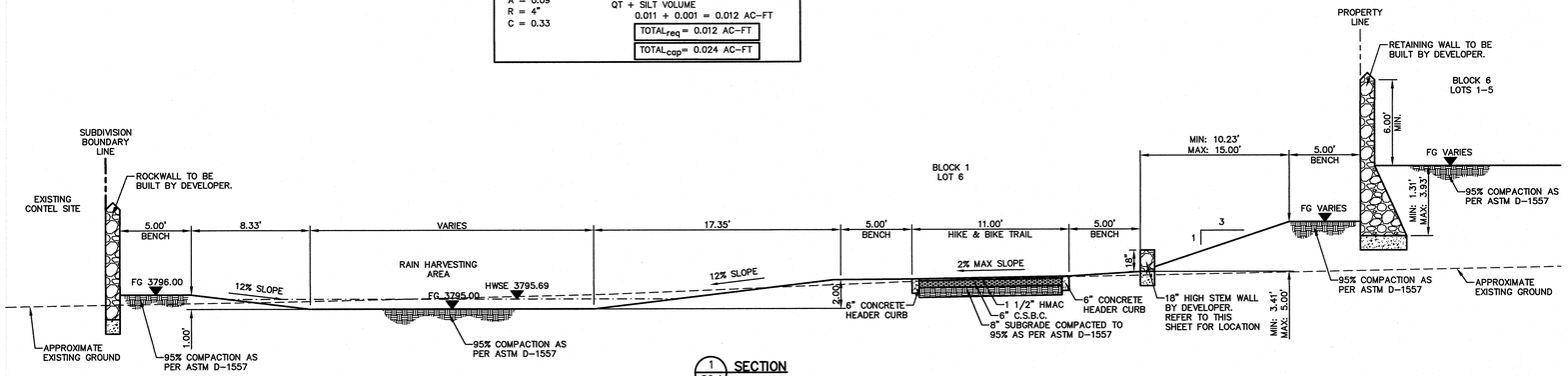
$TOTAL_{req}$= 0.074 AC-FT
$TOTAL_{cap}$= 0.107 AC-FT

RAIN HARVESTING AREA #2

QT = (ARC)/12
QT = 0.011
A = 0.09
R = 4"
C = 0.33

SILT VOLUME = 0.001
0.012 AC-FT/AC
QT + SILT VOLUME
0.011 + 0.001 = 0.012 AC-FT

$TOTAL_{req}$ = 0.012 AC-FT
$TOTAL_{cap}$= 0.024 AC-FT



1 C9.1 SECTION

LINE TABLE

LINE	LENGTH	BEARING
L1	11.00'	S89°59'19"E
L2	47.95'	S01°12'56"E
L3	17.00'	S27°18'11"E
L4	28.60'	S15°15'06"W
L5	11.13'	N80°27'01"W
L6	28.60'	N15°15'06"E
L7	17.00'	N27°18'11"W
L8	48.19'	N01°12'56"W

CURVE TABLE

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	224.00'	37.54'	18.816	37.50'	S06°01'02"E	009°36'12"
C2	224.00'	64.45'	32.447	64.22'	S19°03'40"E	016°29'04"
C3	286.00'	212.42'	111.377	207.57'	N06°01'33"W	042°33'17"
C4	60.00'	16.15'	8.125	16.10'	S07°32'24"W	015°25'23"
C5	71.00'	17.23'	8.658	17.19'	S08°17'56"W	013°54'20"
C6	275.00'	204.25'	107.093	199.59'	N06°01'33"W	042°33'17"
C7	235.00'	67.61'	34.041	67.38'	S19°03'40"E	016°29'04"
C8	235.00'	39.39'	19.740	39.34'	S06°01'02"E	009°36'12"

NOTES:

1. ALL PARK IMPROVEMENTS TO BE CONSTRUCTED BY DEVELOPER.
2. ALL WALKING PATHS, SIDEWALKS, AND RAMPS SHALL COMPLY WITH ADA/TAS STANDARDS.
3. PARK RULES AND SAFETY CROSSING SIGNS LOCATION TO BE COORDINATED WITH PARK STAFF PRIOR TO INSTALLATION.
4. ALL ADA RAMPS TO BE CONSTRUCTED BY DEVELOPER

LEGEND:

- 1 1/2" HMAC TYPE D SEAL COATED (2 COATS) 6" CSBC 100% COMPACTED AS PER ASTM D-1557 8" SCARIFIED SUBGRADE 95% COMPACTED AS PER ASTM D-1557
- NEW RETAINING ROCKWALL (2'-3' IN HEIGHT)
- NEW RETAINING ROCKWALL (3'-9' IN HEIGHT)
- NEW 6' HIGH ROCKWALL BY DEVELOPER
- 3805 PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- 3800 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PARK RULES SIGN
- SAFETY CROSSING SIGN
- STEEL LIGHT POLES (REFER TO DETAIL 5/C10.3)
- REMOVABLE BOLLARDS WITH SLEEVE TO BE INSTALLED @ 3' O.C.
- EXISTING POWER POLE
- EXISTING POWER LINE
- CONCRETE HEADER CURB

PARKS DEPARTMENT
Antonio Ortiz Jr. 12/07/2011
— Approved —

HIKE & BIKE TRAIL PLAN
SCALE: 1" = 20'

REFERENCES - BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN (NW 3887.39 DEL NORTE & DIANA) = 3935.48 (NAVD 88 DATUM)
"CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4084
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.2232 Fax: 915.544.5233 www.ceagroup.net

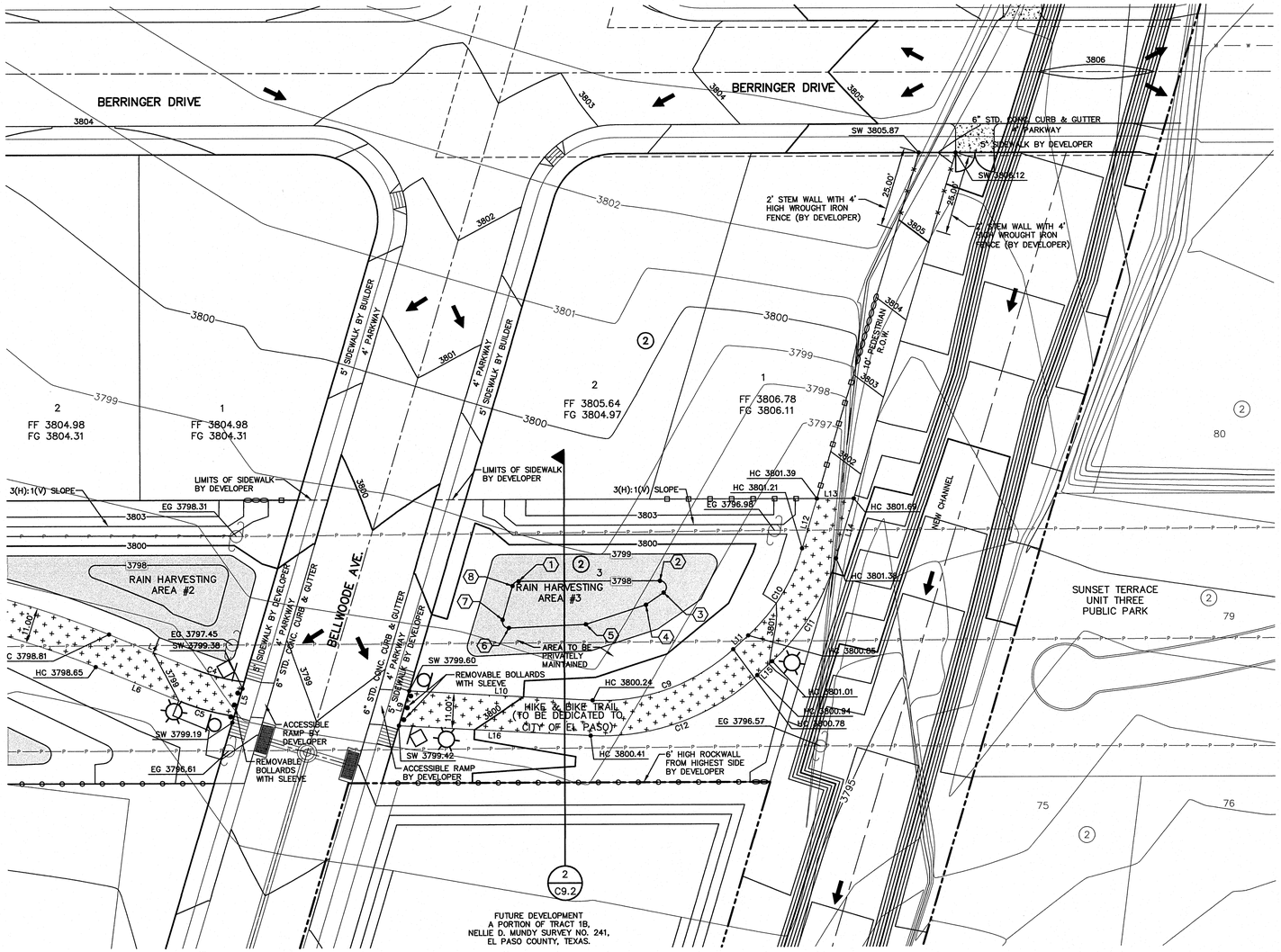
ENGINEER'S SEAL
JORGE L. ACEVEDO
85075
CONSULTANT
CONSULTANT

SCALE
Horizontal: 1"=20'
Vertical: N/A
Contour Interval: N/A
DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-LD

PROJECT TITLE
SUNSET TERRACE UNIT FOUR
SUBDIVISON IMPROVEMENTS

SHEET TITLE
HIKE & BIKE TRAIL GRADING PLAN

SHEET NO.
C9.1



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

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

KEY #	NORTH	EAST
1	N 10703900.6185	E 378524.2016
2	N 10703856.8838	E 378529.6266
3	N 10703855.3129	E 378526.1435
4	N 10703860.3232	E 378521.7136
5	N 10703878.1454	E 378513.4427
6	N 10703901.8575	E 378509.4358
7	N 10703904.1631	E 378511.7397
8	N 10703902.3446	E 378522.5486

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN ELEVATION = 3887.39 (CITY DATUM) BENCHMARK IS ON THE NORTHEAST "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

LEGEND:

- 1 1/2" HMAC TYPE D SEAL COATED (2 COATS) 6" CSBC 100% COMPACTED AS PER ASTM D-1557 8" SCARIFIED SUBGRADE 95% COMPACTED AS PER ASTM D-1557
- NEW RETAINING ROCKWALL (2'-3' IN HEIGHT)
- NEW RETAINING ROCKWALL (3'-9' IN HEIGHT)
- NEW 6' HIGH ROCKWALL BY DEVELOPER
- 2' STEM WALL WITH 4' HIGH WROUGHT IRON FENCE
- 3805 PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- 3800 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PARK RULES SIGN
- SAFETY CROSSING SIGN
- STEEL LIGHT POLES (REFER TO DETAIL 5/C10.3)
- REMOVABLE BOLLARDS WITH SLEEVE TO BE INSTALLED @ 3' O.C.
- EXISTING POWER POLE
- EXISTING POWER LINE
- CONCRETE HEADER CURB

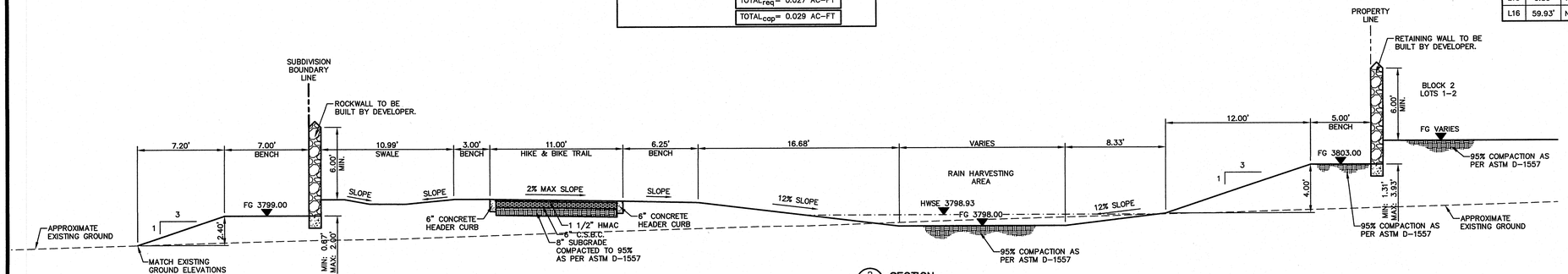
NOTES:

1. ALL PARK IMPROVEMENTS TO BE CONSTRUCTED BY DEVELOPER.
2. ALL WALKING PATHS, SIDEWALKS, AND RAMPS SHALL COMPLY WITH ADA/TAS STANDARDS.
3. PARK RULES AND SAFETY CROSSING SIGNS LOCATION TO BE COORDINATED WITH PARK STAFF PRIOR TO INSTALLATION.
4. ALL ADA RAMPS TO BE CONSTRUCTED BY DEVELOPER

LINE TABLE		
LINE	LENGTH	BEARING
L9	11.31'	S80°27'01"E
L10	57.29'	S03°55'57"E
L11	6.36'	S49°41'14"E
L12	16.09'	S80°27'01"E
L13	11.48'	S07°04'16"E
L14	19.37'	N80°27'01"W
L15	6.36'	N49°41'14"W
L16	59.93'	N03°55'57"W

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C9	60.00'	47.91'	25.317	46.65'	S26°48'36"E	045°45'17"
C10	60.00'	32.21'	16.506	31.83'	S65°04'08"E	030°45'47"
C11	71.00'	38.12'	19.532	37.66'	S65°04'08"E	030°45'47"
C12	71.00'	56.70'	29.959	55.20'	S26°48'36"E	045°45'17"

RAIN HARVESTING AREA #3	
QT = (ARC)/12 QT = 0.024 A = 0.22 AC R = 4" C = 0.33	SILT VOLUME = 0.003 0.012 AC-FT/AC QT + SILT VOLUME 0.024 + 0.003= 0.027 AC-FT $TOTAL_{req}$ = 0.027 AC-FT $TOTAL_{cap}$ = 0.029 AC-FT



2 / C9.2 SECTION

PARKS DEPARTMENT
Antonio Ortiz Jr. 12/07/2011
— Approved —

HIKE & BIKE TRAIL PLAN
SCALE: 1" = 20'

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4504
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5232 Fax: 915.544.5233 www.ceagroup.net

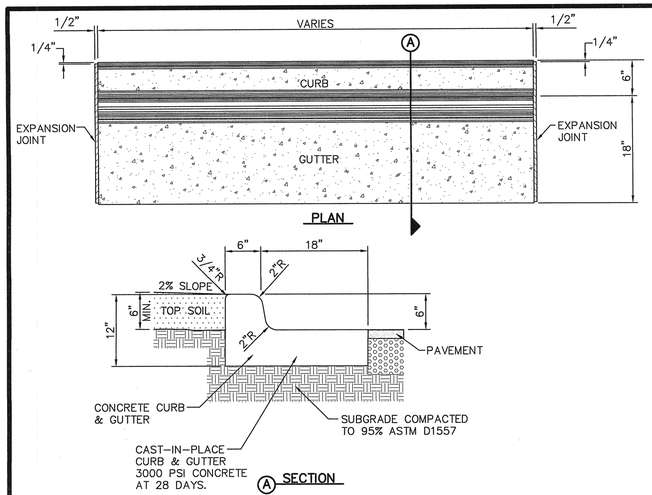
ENGINEER'S SEAL
JORGE L. AZCARATE 85075 LICENSED PROFESSIONAL ENGINEER

SCALE	
Horizontal:	1"=20'
Vertical:	N/A
Contour Interval:	N/A
DATE:	OCTOBER 2011
DESIGN BY:	J.G.
DRAWN BY:	A.B.
CHKD. BY:	J.L.A.
APPVD. BY:	J.L.A.
JOB No.	2000-123-LD

PROJECT TITLE
SUNSET TERRACE UNIT FOUR SUBDIVISON IMPROVEMENTS

SHEET TITLE
HIKE & BIKE TRAIL PLAN

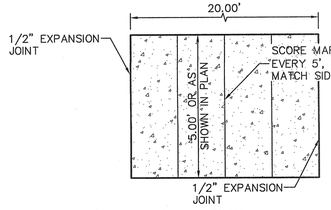
SHEET NO.
C9.2



NOTES:

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

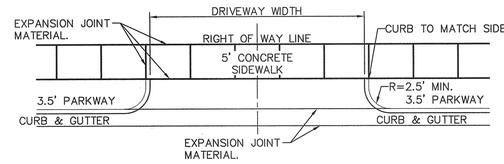
1 C10.1 **CURB & GUTTER DETAIL**
SCALE: 1" = 1'-0"

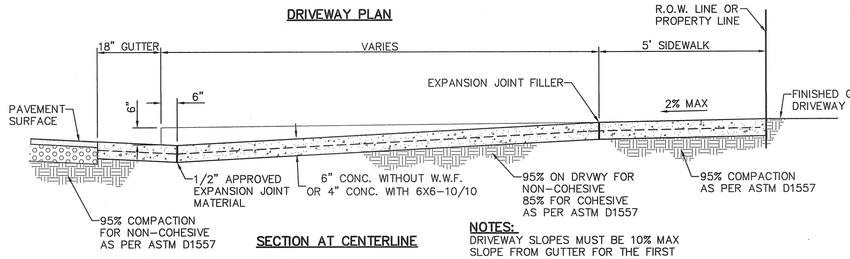


SIDEWALK NOTES:

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.

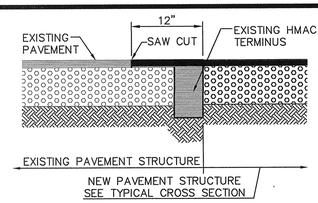
2 C10.1 **SECTION-SIDEWALK/SLAB**
SCALE: 1" = 2'-0"



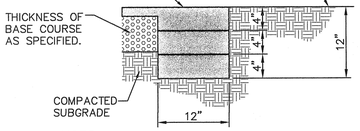


NOTES:
DRIVEWAY SLOPES MUST BE 10% MAX SLOPE FROM GUTTER FOR THE FIRST 12 FEET, 14% MAX. THEREAFTER.

3 C10.1 **TYPICAL DRIVEWAY DETAIL**
SCALE: N.T.S.

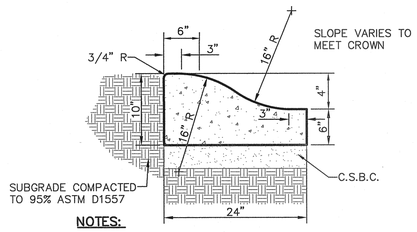


4 C10.1 **TYPICAL PAVEMENT JOINT SECTION**
SCALE: N.T.S.



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

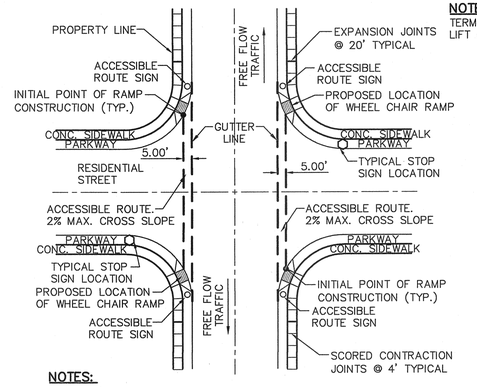
5 C10.1 **TERMINUS OF STREET**
SCALE: 1" = 1'-0"



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.

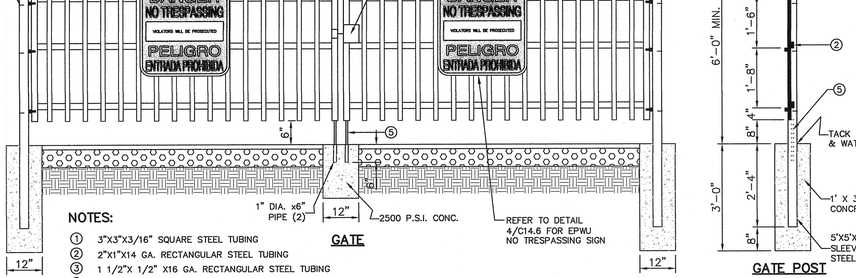
7 C10.1 **4" CONCRETE ROLLED CURB DETAIL**
SCALE: 1" = 1'-0"



NOTES:

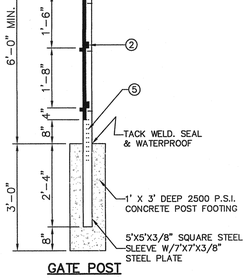
1. RAMPS MAY BE PLACED AS SUGGESTED, HOWEVER EXISTING LIGHT POLES, FIREHYDRANTS, DROP INLETS, ETC., MAY AFFECT PLACEMENT. REFERENCE STREET PLAN & PROFILES FOR ACTUAL LOCATION.
2. THE CONCRETE SURFACE SHALL HAVE A ROUGH, NONSKID TYPE FINISH.
3. CONSTRUCTION METHODS SHALL CONFORM WITH THE CITY OF EL PASO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

8 C10.1 **TYPICAL WHEELCHAIR RAMP STREET PLAN @ TWO-WAY STOP CONTROL INTERSECTION**
SCALE: 1" = 30'-0"

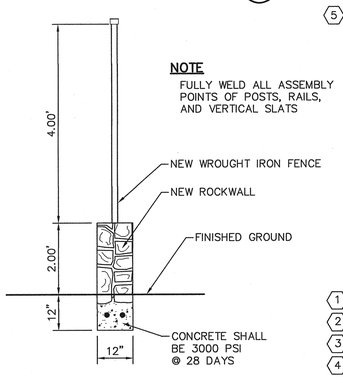


NOTES:

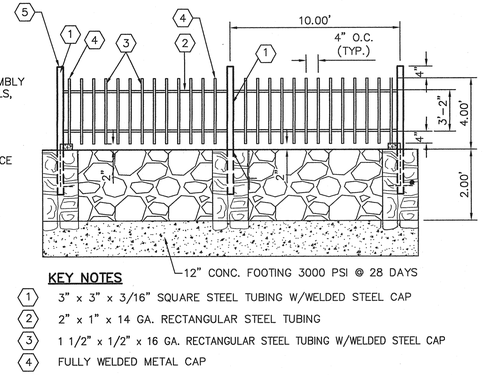
1. 3"X3"X3/16" SQUARE STEEL TUBING
2. 2"X1"X14 GA. RECTANGULAR STEEL TUBING
3. 1 1/2"X 1/2" X16 GA. RECTANGULAR STEEL TUBING
4. BOLT HOOK AND STRAP HINGE
5. CANE BOLT LATCH W/KEEPER 5-8"X18" LONG (2 REQUIRED)
6. DOUBLE GATE HEAVY DUTY INDUSTRIAL LATCH W/PAD LOCK
7. FLAT TOP POLYVINYL CAP
8. 2"X1"X10 GA. RECT. STL. TUBING



6 C10.1 **WROUGHT IRON GATE**
SCALE: 1"=2'-0"



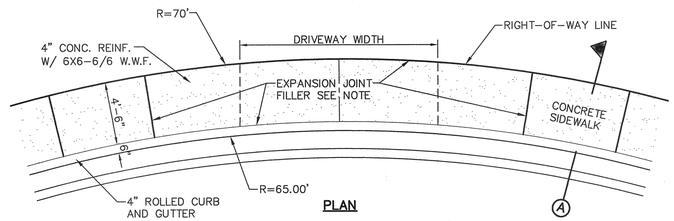
SCALE: 1/2"=1'-0"

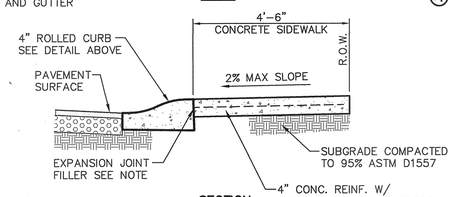


KEY NOTES

1. 3" x 3" x 3/16" SQUARE STEEL TUBING W/WELDED STEEL CAP
2. 2" x 1" x 14 GA. RECTANGULAR STEEL TUBING
3. 1 1/2" x 1/2" x 16 GA. RECTANGULAR STEEL TUBING W/WELDED STEEL CAP
4. FULLY WELDED METAL CAP

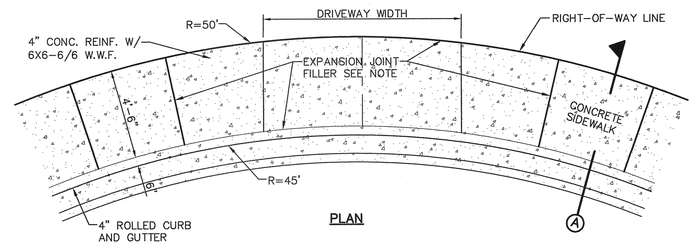
9 C10.1 **TYPICAL ROCKWALL W/ WROUGHT IRON FENCE DETAILS**
SCALE: N.T.S.

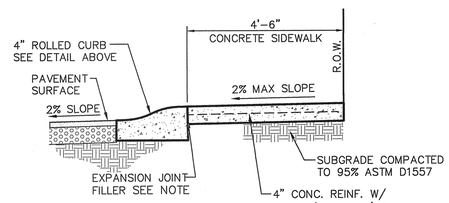




NOTE:
EXPANSION MATERIAL SHALL BE 1/2" PREMOLDED ASPHALT IMPREGNATED EXPANSION MATERIAL OR EQUAL.

10 C10.1 **HEEL (70' R) DRIVEWAY DETAIL**
SCALE: N.T.S.





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

11 C10.1 **EYEBROW (50' R) DRIVEWAY DETAIL**
SCALE: N.T.S.

REFERENCES - BENCHMARKS
CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE AND MESA STREET, "ELEV. = 3937.39 (CITY DATUM) THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office 915.544.3232 Fax 915.544.3233 www.ceagroup.net

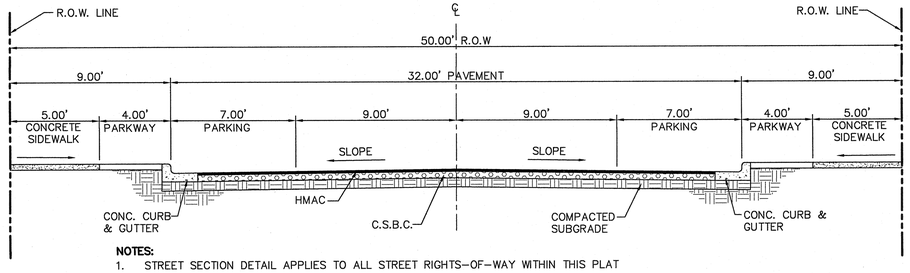
ENGINEER'S SEAL
STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER

SCALE	
Horizontal:	N/A
Vertical:	N/A
Contour Interval:	N/A
DATE:	OCTOBER 2011
DESIGN BY:	J.G.
DRAWN BY:	A.B.
CHKD. BY:	J.L.A.
APPVD. BY:	J.L.A.
JOB No.	2000-123-LD

PROJECT TITLE
SUNSET TERRACE
UNIT FOUR
SUBDIVISON IMPROVEMENTS

SHEET TITLE
STANDARD DETAILS
(SHEET 1 OF 3)

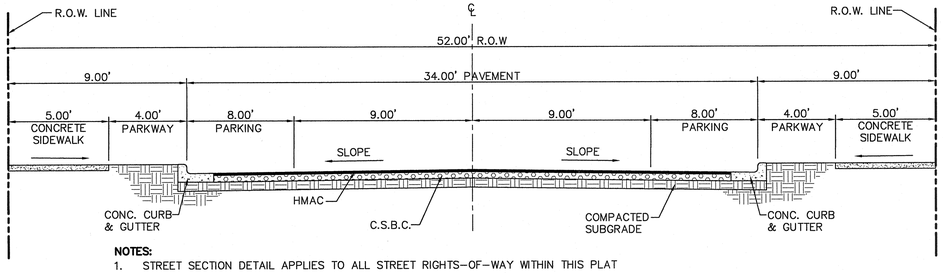
SHEET NO.
C10.1



NOTES:

1. STREET SECTION DETAIL APPLIES TO ALL STREET RIGHTS–OF–WAY WITHIN THIS PLAT
2. 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 ENGINEERING DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO PLACEMENT OF PAVEMENT.

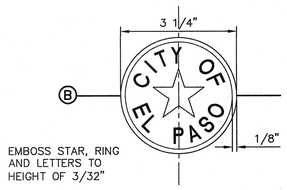
1 / C10.2 TYPICAL 50' ROW STREET SECTION DETAIL
SCALE: N.T.S.



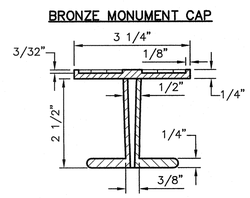
NOTES:

1. STREET SECTION DETAIL APPLIES TO ALL STREET RIGHTS–OF–WAY WITHIN THIS PLAT
2. 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 ENGINEERING DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO PLACEMENT OF PAVEMENT.

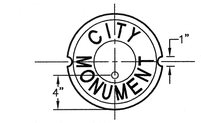
2 / C10.2 TYPICAL 52' ROW STREET SECTION DETAIL
SCALE: N.T.S.



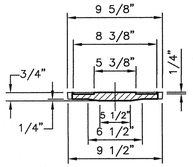
BRONZE MONUMENT CAP

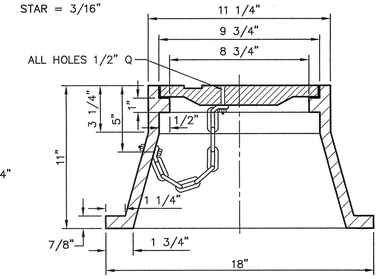


B SECTION



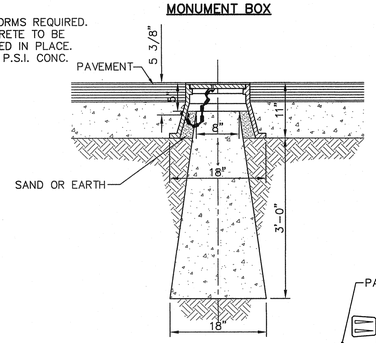
COVER



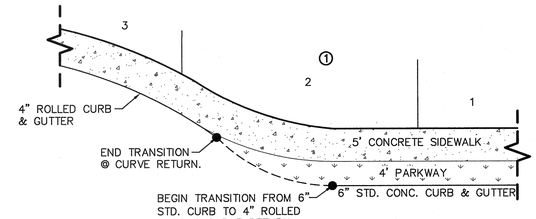


MONUMENT BOX

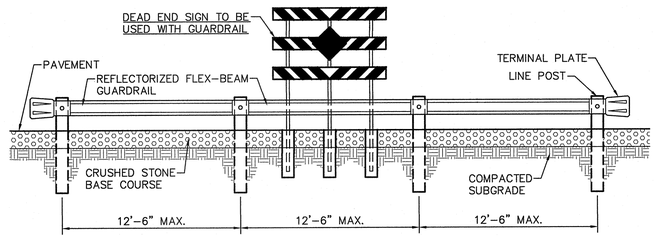
NO FORMS REQUIRED. CONCRETE TO BE POURED IN PLACE. 3000 P.S.I. CONC.



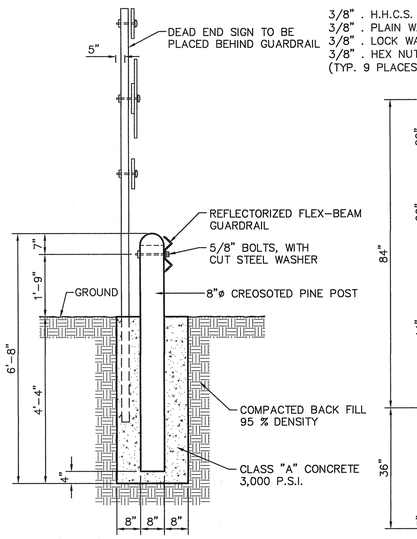
3 / C10.2 CITY SURVEY MONUMENT DETAILS
SCALE: N.T.S.



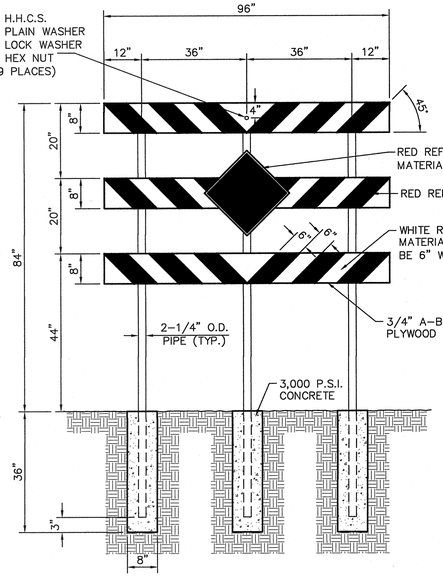
4 / C10.2 TYPICAL HEEL/CUL–DE–SAC SIDEWALK TRANSITION
SCALE: N.T.S.



ELEVATION
SCALE: 1"=5'

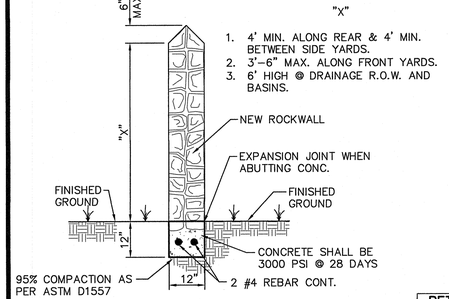


POST AND SIGN DETAIL
SCALE: N.T.S.



DEAD END SIGN DETAIL
SCALE: 1" = 2'–0"

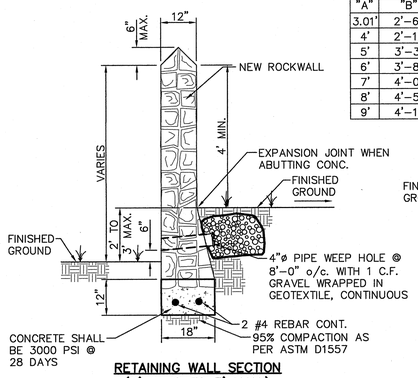
6 / C10.2 GUARD RAIL/SIGN ASSEMBLY AT DEAD END STREET DETAIL
SCALE: AS SHOWN



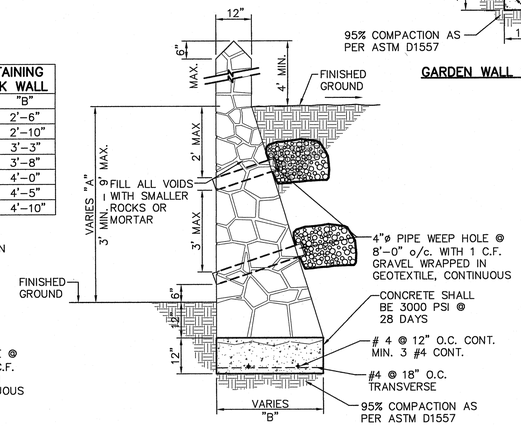
1. 4' MIN. ALONG REAR & 4' MIN. BETWEEN SIDE YARDS.
2. 3'–6" MAX. ALONG FRONT YARDS.
3. 6' HIGH @ DRAINAGE R.O.W. AND BASINS.

GARDEN WALL SECTION

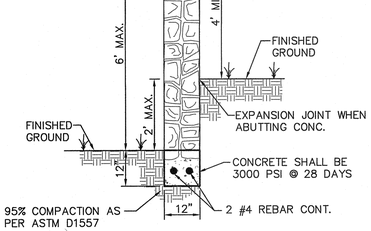
RETAINING ROCK WALL	
"A"	"B"
3.01'	2'–6"
4'	2'–10"
5'	3'–3"
6'	3'–8"
7'	4'–0"
8'	4'–5"
9'	4'–10"



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



RETAINING WALL SECTION (3' MIN. TO 9' MAX.)



GARDEN WALL SECTION (2' MAX.)

ROCK WALL NOTES

1. STONE FOR ROCKWALL SHALL BE AS NEARLY UNIFORM IN SECTIONS AS IN PRACTICABLE THE STONE SHALL BE DENSE AND RESISTANT OF AIR AND WATER.
2. MORTAR MUST BE TYPE "S: 1800 P.S.I. AS PER ASTM C270.
3. MASONRY WALL OVER SIX (6) FEET IN HEIGHT AND THOSE USED FOR EARTH RETENTION OVER TWO (2) FEET MUST BE DESIGNED AS STRUCTURAL WALLS..
4. WALLS ADJACENT TO PONDING AREAS OR DRAINAGE DITCHES MAY BE CONSTRUCTED OF BRICK, ROCK, STONE, OR CINDER BLOCK AND SHALL NOT BE LESS THAN SIX (6) FEET HIGH.
5. ROCKWALL MORTAR JOINTS MUST NOT EXCEED TWO (2) INCHES.
6. PROVIDE ONE (1) INCH EXPANSION JOINTS AT EVERY 100 FEET.
7. ALL STONE SHALL BE THOROUGHLY SOAKED BEFORE BEING PLACED.
8. ALL STONE FOR ROCKWALLS SHALL BE FRACTURED QUARRIED ROCK OR ROUND ROCK, NO RIVER ROCK SHALL BE ALLOWED.
9. REINFORCING STEEL SHALL BE ASTM A615 GRADE 40.
10. ALLOWABLE SOIL BEARING PRESSURE = 2,500 PSI (MINIMUM).
11. BACKFILL MATERIALS SHALL CONSIST OF COARSE GRAINED, WELL–DRAINED SOILS (WITH NO CLAY CONTENT).

5 / C10.2 TYPICAL ROCKWALL DETAILS
SCALE: 1" = 2'–0"

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN ELEVATION = 3887.39 (NAVD 88) CITY MONUMENT AT THE INTERSECTION OF MAGOFFIN AVENUE & "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4504
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5232 Fax: 915.544.5233 www.ceagroup.net

ENGINEER'S SEAL

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

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

DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000–123–LD

PROJECT TITLE

SUNSET TERRACE UNIT FOUR SUBDIVISON IMPROVEMENTS

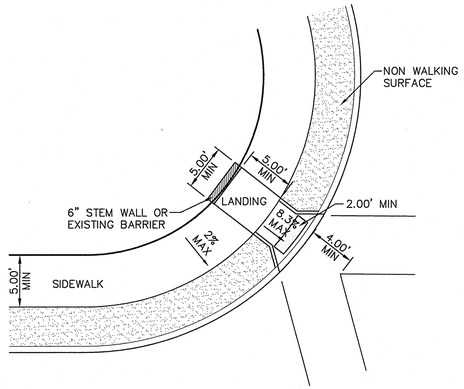
SHEET TITLE

STANDARD DETAILS

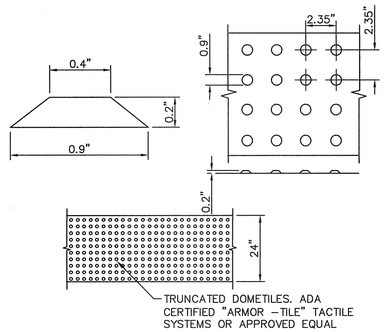
(SHEET 2 OF 3)

SHEET NO.

C10.2



1 C10.3 DIAGONAL CURB RAMP (RETURNED CURB) (TYPE VI)
SCALE: N.T.S.

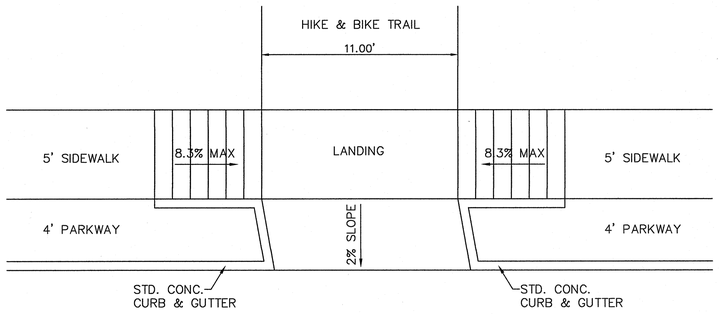


DOME SIZE AND SPACING. TRUNCATED DOMES SHALL HAVE A DIAMETER OF NOMINAL 0.9 INCHES (23 mm) AT THE BOTTOM, A DIAMETER OF 0.4 INCH (10 mm) AT THE TOP, A HEIGHT OF NOMINAL 0.2 INCHES (5 mm), AND A CENTER–TO–CENTER SPACING OF NOMINAL 2.35 INCHES (60 mm) MEASURED ALONG ONE SIDE OF A SQUARE ARRANGEMENT.

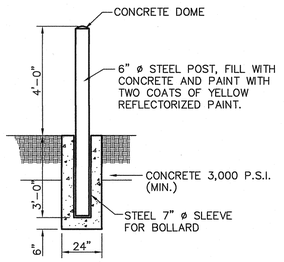
DOME ALIGNMENT. DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES. DETECTABLE WARNING SURFACES SHALL EXTEND 24 INCHES (610 mm) MINIMUM IN THE DIRECTION OF TRAVEL AND THE FULL WIDTH OF THE CURB RAMP, LANDING, OR BLENDED TRANSITION.

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.

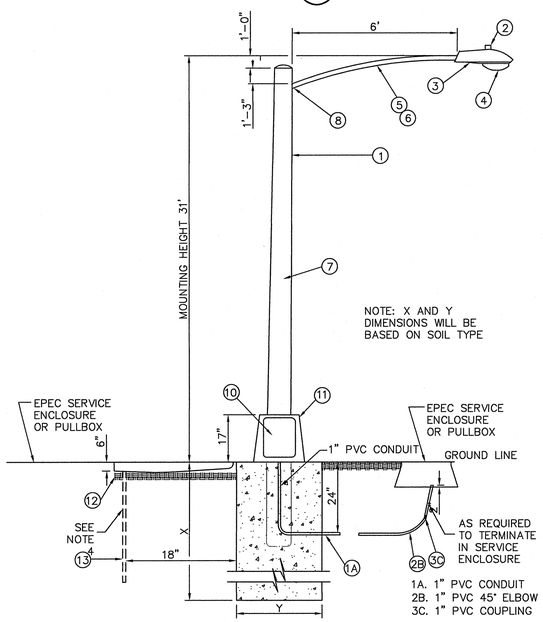
2 C10.3 TRUNCATED DOME SIZE AND SPACING
SCALE: N.T.S.



3 C10.3 ACCESSIBLE RAMP @ HIKE & BIKE TRAIL
SCALE: N.T.S.



4 C10.3 TYPICAL REMOVABLE BOLLARD POST EMBEDMENT DETAIL
SCALE: N.T.S.



ITEM NO.	DESCRIPTION	STOCK/DSO NO.	QTY.
1	POLE, 35 FT.–CLASS IV		1
2	PHOTOCELL, 240V–SEE NOTE 1	021–225	1
3	LUMINAIRE, 100W H. P. S.	021–335	1
4	HPS LAMP, 100W	021–085	1
5	MAST ARM, 6' X 1–1/4"	21–200	1
6	#10 SOLID CABLE 600 V	013–600	AS REQ
7	CABLE, #10, 3 CONDUCTOR, 600 V, UF	013–600	1
8	SLEEVES, #12	05–145	1
9	ROADWAY LUMINAIRE HPS 150 WATTS	21–340	1
10	BREAK–A–WAY FUSES 30 AMP.	21–250	1
11	ALUMINUM TRANSFORMER BASE	21–608	1
12	5/8" GROUND ROD CLAMP	07–561	1
13	5/8" X 10' CU BONDED GROUND ROD	08–626	1

KEY NOTES

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

DESIGN NOTES

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

5 C10.3 RESIDENTIAL STREET LIGHT STEEL POLE
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).

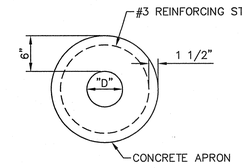
CONCRETE APRON FOR CIRCULAR PENETRATIONS IN ASPHALT PAVEMENTS				
"D" DIAMETER OF PENETRATION (INCHES)	"A" CONCRETE HORIZONTAL DIMENSION FROM PENETRATION (INCHES)	NUMBER OF NO. 3 REINFORCING STEEL BARS (QUANTITY)	"B" MINIMUM CLEARANCE FROM EDGE OF CONCRETE APRON TO CENTER OF NEAREST REBAR (INCHES)	"C"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

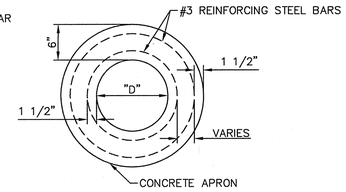
1. ANY DISTURBED SUBGRADE UNDER THE CONCRETE APRON SHALL BE COMPACTED TO 95% DENSITY ±3% OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D–1557.
2. ANY DISTURBED COARSE UNDER THE CONCRETE APRON SHALL BE COMPACTED TO 100% DENSITY ±2% OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D–1557.
3. PROVIDE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

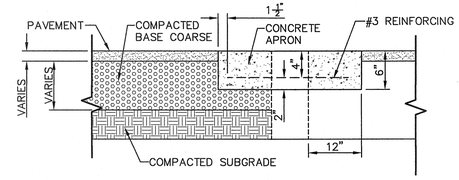
1. THE PENETRATION APRON SHOULD BE CAST IN–PLACE CONCRETE. (MINIMUM 28 DAY COMPRESSIVE STRENGTH 4000 PSI. HIGH EARLY CONCRETE IS REQUIRED).
2. TOPS OF PENETRATION APRON SHALL BE FLUSH WITH ROADWAY SURFACE OR FINISHED GRADE UNLESS OTHERWISE SPECIFIED BY THE CITY ENGINEER.



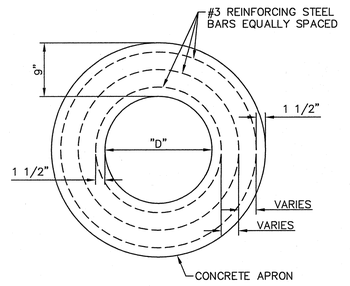
PLAN VIEW – SINGLE REBAR



PLAN VIEW – 2 REBAR



SECTION



PLAN VIEW – 3 REBAR

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

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & THE UNION PACIFIC RAILROAD
(CITY DATUM) THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

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

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

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

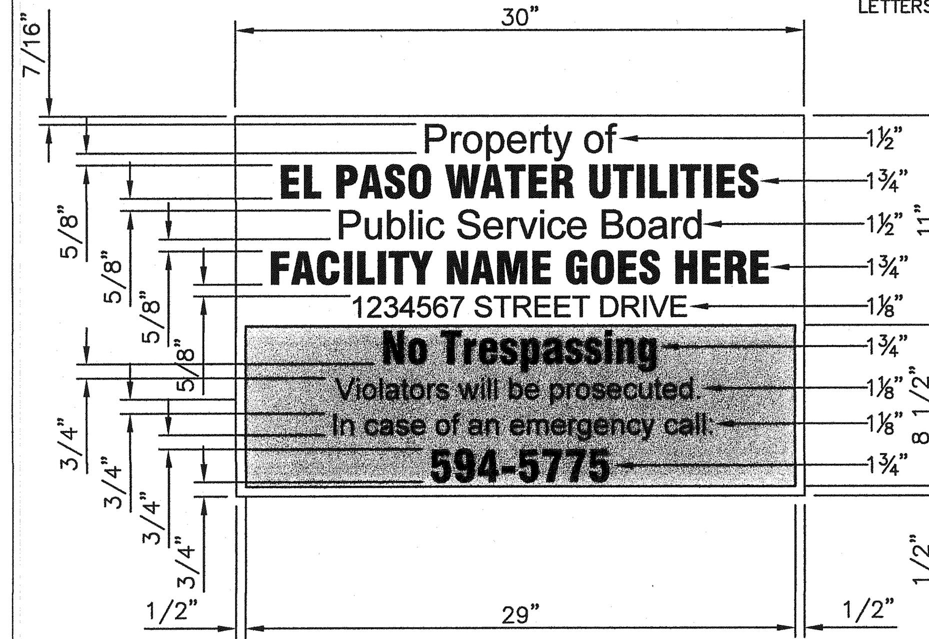
DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-LD

PROJECT TITLE
SUNSET TERRACE
UNIT FOUR
SUBDIVISON IMPROVEMENTS

SHEET TITLE
STANDARD DETAILS
(SHEET 3 OF 3)

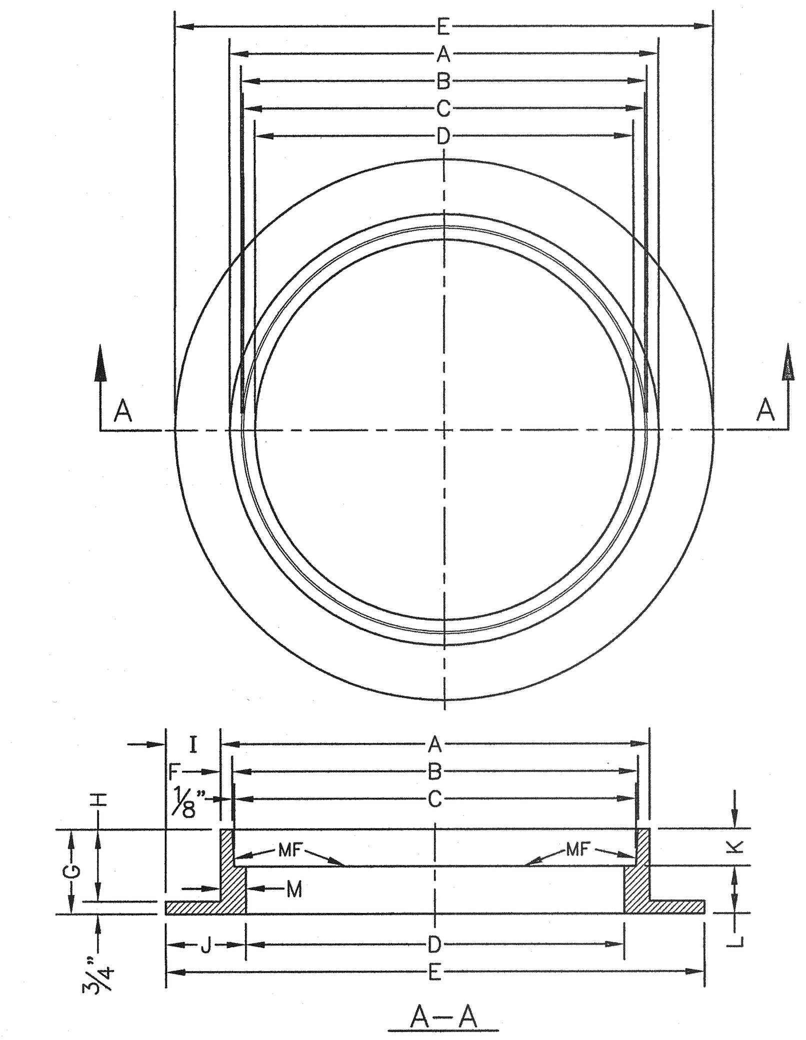
SHEET NO.
C10.3

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



STANDARD DETAIL	DATE: 9/15/2005 REV: 8/28/2006	SITE SIGN – NO TRESPASSING N.T.S.	EL PASO WATER UTILITIES PUBLIC SERVICE BOARD	DETAIL No. 512

1 C11.1 SITE SIGN – NO TRESPASSING DETAIL
N.T.S.



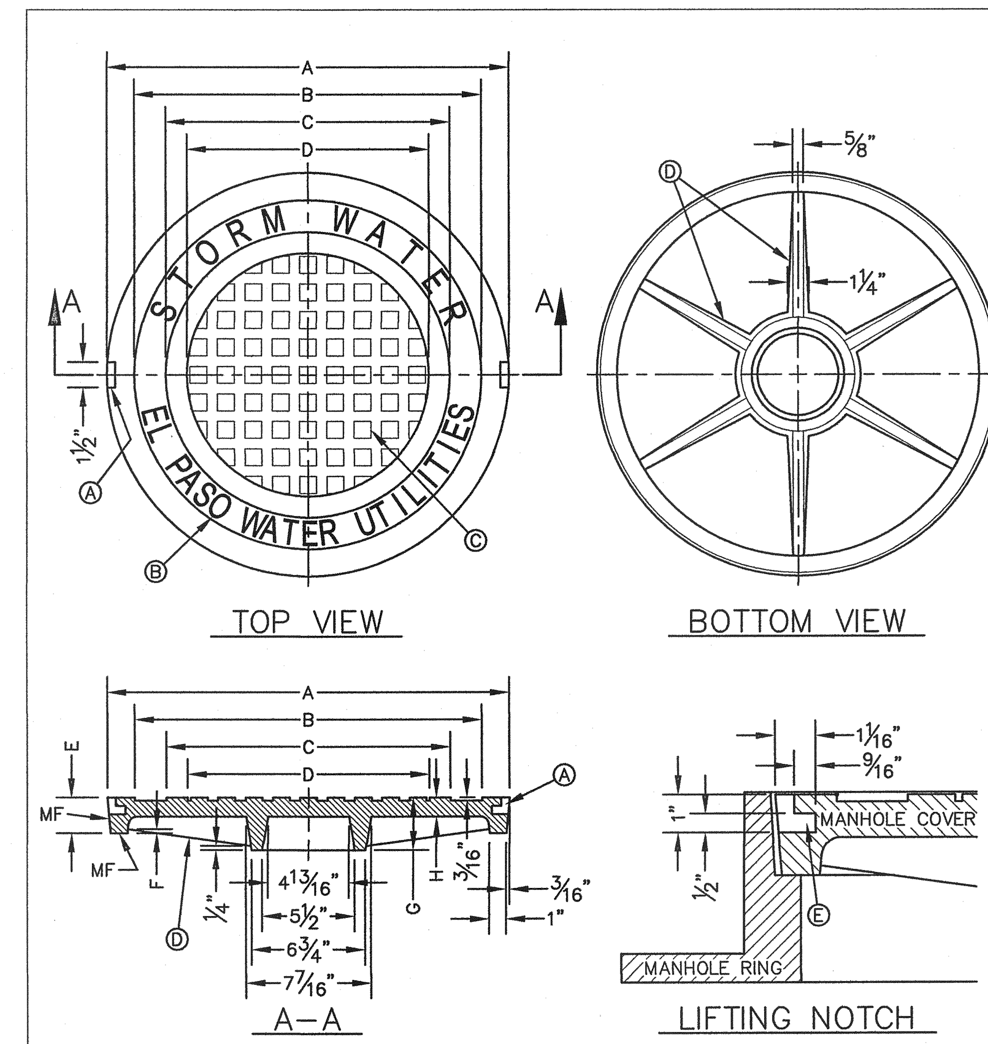
GENERAL NOTES:
1. MATCHING SURFACES MARKED "MF" TO BE FINISHED OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
2. CASTING TO BE SMOOTH & VOID OF AIR HOLES.
3. CASTING MUST MEET REQUIREMENTS OF AASHTO M306–07.
4. AS–CAST DIMENSIONS MAY VARY 1/16"±/ PER FOOT (AASHTO M306–07).
5. WEIGHT MAY VARY 5%±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

SEE NOTE 6

MANHOLE RING	MANHOLE – ALL TYPES	MANHOLE TYPE 48"	MANHOLE TYPE 72"
A	33"	25¼"	32¾"
B	31¾"	23⅞"	31⅜"
C	31½"	23⅝"	31⅛"
D	30"	22½"	30"
E	39½"	34½"	42"
F	⅝"	11/16"	11/16"
G	5"	6"	6"
H	4¼"	5¼"	5¼"
I	3¼"	4 1/16"	4 1/16"
J	4¾"	6"	6"
K	2 3/16"	3 1/16"	3 1/16"
L	2 13/16"	2 15/16"	2 15/16"
M	1½"	1⅜"	1⅜"
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 C11.1 STORMWATER MANHOLE RING
SCALE: N.T.S.



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

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

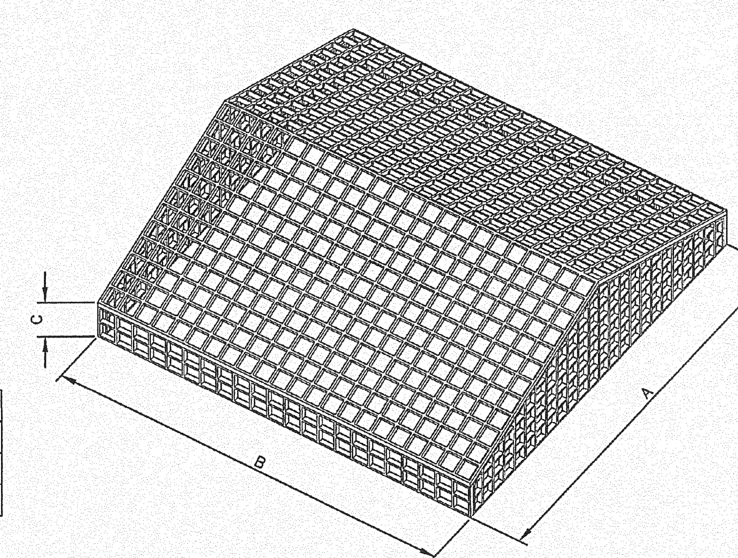
SEE NOTE 6

MANHOLE COVER	MANHOLE – ALL TYPES	MANHOLE TYPE 48"	MANHOLE TYPE 72"
A	31⅜"	23¾"	31¼"
B	28⅛"	20⅝"	28⅛"
C	24⅜"	16⅞"	24⅜"
D	21⅞"	14⅜"	21⅞"
E	2⅛"	3"	3"
F	¼"	1¼"	1¼"
G	3⅛"	3"	3"
H	1⅛"	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 C11.1 STORMWATER MANHOLE COVER
SCALE: N.T.S.

STORM RAX
PEAK ROOF STRUCTURE
(STANDARD SIZES)
DIMENSIONS IN INCHES TO THE NEAREST 1/8"



HOST STRUCTURE INSIDE DIMENSIONS
____ LENGTH (B) ____ WALL THICKNESS (REQUIRED)
____ WIDTH (A)

AS DISTRIBUTED BY CONTECH CONSTRUCTION PRODUCTS NATIONALLY

WIDTH (A)	22 1/8	32 7/8	43 5/8	54 3/8	65 1/8	75 7/8	87 1/4	98	108 3/4	119 1/2	130 1/4
CODE	4	6	8	10	12	14	16	18	20	22	24

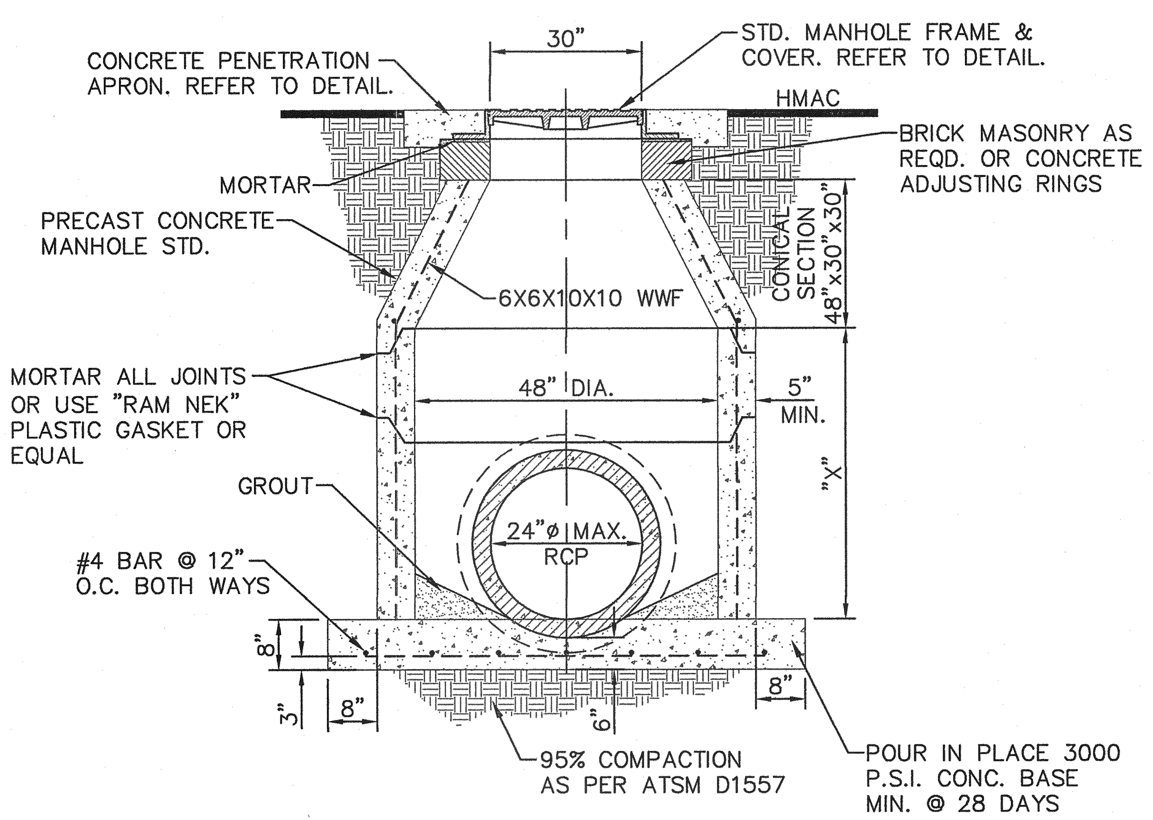
LENGTH (B)	32 7/8	38 1/4	43 5/8	49	54 3/8	59 3/4	65 1/8	70 1/2	75 7/8	81 7/8	87 1/4	92 5/8	98	103 3/8	108 3/4
CODE	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

HEIGHT (C)	11 5/16	16 7/8
CODE	02	03

PEAK ROOF (PR) ________ WIDTH (A) ________ LENGTH (B) ________ HEIGHT (C)

CONTECH CONSTRUCTION PRODUCTS INC. 9025 CENTRE POINTE DRIVE, SUITE 400 WEST CHESTER, OHIO 45069 PH: 1.800.338.1122 FAX: 513.645.7399 © COPYRIGHT	CUSTOMER:	DATE:
		DRAWN BY:
	PROJECT:	APP'D BY:
		DETAIL:

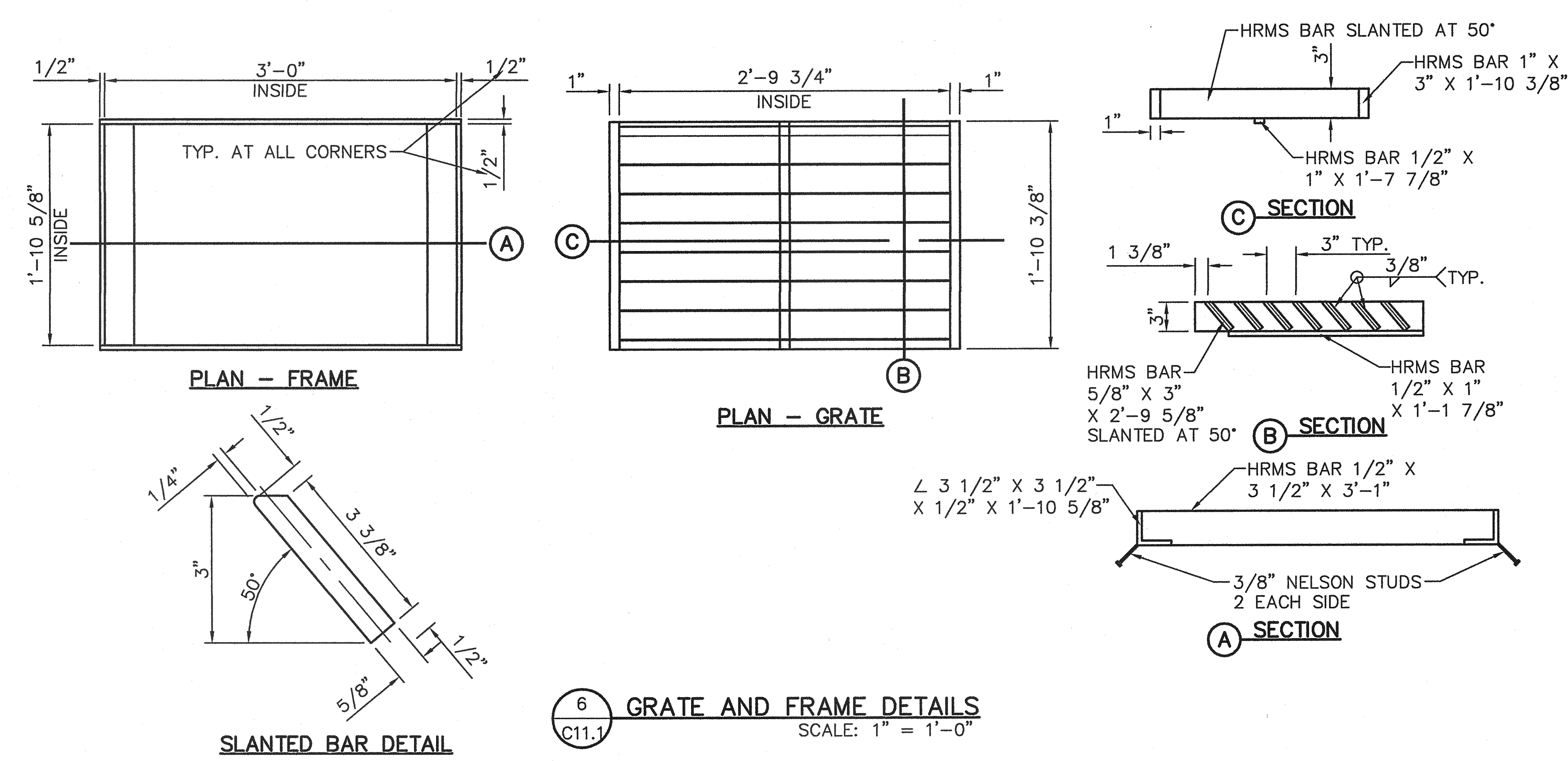
4 C11.1 RAISED TRASH RACK/DEBRIS CAGE DETAIL
SCALE: N.T.S.



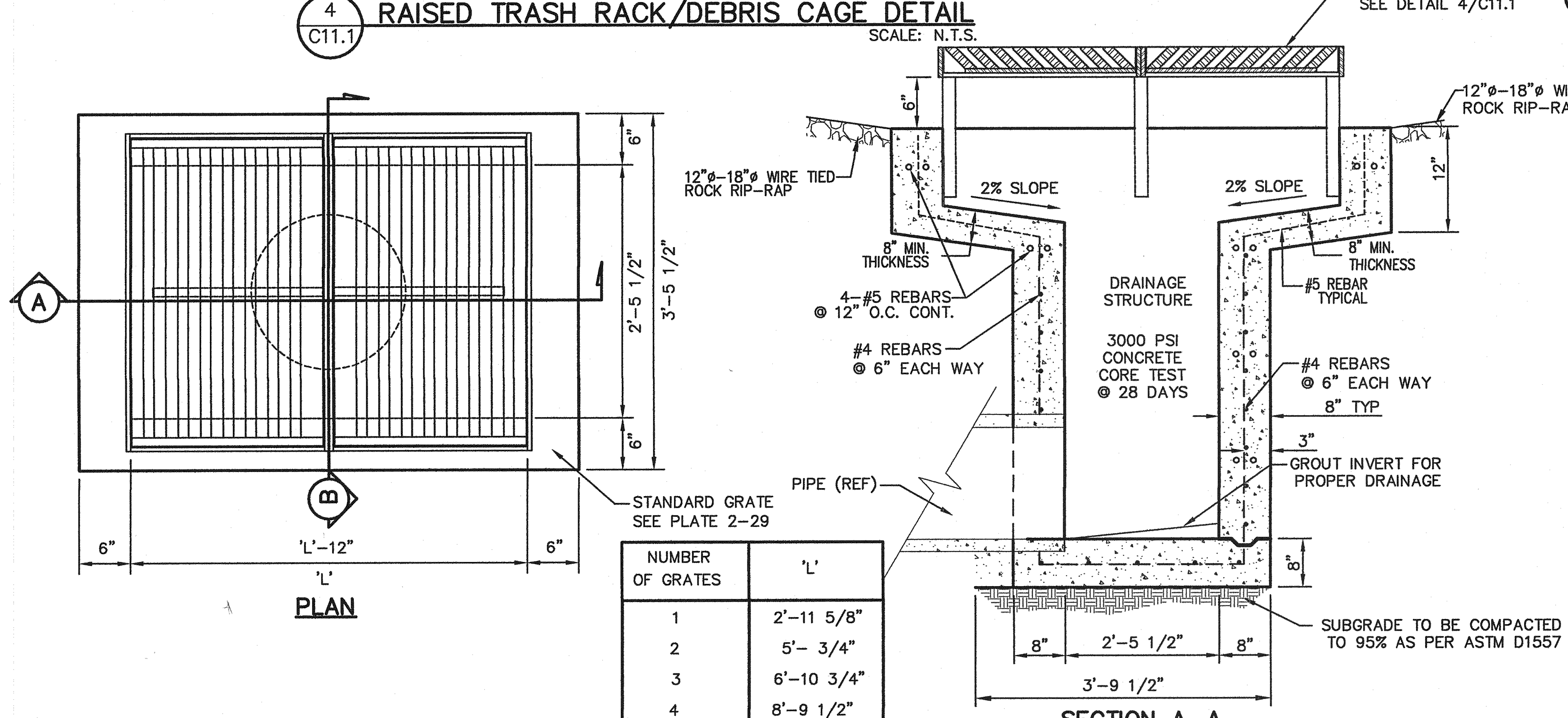
"X"= 48" DIA. x 12", 24", 36", OR 48" PRE–CAST LONG SECTIONS AS REQUIRED

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

5 C11.1 48" STANDARD MANHOLE DETAIL
SCALE: N.T.S.

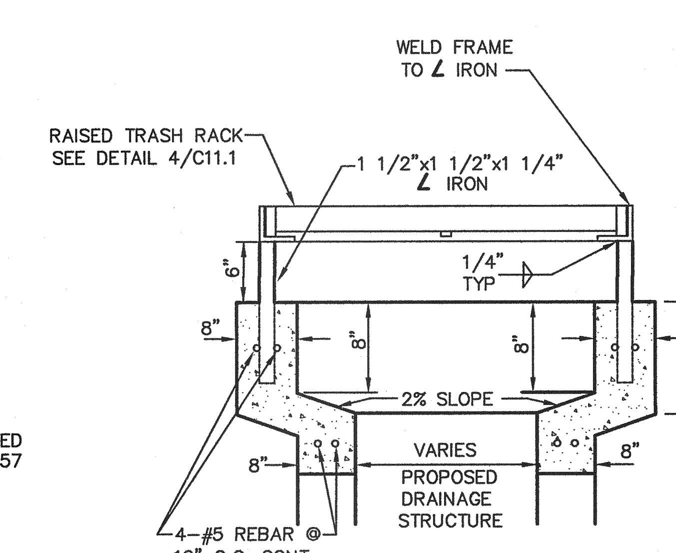


6 C11.1 GRATE AND FRAME DETAILS
SCALE: 1" = 1'–0"



NUMBER OF GRATES	'L'
1	2'–11 5/8"
2	5'– 3/4"
3	6'–10 3/4"
4	8'–9 1/2"
5	10'–8"
6	12'– 6 1/2"

7 C11.1 OFF–STREET STORM INLET DETAIL
SCALE: N.T.S.



SECTION B–B

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"øX4" LONG CONCRETE ANCHOR STUDS REQUIRED FOR EACH SIDE OF FRAME, WHERE RESTING ON CONCRETE, USE NELSON STUDS OR EQUAL.
21. THE GRATES OF ALL INLETS WITHIN THE STREET PAVEMENT MUST BE CONSTRUCTED WITH THE GRATE BARS PERPENDICULAR TO THE CURB.

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

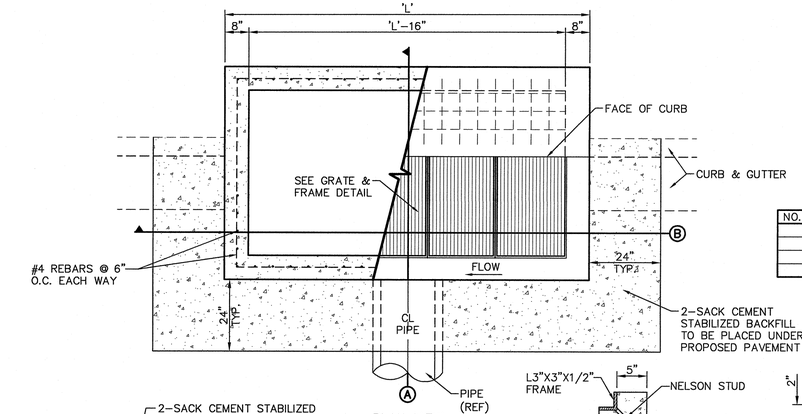
ENGINEER'S SEAL
STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER

SCALE
Horizontal: N/A
Vertical: N/A
Contour Interval: N/A
DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000–123–LD

PROJECT TITLE
SUNSET TERRACE
UNIT FOUR
SUBDIVISON IMPROVEMENTS

SHEET TITLE
DRAINAGE DETAILS
(SHEET 1 OF 3)

SHEET NO.
C11.1



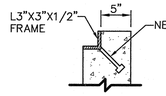
PLAN VIEW

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

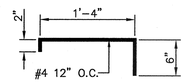
* THESE CAPACITIES CORRESPOND TO A CLOGGING FACTOR OF 0.5

NOTES:

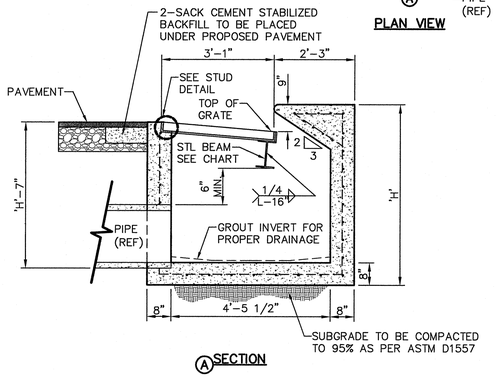
1. GRATES TO BE PERPENDICULAR TO TRAFFIC
2. CONCRETE TO BE 3,000 PSI (MIN.) CORE TEST @ 28 DAYS.
3. H=20' MAXIMUM
4. SEE STORM SEWER PLAN & PROFILES FOR APPROVED PIPE DIAMETER.



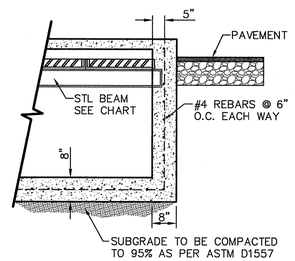
STUD DETAIL
1"=1'



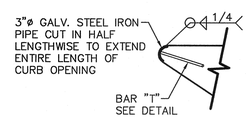
BAR "T" DETAIL
1"=1'



SECTION

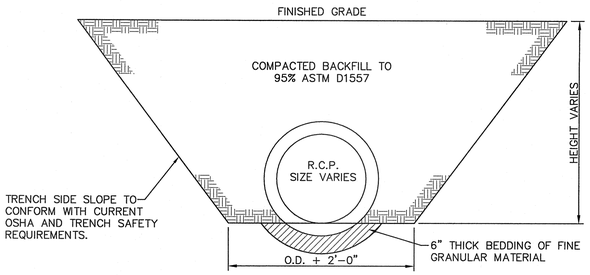


SECTION

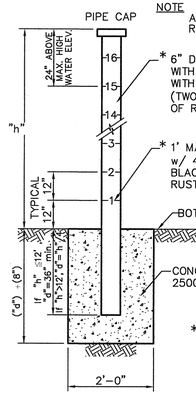


DETAIL "B"
1"=1'

1 C11.2 DROP INLET (TYPE I) DETAILS
SCALE: 1" = 2'-0"



2 C11.2 STORM SEWER BEDDING DETAIL
SCALE: 1/2" = 1'-0"



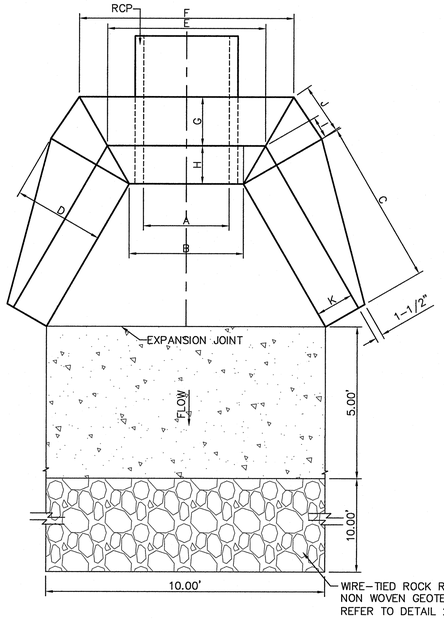
NOTE
ALTERNATES WILL BE ALLOWED WITH THE PRIOR REVIEW AND APPROVAL OF THE CITY ENGINEER.

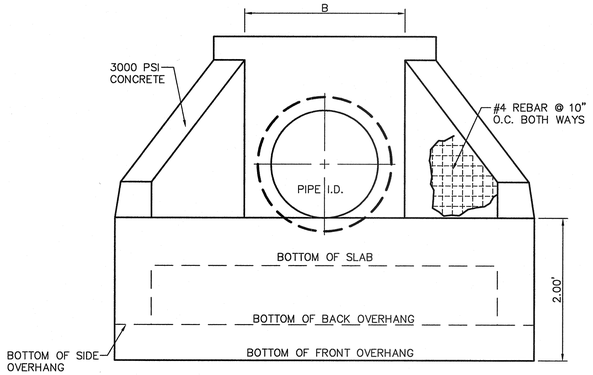
* 6" DIA. GALVANIZED STEEL PIPE WITH ANTI-RUST WHITE METAL PAINT WITH RUST INHIBITIVE RESINS (TWO COATS) WITH BASE COAT OF RUST PRIMER.

* 1' MARK ON OPPOSITE SIDES OF PIPE w/ 4" HIGH DIGITS. USE ONE COAT OF BLACK ANTI-RUST METAL PAINT WITH RUST INHIBITIVE RESINS.

* NOTES:
1. CONSULT WITH PAINT MANUFACTURER FOR PRODUCTS THAT CAN SUSTAIN LONG PERIODS OF MOISTURE.
2. GAUGE REQUIRED IN PONDS OF GREATER THAN 5' DEPTH ONLY.
3. "h" = Height

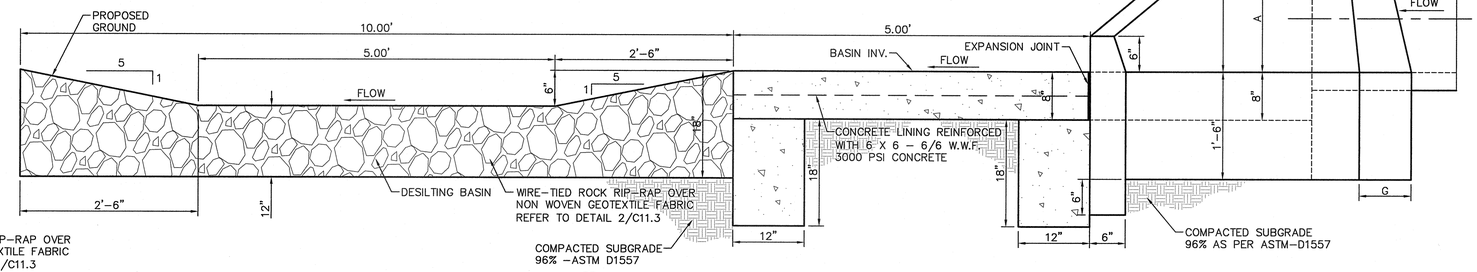
3 C11.2 POND DEPTH GAUGE
N.T.S.

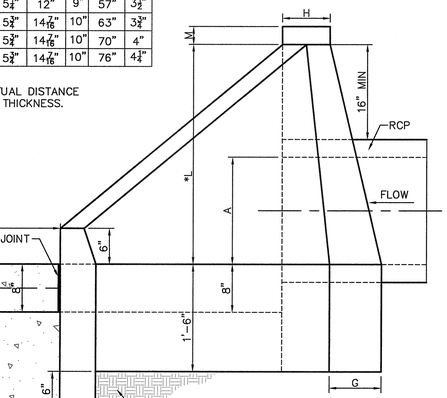




PIPE I.D.	A	B	C	D	E	F	G	H	I	J	K	*L	M
18"	18"	30"	34 2/3"	19"	39 1/4"	52"	11"	8"	4 8/8"	11"	8"	37"	3"
24"	24"	36"	41 2/3"	19"	45 1/4"	58"	11"	8"	4 8/8"	11"	8"	43"	3"
30"	30"	42"	48 1/2"	20"	51 1/4"	65"	12"	8"	4 8/8"	11 8/16"	8"	50"	3"
36"	36"	48"	55 1/2"	20 5/8"	58 3/8"	72"	11 8/8"	9"	5 1/4"	12"	9"	57"	3 1/2"
42"	42"	54"	62 1/2"	25"	65 13/16"	82 4/8"	15"	10"	5 3/4"	14 7/16"	10"	63"	3 3/4"
48"	48"	60"	69 1/3"	25"	71 13/16"	88 4/8"	15"	10"	5 3/4"	14 7/16"	10"	70"	4"
54"	54"	66"	76 1/4"	25"	77 13/16"	94 4/8"	15"	10"	5 3/4"	14 7/16"	10"	76"	4 1/4"

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





4 C11.2 CONCRETE HEADWALL WITH WINGWALL DETAIL
SCALE: 1" = 1'-0"

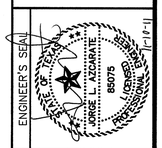
REFERENCES - BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN ELEVATION = 3887.39 (CITY DATUM) THENCE SOUTH 5°30'00" WEST 4.7 MILES TO "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

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

ENGINEER'S SEAL



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

DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-LD

PROJECT TITLE

SUNSET TERRACE
UNIT FOUR
SUBDIVISON IMPROVEMENTS

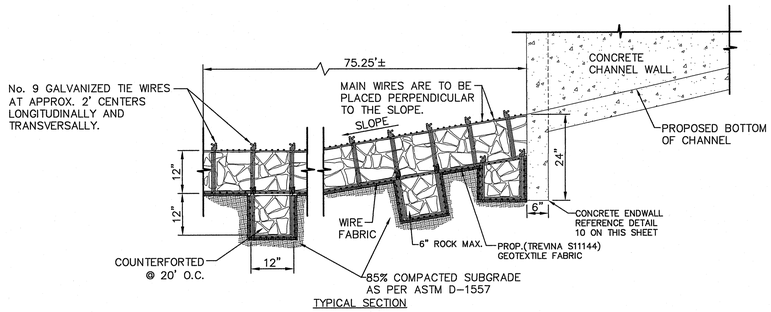
SHEET TITLE

DRAINAGE DETAILS

(SHEET 2 OF 3)

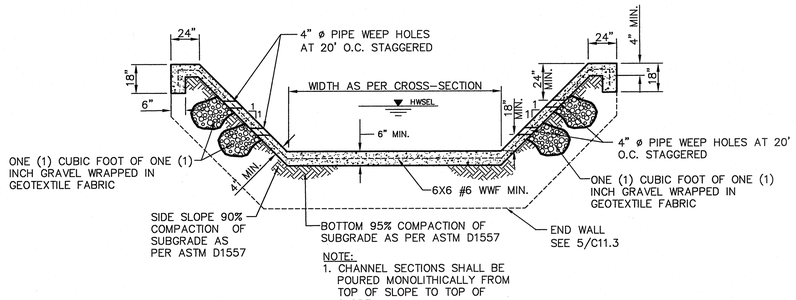
SHEET NO.

C11.2



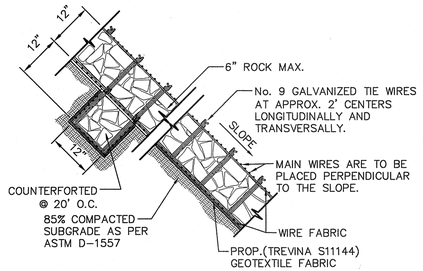
TYPICAL SECTION

1 C11.3 **CONCRETE/WIRE-WRAPPED RIP-RAP TRANSITION**
SCALE: NTS

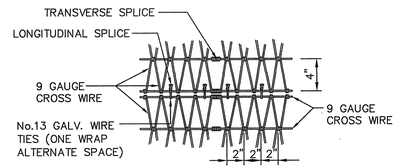


NOTE:
1. CHANNEL SECTIONS SHALL BE POURED MONOLITHICALLY FROM TOP OF SLOPE TO TOP OF SLOPE
2. CONCRETE TO BE 3000 PSI @ 28 DAYS.

3 C11.3 **CONCRETE CHANNEL DETAIL**
SCALE: N.T.S.

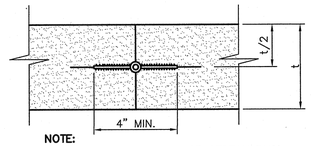


TYPICAL SECTION



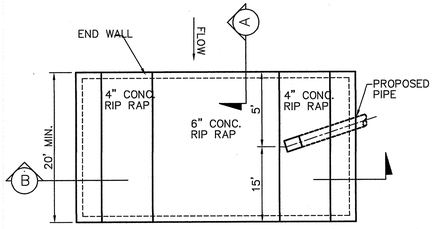
WIRE FABRIC AND SPLICE DETAIL
(FOR NON-COHESIVE SOIL)

2 C11.3 **WIRE WRAPPED RIP RAP**
SCALE: N.T.S.

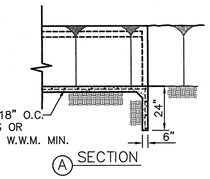


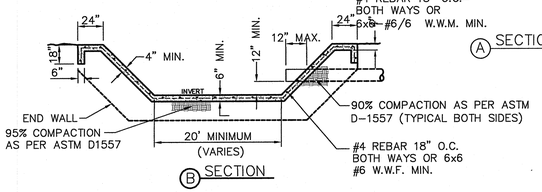
NOTE:
WATERSTOP SHALL BE GREENSTREAK PVC MATERIAL, SPECIFICATIONS GRADE, 6" X 1/8" AND SERRATED WITH CENTERBULB OR APPROVED SUBSTITUTION BY CITY ENGINEER.

4 C11.3 **WATERSTOP DETAIL**
SCALE: N.T.S.

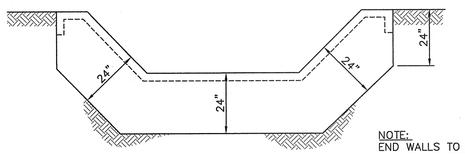


PLAN VIEW



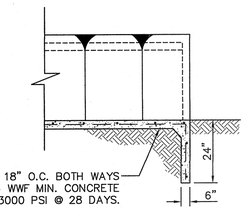


5 C11.3 **CHANNEL LINING AT PIPE DISCHARGE DETAIL**
SCALE: N.T.S.



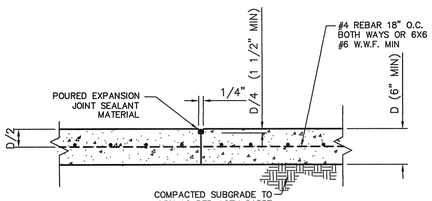
NOTE:
END WALLS TO BE PLACED AT BEGINNING AND END OF CONCRETE CHANNELS.

END WALL ELEVATOIN

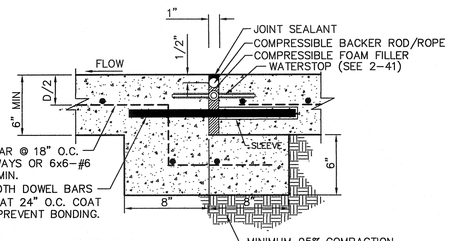


END WALL SECTIONAL VIEW

6 C11.3 **CONCRETE CHANNEL TYPE I END WALL DETAIL**
SCALE: N.T.S.



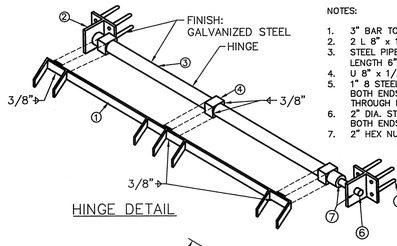
CONTRACTION JOINT AT 25' O.C.



NOTES:
MAX. EXPANSION JOINT SPACING @ 100 FEET O.C. ALONG C.L. OF CHANNEL.

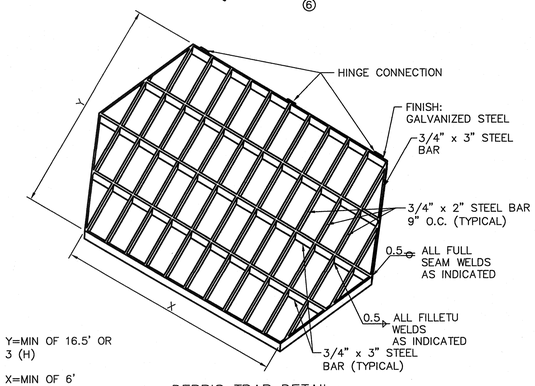
EXPANSION JOINT

7 C11.3 **CONCRETE JOINTS DETAIL**
SCALE: N.T.S.



NOTES:
1. 3" BAR TOP OF RACK.
2. 2 L 8" x 1/2" x5"
3. STEEL PIPE 4" O.D. 2-1/2" I.D. LENGTH 6" LESS THEN ROD
4. U 8" x 1/2" x 5" x 3"
5. 1" 8 STEEL RODS THREADED BOTH ENDS LENGTH TO EXTEND THROUGH HEADWALL.
6. 2" DIA. STEEL ROD THREAD BOTH ENDS.
7. 2" HEX NUTS AND WASHERS.

HINGE DETAIL



Y=MIN OF 16.5' OR 3 (H)
X=MIN OF 6'

DEBRIS TRAP DETAIL

8 C11.3 **DEBRIS TRAP/SAFETY GRATE DETAIL**
SCALE: N.T.S.

REFERENCES - BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & MESA HILLS. ELEVATION = 3937.39 (CITY DATUM) THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4584
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.3232 Fax: 915.544.3233 www.ceagroup.net

ENGINEER'S SEAL

JORGE L. AZCARATE
85075
CONSULTING ENGINEER
STATE OF TEXAS

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

DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-LD

PROJECT TITLE

SUNSET TERRACE UNIT FOUR SUBDIVISON IMPROVEMENTS

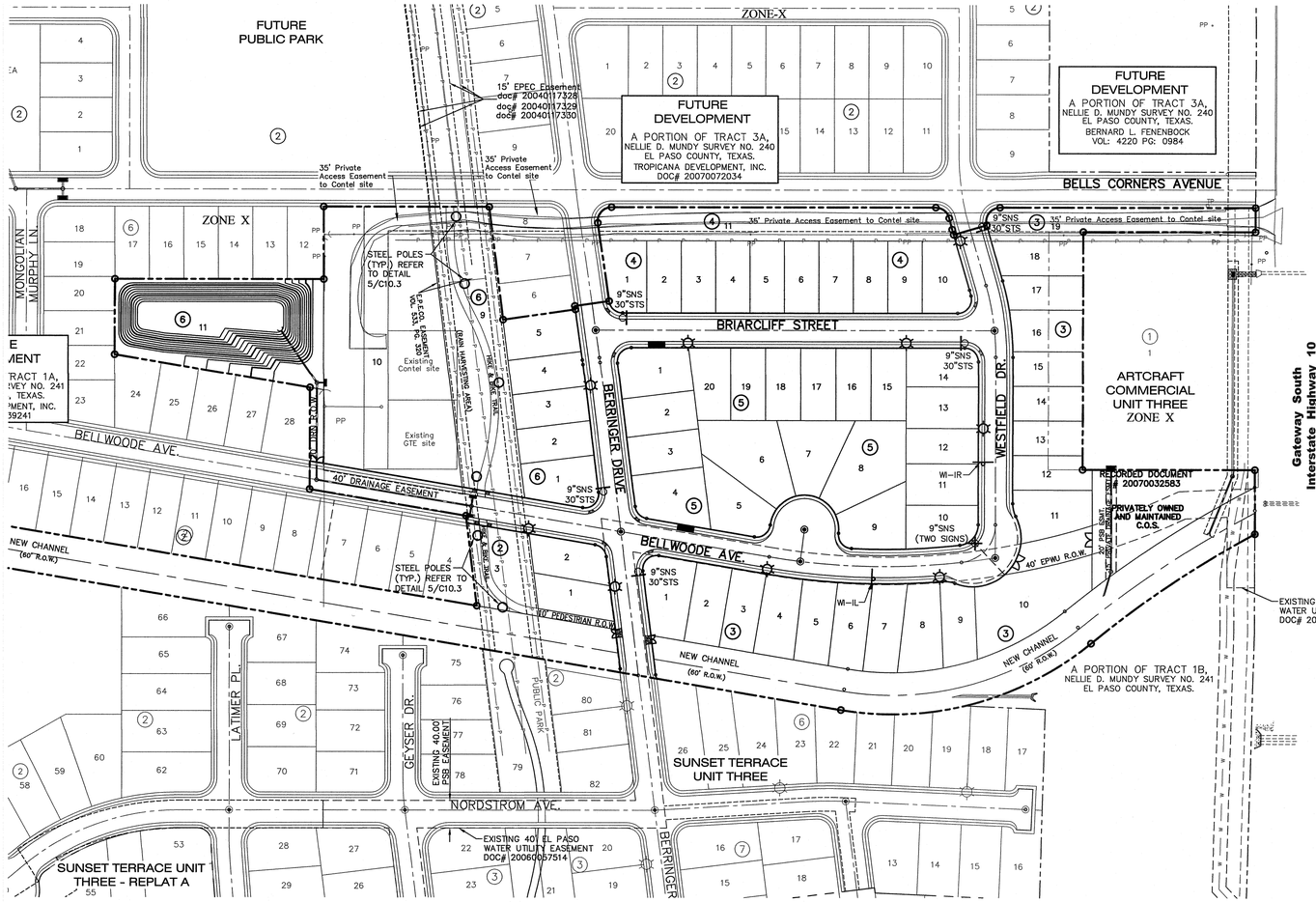
SHEET TITLE

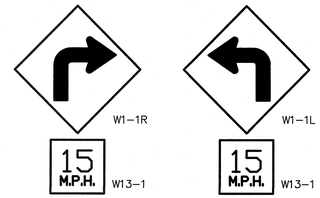
DRAINAGE DETAILS

(SHEET 3 OF 3)

SHEET NO.

C11.3





NOTE:

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

SIGNS DETAIL

SCALE: N.T.S.

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

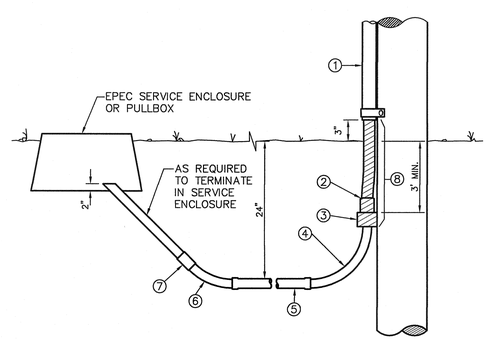
REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN ELEVATION = 3887.39 "L" IN NW QUADRANT OF SIDEWALK AT CURB "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

LEGEND:

- PROPOSED RESIDENTIAL STREET LIGHT
- EXISTING RESIDENTIAL STREET LIGHT
- PROPOSED LIGHT (STEEL POLE) REFER TO DETAIL 5/C10.3
- PROPOSED 6" STREET NAMES AND 30" STOP SIGN
- PROPOSED 9" STREET NAME SIGN (TWO SIGNS)
- NO OUTLET SIGN
- PROPOSED N.D.B.C.U. MAIL BOX



KEY NOTES:

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

ACCEPTED:

BY: _____ DATE: 19 Oct 11

DEPARTMENT OF TRANSPORTATION
CITY OF EL PASO

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

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4504
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5232 Fax: 915.544.5233 www.ceagroup.net

SCALE	1"=100'
Horizontal:	
Vertical:	N/A
Contour Interval:	N/A
DATE:	OCTOBER 2011
DESIGN BY:	J.G.
DRAWN BY:	A.B.
CHKD. BY:	J.L.A.
APPVD. BY:	J.L.A.
JOB No.	2000-123-LD

PROJECT TITLE

SUNSET TERRACE UNIT FOUR SUBDIVISON IMPROVEMENTS

SHEET TITLE

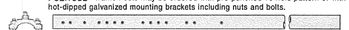
ILLUMINATION AND SIGNAGE PLAN

SHEET NO.

C12.1

COMPONENTS OF THE POZITUBE® TRAFFIC POST

POZITUBE® Traffic Posts may be ordered with pre-punched 13-hole pattern or with hot-dipped galvanized mounting brackets including nuts and bolts.



Sign Mounting Brackets 2" = #206, 2.5" = #207 Quantities of 100 w/nuts & washers

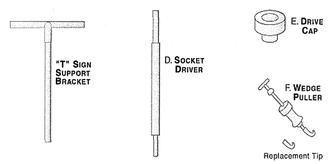
POZITUBE® TRAFFIC POST SIZES

Product	Outside Diameter	Nominal Pipe Size	Wall Thickness	Weight Per Foot
Traffic Post	2.375"	2"	.065	1.60 lb
Posts Are Available In 8'-14', In 1' Increments			.080	1.96 lb
			.095	2.313 lb

POZ-LOC™ SIGN POST SOCKET SYSTEM

Northwest Pipe Company also manufactures the POZ-LOC™ Sign Post Socket System which offers the simplest, most cost effective breakaway sign post system available today. It is installed flush with the ground, which prevents damage to the socket system and the vehicle upon impact. The POZ-LOC™ Socket System is easiest to install and simplest to reuse after impact.

ATTACHMENTS AND TOOLS FOR POZ-LOC™ SOCKET SYSTEM



POZITUBE® TRAFFIC POST

GALVANIZED TRAFFIC POSTS

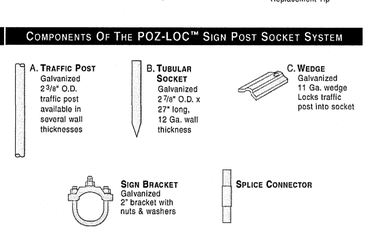
COLOR COATINGS AVAILABLE

• High Visibility Yellow • Clear Coat • Green • Black • Brown

POZITUBE® Traffic Posts have the following characteristics and properties:

1. Galvanized (inside and out).
2. Electrostatically powder coated for years of additional life.
3. Electric resistance welded from hot-dipped galvanized steel sheet conforming to ASTM specifications A-525-G90 commercial weight.
4. Tubing is produced to ASTM A-513, Specification For Welded Mechanical Tubing.
5. Excellent resistance to urban environments where air pollution causes accelerated corrosion.
6. Resistant to damage by impact, abrasion, scratches, temperature variations. Provides superb protection against rust and chemicals such as salt, fertilizers, insecticides, fungicides and solvents such as motor oils, gasoline and other normally damaging substances.
7. May be ordered with sign mounting brackets (listed under components), our standard 13-hole pre-punched pattern or punched to your specifications.

COMPONENTS OF THE POZ-LOC™ SIGN POST SOCKET SYSTEM



POZ-LOC™ SOCKET SYSTEM ORDERING INFORMATION

POZ-LOC SOCKET SYSTEM ASSEMBLY

Description	Part No.	Wt. (Lbs)
Socket 2 7/8" x 27"	2804	7.3
Wedge	2813	1.0
Sign Post 2 3/8"		
Sign Brackets 2"	206	0.39

POZ-LOC TOOLS

Description	Part No.	Wt. (Lbs)
2 7/8" Drive Cap	2720	11.9
Wedge Puller	2713	6.0
Puller Replacement Tip	2719	1.0
Socket Driver	2712	45.0

COMPLETE POZ-LOC POST & SOCKET ASSEMBLIES

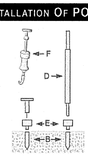
(Posts Are Available In 8'-14', In 1' Increments)

Part No.	Outside Diameter	Nominal Pipe Size	Post Wall Thickness	Post Weight Per Foot
238065	2.375	2"	.065	1.60 lb.
238080	2.375	2"	.080	1.96 lb.
238095	2.375	2"	.095	2.313 lb.

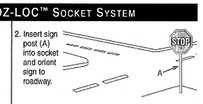
Plus weight of one socket and wedge per post 8.3 lbs.

INSTALLATION OF POZ-LOC™ SOCKET SYSTEM

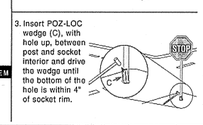
1. With drive cap (E) in place on end of POZ-LOC tubular socket (B), drive socket into ground (orient flat end of socket parallel to sign face) using a mechanical hammer or a socket driver (D).



2. Insert sign post (A) into socket and orient sign to roadway.

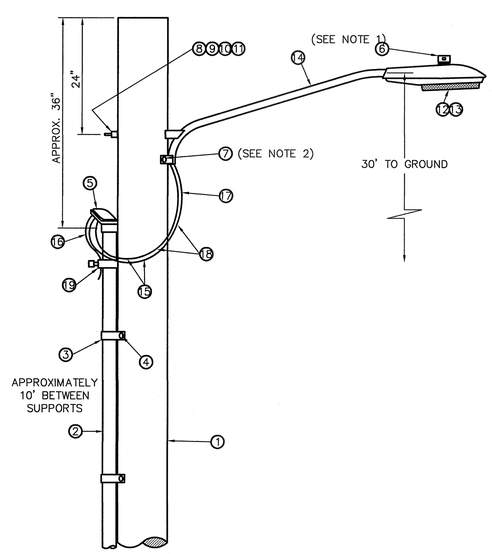


3. Insert POZ-LOC wedge (C), with hole up, between post and socket interior and drive the wedge until the bottom of the hole is within 4" of socket rim.



RE-USE OF POZ-LOC SOCKET SYSTEM

1. Insert wedge puller (F) into hole in wedge (C) and remove from post and socket.
2. Follow instructions 2 & 3 to reinstall.



RESIDENTIAL STREET LIGHT WOOD POLE

SCALE: N.T.S.

ITEM No.	DESCRIPTION	STOCK No.	QTY.
1	POLE, 35 FT.-CLASS IV	ITEM NO.	1
2	GALVANIZED RIGID 1/2" CONDUIT	ITEM NO.	1
3	PIPE STRAP FOR 1/2" CONDUIT, 2-HOLE	ITEM NO.	1
4	LAG BOLT, 1/4" x 2"	ITEM NO.	1
5	WEATHERHEAD, 1/2" CONDUIT	ITEM NO.	1
6	PHOTOCELL, 240V-SEE NOTE 1	ITEM NO.	1
7	LAG BOLT, 1/2" x 4"	ITEM NO.	1
8	MACHINE BOLT, 5/8" x 8"	ITEM NO.	1
9	SQUARE GALV. WASHER, 2-1/4"x2"-1/4"	ITEM NO.	1
10	COIL-SPRING WASHER, 5/8"	ITEM NO.	1
11	LOCKNUT, 5/8"	ITEM NO.	1
12	LUMINAIRE, 100W H. P. S.	ITEM NO.	1
13	HPS LAMP, 100W	ITEM NO.	1
14	MAST ARM, 6' x 1-1/4"	ITEM NO.	1
15	COPPER CABLE, #12, 19 STRAND, 600 V GREEN	ITEM NO.	1
16	COPPER CABLE, #12, SOLID, 600 V, UF	ITEM NO.	1
17	CABLE #10, 2 CONDUCTOR, 600 V, UF	ITEM NO.	1
18	SLEEVES, #12-10	ITEM NO.	1
19	GROUNDING CLAMP	ITEM NO.	1

KEYED NOTES:

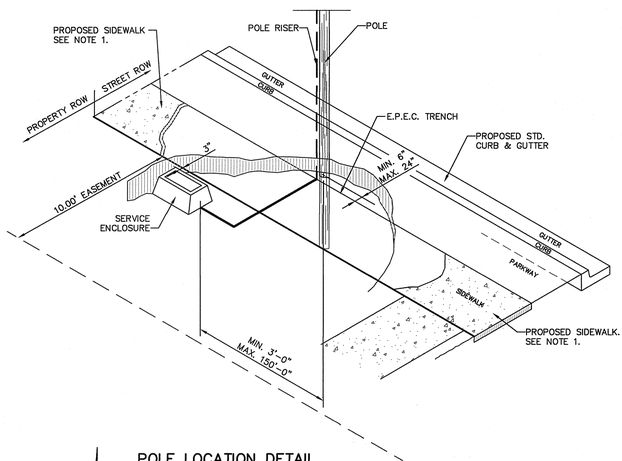
1. MOUNT SO THAT CONTROL FACES NORTH
2. ITEM 17 SHALL NOT BE SPLICED INSIDE ITEM 14

DESIGN NOTES:

1. INSTALLATION SHALL COMPLY WITH ALL LOCAL CODE REQUIREMENTS.
2. FOR ANY CLARIFICATION, EXCEPTIONS, OR QUESTIONS REGARDING CODE INTERPRETATION, CALL THE EL PASO ELECTRIC CO. DISTRIBUTION DEVELOPMENT DEPARTMENT.

RESIDENTIAL STREET LIGHT WOOD POLE

SCALE: N.T.S.

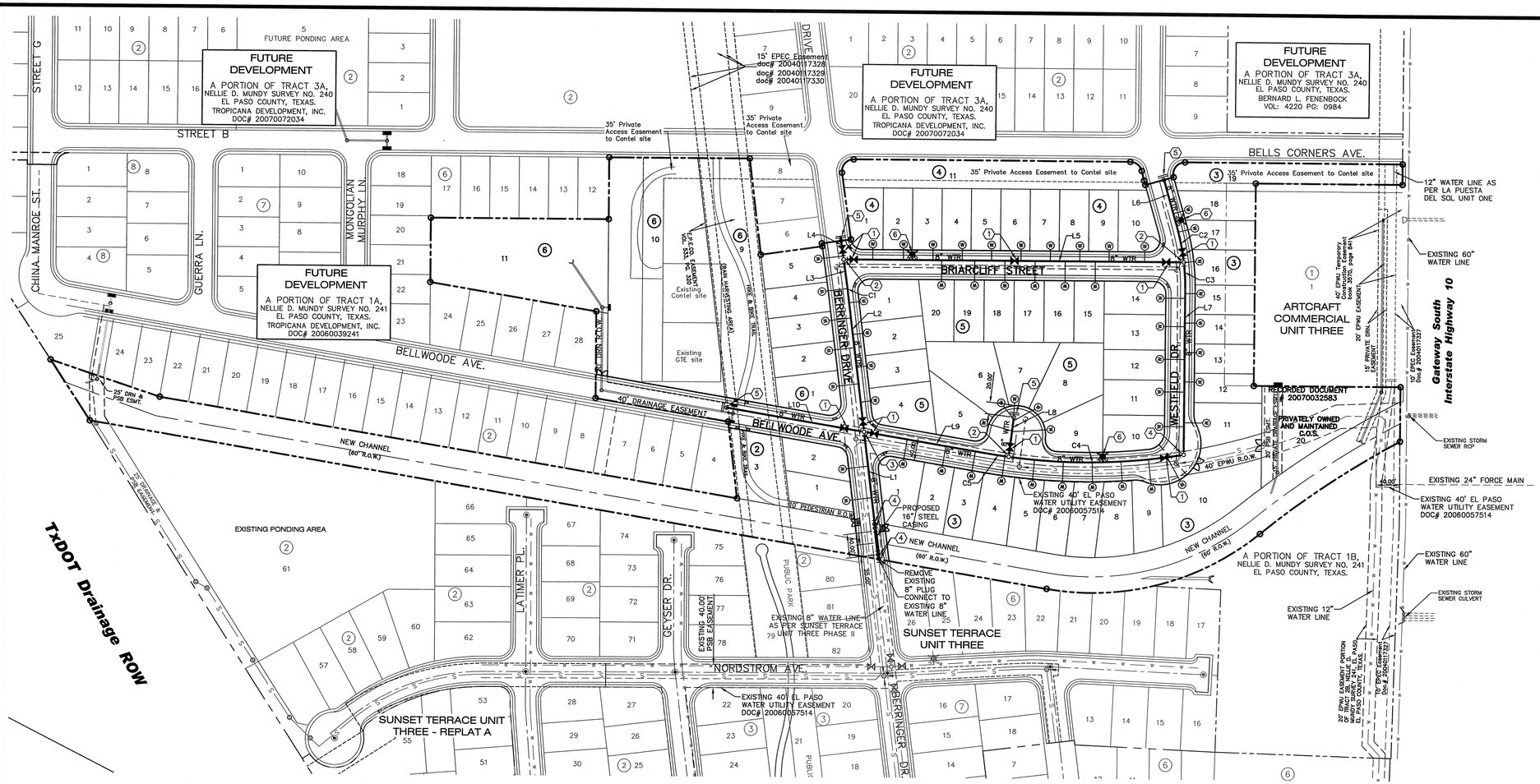


POLE LOCATION DETAIL

CEA GROUP

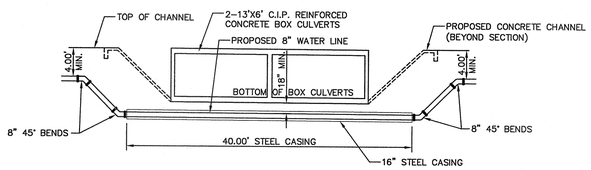
ILLUMINATION AND SIGNAGE PLAN

SCALE: 1" = 100'



CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	382.99'	7.28'	3.642	7.28'	N07°36'57"W	001°05'22"
C2	383.00'	60.77'	30.449	60.71'	N11°25'21"W	009°05'28"
C3	383.00'	46.47'	23.264	46.44'	N03°24'04"W	006°57'07"
C4	1002.00'	299.34'	150.795	298.23'	N88°51'41"E	017°07'01"
C5	1002.00'	37.25'	18.625	37.24'	S81°30'55"E	002°07'47"

LINE TABLE		
LINE	LENGTH	BEARING
L1	218.09'	S07°04'16"E
L2	240.47'	S07°04'16"E
L3	46.86'	S08°09'33"E
L4	32.07'	S08°09'34"E
L5	579.96'	S89°59'36"E
L6	83.92'	S15°58'05"E
L7	280.74'	N00°04'30"E
L8	67.96'	N06°57'45"E
L9	213.08'	S80°27'01"E
L10	238.34'	S80°27'01"E



WATER LINE–CHANNEL CROSSING DETAIL
SCALE: 1" = 10'

WATER KEYED NOTES	
1	8" ø GATE VALVE
2	8" X 8" X 8" TEE
3	8" X 8" CROSS
4	8" BEND
5	8" PLUG
6	FIRE HYDRANT

WATER INDEX MAP
SCALE: 1" = 100'

GENERAL NOTES

1. UNLESS OTHERWISE SHOWN ON THE DRAWINGS, THE PROPOSED WATER MAINS SHALL BE INSTALLED NO LESS THAN 10' AWAY FROM SEWER LINE. SEPARATION 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 48" OF COVER BELOW PROPOSED GROUND AT ALL LOCATIONS. THE PIPELINES SHALL HAVE NO DIPS, SAGS OR HUMPS OR OTHER IRREGULARITIES IN VERTICAL ALIGNMENT. CONSIDERING UTILITIES AND OTHER CONDITIONS, VARIANCE FROM GRADE PROFILE IS NOT RECOMMENDED IF OTHER EXISTING UTILITIES OR OBSTRUCTIONS ARE ENCOUNTERED DURING THE WORK. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO INSTALLING THE WATER MAIN 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 THE WORK WITH ALL UTILITY COMPANIES, EL PASO WATER UTILITIES, AND THE CITY OF EL PASO DEPARTMENT OF TRANSPORTATION 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 VALVE, FIRE HYDRANT, ELBOW, SERVICE CONNECTION AND/OR STUB–OUT, WITH RESPECT TO THE APPROPRIATE PROJECT CONTROL POINT.
6. EL PASO WATER UTILITIES AND THE CITY OF EL PASO MUST BE NOTIFIED 48 HOURS PRIOR TO COMMENCING ANY WORK IN AREAS WITHIN THEIR JURISDICTION. A COPY OF ALL FIELD SOIL DENSITY TESTS WITHIN THEIR RESPECTIVE R.O.W. SHALL BE FORWARDED TO THE DEVELOPER'S ENGINEER AND THE DEVELOPER BY THE CONTRACTOR.
7. EXISTING STREETS, DRIVEWAYS, SIGNS, AND ALL OTHER MISCELLANEOUS STRUCTURES DAMAGED OR REMOVED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO ORIGINAL OR BETTER THAN ORIGINAL CONDITION AT NO COST TO THE OWNER.
8. ALL WATER AND SEWER UTILITY WORK, INCLUDING TIE–INS SHALL BE CLOSELY COORDINATED WITH EL PASO WATER UTILITIES FIELD ENGINEERING AT LEAST 48 HOURS PRIOR TO COMMENCING ANY UTILITY WORK.
9. TRAFFIC CONTROL SHALL BE IN PLACE PRIOR TO INITIATING WORK.
10. CONSTRUCTION OF THE PUBLIC WATER AND SEWER SYSTEM INCLUDING MATERIALS AND TESTING, SHALL CONFORM WITH 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
4712 WOODROW BEAN, STE. F.
EL PASO, TX. 79924
(915) 544–5232
MR. JORGE L. AZCARATE, P.E.

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

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

WATER & SEWER:
EL PASO WATER UTILITIES
1154 HAWKINS BLVD #1
EL PASO, TX. 79925
(915) 594–5500
MR. FELIPE LOPEZ, P.E.

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

EL PASO STREETS
EL PASO STREETS DEPARTMENT.
7969 SAN PAULO DR.
EL PASO, TX. 79907
(915) 621–6750
MR. DARYL COLE

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

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

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

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

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

INDEX

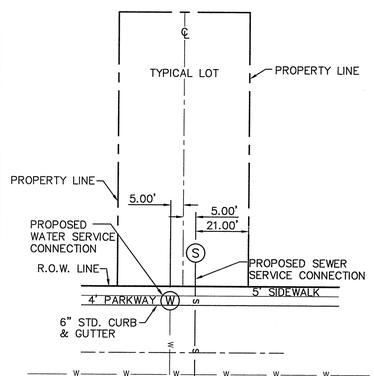
SHEET NO.	DESCRIPTION
C13.1	SUNSET TERRACE UNIT FOUR WATER MAIN PIPE LAYOUT
C13.2–C13.3	WATER LINE PLAN & PROFILE.
C13.4	WATER DETAILS
C13.5	WATER DETAILS
C13.6	WATER DETAILS
C13.7	WATER DETAILS

NOTES:

1. ALL SUNSET TERRACE UNIT FOUR SANITARY SEWER, WATER, AND DRAINAGE STRUCTURES SHALL BE BUILT CONCURRENTLY ACCORDING TO THE PLANS.
2. ALL LOTS SHALL BE PROVIDED WITH ONE SERVICE CONNECTION TO BE INSTALLED AT THE LOCATION AS SHOWN ON THE SERVICE LOCATION DETAIL.
3. ALL WATER LINES SHALL BE PVC C–900, DR 14, CLASS 305.
4. REFERENCE WATER DETAILS FOR TYPICAL VALVE AND WATER LOCATIONS AT STREET INTERSECTIONS.
5. REFERENCE SUNSET TERRACE UNIT THREE PHASE II FOR EXISTING WATER LINES ON BERRINGER DRIVE AND NORDSTROM AVE.
6. SUBDIVISION LOCATED ON INTERMEDIATE PRESSURE ZONE. PRESSURE REGULATORS ARE REQUIRED AT THE DISCHARGE SIDE OF ALL METERS.

LEGEND

SYMBOL	DESCRIPTION
8" WTR.	PROPOSED 8", C–900 P.V.C. PIPE CL 305
	SUBD. BOUNDARY LINE
	PROPERTY LINE
	CENTER LINE
8" SWR	PROPOSED SEWER LINE (PLAN VIEW)
	PROPOSED STORM SEWER
W	PROPOSED SERVICE CONNECTION (PLAN VIEW)
	PROPOSED FIRE HYDRANT, KENNEDY OR MUELLER MODEL
	PROPOSED 16" STEEL CASING
	PROPOSED 8" PLUG
	PROPOSED GATE VALVE
	POINT OF TANGENCY
	EXISTING GATE VALVE
	EXISTING FIRE HYDRANT
	EXISTING PLUG
P P P P P	EXISTING POLE LINE (CABLE, POWER & TELEPHONE)
S S	EXISTING SEWER LINE
FM FM	EXISTING FORCE MAIN
W W W	EXISTING WATER LINE



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

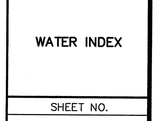
REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN ELEVATION = 3887.39 (NAVD 1988 DATUM) CONVERTED TO EPWU "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

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

ENGINEER'S SEAL



SCALE: Horizontal: 1"=100' Vertical: N/A Contour Interval: N/A
DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-10

PROJECT TITLE
SUNSET TERRACE UNIT FOUR SUBDIVSON IMPROVEMENTS

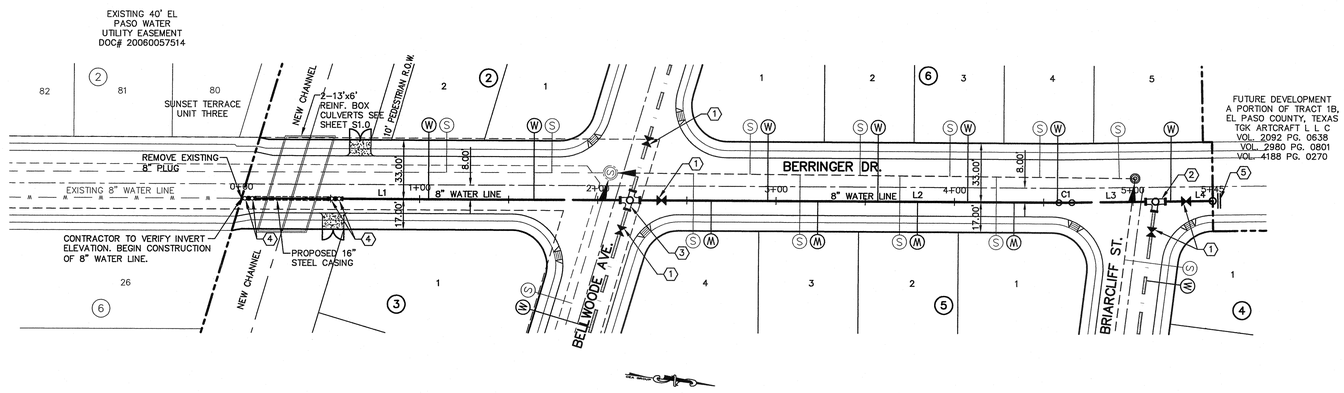
SHEET TITLE
WATER INDEX

SHEET NO.
C13.1

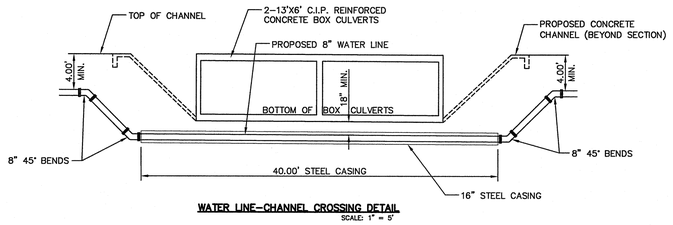
UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT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

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

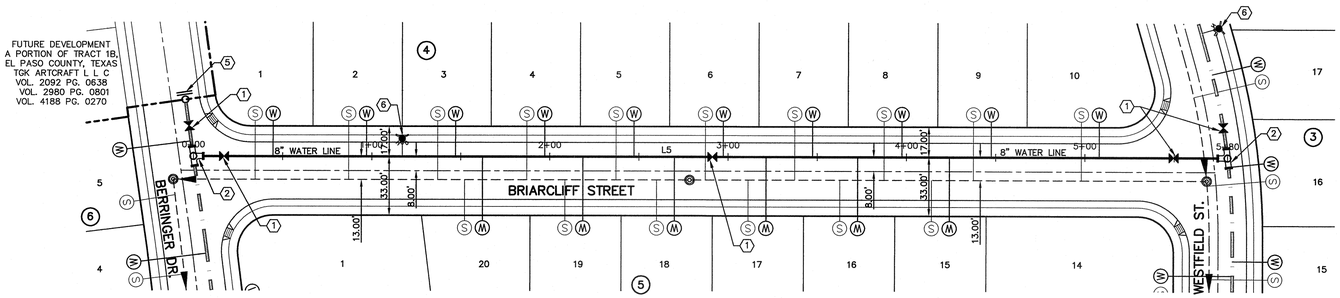
WATER KEYED NOTES	
1	8" ø GATE VALVE
2	8" X 8" X 8" TEE
3	8"X 8" CROSS
4	8" BEND
5	8" PLUG
6	FIRE HYDRANT



PLAN



WATER LINE-CHANNEL CROSSING DETAIL
SCALE: 1" = 5'



PLAN

LINE TABLE		
LINE	LENGTH	BEARING
L1	218.09'	S07°04'16"E
L2	240.47'	S07°04'16"E
L3	46.86'	S08°09'33"E
L4	32.07'	S08°09'34"E
L5	579.96'	S89°59'36"E
L6	83.92'	S15°58'05"E
L7	280.74'	N00°04'30"E
L8	67.96'	N06°57'45"E
L9	213.08'	S80°27'01"E
L10	238.34'	S80°27'01"E

LEGEND

SYMBOL	DESCRIPTION
— w — w —	EXISTING WATER LINE
	PROPERTY LINE
	SUBDIVISION BOUNDARY
	STREET R.O.W. LINE
8" WATER LINE	PROPOSED 8", C-900 P.V.C. PIPE
	PROPOSED SANITARY SEWER
S	PROPOSED SEWER SERVICE CONNECTION
W	PROPOSED WATER SERVICE CONNECTION
	EXISTING FIRE HYDRANT,
	PROPOSED FIRE HYDRANT, KENNEDY OR MUELLER MODEL
	EXISTING GATE VALVE
	PROPOSED GATE VALVE
	TEE
	CROSS
	BEND(S)
	PLUG
	POINT OF TANGENCY

REFERENCES - BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN ELEVATION = 3887.39 (CITY DATUM) STATE BENCHMARK AT HUGHEY "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

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

ENGINEER'S SEAL

STATE OF TEXAS
JORGE L. AZCARATE
85075
REGISTERED
ENGINEER
11-14-11

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

DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-LD

PROJECT TITLE

SUNSET TERRACE
UNIT FOUR
SUBDIVISON IMPROVEMENTS

SHEET TITLE

WATER LINE PLAN
BERRINGER DRIVE
BRIARCLIFF STREET
BELLS CORNERS AVE

SHEET NO.

C13.2

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

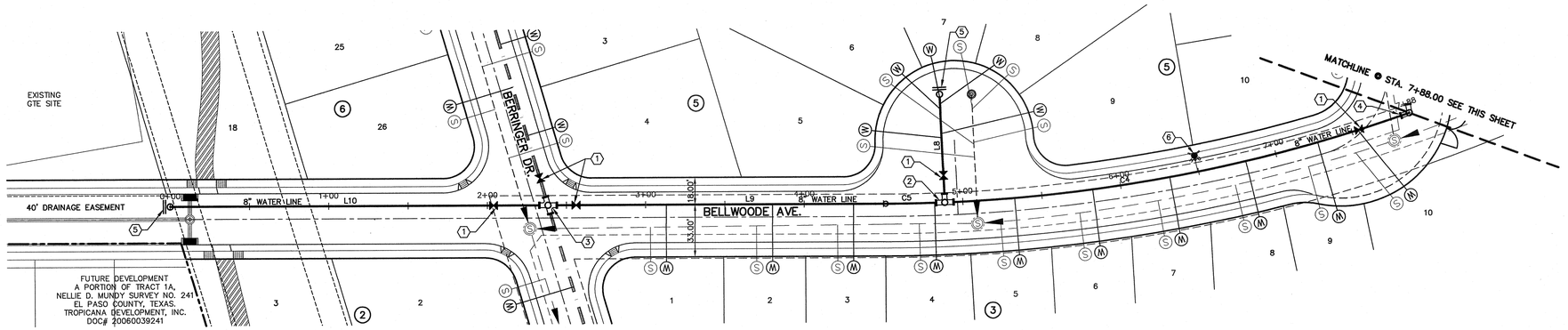
WARNING ! BEFORE YOU DIG

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

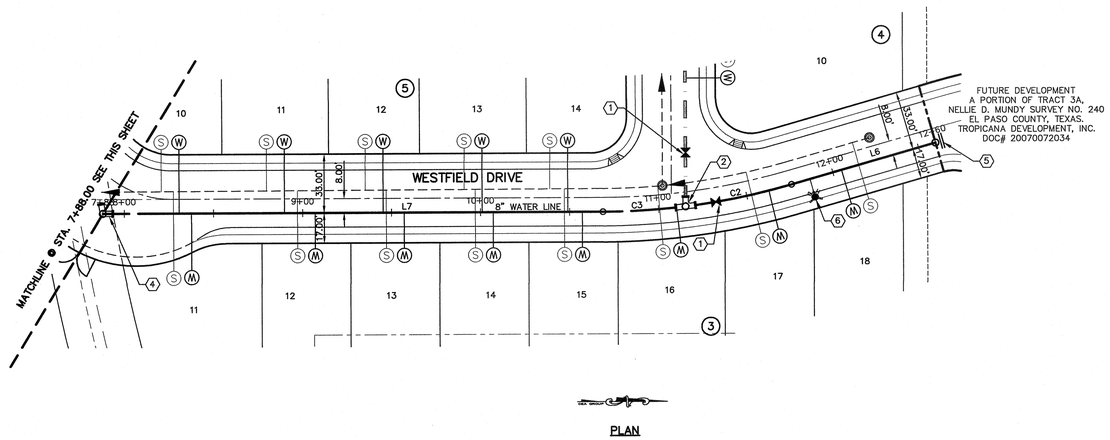
REFERENCES - BENCHMARKS

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

DATE	REVISIONS	BY



PLAN



PLAN

WATER KEYED NOTES	
1	8" ø GATE VALVE
2	8" X 8" X 8" TEE
3	8"X 8" CROSS
4	8" BEND
5	8" PLUG
6	FIRE HYDRANT

LINE TABLE		
LINE	LENGTH	BEARING
L1	218.09'	S07°04'16"E
L2	240.47'	S07°04'16"E
L3	46.86'	S08°09'33"E
L4	32.07'	S08°09'34"E
L5	579.96'	S89°59'36"E
L6	83.92'	S15°58'05"E
L7	280.74'	N00°04'30"E
L8	67.96'	N06°57'45"E
L9	213.08'	S80°27'01"E
L10	238.34'	S80°27'01"E

LEGEND

SYMBOL	DESCRIPTION
— W — W —	EXISTING WATER LINE
	PROPERTY LINE
	SUBDIVISION BOUNDARY
	STREET R.O.W. LINE
8" WATER LINE	PROPOSED 8", C-900 P.V.C. PIPE
	PROPOSED SANITARY SEWER
S	PROPOSED SEWER SERVICE CONNECTION
W	PROPOSED WATER SERVICE CONNECTION
	EXISTING FIRE HYDRANT,
	PROPOSED FIRE HYDRANT, KENNEDY OR MUELLER MODEL
	EXISTING GATE VALVE
	PROPOSED GATE VALVE
	TEE
	CROSS
	BEND(S)
	PLUG
	POINT OF TANGENCY

eaa group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5222 Fax: 915.544.5233 www.eaagroup.net

ENGINEER'S SEAL

STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER

SCALE	
Horizontal:	1"=40'
Vertical:	1"=5'
Contour Interval:	N/A
DATE:	OCTOBER 2011
DESIGN BY:	J.G.
DRAWN BY:	A.B.
CHKD. BY:	J.L.A.
APPVD. BY:	J.L.A.
JOB No.	2000-123-LD

PROJECT TITLE

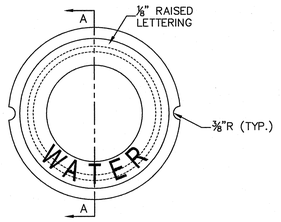
SUNSET TERRACE UNIT FOUR SUBDIVISON IMPROVEMENTS

SHEET TITLE

WATER LINE PLAN BELLWOODE AVE. WESTFIELD DR.

SHEET NO.

C13.3



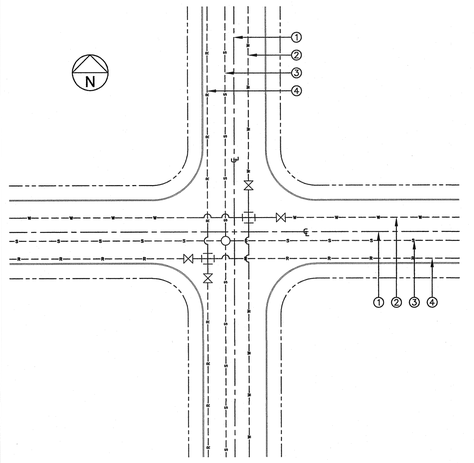
SECTION A–A

GENERAL NOTES:
1. CASTINGS TO SMOOTH AND VOID OF AIR HOLES.
2. WEIGHT OF COVER IS 10 POUNDS.

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

STANDARD DETAIL	DATE: 2/1994 REV: 11/1/2007	BONNET BOX COVER N.T.S.	EL PASO WATER UTILITIES PUBLIC SERVICE BOARD	DETAIL No. 269–1

1 / C13.4 BONNET BOX COVER
N.T.S.



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

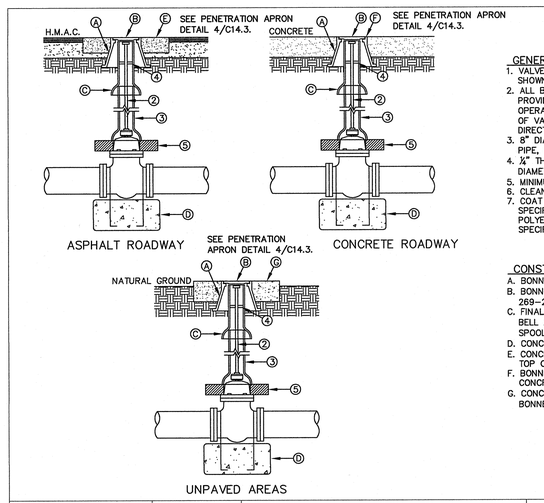
CONSTRUCTION KEY NOTES:
A. DISTANCES FROM CENTERLINE VARY AND SHALL BE ACCORDING TO THE FOLLOWING:

PIPELINE LOCATION WITHIN NEW RIGHT–OF–WAY			
RIGHT–OF–WAY WIDTH*	OFFSET FROM CENTERLINE**		
	WATER	SEWER	RECLAIMED
36 FT.	9 FT.	1 FT.	6 FT.
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 UTILITIES PUBLIC SERVICE BOARD	DETAIL No. 140

2 / C13.4 LOCATION FOR UTILITY LINES
N.T.S.



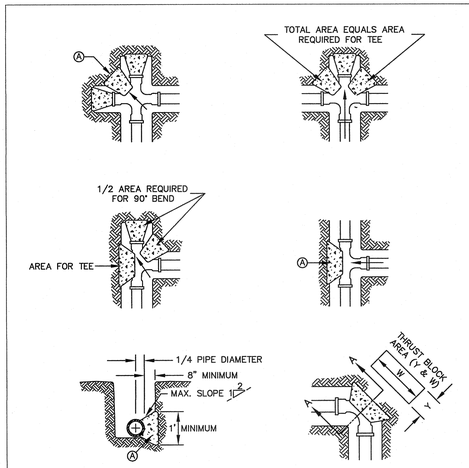
GENERAL NOTES:
1. VALVE TYPE AND VALVE ENDS SHALL BE AS SHOWN ON THE PLANS.
2. ALL BURIED VALVES 5' AND DEEPER SHALL BE PROVIDED WITH SOLID STEEL EXTENSION STEM OPERATOR WITH 2" SQUARE AWWA NUT WITHIN 36" OF VALVE BOX COVER. NUT IS TO INDICATE DIRECTION OF ROTATION TO OPEN VALVE.
3. 8" DIA. MINIMUM VITRIFIED 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 ¾".
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.

* SEE PENETRATION DETAIL 4/C14.3.

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

3 / C13.4 GATE VALVE INSTALLATION
N.T.S.



SECTION "A"

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

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

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

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

4 / C13.4 CONCRETE THRUST BLOCKING
N.T.S.

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & MONTWOOD DRIVE. ELEVATION = 3937.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

oea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-454
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5232 Fax: 915.544.5233 www.oeagroup.net

ENGINEER'S SEAL

JORGE AZCARATE 85075 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS

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

DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000–123–LD

PROJECT TITLE

SUNSET TERRACE
UNIT FOUR
SUBDIVISON IMPROVEMENTS

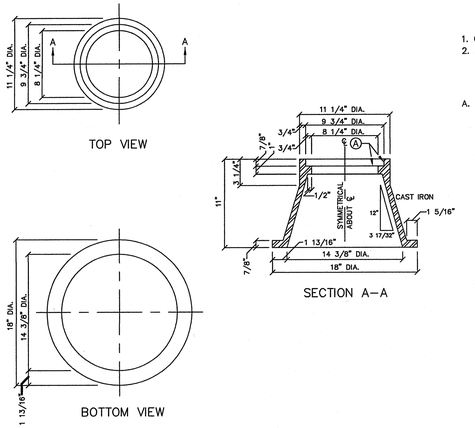
SHEET TITLE

WATER DETAILS

(SHEET 1 OF 4)

SHEET NO.

C13.4



GENERAL NOTES:

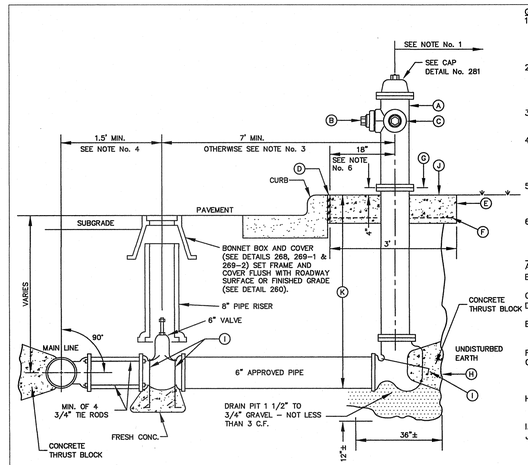
1. CASTING TO BE SMOOTH AND VOID OF AIR HOLES.
2. WEIGHT OF BONNET BOX IS 95 POUNDS.

CONSTRUCTION KEY NOTES:

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

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

1 C13.5 **BONNET BOX** N.T.S.



GENERAL NOTES:

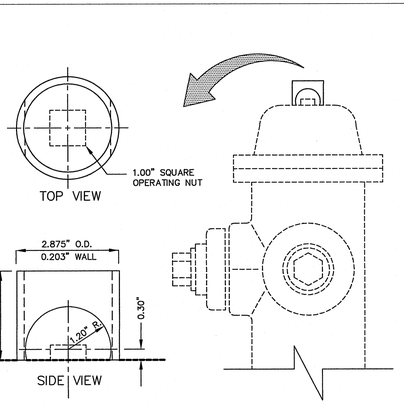
1. NO OBSTRUCTIONS WILL BE PERMITTED WITHIN 5 FT. IN ALL DIRECTIONS OF FIRE HYDRANT (PER EL PASO MUNICIPAL CODE, TITLE 12). FIRE HYDRANT SHALL NOT BE PLACED IN WHEEL CHAIR RAMP OR DRIVEWAY.
2. FIRE HYDRANT SHALL BE LOCATED AT THE BEGINNING OF CURB RETURN OR AT THE PROPERTY LINE COMMON TO ADJOINING LOTS, 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 4½" 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. CONTRACTOR IS TO PROVIDE ADDITIONAL SPOOLS IF NEEDED TO MAINTAIN THE 4' MIN. CLEARANCE FROM THE CONTROLLED ELEV. LINE TO TOP OF SLAB.

STANDARD DETAIL	DATE: 2/1993 REV: 8/11/2009	FIRE HYDRANT INSTALLATION N.T.S.	EL PASO WATER UTILITIES PUBLIC SERVICE BOARD	DETAIL No. 280–1

2 C13.5 **FIRE HYDRANT INSTALLATION** N.T.S.

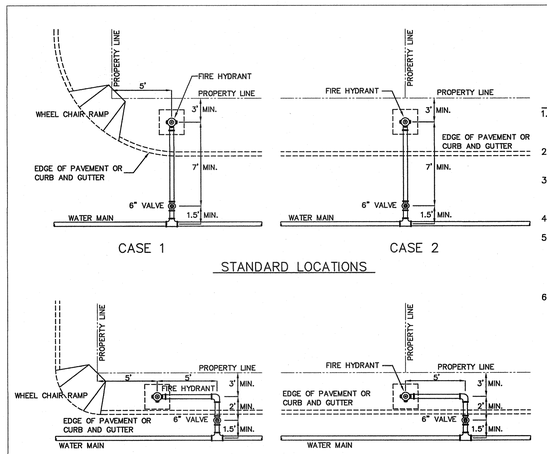


GENERAL NOTES:

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

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

3 C13.5 **FIRE HYDRANT CAP** N.T.S.



GENERAL NOTES:

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

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

4 C13.5 **FIRE HYDRANT LOCATIONS** N.T.S.

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTH ZARAGOSA ROAD, STAMPED 39 (CITY DATUM) THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office 915.544.4222 Fax 915.544.3233 www.ceagroup.net

ENGINEER'S SEAL

STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER

SCALE	
Horizontal:	N/A
Vertical:	N/A
Contour Interval:	N/A
DATE:	OCTOBER 2011
DESIGN BY:	J.G.
DRAWN BY:	A.B.
CHKD. BY:	J.L.A.
APPVD. BY:	J.L.A.
JOB No.	2000–123–LD

PROJECT TITLE

SUNSET TERRACE
UNIT FOUR
SUBDIVISON IMPROVEMENTS

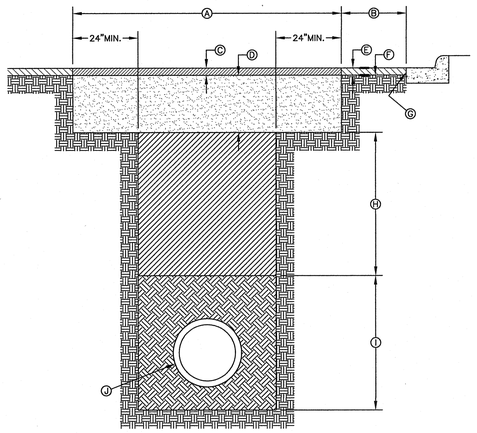
SHEET TITLE

WATER DETAILS

(SHEET 2 OF 4)

SHEET NO.

C13.5

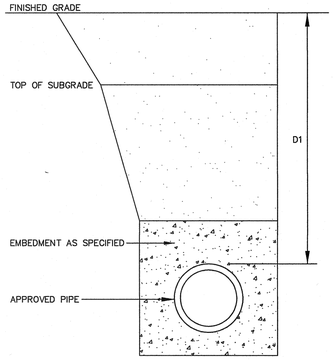


GENERAL NOTES:
1. ALL ASPHALT CUTS MUST BE SAW CUT.
2. SOIL CEMENT SLURRY SHALL BE ALLOWED TO CURE BEFORE PAVING OR OPENING TO ALL TRAFFIC.

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

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

1 C13.6 PAVEMENT REPLACEMENT
N.T.S.



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

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

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

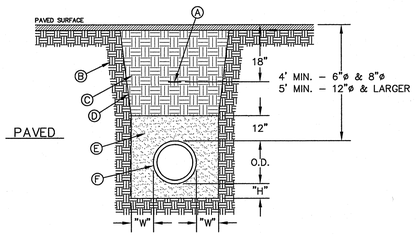
CONDITION B – NEW SUBDIVISIONS, NON-PAVED AREA

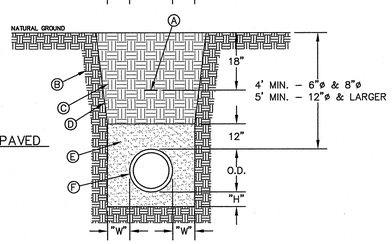
AND SHALL BE AS FOLLOWS.

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

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

2 C13.6 COVER FOR WATER MAINS
N.T.S.





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

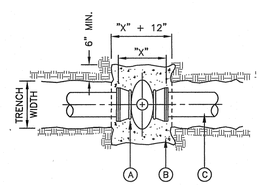
CONSTRUCTION KEY NOTES:
A. APPROVED MARKING TAPE.
B. UNDISTURBED STABLE MATERIAL.
C. NATIVE MATERIAL BACKFILL.
PAVED CONDITION: COMPACT TO 90% DENSITY PER ASTM D-1557 MODIFIED PROCTOR.
UNPAVED CONDITION: COMPACT TO 85% DENSITY PER ASTM D-1557 MODIFIED PROCTOR.
(*SEE NOTE #3 IF THESE PREVIOUS CONDITIONS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

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

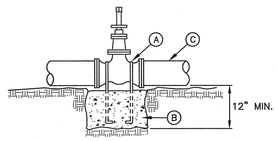
PIPE DIAMETER	"W"
6" – 30"	8"
GREATER THAN 30"	12"

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

3 C13.6 BEDDING CLASS DETAILS FOR FOR P.V.C. PRESSURE PIPE
SCALE: N.T.S.



PLAN



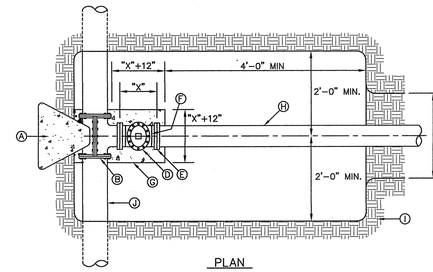
SECTION

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.

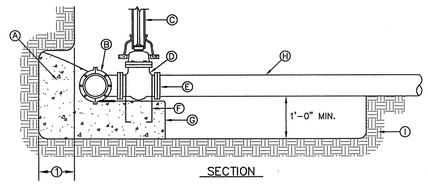
CONSTRUCTION KEY NOTES:
A. TWO No. 5 REBAR HAIR PINS. PAINT UNEMBEDDED PORTION OF REBARS WITH TWO COATS OF COAL TAR EPOXY.
B. CONCRETE VALVE SUPPORT, 2500 PSI. CONCRETE.
C. APPROVED PIPE.

STANDARD DETAIL	DATE: 2/1994 REV: 8/9/2006	VALVE ANCHOR N.T.S.	EL PASO WATER UTILITIES PUBLIC SERVICE BOARD	DETAIL No. 271

4 C13.6 VALVE ANCHOR
N.T.S.



PLAN



SECTION

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

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

STANDARD DETAIL	DATE: 9/1994 REV: 8/9/2006	TAPPING SLEEVE AND VALVE INSTALLATION N.T.S.	EL PASO WATER UTILITIES PUBLIC SERVICE BOARD	DETAIL No. 266

5 C13.6 TAPPING SLEEVE AND VALVE INSTALLATION
N.T.S.

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE AND MESA STREET, ELEVATION = 3937.79 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

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

ENGINEER'S SEAL

STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER

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

DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-10

PROJECT TITLE

SUNSET TERRACE
UNIT FOUR
SUBDIVISON IMPROVEMENTS

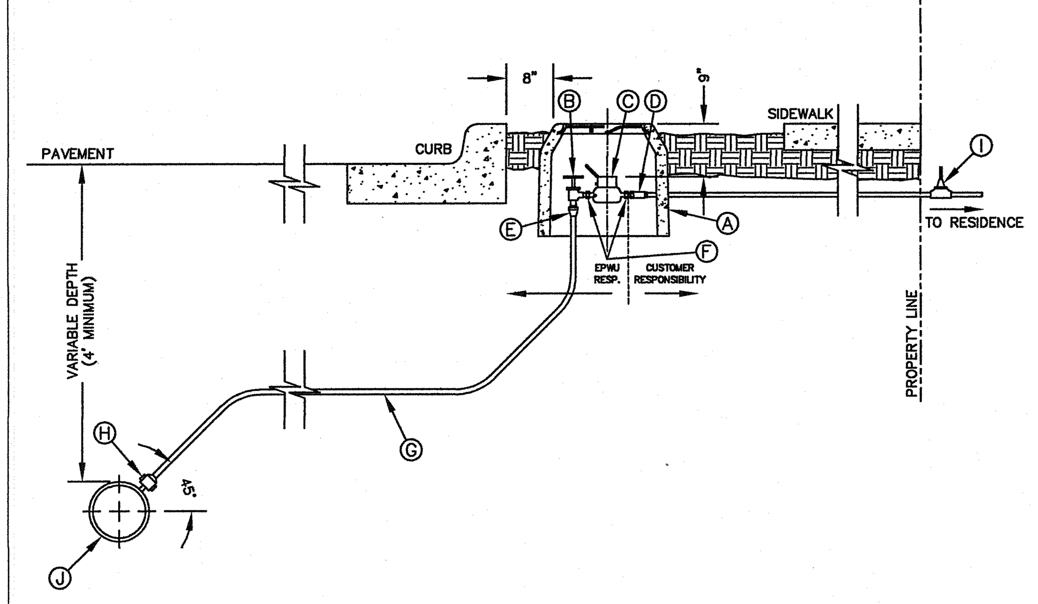
SHEET TITLE

WATER DETAILS

(SHEET 3 OF 4)

SHEET NO.

C13.6



GENERAL NOTES:

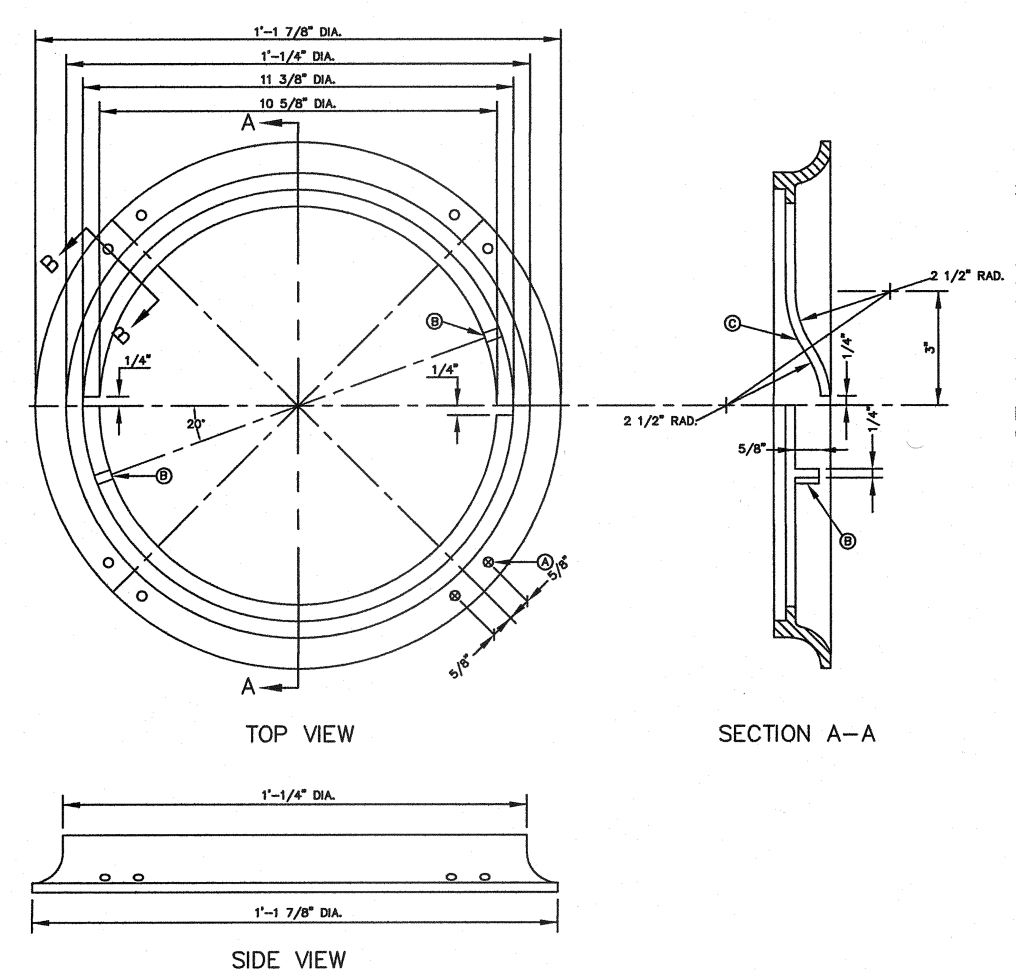
1. DETAIL SHOWN FOR A 3/4" SERVICE, 1" SERVICE INSTALLATION IS SIMILAR EXCEPT FOR SIZES OF PIPE, FITTING, METER AND BOX (TYPE "B").
2. WHERE NO CURB EXISTS, METER IS TO BE SET NEAR PROPERTY LINE OR AT DESIGNATED LOCATION.
3. THE EPWU WILL FURNISH AND INSTALL ALL NECESSARY PIPE, FITTINGS, METER BOXES, AND METERS 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.

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.
H. 5/8" X 3/4" CORPORATION STOP
I. PRESSURE REGULATOR SOMETIMES LOCATED NEAR THE RESIDENCE.
J. WATER MAIN

STANDARD DETAIL	DATE: 12/1994 REV: 5/2/2007	SERVICE LINE ¾" AND 1" INSTALLATION BY EPWU N.T.S.	EL PASO WATER UTILITIES PUBLIC SERVICE BOARD	DETAIL No. 290-1

1 / C13.7 TYPICAL 3/4" SERVICE LINE INSTALLATION
N.T.S.

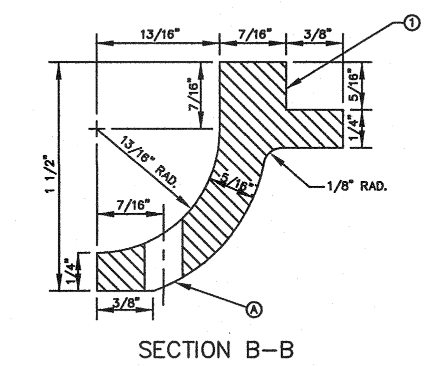


GENERAL NOTES:

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.

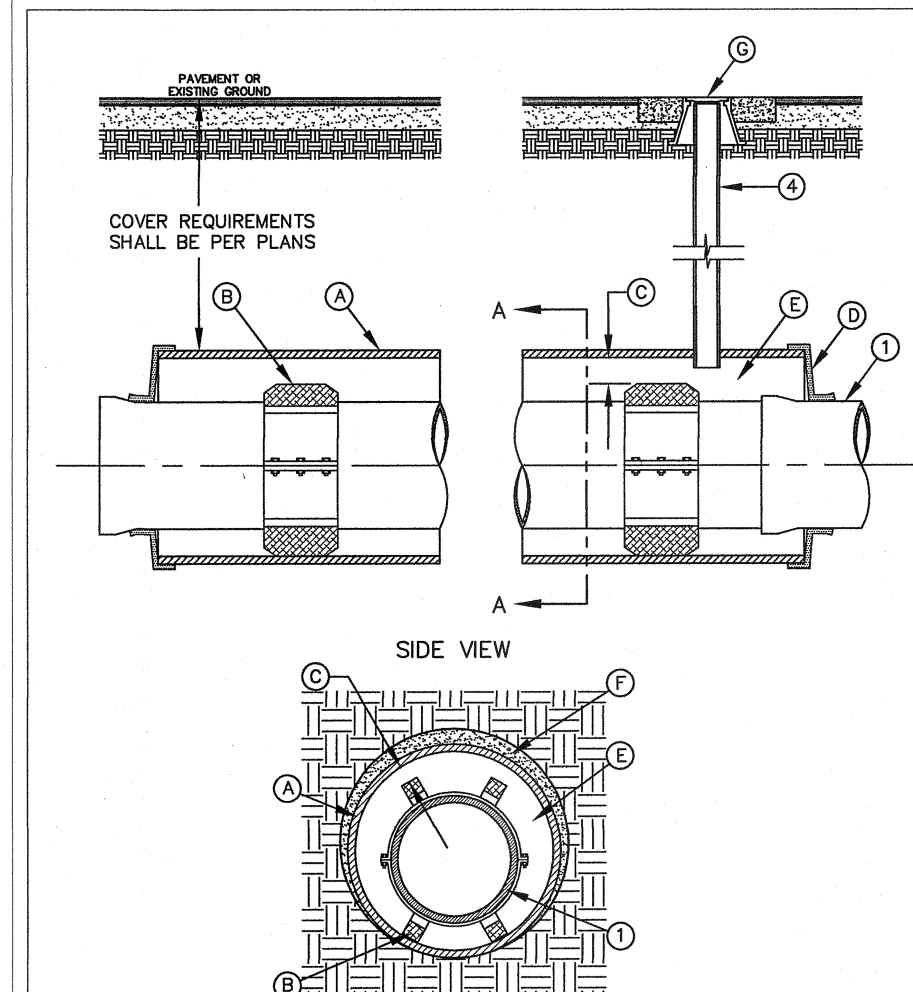
CONSTRUCTION KEY NOTES:

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 UTILITIES PUBLIC SERVICE BOARD	DETAIL No. 300

2 / C13.7 TYPE "A" & "B" METER BOX RING
N.T.S.



GENERAL NOTES:

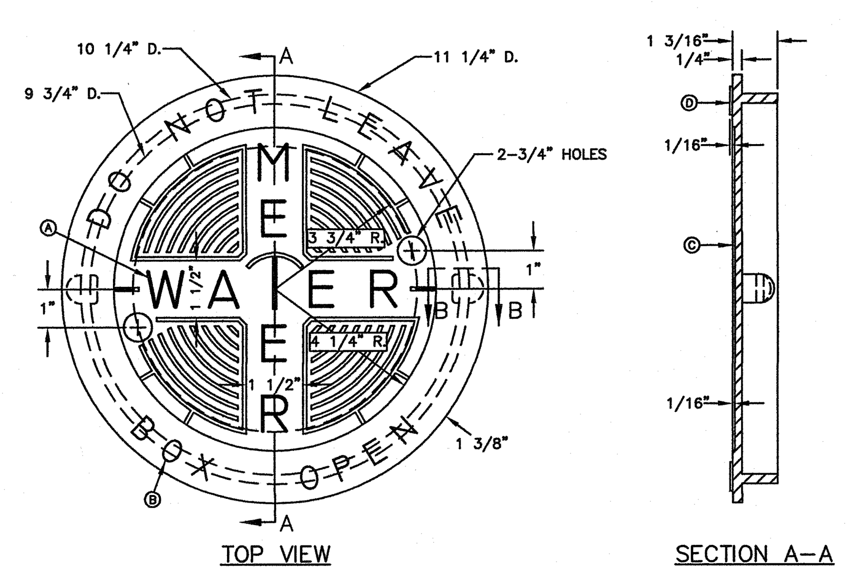
1. INSTALLATION FOR APPROVED CARRIER PIPE.
2. CASING SHALL BE INSTALLED USING EITHER JACKING, BORING OR TUNNELING METHODS FROM THE END WHICH CREATES A MINIMUM OF ACCESS AND RELOCATION PROBLEMS.
3. INSULATED SPACERS SHALL BE USED WHEN SPECIFIED, TO PROVIDE CORROSION PROTECTION.
4. PRECAUTIONARY OUTLET (6") WITH BONNET BOX AND COVER SHALL BE USED WHEN REQUIRED BY OTHER GOVERNING AGENCIES.

CONSTRUCTION KEY NOTES:

A. STEEL CASING MINIMUM YIELD 35000 PSI, SIZE AND LENGTH AS SPECIFIED.
B. CASING INSULATORS, SPACING AND LOCATION PER MANUFACTURES RECOMMENDATIONS. INSULATORS SHALL FIT SNUG OVER THE CARRIER PIPE.
C. POSITION CARRIER PIPE APPROXIMATELY IN CENTER OF CASING. MINIMUM SPACING BETWEEN INSULATOR AND CARRIER PIPE SHALL BE 1", MAXIMUM SPACING SHALL BE 2".
D. END SHALL BE SEALED WITH BRICK AND MORTAR, BULKHEAD AND GROUT, OR WITH SYNTHETIC RUBBER SEAL, AS SPECIFIED.
E. ANNULAR SPACE SHALL BE LEFT OPEN FOR CATHODICALLY PROTECTED SYSTEM WHERE BOTH CASING AND CARRIER PIPE ARE METALLIC MATERIAL, OR AS OTHERWISE SPECIFIED.
F. PRESSURE GROUT ANNULAR SPACE OUTSIDE CASING AFTER CASING IS INSTALLED.
G. BONNET BOX AND COVER (SEE DETAILS 268, 269-1 & 269-2) SET FRAME AND COVER FLUSH WITH ROADWAY SURFACE OR FINISHED GRADE (SEE DETAIL 260).

STANDARD DETAIL	DATE: 3/1994 REV: 6/24/2010	CARRIER PIPE INSTALLATION WITH CASING INSULATORS N.T.S.	EL PASO WATER UTILITIES PUBLIC SERVICE BOARD	DETAIL No. 180

3 / C13.7 PIPE CASING DETAIL
N.T.S.

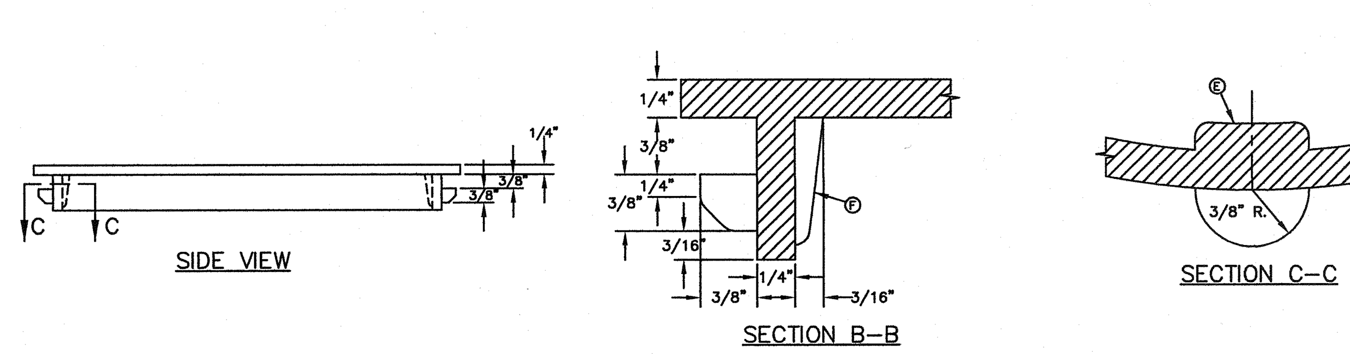


GENERAL NOTES:

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.

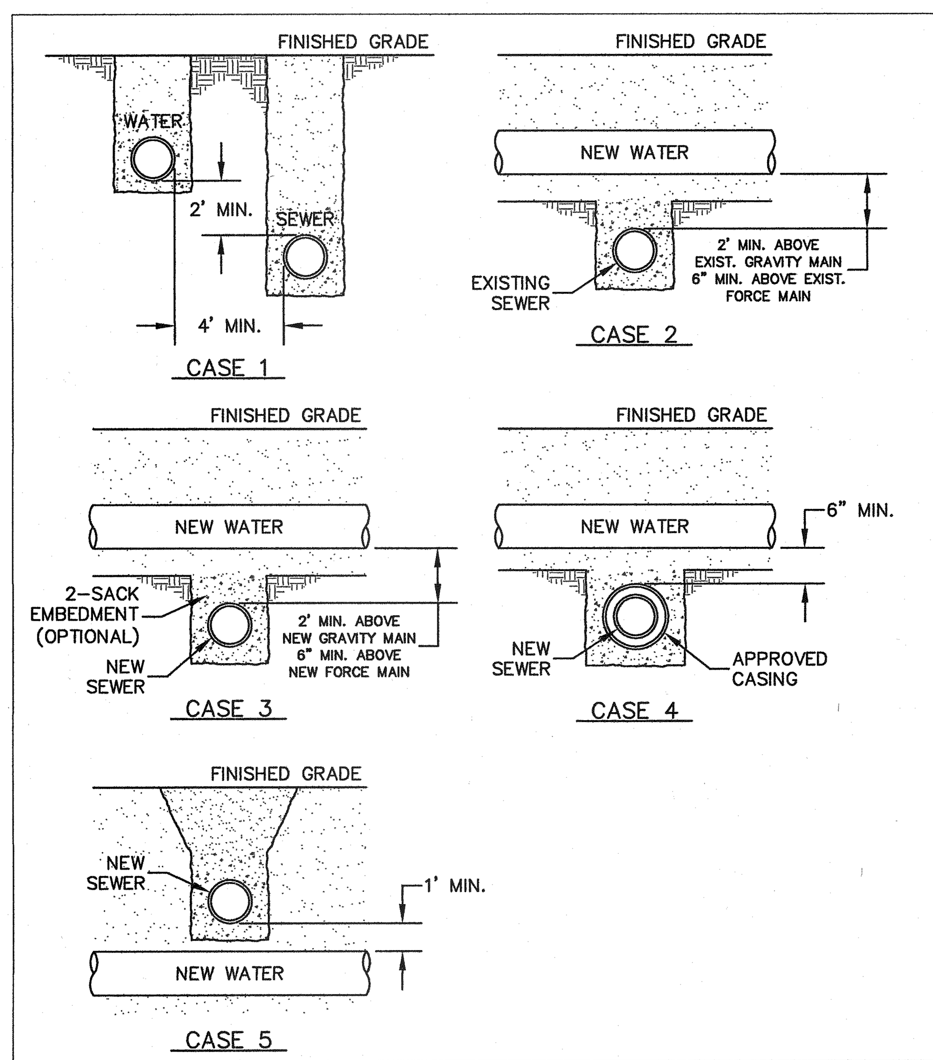
CONSTRUCTION KEY NOTES:

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 UTILITIES PUBLIC SERVICE BOARD	DETAIL No. 301

4 / C13.7 TYPE "A" & "B" METER BOX COVER
N.T.S.



GENERAL NOTES:

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

CONSTRUCTION KEY NOTES

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

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

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

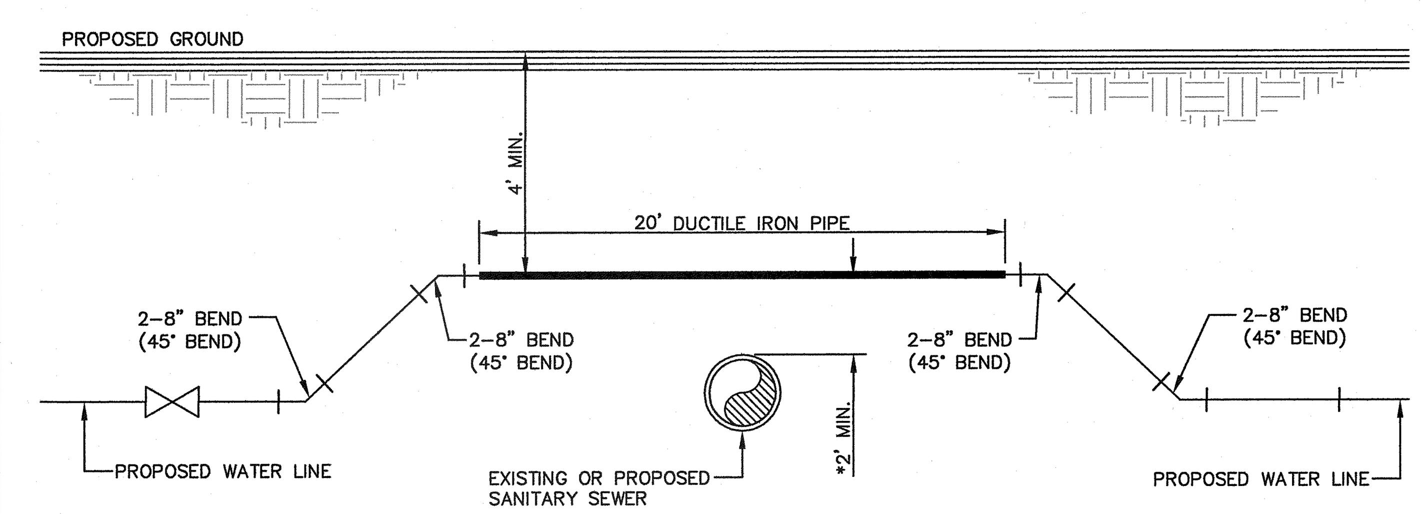
CASE 3. NEW POTABLE WATER MAIN CROSSING NEW GRAVITY SANITARY SEWER MAIN OR NEW FORCE MAIN (PER TCEQ §290.44(e)(4)(B)(iii), §290.44(e)(4)(B)(v) AND §290.44(e)(4)(B)(iv)(I).
- LOCATION: WATER ABOVE SEWER OR FORCE MAIN.
- SEWER MATERIALS: NEW GRAVITY MAIN - PVC (150 PSI) or DI REQUIRED, CENTER UNDER WATER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

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

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

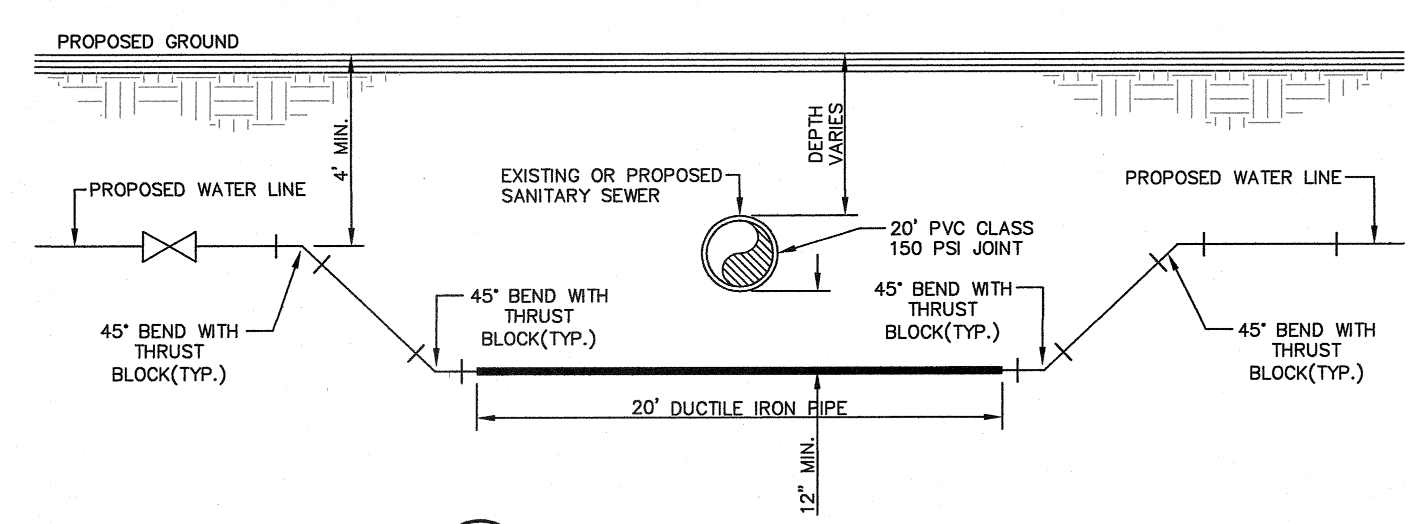
STANDARD DETAIL	DATE: 8/3/2006 REV: 8/21/2007	SEPARATION DISTANCE SANITARY SEWER AND POTABLE WATER (SPECIAL CONDITIONS) N.T.S.	EL PASO WATER UTILITIES PUBLIC SERVICE BOARD	DETAIL No. 161

5 / C13.7 TYPE "A" & "B" METER BOX RING
N.T.S.



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

6 / C13.7 SANITARY SEWER CROSSING WATER LINE DETAIL
N.T.S.



7 / C13.7 SANITARY SEWER CROSSING WATER LINE DETAIL
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
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5232 Fax: 915.544.5233 www.ceagroup.net

ENGINEER'S SEAL
STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER
10/06/11

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

DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-LD

PROJECT TITLE

SUNSET TERRACE UNIT FOUR SUBDIVISON IMPROVEMENTS

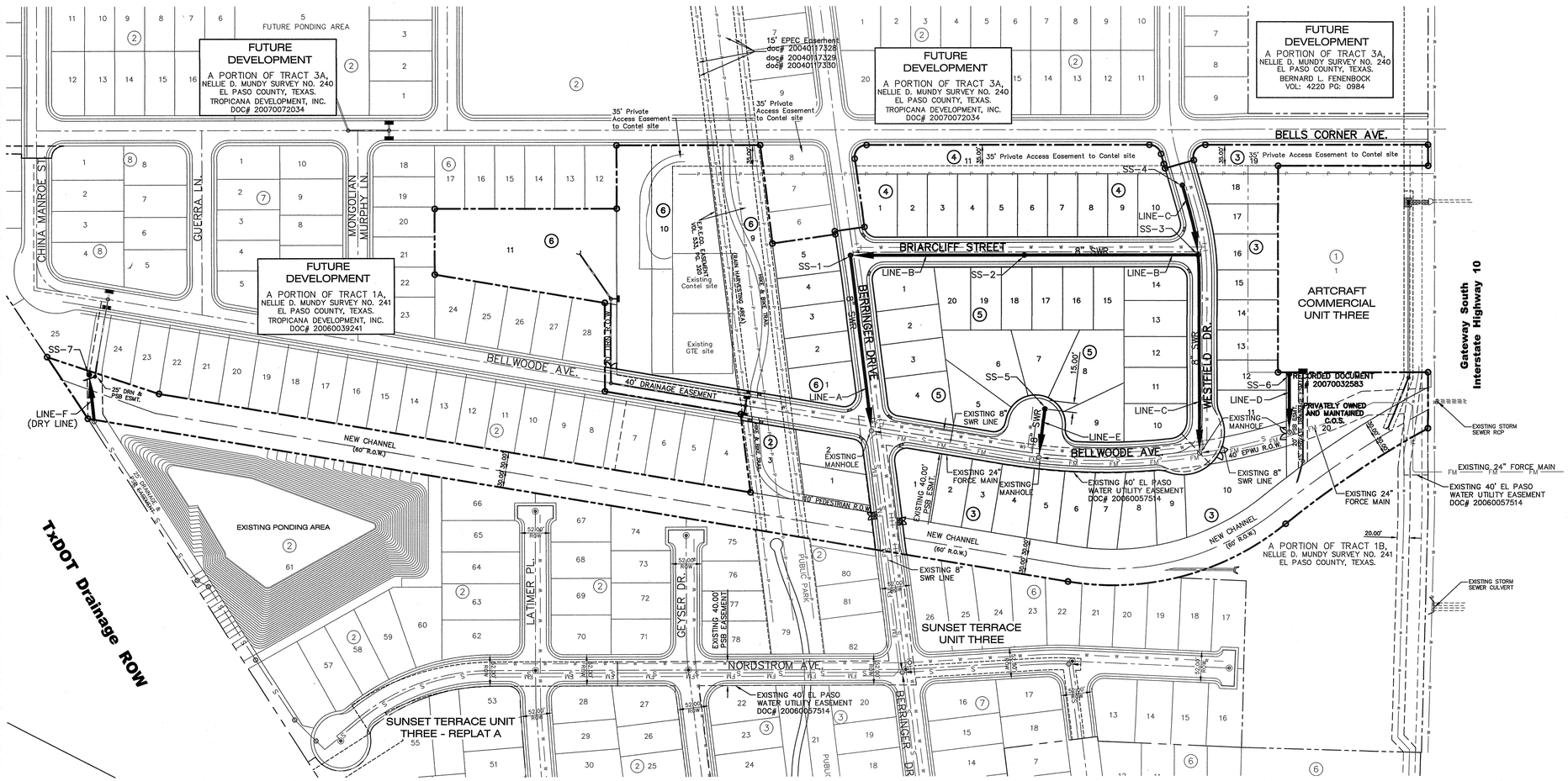
SHEET TITLE

WATER DETAILS

(SHEET 4 OF 4)

SHEET NO.

C13.7



INDEX

SHEET NO.	DESCRIPTION
C14.1	SUNSET TERRACE UNIT FOUR SANITARY PIPE LAYOUT
C14.2–C14.3	SANITARY SEWER PLAN & PROFILE.
C14.4	SANITARY DETAILS
C14.5	SANITARY DETAILS
C14.6	SANITARY DETAILS

NOTES:

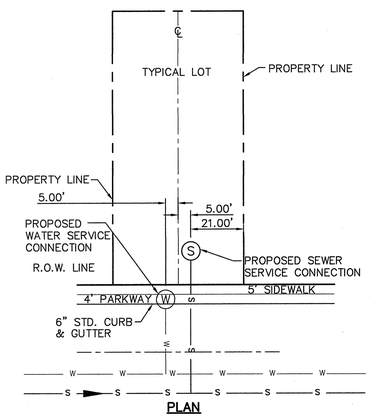
1. ALL SUNSET TERRACE UNIT FOUR SANITARY SEWER, WATER, AND DRAINAGE STRUCTURES SHALL BE BUILT CONCURRENTLY ACCORDING TO THE PLANS.
2. ALL LOTS SHALL BE PROVIDED WITH ONE SERVICE CONNECTION TO BE INSTALLED AT THE LOCATION AS SHOWN ON THE SERVICE LOCATION DETAIL.
3. ALL SANITARY SEWER PIPES SHALL BE PVC, SDR 35, (D 3034), UNLESS OTHERWISE SHOWN.
4. REFERENCE SUNSET TERRACE UNIT THREE FOR EXISTING SANITARY SEWER LINES ON BERRINGER DRIVE AND NORDSTROM AVE.

LEGEND

SYMBOL	DESCRIPTION
—W—W—W—	PROPOSED WATER LINE
	SUBD. BOUNDARY LINE
	PROPERTY LINE
	CENTER LINE
8" SWR	PROPOSED SEWER LINE (PLAN VIEW)
	PROPOSED SEWER LINE ON ANOTHER SHEET (PLAN VIEW)
P.V.C. @ 0.33%	PROPOSED SEWER LINE (PROFILE VIEW)
Q=311 GPM	PROPOSED STORM SEWER
	PROPOSED MANHOLE (PLAN VIEW)
	PROPOSED 8" CAP
S	PROPOSED SERVICE CONNECTION (PLAN VIEW)
—P—P—P—P—P—	EXISTING POLE LINE (CABLE, POWER & TELEPHONE)
—S—S—	EXISTING SEWER LINE
—FM—FM—	EXISTING FORCE MAIN
—W—W—W—	EXISTING WATER LINE
S	EXISTING MANHOLE

PROPOSED MANHOLE (PROFILE VIEW)

EXISTING MANHOLE (PROFILE VIEW)



PLAN

SERVICE LOCATION DETAIL

SCALE: N.T.S.

GENERAL NOTES

1. UNLESS OTHERWISE SHOWN ON THE DRAWINGS, THE PROPOSED SEWER MAINS AND SEWER MANHOLES SHALL BE INSTALLED NO LESS THAN 10' AWAY FROM WATER LINE. SEPARATION 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 60" 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 THE WORK WITH ALL UTILITY COMPANIES, EL PASO WATER UTILITIES, AND THE CITY OF EL PASO DEPARTMENT OF TRANSPORTATION 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. EL PASO WATER UTILITIES AND THE CITY OF EL PASO MUST BE NOTIFIED 48 HOURS PRIOR TO COMMENCING ANY WORK IN AREAS WITHIN THEIR JURISDICTION. A COPY OF ALL FIELD SOIL DENSITY TESTS WITHIN THEIR RESPECTIVE R.O.W. SHALL BE FORWARDED TO THE DEVELOPER'S ENGINEER AND THE DEVELOPER BY THE CONTRACTOR.
7. EXISTING STREETS, DRIVEWAYS, SIGNS, AND ALL OTHER MISCELLANEOUS STRUCTURES DAMAGED OR REMOVED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO ORIGINAL OR BETTER THAN ORIGINAL CONDITION AT NO COST TO OWNER.
8. ALL WATER AND SEWER UTILITY WORK, INCLUDING TIE–INS SHALL BE CLOSELY COORDINATED WITH EL PASO WATER UTILITIES FIELD ENGINEERING AT LEAST 48 HOURS PRIOR TO COMMENCING ANY UTILITY WORK.
9. TRAFFIC CONTROL SHALL BE IN PLACE PRIOR TO INITIATING WORK.
10. CONSTRUCTION OF THE PUBLIC WATER AND SEWER SYSTEM INCLUDING MATERIALS AND TESTING, SHALL CONFORM WITH 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
4712 WOODROW BEAN, STE. F.
EL PASO, TX. 79924
(915) 544–5232
MR. JORGE L. AZCARATE, P.E.

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

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

WATER & SEWER:
EL PASO WATER UTILITIES
1154 HAWKINS BLVD #1
EL PASO, TX. 79925
(915) 594–5500
MR. FELIPE LOPEZ, P.E.

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

EL PASO STREETS
EL PASO STREETS DEPARTMENT.
7969 SAN PAULO DR.
EL PASO, TX. 79907
(915) 621–6750
MR. DARYL COLE

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

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

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

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

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

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE AND PATRIOTS FREEWAY. (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

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

ENGINEER'S SEAL

JORGE L. AZCARATE 85075

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

DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000–123–LD

PROJECT TITLE

SUNSET TERRACE UNIT FOUR SUBDIVISON IMPROVEMENTS

SHEET TITLE

SANITARY SEWER INDEX

SHEET NO.

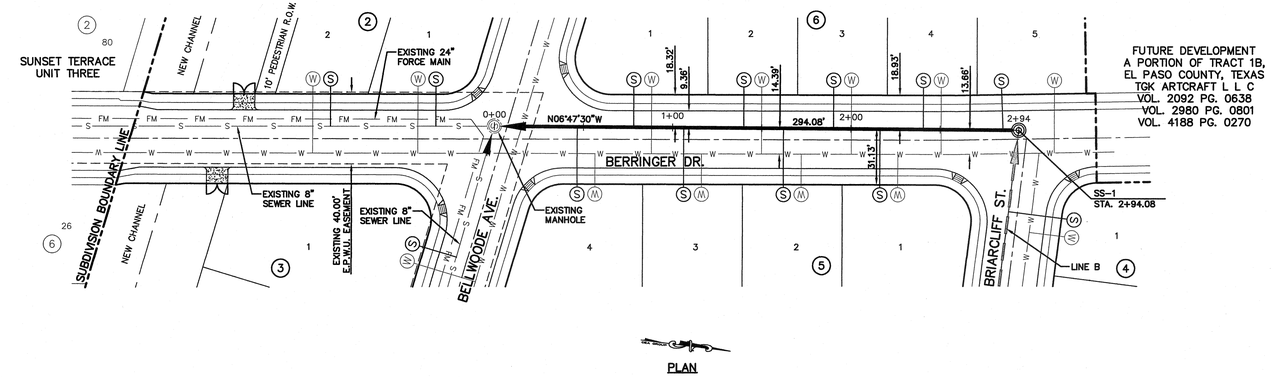
C14.1

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

WARNING ! BEFORE YOU DIG

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

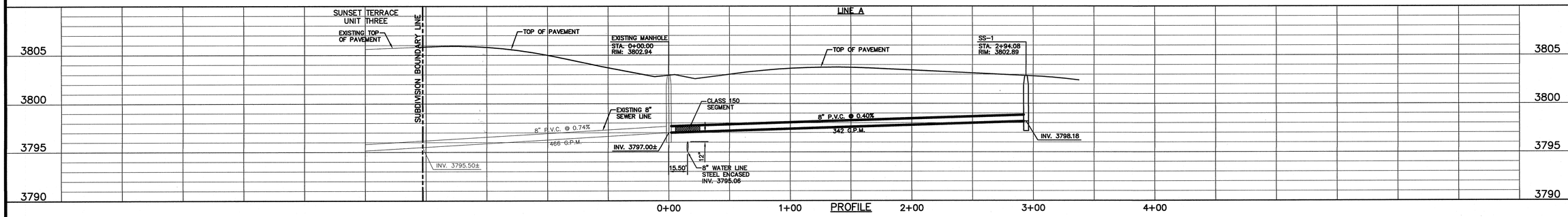
LINE A



PLAN

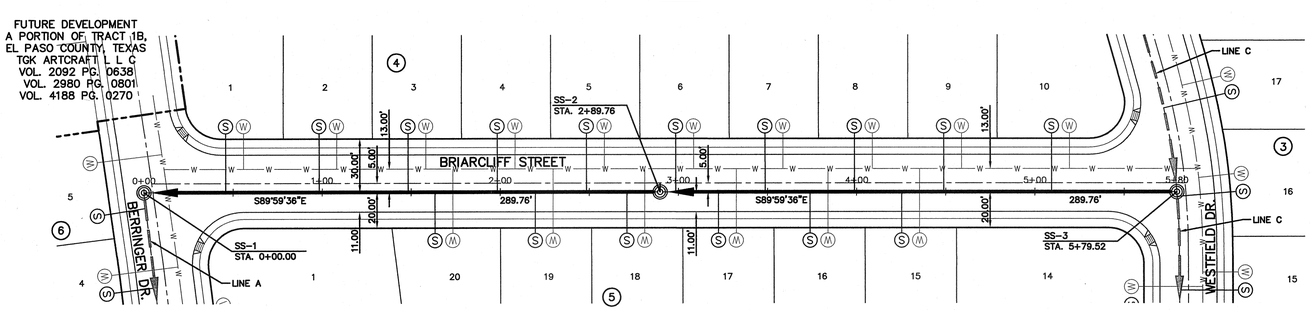
LEGEND:

- PROPOSED WATER LINE
- PROPOSED SEWER LINE
- PROPOSED SEWER LINE ON ANOTHER SHEET (PLAN VIEW)
- EXISTING SEWER LINE
- EXISTING WATER LINE
- EXISTING 24" FORCE MAIN
- PROPOSED WATER SERVICE
- PROPOSED SEWER SERVICE

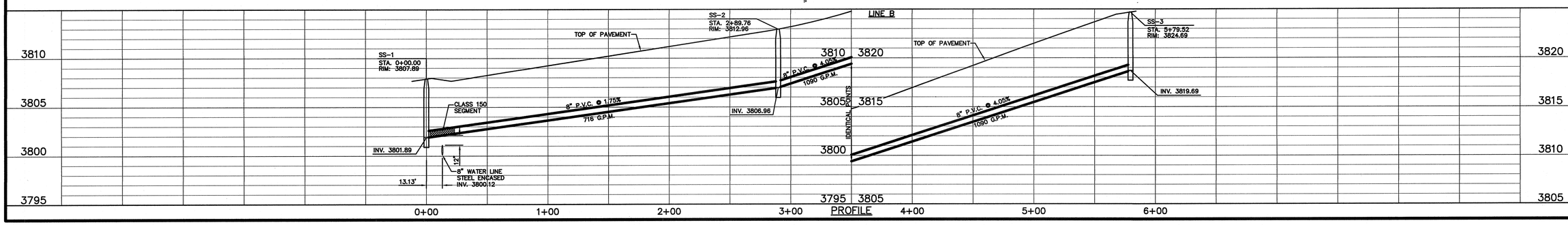


PROFILE

LINE B



PLAN



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

ENGINEER'S SEAL

STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER

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

DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-LD

PROJECT TITLE

SUNSET TERRACE UNIT FOUR SUBDIVISON IMPROVEMENTS

SHEET TITLE

SANITARY SEWER PLAN & PROFILE LINE "A, & B"

SHEET NO.

C14.2

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

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE & NORTHWESTERN ELEVATION = 3887.39 (CITY DATUM) NGS BENCHMARK "DAVID" "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

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

ENGINEER'S SEAL

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

SCALE	
Horizontal:	1"=40'
Vertical:	1"=5'
Contour Interval:	N/A
DATE:	OCTOBER 2011
DESIGN BY:	J.G.
DRAWN BY:	A.B.
CHKD. BY:	J.L.A.
APPVD. BY:	J.L.A.
JOB No.	2000-123-LD

PROJECT TITLE

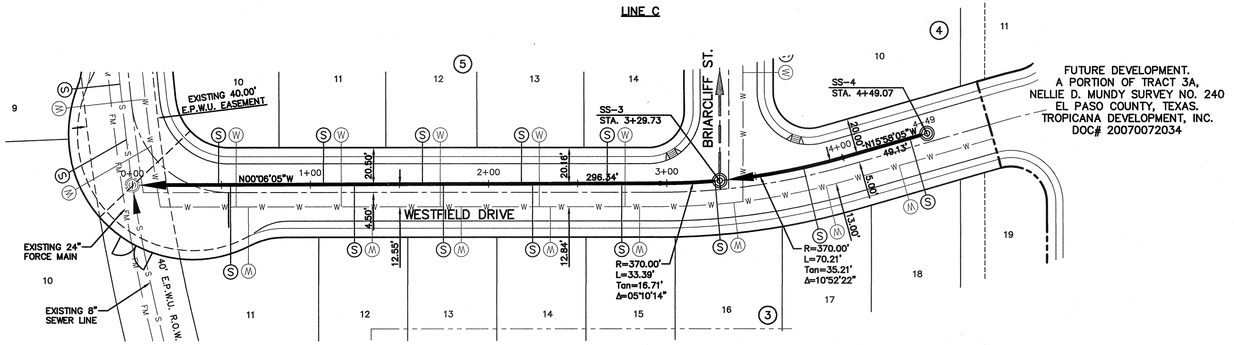
SUNSET TERRACE UNIT FOUR SUBDIVISON IMPROVEMENTS

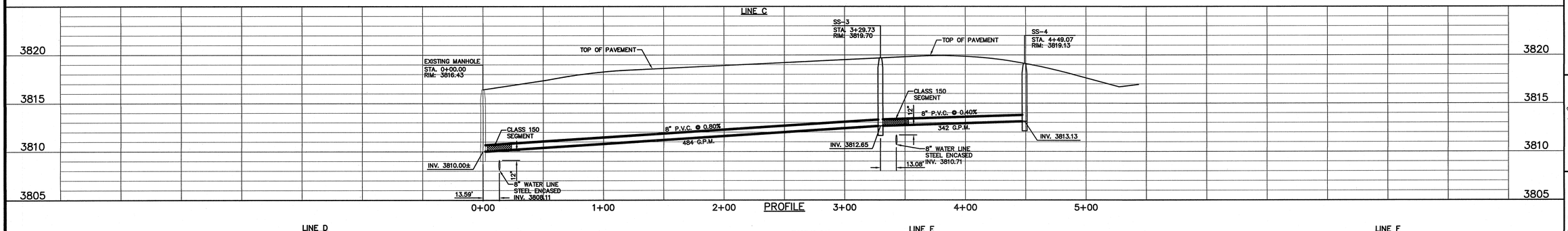
SHEET TITLE

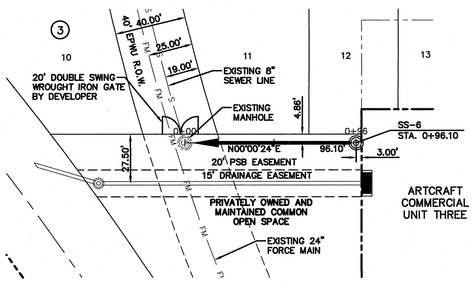
SANITARY SEWER PLAN & PROFILE LINE "C, D, E & F"

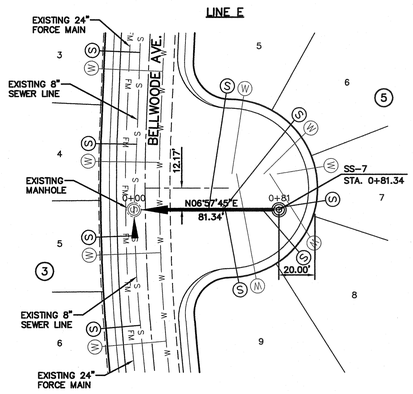
SHEET NO.

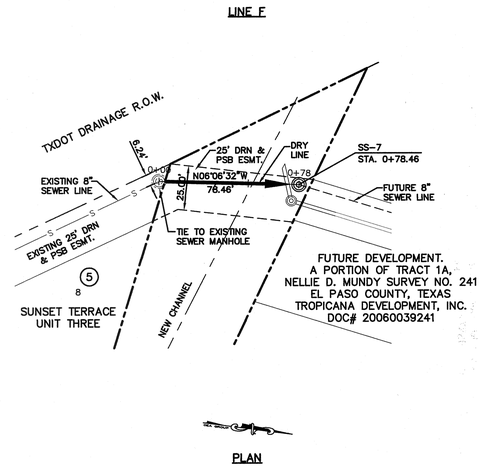
C14.3

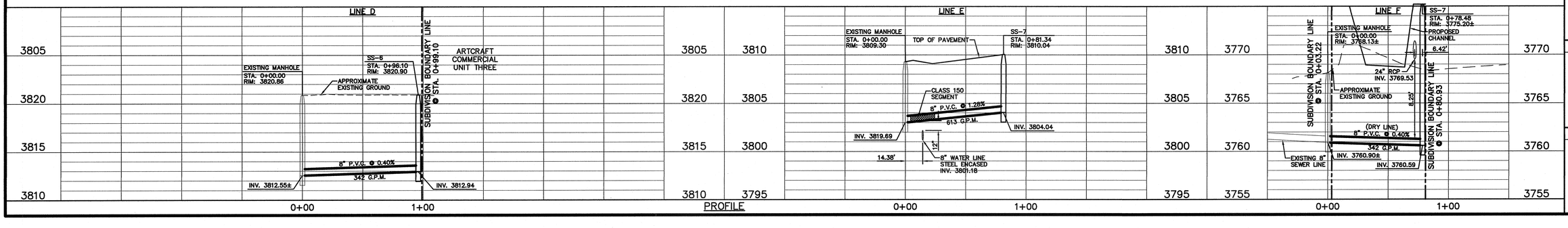


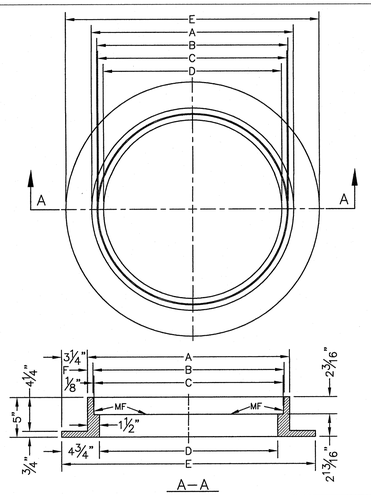












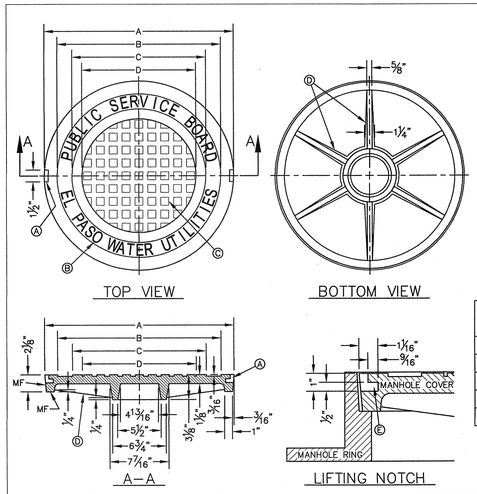
GENERAL NOTES:
1. MATCHING SURFACES MARKED "MF" TO BE FINISHED OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
2. CASTING TO BE SMOOTH & VOID OF AIR HOLES.
3. CASTING MUST MEET REQUIREMENTS OF AASHTO M306-07.
4. AS-CAST DIMENSIONS MAY VARY ⅛"±/ PER FOOT (AASHTO M306-07).
5. WEIGHT MAY VARY 5%± (AASHTO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

MANHOLE RING	MANHOLE – ALL TYPES	*MANHOLE TYPE A, A1, A2 & C
A	33"	25½"
B	31¾"	24⅛"
C	31½"	23⅞"
D	30"	22½"
E	39½"	32"
F	⅝"	1⅛"
WEIGHT	205 lbs.	170 lbs.

*OBSOLETE –DO NOT USE (FOR REFERENCE ONLY)

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

1 C14.4 STANDARD MANHOLE RING
SCALE: N.T.S.



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

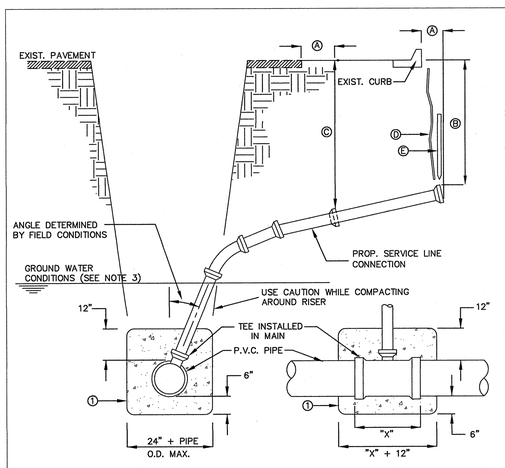
CONSTRUCTION KEY NOTES:
A. LIFTING NOTCH.
B. ⅜" RAISED LETTERING.
C. 1" SQUARES (⅜" TALL) WITH ⅜" SPACE BETWEEN.
D. REINFORCING RIBS.
E. SLOT.

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 UTILITIES PUBLIC SERVICE BOARD	DETAIL No. 378

2 C14.4 STANDARD COVER DETAIL
SCALE: N.T.S.

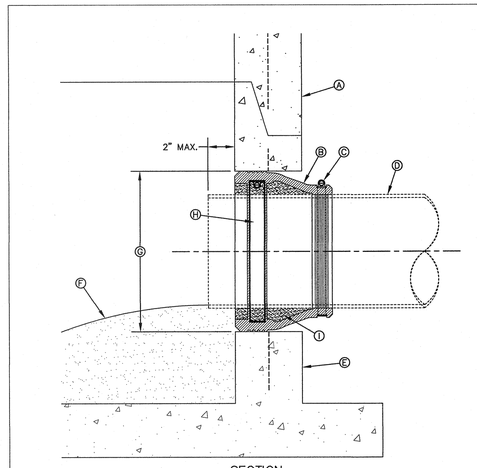


GENERAL NOTES:
1. IN GROUNDWATER CONDITIONS ONLY, P.V.C. SADDLES OR TEES ARE TO BE ENCASED WITH CLASS B CONCRETE.
2. UNDER CERTAIN CONDITIONS FIELD INVESTIGATIONS WILL BE REQUIRED TO DETERMINE THE ADEQUACY OF THE DEPTH ON THE LATERAL.
3. WHEN GROUND WATER IS ENCOUNTERED SERVICE RISER SHALL BE EXTENDED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

3 C14.4 SEWER SERVICE RISER AND SERVICE LINE CONNECTION
SCALE: N.T.S.



SECTION

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

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

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

4 C14.4 PIPE CONNECTION TO MANHOLE
SCALE: N.T.S.

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE AND HORIZON BOULEVARD #3927 59 (CITY DATUM) THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

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

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

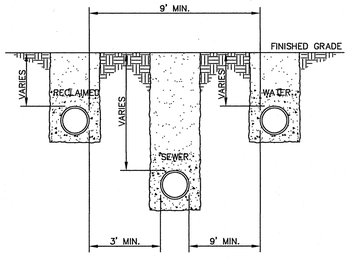
SCALE
Horizontal: N/A
Vertical: N/A
Contour Interval: N/A

DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-LD

PROJECT TITLE
SUNSET TERRACE
UNIT FOUR
SUBDIVISON IMPROVEMENTS

SHEET TITLE
SANITARY SEWER DETAILS
(SHEET 1 OF 3)

SHEET NO.
C14.4

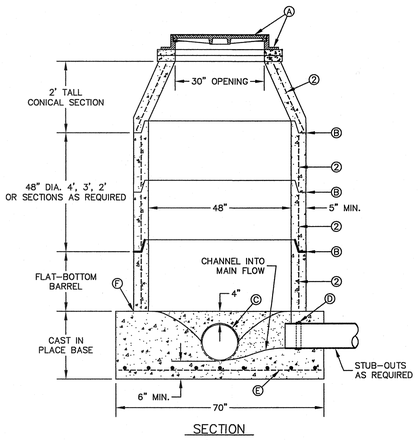


SECTION

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

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

1 / C14.5 SEPARATION DISTANCE–POTABLE WATER, SANITARY SEWER AND RECLAIMED WATER
SCALE: N.T.S.



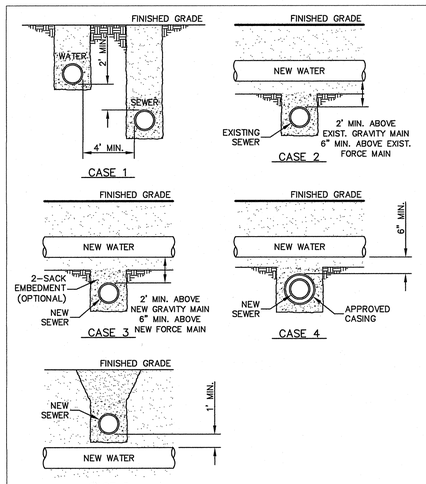
SECTION

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: 8/14/2009	MANHOLE TYPE "A1" N.T.S.	EL PASO WATER UTILITIES PUBLIC SERVICE BOARD	DETAIL No. 370–2

2 / C14.5 STANDARD PDEMUD MANHOLE TYPE "A1"
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)(v)).
- 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.

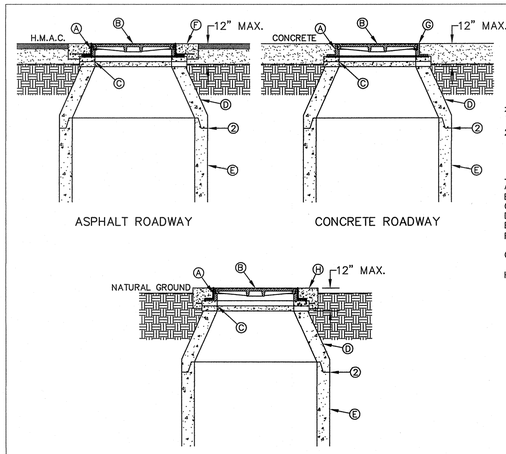
CASE 3. NEW POTABLE WATER MAIN CROSSING NEW GRAVITY SANITARY SEWER MAIN OR NEW FORCE MAIN (PER TCEQ §290.44(e)(4)(B)(iii), §290.44(e)(4)(B)(v) AND §290.44(e)(4)(B)(v)(I).
- LOCATION: WATER ABOVE SEWER OR FORCE MAIN.
- SEWER MATERIALS: NEW GRAVITY MAIN - PVC (150 PSI) or DI REQUIRED, CENTER UNDER WATER 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 SDR26. 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)(v)(I)).
- LOCATION: WATER ABOVE SEWER OR FORCE MAIN.
- SEWER MATERIALS: NEW GRAVITY MAIN - SDR35 ACCEPTABLE. NEW FORCE MAIN - PVC (150PSI) OR DI REQUIRED. IN ADDITION, SEWER MAIN OR FORCE MAIN MUST BE ENCASED IN DI OR STEEL, TWO NOMINAL SIZES LARGER THAN MAIN AND AT LEAST 18 FEET LONG.
- CENTER CASING PIPE ON WATER MAIN.

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

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

3 / C14.5 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. OR SEE PENETRATION DETAIL.
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 UTILITIES PUBLIC SERVICE BOARD	DETAIL No. 185

4 / C14.5 STANDARD MANHOLE RING AND COVER INSTALLATION DETAIL
SCALE: N.T.S.

REFERENCES – BENCHMARKS
CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE AND PISTOL RANGE. ELEVATION = 3937.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office 915.544.3232 Fax 915.544.3233 www.ceagroup.net

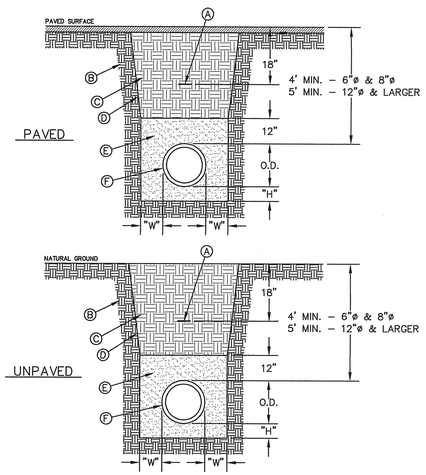
ENGINEER'S SEAL
STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER

SCALE
Horizontal: N/A
Vertical: N/A
Contour Interval: N/A
DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-LD

PROJECT TITLE
SUNSET TERRACE
UNIT FOUR
SUBDIVISON IMPROVEMENTS

SHEET TITLE
SANITARY SEWER DETAILS
(SHEET 2 OF 3)

SHEET NO.
C14.5



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

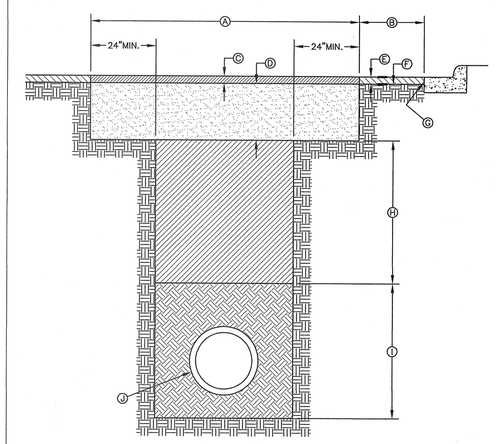
CONSTRUCTION KEY NOTES:
A. APPROVED MARKING TAPE.
B. UNDISTURBED STABLE MATERIAL.
C. NATIVE MATERIAL BACKFILL.
PAVED CONDITION: COMPACT TO 90% DENSITY PER ASTM D–1557 MODIFIED PROCTOR.
UNPAVED CONDITION: COMPACT TO 85% DENSITY PER ASTM D–1557 MODIFIED PROCTOR.
(*SEE NOTE #3 IF THESE PREVIOUS CONDITIONS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

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

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

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

1 C14.6 EMBEDMENT CLASS "A" FOR PRESSURE PIPE AND GRAVITY PIPE DRY CONDITIONS SCALE: N.T.S.

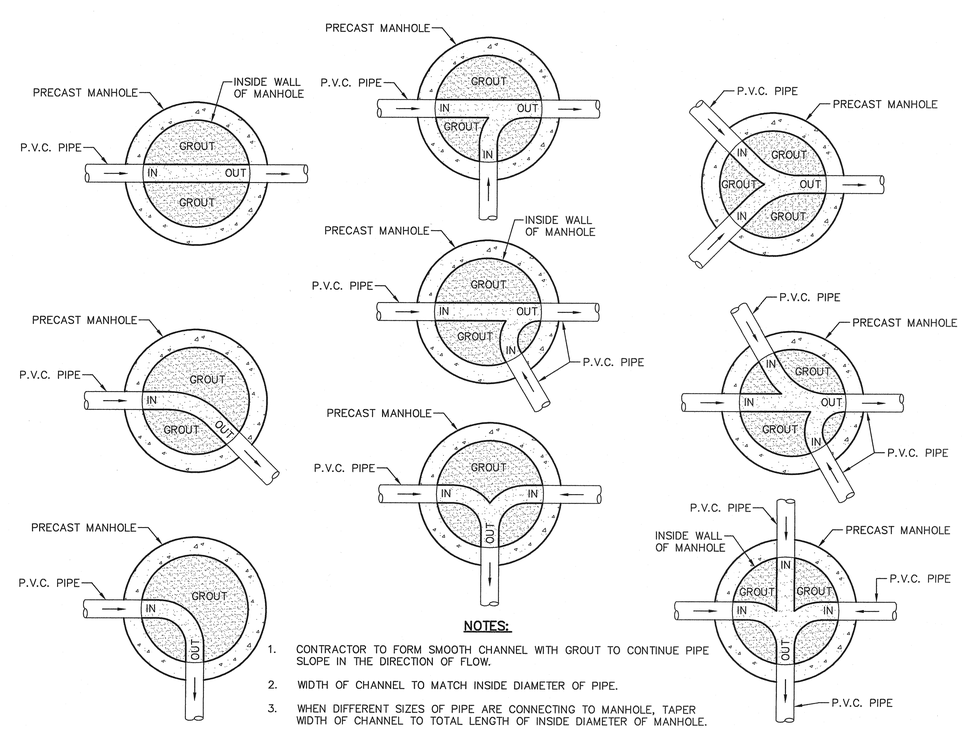


GENERAL NOTES:
1. ALL ASPHALT CUTS MUST BE SAW CUT.
2. SOIL CEMENT SLURRY SHALL BE ALLOWED TO CURE BEFORE PAVING OR OPENING TO ALL TRAFFIC.

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

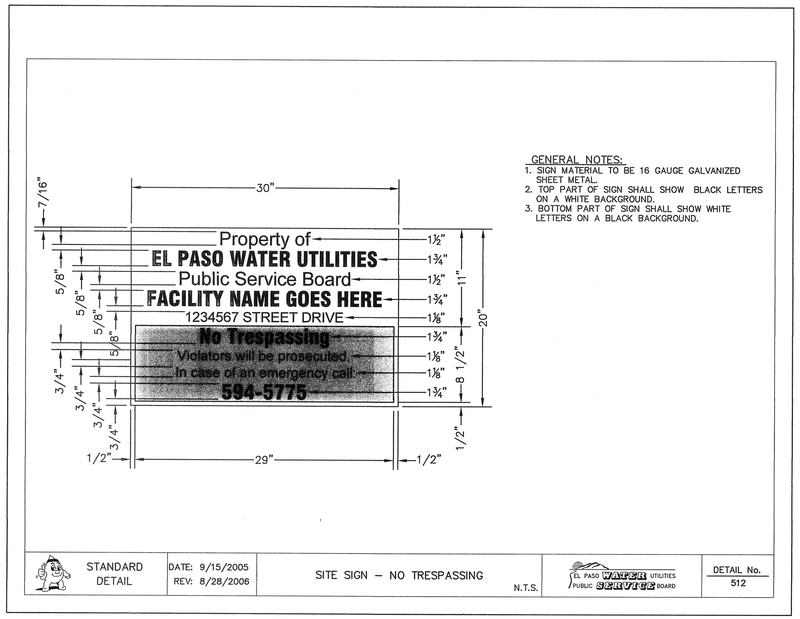
STANDARD DETAIL	DATE: 10/1992 REV: 5/9/2011	PAVEMENT REPLACEMENT N.T.S.	EL PASO WATER UTILITIES PUBLIC SERVICE BOARD	DETAIL No. 179

2 C14.6 PAVEMENT REPAIR DETAIL 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.

3 C14.6 TYPICAL MANHOLE INVERT PLANS SCALE: N.T.S.



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

STANDARD DETAIL	DATE: 9/15/2005 REV: 8/28/2006	SITE SIGN – NO TRESPASSING N.T.S.	EL PASO WATER UTILITIES PUBLIC SERVICE BOARD	DETAIL No. 512

4 C14.6 SITE SIGN – NO TRESPASSING DETAIL N.T.S.

REFERENCES – BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO AND MONTWOOD WITH ELEVATION = 3887.39 (CITY DATUM) THIS BENCHMARK IS ALSO MARKED "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.5222 Fax: 915.544.5233 www.ceagroup.net

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

SCALE Horizontal: N/A Vertical: N/A Contour interval: N/A
DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-LD

PROJECT TITLE
SUNSET TERRACE
UNIT FOUR
SUBDIVISON IMPROVEMENTS

SHEET TITLE
SANITARY SEWER DETAILS
(SHEET 3 OF 3)

SHEET NO.
C14.6

SITE DESCRIPTION

PROJECT NAME AND LIMITS: SUNSET TERRACE UNIT FOUR IS BORDERED BY A PORTION OF TRACT 3A, NELLIE D. MUNDY SURVEY NO. 240 TO THE NORTH, INTERSTATE HIGHWAY NO. 10 TO THE EAST, A PORTION OF TRACT 1A, NELLIE D. MUNDY SURVEY NO. 241 TO THE WEST, SUNSET TERRACE UNIT THREE TO THE SOUTH.

PROJECT DESCRIPTION: THE SITE FOR THE NEW SUBDIVISION WILL ENCOMPASS APPROXIMATELY 19.47± ACRES, AND WILL CONTAIN A TOTAL OF 55 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: 19.47±

TOTAL AREA TO BE DISTURBED: 19.47±

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: SUNSET TERRACE UNIT FOUR 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

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: ____________________

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

ENGINEER'S SEAL

STATE OF TEXAS JORGE L. AZCARATE 85075 LICENSED PROFESSIONAL ENGINEER 10/20/11

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

DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000–123–LD

PROJECT TITLE

SUNSET TERRACE
UNIT FOUR
SUBDIVISON IMPROVEMENTS

SHEET TITLE

STORM WATER POLLUTION CONTROL PLAN: GENERAL NOTES

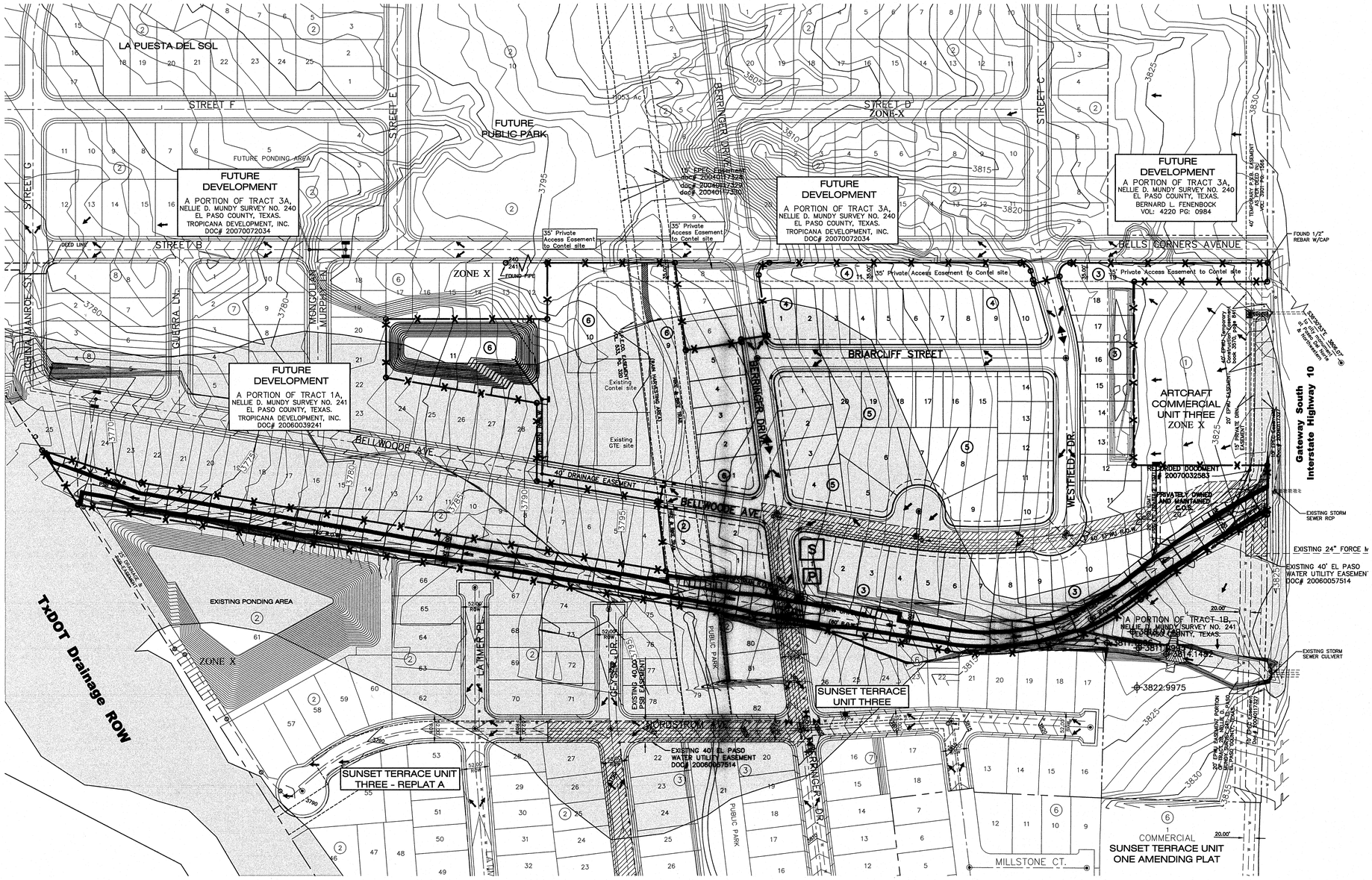
SHEET NO.

C15.1

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

WARNING ! BEFORE YOU DIG

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



—X—X— SILT FENCE OR EARTHEN BERM

STABILIZED CONSTRUCTION ENTRANCE

S STAGING AREA

P PORTABLE TOILETS

• WASH OUT

SITE PLAN
SCALE: 1" = 100'

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

ENGINEER'S SEAL

STATE OF TEXAS
JORGE L. AZCARATE
85075
LICENSED PROFESSIONAL ENGINEER

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

DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-LD

PROJECT TITLE

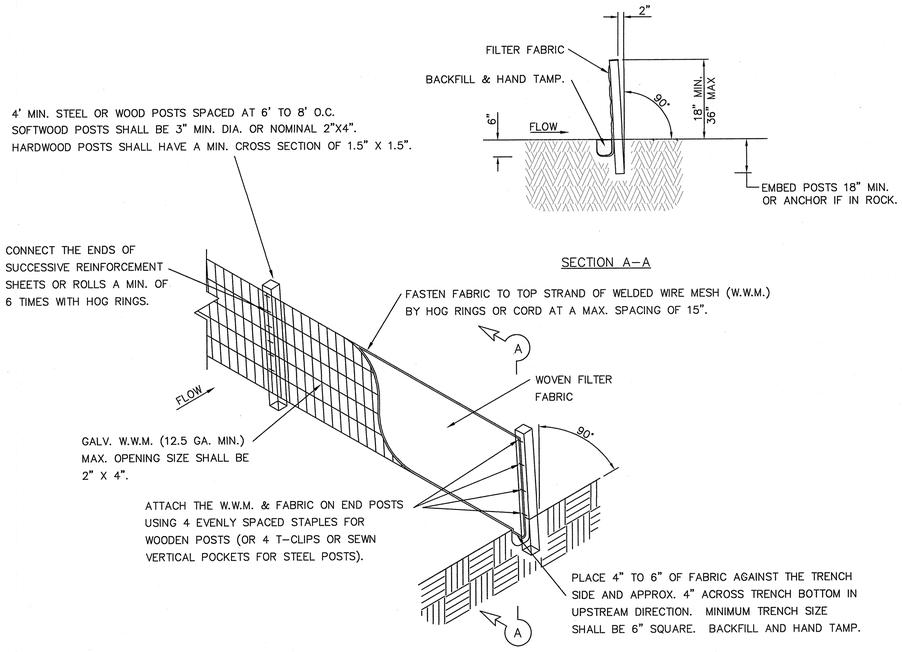
SUNSET TERRACE UNIT FOUR SUBDIVISON IMPROVEMENTS

SHEET TITLE

STORM WATER POLLUTION PREVENTION PLAN SITE PLAN

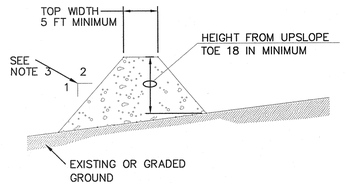
SHEET NO.

C15.2



SECTION A-A

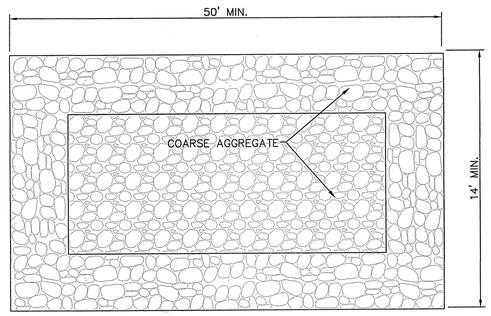
TEMPORARY SEDIMENT CONTROL FENCE



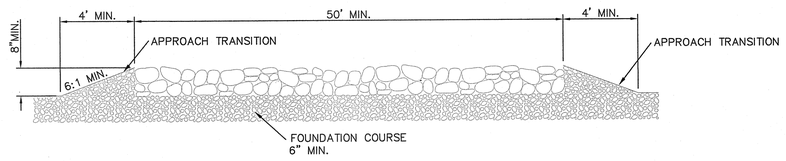
GENERAL NOTES:

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

TYPICAL BERM CONFIGURATION



PLAN

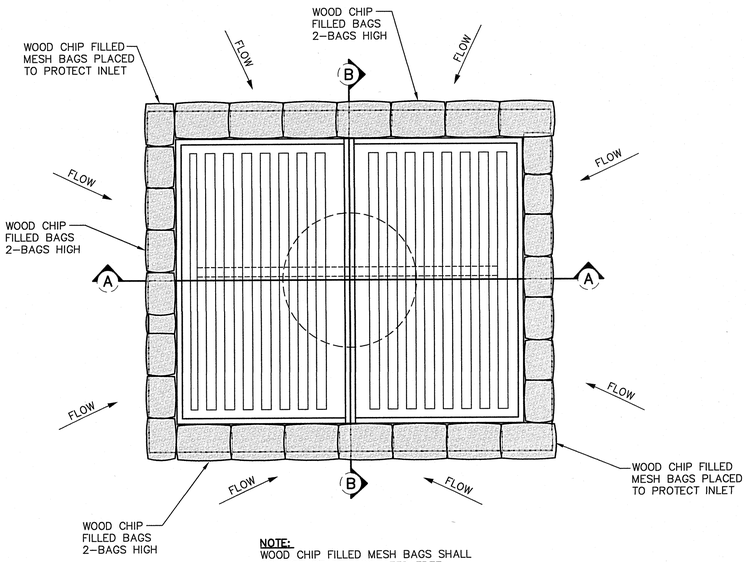


PROFILE

GENERAL NOTES

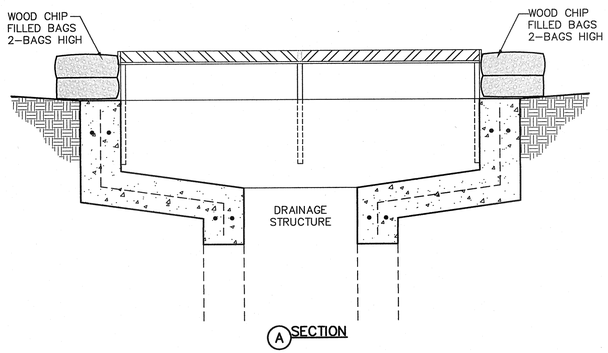
1. THE LENGTH OF THE TYPE 1 CONSTRUCTION EXIT SHALL BE AS INDICATED ON THE PLANS, BUT NOT LESS THAN 50'.
2. THE COARSE AGGREGATE SHOULD BE OPEN GRADED WITH A SIZE OF 4" TO 8".
3. THE APPROACH TRANSITIONS SHOULD BE NO STEEPER THAN 6:1 AND CONSTRUCTED AS DIRECTED BY THE ENGINEER.
4. THE CONSTRUCTION EXIT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

CONSTRUCTION EXIT (TYPE 1)



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

PLAN

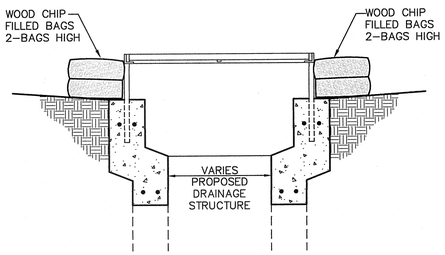


SECTION

TEMPORARY INLET PROTECTION

GENERAL NOTES:

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



SECTION

REFERENCES - BENCHMARKS

CITY MONUMENT AT THE INTERSECTION OF PASEO DEL NORTE AND HORIZON BLVD. ELEVATION = 3957.39 (CITY DATUM). THIS IS BASED ON NGS MONUMENT "CHINO" ELEVATION = 3935.48 (CITY DATUM)

DATE	REVISIONS	BY

cea group
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4564
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office: 915.544.3232 Fax: 915.544.3233 www.ceagroup.net

ENGINEER'S SEAL

JORGE L. AZCARATE
85075
LICENSED
PROFESSIONAL
ENGINEER
STATE OF TEXAS

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

DATE: OCTOBER 2011
DESIGN BY: J.G.
DRAWN BY: A.B.
CHKD. BY: J.L.A.
APPVD. BY: J.L.A.
JOB No. 2000-123-LD

PROJECT TITLE

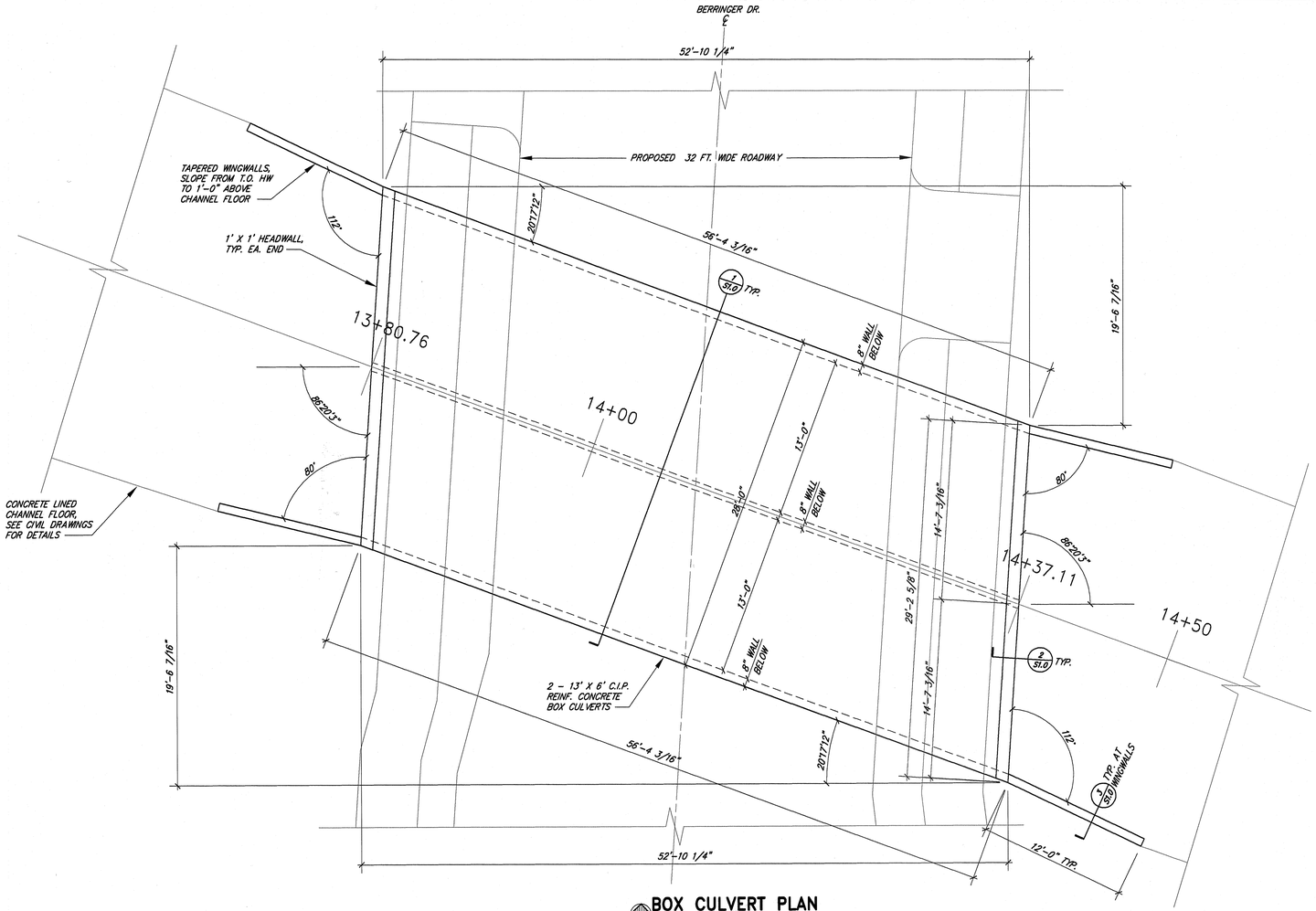
SUNSET TERRACE UNIT FOUR SUBDIVISON IMPROVEMENTS

SHEET TITLE

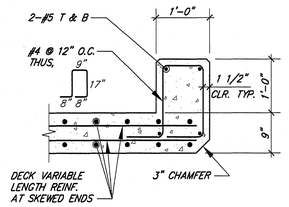
STORM WATER POLLUTION PREVENTION PLAN DETAILS

SHEET NO.

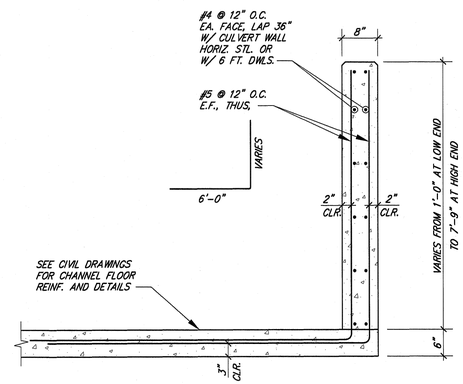
C15.3



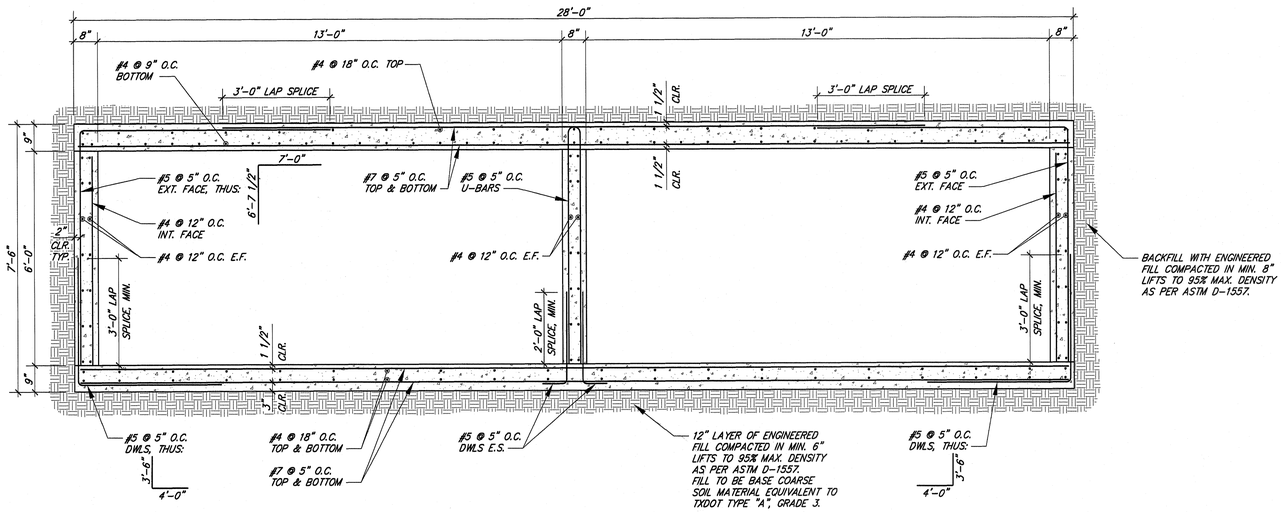
BOX CULVERT PLAN
NORTH 3/16" = 1'-0"



HW SECTION
2/S1.0 3/4" = 1'-0"



WW SECTION
3/S1.0 3/4" = 1'-0"



SECTION
1/S1.0 1/2" = 1'-0"

UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
PASEO DEL ESTE MUD NO. 1	(915) 858-1065
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
1-800-DIG-TESS
1-800-344-8377
FOR FIELD LOCATING EXISTING UTILITIES

GENERAL NOTES:

1. FOUNDATION & WALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3600 PSI AT 28 DAYS. DECK CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS. CONCRETE SHALL BE AIR ENTRAINED (8 + OR - 1.5%). CONCRETE SHALL HAVE A MAXIMUM WATER/CEMENT RATIO OF 0.45. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH "THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI 318, LATEST EDITION.
2. REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A-615 (GRADE 60). ALL REINFORCING DETAILS SHALL CONFORM TO THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315, LATEST EDITION, UNLESS DETAILED OTHERWISE ON THIS DRAWING. CONCRETE COVER OVER STEEL REINFORCEMENT SHALL CONFORM TO THE REQUIREMENTS OF ACI 318, LATEST EDITION.
3. COMPACT GROUND SURFACE TO 95% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
4. REINFORCEMENT PLACEMENT DRAWINGS SHALL BE PREPARED WITH SUFFICIENT DETAIL AND NOTATION FOR FIELD ERECTION AND INSTALLATION. REINFORCEMENT PLACEMENT DRAWINGS SHALL BE SEPARATE DRAWINGS PREPARED BY THE REINFORCING STEEL SUPPLIER.
5. THE USE OF PERMANENT FORMS IS NOT ALLOWED.
6. THE BOTTOM EDGE OF THE TOP SLAB SHALL BE CHAMFERED 3" AT THE ENTRANCE.
7. FOR BAR LENGTHS OVER 60 FEET PROVIDE LAP SPLICES AS FOLLOWS: #4 = 1'-9", #5 = 2'-2"

REFERENCES - BENCHMARKS
BENCHMARK IS 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

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

ENGINEER'S SEAL
STATE OF TEXAS RAUL MEZA, JR. 86994 LICENSED PROFESSIONAL ENGINEER
9-25-11

RAUL MEZA, JR., P.E.
TEXAS REGISTERED ENGINEERING FIRM F-12829
P.O. BOX 2322, FABENS, TEXAS 79838
Office: 915.764.7028 Fax: 915.589.3936

PROJECT TITLE
SUNSET TERRACE UNIT FOUR
SUBDIVISION IMPROVEMENTS

SHEET TITLE
2-13'X6' C.I.P. REINF. CONC. BOX CULVERTS

SHEET NO.
S1.0