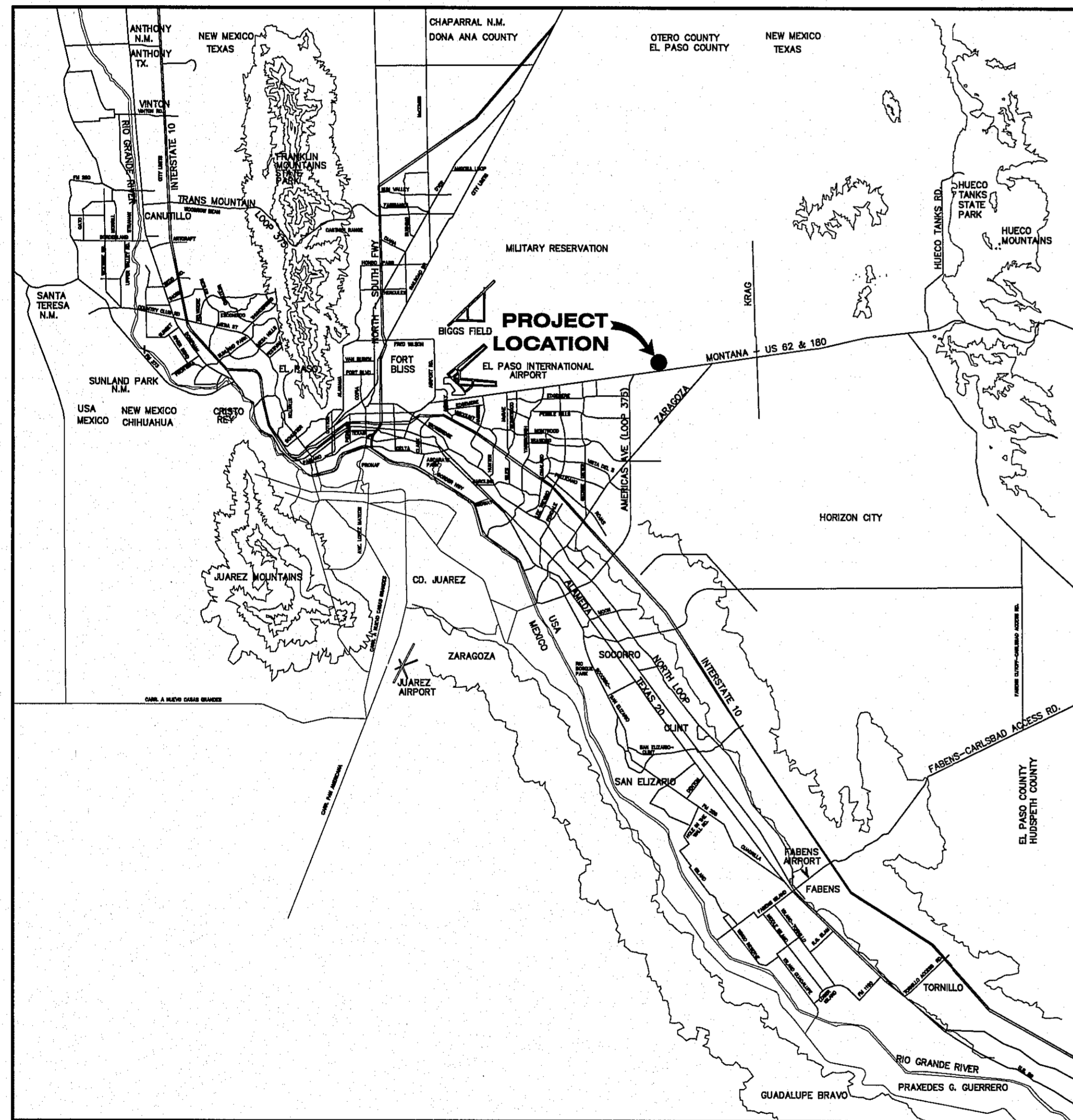


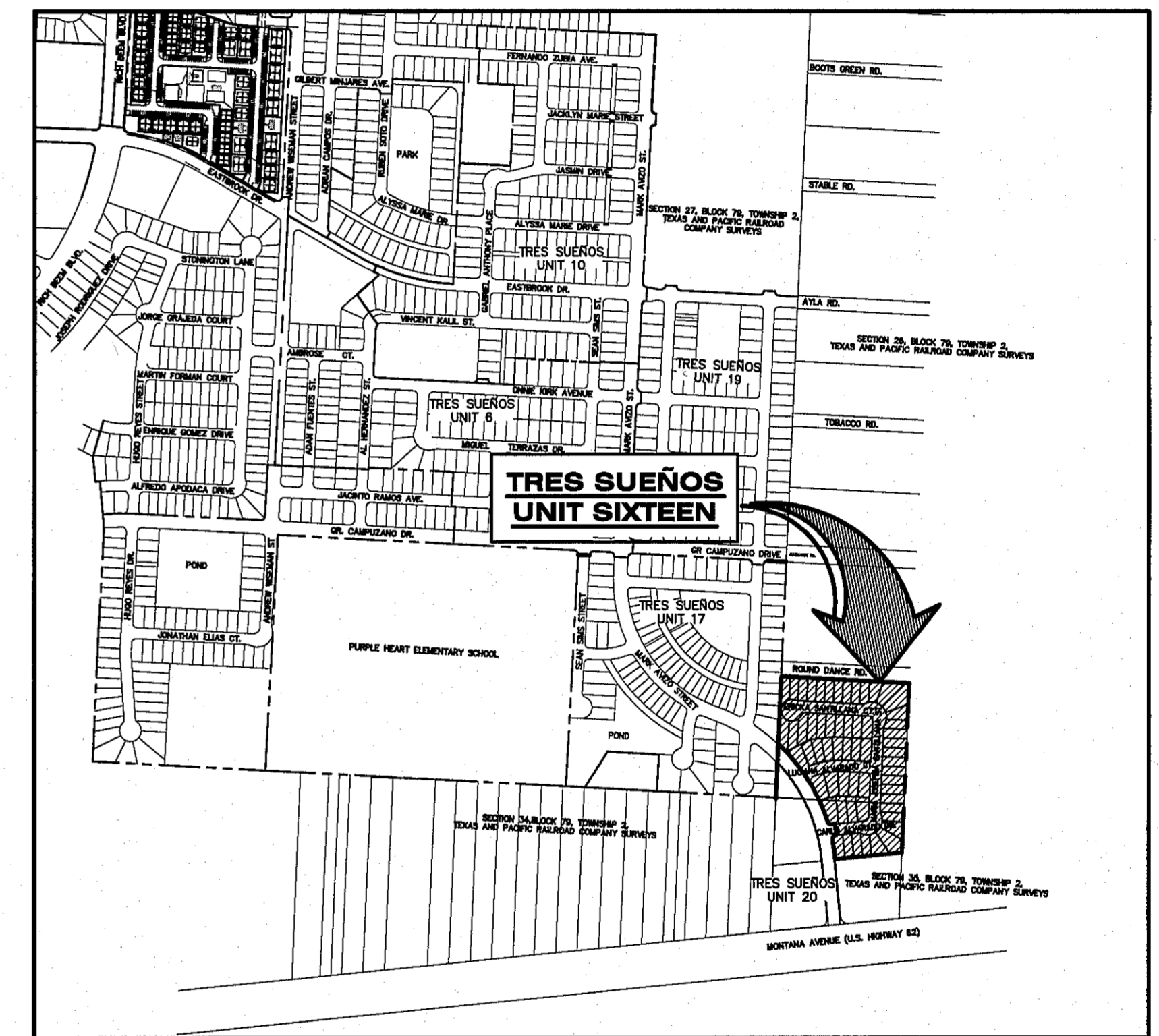
# TRES SUEÑOS UNIT SIXTEEN SUBDIVISION IMPROVEMENTS

BEING ALL OF TRACT 1-B, SECTION 26, AND A PORTION OF TRACT 4, SECTION 35,  
BLOCK 79, TOWNSHIP 2, TEXAS AND PACIFIC RAILROAD COMPANY SURVEYS,  
CITY OF EL PASO, EL PASO COUNTY, TEXAS.  
CONTAINING 8.90± ACRES.

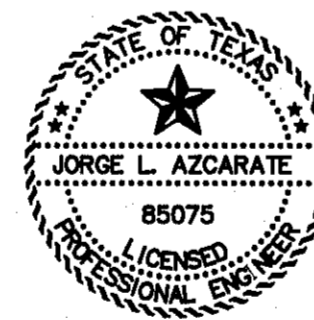


**VICINITY MAP**  
APPROXIMATE SCALE:  
1" = 2 MILES

SHEET NUMBER	SHEET TITLE
CVR	COVER SHEET
C1.1	GENERAL INFORMATION
C2.1	FINAL PLAT
C3.1	GRADING PLAN
C4.1	DRAINAGE PLAN
C5.1	GRADING SECTIONS
C6.1-C6.3	STREET PLAN & PROFILES
C7.1	STORM SEWER PLAN & PROFILE
C8.1,C8.2	STANDARD DETAILS
C9.1-C9.3	DRAINAGE DETAILS
C10.1,C10.2	ILLUMINATION PLAN
C11.1	WATER INDEX / GENERAL INFORMATION
C12.1-C12.4	WATER DETAILS
C13.1	SANITARY SEWER INDEX / GENERAL INFORMATION
C14.1	SANITARY SEWER PLAN & PROFILES
C15.1-C15.2	SANITARY SEWER DETAILS
C16.1-C16.3	STORM WATER POLLUTION PREVENTION PLAN

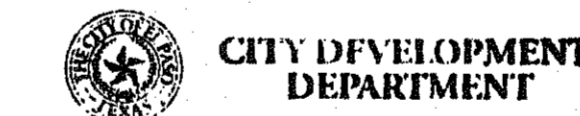


**LOCATION MAP**  
APPROXIMATE SCALE: 1" = 600'



*JL*  
12-12-18  
JORGE L. AZCARATE, P.E. PROJECT MANAGER

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



Reviewed For Conformance For Condition Related To:

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

Contractor Must Call 24 Hours Prior To Construction for Inspections

*JL* 12/13/2018

PRINCIPAL CONTACTS:

NAME	ADDRESS	CITY & ZIP	PHONE	FAX
OWNER:	JNC DEVELOPMENT INC.	12300 MONTWOOD DR.	EL PASO, TX 79928	(915) 855-1005
ENGINEER:	CEA GROUP	4712 WOODROW BEAN DR. STE. F	EL PASO, TX 79924	(915) 544-5232 (915) 544-5233
SURVEYOR:	BARRAGAN & ASSOCIATES	10950 PELLICANO DR. BUILDING F	EL PASO, TX 79936	(915) 591-5709 (915) 591-5706

**GENERAL NOTES**

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

**GRADING SPECIFICATIONS**

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

**ABBREVIATIONS**

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

**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)
-----	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)	STANDARD DETAIL/SECTION NUMBER
(X)	SHEET NUMBER WHERE STANDARD/SECTION DETAIL IS LOCATED
4000.00	FINISHED SPOT ELEVATION
FG 4000.00	LOT FINISHED GROUND ELEVATION
TC 4000.00	TOP OF CURB ELEVATION
TP 4000.00	TOP OF PAVEMENT ELEVATION
1 (2)	SUBDIVISION LOT AND BLOCK NUMBER
→	DRAINAGE FLOW
▲	HIGH POINT
▼	LOW POINT
◁▷	EXISTING HIGH POINT
▷◁	EXISTING LOW POINT
▣	HEADWALL WITH WINGWALLS
DA-1	DRAINAGE AREA
3:1 SLOPE	HORIZONTAL:VERTICAL SLOPE RATIO
↔	WHEELCHAIR RAMP

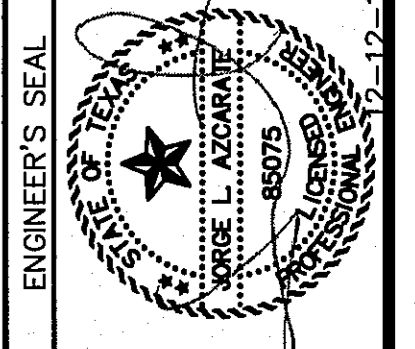
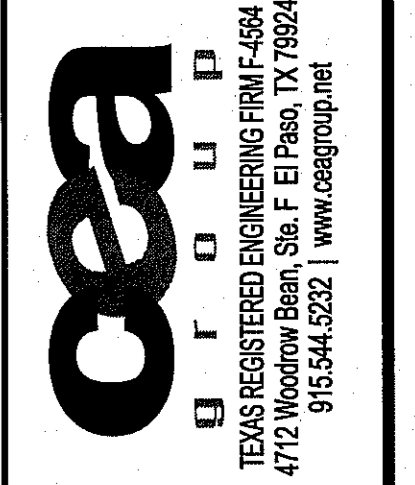
UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 534-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-8005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579

**WARNING 1  
BEFORE YOU DIG  
CALL 811**  
FOR FIELD LOCATING EXISTING UTILITIES

**INDEX OF DRAWINGS**

DRAWING NAME	SHEET NO.
COVER	CVR
GENERAL INFORMATION	C1.1
PLAT	C2.1
GRADING PLAN	C3.1
DRAINAGE PLAN	C4.1
GRADING SECTIONS	C5.1
CARLO ALVARADO DRIVE PLAN & PROFILE FROM STA. 0+58.56 TO STA. 2+35.47	C6.1
JOSEFINA SANTILLANA STREET PLAN & PROFILE FROM STA. 2+35.47 TO STA. 6+25.00	C6.2
JOSEFINA SANTILLANA STREET PLAN & PROFILE FROM STA. 6+25.00 TO STA. 7+44.96	C6.2
ERICKA SANTILLANA COURT PLAN & PROFILE FROM STA. 7+44.96 TO STA. 11+38.32	C6.3
LUCIANA ALVARADO COURT PLAN AND PROFILE FROM STA. 0+61.65 TO STA. 3+72.45	C6.3
LINE C PLAN & PROFILE FROM STA. 0+00.00 TO STA. 3+94.99	C7.1
STANDARD DETAILS (SHEET 1 OF 2)	C8.1
STANDARD DETAILS (SHEET 2 OF 2)	C8.2
DRAINAGE DETAILS (SHEET 1 OF 3)	C9.1
DRAINAGE DETAILS (SHEET 2 OF 3)	C9.2
DRAINAGE DETAILS (SHEET 3 OF 3)	C9.3
ILLUMINATION AND SIGNAGE PLAN	C10.1
ILLUMINATION AND SIGNAGE DETAILS	C10.2
WATER LINE INDEX	C11.1
WATER DETAILS (SHEET 1 OF 4)	C12.1
WATER DETAILS (SHEET 2 OF 4)	C12.2
WATER DETAILS (SHEET 3 OF 4)	C12.3
WATER DETAILS (SHEET 4 OF 4)	C12.4
SANITARY SEWER INDEX	C13.1
SANITARY SEWER PLAN & PROFILE: LINE A & B	C14.1
SANITARY SEWER DETAILS (SHEET 1 OF 2)	C15.1
SANITARY SEWER DETAILS (SHEET 2 OF 2)	C15.2
STORM WATER POLLUTION PREVENTION PLAN: GENERAL NOTES	C16.1
STORM WATER POLLUTION PREVENTION PLAN: SITE PLAN	C16.2
STORM WATER POLLUTION PREVENTION PLAN: DETAILS	C16.3

REFERENCES - BENCHMARKS	CITY MONUMENT AT POINT OF CURVE CENTERLINE RICH FROM THE SOUTHERLY RIGHT OF WAY LINE OF MONTANA AVENUE. ELEVATION = 4005.40 (CITY DATUM).
DATE	
REVISIONS	
BY	



SCALE	N/A
Horizontal	N/A
Vertical	N/A
Contour Interval	N/A
DATE	AUGUST 2018
DESIGN BY	F.Z.
DRAWN BY	K.A.P.
CHECKED BY	J.L.A.
APPROVED BY	J.L.A.
JOB No.	2025-013

**TRES SUENOS  
UNIT SIXTEEN  
SUBDIVISION IMPROVEMENTS**

SHEET TITLE

GENERAL NOTES

SHEET NO.

C1.1



# TRES SUEÑOS UNIT SIXTEEN

BEING A PORTION OF TRACT 1-B, SECTION 26, AND A PORTION OF TRACT 4, SECTION 35, ALL IN BLOCK 79, TOWNSHIP 2, TEXAS AND PACIFIC RAILROAD COMPANY SURVEYS, CITY OF EL PASO, EL PASO COUNTY, TEXAS, CONTAINING 8.90± ACRES.

## DEDICATION

JNC Development Inc., the owner of this land, do hereby present this map and dedicate their respective portions of property to the use of the public, the streets and utility easements as herein laid down and designated, including easements for overhead of service wires for pole utility lines and the right for installation of service poles alongside lot lines as may be required, easements for buried service wires, conduits and pipes for underground utilities, and the right to ingress and egress for service and construction, and the right to trim interfering trees and shrubs.

Witness my signature this 17 day of April, 2019.

Carlos D. Bombach, COO  
JNC Development Inc.

## ACKNOWLEDGEMENT

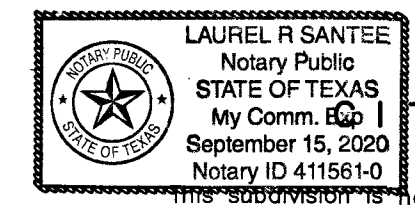
STATE OF TEXAS  
COUNTY OF EL PASO

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

Given under my hand and seal of office this 17 day of April, 2019.

*Laurel R. Santee*  
Notary Public in and for El Paso County

9-15-20  
My Commission Expires



## CITY PLANNING COMMISSION

I 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 10 day of January, 2019.

*Margaret Houston* *X. Z. St.*  
Chairperson Executive Secretary

Approved for filing this 31 day of May, 2019.

*Philip E. Howe*  
Planning and Inspections Director

## FILING

Filed and recorded in the office of the County Clerk of El Paso County, Texas, this 4th day of June, 2019, in File No. 2019004147 of the Plat Records.

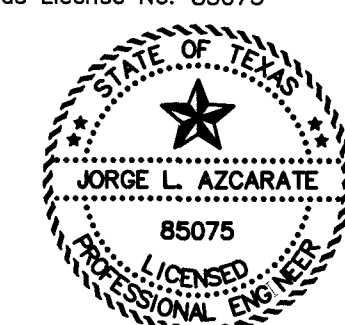
*Debra Brinson*  
County Clerk

*Isabel Chavez*  
by Deputy

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

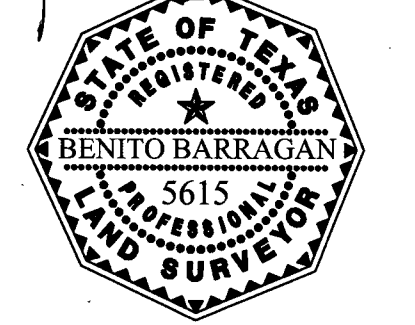
This plat represents a survey made on the ground by me or under my supervision and complies with the current Texas Board of Professional Land Survey Professional and Technical Standards.

*Jorge L. Azcarate*  
4-5-19  
Jorge L. Azcarate, P.E.  
Licensed Professional Engineer  
Texas License No. 85075



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

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



**SURVEYOR**  
**Barragan & Associates Inc.**  
LAND PLANNING & LAND SURVEYING  
TPELS FIRM # 10151200  
10950 Pellaco Dr. Bldg. F - El Paso TX 79935  
Phone (915) 591-5709 Fax (915) 591-5706

CONTACT: JORGE L. AZCARATE, P.E.

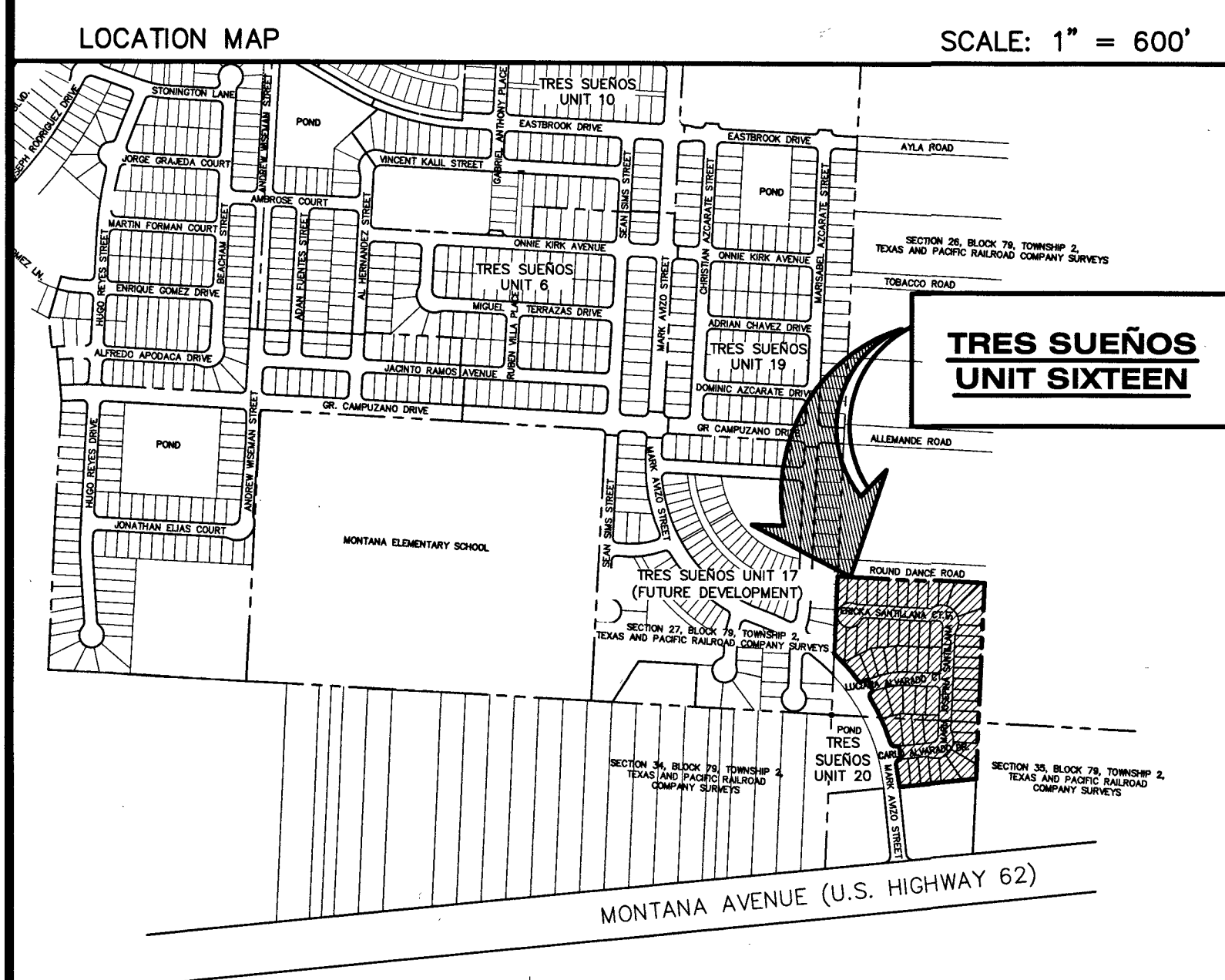
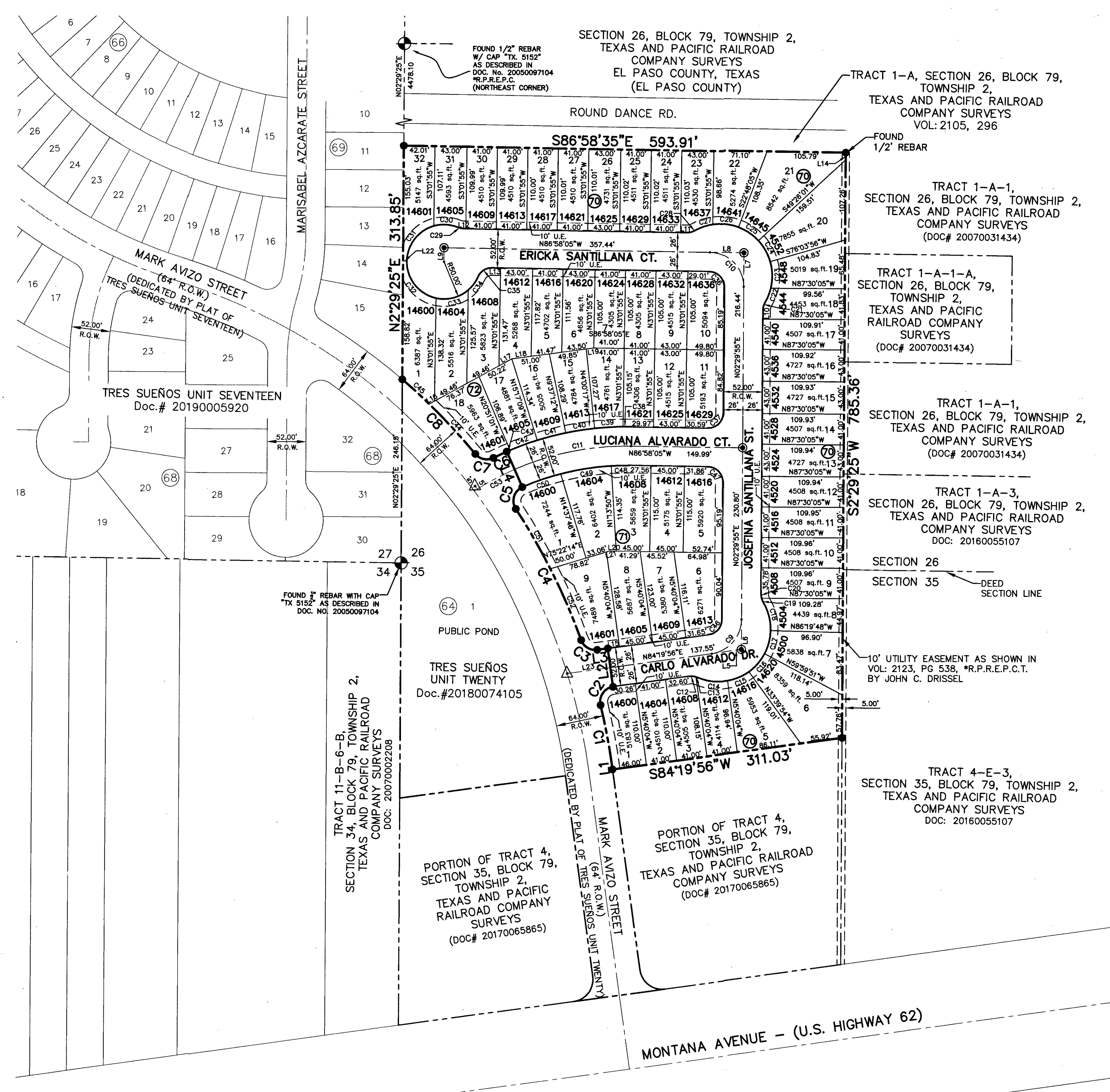
CONTACT: BENITO BARRAGAN, R.P.L.S.

DATE OF PREPARATION: APRIL 2019.

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	832.00'	83.28'	41.68'	83.25'	N08°32'07"W	005°44'07"
C2	20.00'	33.42'	22.11'	29.66'	N36°27'53"E	095°44'07"
C3	20.00'	27.23'	16.20'	25.17'	N56°40'04"W	078°00'00"
C4	832.00'	196.83'	98.88'	196.37'	N24°26'42"W	013°33'17"
C5	20.00'	34.80'	23.70'	30.57'	N18°37'12"E	099°41'05"
C6	401.00'	19.87'	9.94'	19.87'	S67°02'34"W	002°50'21"
C7	20.00'	26.82'	15.86'	24.86'	N75°57'22"W	076°50'29"
C8	832.00'	140.30'	70.32'	140.14'	N42°21'59"W	009°39'43"
C9	46.00'	65.70'	39.87'	60.26'	N43°24'56"E	081°50'02"
C10	46.00'	71.83'	45.57'	64.75'	N42°14'05"W	089°28'00"
C11	375.00'	160.81'	81.66'	159.58'	S80°44'50"W	024°34'10"
C12	20.00'	8.66'	4.40'	8.60'	N83°15'29"W	024°49'09"
C13	20.00'	2.27'	1.14'	2.27'	N67°35'57"W	006°29'55"
C14	70.00'	40.88'	21.04'	40.30'	S81°04'44"E	033°27'30"
C15	70.00'	31.59'	16.07'	31.32'	N69°15'48"E	025°51'24"
C16	70.00'	32.17'	16.37'	31.89'	N43°10'08"E	026°19'57"
C17	70.00'	32.17'	16.37'	31.89'	N16°50'11"E	026°19'57"
C18	70.00'	39.69'	20.40'	39.16'	N12°34'29"W	032°29'21"
C19	20.00'	5.65'	2.84'	5.63'	S20°43'34"E	016°11'11"
C20	20.00'	5.28'	2.66'	5.27'	S05°04'02"E	015°07'53"
C21	20.00'	10.54'	5.39'	10.42'	S17°35'38"W	030°11'26"
C22	70.00'	20.72'	10.44'	20.65'	N24°12'32"E	016°57'37"
C23	70.00'	36.24'	18.54'	35.84'	N00°53'50"E	029°39'48"
C24	70.00'	32.54'	16.57'	32.25'	N27°15'02"W	026°37'55"
C25	70.00'	32.54'	16.57'	32.25'	N53°52'57"W	026°37'55"
C26	70.00'	34.98'	17.86'	34.61'	N81°30'45"W	028°37'41"
C27	70.00'	26.06'	13.18'	25.91'	S73°30'27"W	021°19'56"
C28	20.00'	10.54'	5.39'	10.42'	N77°56'12"E	030°11'26"
C29	20.00'	7.61'	3.85'	7.56'	S76°04'29"E	021°47'12"
C30	50.00'	33.67'	17.50'	33.04'	N84°28'23"W	038°35'00"
C31	50.00'	63.88'	37.14'	59.63'	S39°38'01"W	073°12'13"
C32	50.00'	68.72'	41.03'	63.44'	S36°20'38"E	078°45'05"
C33	50.00'	46.19'	24.89'	44.56'	N77°49'03"E	052°55'33"
C34	50.00'	22.37'	11.38'	22.18'	N38°32'14"E	025°38'05"
C35	20.00'	23.50'	13.32'	22.17'	S59°22'33"W	067°18'43"
C36	20.00'	31.23'	19.81'	28.15'	N42°14'05"W	089°28'00"
C37	20.00'	31.60'	20.19'	28.42'	N47°45'55"E	090°32'00"
C38	401.00'	11.03'	5.52'	11.03'	N87°45'22"W	001°34'34"
C39	401.00'	38.22'	19.12'	38.20'	S88°43'32"W	005°27'38"
C40	401.00'	39.30'	19.67'	39.28'	S83°11'16"W	005°36'55"

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C41	401.00'	39.65'	19.84'	39.64'	S77°32'50"W	005°39'57"
C42	401.00'	38.95'	19.49'	38.93'	S71°55'55"W	005°33'52"
C43	401.00'	4.81'	2.40'	4.81'	S68°48'22"W	000°41'13"
C44	832.00'	91.25'	45.67'	91.21'	N40°40'39"W	006°17'03"
C45	832.00'	49.05'	24.53'	49.04'	N45°30'31"W	003°22'40"
C46	20.00'	28.57'	17.33'	26.20'	N43°24'56"E	081°50'02"
C47	20.00'	31.23'	19.81'	28.15'	N42°14'05"W	089°28'00"
C48	349.00'	25.96'	12.99'	25.96'	N89°05'58"W	004°15'45"
C49	349.00'	68.92'	34.57'	68.81'	S83°06'43"W	011°18'52"
C50	349.00'	54.77'	27.44'	54.72'	S72°57'31"W	008°59'32"
C51	832.00'	92.46'	46.28'	92.41'	N28°02'19"W	006°22'02"
C52	832.00'	104.37'	52.25'	104.30'	N21°15'41"W	007°11'14"
C53	375.00'	61.65'	30.89'	61.58'	S63°45'11"W	009°25'08"

LINE TABLE		
LINE	BEARING	LENGTH
L1	N05°40'04"W	4.86'
L2	N05°40'04"W	52.00'
L3	S84°19'56"W	14.35'
L4	N21°32'15"W	52.00'
L5	N84°19'56"E	39.87'
L6	N02°29'55"E	39.87'
L7	N02°29'55"E	45.57'
L8	N86°58'05"W	45.57'
L9	N02°29'02"E	19.00'
L10	S02°29'55"W	12.60'
L11	N86°58'05"W	8.52'
L12	S86°58'05"E	2.57'
L13	S86°58'05"E	11.66'
L14	N02°29'25"E	9.59'
L15	N84°19'56"E	15.91'
L16	N63°24'53"E	8.04'
L17	N63°24'53"E	19.63'
L18	N84°21'25"E	26.23'
L19	S84°21'25"W	10.35'
L20	S86°58'05"E	9.05'
L21	S75°22'14"W	4.24'
L22	N87°30'58"W	5.00'
L23	N84°19'56"E	58.56'



- PLAT NOTES AND RESTRICTIONS:**
- THIS IS TO CERTIFY THAT WATER AND SEWER SERVICES WILL BE PROVIDED TO TRES SUEÑOS UNIT SIXTEEN SUBDIVISION BY THE EL PASO WATER UTILITIES/PUBLIC SERVICE BOARD IN ACCORDANCE WITH THEIR RULES AND REGULATIONS AND WITH SECTION 16.343 OF THE TEXAS WATER CODE. WATER AND SEWER SERVICES WILL BE EXTENDED TO THE SUBDIVISION FROM EXISTING FACILITIES LOCATED ON MONTANA AVENUE AND MARK AVIZO STREET, AND WILL BE CONSTRUCTED TO SERVE THE SUBDIVISION.
  - TAX CERTIFICATE(S) FOR THIS SUBDIVISION ARE FILED IN THE OFFICE OF THE COUNTY CLERK, DEED AND RECORD SECTION, 20190041472-473 DATE June 4 2019
  - RESTRICTIVE COVENANTS FOR THIS SUBDIVISION ARE FILED IN THE OFFICE OF THE COUNTY CLERK, DEED AND RECORD SECTION, INSTRUMENT No. 20190041474 DATE June 4 2019
  - VEHICULAR ACCESS TO RESIDENTIAL LOTS ABUTTING MARK AVIZO STREET AND ROUND DANCE ROAD, SHALL BE FROM OTHER DEDICATED STREETS ONLY. THE INSTRUMENT ASSURING RELEASE OF ACCESS IS FILED IN THE OFFICE OF THE COUNTY CLERK, DEED AND RECORD SECTION, INSTRUMENT No. 20190041475 DATE June 4 2019
  - SUBDIVISION IMPROVEMENTS AGREEMENT & GUARANTEE FOR THIS SUBDIVISION IS FILED IN THE OFFICE OF THE COUNTY CLERK, DEED AND RECORD SECTION, INSTRUMENT No. \_\_\_\_\_ DATE \_\_\_\_\_
  - INTERIOR LOT CORNERS WILL BE SET UPON COMPLETION OF CONSTRUCTION OF ROADWAYS AND UTILITIES. (BY OTHERS) SET 1/2" REBAR WITH CAP STAMPED "B&A INC" AT ALL EXTERIOR BOUNDARY CORNERS UNLESS OTHERWISE SHOWN.
  - "U.S. POSTAL SERVICE DELIVERY WILL BE PROVIDED THROUGH NEIGHBORHOOD DELIVERY AND COLLECTION BOX UNITS."
  - THIS SUBDIVISION LIES WITH IN ZONE "X" AS DESIGNATED IN PANEL NO. 480212 0175 B, DATED SEPTEMBER 4, 1991, OF THE FLOOD INSURANCE RATE MAPS, EL PASO COUNTY, TEXAS. ZONE "X" INDICATES AREAS OF MINIMAL FLOODING.
  - △ DENOTES EXISTING CITY MONUMENT.
  - ◎ DENOTES PROPOSED MONUMENT AS PER TRES SUEÑOS UNIT SIXTEEN SUBDIVISION. (MAY BE SUBJECT TO RELOCATION AT TIME OF CONSTRUCTION. FOR EXACT LOCATION PLEASE CONTACT THE CITY OF EL PASO).
  - DEED REFERENCE: DOCUMENT NO. 20170065865 AND DOCUMENT NO. 20060084410
  - PROPERTY MAY BE SUBJECT TO EASEMENTS OR OTHER MATTERS WHETHER OF RECORD OR NOT. (NOT SHOWN). NO ADDITIONAL RESEARCH WAS PERFORMED BY B&A INC. FOR ANY RESERVATIONS, RESTRICTIONS, BUILDING LINES AND/OR EASEMENTS WHICH MAY OR MAY NOT AFFECT SUBJECT PARCEL.
  - THIS SURVEY WAS DONE WITHOUT THE BENEFIT OF A TITLE COMMITMENT.
  - U.E. = UTILITY EASEMENT.

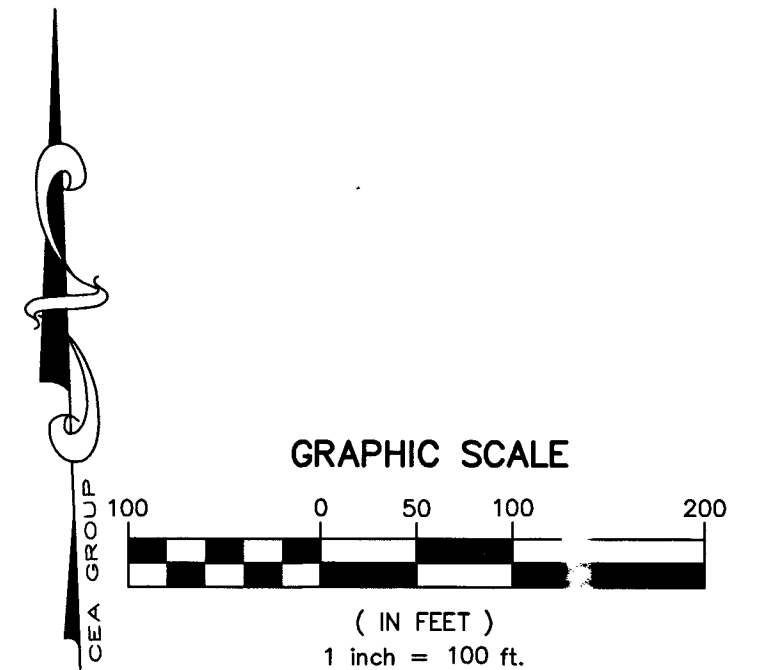
**BENCHMARK:**  
CITY MONUMENT AT POINT OF CURVE CENTERLINE RICH BEEM BLVD., S08°43'31"E A DISTANCE OF 467.58 FEET FROM THE SOUTHERLY RIGHT OF WAY LINE OF MONTANA AVENUE.  
ELEVATION: 4005.40 (CITY DATUM)

**FLOOD ZONE**  
THIS SUBDIVISION LIES WITH IN ZONE "X" AS DESIGNATED IN PANEL NO. 480212 0175 B, DATED SEPTEMBER 4, 1991, OF THE FLOOD INSURANCE RATE MAPS, EL PASO COUNTY, TEXAS. ZONE "X" INDICATES AREAS OF MINIMAL FLOODING.

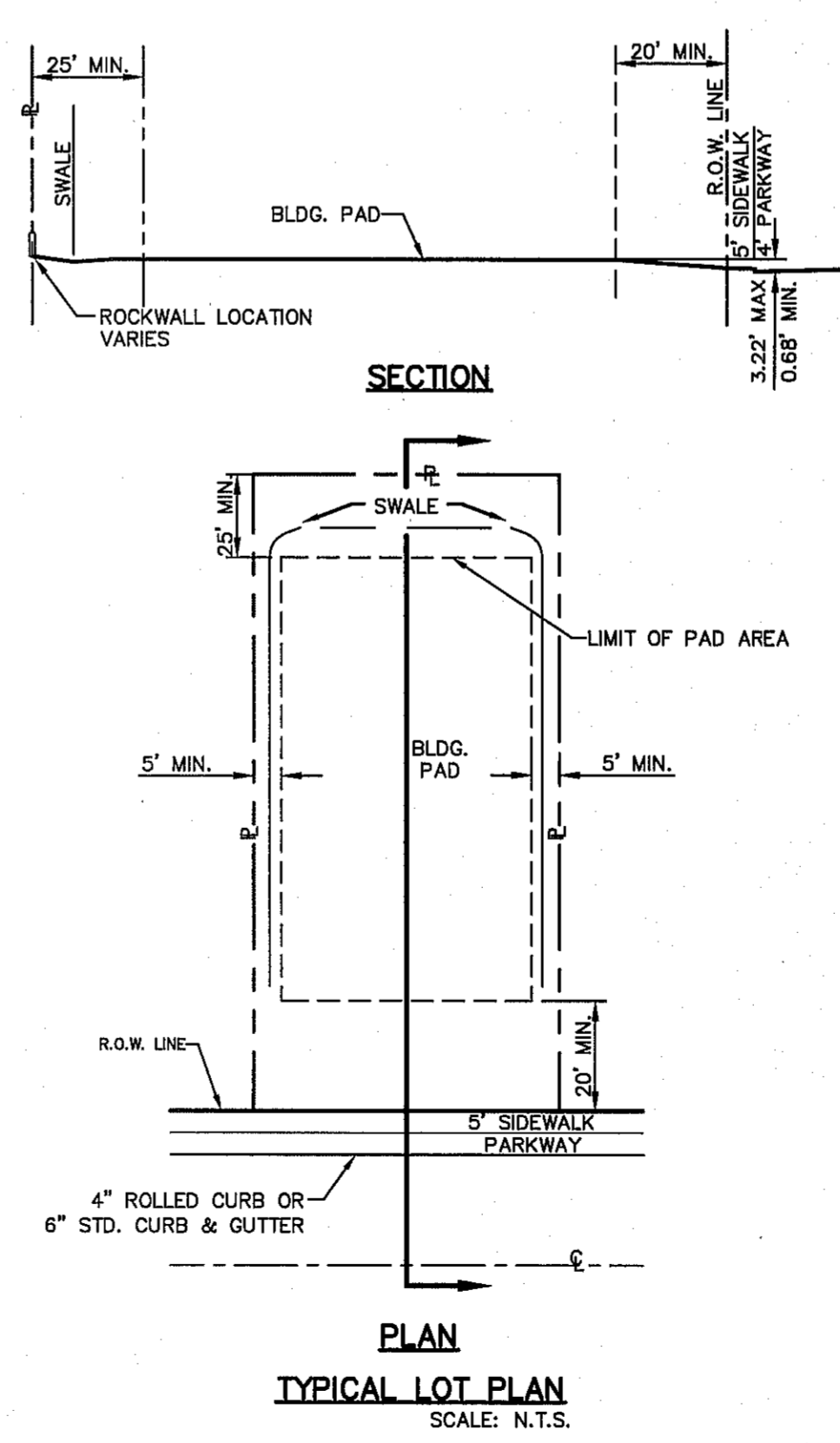
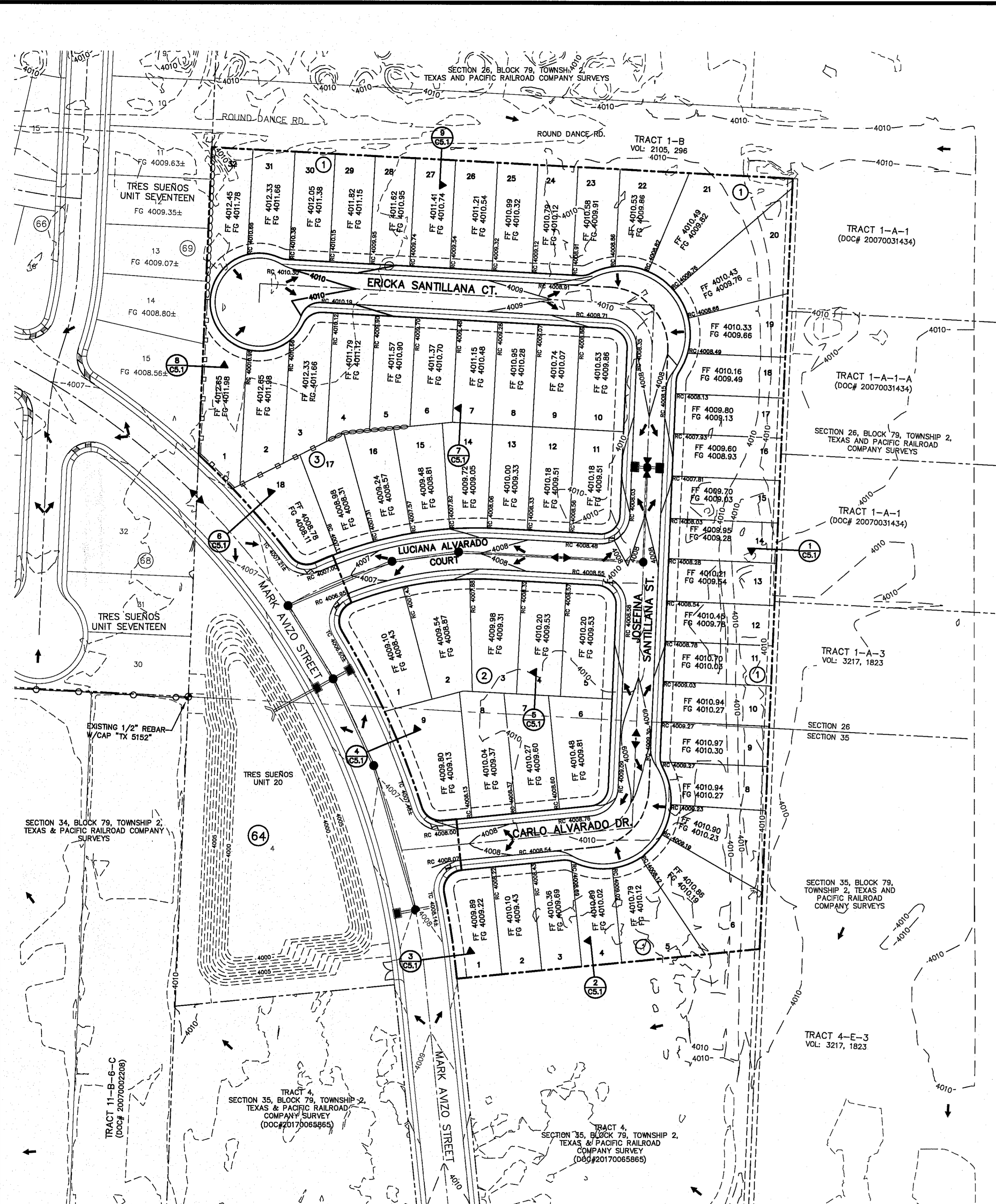
**SCHOOL DISTRICT**  
SOCORRO INDEPENDENT SCHOOL DISTRICT  
12440 ROJAS DR, EL PASO, TX 79928

RESIDENTIAL LOTS = 59  
POND = 0  
TOTAL = 59

**BEARING BASIS**  
BEARINGS SHOWN ARE GRID BEARINGS DERIVED FROM RTK OBSERVATIONS TO THE TEXAS CO-OP NETWORK, REFERRED TO THE TEXAS COORDINATE SYSTEM (NAD 83) CENTRAL ZONE. DISTANCES ARE GROUND DISTANCES AND MAY BE CONVERTED TO GRID DIVIDING BY 1.00020946.



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

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

**18.44.090 - WARRANTY**  
ANY PERSON ISSUED A PERMIT SHALL AGREE WARRANT AND MAINTAIN THE AREA DESCRIBED IN THE PERMIT FOR A PERIOD OF TWO YEARS AFTER THE PERMIT IS CLOSED BY THE CITY PURSUANT TO SECTION 18.44.220 OR UNTIL A BUILDING PERMIT IS ISSUED FOR THE PURPOSE OF MAINTAINING A STABILIZED SITE IN ACCORDANCE WITH THE APPROVED GSP, WHICHEVER FIRST OCCURS (THE "WARRANTY" OR "WARRANTY PERIOD"). THE CITY MAY CONDUCT INSPECTIONS OF THE PERMITTED AREA THROUGHOUT THE WARRANTY PERIOD AND REQUIRE MAINTENANCE AND CORRECTION OF THE WORK BY THE PERMIT HOLDER. FAILURE OF THE PERMIT HOLDER TO CORRECT THE WORK SHALL CONSTITUTE A FAILURE TO COMPLY WITH THE PROVISIONS OF THIS CHAPTER.  
(Ord. No. 17516, § 1, 3-29-2011)

**18.44.220 - PERMIT CLOSEOUT PROCEDURE**  
AFTER THE PERMITTEE COMPLETES THE GRADING UNDER THE PERMIT, THE PERMIT SHALL BE CLOSED. AS PART OF THE CLOSEOUT PROCEDURE, THE APPLICANT MUST SUBMIT THE FOLLOWING TO THE CITY:  
A. A STATEMENT FROM THE ENGINEER OF RECORD THAT STATES "THE GRADING OPERATION HAS BEEN SUBSTANTIALLY COMPLETED AND GENERALLY CONFORMS TO THE APPROVED SET OF PLANS". THE PERMITTEE SHALL CALL THE PERMIT OFFICIAL TO ESTABLISH THE BEGINNING OF THE WARRANTY PERIOD AND TO NOTIFY THE PERMIT OFFICIAL THAT THE GSP HAS BEEN IMPLEMENTED.  
B. A COPY OF THE NOTICE OF TERMINATION FILED WITH THE STATE OR DATED CONSTRUCTION SITE NOTICE, IF APPLICABLE, IN ACCORDANCE WITH CHAPTER 15. THE CITY WILL ISSUE A LETTER STATING GENERAL CONFORMANCE TO THE PERMIT HAS BEEN MET AND THAT THE WARRANTY PERIOD REQUIREMENTS WILL CONTINUE TO BE IN EFFECT.  
(Ord. No. 17516, § 1, 3-29-2011)

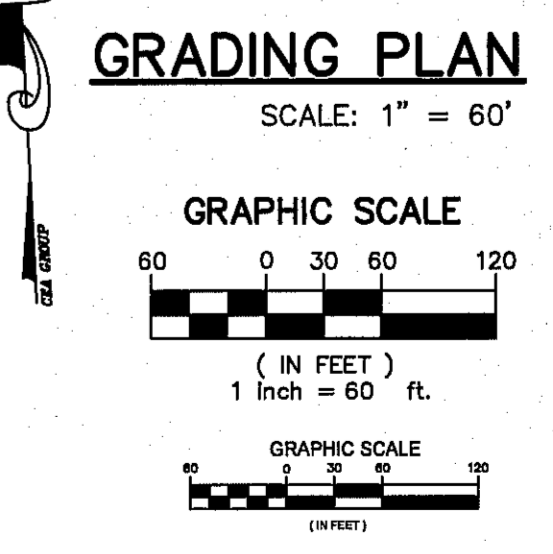
**18.44.200 - ENGINEERING CONTROLS FOR GRADING**  
CONSTRUCTION ACTIVITY REQUIREMENTS:  
1. NO ON-SITE PROCESSING OF MATERIAL FOR COMMERCIAL OR RETAIL SALE SHALL BE ALLOWED. ON-SITE PROCESSING OF MATERIALS TO BE USED FOR PREPARATION OR CONSTRUCTION OF IMPROVEMENTS WITHIN THE SITE COVERED BY THE GRADING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

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

**BENCHMARK**  
CITY MONUMENT AT POINT OF CURVE CENTERLINE RICH BEEM BLVD., 508'43"31" E A DISTANCE OF 487.58 FEET FROM THE SOUTHERLY RIGHT OF WAY LINE OF MONTANA AVENUE.  
ELEVATION = 4005.40 (CITY DATUM)

**FLOOD ZONE:**  
THIS SUBDIVISION LIES WITHIN ZONE "X" AS DESIGNATED IN PANEL NO. 480212 0175 B, DATED SEPTEMBER 4, 1991, OF THE FLOOD INSURANCE RATE MAPS, EL PASO COUNTY, TEXAS. ZONE "X" INDICATES AREAS OF MINIMAL FLOODING.

- LEGEND:**
- ○ ○ ○ ○ NEW RETAINING ROCKWALL (2'-3' RETAINING HEIGHT)
  - □ □ □ □ NEW RETAINING ROCKWALL (3'-9' RETAINING HEIGHT)
  - ○ ○ ○ ○ EXISTING RETAINING ROCKWALL (2'-3' RETAINING HEIGHT)
  - □ □ □ □ EXISTING RETAINING ROCKWALL (3'-9' RETAINING HEIGHT)
  - 4000 — PROPOSED MAJOR CONTOURS
  - 4000 — PROPOSED MINOR CONTOURS
  - 4000 — EXISTING MAJOR CONTOURS
  - 4000 — EXISTING MINOR CONTOURS
  - RC 4075.00 ROLLED CURB ELEVATION
  - TC 4075.00 TOP OF CURB ELEVATION
  - FG 4075.00 FINISH GROUND ELEVATION
  - FF 4075.00 FINISH FLOOR ELEVATION
  - FG 4075.00 EXISTING FINISH GROUND ELEVATION
  - FF 4075.00 EXISTING FINISH FLOOR ELEVATION
  - ↗ DRAINAGE FLOW
  - ▲ HIGH POINT
  - ▼ LOW POINT



REFERENCES - BENCHMARKS

CITY MONUMENT AT POINT OF CURVE CENTERLINE RICH BEEM BLVD., 508'43"31" E A DISTANCE OF 487.58 FEET FROM THE SOUTHERLY RIGHT OF WAY LINE OF MONTANA AVENUE.	ELEVATION = 4005.40 (CITY DATUM).
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ENGINEER'S SEAL

**CEA**  
CITY ENGINEER  
TEXAS REGISTERED ENGINEERING FIRM F-6584  
4712 Woodrow Bess, Ste. F, El Paso, TX 79924  
915.544.5232 | www.ceagroup.net

SCALE: 1" = 60'

Horizontal: 1" = 60'  
Vertical: 1" = 4'  
Contour Interval: 1/4'

DATE: AUGUST 2018  
DESIGN BY: F.Z.  
DRAWN BY: K.A.P.  
CHKD. BY: J.L.A.  
APP'D. BY: J.L.A.  
JOB NO. 2025-013

PROJECT TITLE

**TRES SUENOS UNIT SIXTEEN SUBDIVISION IMPROVEMENTS**

SHEET TITLE

**GRADING PLAN**

SHEET NO.

**C3.1**



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

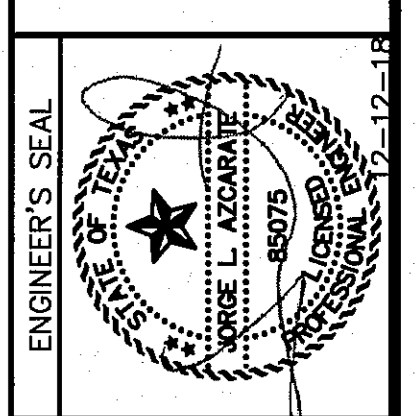
**WARNING!**  
**BEFORE YOU DIG**  
**CALL 811**  
FOR FIELD LOCATING EXISTING UTILITIES

REFERENCES - BENCHMARKS

CITY MONUMENT AT POINT OF CURVE CENTERLINE RICH BEEM BLVD., S084337E A DISTANCE OF 467.56 FEET FROM THE SOUTHERLY RIGHT OF WAY LINE OF MONTANA AVENUE. ELEVATION = 4005.40 (CITY DATUM).

DATE	REVISIONS	BY

**osa**  
REGISTERED ENGINEERING FIRM  
4777 Woodrow Bean, Ste. F, El Paso, TX 79904  
915.544.6232 | www.osagroup.net

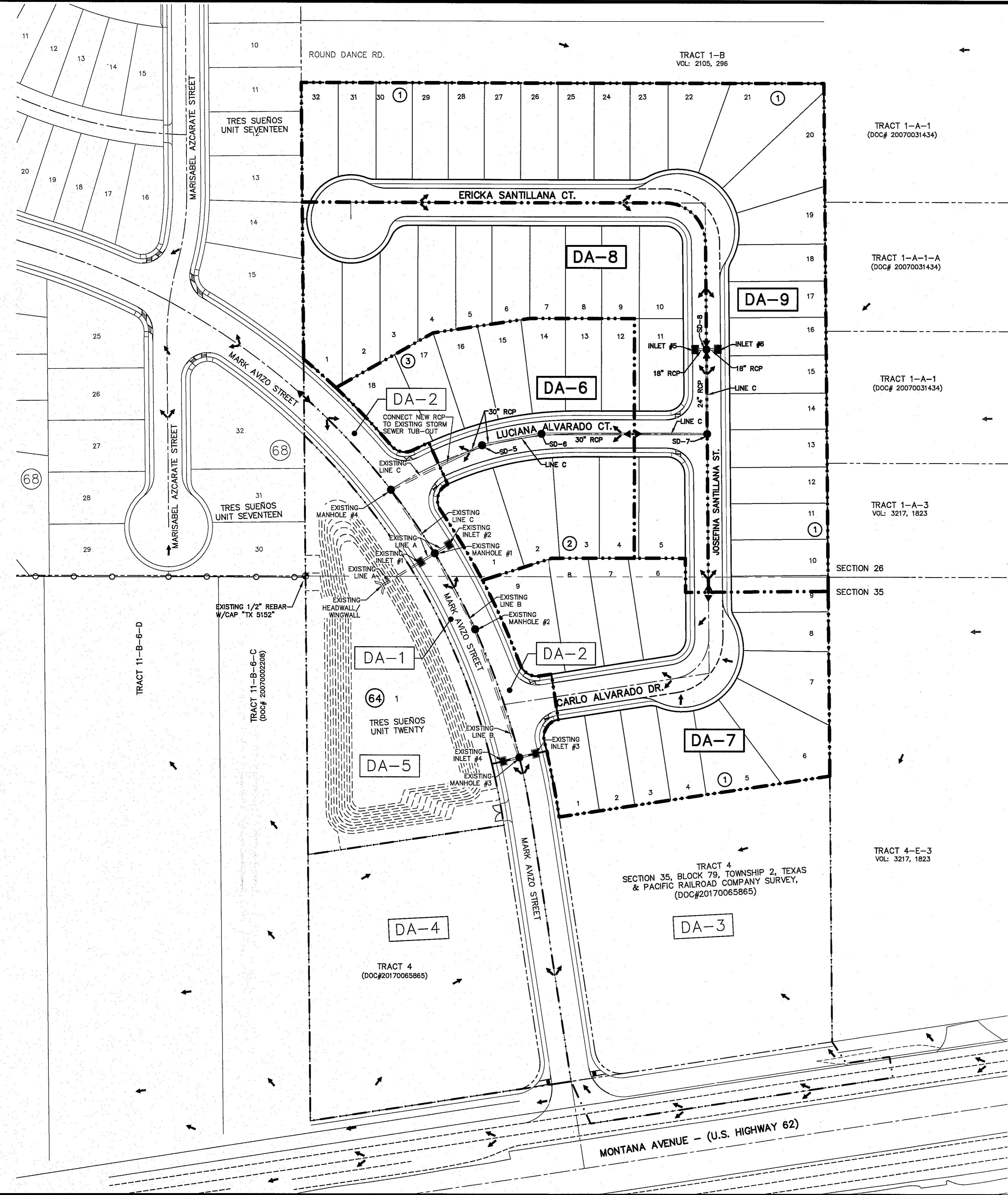


SCALE: 1" = 60'  
Horizontal: N/A  
Vertical: N/A  
Contour Interval: N/A  
DATE: AUGUST 2018  
DESIGN BY: F.Z.  
DRAWN BY: K.A.P.  
CHKD. BY: J.L.A.  
APPVD. BY: J.L.A.  
JOB No. - 2025-013

PROJECT TITLE  
**TRES SUEÑOS UNIT SIXTEEN SUBDIVISION IMPROVEMENTS**

SHEET TITLE  
**DRAINAGE PLAN**

SHEET NO.  
**C4.1**



**AS PER TRES SUEÑOS UNIT TWENTY**

EXISTING POND CALCULATIONS	
QT = (ARC)/12	0.012 AC-FT/AC = SILT VOLUME
QT = 3.581 AC-FT	SILT VOLUME = 0.183
A = 15.329	QT+25%*SILT = TOTAL AC-FT
R = 4"	
Cw = 0.701	
QT X 25% = 0.895	<b>TOTALreq= 4.659 AC-FT</b>

STREET CAPACITIES					
STREET (1)	Ø INLET (2)	EXP. FLOW Q REQ. (CFS) (3)	DEPTH (4)	Velocity (5)	CAPACITY (CFS) (6)
MARK AVIZO	1	1.789	0.174	1.876	20.182
MARK AVIZO	2	12.621	0.369	3.058	20.182
MARK AVIZO	3	12.739	0.370	3.065	20.182
MARK AVIZO	4	10.159	0.340	2.896	20.182
JOSEFINA	5	4.518	0.315	2.751	8.633
JOSEFINA	6	6.966	0.255	2.391	8.633

EXISTING POND / 100 YEAR STORM								
Basin No.	REQUIRED CAPACITY (AC.-FT.)	AVAILABLE CAPACITY (AC.-FT.)	PEAK INFLOW (CFS)	OUTLET TOWER FLOW (CFS)	HIGH WATER SURFACE ELEV. (FT.)	BOTTOM ELEVATION (FT.)	FREE BOARD (FT.)	TOP ELEVATION
1	4.659	5.487	53.079	0	4005.00	3998	1.00	4006

EX. POND AREAS	
CONTOUR	ACCUMULATED VOLUME (AC.-FT.)
3998	0.000
3999	0.487
4000	1.027
4001	1.622
4002	2.273
4003	2.983
4004	3.754
4005	4.662
4006	5.487

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

HGL = QT  
HGL = 3.581 AC-FT  
CONTOUR 4003, ACCUMULATED VOLUME=2.983 AC-FT  
CONTOUR 4004, ACCUMULATED VOLUME=3.754 AC-FT  
CONTOUR 4005, ACCUMULATED VOLUME=4.662 AC-FT  
CONTOUR 4006, ACCUMULATED VOLUME=5.487 AC-FT  
HYDRAULIC GRADE LINE ELEVATION=4003.78

HWS = QT+SILT VOLUME+25% EMERGENCY  
HWS = 3.581+0.183+0.895=4.659 AC-FT  
CONTOUR 4005, ACCUMULATED VOLUME=4.662 AC-FT  
CONTOUR 4006, ACCUMULATED VOLUME=5.487 AC-FT  
HIGH WATER SURFACE ELEVATION=4005.00

**100 YEAR STORM CALCULATIONS FOR WATERSHED AREAS**

DRAINAGE AREA NO. (1)	DRAINAGE AREA (AC) (2)	DESIGN STORM INTENSITY (1100) (3)	TIME OF CONCENTRATION (4)	RUNOFF COEFF. (C) (5)	Q100 (CFS) (6)
* DA-1	0.336	5.605	10.00	0.95	1.789
* DA-2	0.446	5.605	10.00	0.95	2.374
* DA-3	2.648	5.605	10.00	0.95	14.099
* DA-4	1.908	5.605	10.00	0.95	10.159
* DA-5	1.530	5.605	10.00	0.50	4.287
DA-6	1.592	4.169	18.42	0.60	3.982
DA-7	1.968	4.154	18.54	0.60	4.905
DA-8	2.102	3.582	24.06	0.60	4.518
DA-9	3.240	3.582	24.06	0.60	6.963

- \* DRAINAGE AREAS OUTSIDE OF DEVELOPMENT - TRES SUEÑOS UNIT 20
- REFERENCE: CITY OF EL PASO DRAINAGE DESIGN MANUAL (JUNE, 2008)
- (1) WATERSHED AREA IDENTIFICATION
- (2) AREA FROM DRAINAGE PLAN
- (3) RAINFALL INTENSITY, 100 YEAR STORM => TABLE 4-3
- (4) TIME OF CONCENTRATION: TC= T (OVERLAND) + T (GUTTER)
- (5) RUNOFF COEFFICIENT => TABLE 4-5
- OPEN SPACE AREA = 0.50
- RESIDENTIAL AREA = 0.60
- PAVEMENT AREA = 0.95
- (6)  $Q_{100} = C \times I \times A_{100}$

**LEGEND:**

- DRAINAGE AREA BOUNDARY
- DRAINAGE FLOW
- ▲ HIGH POINT
- ▼ LOW POINT
- DROP INLET
- STORM SEWER MANHOLE
- RCP
- THRUST BLOCK STRUCTURE
- DA-10 DRAINAGE AREA

DROP INLETS									
NO.	REQ. FLOW Q REQ. (CFS)	ADDITIONAL FLOW Q (CFS) FROM INLET #	CROWN Q OVERTOP (CFS)	Q EXP. (CFS)	AVAIL. FLOW CAPACITY Q AVAIL. (CFS)	FLOW BYPASS Q (CFS) TO INLET #	# OF GRATES	TYPE OF INLET	INLET LOCATION
*1	1.789	0	0	1.789	19.267	0	2	TYPE I	SUMP
*2	11.261	1,360 (#3)	0	12.621	19.267	0	2	TYPE I	SUMP
*3	14.099	0	0	14.099	12.739	1,360	3	TYPE I	ON GRADE
*4	10.159	0	0	10.159	10.679	0	3	TYPE I	ON GRADE
5	4.518	0	0	4.518	17.748	0	2	TYPE III	SUMP
6	6.963	0	0	6.966	17.748	0	2	TYPE III	SUMP

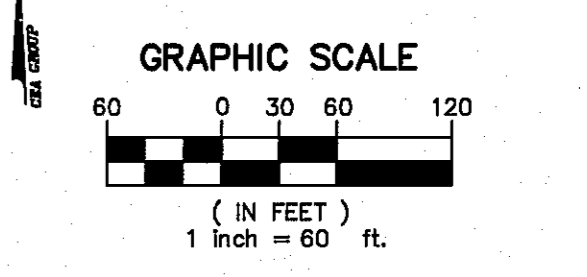
\* INLETS LOCATED OUTSIDE OF DEVELOPMENT - TRES SUEÑOS UNIT 20

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

MOMENTUM COMPUTATION			
LOCATION Ø INLET (1)	DEPTH (2)	VELOCITY (3)	PRODUCT NUMBER (4)
*1	0.174	1.876	0.326
*2	0.369	3.058	1.128
*3	0.370	3.065	1.134
*4	0.340	2.896	0.984
5	0.315	2.751	0.866
6	0.255	2.391	0.609

- \* INLETS LOCATED OUTSIDE OF DEVELOPMENT - TRES SUEÑOS UNIT 20
- (1) LOCATION
- (2) DEPTH
- (3) VELOCITY
- (4) PRODUCT NUMBER = DEPTH X VELOCITY

**DRAINAGE PLAN**  
SCALE: 1" = 60'

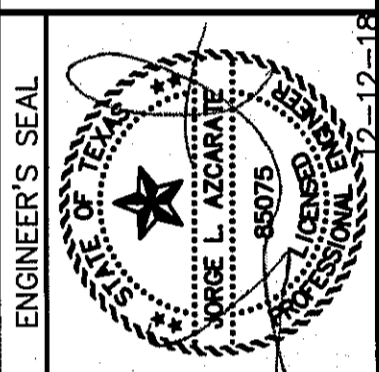


UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT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

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

DATE	REVISIONS	BY

**ceagroup**  
TEXAS REGISTERED ENGINEERING FIRM F-694  
4712 Woodrow Babin, Ste. F, El Paso, TX 79924  
915.544.5232 www.ceagroup.net



SCALE	DATE	DESIGN BY	CHKD. BY	APPVD. BY	JOB NO.
Vertical: 1"=8' Horizontal: 1"=80'	AUGUST 2018	F.Z.	K.A.P.	J.L.A.	2025-013

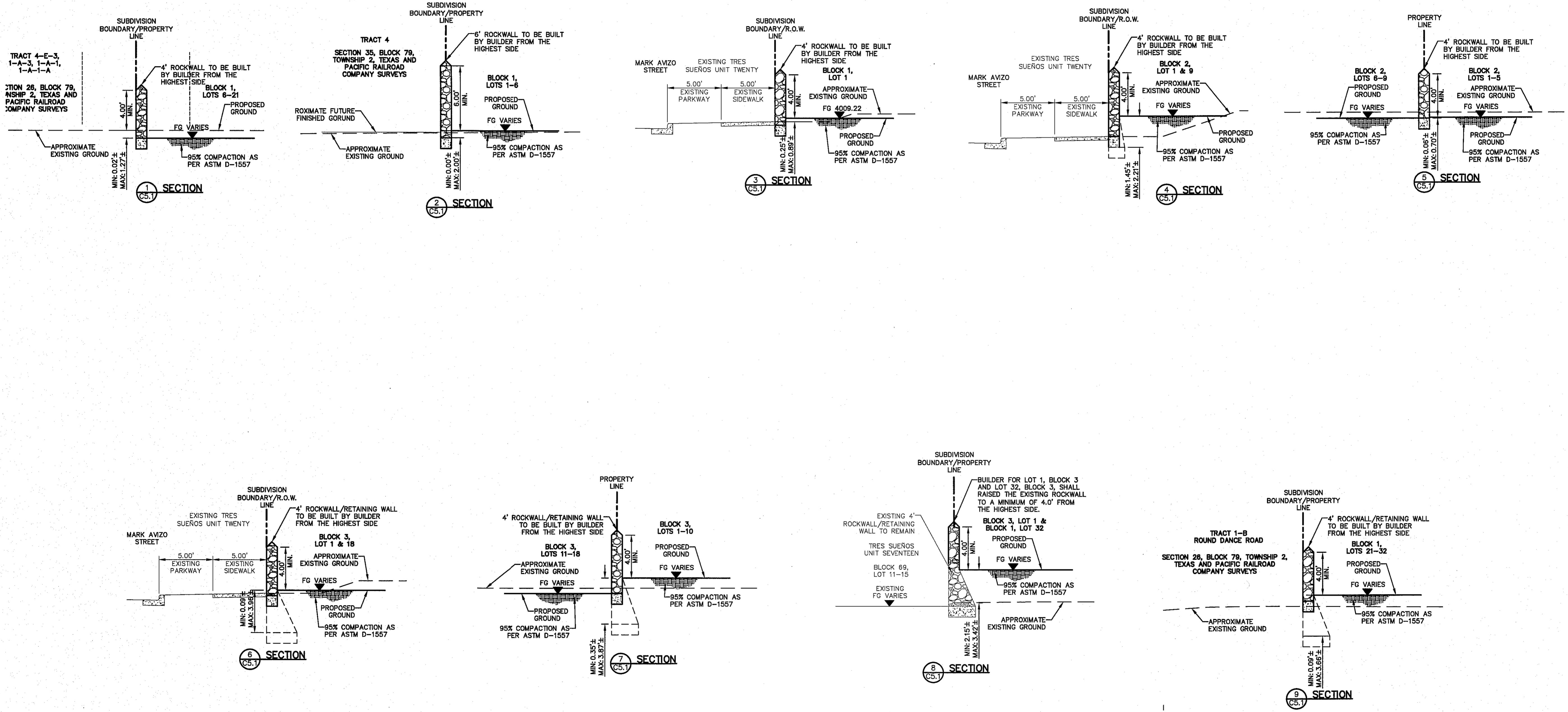
PROJECT TITLE  
**TRES SUEÑOS  
UNIT SIXTEEN  
SUBDIVISION IMPROVEMENTS**

SHEET TITLE

GRADING SECTIONS

SHEET NO.

**C5.1**



S:\2025\2025-013-Tres Suenos Unit Sixteen\DWG\Construction Drawings\Improvement Plans\C5.1-Grading Sections.dwg, 12/13/2018 7:52:44 AM

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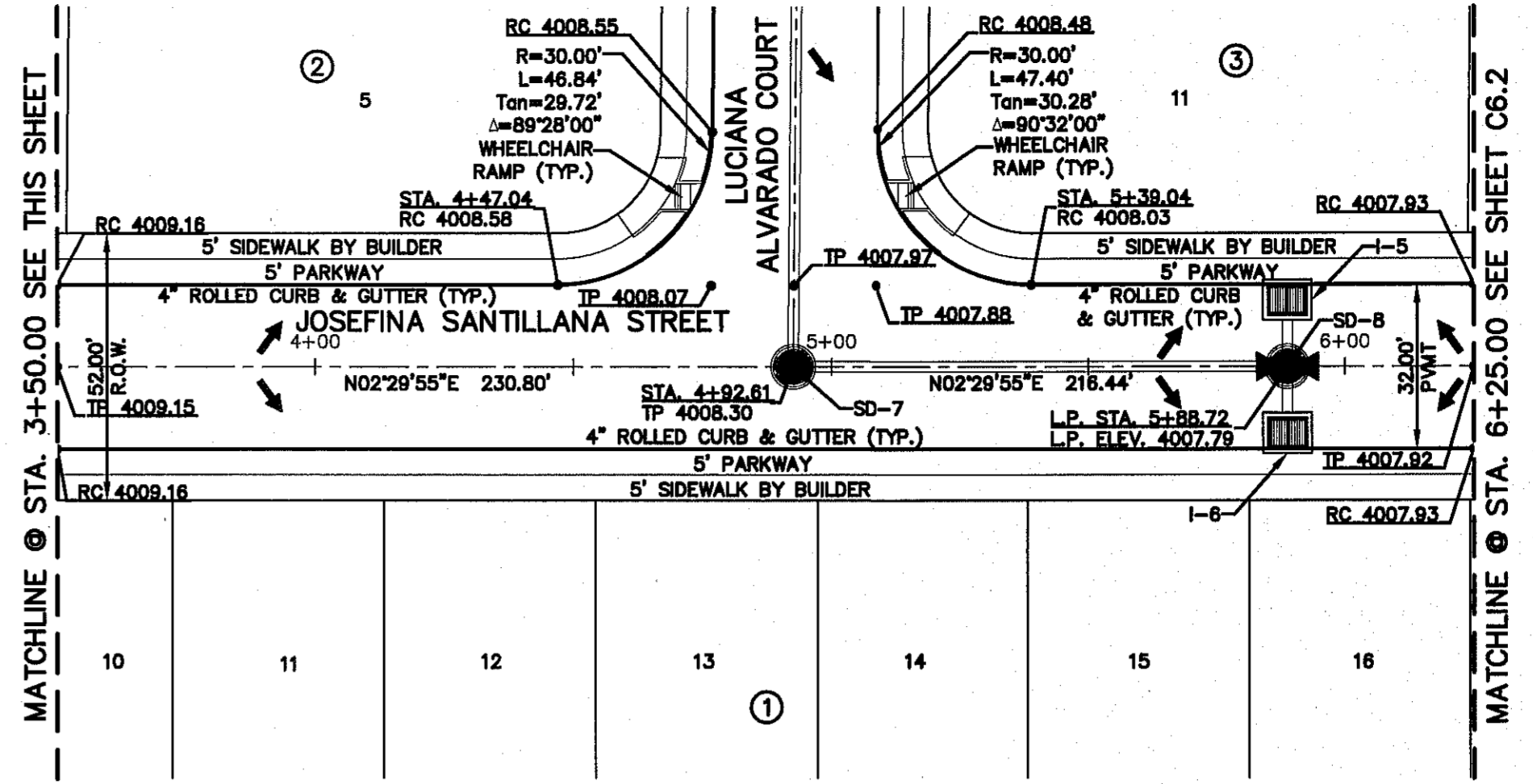
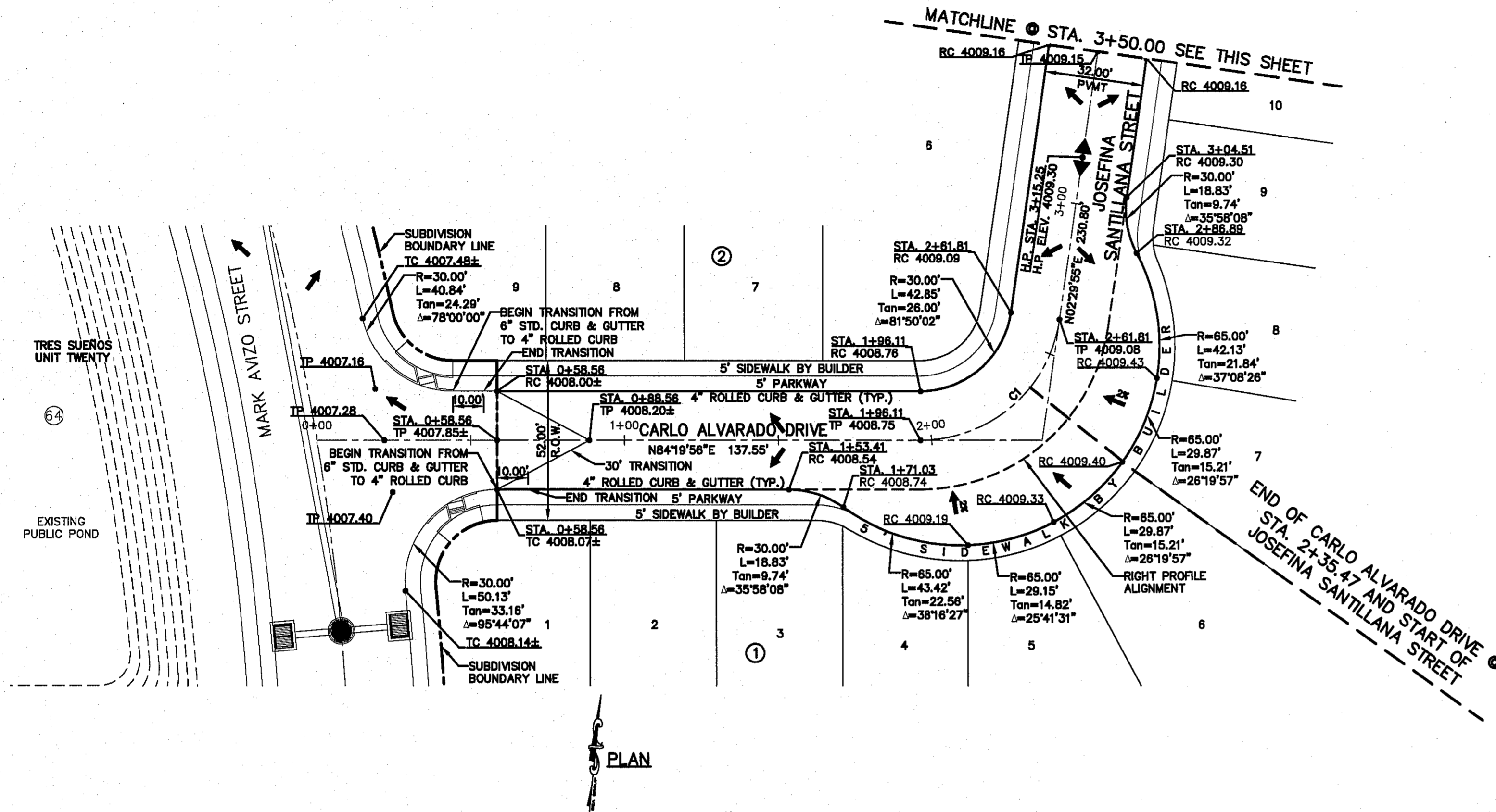
UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 498-5244
EL PASO WATER UTILITIES	(915) 594-5500
MOI SURVEILLANCE	(800) MOI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579

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

DATE	REVISIONS	BY

REFERENCES - BENCHMARKS  
 CITY MONUMENT AT POINT OF CURVE CENTERLINE RICH BEEM BLDG., S08°43'31"E A DISTANCE OF 467.58 FEET FROM THE SOUTHERLY RIGHT OF WAY LINE OF MONTANA AVENUE. ELEVATION = 4005.40 (CITY DATUM).

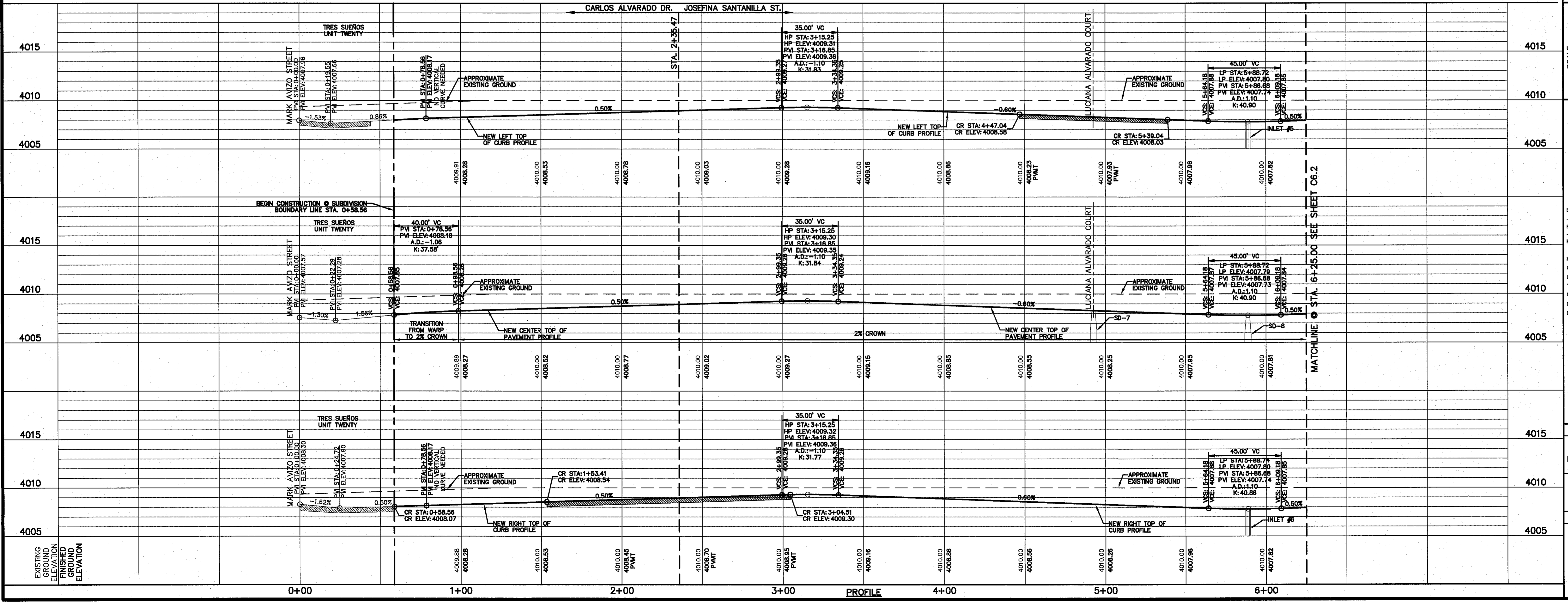
CEA ENGINEERING FIRM, L.P.  
 TEXAS REGISTERED ENGINEERING FIRM #14564  
 4712 Woodloch Blvd, Ste F, El Paso, TX 79924  
 915.544.5322 | www.ceainc.com



**LEGEND**

DIRECTIONAL WHEELCHAIR RAMP BY DEVELOPER (TYP.)

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



ENGINEER'S SEAL

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

DATE: AUGUST 2018  
 DESIGN BY: F.Z.  
 CHECKED BY: K.A.P.  
 APPROVED BY: J.L.A.  
 JOB No. ...2025-013

PROJECT TITLE  
**TRES SUEÑOS UNIT SIXTEEN SUBDIVISION IMPROVEMENTS**

SHEET TITLE  
**CARLO ALVARADO DRIVE PLAN & PROFILE FROM STA. 0+58.56 TO STA. 2+35.47**  
**JOSEFINA SANTILLANA STREET PLAN & PROFILE FROM STA. 2+35.47 TO STA. 6+25.00**

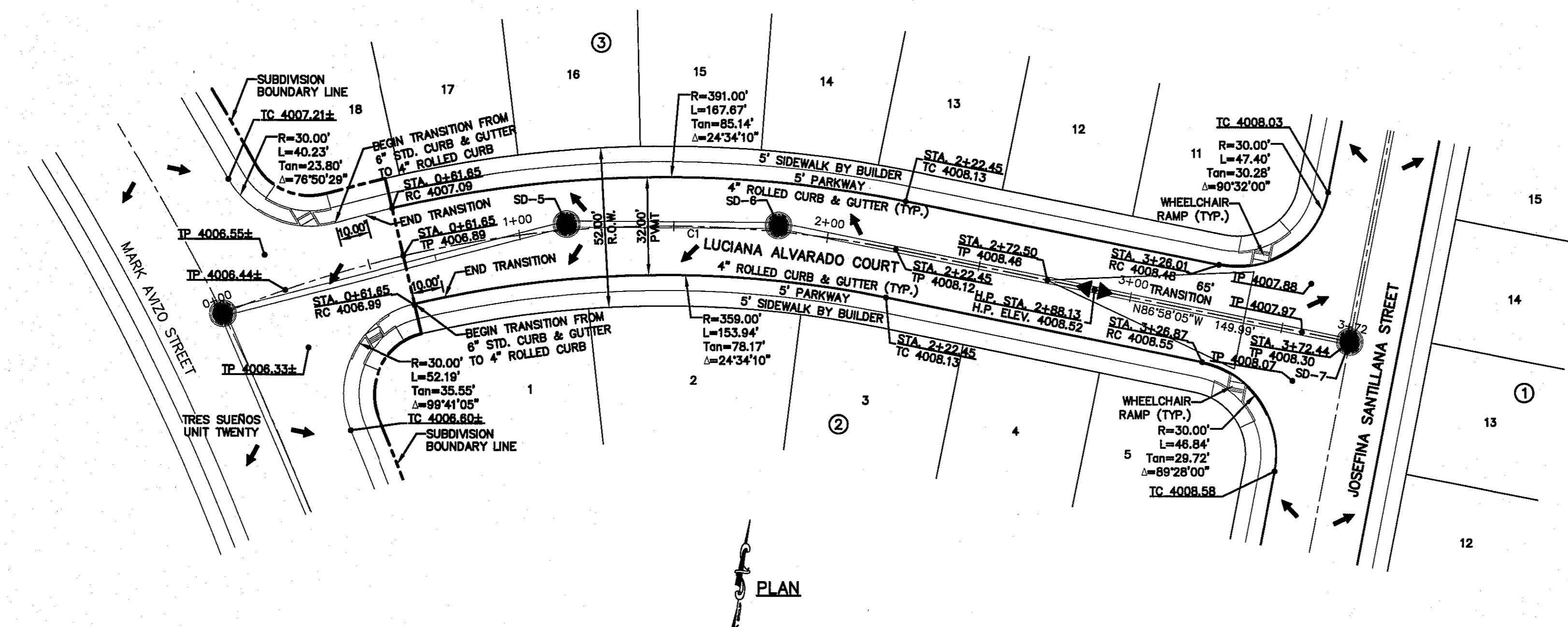
SHEET NO.  
**C6.1**





UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 498-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3786
U.S. SPRINT TELECOMM	(800) 521-0579

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FOR FIELD LOCATING EXISTING UTILITIES



CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	375.00'	160.81'	81.66'	159.58'	S80°44'50"W	024°34'10"

**LEGEND**  

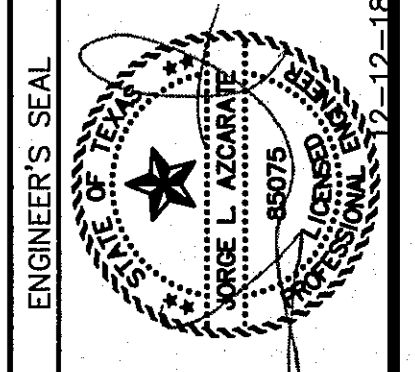
 DIRECTIONAL WHEELCHAIR RAMP BY DEVELOPER (TYP.)  

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

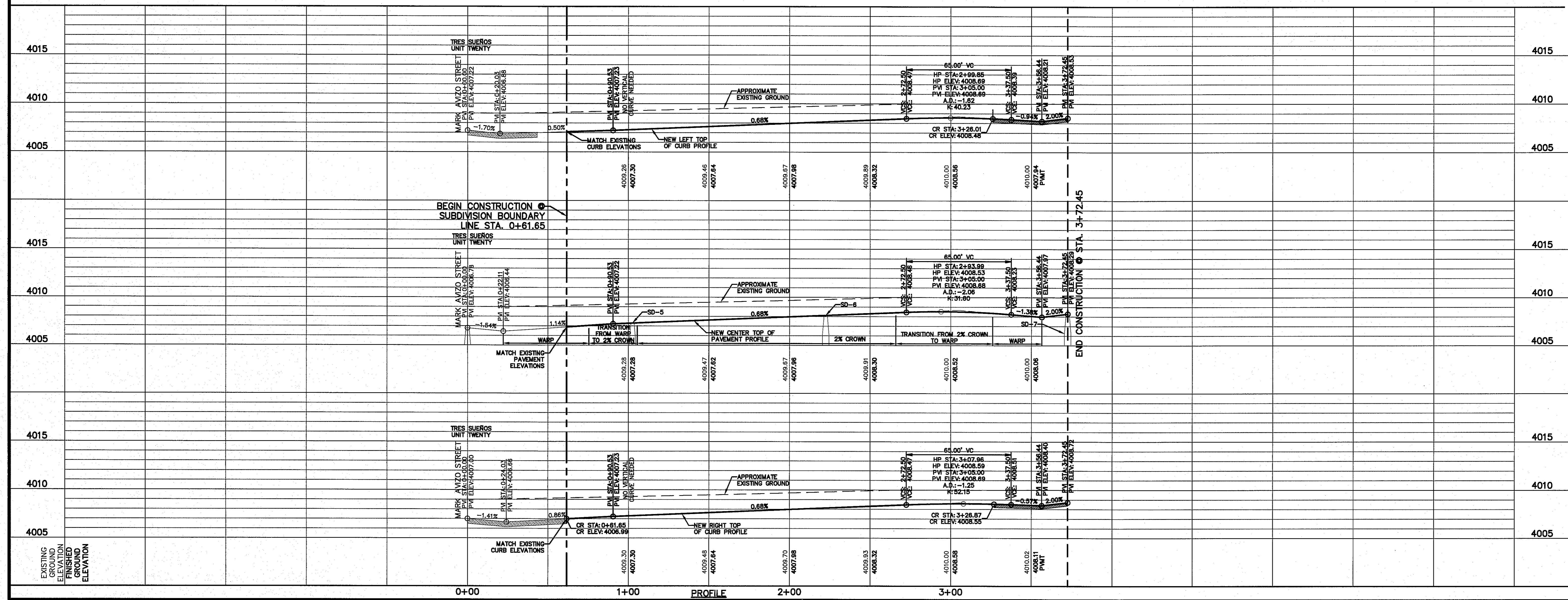


DATE	REVISIONS	BY

**ceagroup**  
 TEXAS REGISTERED ENGINEERING FIRM F-494  
 4172 Woodrow Beam, Ste. F, El Paso, TX 79924  
 915.544.5232 | www.ceagroup.net



SCALE:  
 Horizontal: 1"=30'  
 Vertical: 1"=5'  
 Contour Interval: N/A  
 DATE: AUGUST 2018  
 DESIGN BY: F.Z.  
 DRAWN BY: K.A.P.  
 CHECK BY: J.L.A.  
 APP'D BY: J.L.A.  
 JOB No.: 2025-013



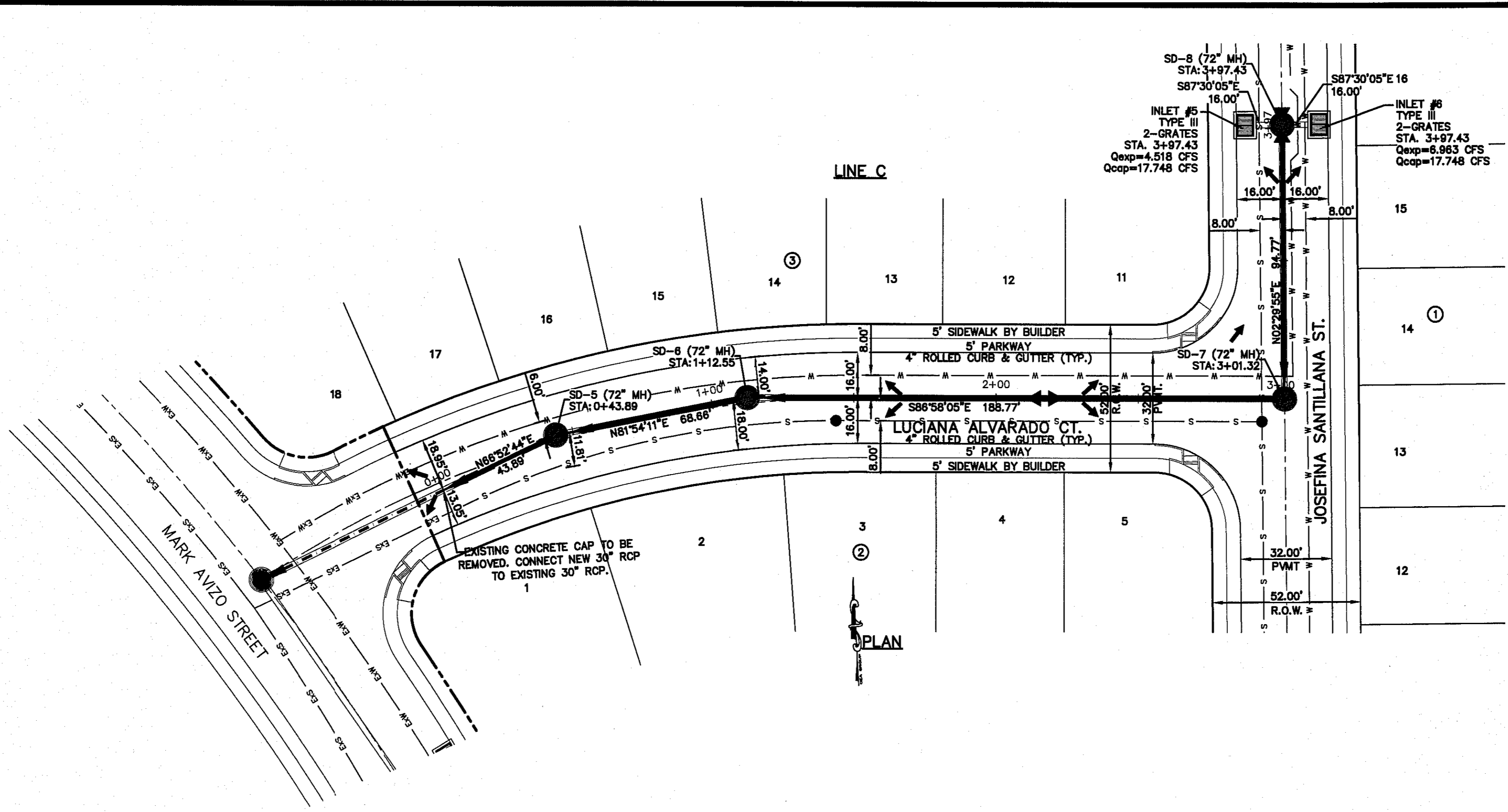
PROJECT TITLE  
**TRES SUEÑOS  
 UNIT SIXTEEN  
 SUBDIVISION IMPROVEMENTS**

SHEET TITLE  
**LUCIANA ALVARADO COURT  
 PLAN AND  
 PROFILE FROM  
 STA. 0+61.65 TO  
 STA. 3+72.45**

SHEET NO.  
**C6.3**

S:\2025\2025-013-Tres Suenos U16 SP\DWG\Construction Drawings\Improvement Plans\C6.3-Luciana Alvarado Court P&P.dwg, 12/13/2018 8:02:26 AM

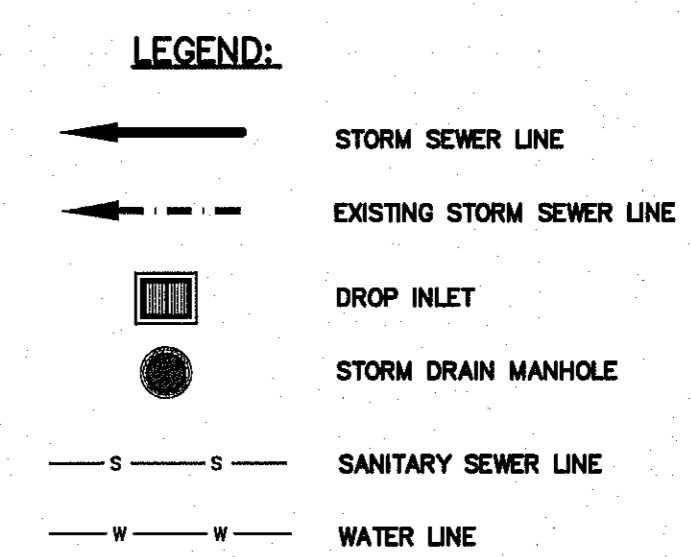
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UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 880-7200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

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**NOTE:**  
CONTRACTOR SHALL UTILIZE SPECIAL CAUTION WHEN PIPE DEPTH OF COVER IS LESS THAN 48-INCHES FOR HEAVY VEHICULAR EQUIPMENT. NO HEAVY CONSTRUCTION VEHICLES SHALL BE ALLOWED OVER HP SANITITE PIPES WITH DEPTHS OF COVER OF LESS THAN 48-INCHES UNLESS THE CONTRACTOR CREATES A SOIL BRIDGE TO INCREASE THE DEPTH OF COVER AS PER MANUFACTURER'S RECOMMENDATIONS.

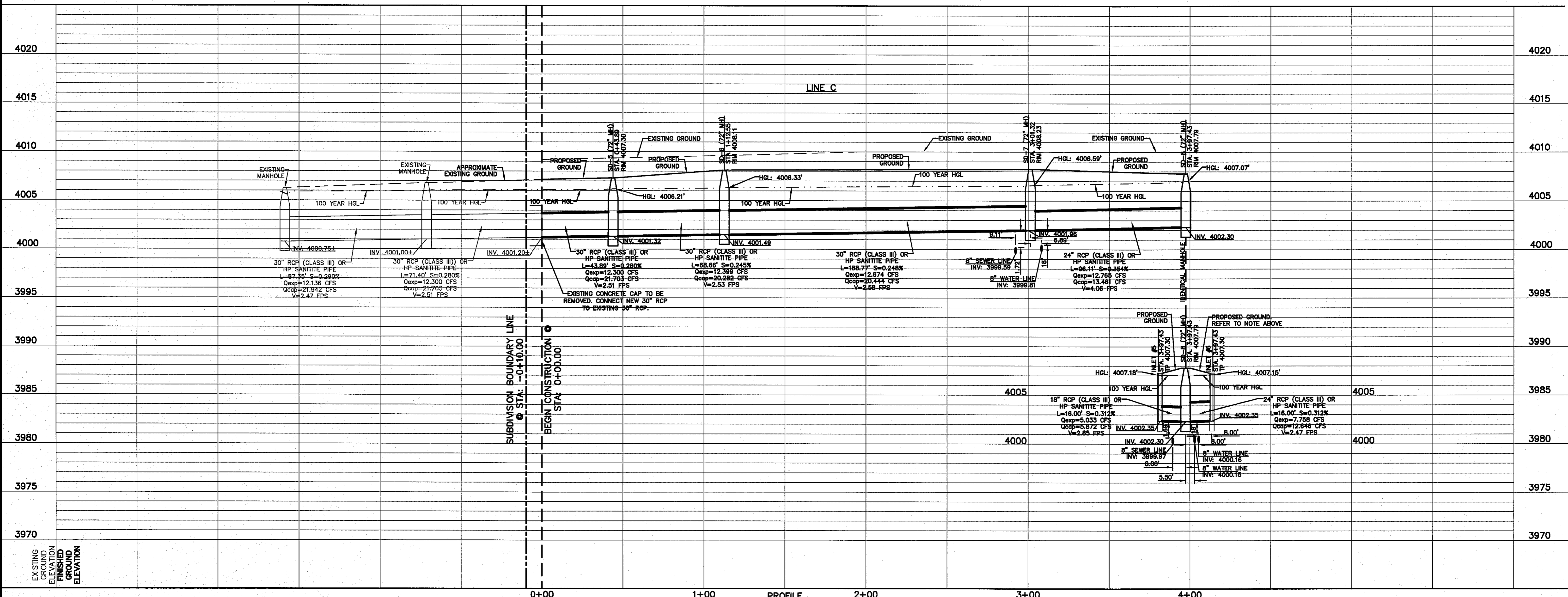
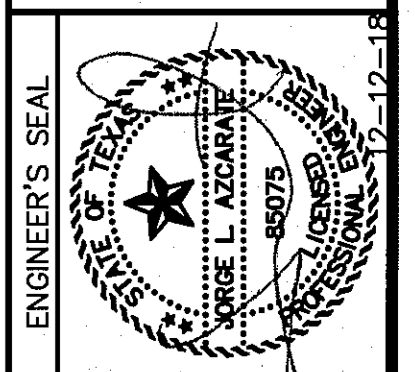


REFERENCES - BENCHMARKS

CITY MONUMENT AT POINT OF CURVE CENTERLINE RICH BEEM BLVD., S0843.37'E, A DISTANCE OF 167.58 FEET TO THE SOUTHERLY, RIGHT OF WAY LINE OF MONTANA AVENUE. ELEVATION = 4005.40 (CITY DATUM).

DATE	REVISIONS	BY

**cea**  
REGISTERED ENGINEERING FIRM #4584  
4772 Woodrow Basin, Ste. F El Paso, TX 79924  
915.544.5232 | www.ceagroup.net



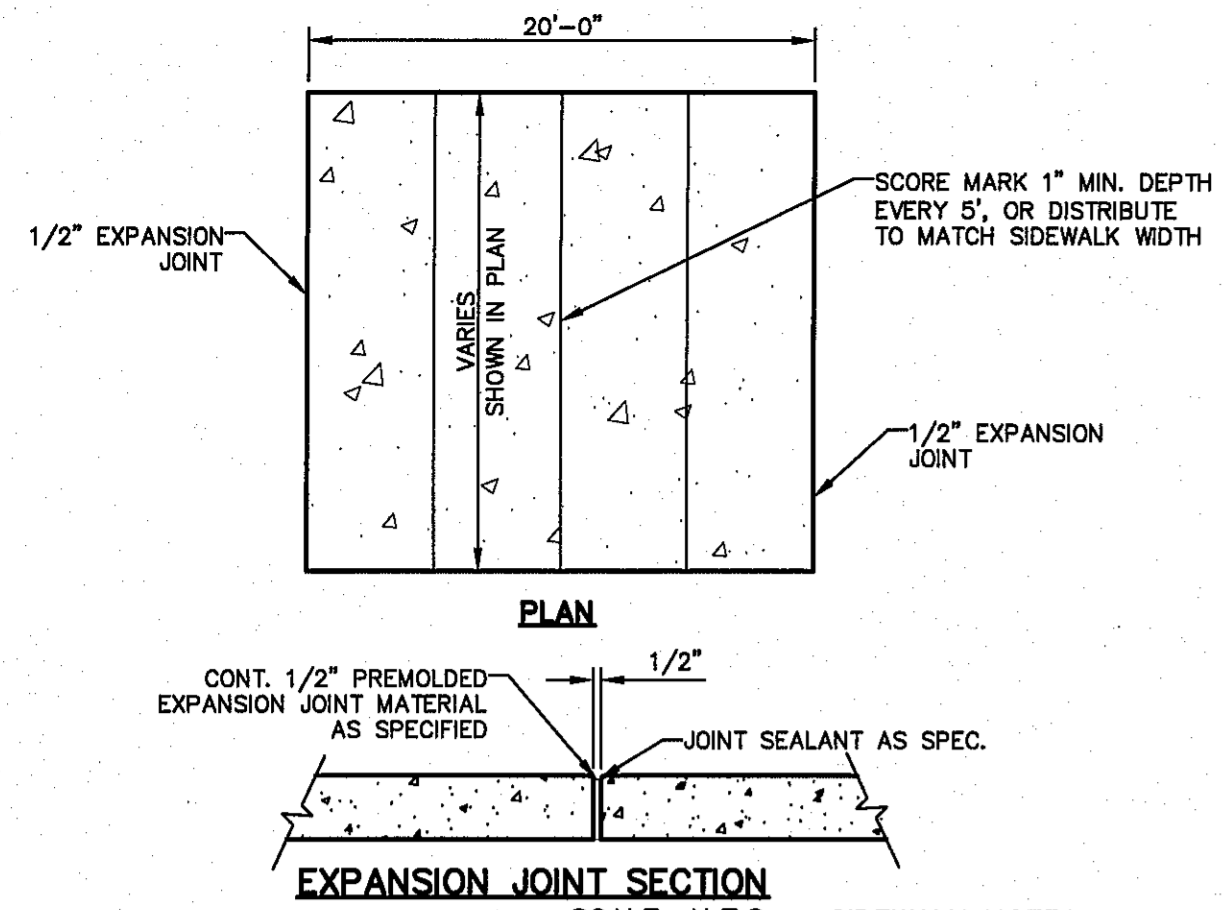
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Horizontal: 1"=5'  
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Contour Interval: N/A  
DATE: AUGUST 2018  
DESIGN BY: F.Z.  
DRAWN BY: K.A.P.  
CHKD. BY: J.L.A.  
APPVD. BY: J.L.A.  
JOB No. 2025-013

PROJECT TITLE  
**TRES SUEÑOS  
UNIT SIXTEEN  
SUBDIVISION IMPROVEMENTS**

SHEET TITLE  
**LINE "C"  
STORM SEWER  
PLAN & PROFILE  
FROM STA. 0+00.00  
TO STA. 3+94.99**

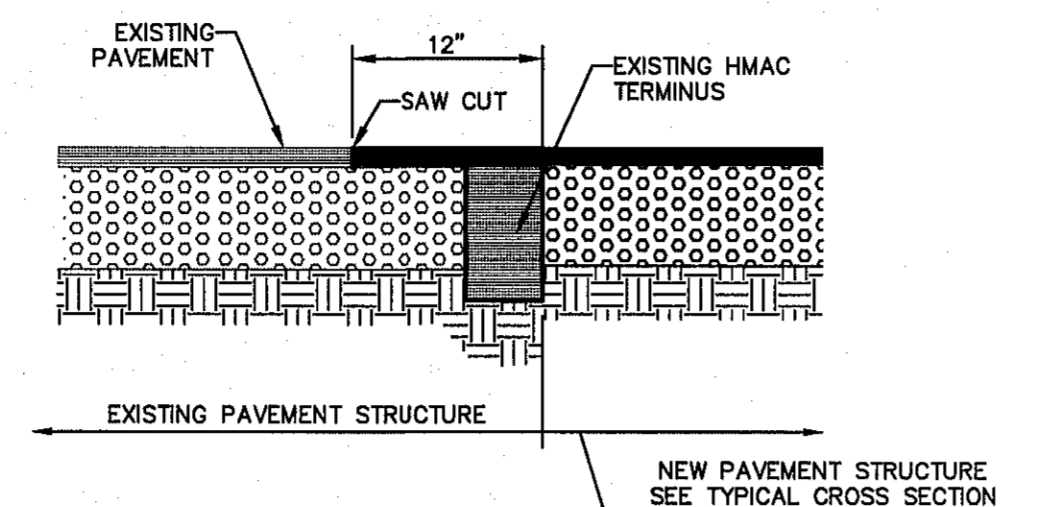
SHEET NO.

**C7.1**

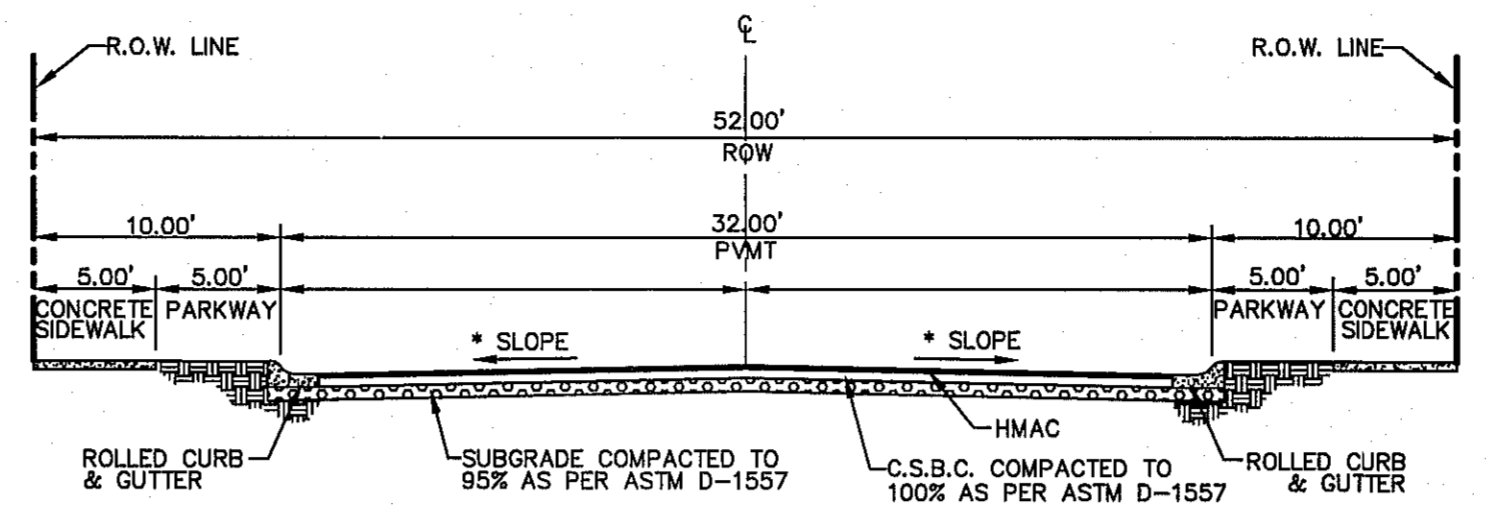


- NOTES:**
- EXPANSION JOINT FILLER SHALL BE 1/2" BITUMINOUS TYPE PREFORMED JOINT FILLER (AASHTO M-33).
  - EXPANSION JOINTS SHALL BE SPACED AT 20'-0" MAX.
  - WHEREVER SIDEWALK ABUTS ROCK OR MASONRY STRUCTURES SUCH AS CURBS OR BUILDINGS, EXPANSION JOINTS FILLER SHALL BE PLACED IN ACCORDANCE WITH STANDARD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

1 SECTION-SIDEWALK/SLAB  
SCALE: N.T.S.

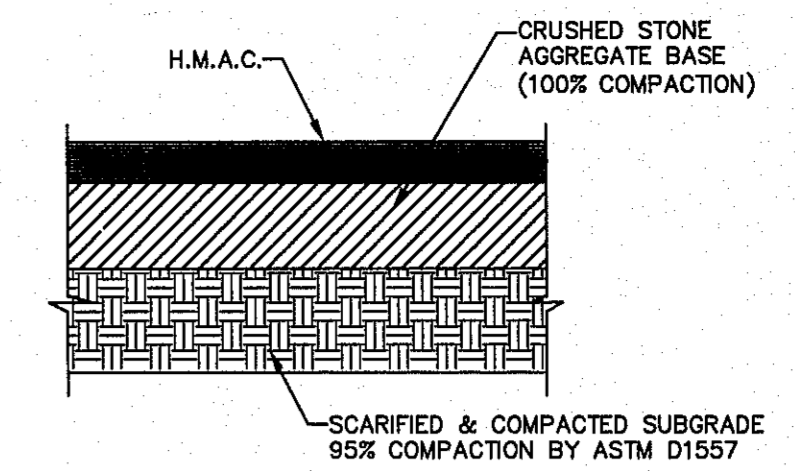


2 TYPICAL PAVEMENT JOINT SECTION  
SCALE: N.T.S.



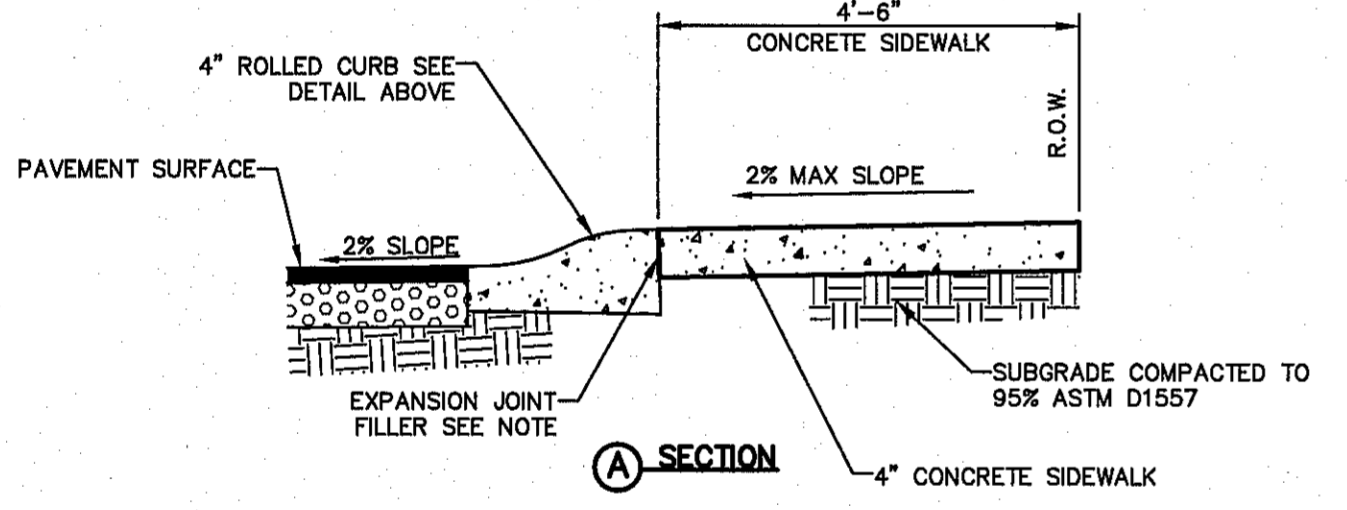
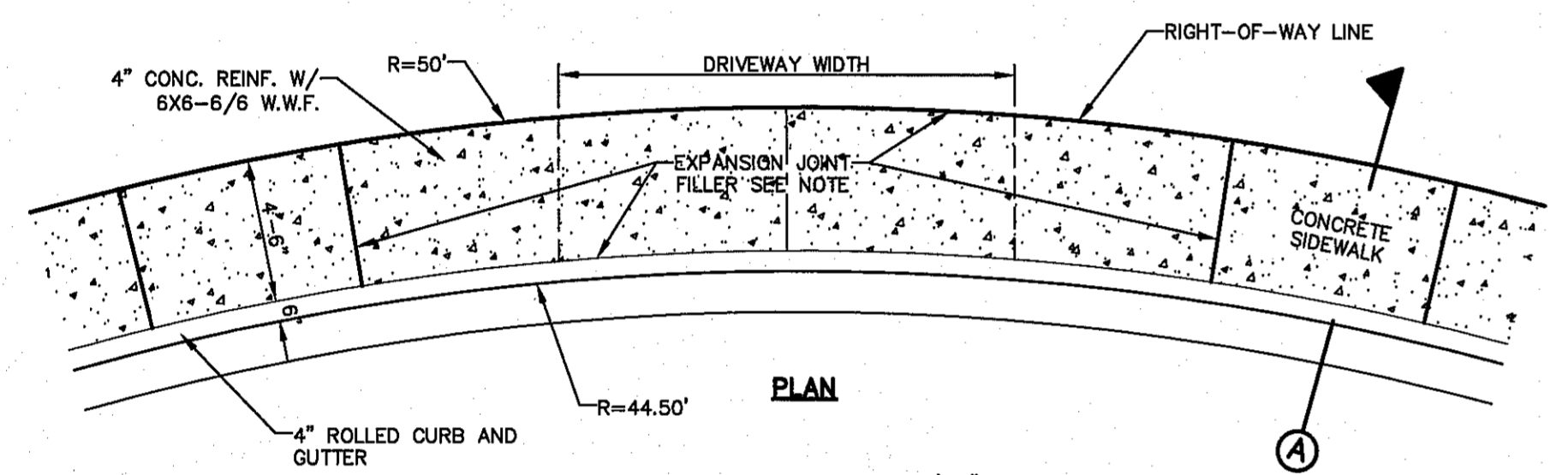
**\*CBR NOTE:**  
STREET IMPROVEMENTS (FLEXIBLE PAVEMENT DESIGN STRUCTURE) SHALL BE CONSTRUCTED IN ACCORDANCE WITH CURRENT CITY OF EL PASO PAVING CONSTRUCTION DETAILS AND STANDARD SPECIFICATIONS. CBR @ EVERY 500' RESULTS TO BE SUBMITTED TO THE CITY OF EL PASO FOR REVIEW AND APPROVAL PRIOR TO PLACEMENT OF PAVEMENT. THE CBR RESULTS WILL DICTATE THE REQUIRED THICKNESS OF THE PAVEMENT STRUCTURE BASED ON CITY OF EL PASO DESIGN STANDARDS. THE DEVELOPER SHALL PLACE THE HIGHER VALUE OF PAVEMENT STRUCTURE BASED ON THE CBR RESULTS OR THE MINIMUM PAVEMENT THICKNESS AS SHOWN ON THE CITY OF EL PASO DESIGN STANDARDS.

3 TYPICAL 52' ROW STREET SECTION DETAIL (RESIDENTIAL SUBCOLLECTOR)  
SCALE: N.T.S.

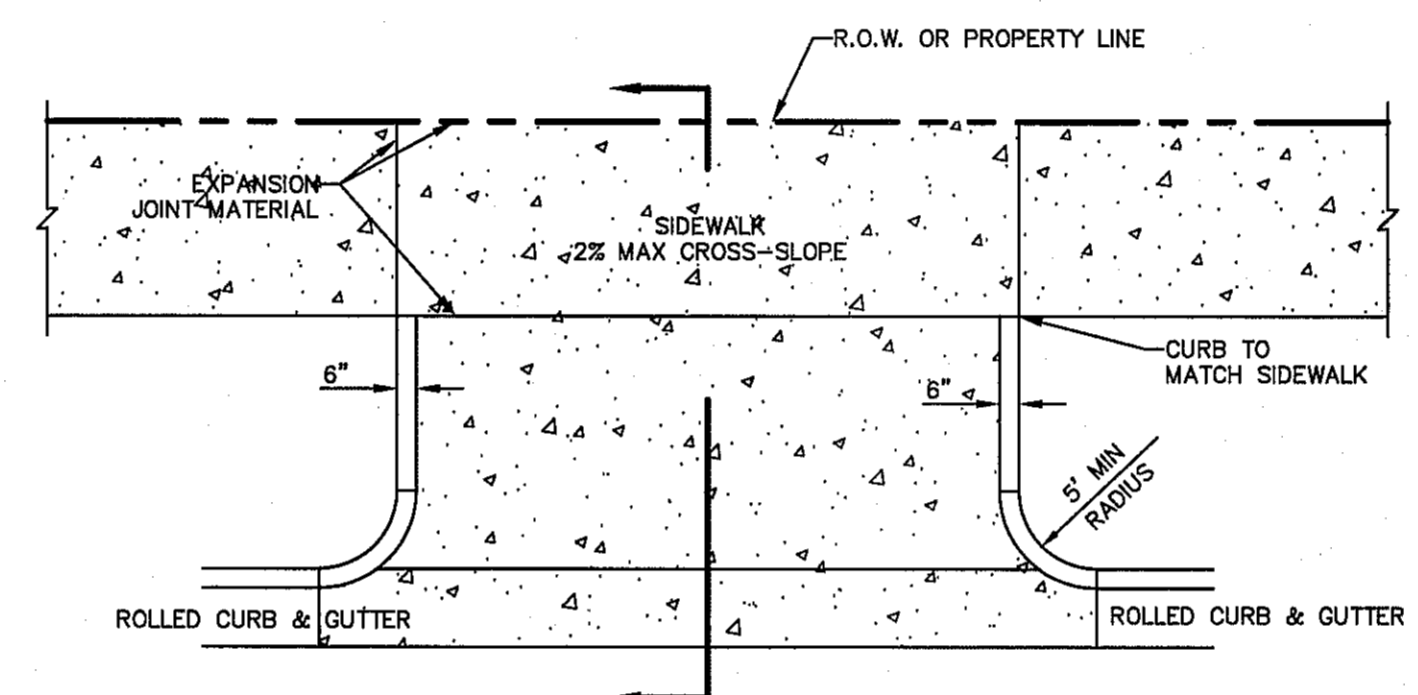


- PAVEMENT SECTION NOTES:**
- SUBGRADE TO BE COMPACTED TO 95% OF MAXIMUM DENSITY AS PER ASTM D-1557.
  - MINIMUM PAVEMENT DESIGN DETAILS ARE SHOWN, ACTUAL PAVEMENT DESIGN WILL BE DETERMINED BY CBR.
  - STREET IMPROVEMENTS (FLEXIBLE PAVEMENT DESIGN STRUCTURE) SHALL BE CONSTRUCTED IN ACCORDANCE WITH CURRENT EL PASO COUNTY PAVING CONSTRUCTION DETAILS AND STANDARD SPECIFICATIONS. CBR @ EVERY 500' RESULTS TO BE SUBMITTED TO CITY OF EL PASO FOR REVIEW AND APPROVAL PRIOR TO PLACEMENT OF PAVEMENT. THE CBR RESULTS WILL DICTATE THE REQUIRED THICKNESS OF THE PAVEMENT STRUCTURE BASED ON CITY OF EL PASO DESIGN STANDARDS. THE DEVELOPER SHALL PLACE THE HIGHER VALUE OF PAVEMENT STRUCTURE BASED ON THE CBR RESULTS OR THE MINIMUM PAVEMENT THICKNESS AS SHOWN ON THE CITY OF EL PASO DESIGN STANDARDS.

4 TYPICAL PAVEMENT SECTION  
SCALE: N.T.S.

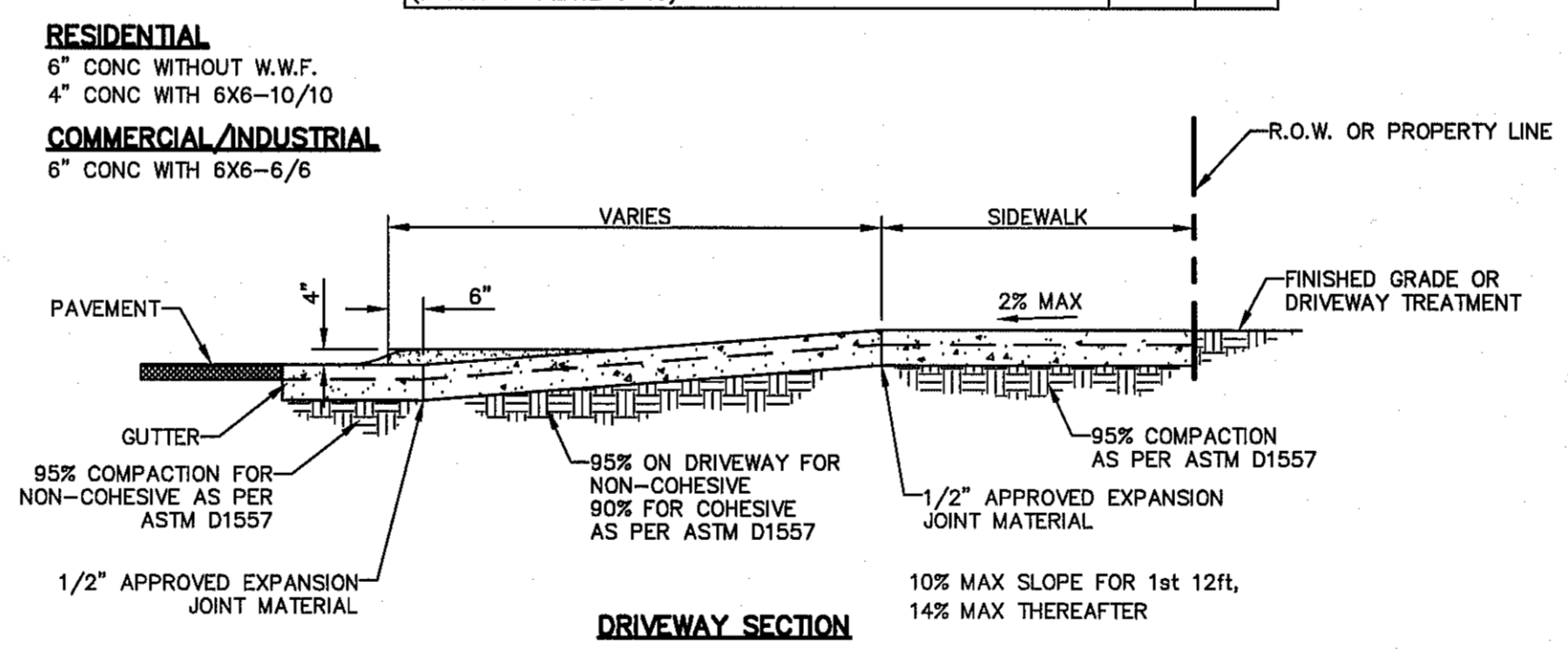


5 HEEL/CUL-DE-SAC DRIVEWAY DETAIL  
SCALE: N.T.S.

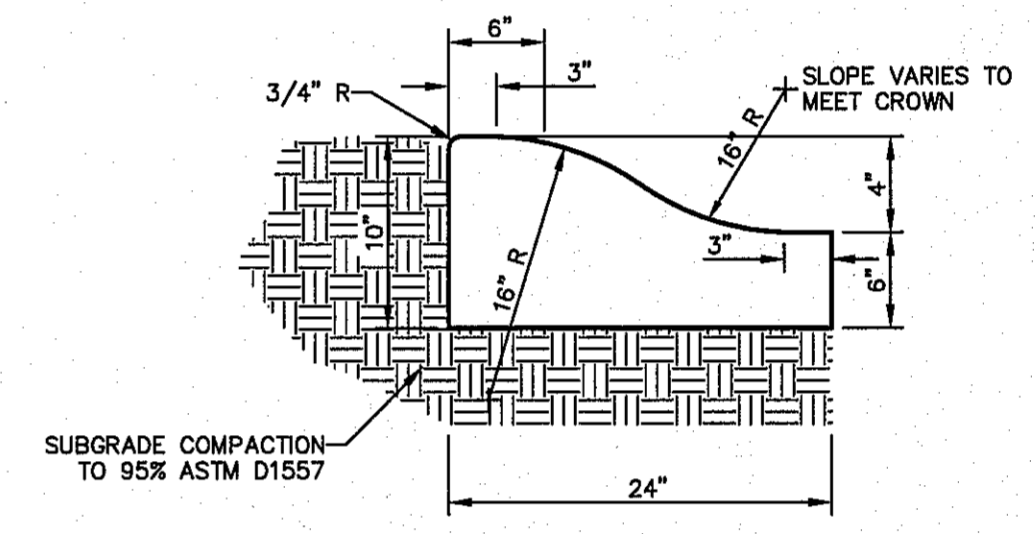


**DRIVEWAY PLAN**

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

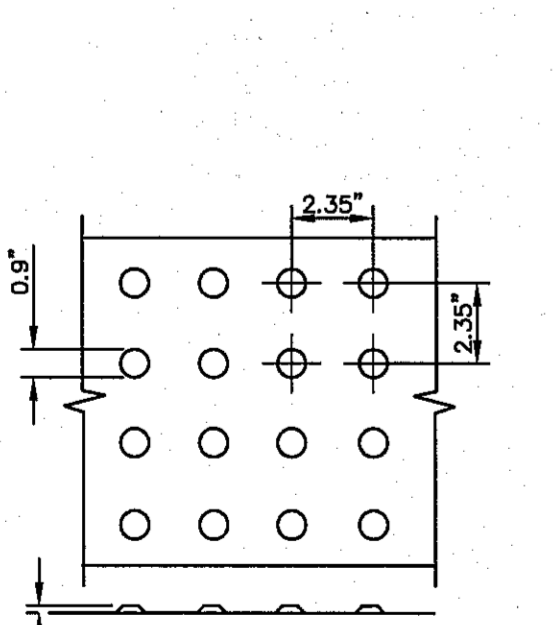


6 CONCRETE APRON FOR DRIVEWAYS/ALLEYS  
SCALE: N.T.S.



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

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



**DOMES 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.

**DOMES 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, LANDINGS, OR BLENDED TRANSITION.

**CONTRAST.** THERE SHALL BE A MINIMUM OF 70 PERCENT CONTRAST IN LIGHT REFLECTANCE BETWEEN THE DETECTABLE WARNING AND AN ADJOINING SURFACE, OR THE DETECTABLE WARNING SHALL BE "RED BRICK" COLOR, UNLESS OTHERWISE DIRECTED BY THE OWNER. THE MATERIAL USED TO PROVIDE VISUAL CONTRAST SHALL BE AN INTEGRAL PART OF THE DETECTABLE WARNING SURFACE. ADA CERTIFIED "ARMOR-TILE" REQUIRED. CONCRETE POURED TRUNCATED DOMES NOT ALLOWED. NO PAINTING OF SURFACE SHALL BE PERMITTED.

8 TRUNCATED DOME SIZE AND SPACING  
SCALE: N.T.S.

**REFERENCES - BENCHMARKS**

CITY MONUMENT AT POINT OF CURVE CENTERLINE RICH BEEM BLVD., S08°43'31"E, A DISTANCE OF 487.88 FEET FROM THE SOUTHERLY RIGHT OF WAY LINE OF MONTANA AVENUE.

ELEVATION = 4088.40 (CITY DATUM).

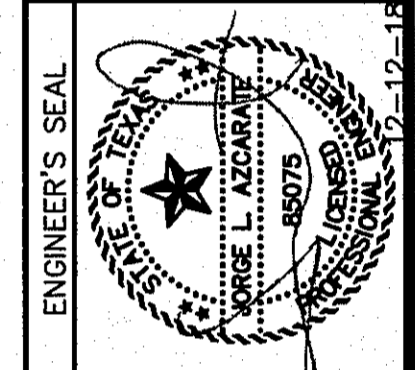
DATE: \_\_\_\_\_

REVISIONS: \_\_\_\_\_

BY: \_\_\_\_\_

**oesa**

REGISTERED ENGINEERING FIRM #7464  
4772 Woodrow Pkwy, Ste. F, El Paso, TX 79924  
915.544.5222 | www.oesagr.com



**SCALE**

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

DATE: AUGUST 2018  
DESIGN BY: F.Z.  
DRAWN BY: K.A.P.  
CHKD. BY: J.L.A.  
APPVD. BY: J.L.A.  
JOB No.: 2025-013

**PROJECT TITLE**

TRES SUEÑOS  
UNIT SIXTEEN  
SUBDIVISION IMPROVEMENTS

**SHEET TITLE**

STANDARD  
DETAILS

(SHEET 1 OF 2)  
SHEET NO.



C8.1

S:\2025\013-Tres Suenos\116 SIP\DWG\Construction Drawings\Improvement Plans\C8.1-C8.2-Standard Details.dwg, 12/13/2018 7:58:02 AM

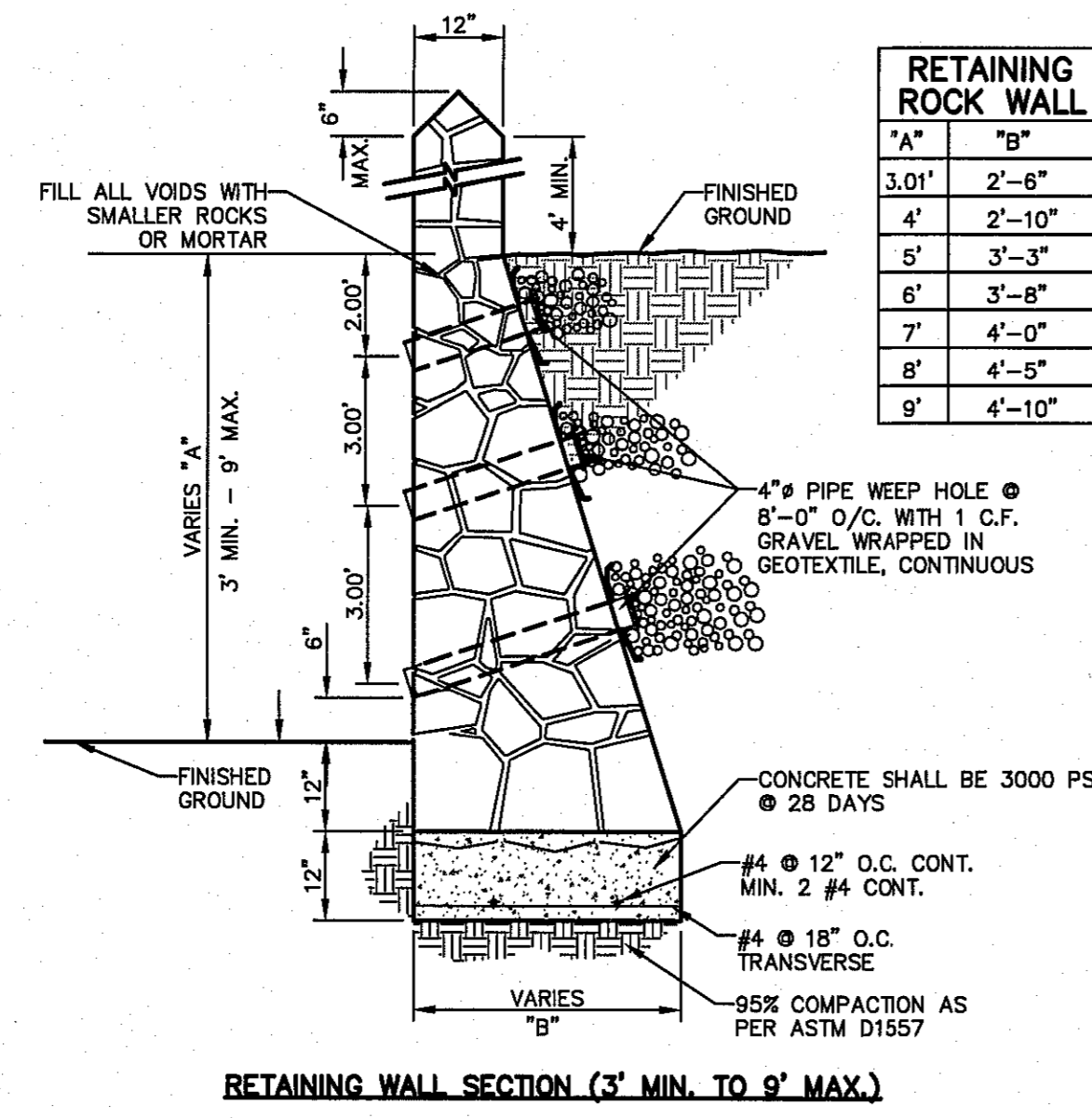
**ROCK WALLS**  
 MATERIALS: STONE FOR ROCK WALLS SHALL CONSIST OF QUARRIED LIMESTONE AS NEARLY UNIFORM IN SECTION AS IS PRACTICABLE. FIELD STONE OR SALVAGED STONE FROM ROCK WALLS SHALL BE USED ONLY WHERE DIRECTED BY THE ENGINEER. THE STONE SHALL BE DENSE, RESISTANT TO THE ACTION OF AIR AND WATER, CLEAN OF OLD MORTAR AND SUITABLE IN ALL RESPECTS FOR THE PURPOSE INTENDED.  
 MORTAR FOR THE ROCK WALLS SHALL CONSIST BY VOLUMES OF ONE (1) PART PORTLAND CEMENT, ONE-QUARTER TO ONE-HALF (1/4 TO 1/2) PART HYDRATED LIME, AND THREE (3) PARTS CLEAN, HARD, DURABLE SAND (2 1/4 TO 3 TIMES THE SUM OF THE VOLUMES OF CEMENT AND LIME COMBINED. SEE CITY BUILDING CODE PP. 14-3 AND 14-4). MORTAR SHALL BE TYPE S, ASTM SPECIFICATION C270-73. COMPRESSIVE STRENGTH = 1800 P.S.I. (28 DAYS). CONCRETE FOR THE FOUNDATION SHALL BE CLASS "A" (3000 P.S.I.), REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60. IF ROCK WALL IS FREQUENTLY EXPOSED TO WATER, LIME SHALL NOT BE USED AND THE PORTIONS SHALL BE ONE PART PORTLAND CEMENT AND THREE PARTS SAND.

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

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

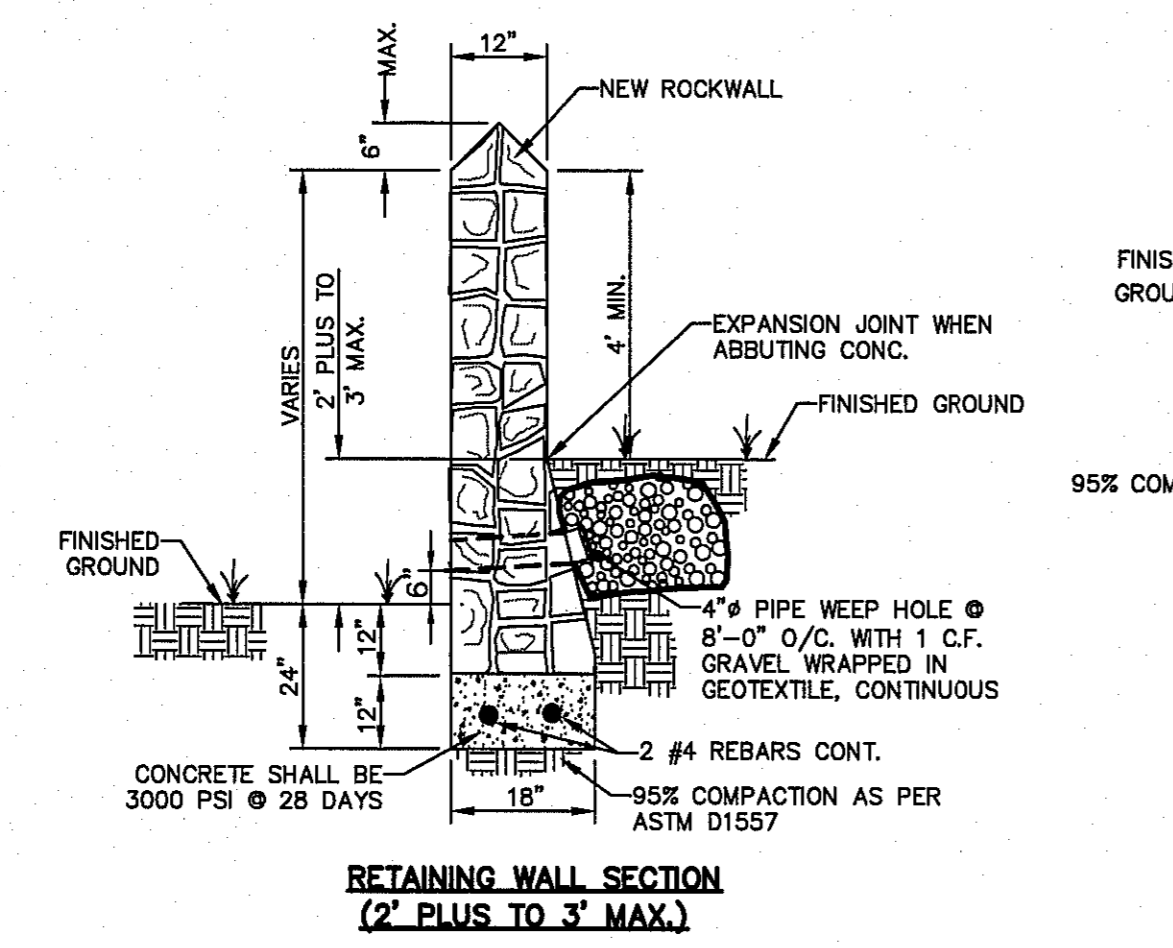
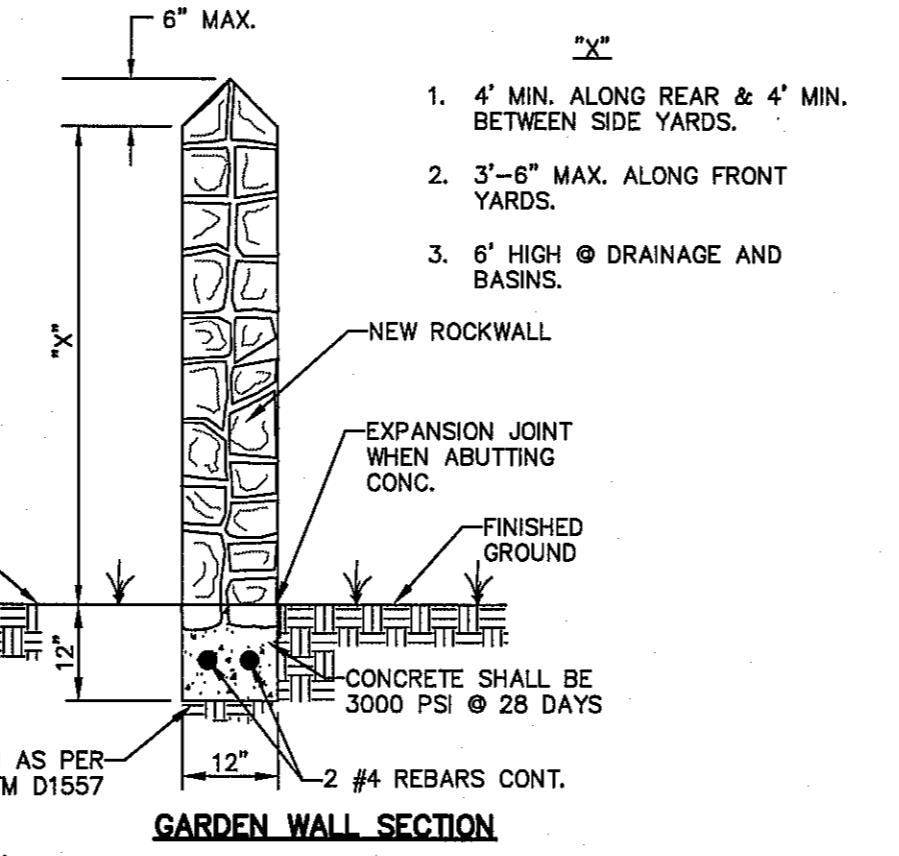
THE ERECTION OF THE ROCK WALL SHALL NOT BE MORE THAN THREE FEET IN HEIGHT FOR EVERY 24-HOUR PERIOD TO ALLOW FOR THE LOWER PORTIONS TO BECOME SUFFICIENTLY SET. ALL STONES SHALL BE THOROUGHLY WET BEFORE BEING PLACED IN FRESH MORTAR. THE LAST LAYER OF ROCK PRIOR TO BREAK OF CONSTRUCTION PHASE SHALL NOT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

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

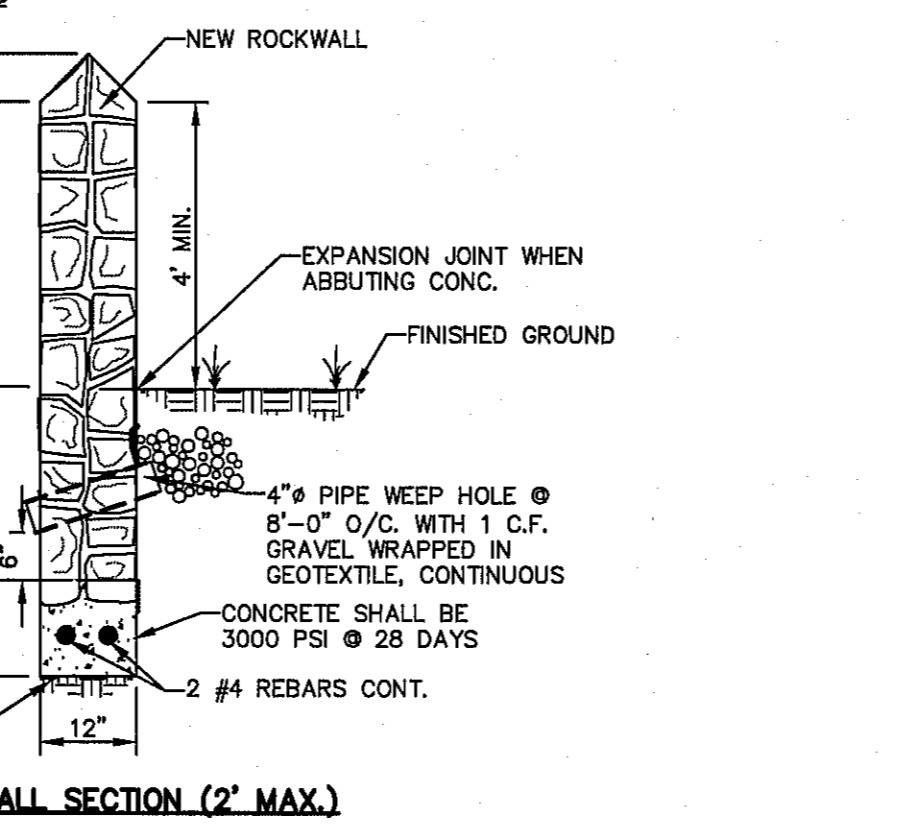


- ROCK WALL NOTES**
- STONE FOR ROCKWALL SHALL BE AS NEARLY UNIFORM IN SECTIONS AS IS PRACTICABLE. THE STONE SHALL BE DENSE AND RESISTANT OF AIR AND WATER
  - MORTAR MUST BE TYPE "S" 1800 P.S.I. AS PER ASTM C270
  - MASONRY WALL OVER SIX (6) FEET IN HEIGHT AND THOSE USED FOR EARTH RETENTION OVER TWO (2) FEET MUST BE DESIGNED AS STRUCTURAL WALLS.
  - 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.
  - ROCKWALL MORTAR JOINTS MUST NOT EXCEED TWO (2) INCHES
  - PROVIDE ONE (1) INCH EXPANSION JOINTS AT EVERY 100 FEET
  - ALL STONE SHALL BE THOROUGHLY SOAKED BEFORE BEING PLACED
  - ALL STONE FOR ROCKWALLS SHALL BE FRACTURED QUARRIED ROCK OR ROUND ROCK, NO RIVER ROCK SHALL BE ALLOWED.
  - REINFORCING STEEL SHALL BE ASTM A615 GRADE 40.
  - ALLOWABLE SOIL BEARING PRESSURE = 2,500 PSI (MINIMUM)
  - BACKFILL MATERIALS SHALL CONSIST OF COARSE GRAINED, WELL-DRAINED SOILS (WITH NO CLAY CONTENT).
  - ALL THE RETAINING WALLS OVER 4' IN DEPTH SHALL BE BUILT BY DEVELOPER, REMAINING ROCKWALL TO BE BUILT BY BUILDER.

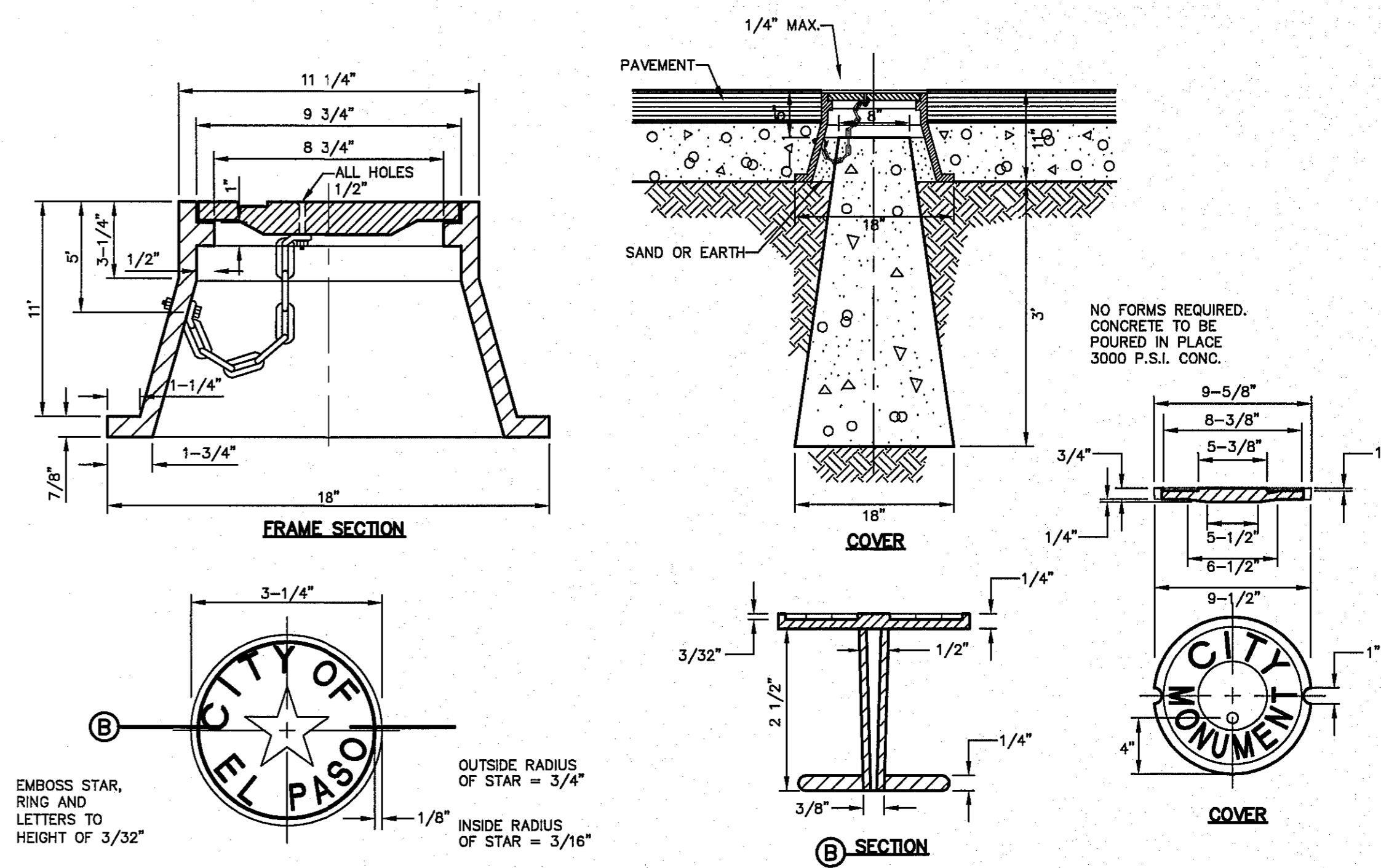
**NOTE:**  
 BUILDER SHALL SUBMIT ROCKWALL AND RETAINING ROCKWALL COMPUTATIONS TO THE COUNTY OF EL PASO OR FOR APPROVAL, IF IN EXCESS OF THOSE SHOWN.



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



**3 GARDEN WALL SECTION (2' MAX.)**  
 SCALE: N.T.S.

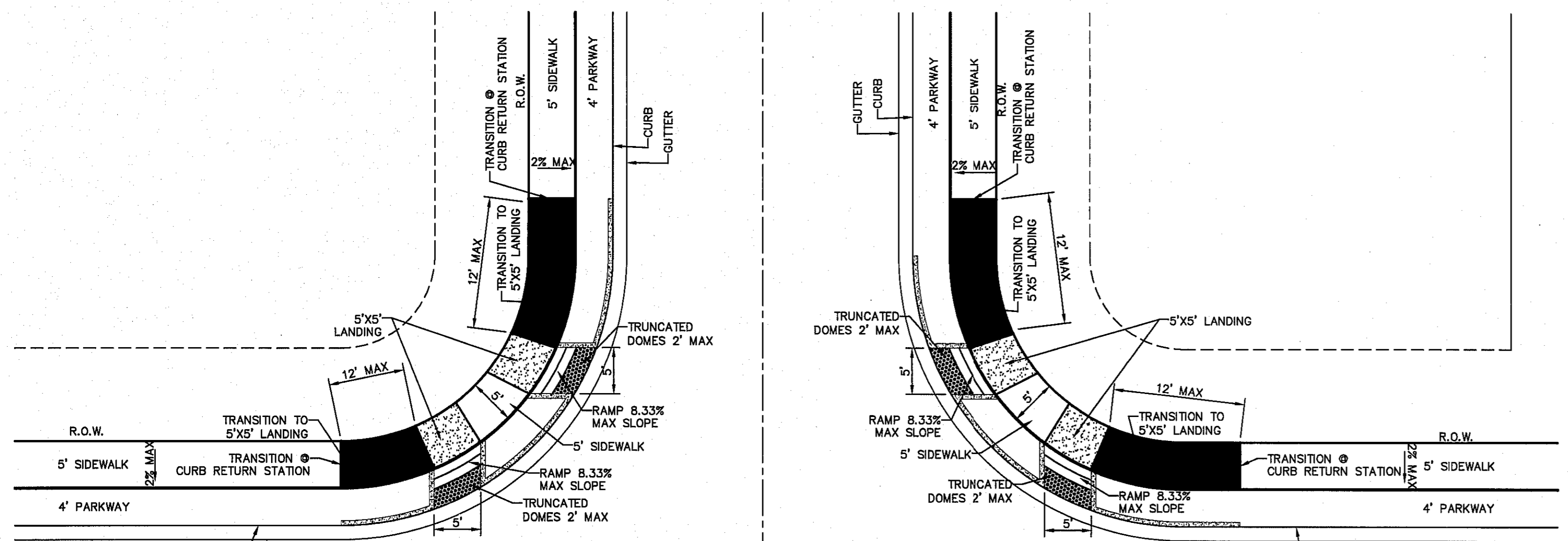


- PROPOSED MONUMENT LOCATIONS**
- MONUMENTS SHALL BE INSTALLED SO THAT ALL FRONT PROPERTY CORNERS OF ALL LOTS IN THE SUBDIVISION ARE WITHIN LINE OF SIGHT OF A MONUMENT, OR WITHIN SIGHT OF THE LINE BETWEEN TWO ADJACENT MONUMENTS.
  - EACH MONUMENT SHALL BE WITHIN LINE OF SIGHT OF ANOTHER MONUMENT.
  - MONUMENTS SHALL BE NO FARTHER THAN 2000 FEET APART.
  - AT LEAST ONE (1) MONUMENT SHALL BE PLACED ON EACH HORIZONTAL CURVE (PI) OF THE TANGENTS LEADING INTO THE CURVE FALLS OUTSIDE THE CURB LINE.
  - NO FEWER THAN TWO MONUMENTS SHALL BE PLACED IN ONE (1) STREET SUBDIVISIONS.

**2 CITY SURVEY MONUMENT DETAILS**  
 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 BE A MINIMUM OF 70% CONTRAST IN LIGHT REFLECTANCE BETWEEN THE DETECTABLE WARNING AND AN ADJOINING SURFACE, OR THE DETECTABLE WARNING SHALL BE "RED BRICK" COLOR, UNLESS OTHERWISE DIRECTED BY THE CITY OF EL PASO ROAD AND BRIDGE DEPARTMENT. THE MATERIAL USED TO PROVIDE VISUAL CONTRAST SHALL BE AN INTEGRAL PART OF THE DETECTABLE WARNING SURFACE. ADA TILE SHALL BE PROVIDED BY PLACING AND MIXING TINT IN THE PLASTIC CONCRETE USED FOR THE DETECTABLE WARNING SURFACE. NO PAINTING OF SURFACE SHALL BE PERMITTED.

- NOTES:**
- 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.
  - 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.
  - LANDINGS SHALL BE 5' X 5' MINIMUM WITH A MAXIMUM 2% SLOPE IN ANY DIRECTION.
  - 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.
  - CURB RAMPS WITH RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT NORMALLY WALK ACROSS THE RAMP. OTHERWISE, FLARED SIDES SHALL BE PROVIDED.
  - ALL CONCRETE SIDEWALK SURFACES SHALL RECEIVE A LIGHT BROOM FINISH UNLESS NOTED OTHERWISE IN THE PLANS.
  - 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.
  - 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.
  - MAXIMUM ALLOWABLE CROSS SLOPE ON SIDEWALK AND RAMP SURFACES IS 2%.
  - 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).



**3 DIRECTIONAL RAMP AT INTERSECTION**  
 SCALE: N.T.S.

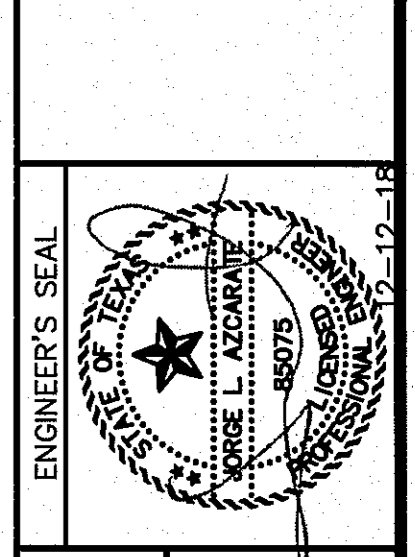
REFERENCES - BENCHMARKS

CITY MONUMENT AT POINT OF CURVE CENTERLINE RICH BEEM BLVD., S08°43'31"E, A DISTANCE OF 487.88 FEET FROM THE SOUTHERLY RIGHT OF WAY LINE OF MONTANA ELEVATION = 4008.40 (CITY DATUM).

DATE	REVISIONS	BY

**CS&S**

TEXAS REGISTERED ENGINEERING FIRM #654  
 4170 Macomber Blvd., El Paso, TX 79904  
 915.544.6202 | www.csands.com



SCALE	N/A
Horizontal	N/A
Vertical	N/A
Contour Interval	N/A
DATE	AUGUST 2018
DESIGN BY	F.Z.
CHECKED BY	K.A.P.
APPROVED BY	J.L.A.
JOB No.	2025-013

PROJECT TITLE

**TRES SUEÑOS  
 UNIT SIXTEEN  
 SUBDIVISION IMPROVEMENTS**

SHEET TITLE

**STANDARD  
 DETAILS**

(SHEET 2 OF 2)  
 SHEET NO.

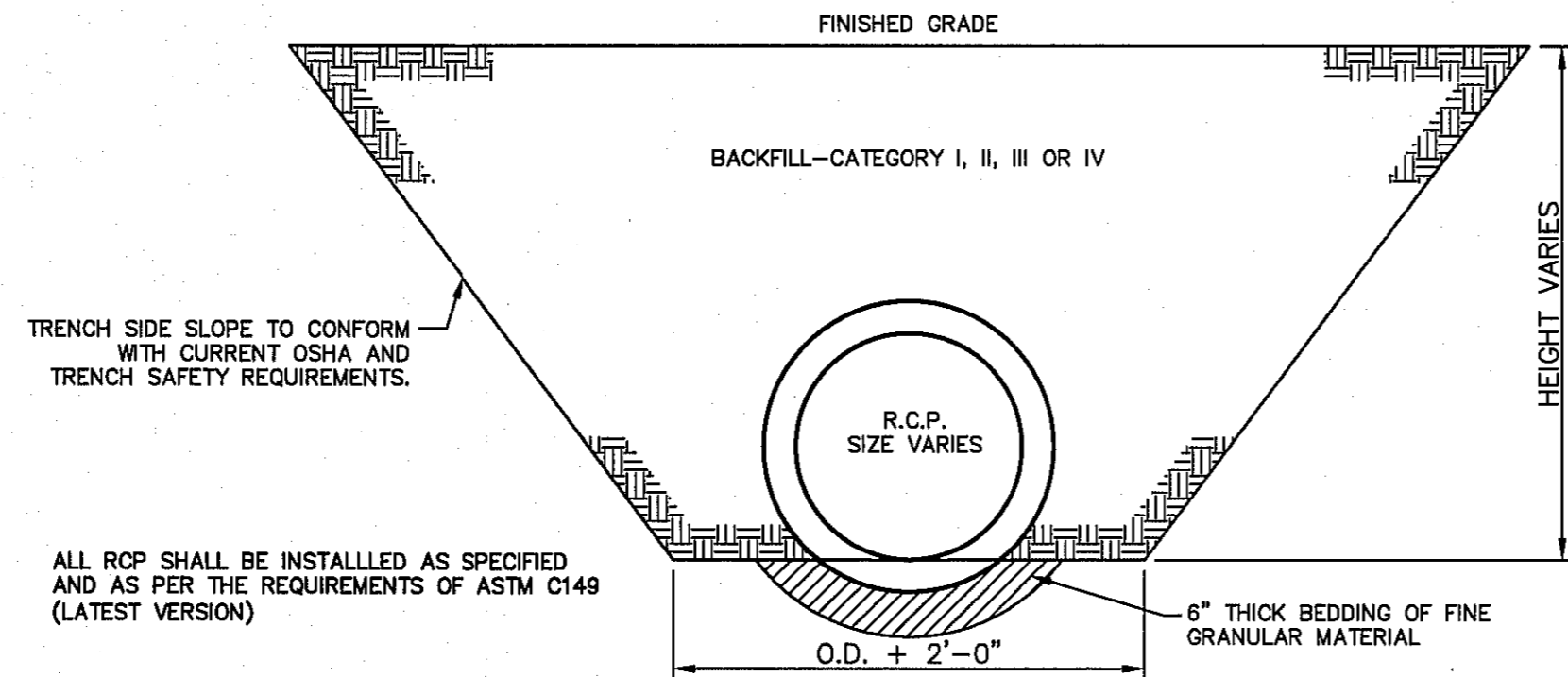
**C8.2**



**EQUIVALENT USCS AND AASHTO SOIL CONDITIONS FOR SOIL DESIGNATION**

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

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



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

**NOTES:**

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

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

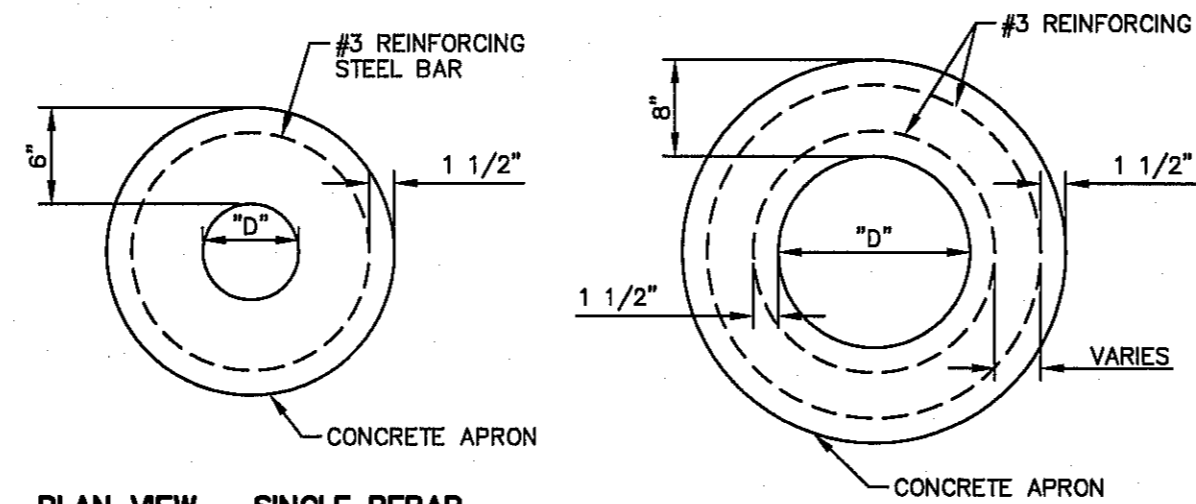
**GENERAL NOTES:**

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

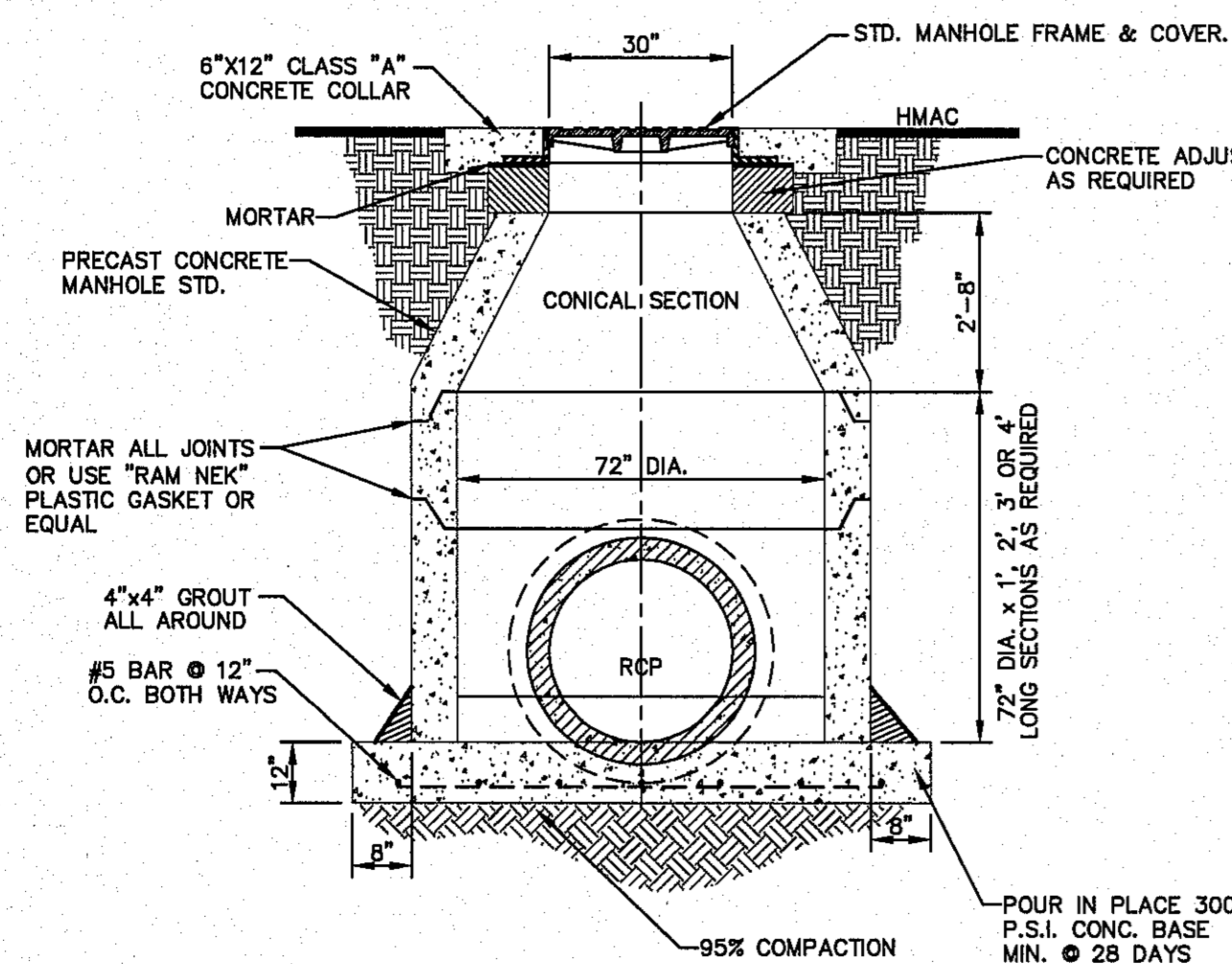
"D" DIAMETER OF PENETRATION (INCHES)	CONCRETE APRON FOR CIRCULAR PENETRATIONS IN ASPHALT PAVEMENTS			"C" MINIMUM CLEARANCE FROM PENETRATION EDGE TO CENTER OF NEAREST REBAR (INCHES)
	"X" CONCRETE HORIZONTAL DIMENSION FROM PENETRATION (INCHES)	NUMBER OF NO. 3 REINFORCING STEEL BARS (QUANTITY)	"Y" MINIMUM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

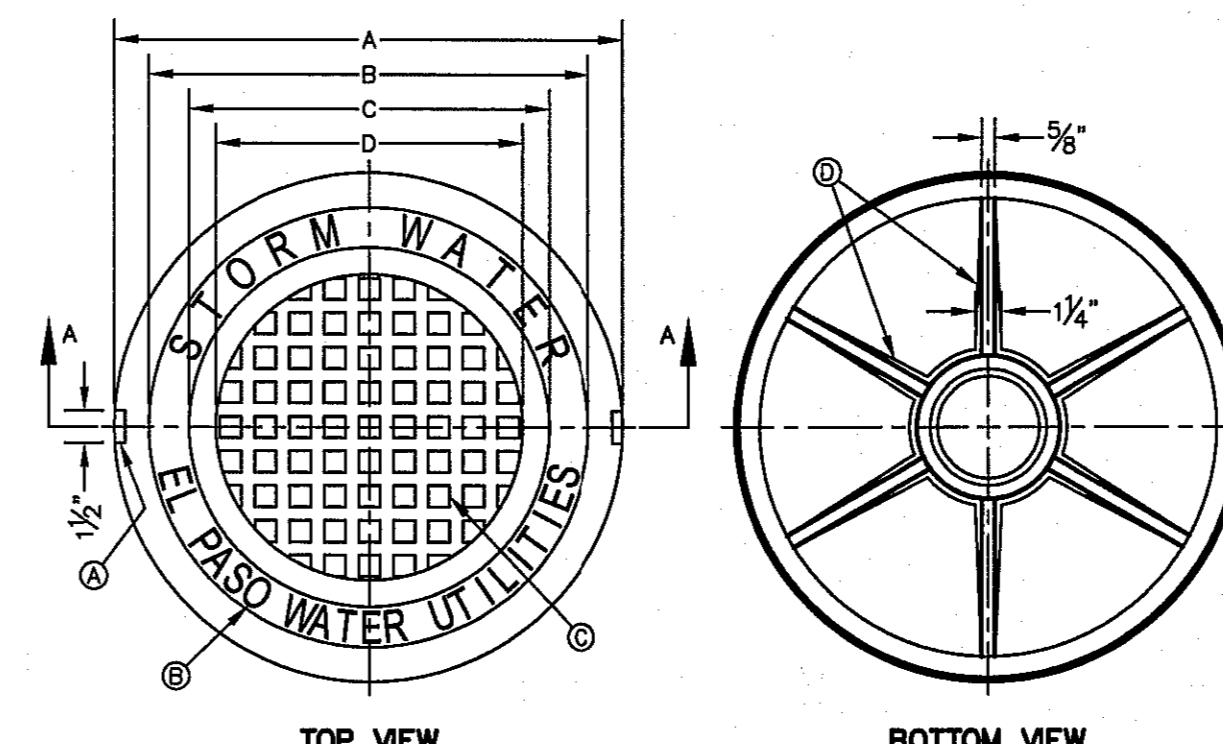
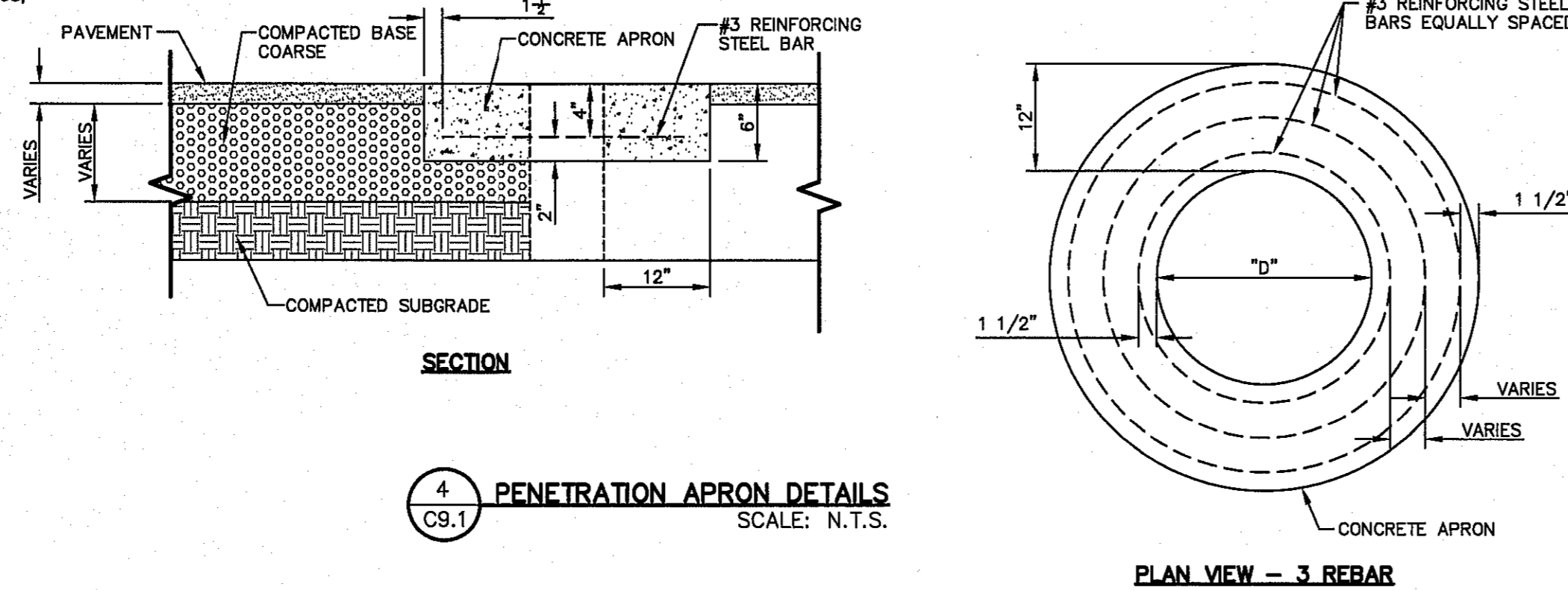
- ANY DISTURBED SUBGRADE UNDER THE CONCRETE APRON SHALL BE COMPACTED TO 95% DENSITY ±3% OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D-1557.
- ANY DISTURBED COARSE UNDER THE CONCRETE APRON SHALL BE COMPACTED TO 100% DENSITY ±2% OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D-1557.
- PROVIDE A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



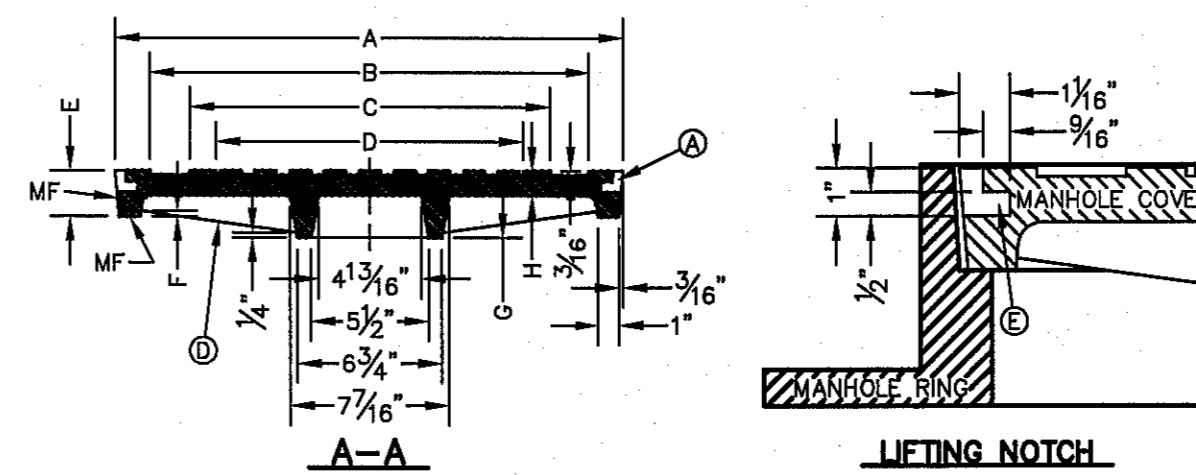
4 PENETRATION APRON DETAILS  
SCALE: N.T.S.



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



TOP VIEW BOTTOM VIEW



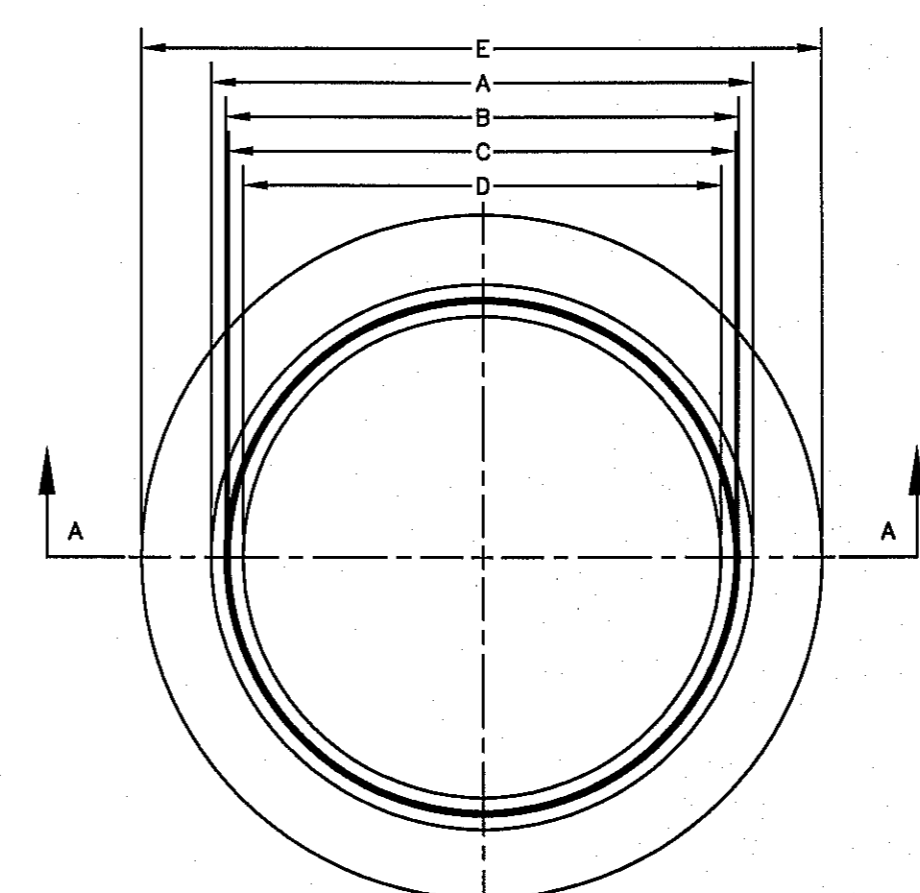
LIFTING NOTCH

STORMWATER MANHOLE COVER

MANHOLE COVER	MANHOLE - ALL TYPES	MANHOLE TYPE 48"	MANHOLE TYPE 72"
A	31 3/4"	23 3/4"	31 3/4"
B	28 3/4"	20 3/4"	28 3/4"
C	24 3/4"	16 3/4"	24 3/4"
D	21 3/4"	14 3/4"	21 3/4"
E	21 3/4"	3"	3"
F	1 1/2"	1 1/2"	1 1/2"
G	3 3/8"	3"	3"
H	1 1/2"	1"	1"
WEIGHT	285 lbs.	175 lbs.	310 lbs.

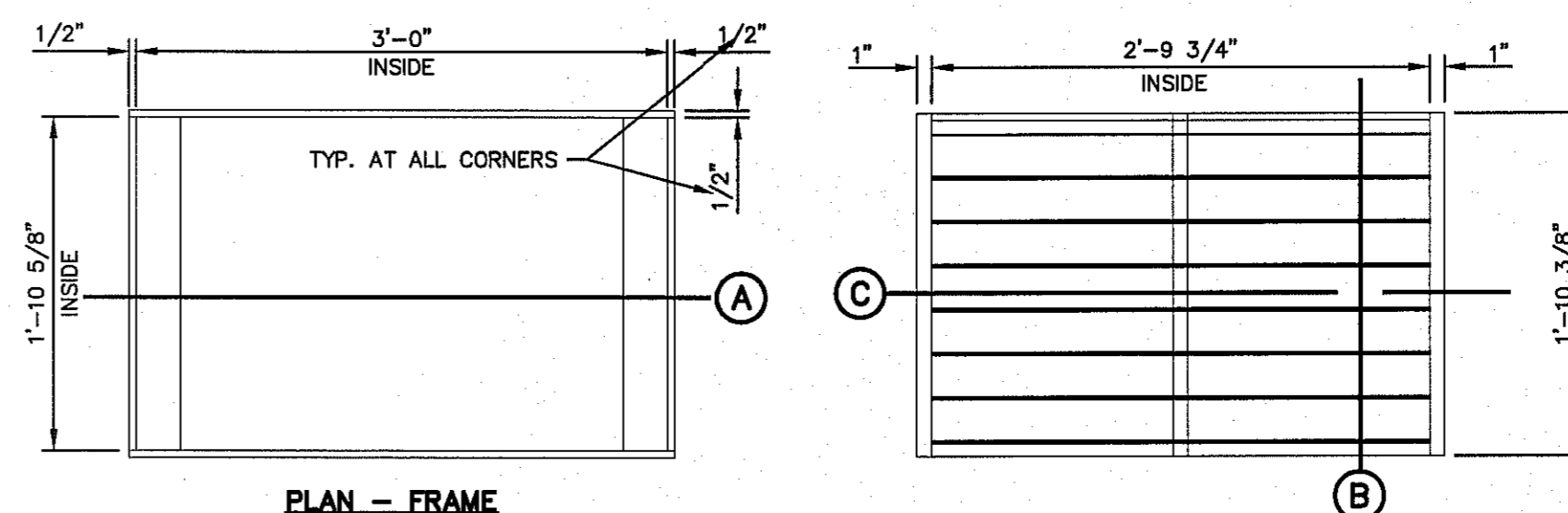
**GENERAL NOTES:**

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



2 MANHOLE RING AND COVER DETAILS  
SCALE: N.T.S.

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

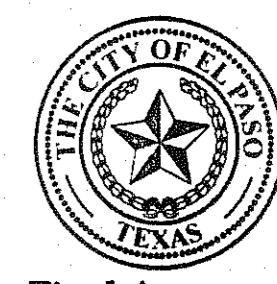


PLAN - FRAME

PLAN - GRATE

SLANTED BAR DETAIL

5 GRATE AND FRAME DETAILS  
SCALE: 1" = 1'-0"



Final Approval

PROJECT TITLE  
**TRES SUEÑOS UNIT SIXTEEN SUBDIVISION IMPROVEMENTS**

SHEET TITLE  
**DRAINAGE DETAILS**

(SHEET 1 OF 3)  
SHEET NO.

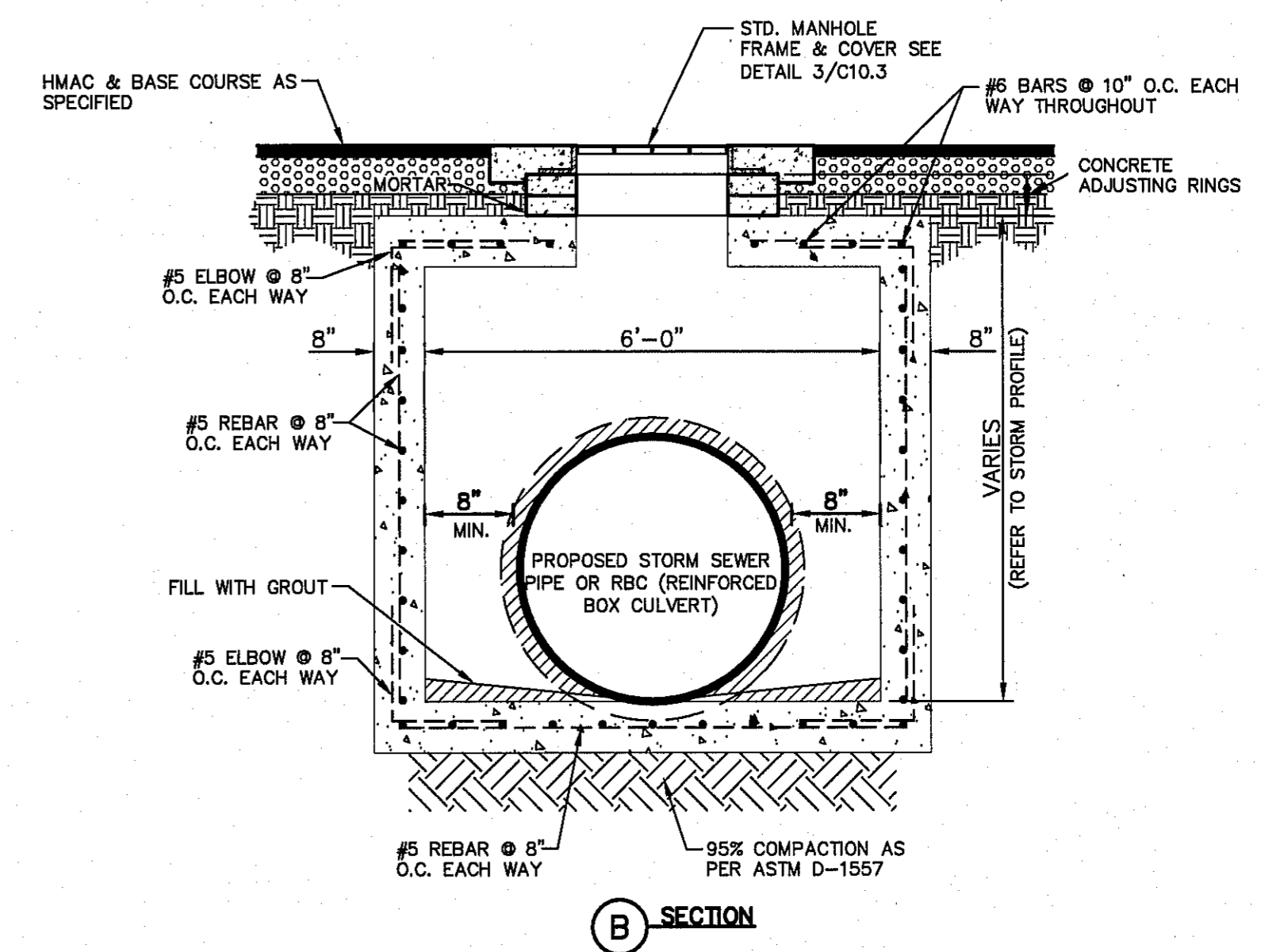
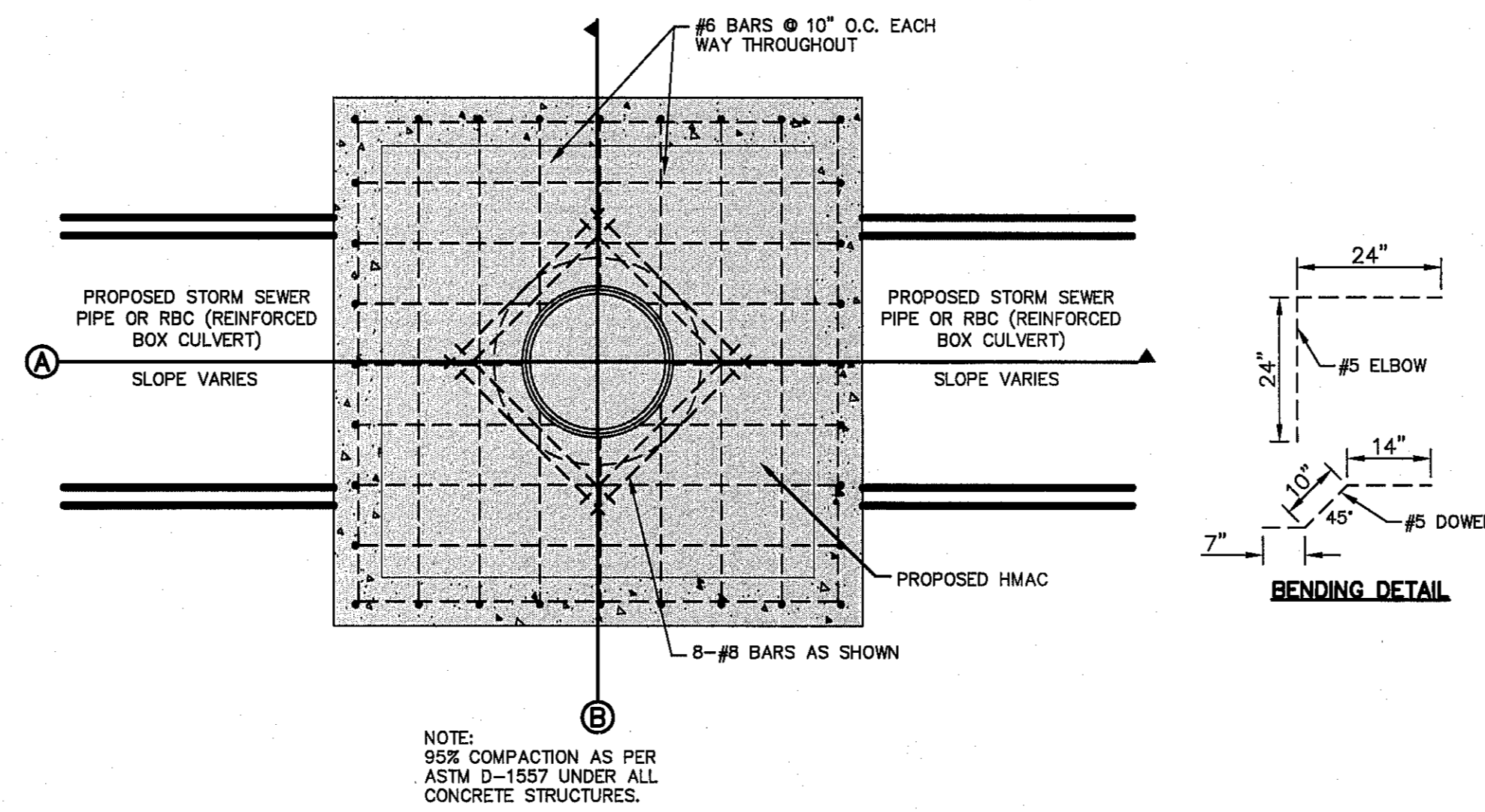
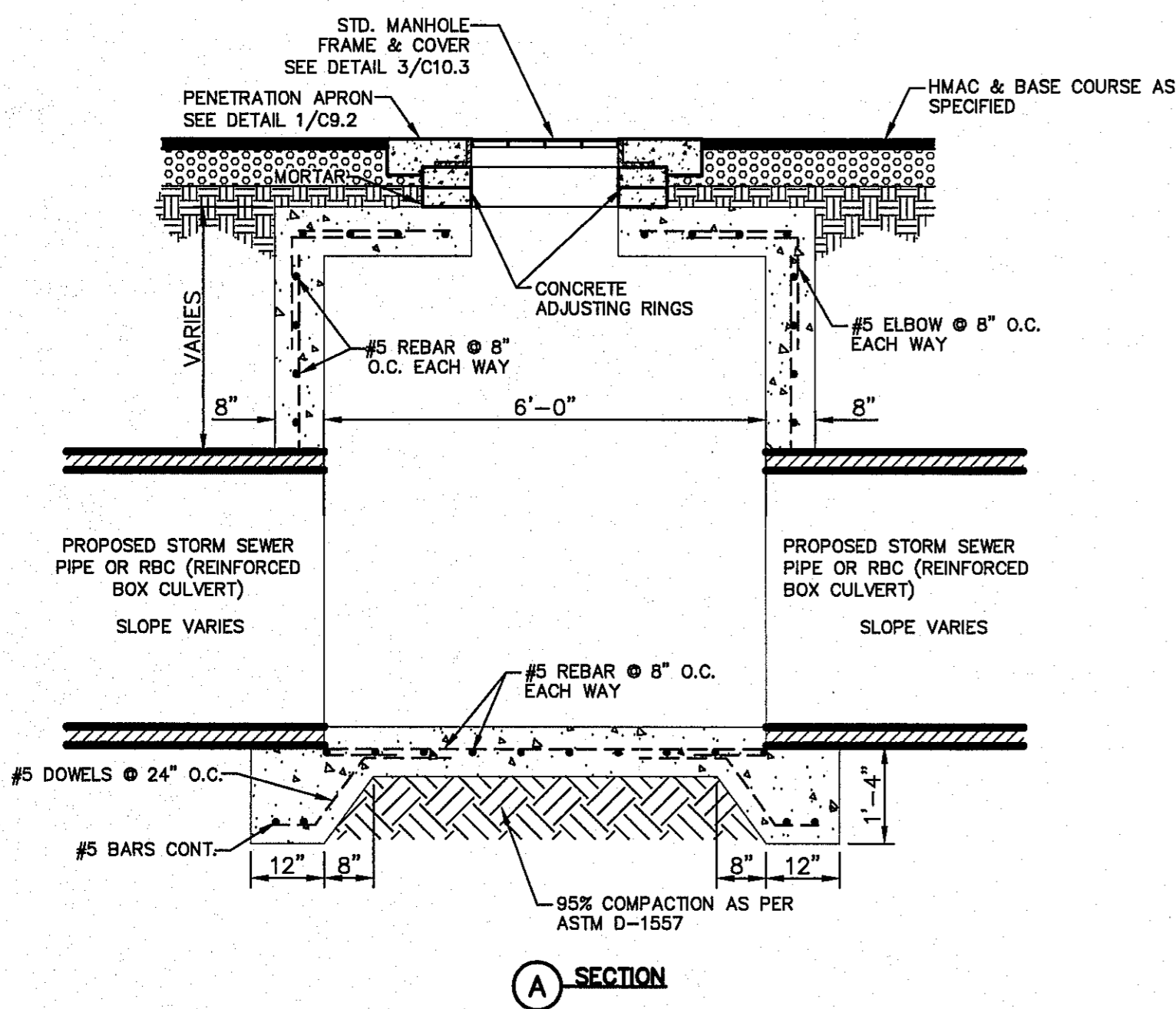
C9.1

SCALE: N/A  
Vertical: N/A  
Horizontal: N/A  
Contour Interval: N/A  
DATE: AUGUST 2018  
DESIGN BY: F.Z.  
DRAWN BY: K.A.P.  
CHKD. BY: J.L.A.  
APPVD. BY: J.L.A.  
JOB No. 2025-013

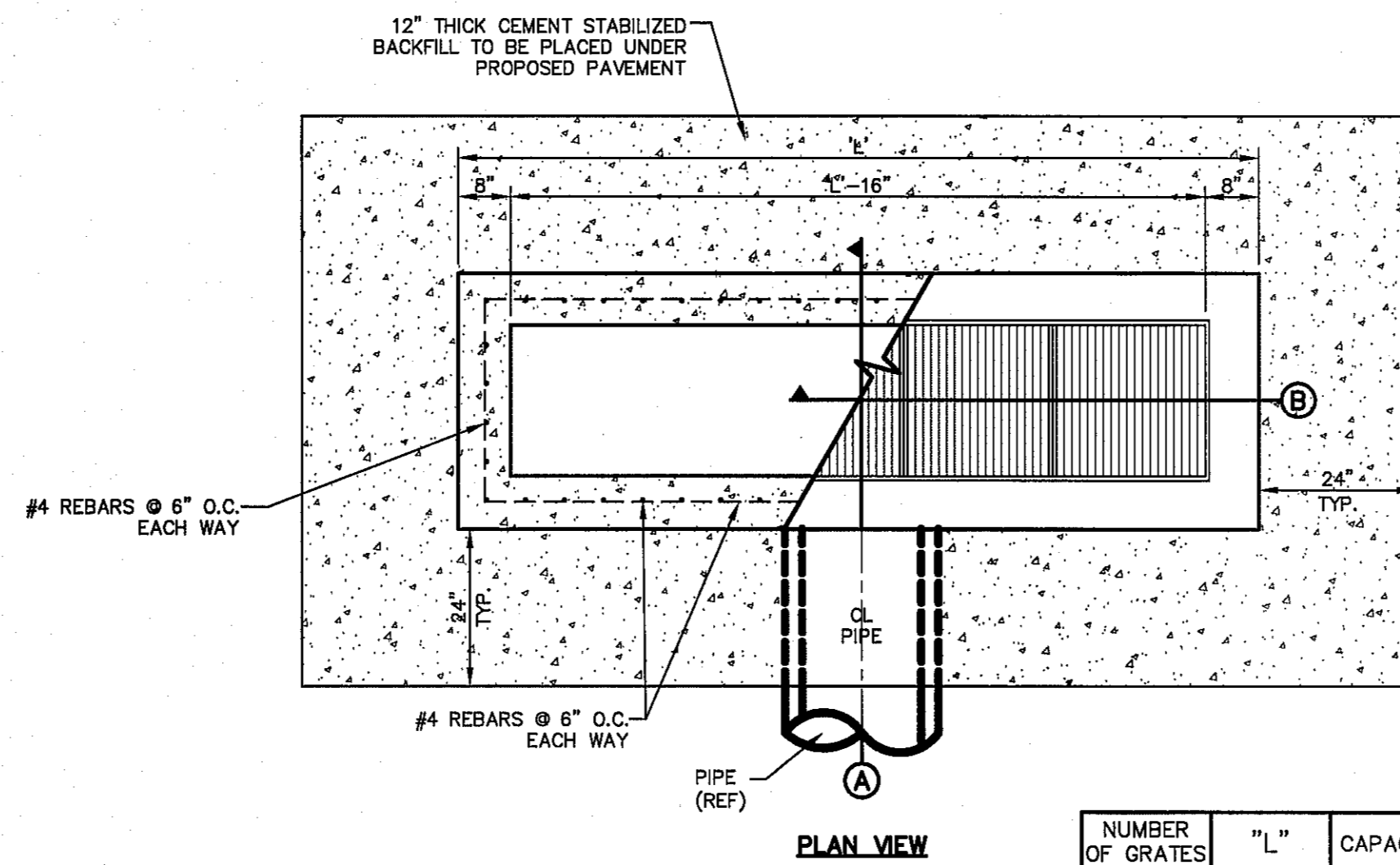
ENGINEER'S SEAL  
CITY OF EL PASO  
COUNTY OF EL PASO  
STATE OF TEXAS  
REGISTERED PROFESSIONAL ENGINEER  
NO. 121212  
EXPIRES 12-31-2025

REFERENCES - BENCHMARKS  
CITY MONUMENT AT POINT OF CURVE CENTERLINE RICH  
ROAD 1/4 MILE SOUTH OF RICH ROAD AND 1/4 MILE  
FROM THE SOUTHERLY RIGHT OF WAY LINE OF MONTANA  
AVENUE. ELEVATION = 4005.40 (CITY DATUM).  
BY: [ ]  
DATE: [ ]  
REVISIONS: [ ]

ceea  
CITY OF EL PASO  
REGISTERED ENGINEERING FIRM F-4584  
4715 Woodrow Bean, Ste. F, El Paso, TX 79904  
915.544.5232 | www.ceegroup.net



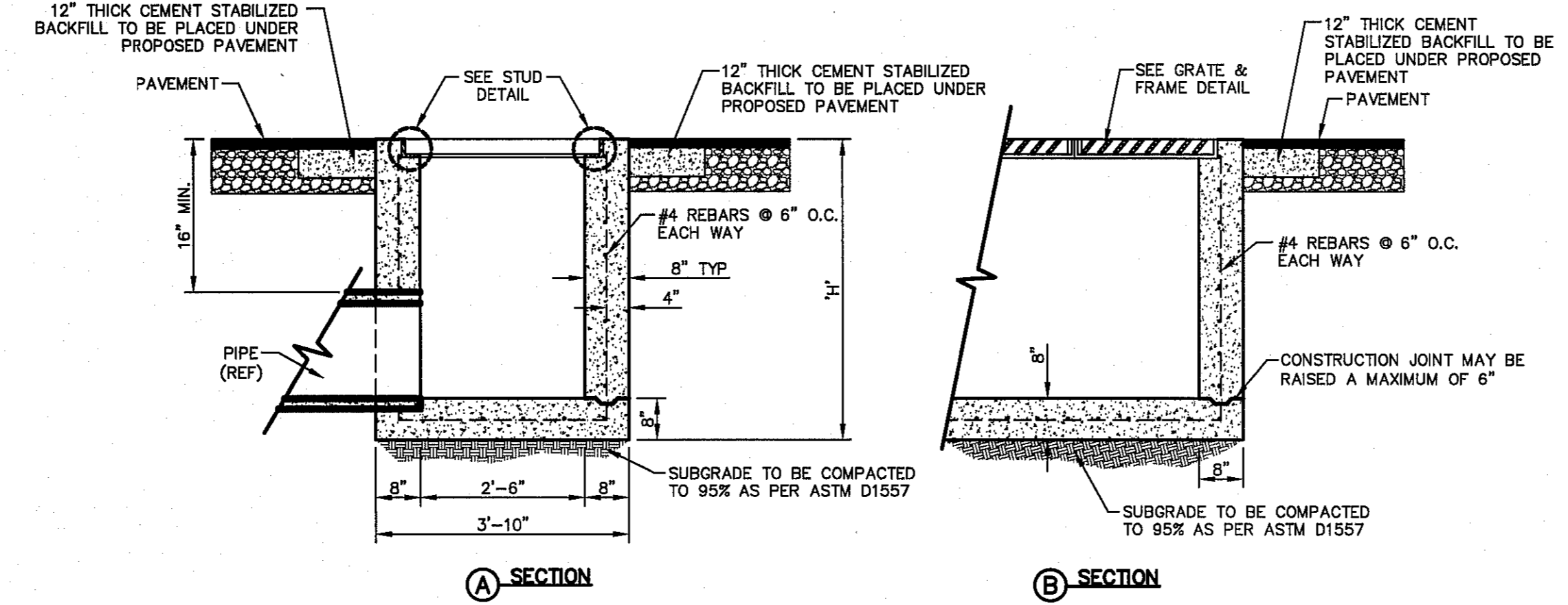
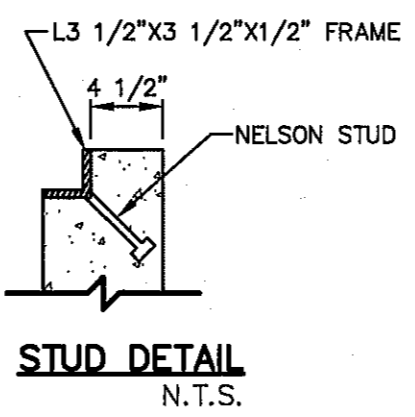
1 72" CAST-IN PLACE MANHOLE DETAIL  
SCALE: N.T.S.



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

\* THESE CAPACITIES CORRESPOND TO A CLOGGING FACTOR OF 0.5

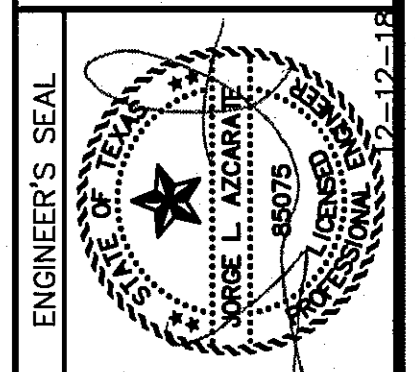
- NOTES:
1. GRATES TO BE PERPENDICULAR TO TRAFFIC
  2. CONCRETE TO BE 3,000 PSI (MIN.) CORE TEST @ 28 DAYS.
  3. H=20" MAXIMUM
  4. SEE STORM SEWER PLAN & PROFILES FOR APPROVED PIPE DIAMETER.



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

REFERENCES - BENCHMARKS  
CITY MONUMENT AT POINT OF CURVE CENTERLINE RICH BEEM BLDG. S084331E A DISTANCE OF 467.58 FEET FROM THE SOUTHERLY RIGHT OF WAY LINE OF MONTANA AVENUE. ELEVATION = 4005.40 (CITY DATUM).  
DATE \_\_\_\_\_ REVISIONS \_\_\_\_\_ BY \_\_\_\_\_

**osa**  
GROUP  
REGISTERED ENGINEERING FIRM F-654  
4712 Woodrow Bess, Ste F, El Paso, TX 78924  
915.544.5232 | www.osagroup.net



SCALE: N/A  
Horizontal: N/A  
Vertical: N/A  
Contour Interval: N/A  
DATE: AUGUST 2018  
DESIGN BY: F.Z.  
DRAWN BY: K.A.P.  
CHECKED BY: J.L.A.  
APPROVED BY: J.L.A.  
JOB No. 2025-013

PROJECT TITLE  
**TRES SUEÑOS  
UNIT SIXTEEN  
SUBDIVISION IMPROVEMENTS**

SHEET TITLE  
**DRAINAGE  
DETAILS**  
(SHEET 2 OF 3)  
SHEET NO.

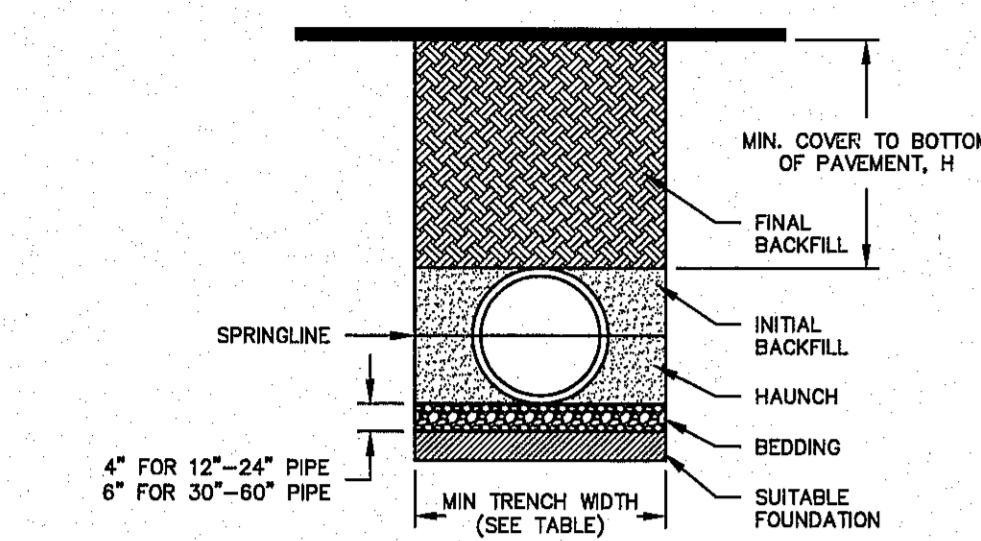


Final Approval

C9.2

S:\2025\2025-013-Tres Suenos Unit Sixteen Subdivision Improvements\Drawings\Improvement Plans\C9.1-C9.3-Drainage Details.dwg, 12/13/2018 7:58:16 AM

**PP TRENCH INSTALLATION DETAIL FOR STORM APPLICATIONS**



PIPE DIAM.	CLASS I		CLASS II		CLASS III	
	COMPACTED	90%	90%	90%	90%	90%
12" (300mm)	39 (11.8)	27 (8.2)	20 (6.1)	21 (6.4)	12 (3.7)	12 (3.7)
15" (375mm)	42 (12.8)	29 (8.8)	21 (6.4)	22 (6.7)	12 (3.7)	12 (3.7)
18" (450mm)	38 (11.0)	28 (7.9)	18 (5.5)	19 (5.6)	12 (3.7)	12 (3.7)
24" (600mm)	31 (8.5)	22 (6.7)	16 (4.9)	16 (4.9)	11 (3.7)	11 (3.7)
30" (750mm)	30 (8.1)	22 (6.7)	16 (4.9)	16 (4.9)	11 (3.7)	11 (3.7)
36" (900mm)	31 (8.5)	22 (6.7)	16 (4.9)	16 (4.9)	11 (3.7)	11 (3.7)
42" (1050mm)	34 (10.4)	23 (7.0)	17 (5.2)	17 (5.2)	11 (3.7)	11 (3.7)
48" (1200mm)	34 (10.4)	24 (7.3)	17 (5.2)	18 (5.5)	11 (3.7)	11 (3.7)
60" (1500mm)	32 (9.8)	22 (6.7)	16 (4.9)	16 (4.9)	11 (3.7)	11 (3.7)

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

TABLE 1. RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN TRENCH WIDTH
12" (300mm)	30" (750mm)
15" (375mm)	34" (860mm)
18" (450mm)	39" (990mm)
24" (600mm)	48" (1200mm)
30" (750mm)	58" (1460mm)
36" (900mm)	64" (1620mm)
42" (1050mm)	72" (1800mm)
48" (1200mm)	80" (2000mm)
60" (1500mm)	98" (2440mm)

TABLE 2. MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS

PIPE DIAM.	SURFACE LIVE LOADING CONDITION	
	H-20	HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48" (300mm - 1200mm)	12" (300mm)	48" (1200mm)
60" (1500mm)	24" (600mm)	80" (1600mm)

\*VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

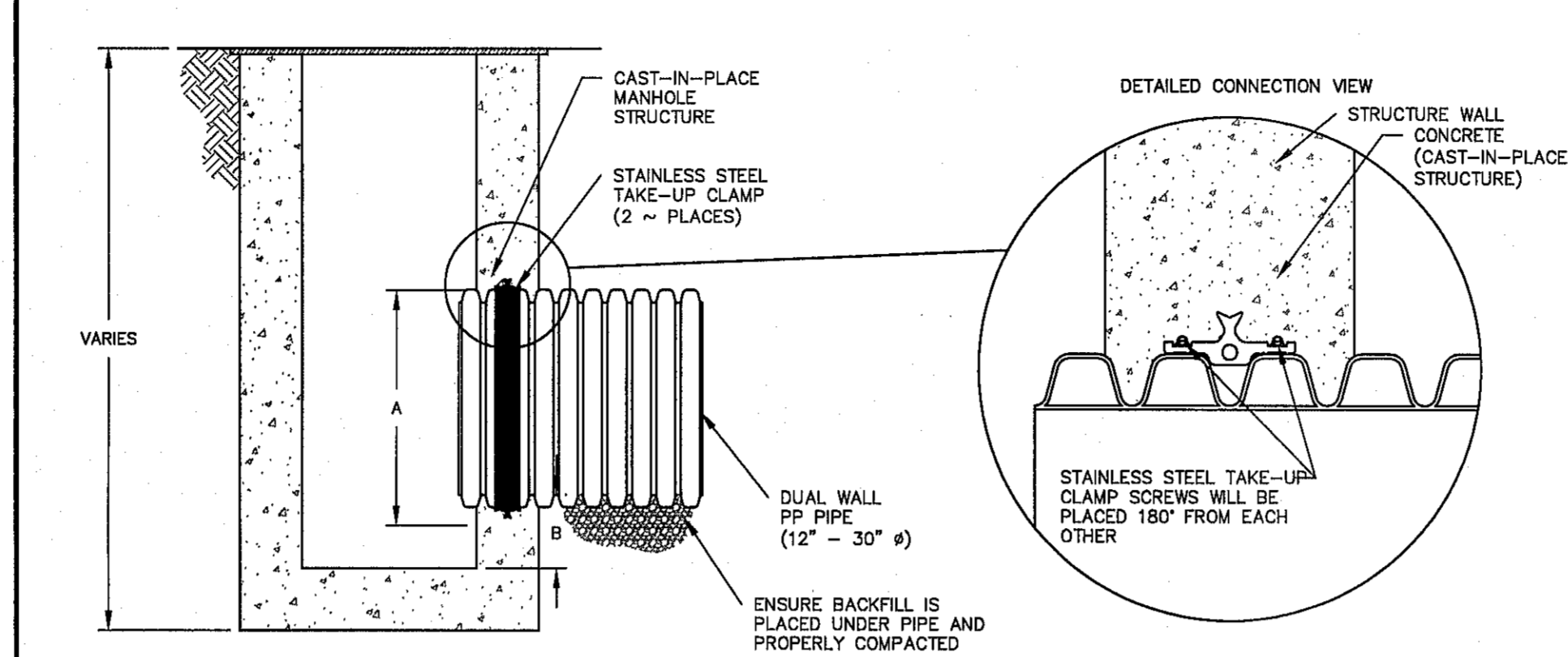
- NOTES:
- ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION, WITH THE EXCEPTION THAT THE INITIAL BACKFILL MAY EXTEND TO THE CROWN OF THE PIPE. SOIL CLASSIFICATIONS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

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

#1 - POLYPROPYLENE PIPE DETAIL FOR STORM SEWER APPLICATIONS (INSTALLATION DETAIL) SCALE: N.T.S.

1 C9.3 #1-POLYPROPYLENE PIPE DETAIL FOR STORM SEWER APPLICATIONS (INSTALLATION DETAIL) SCALE: N.T.S.

**12"-30" PP WATERSTOP GROUDED MANHOLE CONNECTION (DUAL WALL)**



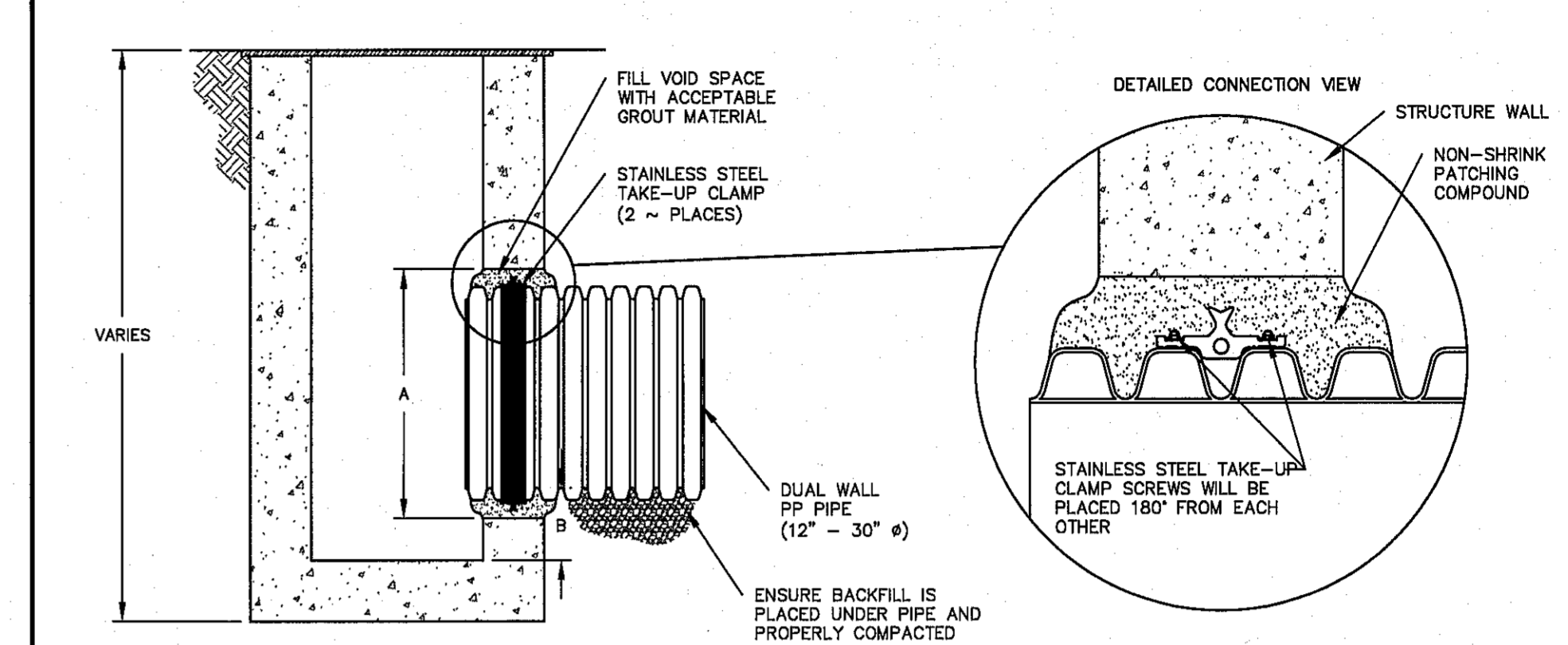
PIPE SIZE (IN)	PIPE OD (IN)	"A" MIN. HOLE # (IN)	"B" MIN. DISTANCE PIPE INVERT TO STRUCTURE INVERT (IN)
12	14.5	19.50	3.7
15	17.6	23.00	4.0
18	21.2	26.50	4.2
24	27.8	33.25	4.5
30	35.1	40.50	5.2
36	41.1	47.00	5.5
42	47.7	53.00	5.7
48	53.8	59.00	5.7
60	66.3	72.00	6.4

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#4 - WATERSTOP 12"-30" DUAL WALL POLYPROPYLENE STORM DETAIL (WATERSTOP GROUT RING CONNECTION DETAIL FOR CAST-IN-PLACE STRUCTURES) SCALE: N.T.S.

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

**12"-30" PP WATERSTOP GROUDED MANHOLE CONNECTION (DUAL WALL)**



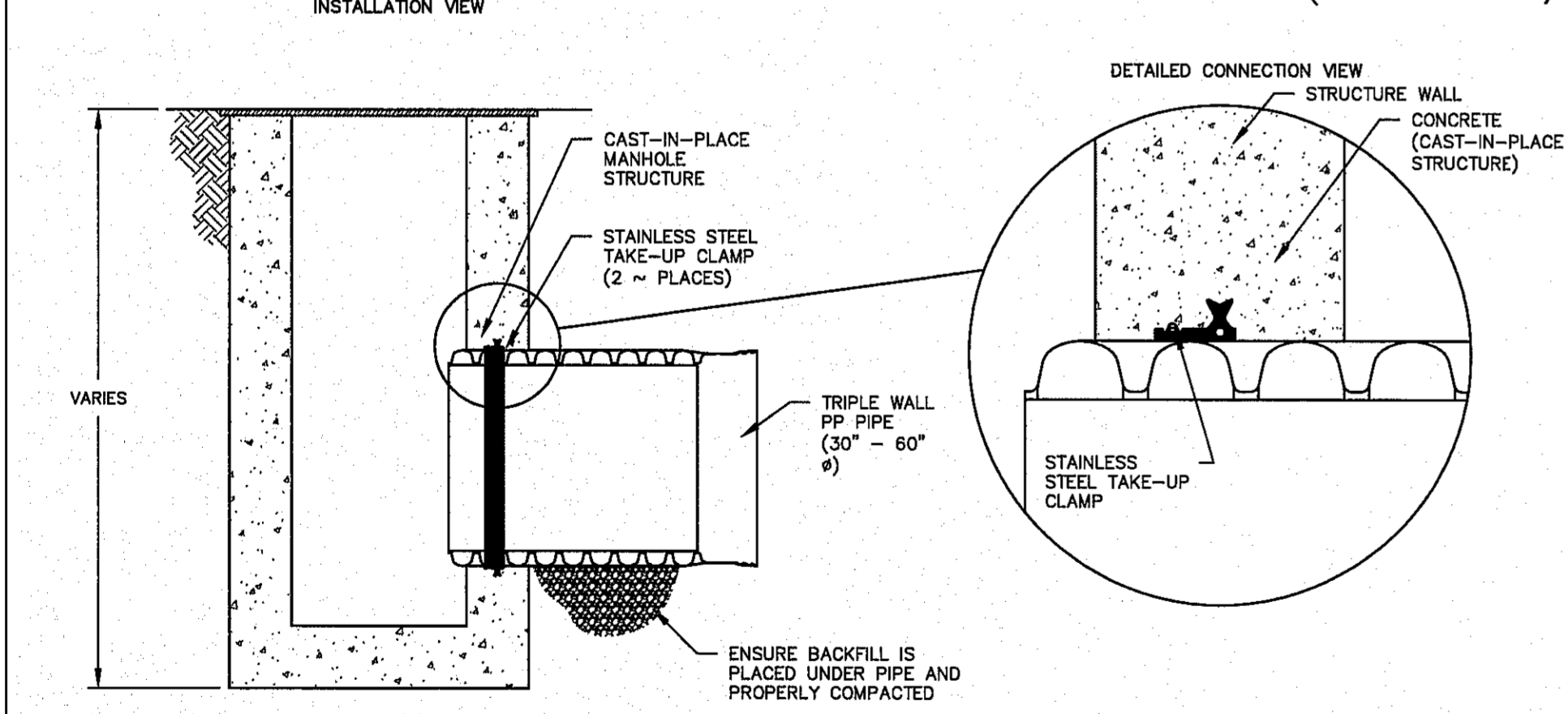
PIPE SIZE (IN)	PIPE OD (IN)	"A" MIN. HOLE # (IN)	"B" MIN. DISTANCE PIPE INVERT TO STRUCTURE INVERT (IN)
12	14.5	19.50	3.7
15	17.6	23.00	4.0
18	21.2	26.50	4.2
24	27.8	33.25	4.5
30	35.1	40.50	5.2
36	41.1	47.00	5.5
42	47.7	53.00	5.7
48	53.8	59.00	5.7
60	66.3	72.00	6.4

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

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

**30"-60" PP WATERSTOP GROUDED MANHOLE CONNECTION (TRIPLE WALL)**



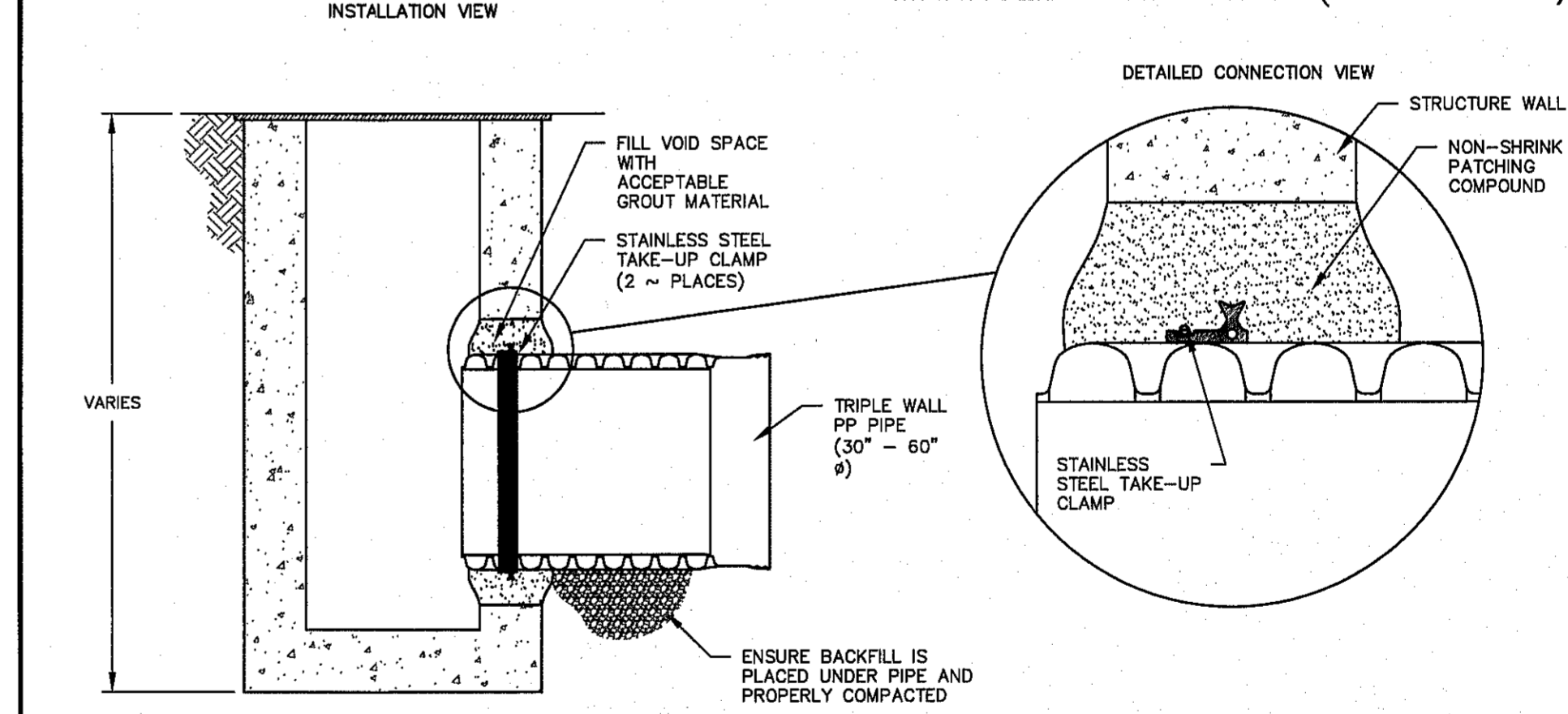
PIPE SIZE (IN)	PIPE OD (IN)	"A" MIN. HOLE # (IN)
30	35.4	41.5
36	41.1	46.0
42	47.2	52.5
48	53.8	60.0
60	66.5	72.5

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

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

**30"-60" PP WATERSTOP GROUDED MANHOLE CONNECTION (TRIPLE WALL)**



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

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

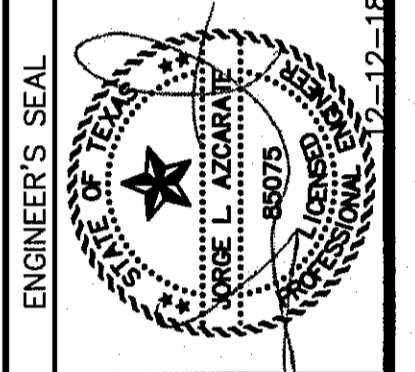
5 C9.3 #5-WATERSTOP TRIPLE WALL 30"-60" POLYPROPYLENE STORM DETAIL (WATERSTOP GROUT RING CONNECTION DETAIL FOR PRECAST STRUCTURES) SCALE: N.T.S.

REFERENCES - BENCHMARKS

CITY MONUMENT AT POINT OF CURVE CENTERLINE RICH FROM BLVD. INTERSECTION OF BLVD. AND 35th AVE. FROM BLVD. SOUTHERLY RIGHT OF WAY LINE OF MONTANA AVENUE. ELEVATION = 4005.40 (CITY DATUM).

DATE	REVISIONS	BY

**ocea GROUP**  
TEXAS REGISTERED ENGINEERING FIRM F-684  
4772 Woodrow Bean, Ste. F El Paso, TX 79824  
915.544.5232 | www.oceagroup.net



SCALE: N/A  
Horizontal: N/A  
Vertical: N/A  
Contour Interval: N/A  
DATE: AUGUST 2018  
DESIGN BY: F.Z.  
DRAWN BY: K.A.P.  
CHKD. BY: J.L.A.  
APPVD. BY: J.L.A.  
JOB No. 2025-013

**Final Approval**

PROJECT TITLE  
**TRES SUEÑOS UNIT SIXTEEN SUBDIVISION IMPROVEMENTS**

SHEET TITLE  
**DRAINAGE DETAILS**

(SHEET 3 OF 3)  
SHEET NO.

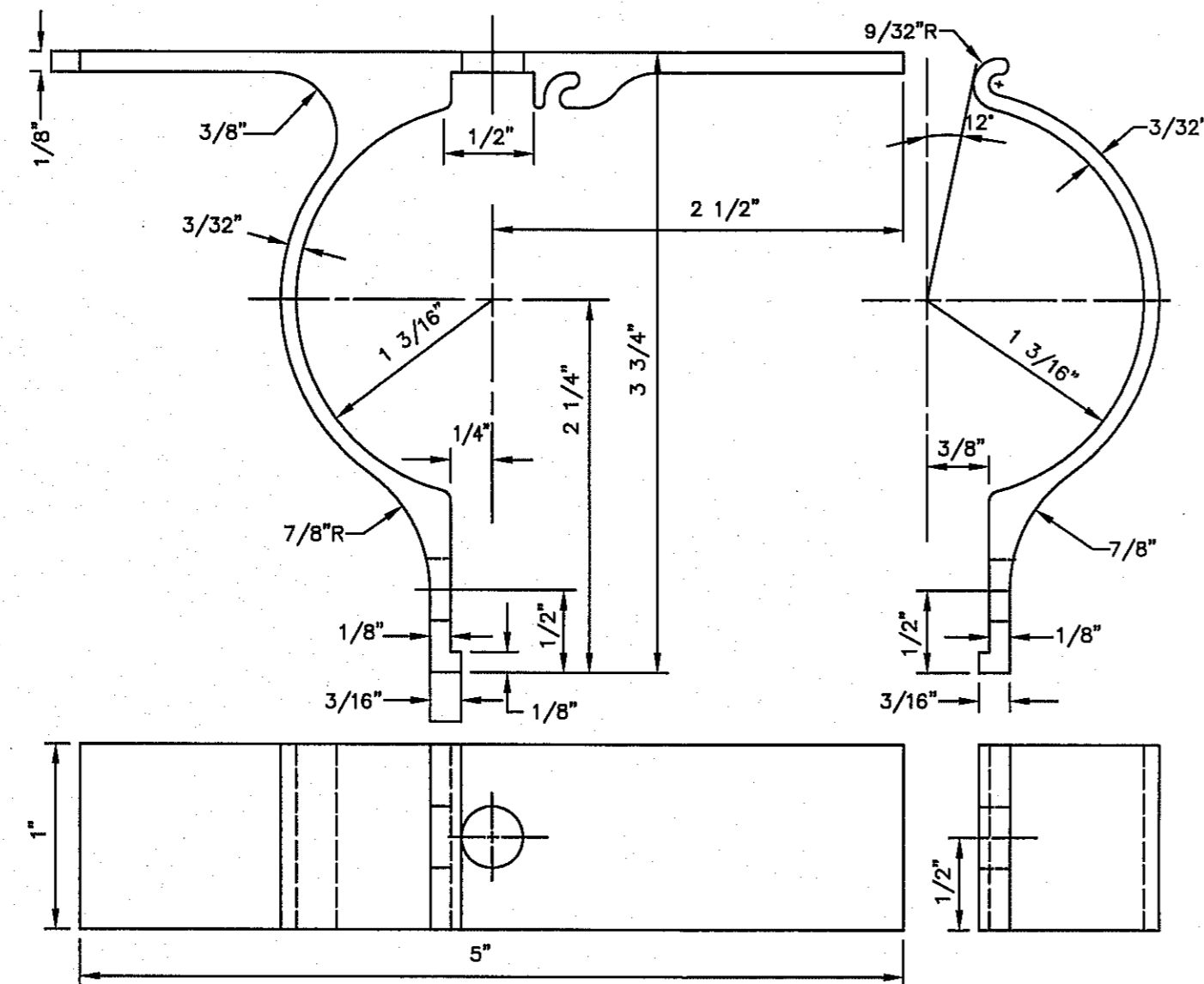
**C9.3**





**CITY OF EL PASO  
SPECIFICATIONS FOR REFLECTORIZED  
STREET NAME SIGNS**

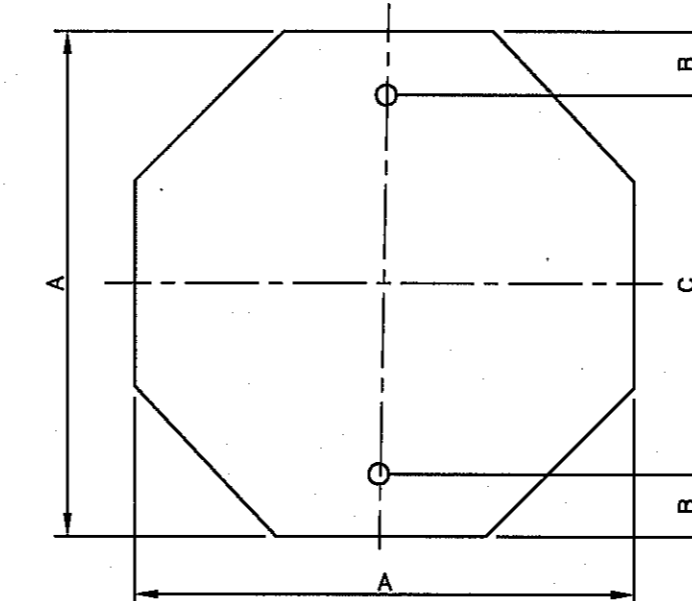
- COLOR OF SIGNS:** THE FINISHED SIGN MUST HAVE A REFLECTORIZED GREEN BACKGROUND. THE BLUE MUST CONFORM WITH THE BUREAU OF PUBLIC ROADS HIGHWAY BLUE. THE LEGEND MUST BE REFLECTORIZED SILVER WHITE (BLUE REVERSE SCREENED BACKGROUND WITH SILVER COPY).
- LETTER DESIGN:** THE LETTERING OF ALL LEGENDS MUST BE MIXED CASE LETTERS IN ACCORDANCE WITH "STANDARD ALPHABETS FOR HIGHWAY SIGNS" PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
- LETTER SPACING:** THE CONTROL FOR THE SPACING VALUES IN TRAFFIC LAYOUT IS THE DISTANCE RECOGNIZED AS AESTHETIC SPACING BETWEEN TWO STRAIGHT LETTERS (HN). A SPACING CONTROL OF TWO TIMES THE WIDTH OF THE STROKE OF THE LETTER SERIES TO BE USED MUST BE THE AESTHETIC CONTROL (100%). TWO AND ONE-HALF TIMES (2-1/2) THIS CONTROL MUST BE USED AS THE AESTHETIC WORD SPACE BETWEEN ELEMENTS IN THE PRIMARY LEGEND.
- LAYOUT:** THE MAXIMUM NUMBER OF LETTERS TO BE ACCOMMODATED ON A GIVEN LENGTH STREET NAME FACE MUST BE DETERMINED BY THE WIDEST LETTER SERIES POSSIBLE FOR THAT LEGEND AND THE SPACING CONTROL (100%) FOR THE SERIES USED MUST BE EXPANDED OR CONDENSED UP TO 25% IN 5% INCREMENTS.
- THE SPACING CONTROL (100%) FOR THE SERIES USED MUST BE EXPANDED OR CONDENSED UP TO 25% IN 5% INCREMENTS FOR THE END MARGIN WITH MINIMUM OF 1".**
- THE WORD SPACE MUST BE EXPANDED UP TO 25% IN 5% INCREMENTS BUT NOT CONDENSED.**
- SPACE BETWEEN PRIMARY AND BLOCK NUMBER AREA MUST BE 1/2 THE AESTHETIC WORD SPACE USED IN THE PRIMARY LEGEND.**
- SIZE OF LEGEND:** FOR 9" STREET NAME SIGNS, THE PRIMARY LEGEND, OR STREET NAME MUST HAVE 6" INITIAL UPPER-CASE LETTERS AND 4.5" LOWER CASE LETTERS ON ALL OTHER STREETS. LETTERING TO INDICATE THE TYPE OF STREET MAY BE IN SMALLER LETTERING COMPOSED OF INITIAL UPPER-CASE LETTERS 3" IN HEIGHT AND LOWERCASE LETTERS 2.25" IN HEIGHT.
- POSITION OF LEGEND:** EACH SIGN FACE WILL CONSIST OF THE STREET NAME, SUFFIX, AND BLOCK NUMBER. THE SUFFIX WILL BE LOCATED IN THE UPPER RIGHT CORNER AND THE BLOCK NUMBER IN THE LOWER RIGHT CORNER OF THE SIGN FACE AND THE STREET NAME CENTERED IN THE REMAINING SPACE.
- SIGN FABRICATION:** THE SIGN FACE MUST BE FABRICATED BY REVERSE SCREENING GREEN TRANSPARENT COLOR OVER SILVER REFLECTIVE SHEETING. TRANSPARENT PROCESS COLORS MUST BE AS RECOMMENDED BY THE SHEETING MANUFACTURER. CUT-OUT OR APPLIED LEGENDS ARE NOT PERMITTED. SIGN FACES MUST BE COMPRISED OF ONE PIECE OR PANEL OF REFLECTIVE SHEETING.
- TYPE OF SHEETING:** ENGINEER GRADE REFLECTIVE SHEETING MUST BE USED IN THE FABRICATION OF THE STREET NAME SIGN FACES.



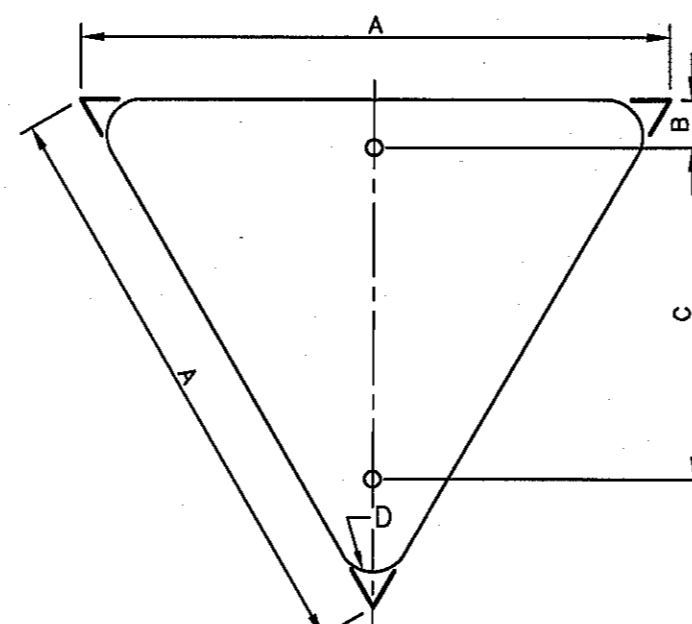
**NOTES:**

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

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



OCTAGON  
N.T.S.



EQUILATERAL TRIANGLE  
N.T.S.

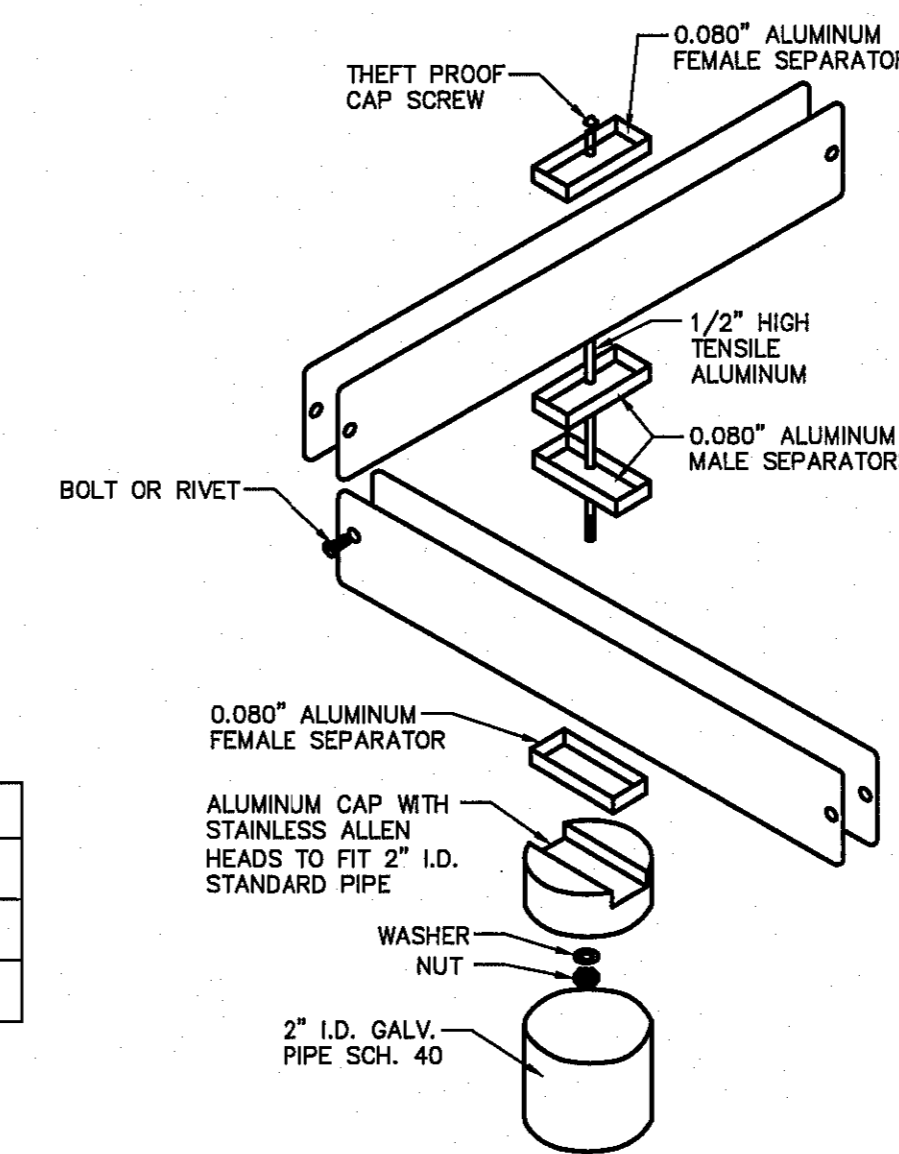
2 D.H.T. BLANK STANDARDS  
SCALE: N.T.S.

3/8" HOLE DIA.

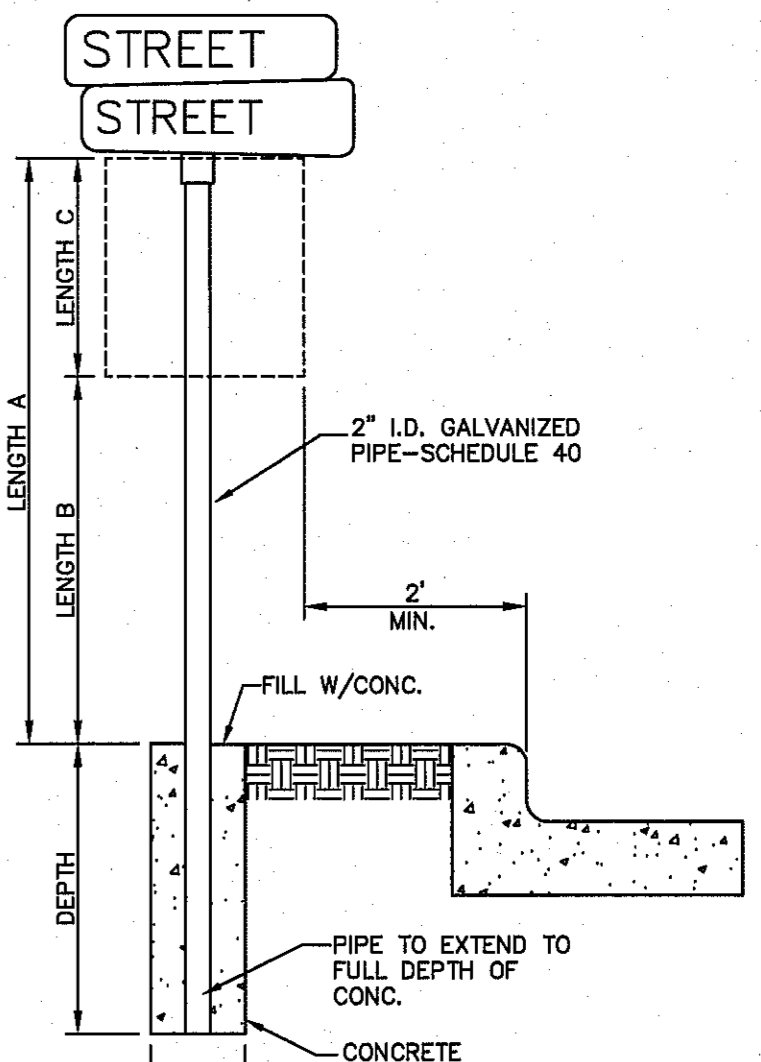
A	B	C
24	3	18
30	3	24
36	3	30

3/8" HOLE DIA.

A	B	C	D
36	3	21	2
42	3	24	2 1/2
48	3	30	3



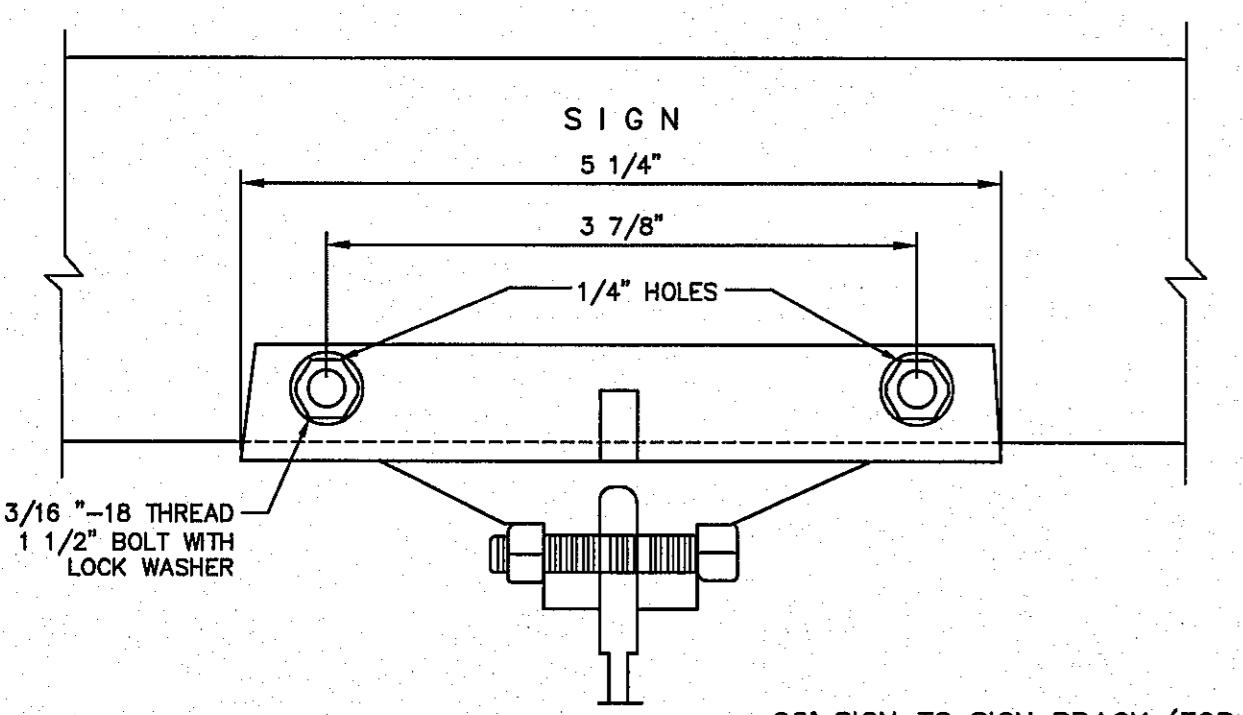
3 9" STREET NAME ASSEMBLY  
SCALE: N.T.S.



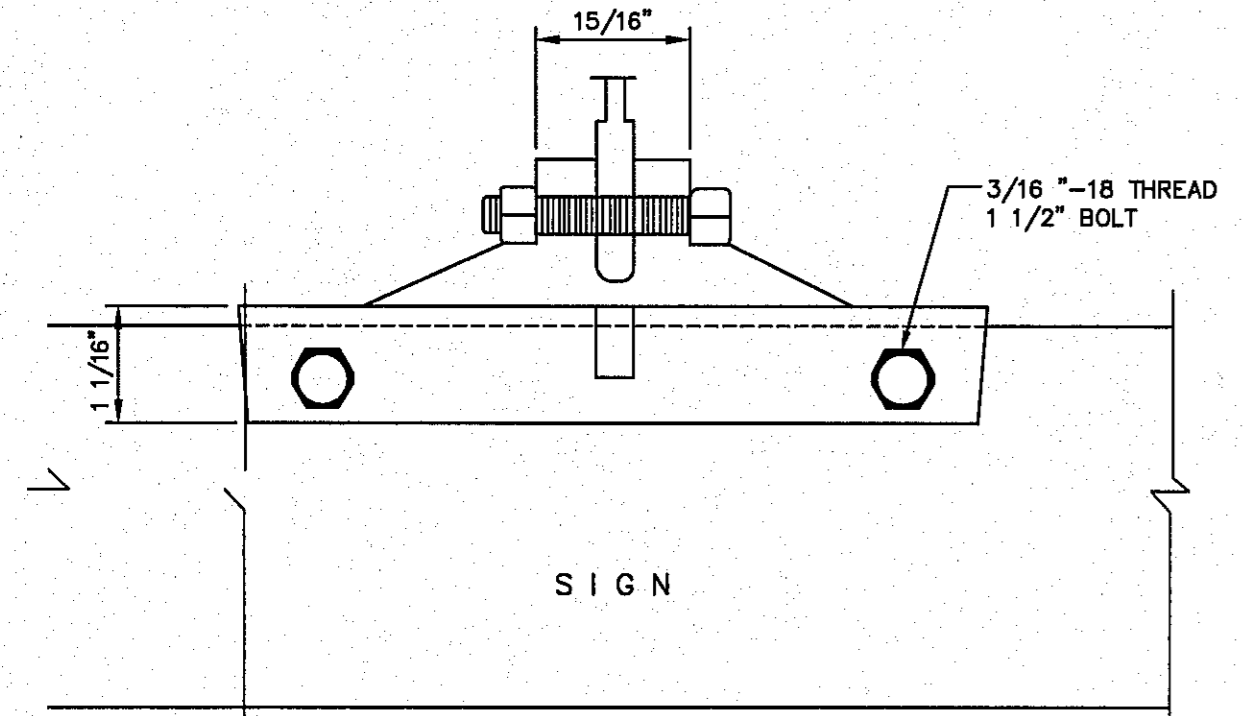
4 SIGN POST INSTALLATION  
SCALE: N.T.S.

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

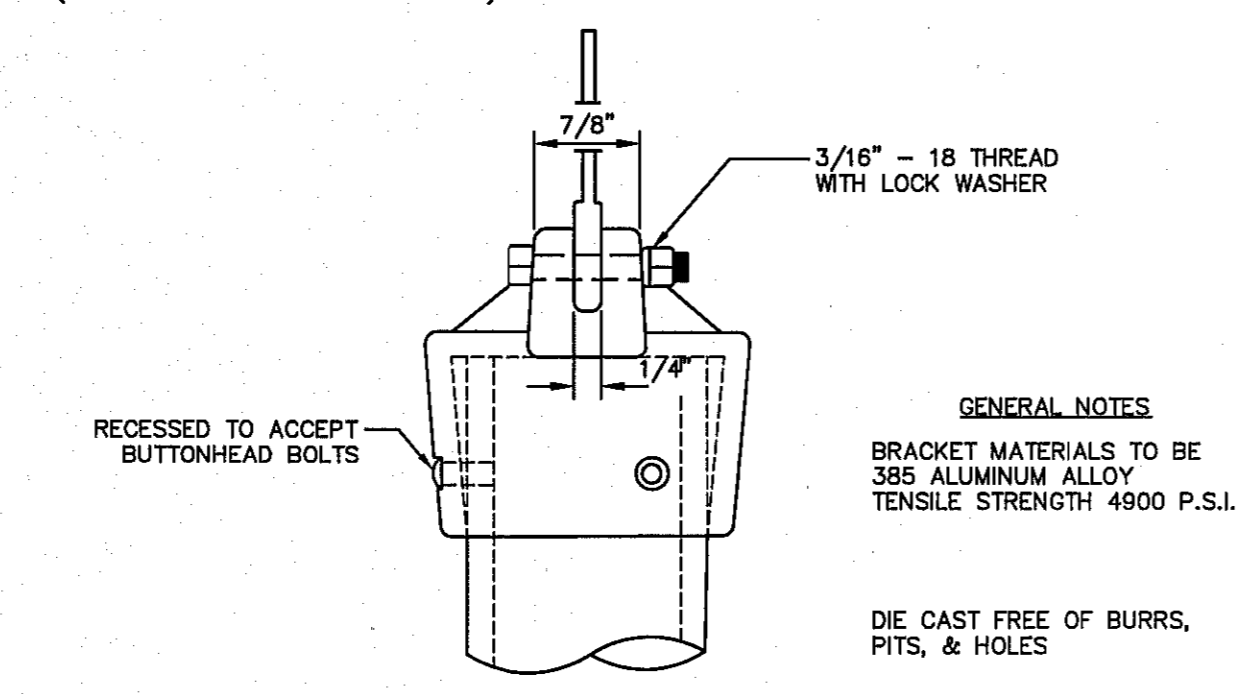
4 SIGN POST INSTALLATION  
SCALE: N.T.S.



90° SIGN TO SIGN BRACK (FOR EXTRUDED BLADES)

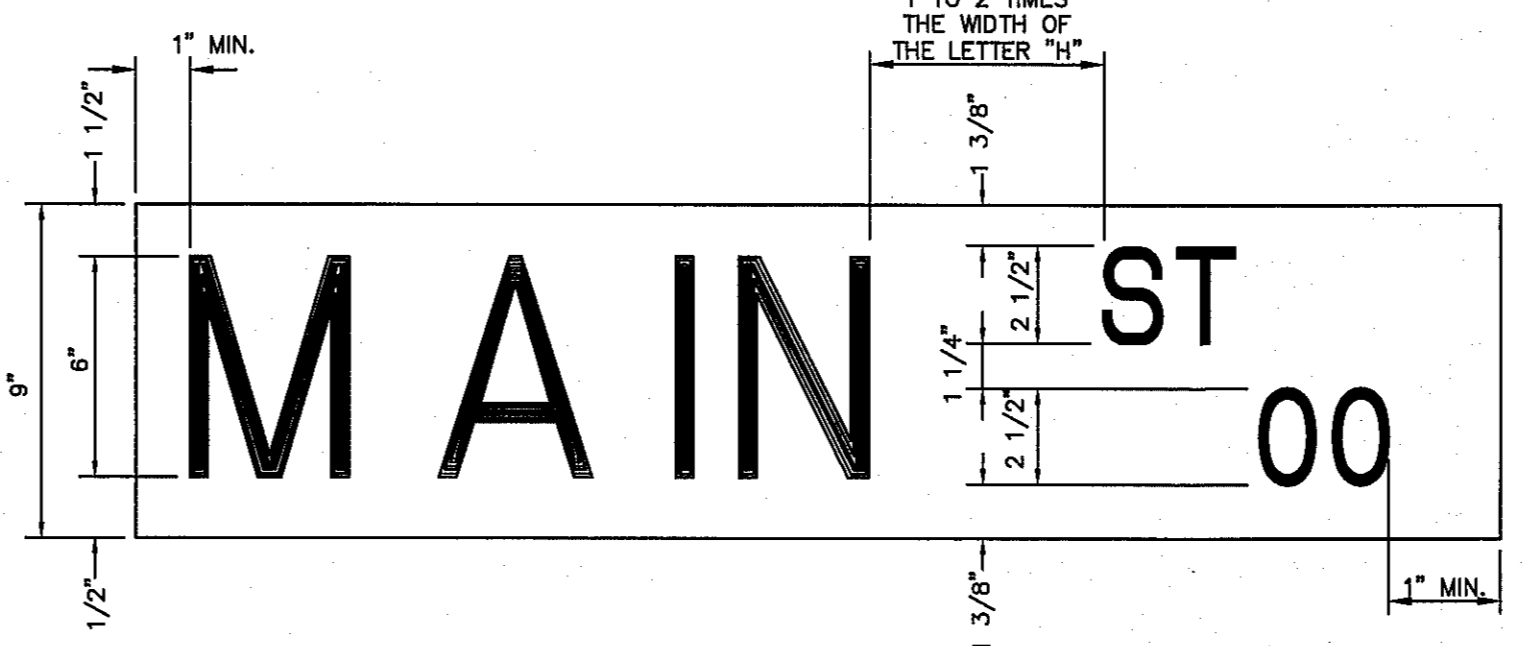


POST CAP BRACKET (FOR EXTRUDED BLADES)



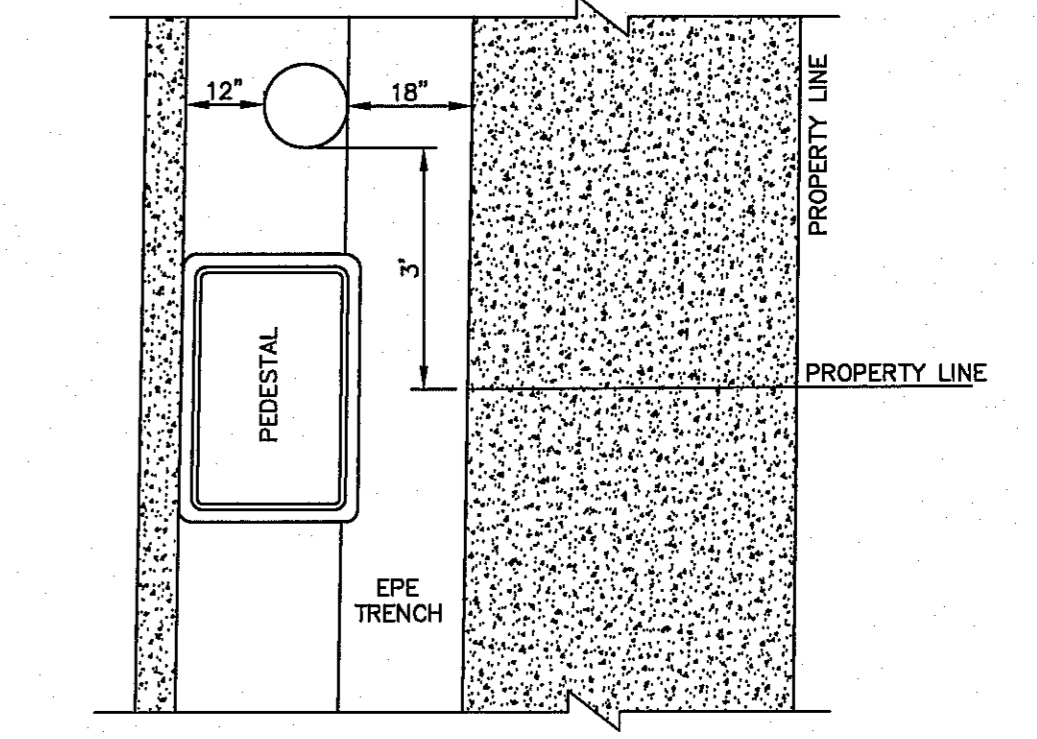
**GENERAL NOTES**  
BRACKET MATERIALS TO BE 385 ALUMINUM ALLOY TENSILE STRENGTH 4900 P.S.I.  
DIE CAST FREE OF BURRS, PITS, & HOLES

ALL SIGNS SHALL CONFORM TO THE CITY OF EL PASO REQUIREMENTS AND FHWA REGULATIONS

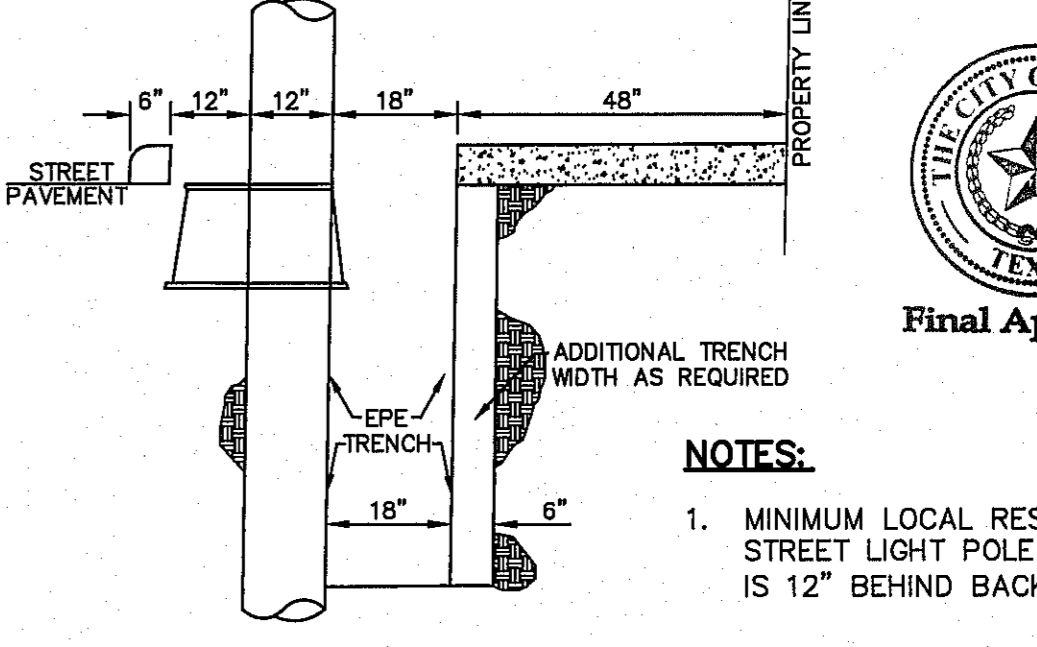


SIGN CLASS	SIGN LENGTH	PRIMARY LETTERS SIZE & SERIES	SUFFIX & BLOCK NUMBER SIZE & SERIES
9" ARTERIAL STREETS	36"	6" C,D SERIES	3" C SERIES
	42"	6" C,D SERIES	3" C SERIES
	48"	6" A,B,C,D SERIES	3" C SERIES

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



AERIAL VIEW



FRONT VIEW

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

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

**UTILITY LOCATOR SERVICES**

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

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

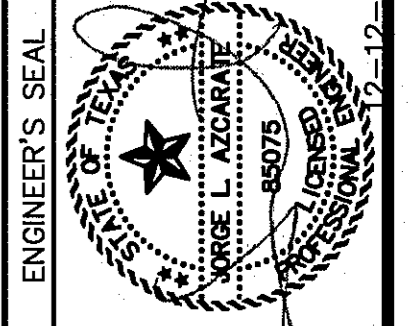
REFERENCES - BENCHMARKS

CITY MONUMENT AT POINT OF CURVE CENTERLINE RICH AND 100' FROM 37' 3\"/>

ELEVATION = 4005.40 (CITY DATUM).

DATE	REVISIONS	BY

**cea**  
CITY OF EL PASO  
TEXAS REGISTERED ENGINEERING FIRM F-4594  
4712 Woodrow Bess, Ste. F El Paso, TX 79904  
915.544.5232 www.ceagroup.net



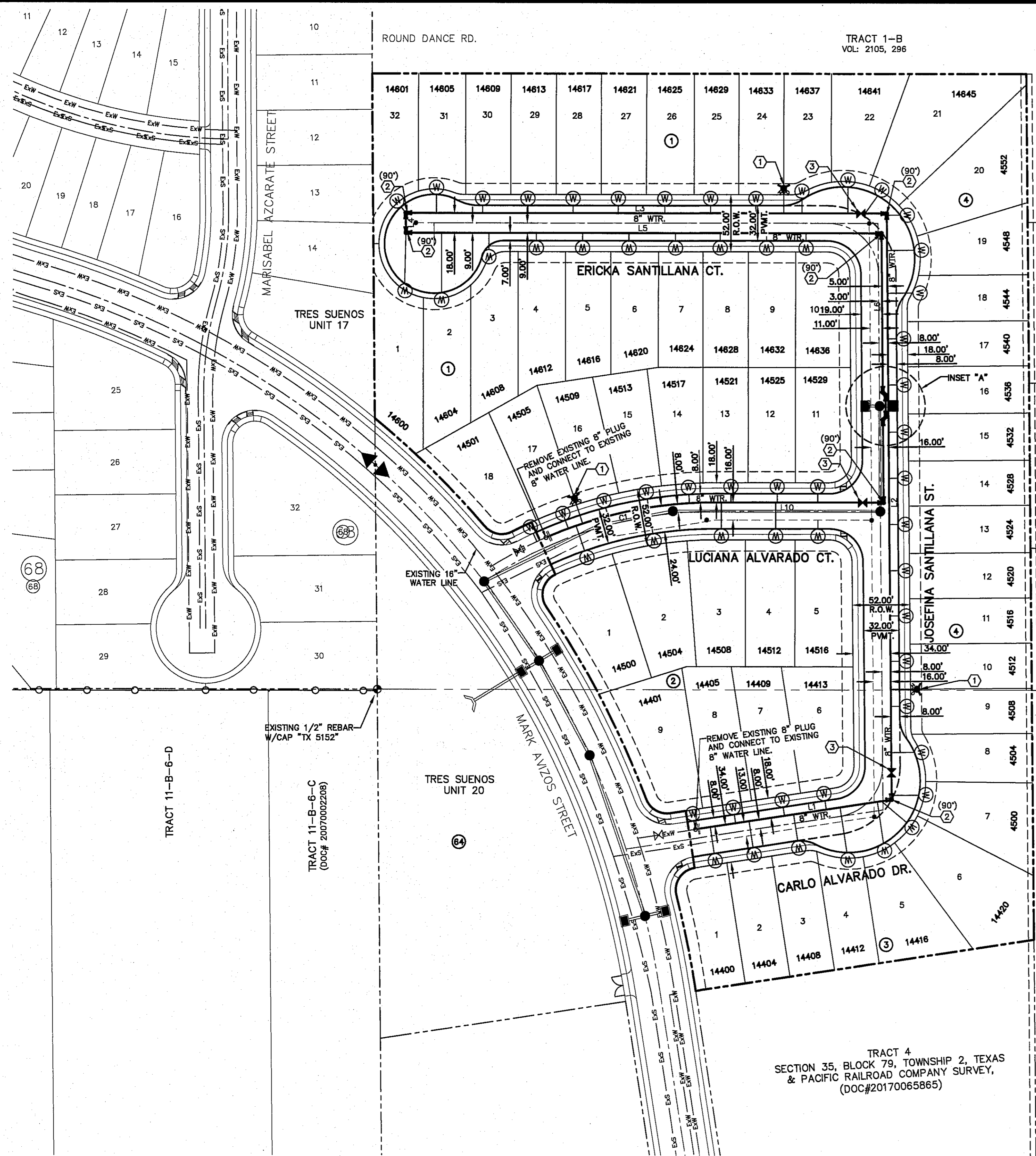
SCALE: N/A  
Vertical: N/A  
Horizontal: N/A  
Contour Interval: N/A  
DATE: AUGUST 2018  
DESIGN BY: F.Z.  
DRAWN BY: K.A.P.  
CHKD. BY: J.L.A.  
APPVD. BY: J.L.A.  
JOB No. 2025-013

PROJECT TITLE  
**TRES SUEÑOS  
UNIT SIXTEEN  
SUBDIVISION IMPROVEMENTS**

SHEET TITLE  
**ILLUMINATION &  
SIGNAGE PLAN**

SHEET NO.

C10.2

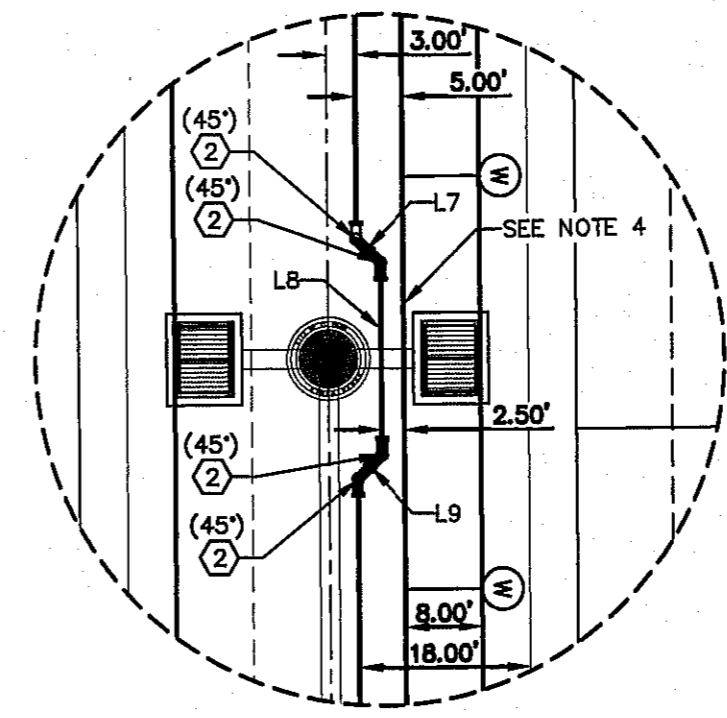


WATER QUANTITIES		
DESCRIPTION	QUANTITY	UNIT
8" PVC WATER LINE	2070	LF
8" GATE VALVE	3	EA
FIRE HYDRANT	3	EA

WATER KEYED NOTES	
①	FIRE HYDRANT
②	8" BEND
③	8" GATE VALVE

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	383.00'	154.24'	78.18'	153.20'	S81°29'43"W	023°04'24"

LINE TABLE		
LINE	BEARING	LENGTH
L1	N84°19'56"E	176.65'
L2	S02°29'55"W	532.38'
L3	S86°58'05"E	436.47'
L4	S02°27'12"W	18.00'
L5	S86°58'05"E	431.50'
L6	S02°31'01"W	144.37'
L7	S42°30'05"E	3.54'
L8	S02°29'55"W	20.00'
L9	S47°29'55"W	3.54'
L10	S86°58'05"E	152.92'



**INSET "A"**  
SCALE: 1" = 20'

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

**WATER INDEX MAP**  
SCALE: 1" = 60'

**INDEX**

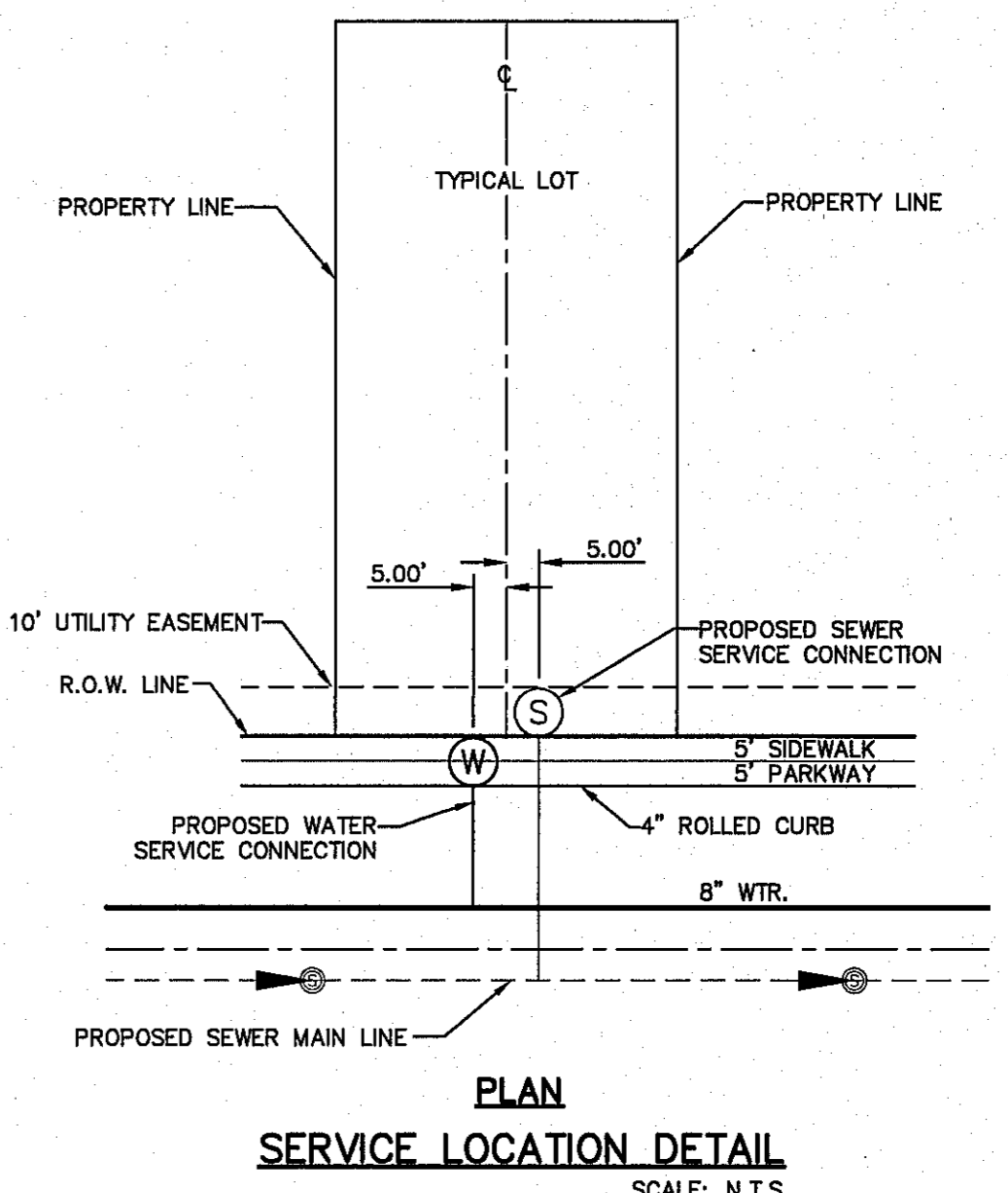
SHEET NO.	DESCRIPTION
C11.1	TRES SUEÑOS UNIT SIXTEEN WATER MAIN PIPE LAYOUT
C12.1	WATER DETAILS
C12.2	WATER DETAILS
C12.3	WATER DETAILS
C12.4	WATER DETAILS

**NOTES:**

- ALL LOTS SHALL BE PROVIDED WITH ONE SERVICE CONNECTION TO BE INSTALLED AT THE LOCATION AS SHOWN ON THE SERVICE LOCATION DETAIL.
- ALL WATER LINES SHALL BE PVC C-900, CLASS 150.
- REFERENCE WATER DETAILS FOR TYPICAL VALVE AND WATER LOCATIONS AT STREET INTERSECTIONS.
- REFERENCE WATER DETAILS FOR WATER LINE CROSSING STORM SEWER.

**LEGEND**

SYMBOL	DESCRIPTION
— 8" WTR. —	PROPOSED 8" C-900, CLASS 150 P.V.C. PIPE
---	SUBDIVISION BOUNDARY LINE
---	PROPERTY LINE
---	STREET CENTER LINE
--- 8" SWR ---	PROPOSED SEWER LINE (PLAN VIEW)
— 14" —	PROPOSED STORM SEWER
⊕	PROPOSED WATER TEE CONNECTION
⊕	PROPOSED WATER BEND CONNECTION
⊕	PROPOSED SERVICE CONNECTION (PLAN VIEW)
⊕	PROPOSED FIRE HYDRANT, KENNEDY OR MUELLER MODEL
⊕	PROPOSED 8" PLUG
⊕	PROPOSED GATE VALVE
⊕	POINT OF TANGENCY
⊕	EXISTING GATE VALVE
⊕	EXISTING FIRE HYDRANT
⊕	EXISTING PLUG
— EWS —	EXISTING SEWER LINE
— EW —	EXISTING WATER LINE



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

**GENERAL NOTES**

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

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

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

**TELEPHONE:**  
SBC  
11200 PELICANO  
EL PASO, TX. 79935  
(915) 595-5151

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

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

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

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

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

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

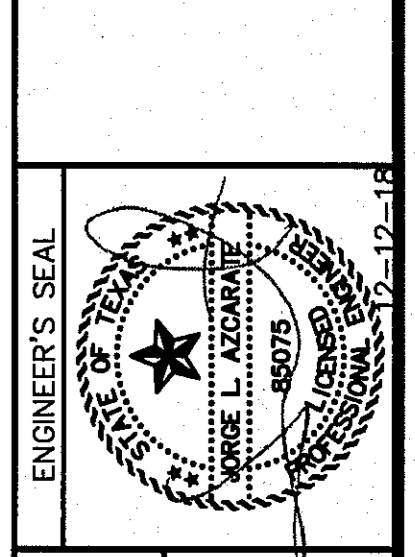
**FIBER OPTICS:**  
MCI TELECOMMUNICATIONS CORPS.  
4045 DONIPHAN PARK CIRCLE  
EL PASO, TX. 79922  
(915) 542-2770 EXT. 201

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

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

DATE	REVISIONS	BY

REFERENCES — BENCHMARKS  
CITY MONUMENT AT POINT OF CURVE CENTERLINE RICH BEEM BLVD., S08°43'31"E, A DISTANCE OF 487.58 FEET FROM THE SOUTHERLY RIGHT OF WAY LINE OF MONTANA AVENUE. ELEVATION = 4005.40 (CITY DATUM).

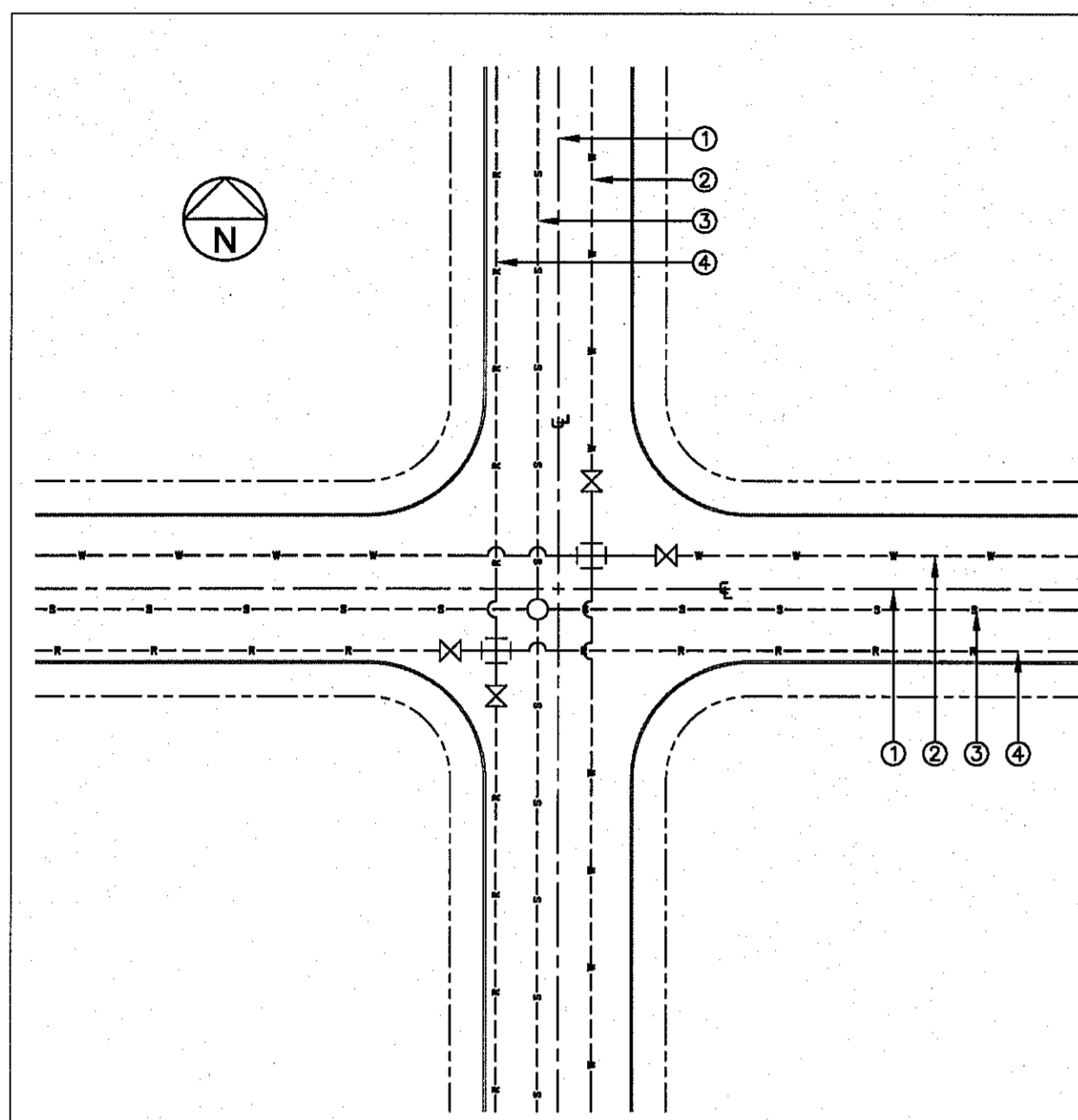


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Vertical: N/A  
Contour Interval: N/A  
DATE: AUGUST 2018  
DESIGN BY: F.Z.  
DRAWN BY: K.A.P.  
CHKD. BY: J.L.A.  
APPVD. BY: J.L.A.  
JOB No. 2025-013

PROJECT TITLE  
**TRES SUEÑOS  
UNIT SIXTEEN  
SUBDIVISION IMPROVEMENTS**

SHEET TITLE  
**WATER INDEX**

SHEET NO.  
**C11.1**



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

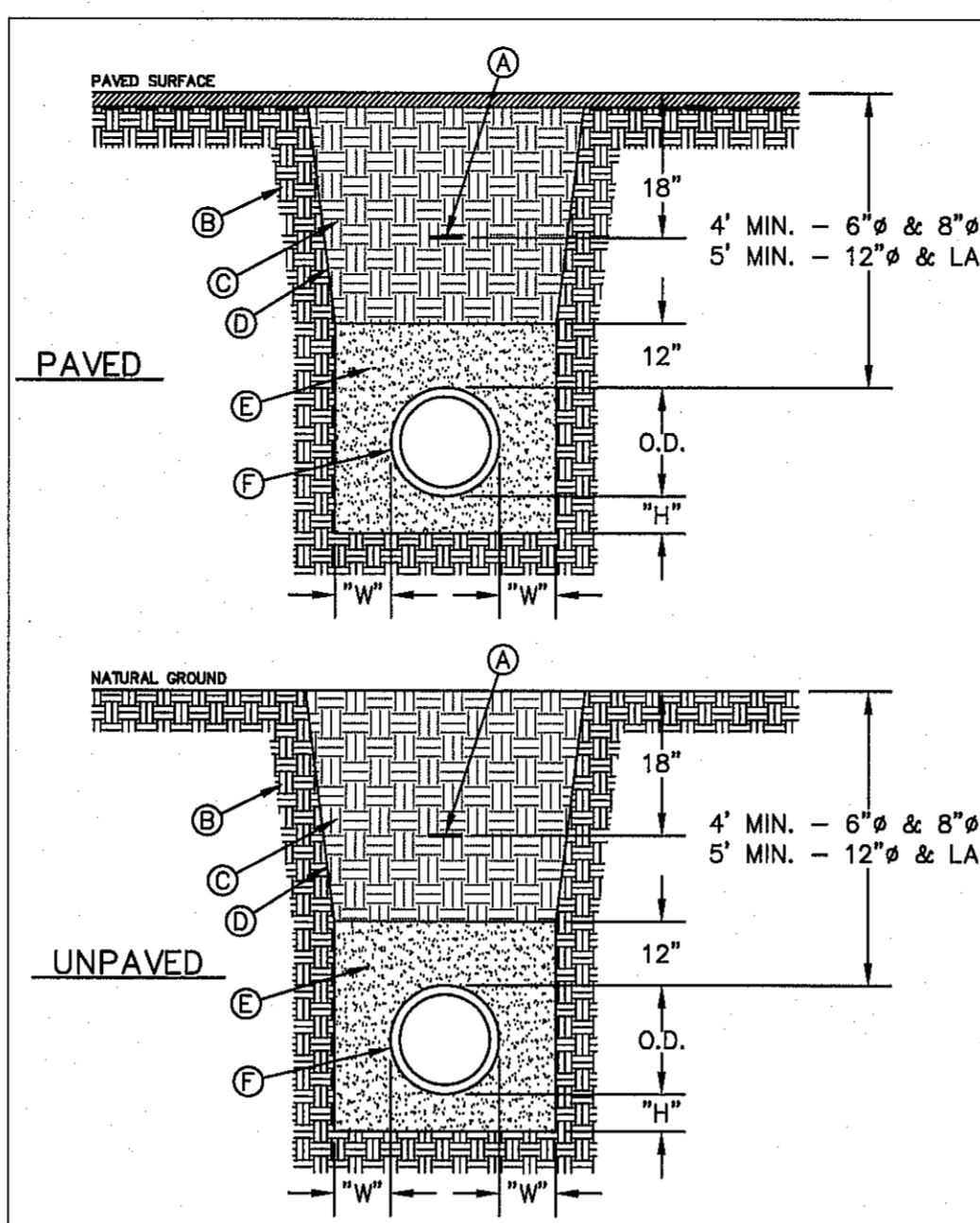
- CONSTRUCTION KEY NOTES:**
- A. DISTANCES FROM CENTERLINE VARY AND SHALL BE ACCORDING TO THE FOLLOWING:

RIGHT-OF-WAY WIDTH*	PIPELINE LOCATION WITHIN NEW RIGHT-OF-WAY OFFSET FROM CENTERLINE**		
	WATER	SEWER	RECLAIMED
36 FT.	9 FT.	1 FT.	6 FT.
44 FT.	8 FT.	3 FT.	8 FT.
52 FT.	8 FT.	5 FT.	10 FT.
64 FT.	10 FT.	5 FT.	10 FT.
72 FT.	10 FT.	5 FT.	10 FT.
76 FT.	10 FT.	5 FT.	10 FT.
84 FT.	20 FT.	5 FT.	10 FT.
110 FT.	25 FT.	15 FT.	20 FT.

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

STANDARD DETAIL DATE: 03/1994 REV: 3/28/2007 LOCATION FOR UTILITY LINES N.T.S. **el paso WATER** DETAIL No. 140

1 LOCATION FOR UTILITY LINES SCALE: N.T.S.

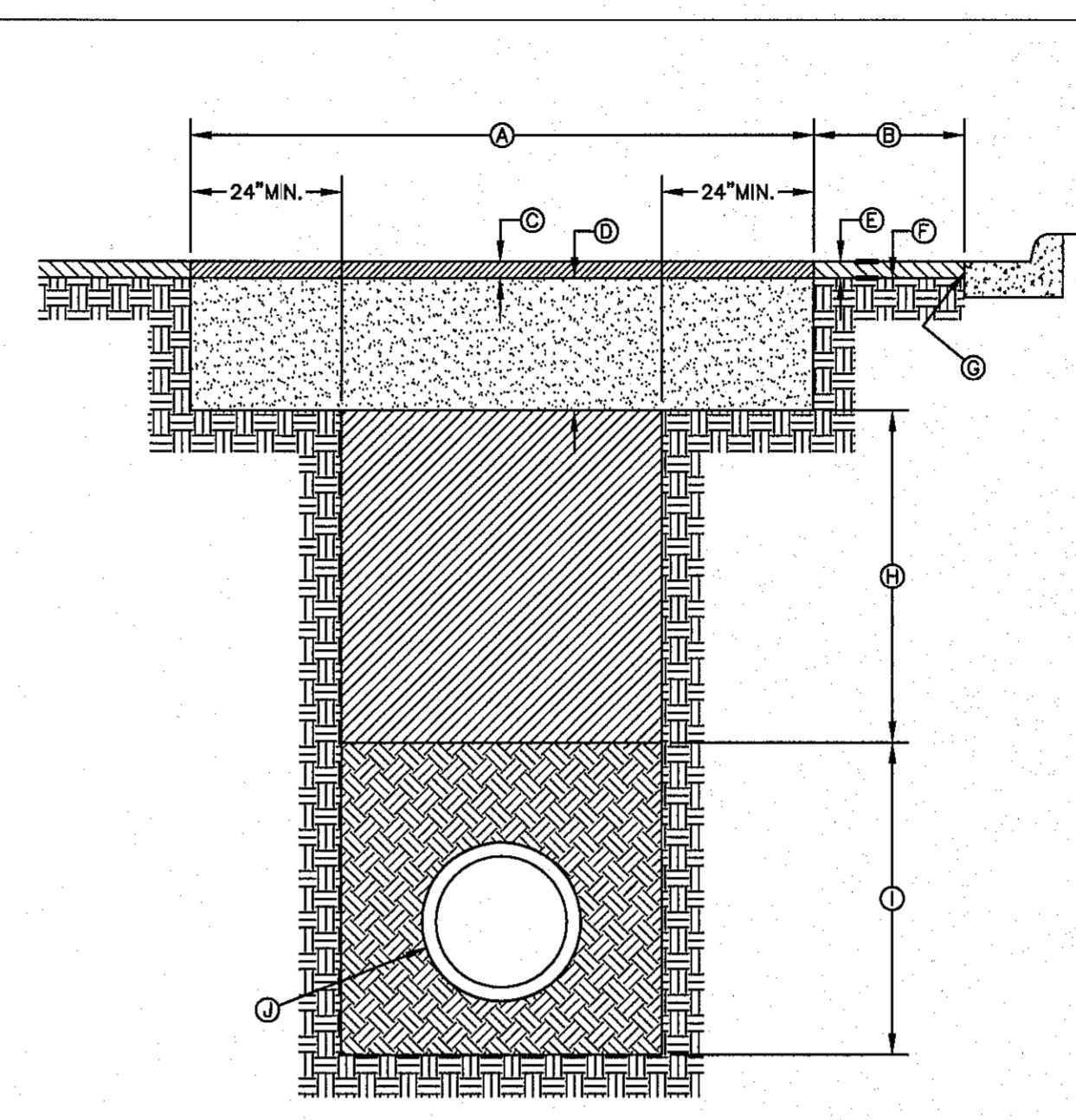


- GENERAL NOTES:**
- BEDDING FOR PRESSURE AND GRAVITY PIPE IN DRY CONDITIONS.
  - PROVIDE TRENCH SAFETY SYSTEM FOR TRENCH DEPTHS GREATER THAN 5 FEET.
  - IF THE NATIVE MATERIAL EXCAVATED FROM THE TRENCH IS UNSUITABLE AS BACKFILL MATERIAL OR THE REQUIRED COMPACTION IS UNATTAINABLE, THE CONTRACTOR SHALL 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:**
- APPROVED MARKING TAPE.
  - UNDISTURBED STABLE MATERIAL.
  - 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.)
  - SLOPE TRENCH IN SANDY SOIL CONDITIONS.
  - 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).
  - APPROVED PIPE.
  - 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 P.V.C. PRESSURE PIPE AND GRAVITY PIPE DRY CONDITIONS N.T.S. **el paso WATER** DETAIL No. 171

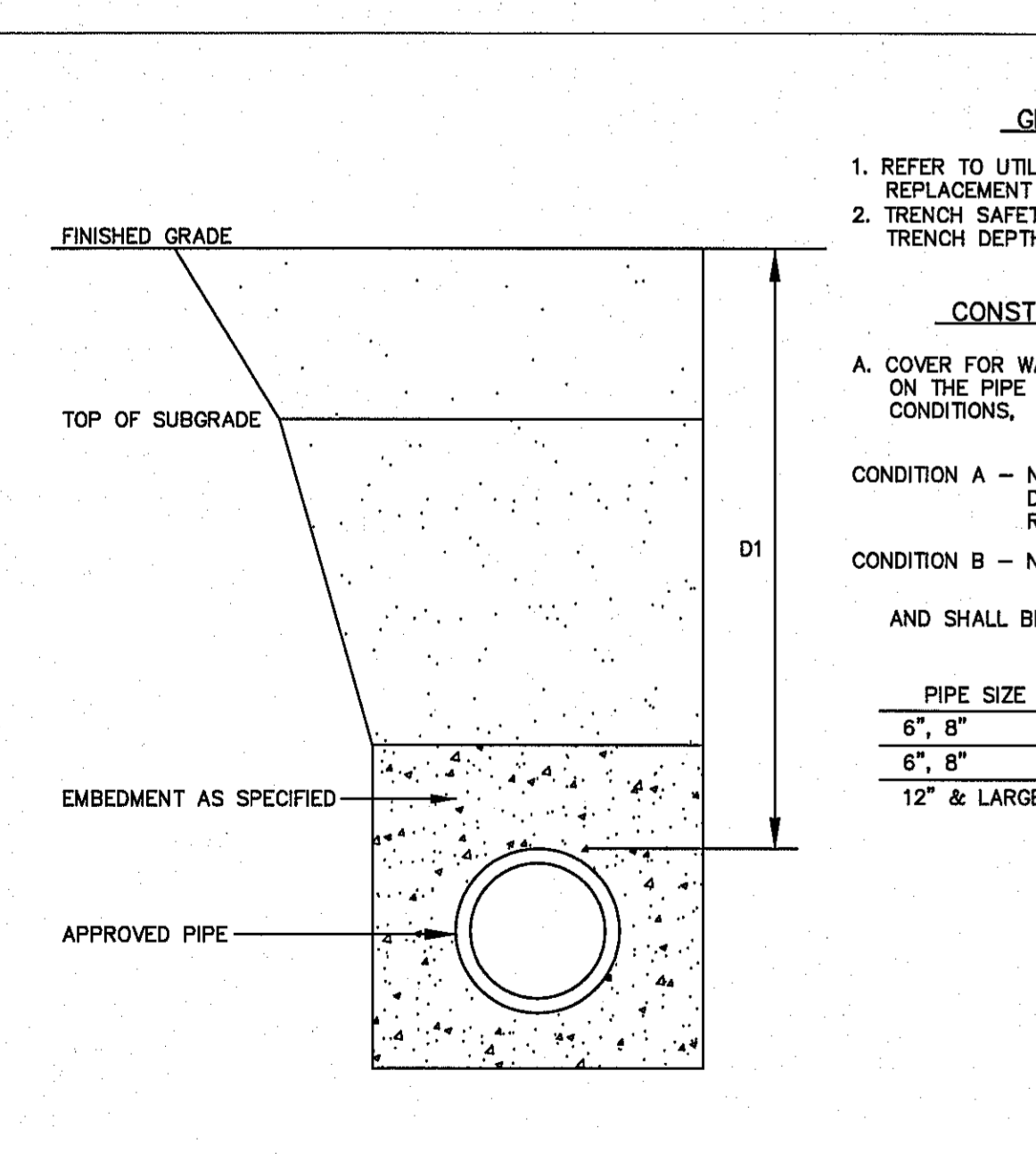
2 BEDDING CLASS DETAILS FOR P.V.C. PRESSURE PIPE SCALE: N.T.S.



- GENERAL NOTES:**
- ALL ASPHALT CUTS MUST BE SAW CUT.
  - SOIL CEMENT SLURRY SHALL BE ALLOWED TO CURE BEFORE PAVING OR OPENING TO ALL TRAFFIC.
- CONSTRUCTION KEY NOTES:**
- REFER TO SPECS FOR LIMIT OF PAVING WIDTH.
  - DIMENSION VARIES. WHERE GUTTER FACE, ETC. IS WITHIN 3' OF SAW CUT EDGE, CONTRACTOR SHALL REMOVE & REPLACE EXISTING HMA/C IN THIS AREA.
  - 2" ASPHALT MIN.
  - 12" THICK SOIL CEMENT BACKFILL (2 SACK PER C.Y. OF SOIL).
  - EXISTING HMA/C-THICKNESS MAY VARY.
  - EXISTING BASE COURSE-THICKNESS MAY VARY.
  - EXISTING GUTTER FACE, EDGE OF PAVEMENT OR BEGINNING OF SHOULDER.
  - BACKFILL DEPTH VARIES, REFER TO REQUIREMENTS LISTED IN EMBEDMENT DETAILS (DETAIL 171 THRU DETAIL 173).
  - PIPE BEDDING AS SPECIFIED, REFER TO APPROPRIATE EMBEDMENT DETAIL (DETAIL 171 THRU DETAIL 173).
  - APPROVED PIPE.

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

3 PAVEMENT REPLACEMENT SCALE: N.T.S.



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

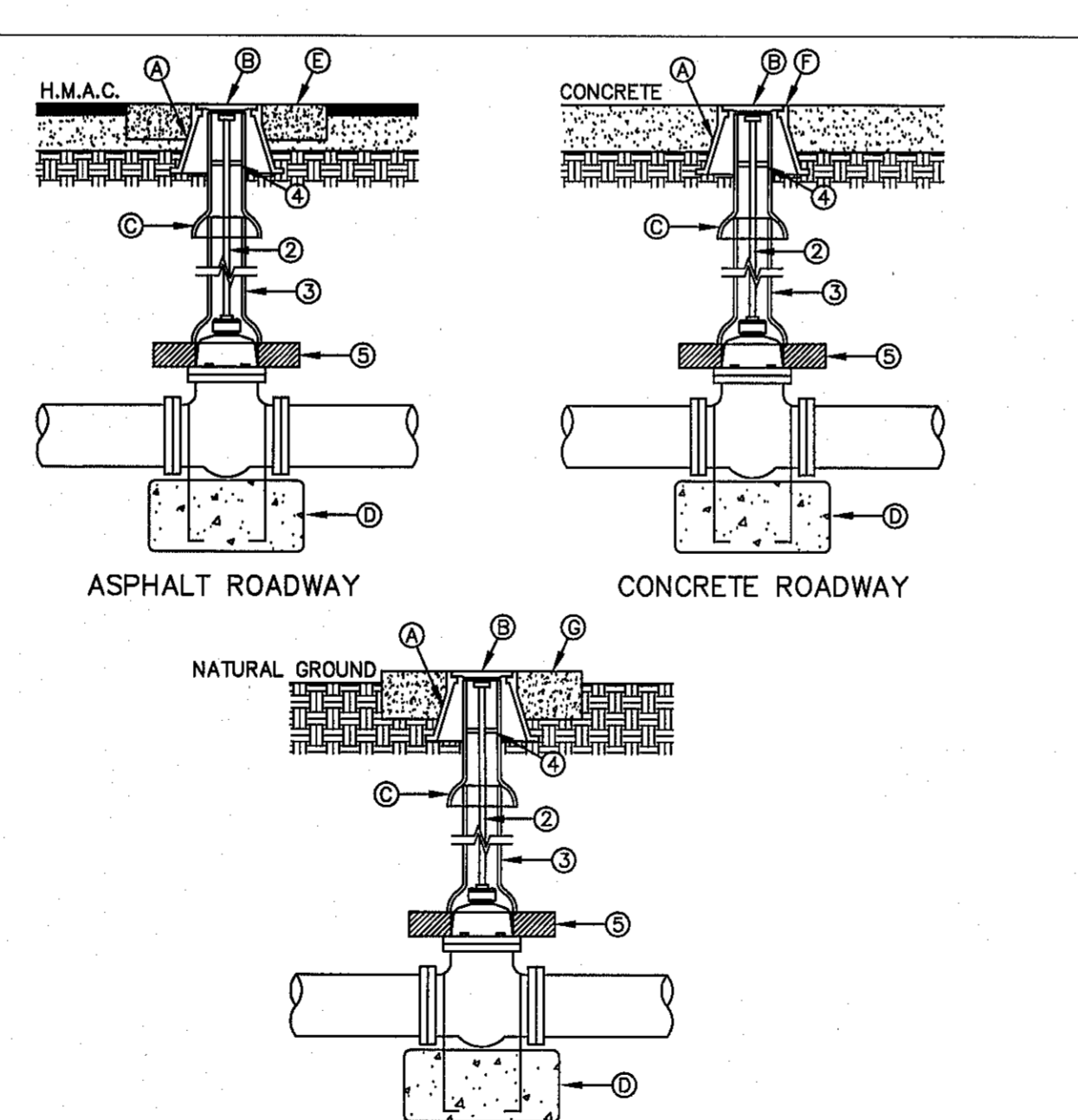
- CONSTRUCTION KEY NOTES:**
- A. COVER FOR WATER MAINS SHALL DEPEND ON THE PIPE SIZE AND THE FOLLOWING INSTALLATION CONDITIONS.

CONDITION A - NORMAL LINE INSTALLATION, STREET AND DRAINAGE PROJECTS, WATERLINE RELOCATION  
 CONDITION B - NEW SUBDIVISIONS, NON-PAVED AREA  
 AND SHALL BE AS FOLLOWS.

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

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

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

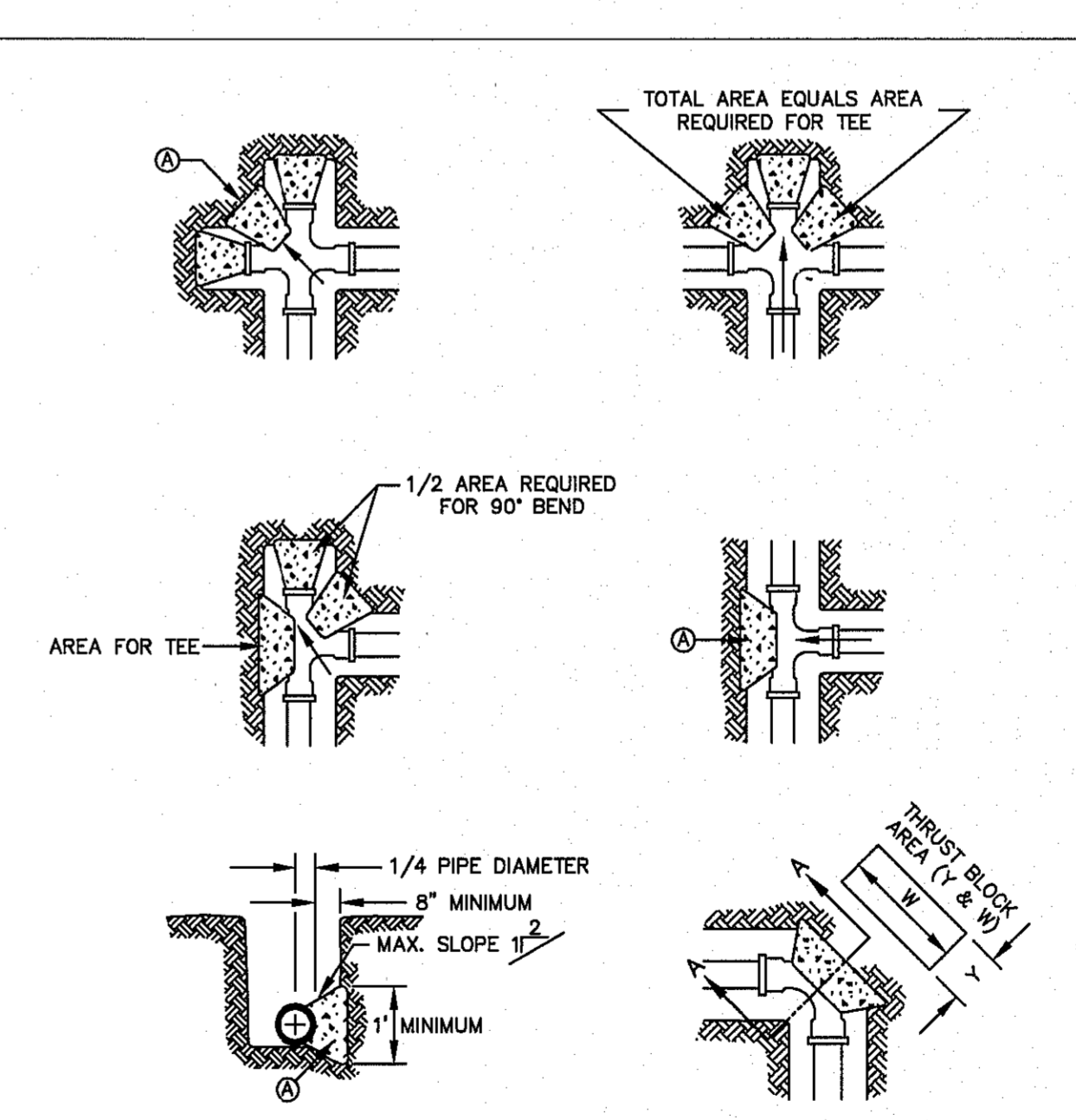


- GENERAL NOTES:**
- VALVE TYPE AND VALVE ENDS SHALL BE AS SHOWN ON THE PLANS.
  - ALL BURIED VALVES 5' AND DEEPER SHALL BE PROVIDED WITH SOLID STEEL EXTENSION STEM OPERATOR WITH 2" SQUARE AWWA NUT WITHIN 36" OF VALVE BOX COVER. NUT IS TO INDICATE DIRECTION OF ROTATION TO OPEN VALVE.
  - 8" DIA. MINIMUM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

- CONSTRUCTION KEY NOTES:**
- BONNET BOX (SEE DETAIL 268).
  - BONNET BOX COVER (SEE DETAILS 269-1 & 269-2).
  - FINAL EXTENSION TO BONNET BOX SHALL BE WITH BELL AND SPIGOT ENDS (CLAY OR SDR 35 P.V.C. SPIGOT).
  - CONCRETE VALVE ANCHOR (SEE DETAIL 271).
  - CONCRETE COLLAR (SEE DET 164-1) FLUSH WITH TOP OF H.M.A.C.
  - BONNET BOX FLUSH WITH TOP OF CONCRETE, CONCRETE COLLAR NOT NEEDED.
  - CONCRETE APRON (SEE DETAIL 184-2) FLUSH WITH BONNET BOX AND 2" ABOVE NATURAL GROUND.

STANDARD DETAIL DATE: 5/1994 REV: 6/22/2009 GATE VALVE INSTALLATION N.T.S. **el paso WATER** DETAIL No. 260

5 GATE VALVE INSTALLATION SCALE: N.T.S.



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

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

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

STANDARD DETAIL DATE: 2/1994 REV: 8/7/2006 CONCRETE THRUST BLOCKING N.T.S. **el paso WATER** DETAIL No. 270

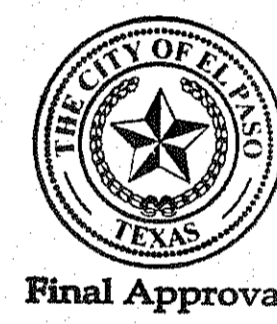
6 CONCRETE THRUST BLOCKING SCALE: N.T.S.

REFERENCES - BENCHMARKS  
 CITY MONUMENT AT POINT OF CURVE CENTERLINE RICH BEEM BLVD., S08°43'31"E, A DISTANCE OF 467.58 FEET FROM THE SOUTHERLY RIGHT OF WAY LINE OF MONTANA AVENUE.  
 ELEVATION = 4008.40 (CITY DATUM).  
 DATE  
 REVISIONS  
 BY

**el paso WATER**  
 TEXAS REGISTERED ENGINEERING FIRM #74684  
 4712 Woodrow Babin, Ste. F, El Paso, TX 79924  
 915.544.5232 | www.eapgroup.net

ENGINEER'S SEAL  
 JOSE L. AZORINE  
 LICENSE NO. 10075  
 (Professional Engineer Seal)

SCALE  
 Horizontal: N/A  
 Vertical: N/A  
 Contour Interval: N/A  
 DATE: AUGUST 2018  
 DESIGN BY: F.Z.  
 DRAWN BY: K.A.P.  
 CHKD. BY: J.L.A.  
 APPD. BY: J.L.A.  
 JOB No. 2025-013

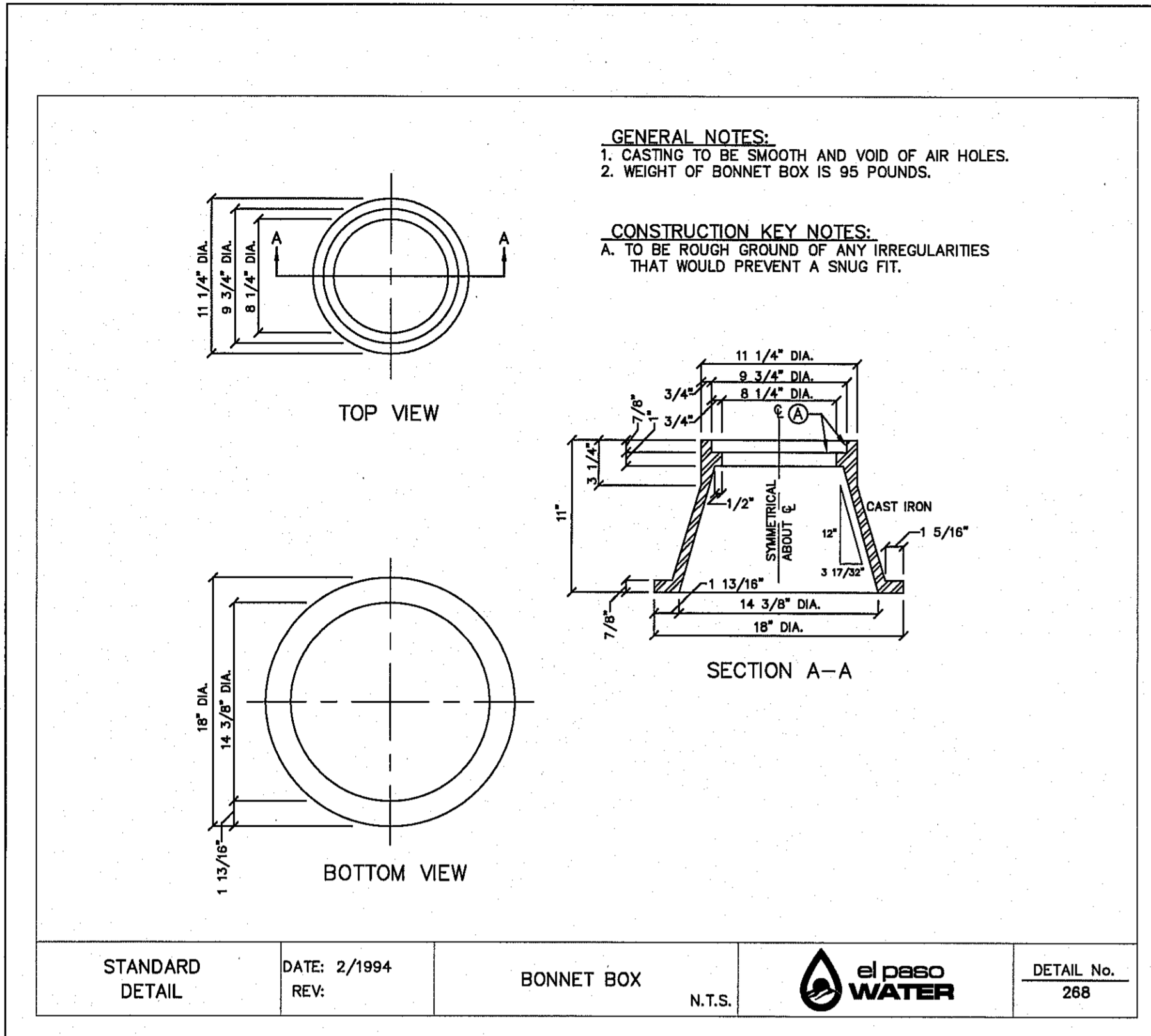


PROJECT TITLE  
**TRES SUEÑOS  
 UNIT SIXTEEN  
 SUBDIVISION IMPROVEMENTS**

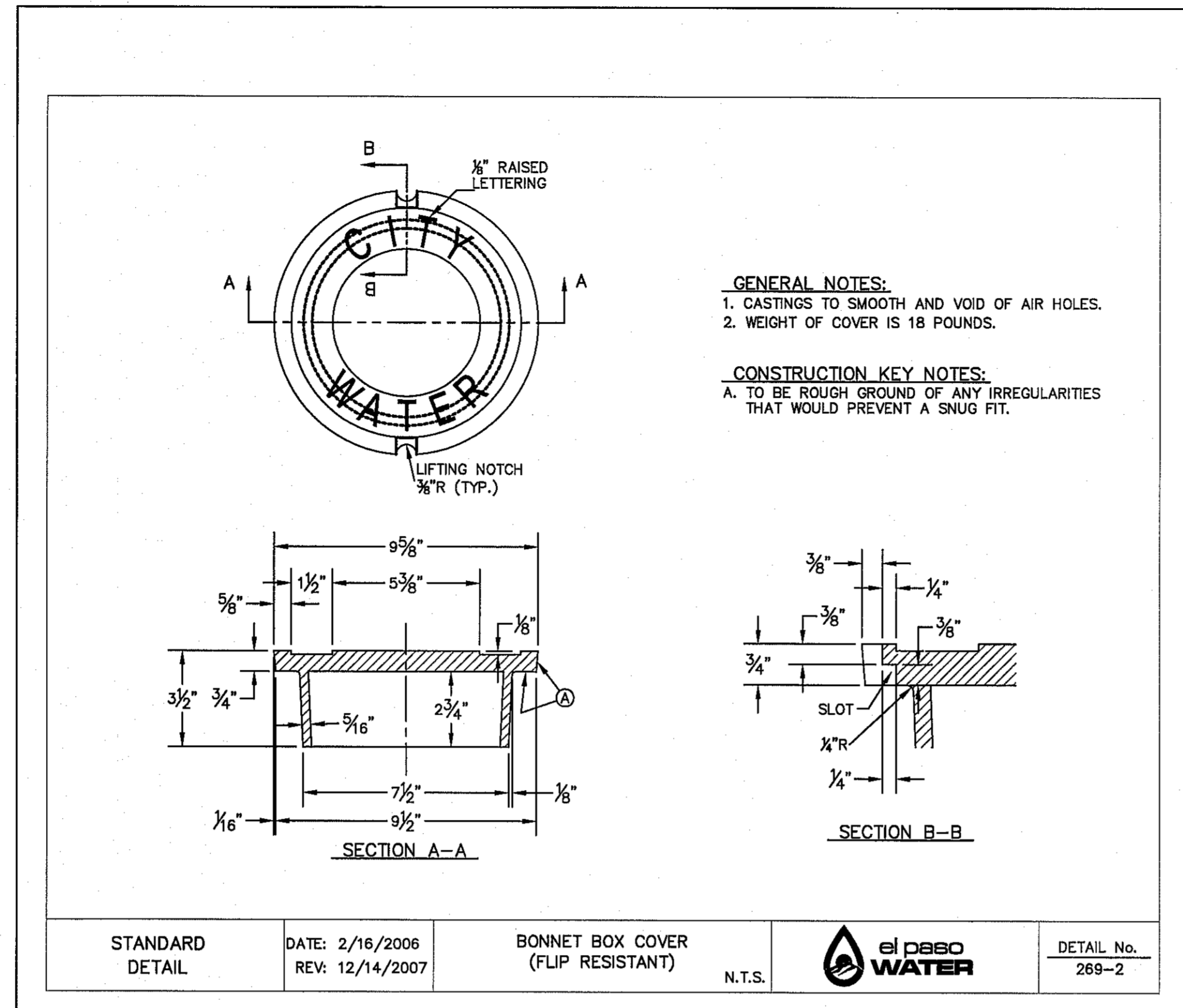
SHEET TITLE  
**WATER  
 DETAILS**

(SHEET 1 OF 4)  
 SHEET NO.

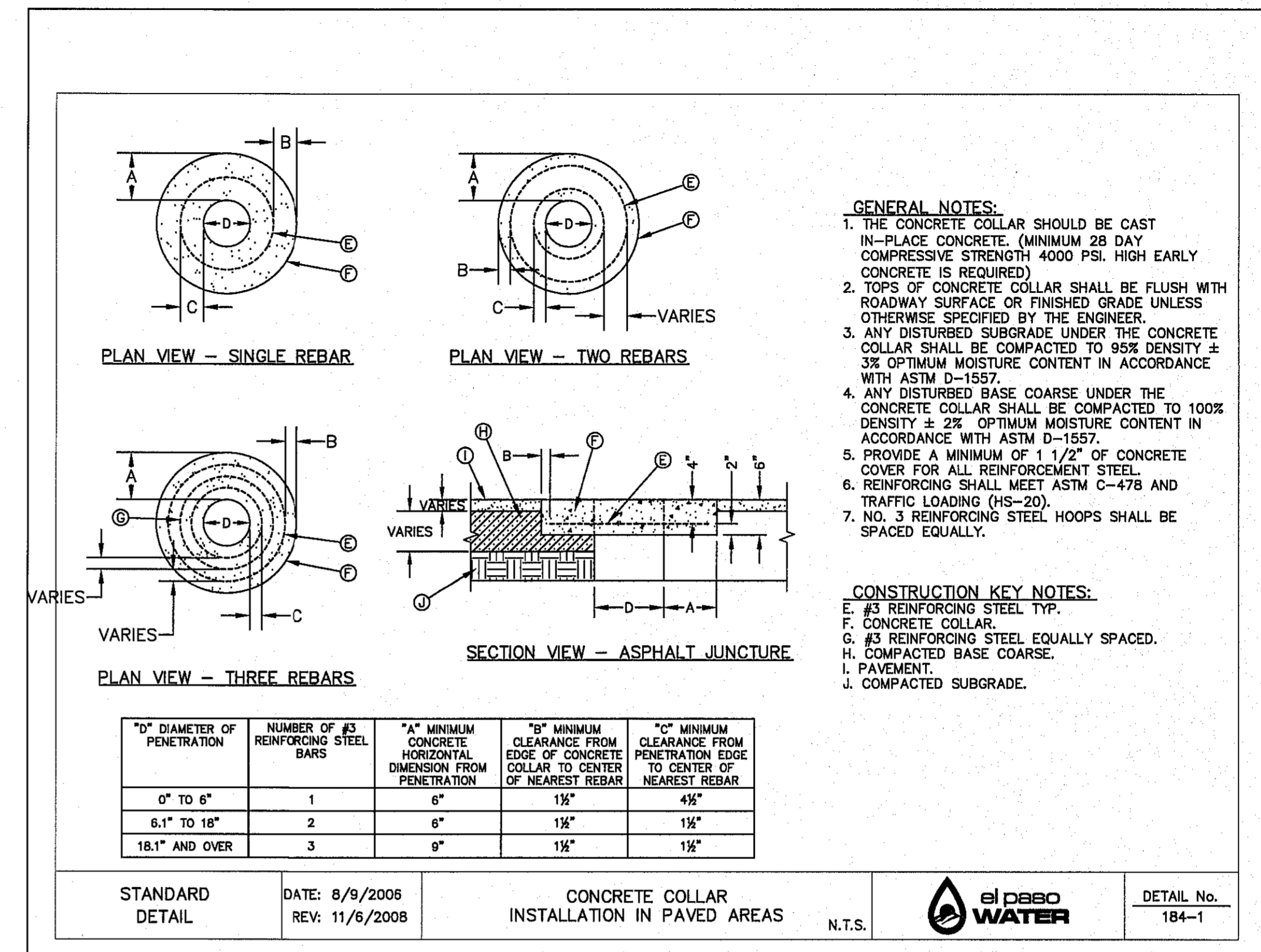
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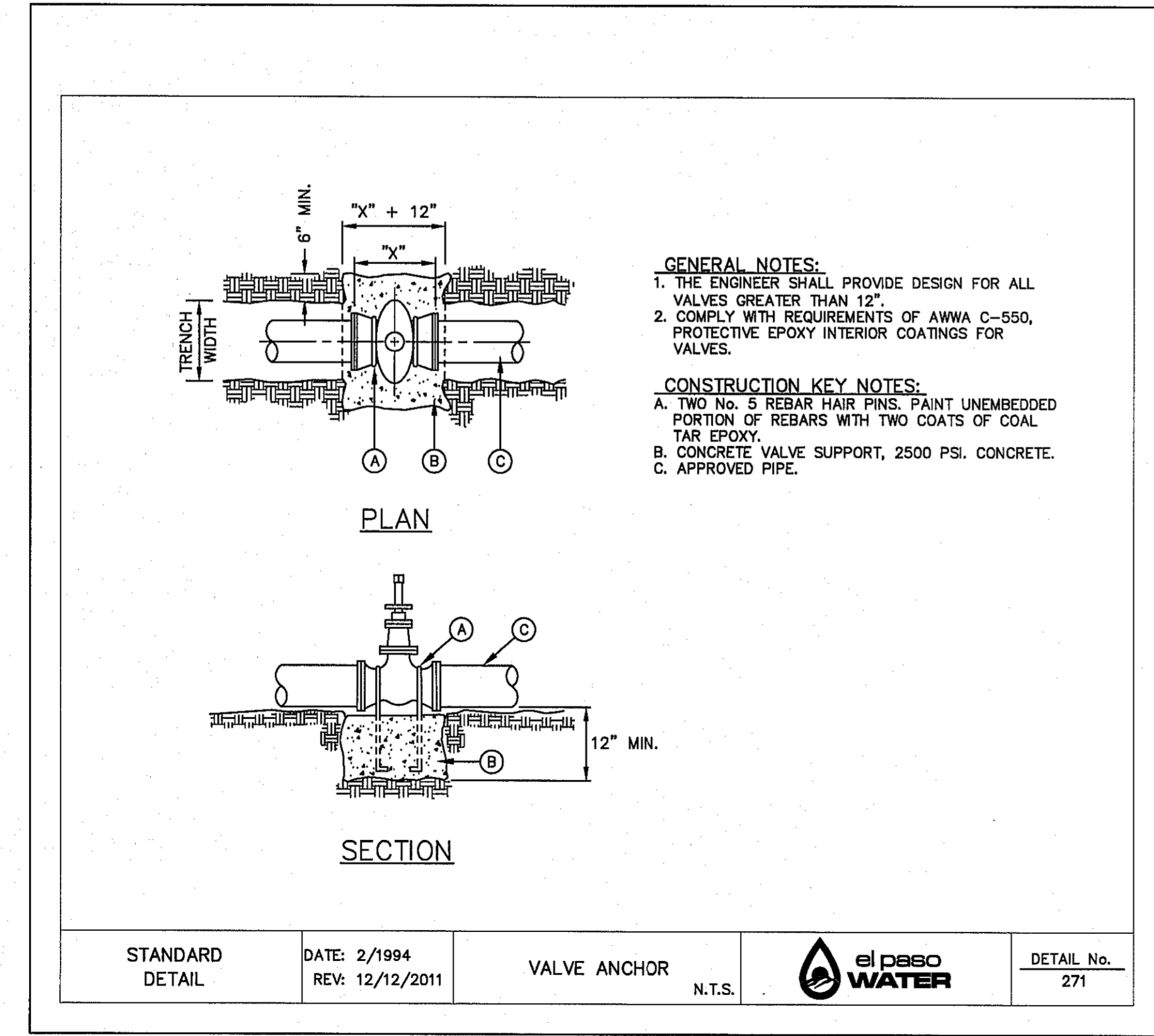
1 BONNET BOX  
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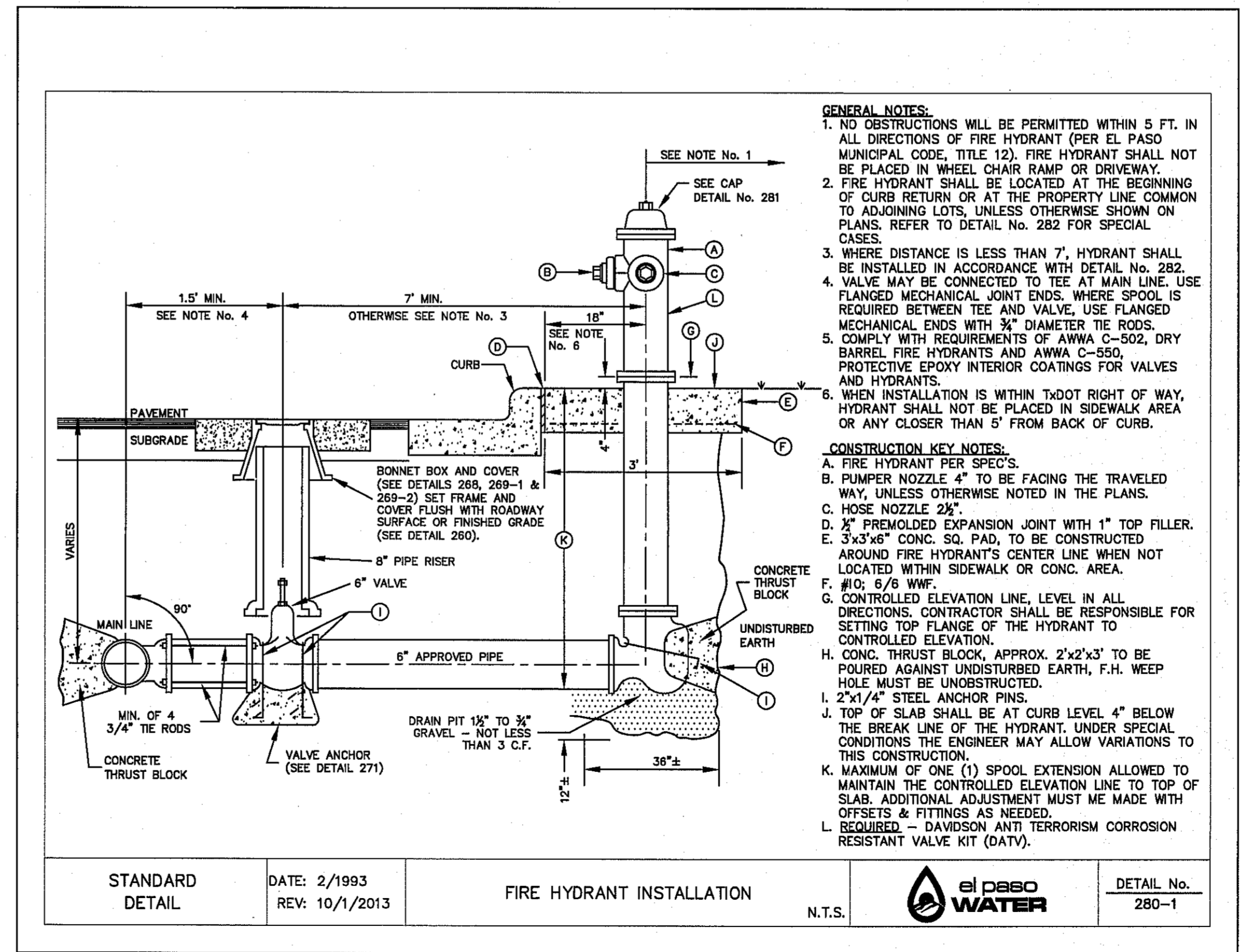
2 BONNET BOX COVER  
 SCALE: N.T.S.



3 CONCRETE COLLAR INSTALLATION IN PAVED AREAS  
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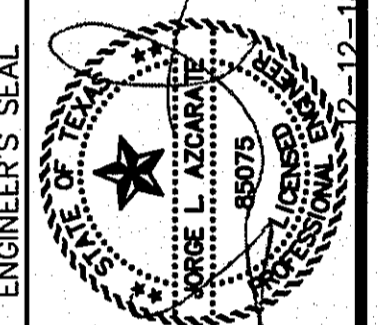
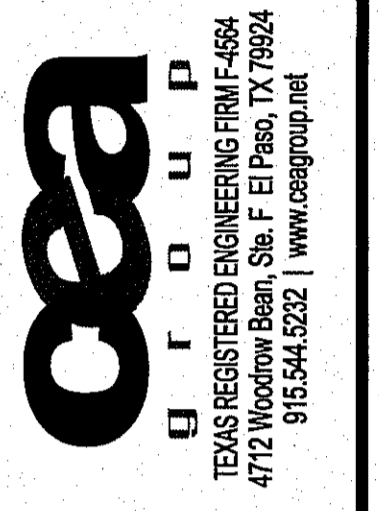
4 VALVE ANCHOR  
 SCALE: N.T.S.



5 FIRE HYDRANT INSTALLATION  
 SCALE: N.T.S.

REFERENCES - BENCHMARKS  
 CITY MONUMENT AT POINT OF CURVE CENTERLINE RICH BEEM BLVD., S08°43'31"E, A DISTANCE OF 467.68 FEET FROM THE SOUTHERLY RIGHT OF WAY LINE OF MONTANA AVENUE  
 ELEVATION = 4005.40 (CITY DATUM)

DATE \_\_\_\_\_ BY \_\_\_\_\_  
 REVISIONS \_\_\_\_\_



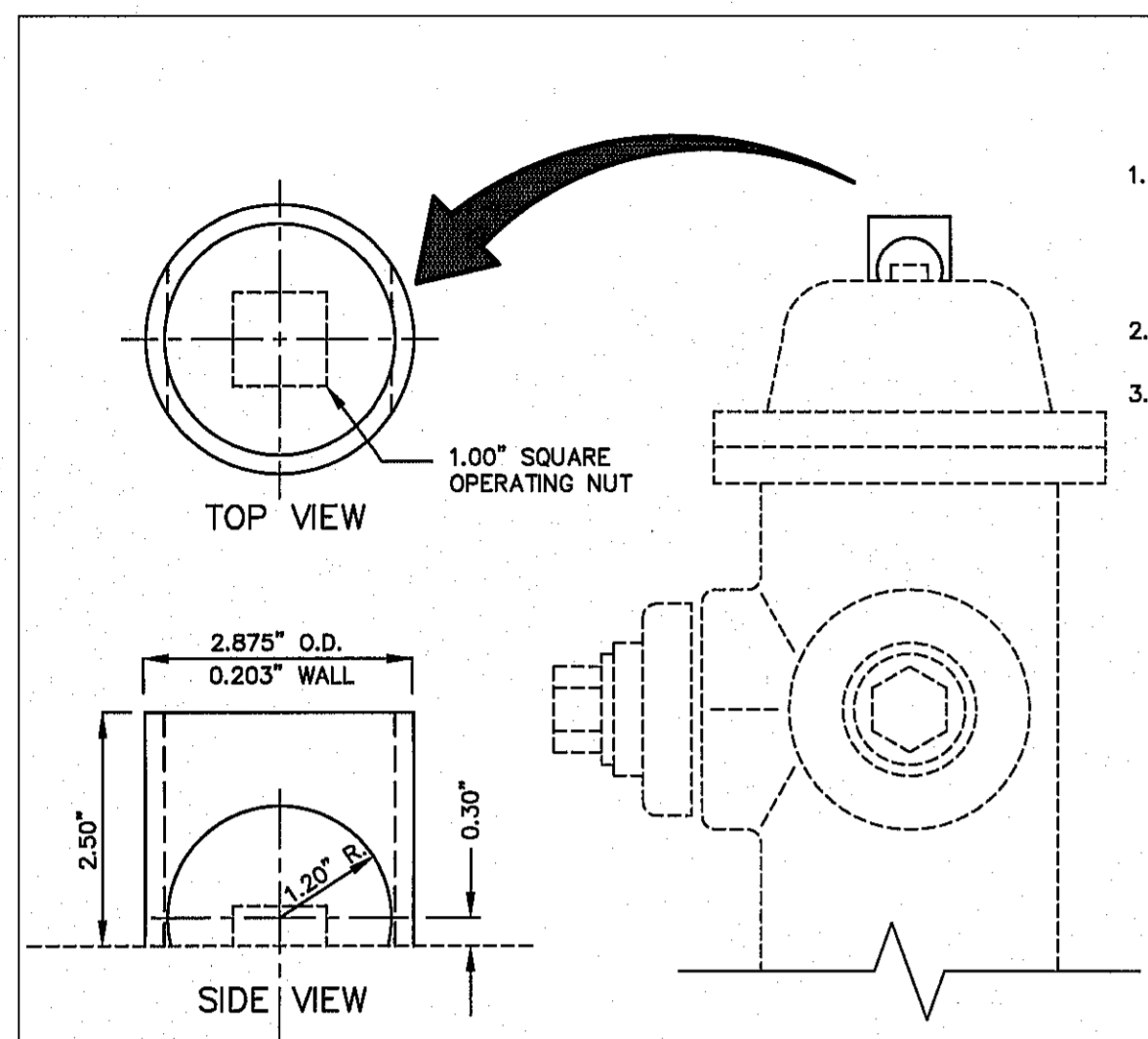
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 DATE: AUGUST 2018  
 DESIGN BY: F.Z.  
 DRAWN BY: K.A.P.  
 CHECK BY: J.L.A.  
 APPROV. BY: J.L.A.  
 JOB No. 2025-013

PROJECT TITLE  
**TRES SUEÑOS  
 UNIT SIXTEEN  
 SUBDIVISION IMPROVEMENTS**

SHEET TITLE  
**WATER  
 DETAILS**  
 (SHEET 2 OF 4)  
 SHEET NO.



C12.2

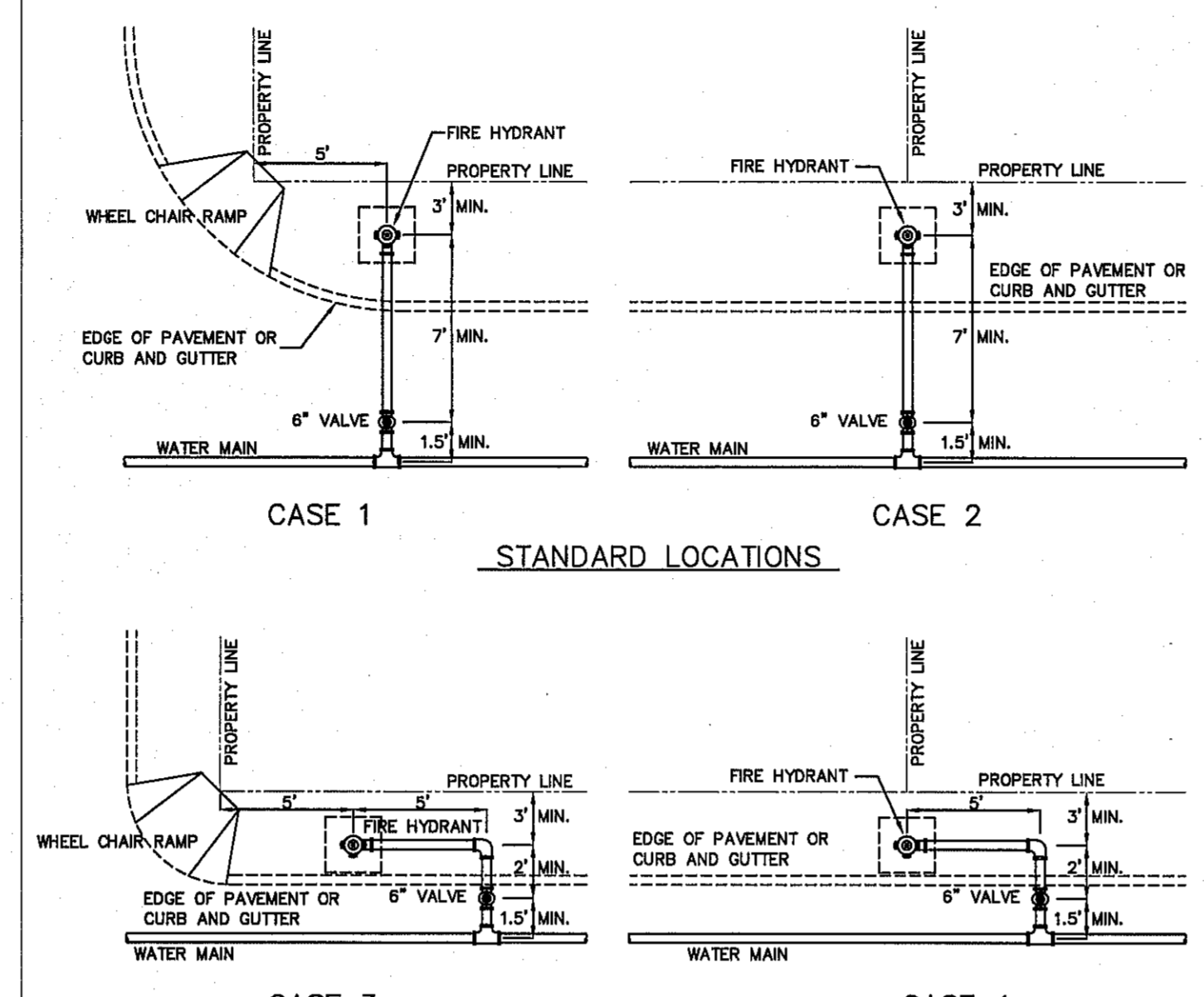


**GENERAL NOTES:**

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.		DETAIL No. 281
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1 FIRE HYDRANT CAP  
SCALE: N.T.S.

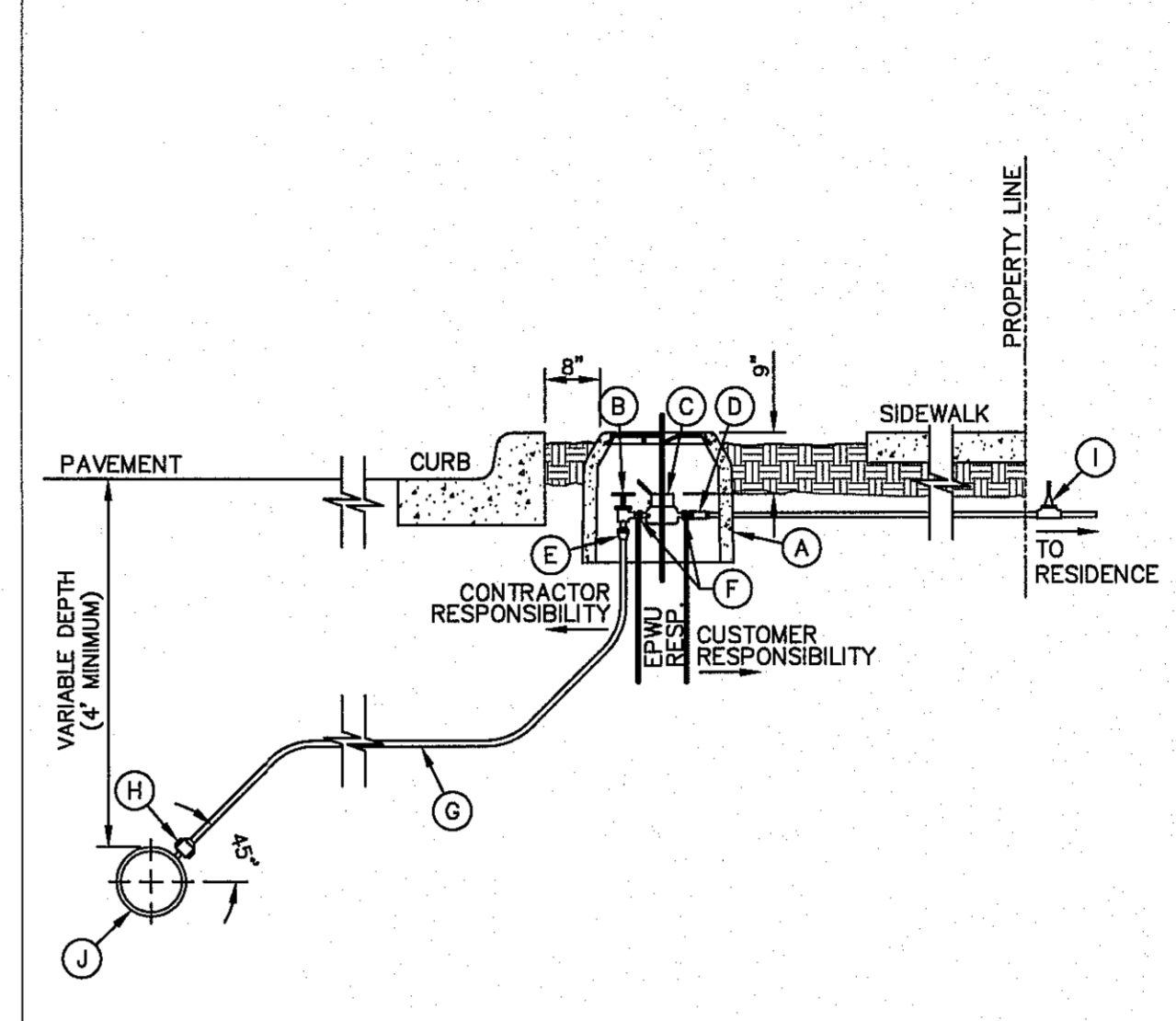


**GENERAL NOTES:**

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

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



**GENERAL NOTES:**

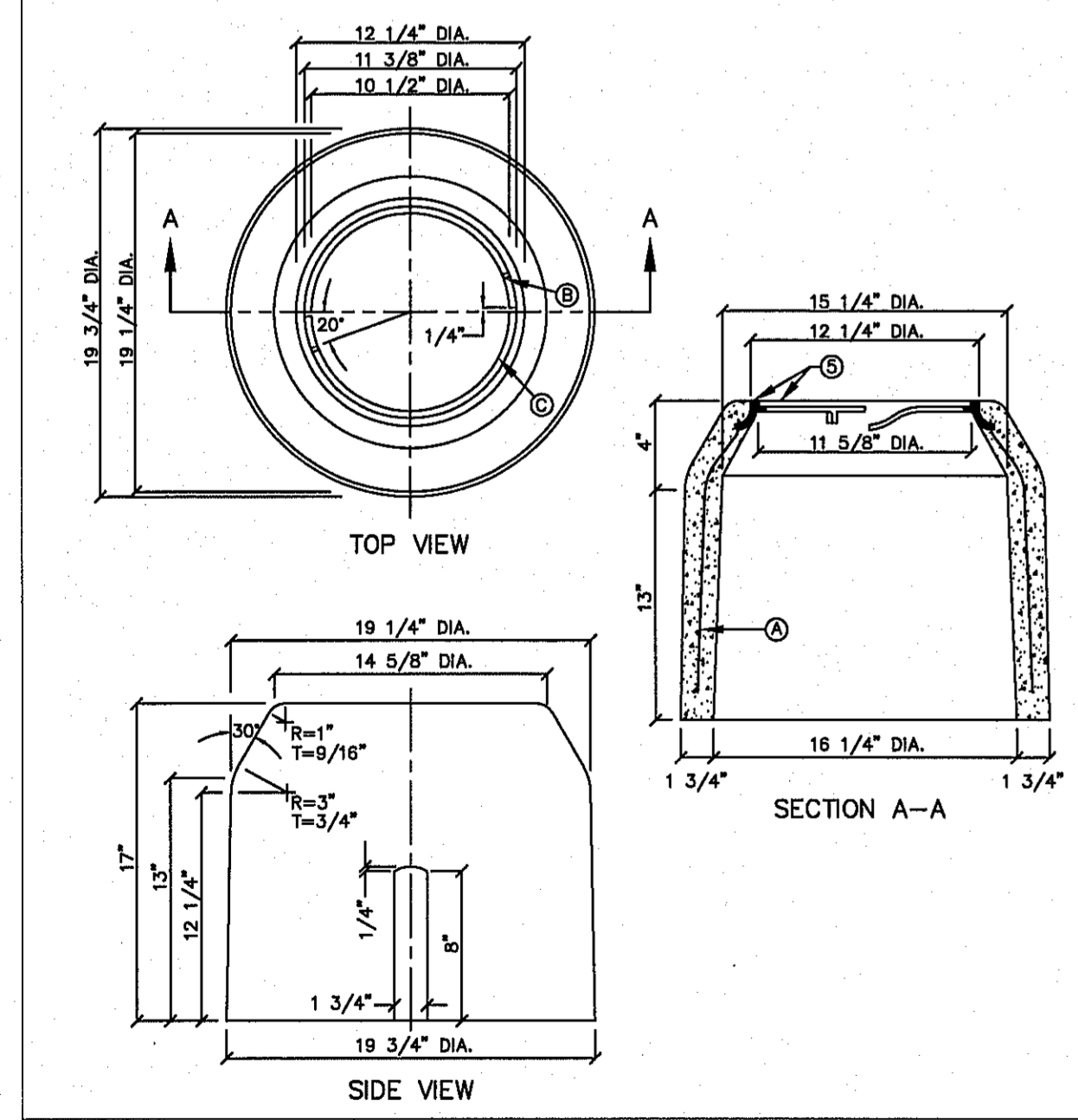
1. DETAIL SHOWN FOR A 3/4" SERVICE, 1" SERVICE INSTALLATION IS SIMILAR EXCEPT FOR SIZES OF PIPE, FITTING, METER AND BOX (TYPE "B").
2. WHERE NO CURB EXISTS, METER IS TO BE SET NEAR PROPERTY LINE OR AT DESIGNATED LOCATION.
3. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY PIPE, FITTINGS, AND METER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

**CONSTRUCTION KEY NOTES:**

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

STANDARD DETAIL	DATE: 10/20/2000 REV: 5/24/2007	SERVICE LINE 3/4" AND 1" INSTALLATION BY CONTRACTOR	N.T.S.		DETAIL No. 290-4
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3 SERVICE LINE 3/4" AND 1" INSTALLATION  
SCALE: N.T.S.



**GENERAL NOTES:**

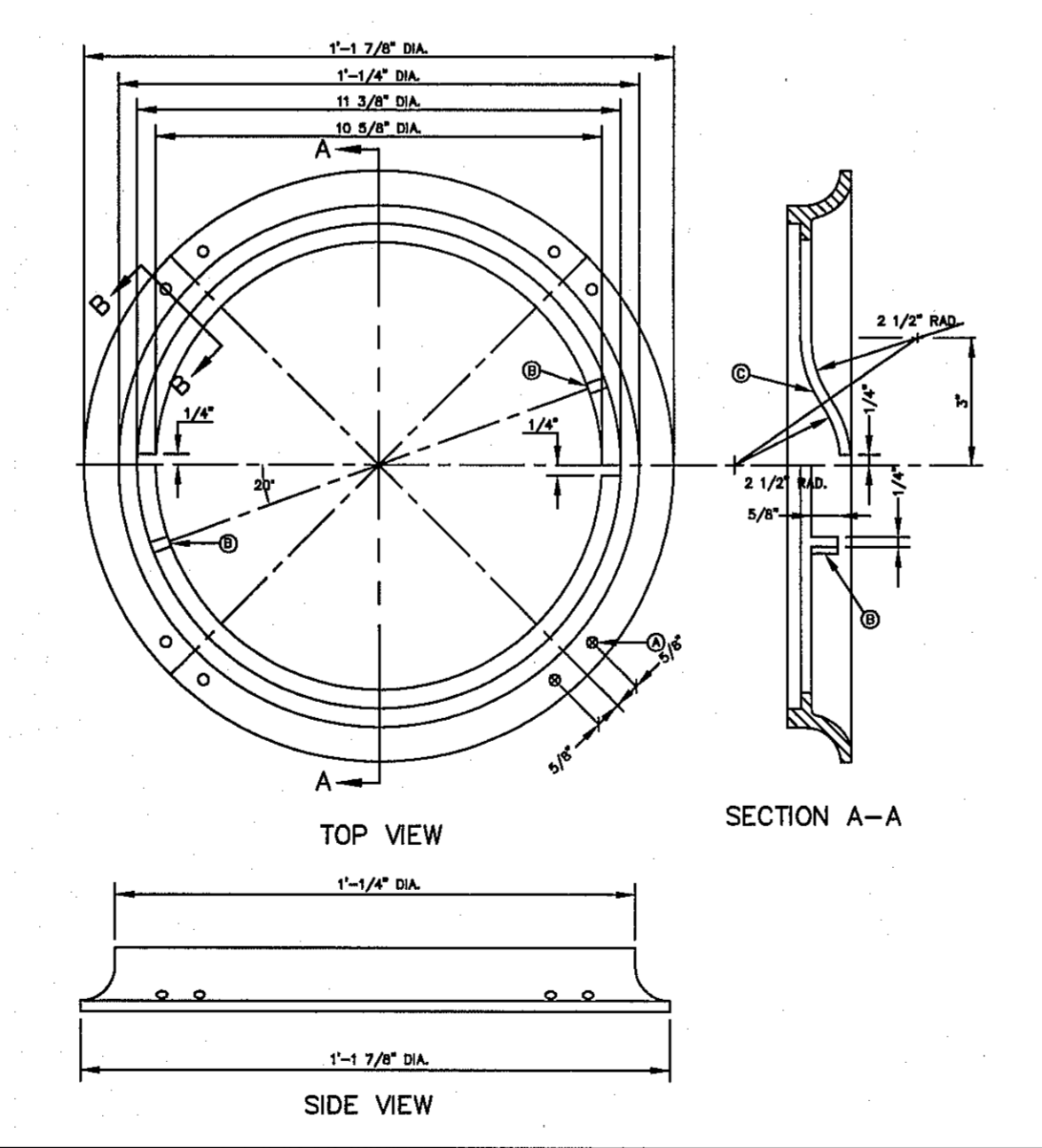
1. INSTALL TO GRADE MATCHING TOP OF CURB.
2. ANGLE VALVE SHALL BE IN LINE WITH THE INLET/OUTLET PORTS OF THE METER BOX.
3. METER BOXES SHALL NOT BE INSTALLED UNDER SIDEWALKS, DRIVEWAYS, OR PROPOSED ABOVE GROUND STRUCTURES.
4. WHERE NO CURBING EXISTS, INSTALL BOXES IN ACCESSIBLE LOCATIONS BEYOND LIMITS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

**CONSTRUCTION KEY NOTES:**

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

STANDARD DETAIL	DATE: 4/1994 REV: 8/24/2006	METER BOX TYPE "A" FOR 3/4" SERVICE INSTALLATION	N.T.S.		DETAIL No. 291
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4 METER BOX TYPE "A" FOR 3/4" SERVICE INSTALLATION  
SCALE: N.T.S.



**GENERAL NOTES:**

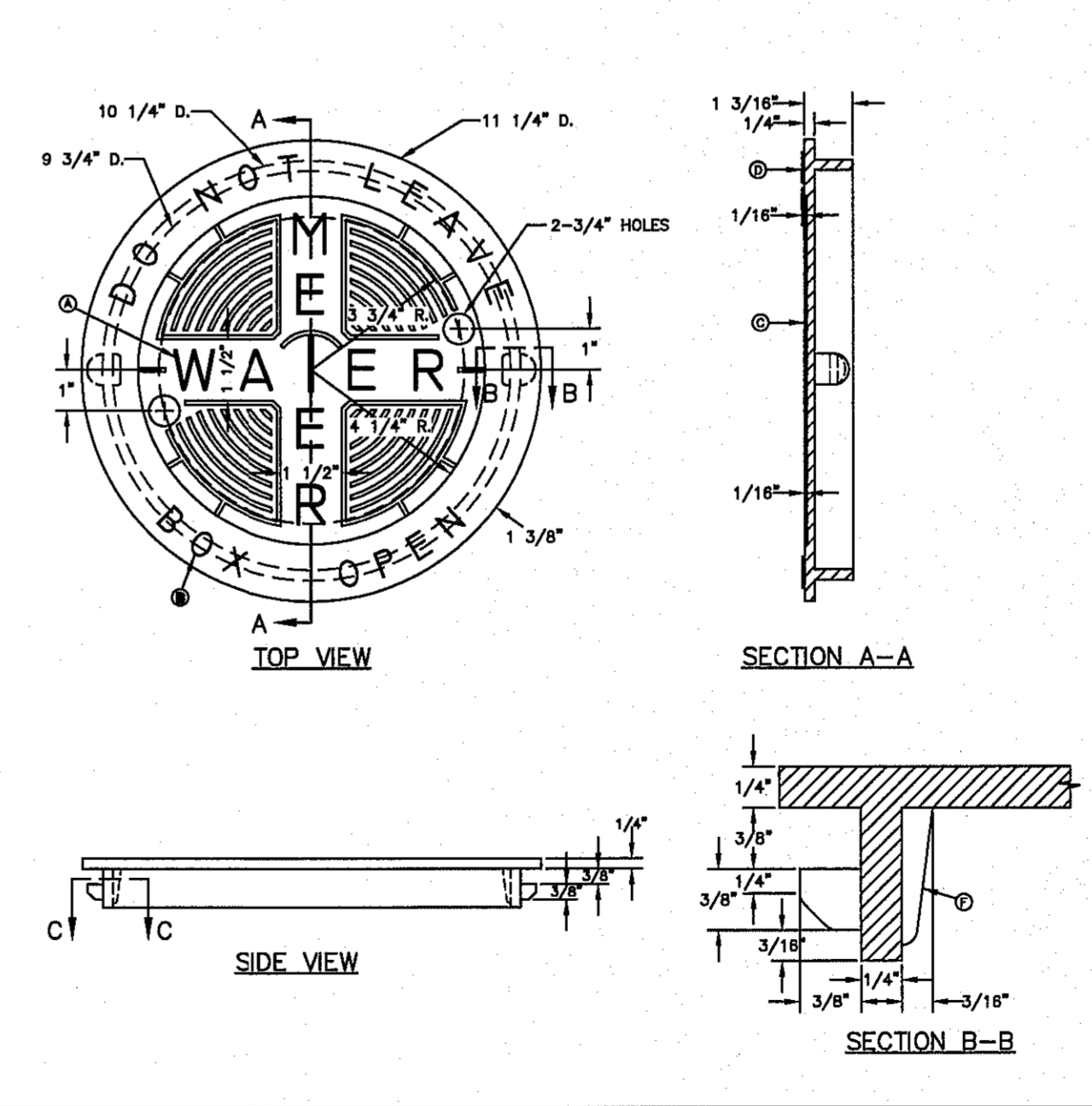
1. MATCHING SURFACES TO BE FINISHED OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
2. CASTING TO BE SMOOTH AND VOID OF AIR HOLES.
3. METER BOX RING WEIGHT = 7 LBS.
4. METER BOX RING MADE OF CAST IRON.

**CONSTRUCTION KEY NOTES:**

- A. 1/2" 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.		DETAIL No. 300
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5 METER BOX RING FOR TYPE "A" & "B" METER BOXES  
SCALE: N.T.S.



**GENERAL NOTES:**

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

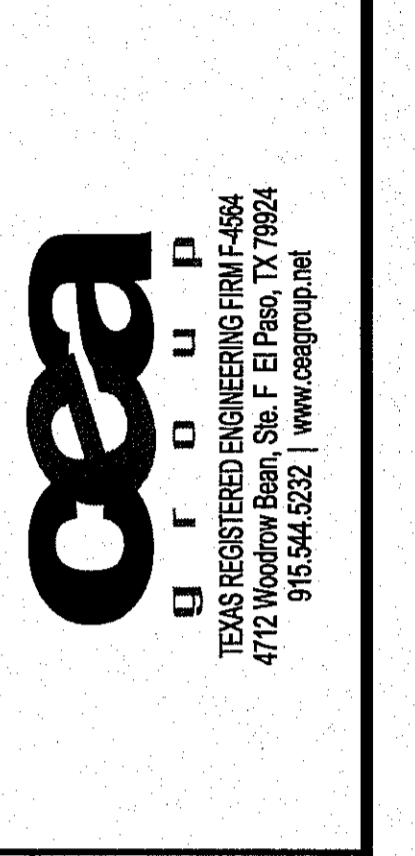
**CONSTRUCTION KEY NOTES:**

- A. LETTERS TO BE 1" HIGH, 3/4" WIDE, 1/8" THICK
- B. LETTERS TO BE 3/4" HIGH, 3/8" WIDE, 1/8" THICK
- C. INSIDE LETTERS & RISERS 3/8" TALL
- D. OUTSIDE LETTERS 3/8" 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.		DETAIL No. 301
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6 METER BOX COVER FOR TYPE "A" & "B" METER BOXES  
SCALE: N.T.S.

REFERENCES - BENCHMARKS	CITY MONUMENT AT POINT OF CURVE CENTERLINE RICH BEEM BLVD., S08°43'31"E A DISTANCE OF 467.58 FEET FROM THE SOUTHERLY RIGHT OF WAY LINE OF MONTANA ELEVATION = 4005.40 (CITY DATUM).
DATE	
REVISIONS	
BY	

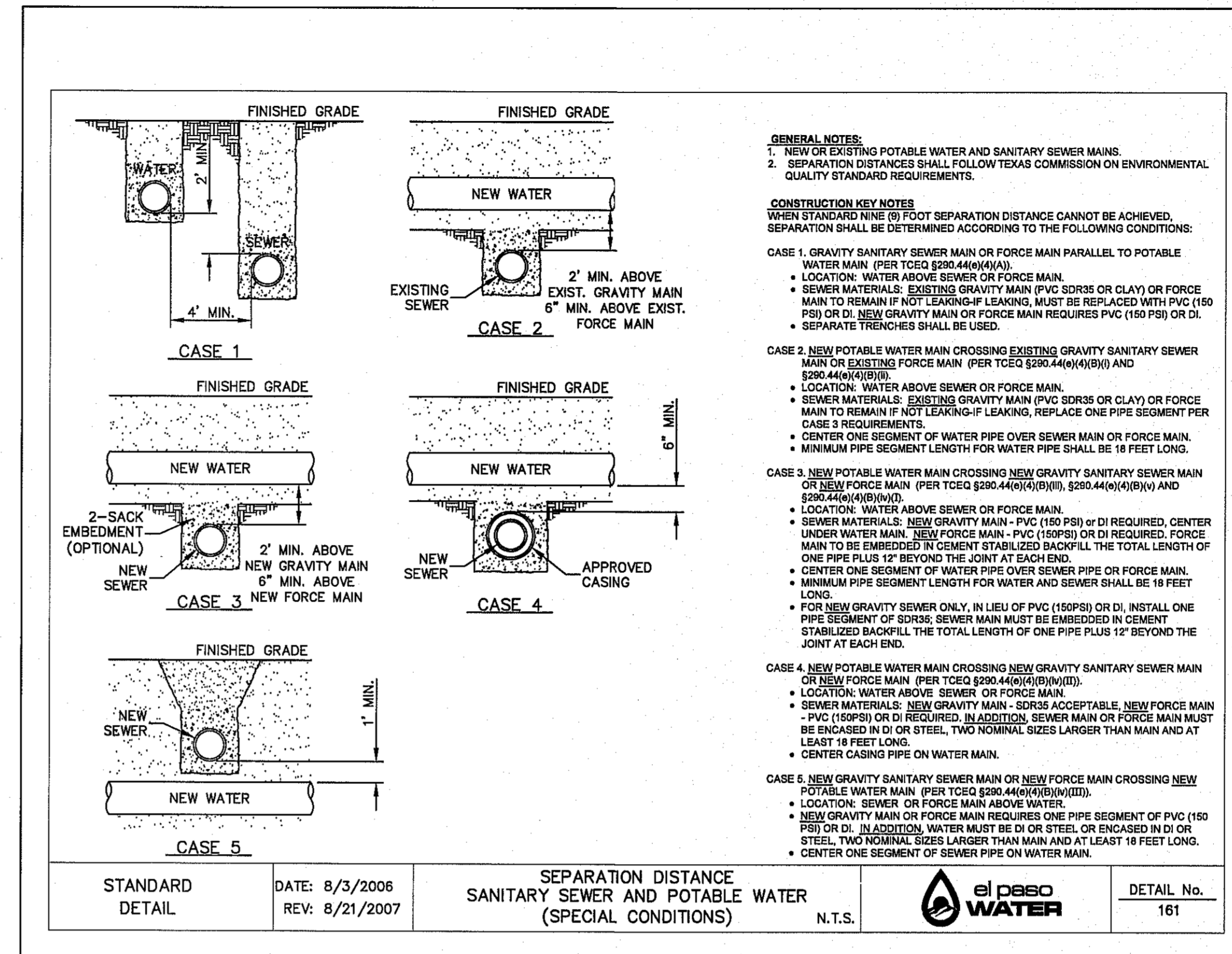
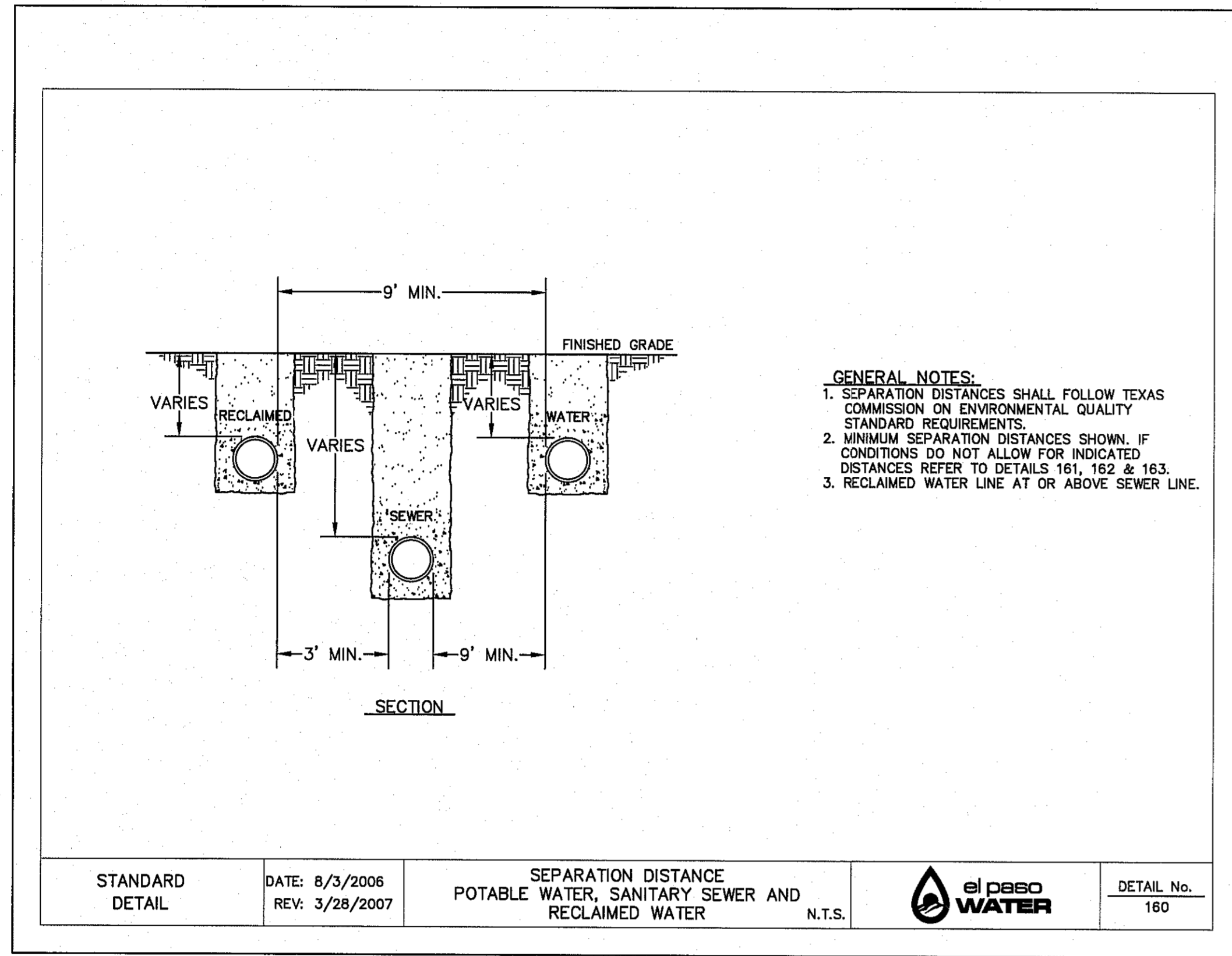


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SCALE	N/A
Horizontal	N/A
Vertical	N/A
Contour Interval	N/A
DATE	AUGUST 2018
DESIGN BY	K.A.P.
DRAWN BY	J.L.A.
CHKD. BY	J.L.A.
APP. NO.	2025-013
JOB NO.	2025-013

PROJECT TITLE  
TRES SUEÑOS  
UNIT SIXTEEN  
SUBDIVISION IMPROVEMENTS

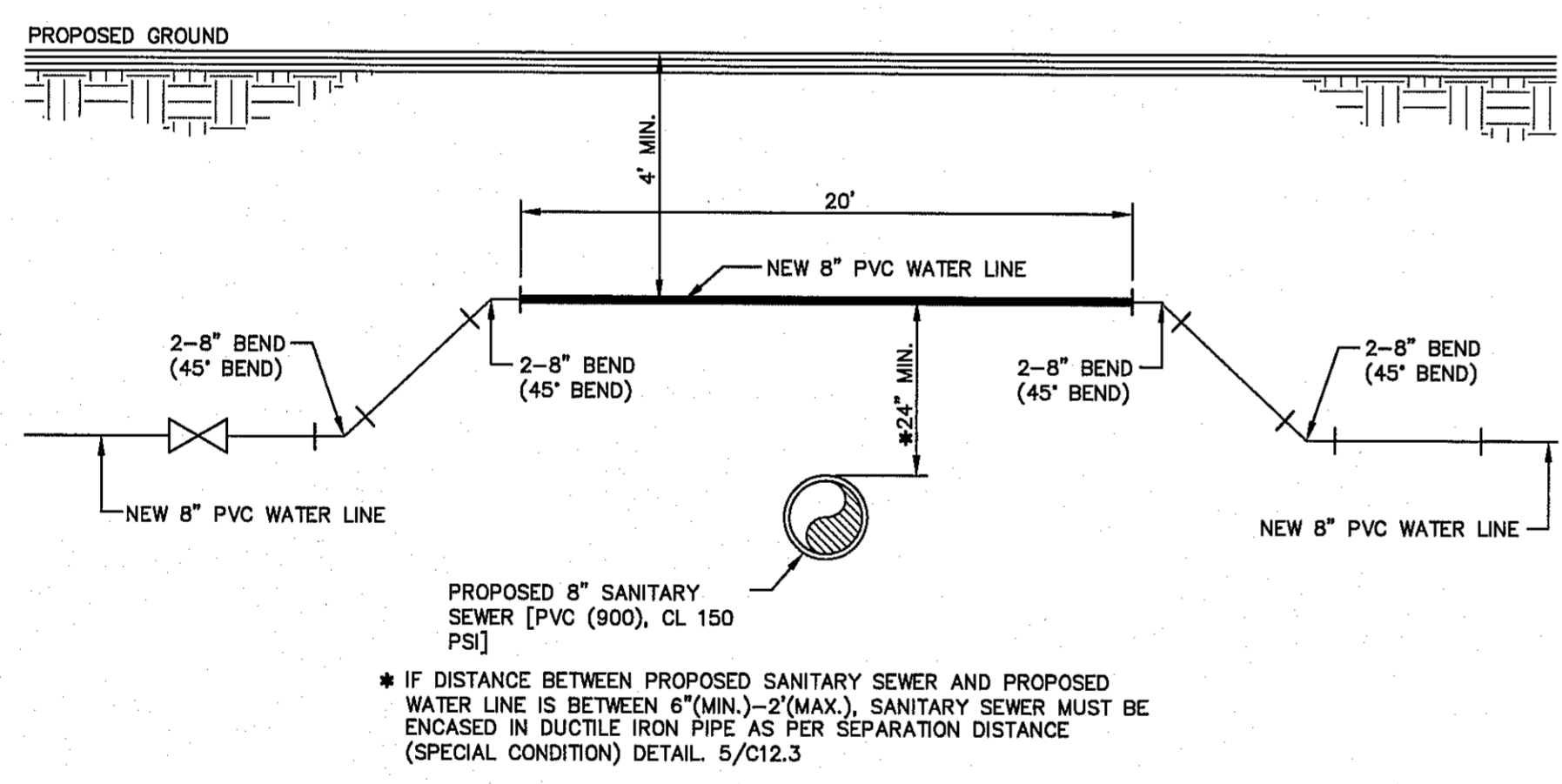
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(SHEET 3 OF 4)	
SHEET NO.	

C12.3

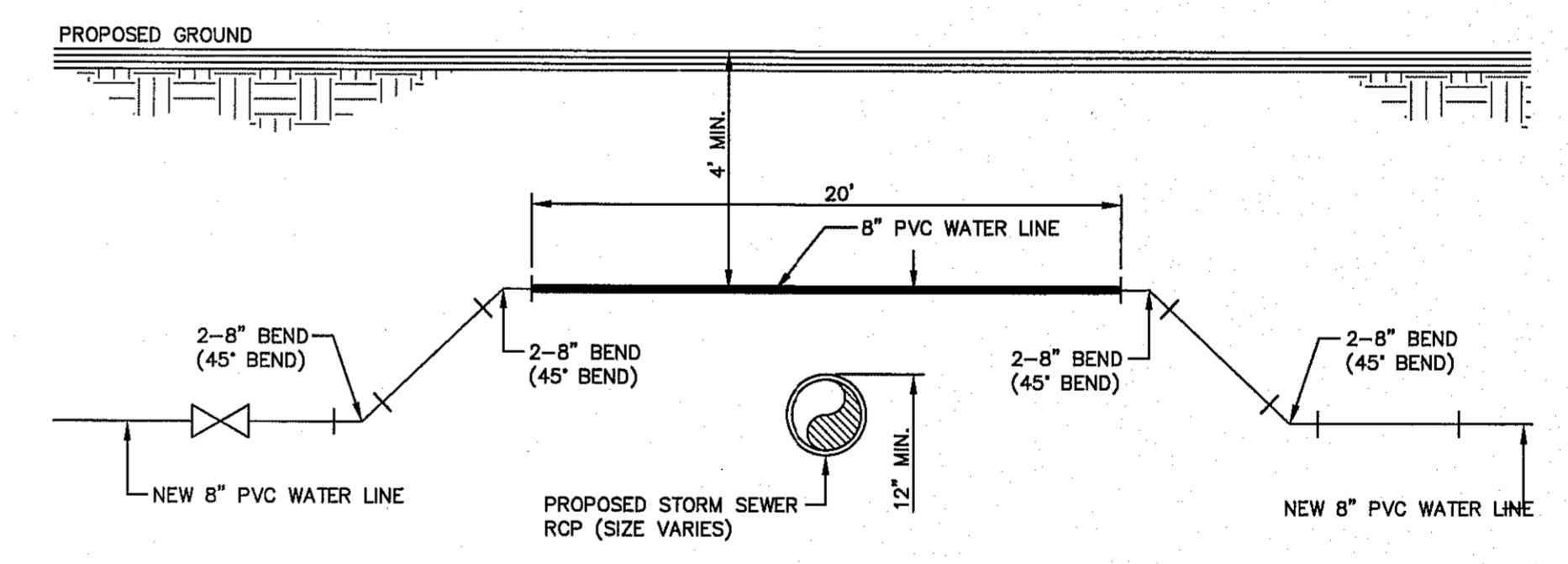


1 SEPARATION DISTANCE POTABLE WATER, SANITARY SEWER AND RECLAIMED WATER  
 C12.4 SCALE: N.T.S.

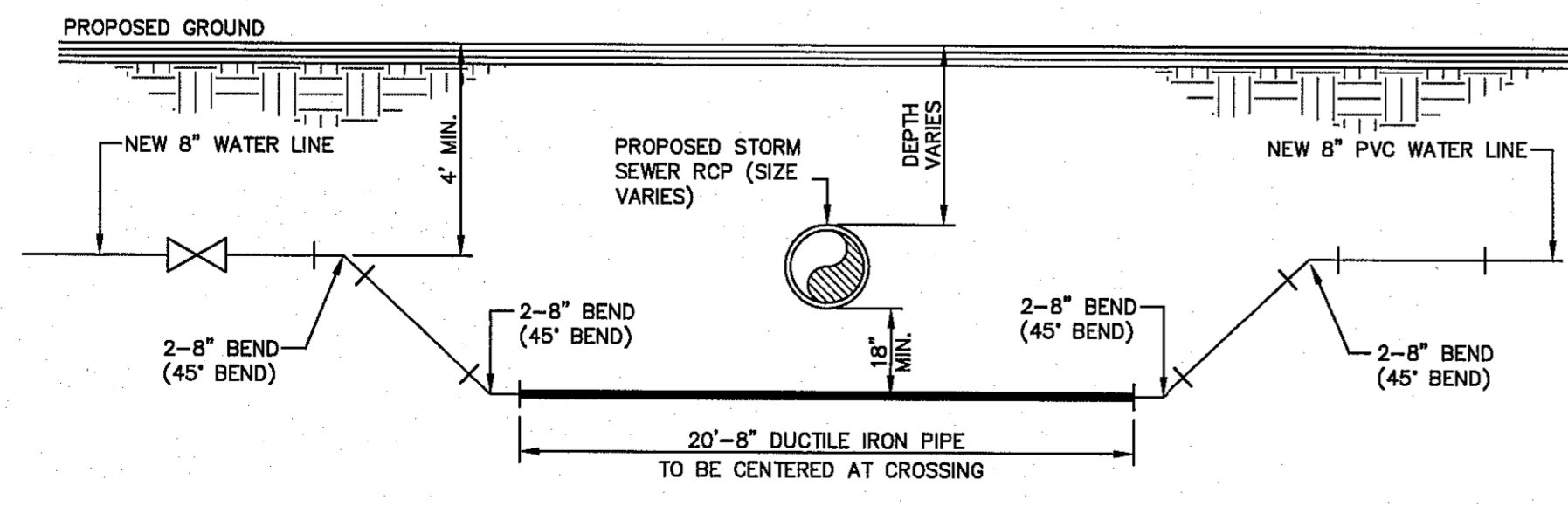
2 SEPARATION DISTANCE SANITARY SEWER AND POTABLE WATER (SPECIAL CONDITIONS)  
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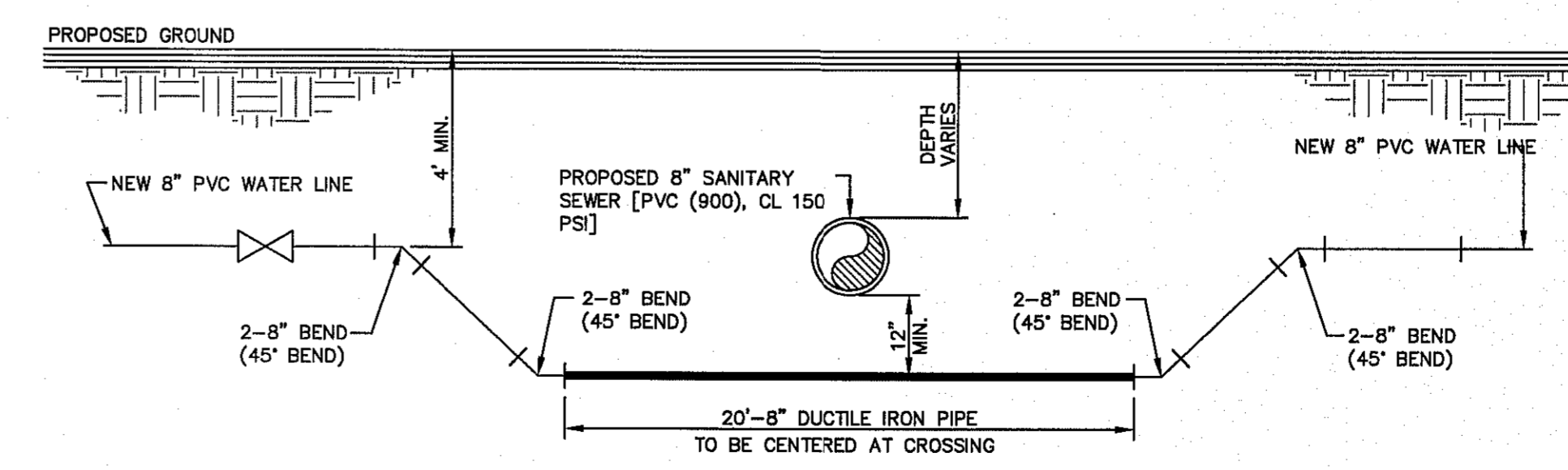
3 WATER LINE OVER SANITARY SEWER CROSSING DETAIL  
 C12.4 SCALE: N.T.S.



4 WATER LINE OVER STORM SEWER CROSSING DETAIL  
 C12.4 SCALE: N.T.S.



5 WATER LINE UNDER STORM SEWER CROSSING DETAIL  
 C12.4 SCALE: N.T.S.



6 WATER LINE UNDER SANITARY SEWER CROSSING DETAIL  
 C12.4 SCALE: N.T.S.

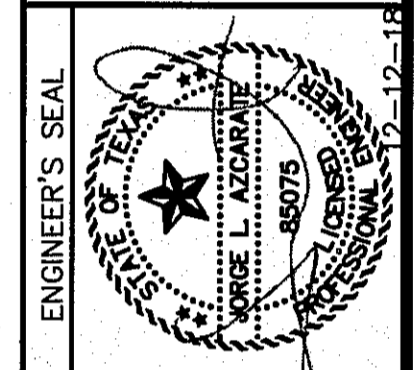
REFERENCES - BENCHMARKS

CITY MONUMENT AT POINT OF CURVE CENTERLINE RICH BEEM BLVD., S08°43'37"E A DISTANCE OF 487.58 FEET FROM THE SOUTHERLY RIGHT OF WAY LINE OF MONTANA AVENUE.

ELEVATION = 4005.40 (CITY DATUM).

DATE	REVISIONS

**ocea**  
 GROUP  
 TEXAS REGISTERED ENGINEERING FIRM #464  
 4712 Woodrow Bessin, Ste. F El Paso, TX 79924  
 915.544.5232 | www.oceagroup.net



SCALE	N/A
Horizontal	N/A
Vertical	N/A
Contour Interval	N/A
DATE	AUGUST 2018
DESIGN BY	F.Z.
DRAWN BY	K.A.P.
CHKD. BY	J.L.A.
APP'D. BY	J.L.A.
JOB No.	2025-013

PROJECT TITLE

**TRES SUEÑOS  
 UNIT SIXTEEN  
 SUBDIVISION IMPROVEMENTS**

SHEET TITLE

**WATER DETAILS**

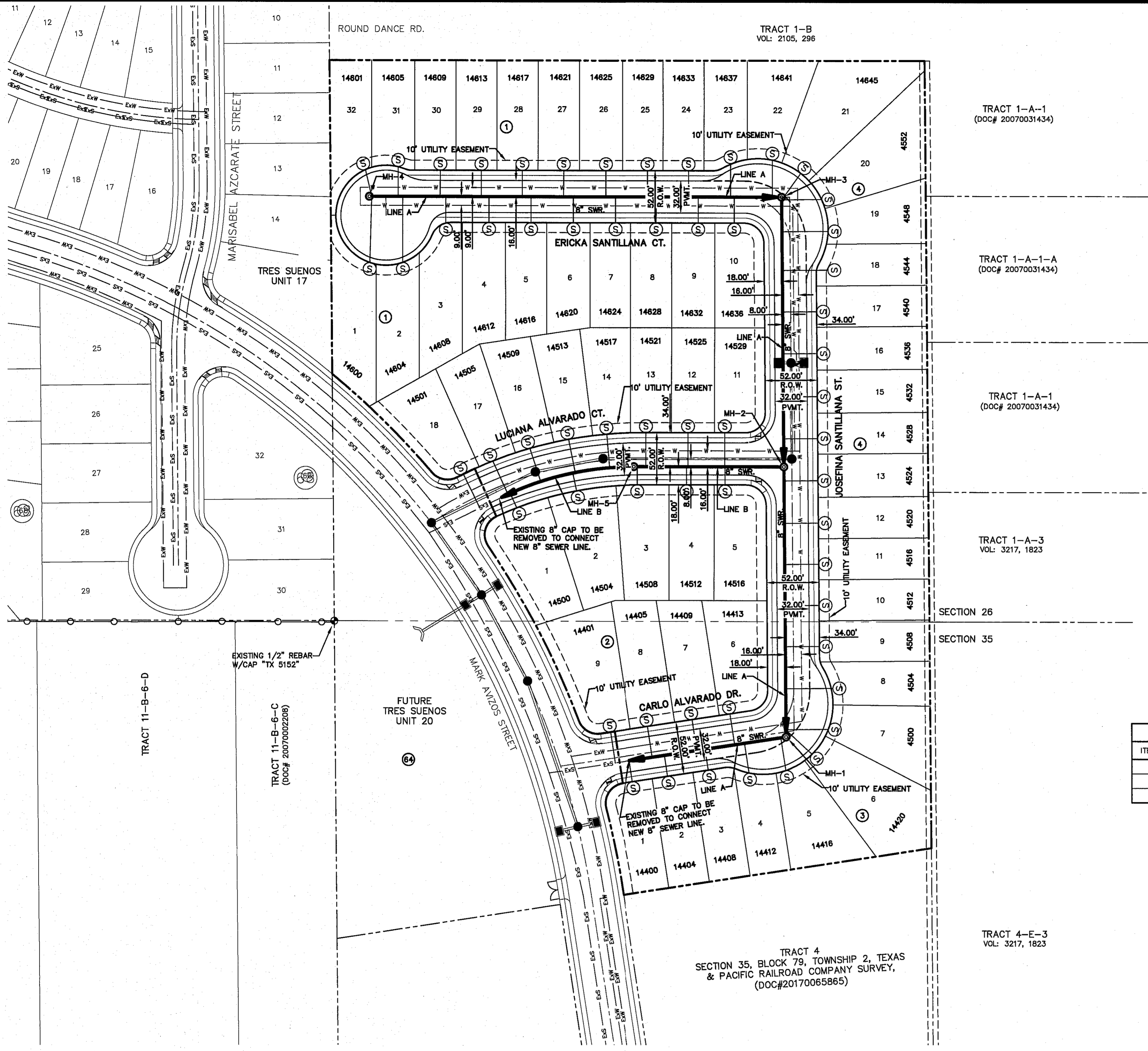
(SHEET 4 OF 4)

SHEET NO.



C12.4

S:\2025\2025-013-Tres Suenos Unit 16 Subdiv Construction Drawings\Improvement Plans\C12.2-C12.5-Water Details.dwg, 12/13/2018 8:04:01 AM



WASTEWATER QUANTITIES			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
1	8" PVC SDR35 GRAVITY LINE	1394	LINEAR FEET
2	STANDARD WASTEWATER MANHOLE	5	EACH
3	4" WASTEWATER SERVICE CONNECTION	59	EACH

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

**SANITARY SEWER INDEX MAP**  
SCALE: 1" = 60'

### INDEX

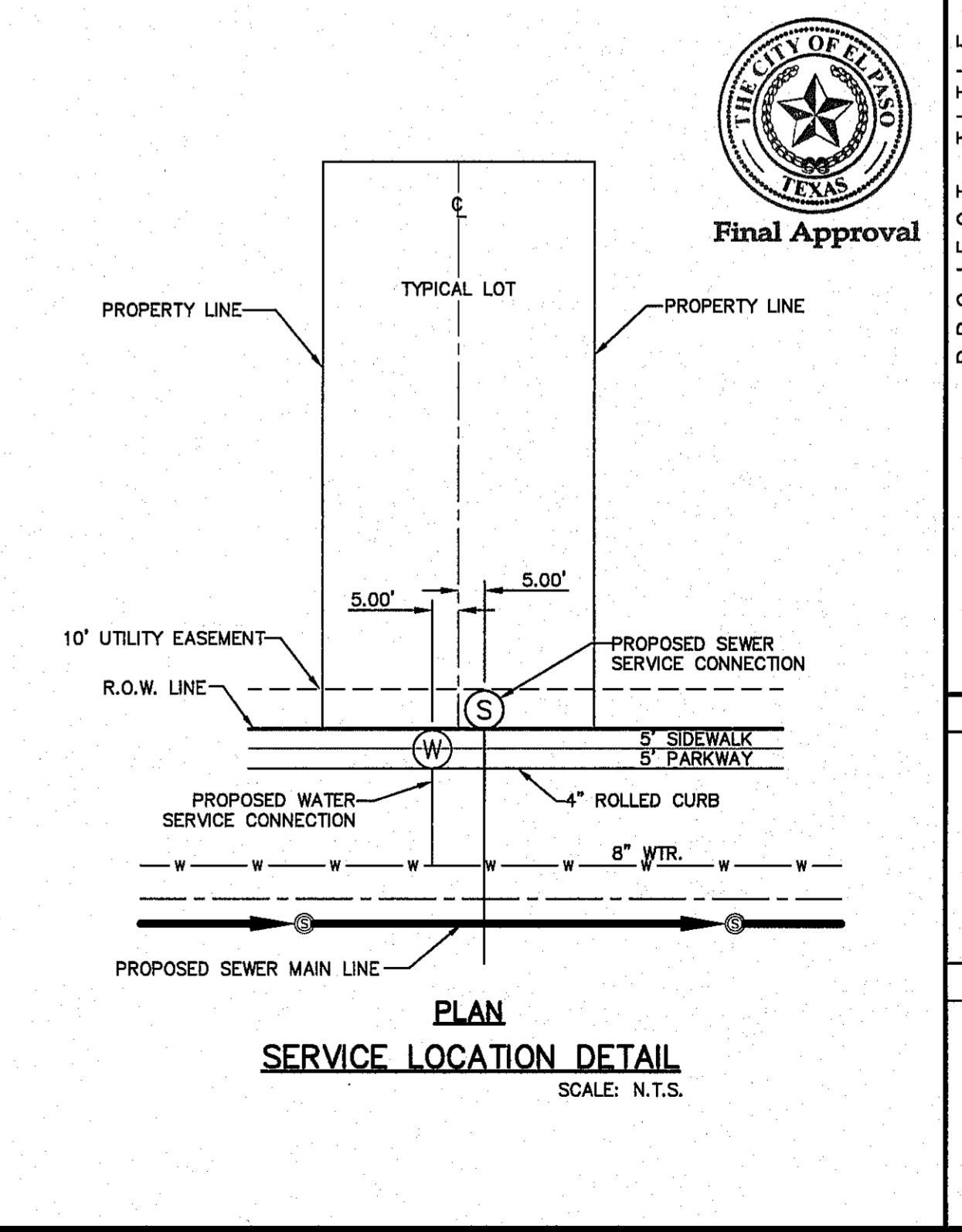
SHEET NO.	DESCRIPTION
C13.1	TRES SUEÑOS UNIT SIXTEEN LEGEND INDEX / GENERAL INFORMATION LINE A & B
C14.1	SANITARY SEWER DETAILS
C15.1	SANITARY SEWER DETAILS
C15.2	SANITARY SEWER DETAILS
C15.3	SANITARY SEWER DETAILS

**NOTES:**

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

### LEGEND

SYMBOL	DESCRIPTION
	PROPOSED STORM SEWER
	EXISTING WATER LINE
	EXISTING SEWER LINE
	SUBD. BOUNDARY LINE
	PROPERTY LINE
	CENTER LINE
	PROPOSED WATER LINE
	PROPOSED SEWER LINE (PLAN VIEW)
	PROPOSED SEWER LINE ON ANOTHER SHEET (PLAN VIEW)
	PROPOSED SEWER LINE (PROFILE VIEW)
	PROPOSED SEWER LINE (PROFILE VIEW)
	PROPOSED SERVICE CONNECTION (PLAN VIEW)
	EXISTING MANHOLE (PLAN VIEW)
	PROPOSED MANHOLE (PROFILE VIEW)
	EXISTING MANHOLE (PROFILE VIEW)



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

- GENERAL UTILITIES:**  
TEXAS EXCAVATION SAFETY SERVICE  
11884 GREENVILLE AVENUE,  
DALLAS, TX. 75243  
(800) 344-8377
- ENGINEER:**  
CEA GROUP  
CASTNER CENTER @ TRANSMOUNTAIN  
4712 WOODROW BEAN, STE. F  
EL PASO, TX. 79924  
(915) 544-5232  
MR. JORGE L. AZCARATE, P.E.
- FIBER OPTICS:**  
U.S. SPRINT  
151 N. BOONE ST.  
EL PASO, TX. 79905  
(915) 534-7910
- FIBER OPTICS:**  
MCI TELECOMMUNICATIONS CORPS.  
4045 DONIPHAN PARK CIRCLE  
EL PASO, TX. 79922  
(915) 542-2770 EXT. 201

- WATER & SEWER:**  
EL PASO WATER  
1154 HAWKINS BOULEVARD  
EL PASO, TX. 79935  
(915) 594-5530
- ELECTRIC:**  
EL PASO ELECTRIC CO.  
501 W. SAN ANTONIO ST.  
EL PASO, TX. 79902  
(915) 543-2076
- EL PASO STREETS**  
CITY OF EL PASO  
STREET AND MAINTENANCE DEPARTMENT  
7989 SAN PAULLO DRIVE  
EL PASO, TX. 79907  
(915) 621-6750
- CABLE TELEVISION:**  
TIME WARNER COMMUNICATIONS  
7010 AIRPORT ROAD  
EL PASO, TX. 79906  
(915) 772-1123

- TELEPHONE:**  
SBC  
11200 PELICANO  
EL PASO, TX. 79935  
(915) 595-5151
- FIBER OPTICS:**  
AT&T  
P.O. BOX 1650  
EL PASO, TX. 79949  
1(800) 852-3786
- RESIDENTIAL GAS LINES:**  
TEXAS GAS SERVICE  
4700 POLLARD ST.  
EL PASO, TX. 79930  
(915) 680-7218

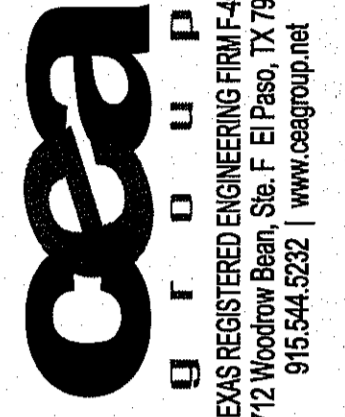
**WARNING!**  
**BEFORE YOU DIG**  
**CALL 811**  
FOR FIELD LOCATING EXISTING UTILITIES

REFERENCES - BENCHMARKS

CITY MONUMENT AT POINT OF CURVE CENTERLINE RICH BEEM BLVD., S08°43'31"E A DISTANCE OF 487.68 FEET FROM THE SOUTHERLY RIGHT OF WAY LINE OF MONTANA ELEVATION = 4006.40 (CITY DATUM).

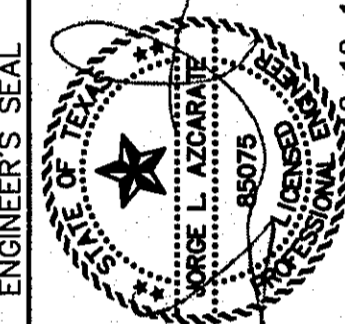
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REVISIONS



TEXAS REGISTERED ENGINEERING FIRM - CEA  
4710 N. AIRPORT ROAD, SUITE 1100, EL PASO, TX. 79904  
915.544.6202 | www.ceagroup.net

ENGINEER'S SEAL



SCALE: 1" = 60'

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

DATE: AUGUST 2018  
DESIGN BY: F.Z.  
CHECKED BY: J.L.A.  
APPROVED BY: J.L.A.  
JOB No. 2025-013

PROJECT TITLE

TRES SUEÑOS  
UNIT SIXTEEN  
SUBDIVISION IMPROVEMENTS

SHEET TITLE

SANITARY SEWER  
INDEX

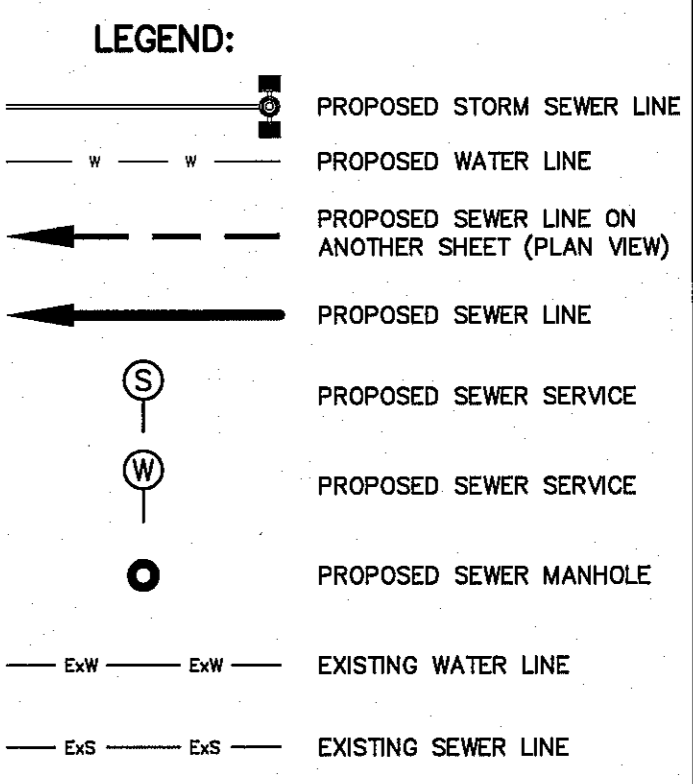
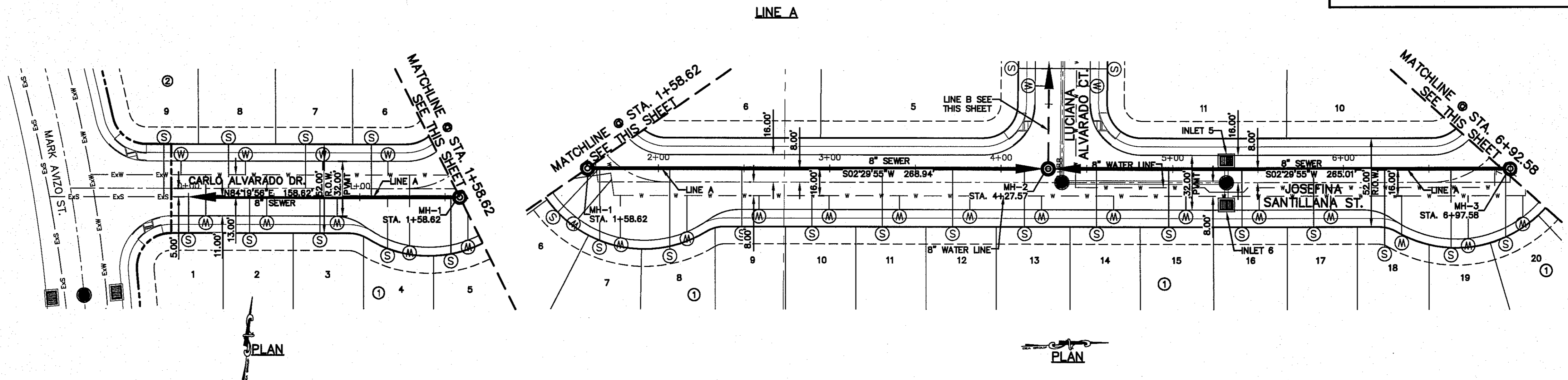
SHEET NO.

C13.1

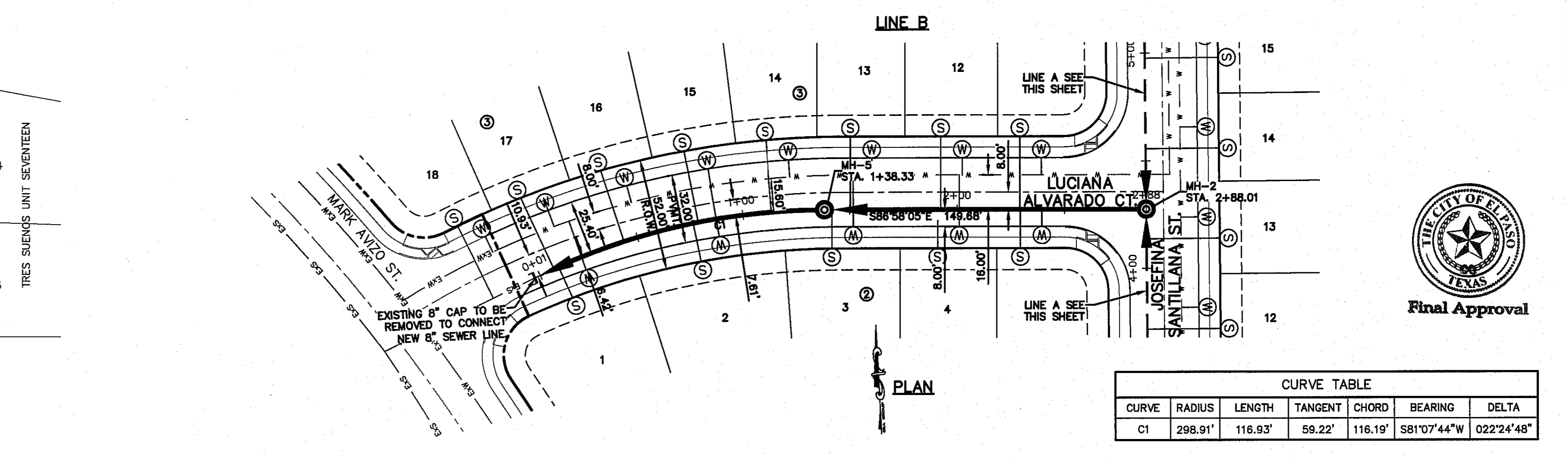
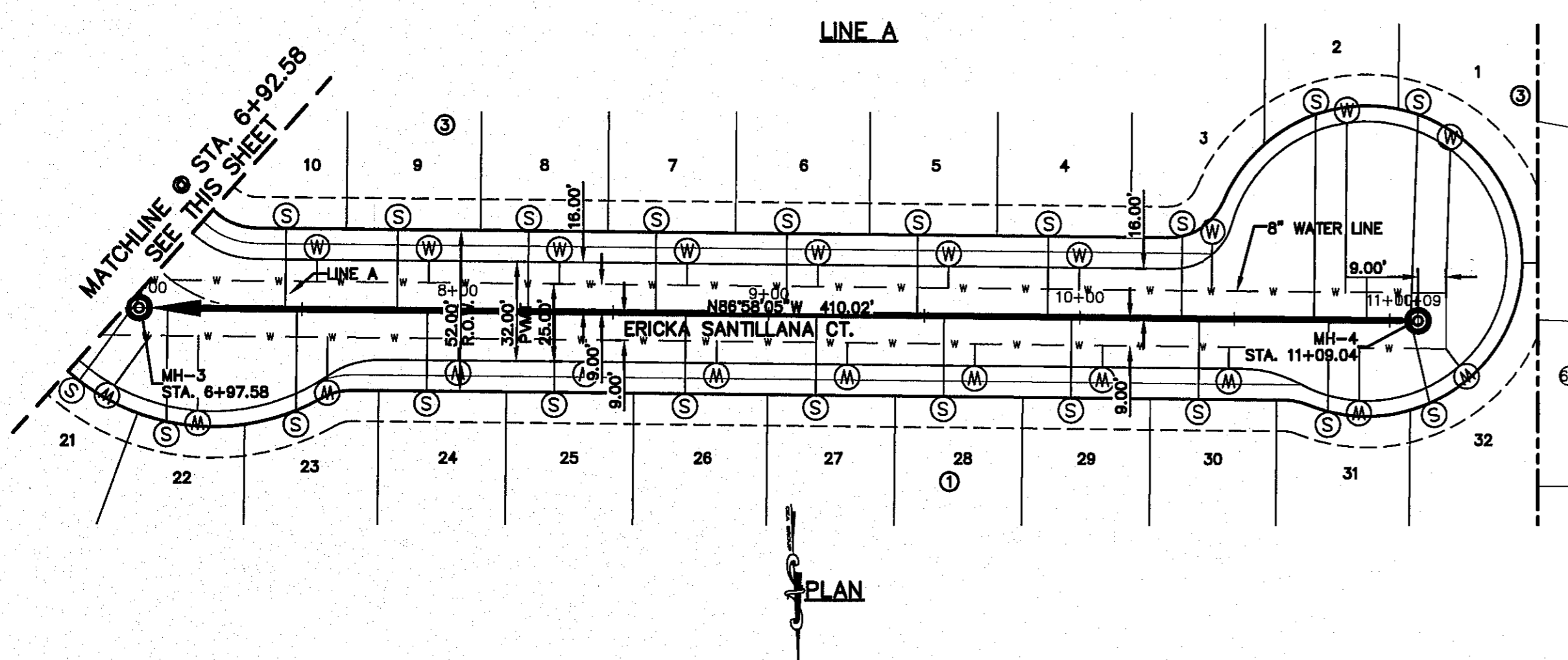
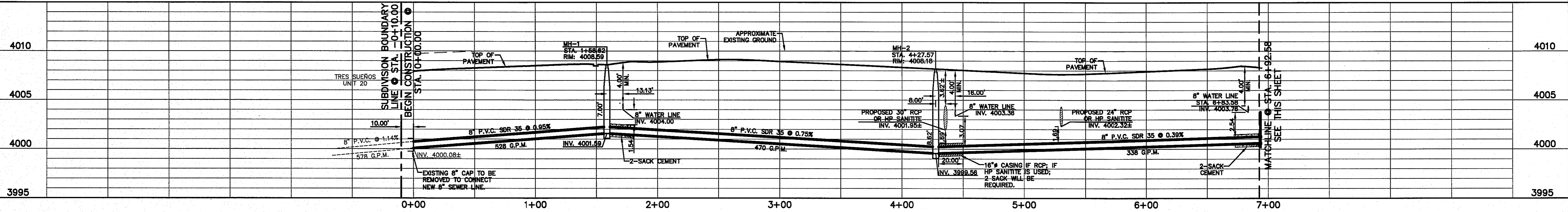
UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 498-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3785
U.S. SPRINT TELECOMM	(800) 521-0579

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

DATE	REVISIONS	BY



REFERENCES - BENCHMARKS  
 CITY MONUMENT AT POINT OF CURVE CENTERLINE RICH AND 10' SOUTH OF CENTERLINE RICH FROM THE SOUTHERLY RIGHT OF WAY LINE OF MONTANA AVENUE. ELEVATION = 4005.40 (CITY DATUM).  
**cea**  
 TEXAS REGISTERED ENGINEERING FIRM F-4894  
 4712 Woodrow Bean, Ste F, El Paso, TX 79904  
 915.544.5232 | www.ceagroup.net



ENGINEER'S SEAL  
 SCALE  
 Horizontal: N/A  
 Vertical: Contour Interval: N/A  
 DATE: AUGUST 2018  
 DESIGN BY: F.Z.  
 DRAWN BY: K.A.P.  
 CHKD. BY: J.L.A.  
 APPVD. BY: J.L.A.  
 JOB No.: 2025-013

PROJECT TITLE  
**TRES SUEÑOS  
 UNIT SIXTEEN  
 SUBDIVISION IMPROVEMENTS**

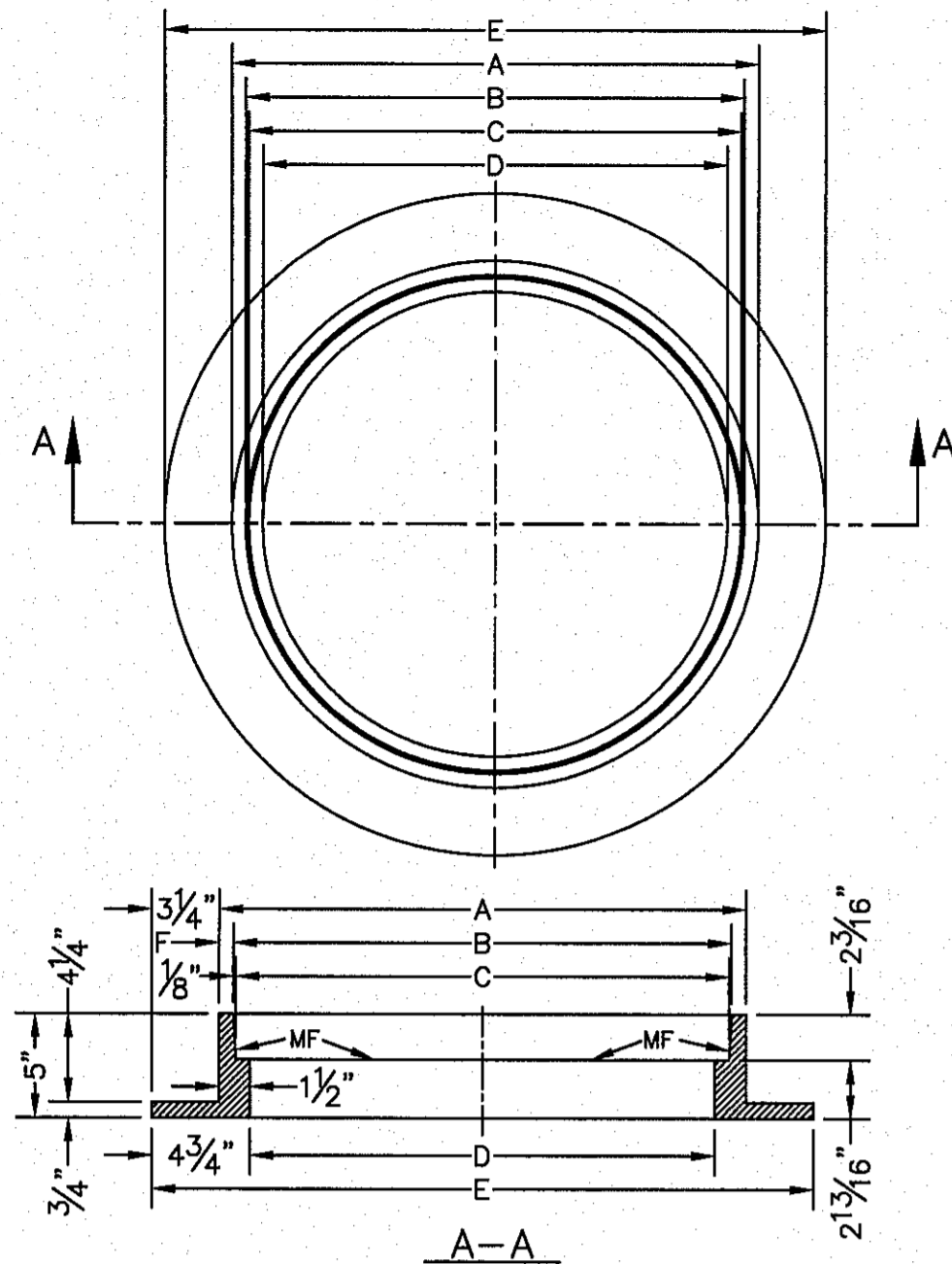
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**SANITARY SEWER  
 PLAN & PROFILE  
 LINE A & B**

SHEET NO.

C14.1

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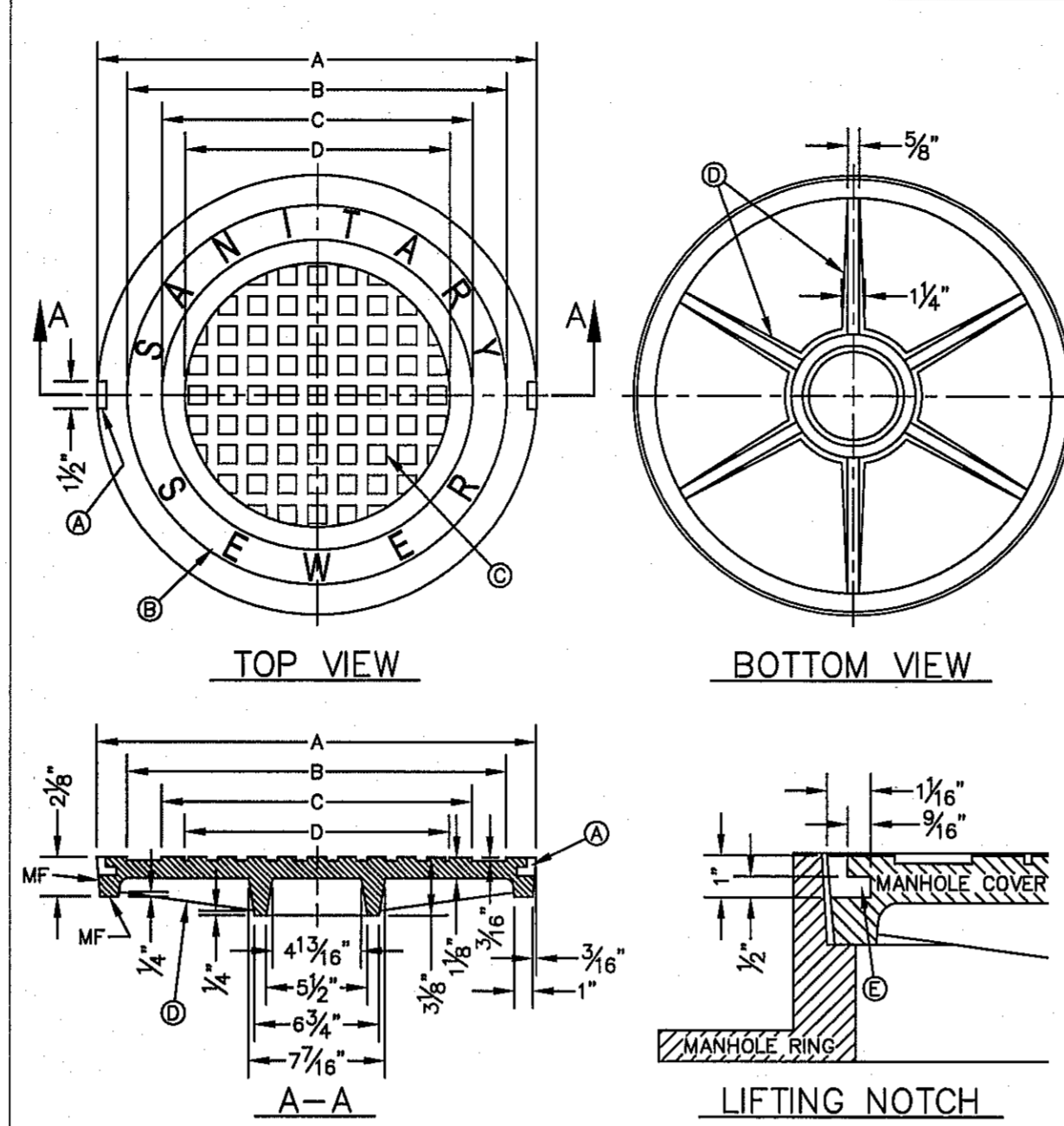




- GENERAL NOTES:**
1. MATCHING SURFACES MARKED "MF" TO BE FINISHED OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
  2. CASTING TO BE SMOOTH & VOID OF AIR HOLES.
  3. CASTING MUST MEET REQUIREMENTS OF AASHTO M306-07.
  4. AS-CAST DIMENSIONS MAY VARY  $\frac{1}{8}$ " ± / PER FOOT (AASHTO M306-07).
  5. WEIGHT MAY VARY 5% ± (AASHTO M306-07).

MANHOLE RING	MANHOLE - ALL TYPES	*MANHOLE TYPE A, A1, A2 & C
A	33"	25½"
B	31¾"	24½"
C	31½"	23¾"
D	30"	22½"
E	39½"	32"
F	5½"	1½"
WEIGHT	205 lbs.	170 lbs.

\*OBSOLETE - DO NOT USE (FOR REFERENCE ONLY)



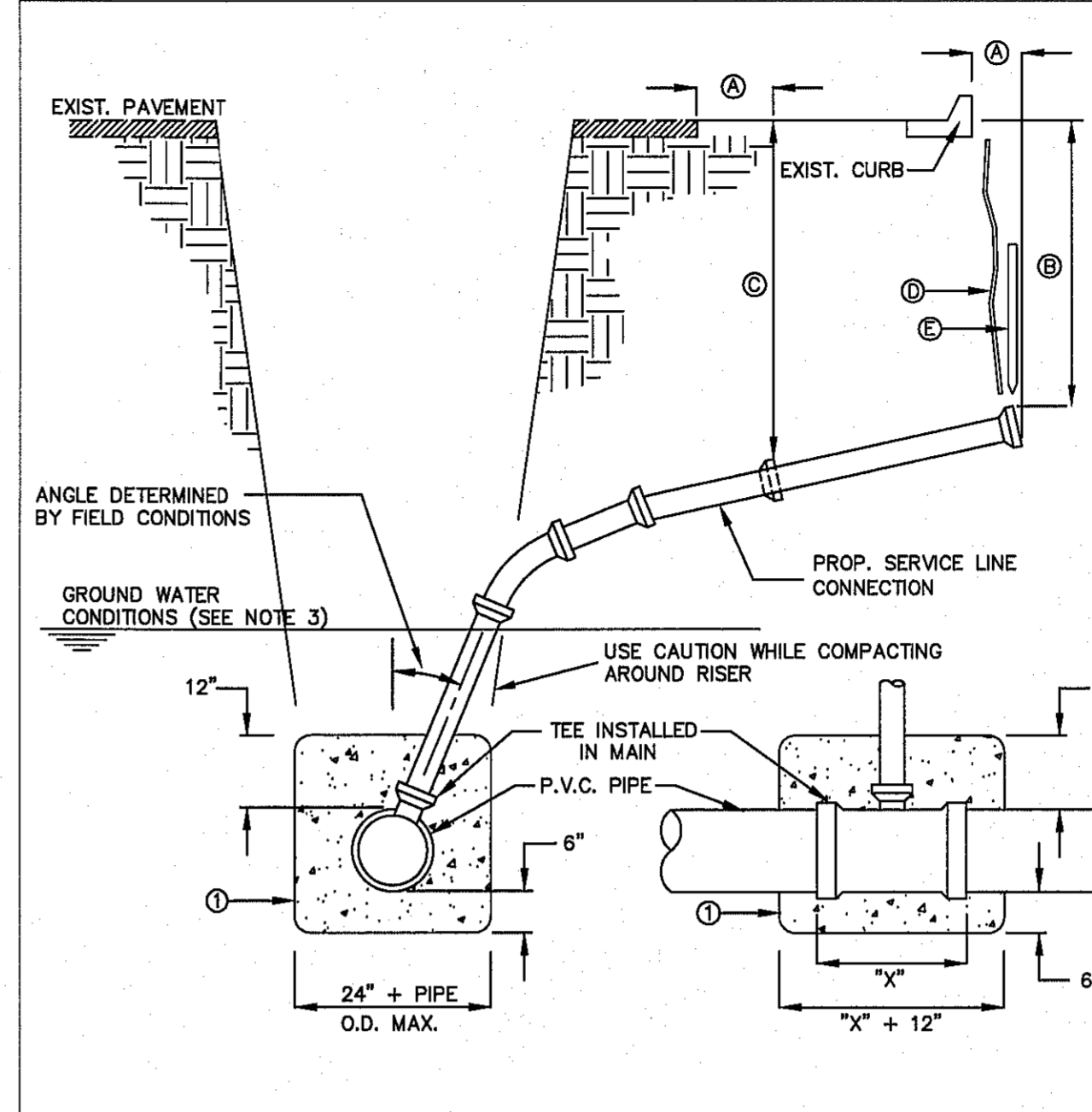
- GENERAL NOTES:**
1. MATCHING SURFACES MARKED "MF" TO BE FINISHED OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
  2. CASTING TO BE SMOOTH & VOID OF AIR HOLES.
  3. CASTING MUST MEET REQUIREMENTS OF AASHTO M306-07.
  4. AS-CAST DIMENSIONS MAY VARY  $\frac{1}{8}$ " ± / PER FOOT (AASHTO M306-07).
  5. WEIGHT MAY VARY 5% ± (AASHTO M306-07).

**CONSTRUCTION KEY NOTES:**

- A. LIFTING NOTCH.
- B.  $\frac{3}{8}$ " RAISED LETTERING.
- C. 1" SQUARES ( $\frac{1}{8}$ " TALL) WITH  $\frac{1}{8}$ " SPACE BETWEEN.
- D. REINFORCING RIBS.
- E. SLOT.

MANHOLE COVER	MANHOLE - ALL TYPES	*MANHOLE TYPE A, A1, A2 & C
A	31¾"	23¾"
B	28½"	20½"
C	24¾"	16½"
D	21¾"	14¾"
WEIGHT	200 lbs.	165 lbs.

\*OBSOLETE - DO NOT USE (FOR REFERENCE ONLY)



- 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 PAVEMENT, 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: 2/21/2011 SEWER MANHOLE RING N.T.S. el PASO WATER DETAIL No. 377

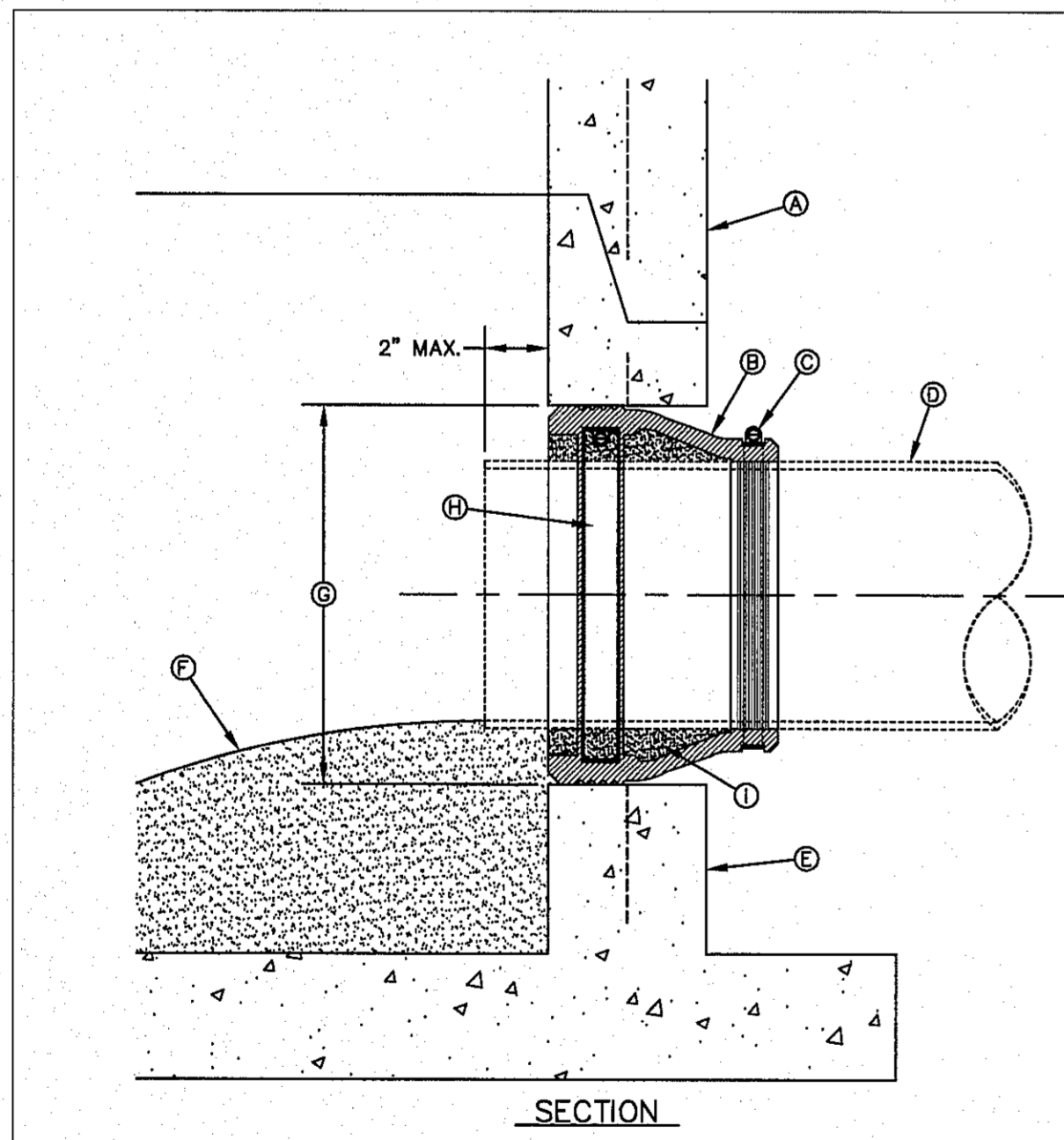
STANDARD DETAIL DATE: 11/1992 REV: 2/21/2011 SEWER MANHOLE COVER N.T.S. el PASO WATER DETAIL No. 378

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

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

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

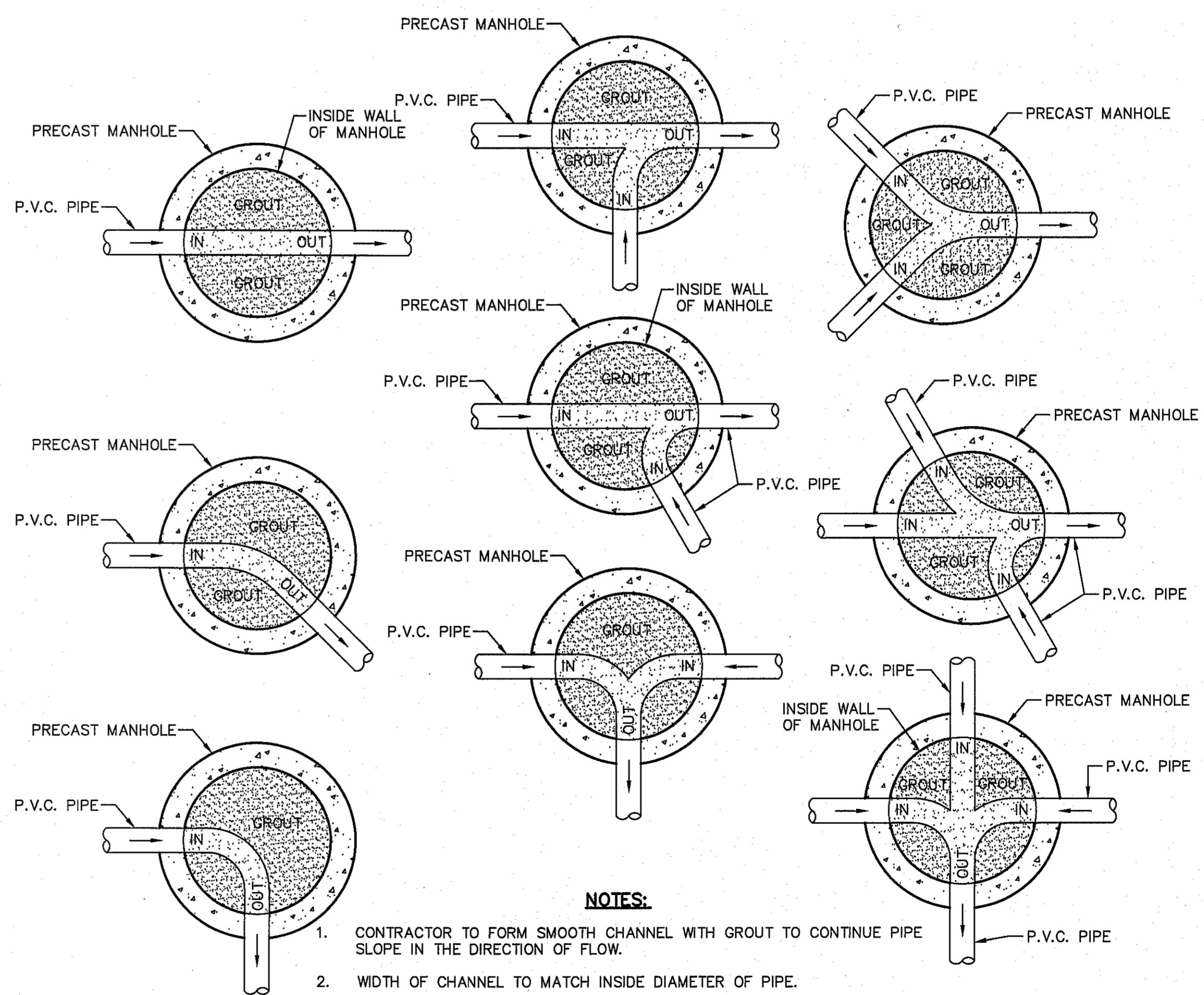
3 SEWER SERVICE RISER AND SERVICE LINE CONNECTION SCALE: N.T.S.



- GENERAL NOTES:**
1. MANHOLE CONNECTOR SHALL BE KOR-N-SEAL OR EQUAL MEETING THE REQUIREMENTS OF ASTM C-923. CONNECTOR SHALL BE FURNISHED BY CONTRACTOR.
- CONSTRUCTION KEY NOTES:**
- A. PRECAST MANHOLE BARREL.
  - B. FLEXIBLE CONNECTOR.
  - C. PIPE CLAMP SS 316.
  - D. APPROVED PIPE.
  - E. PRECAST MANHOLE BASE.
  - F. GROUT AS REQUIRED TO FORM SMOOTH CHANNEL TO MANHOLE INVERT.
  - G. PIPE OPENINGS/KNOCKOUTS AS REQUIRED TO FIT PIPE SIZE.
  - H. EXPANSION BAND SS 316.
  - I. FILL SPACE WITH GROUT.

STANDARD DETAIL DATE: 11/1992 REV: 8/13/2009 PIPE CONNECTION TO MANHOLE N.T.S. el PASO WATER DETAIL No. 376

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



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

5 TYPICAL MANHOLE INVERT PLANS SCALE: N.T.S.

REFERENCES - BENCHMARKS  
CITY MONUMENT AT POINT OF CURVE CENTERLINE RICH  
FROM BLDG. CORNER 31' DISTANCE OF 158.58'  
FROM THE SOUTHWEST CORNER OF MAIN LINE OF MOUNTAIN  
AVENUE. ELEVATION = 4005.40 (CITY DATUM).

DATE: \_\_\_\_\_ REVISIONS: \_\_\_\_\_ BY: \_\_\_\_\_

el PASO WATER  
TEXAS REGISTERED ENGINEERING FIRM F-684  
4772 Woodrow Bean, Ste. F El Paso, TX 79924  
915.544.5202 | www.eapgroup.net

ENGINEER'S SEAL  
SCALE: Horizontal: N/A Vertical: N/A  
Contract Interval: N/A  
DATE: AUGUST 2018  
DESIGN BY: F.Z. K.A.P.  
DRAWN BY: J.L.A.  
CHKD. BY: J.L.A.  
APPD. BY: J.L.A.  
JOB No. 2025-013

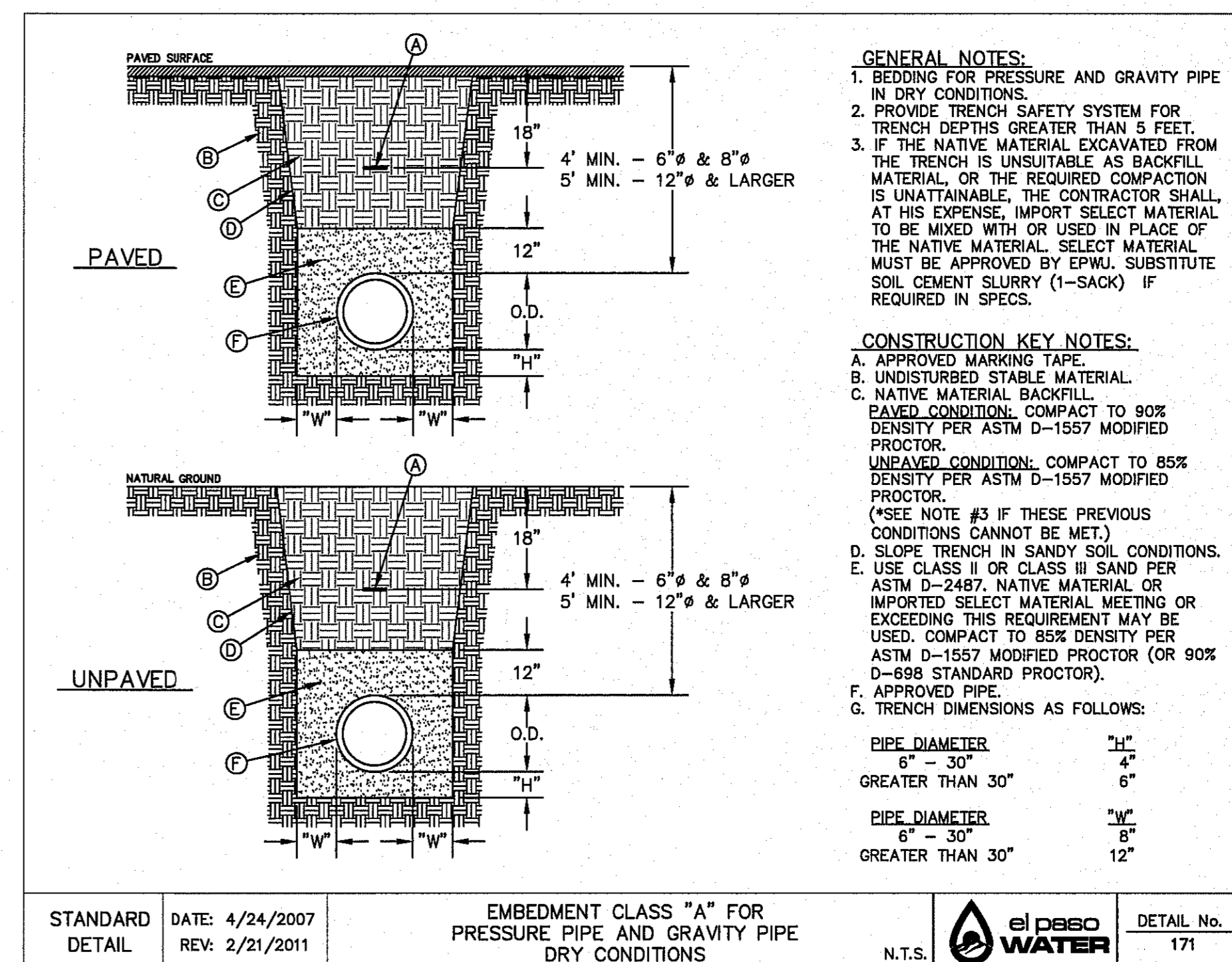
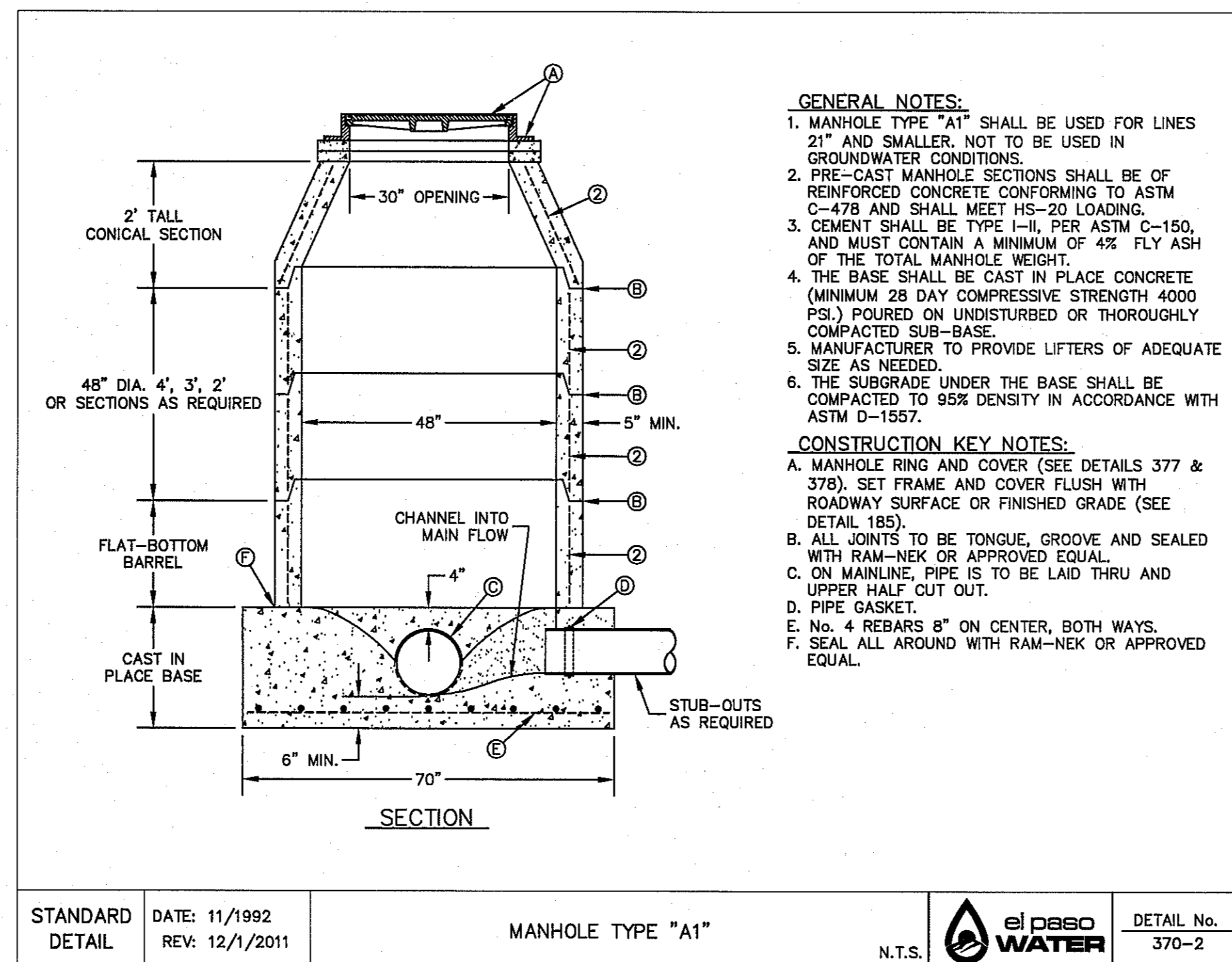
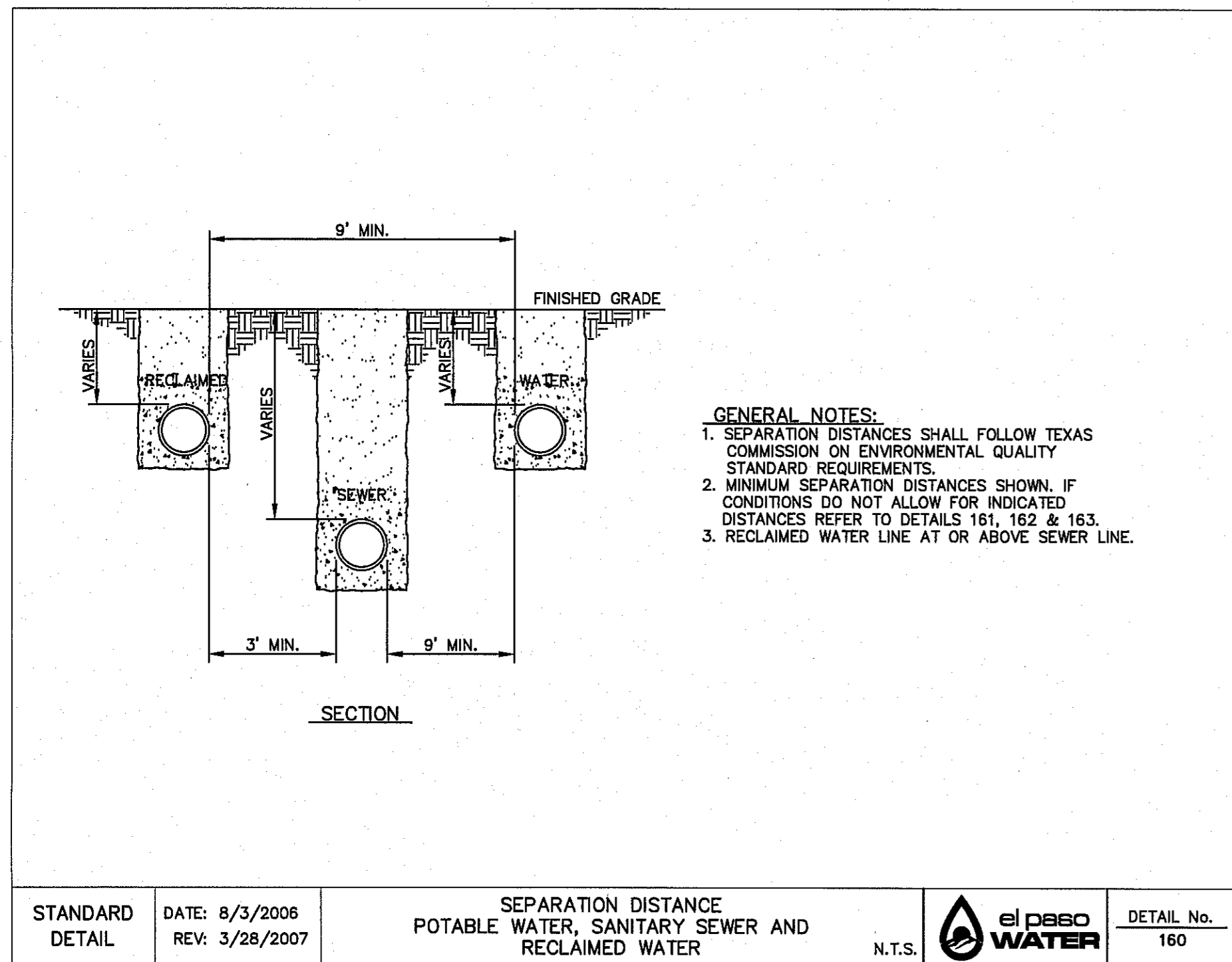
PROJECT TITLE  
TRES SUEÑOS  
UNIT SIXTEEN  
SUBDIVISION IMPROVEMENTS

SHEET TITLE  
SANITARY SEWER  
DETAILS  
(SHEET 1 OF 2)  
SHEET NO.

Final Approval

C15.1

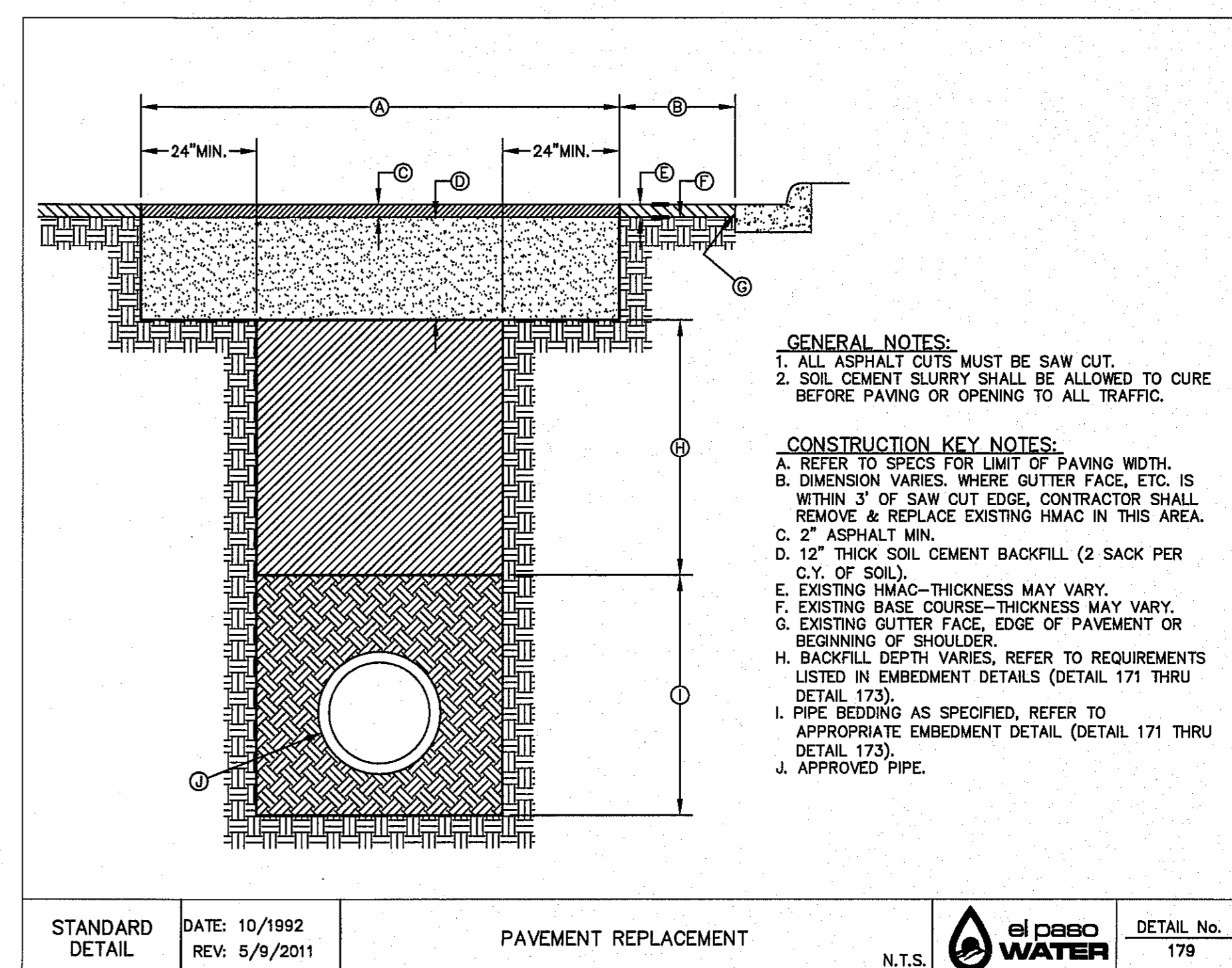
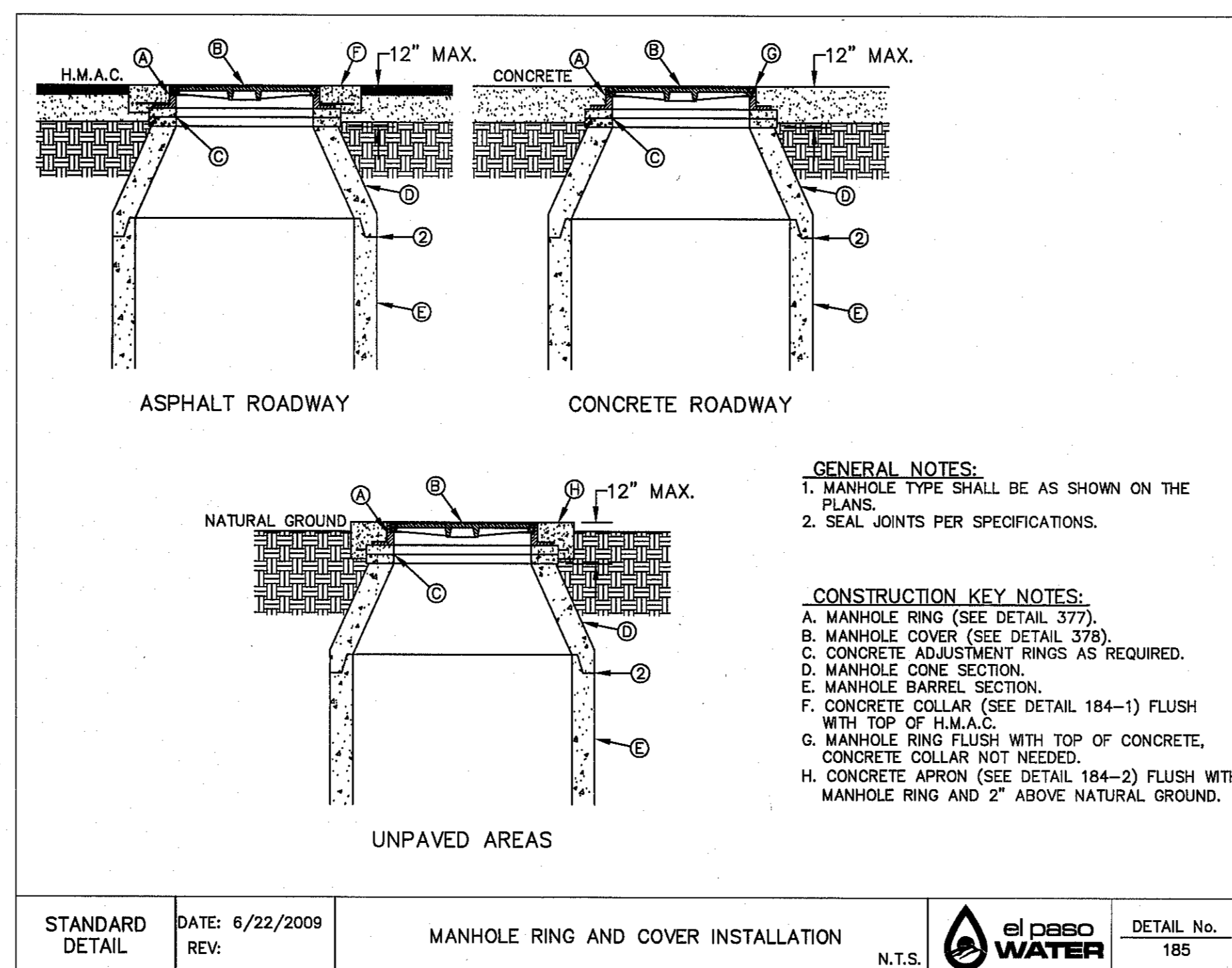
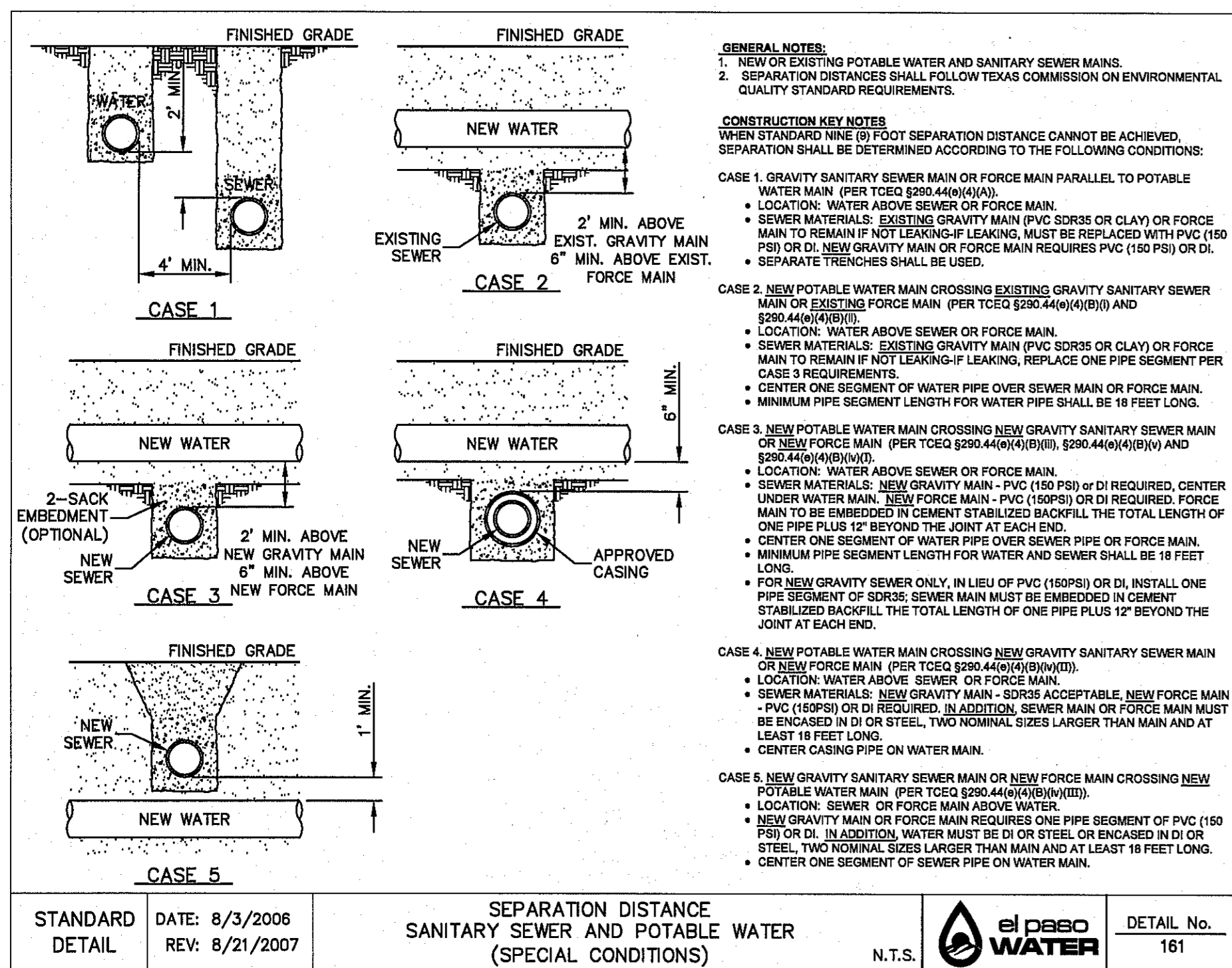
S:\2025\2025-013-Tres Sueños U16 SPS\DWGSA\Construction Drawings\Improvement Plans\C15.1-C15.7-Sanitary Sewer Details.dwg, 12/17/2018 8:08:05 AM



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

2 STANDARD MANHOLE TYPE "A1"  
 SCALE: N.T.S.

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



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

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

6 PAVEMENT REPAIR DETAIL  
 SCALE: N.T.S.

REFERENCES - BENCHMARKS  
 CITY MONUMENT AT POINT OF CURVE CENTERLINE RICH BEEM BLVD., S0834331 E, A DISTANCE OF 467.95 FEET FROM THE SOUTHERLY RIGHT OF WAY LINE OF MONTANA AVENUE. ELEVATION = 4005.40 (CITY DATUM).

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 REVISIONS: \_\_\_\_\_

**el paso WATER**

DESIGNER: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 APPROVED BY: \_\_\_\_\_

ENGINEER'S SEAL

SCALE: Horizontal: N/A, Vertical: N/A  
 Contour Interval: N/A  
 DATE: AUGUST 2018  
 DESIGN BY: F.Z.  
 DRAWN BY: K.A.P.  
 CHKD. BY: J.L.A.  
 APPVD. BY: J.L.A.  
 JOB No.: 2025-013

PROJECT TITLE  
**TRES SUEÑOS UNIT SIXTEEN SUBDIVISION IMPROVEMENTS**

SHEET TITLE  
**SANITARY SEWER DETAILS**

(SHEET 2 OF 2)  
 SHEET NO.

**C15.2**

Final Approval

S: 2025-013-Tree Sueños UT6\_SPP-DWSYS-Construction Drawings/Improvement Plans/C15.2-C15.7-Sanitary Sewer Details.dwg, 12/13/2018 8:08:15 AM

**SITE DESCRIPTION**

PROJECT NAME AND LIMITS: TRES SUEÑOS UNIT 16 IS BORDERED BY A PORTION OF TRACT 1-A, SECTION 26, TO THE NORTH, AND A PORTION OF TRACT 4, SECTION 35, BLOCK 79, TOWNSHIP 2, TO THE SOUTH AND TRES SUEÑOS UNIT 17 AND UNIT 20 TO THE WEST.

PROJECT DESCRIPTION: THE SITE FOR THE NEW SUBDIVISION WILL ENCOMPASS APPROXIMATELY 8.90± ACRES, AND WILL CONTAIN A TOTAL OF 59 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: 8.90±

TOTAL AREA TO BE DISTURBED: 8.90±

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 HUECO-WINK ASSOCIATION. NEARLY LEVEL AND GENTLY SLOPING SOILS THAT HAVE A FINE SANDY LOAM SUBSOIL AND ARE MODERATELY DEEP OVER CALICHE; IN THE HUECO BOLSON.

NAME OF RECEIVING WATERS: TRES SUEÑOS UNIT 16 SUBDIVISION WILL DISCHARGE INTO AN ON-SITE STORM SEWER INFRASTRUCTURE AND ULTIMATELY DISCHARGE INTO AN EXISTING RETENTION BASIN.

**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:**

- SILT FENCES
- ROCK BERMS
- DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
- DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
- DIVERSION DIKE AND SWALE COMBINATION
- PIPE SLOPE DRAINS
- CONCRETE FLUMES
- ROCK BEDDING AT CONSTRUCTION EXIT
- TIMBER MATTING AT CONSTRUCTION EXIT
- CHANNEL LINERS
- SEDIMENT TRAPS
- SEDIMENT BASINS
- STORM INLET SEDIMENT TRAP
- STONE OUTLET STRUCTURES
- CURBS AND GUTTERS
- 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 SWPPP BEST MANAGEMENT PRACTICES (COMPLETE IN PLACE) ITEMS. THE SWPPP PROJECT MANUAL IS AVAILABLE FOR REVIEWING AT THE CITY OF EL PASO-ENGINEERING DEPARTMENT. UPON SELECTION, THE CONTRACTOR WILL BE PROVIDED AN SWPPP MANUAL. THE CONTRACTOR SHALL MAINTAIN THIS MANUAL AT THE CONSTRUCTION SITE AT ALL TIMES THROUGHOUT THE CONSTRUCTION PERIOD.
3. THE CONTRACTOR SHALL COMPLETE AND SUBMIT ALL REGULATORY FORMS AND APPLICATIONS, AS PROVIDED IN THE SWPPP MANUAL, INCLUDING, BUT NOT LIMITED TO; NOI, NOT, SDPCP, AND ANY OTHER FORM REQUIRED BY THE CITY OF EL PASO AND TCEQ.
4. ALLOWABLE STORM WATER AND NON-STORMWATER DISCHARGE SHALL COMPLY WITH 15.20.080 (GENERAL PROHIBITION) AND 15.20.090 (SPECIFIC PROHIBITIONS AND REQUIREMENTS) OF THE CITY OF EL PASO STORM DRAIN POLLUTION CONTROL PLAN ORDINANCE. NON-STORMWATER DISCHARGES MAY CONSIST OF, BUT ARE NOT LIMITED TO, THE DISCHARGE RESULTING FROM FIREFIGHTING, LAWN WATERING, LANDSCAPE IRRIGATION, NATURAL SPRING, AND/OR AGRICULTURAL STORM WATER RUNOFF.
5. REFER TO DRAINAGE PLAN FOR DETAILED INFORMATION ON WATERSHED AREAS AND RUNOFF QUANTITIES (Q).
6. THE FOLLOWING HAVE BEEN IDENTIFIED AS POTENTIAL CONTAMINATION SOURCES: CLEARED AND GRADED AREAS; CONSTRUCTION SITE ENTRANCE AND ASPHALT PARKING AREA CONSTRUCTION; ASPHALT LOADING/UNLOADING AREAS; CONCRETE LOADING/UNLOADING AREAS; AND, ALL UNDISTURBED AREAS.
7. THE FOLLOWING IS A LIST OF POTENTIAL CONSTRUCTION SITE STORM WATER POLLUTANTS: ASPHALT; CONCRETE; GLUE/ADHESIVE; PAINTS; CURING COMPOUNDS; WASTEWATER FROM CONSTRUCTION EQUIPMENT WASHING; HYDRAULIC OIL/FLUIDS; GASOLINE; DIESEL FUEL; KEROSENE; ANTIFREEZE/COOLANT; AND EROSION.

**BEST MANAGEMENT PRACTICES CONTROLS**

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

**I. WASTE MATERIALS:**

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

**II. HAZARDOUS WASTE:**

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

**III. SANITARY WASTE:**

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

**IV. SPILL PREVENTION:**

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

**GOOD HOUSEKEEPING:**

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

**HAZARDOUS PRODUCTS:**

PRACTICES USED TO REDUCE RISKS:

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

**PETROLEUM PRODUCTS:**

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

**SPILL CONTROL PRACTICES:**

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

**V. MAINTENANCE AND INSPECTION PROCEDURES:**

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

**VI. REMARKS:**

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

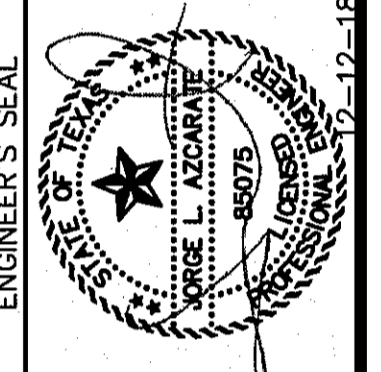
**VII. OFFSITE VEHICLE TRACKING:**

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

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

REFERENCES - BENCHMARKS	CITY MONUMENT AT POINT OF CURVE CENTERLINE RICH BEEM BLVD., S08°43'31"E A DISTANCE OF 467.56 FEET TO THE SOUTHERLY RIGHT OF WAY LINE OF MONTANA AVENUE = 4005.40 (CITY DATUM). ELEVATION = 4005.40 (CITY DATUM).
DATE	BY
REVISIONS	

**CS&A**  
**C O U P**  
 TEXAS REGISTERED ENGINEERING FIRM F-4564  
 4772 Woodrow Bean, Ste. F El Paso, TX 79924  
 915.544.5232 | www.csandagroup.net

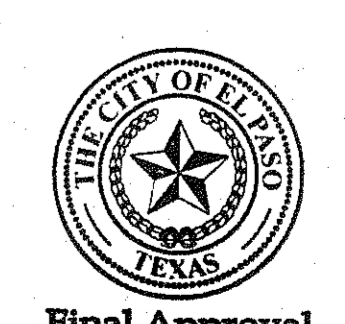


SCALE	1"=100'
Horizontal	N/A
Vertical	N/A
Contour Interval	2.0'
DATE	AUGUST 2018
DESIGN BY	F.Z.
DRAWN BY	K.A.P.
CHECK BY	J.L.A.
APP'D BY	J.L.A.
JOB No.	2025-013

PROJECT TITLE  
**TRES SUEÑOS UNIT SIXTEEN SUBDIVISION IMPROVEMENTS**

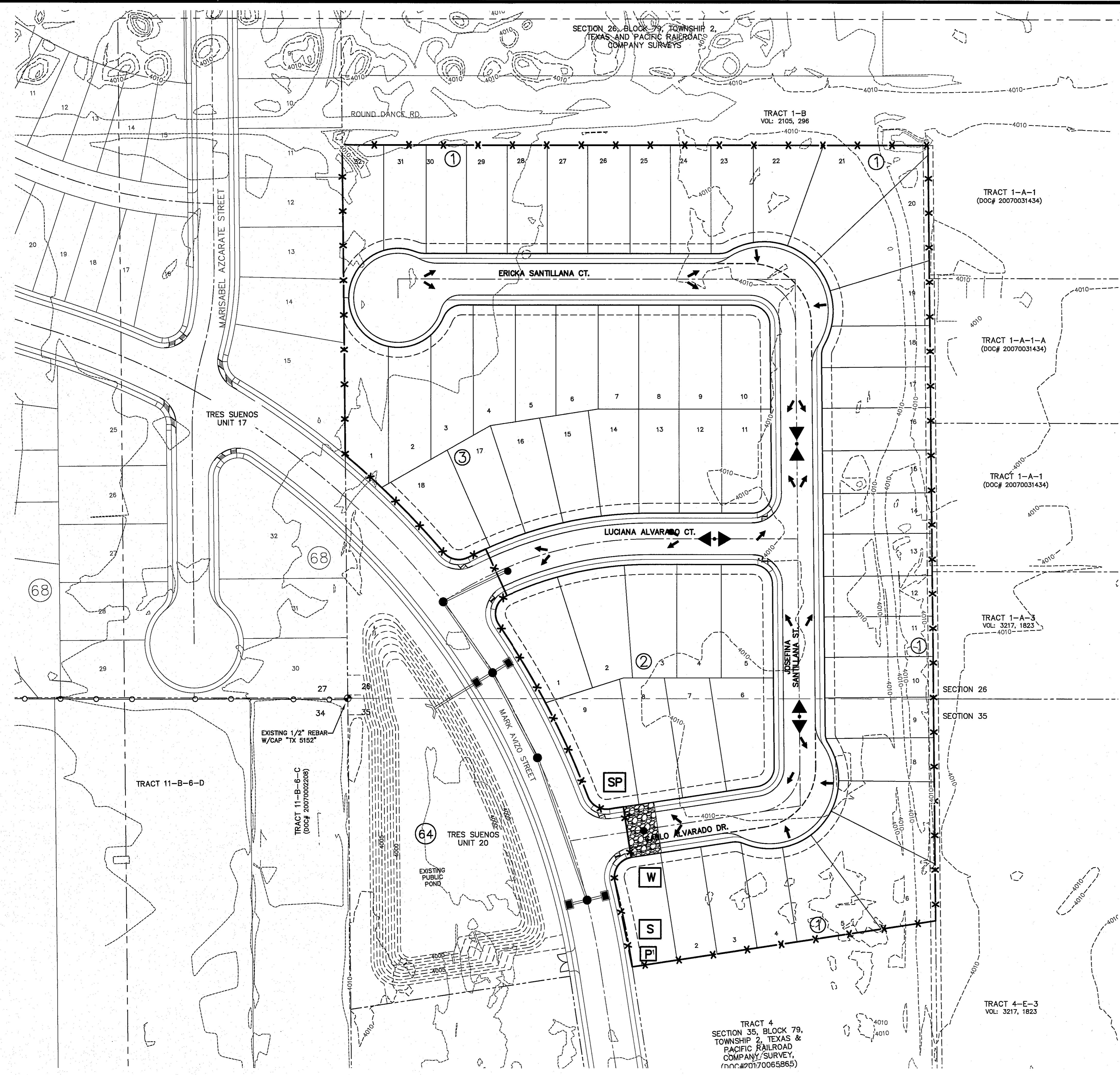
SHEET TITLE  
**STORM WATER POLLUTION PREVENTION NOTES**

SHEET NO.



C16.1

S:\2025\2025-013-Tres Suenos U16 SWP\DWG5\Construction Drawings\Improvement Plans\C14.2-SWPPP Site Plan.dwg, 12/13/2018 8:14:52 AM



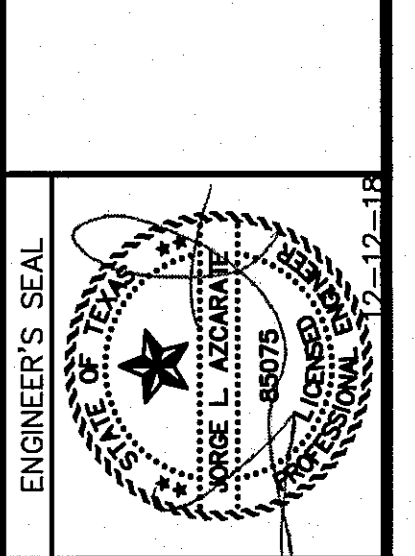
UTILITY LOCATOR SERVICES	
EL PASO ELECTRIC COMPANY	(915) 543-5720
EL PASO ENERGY CORPORATION	(915) 498-5244
EL PASO WATER UTILITIES	(915) 594-5500
MCI SURVEILLANCE	(800) MCI-WORK
TIME WARNER COMMUNICATIONS	(915) 772-1123
TEXAS GAS SERVICE	(915) 680-7200
SBC	(800) 545-6005
AT&T	(800) 852-3788
U.S. SPRINT TELECOMM	(800) 521-0579

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

- SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- STAGING AREA
- PORTABLE TOILETS
- WASH OUT
- SIGN POSTING
- OUTFALL

DATE	REVISIONS	BY

REFERENCES - BENCHMARKS  
 CITY MONUMENT AT POINT OF CURVE CENTERLINE RICH  
 FROM THE SOUTHERLY RIGHT OF WAY LINE OF MONTANA  
 AVENUE. ELEVATION = 4005.40 (CITY DATUM).  
  
 TEXAS REGISTERED ENGINEERING FIRM F4684  
 4712 Woodrow Bean, Ste. F El Paso, TX 79904  
 915.544.5222 | www.ceagroup.net



SCALE	1" = 50'
Horizontal:	N/A
Vertical:	N/A
Contour Interval:	N/A
DATE:	AUGUST 2018
DESIGN BY:	F.Z.
DRAWN BY:	K.A.P.
CHKD. BY:	J.L.A.
APPVD. BY:	J.L.A.
JOB No.	2025-013

PROJECT TITLE  
**TRES SUENOS  
 UNIT SIXTEEN  
 SUBDIVISION IMPROVEMENTS**

SHEET TITLE  
**STORM WATER  
 POLLUTION  
 PREVENTION PLAN:  
 SITE PLAN**

SHEET NO.  
**C16.2**

**SITE PLAN**  
 SCALE: 1" = 50'



TRACT 4  
 SECTION 35, BLOCK 79,  
 TOWNSHIP 2, TEXAS &  
 PACIFIC RAILROAD  
 COMPANY SURVEY,  
 (DOC# 20170065865)

