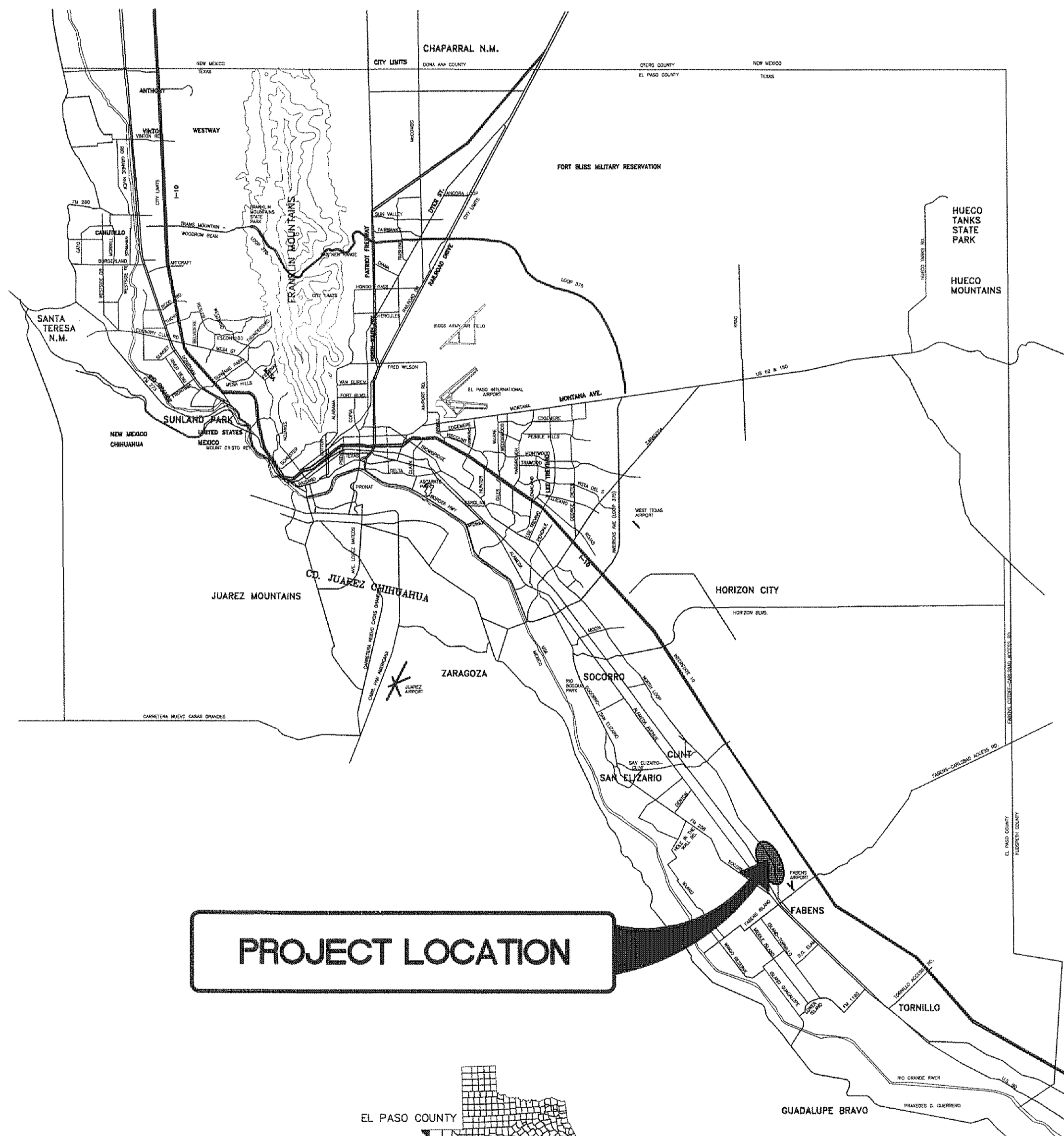


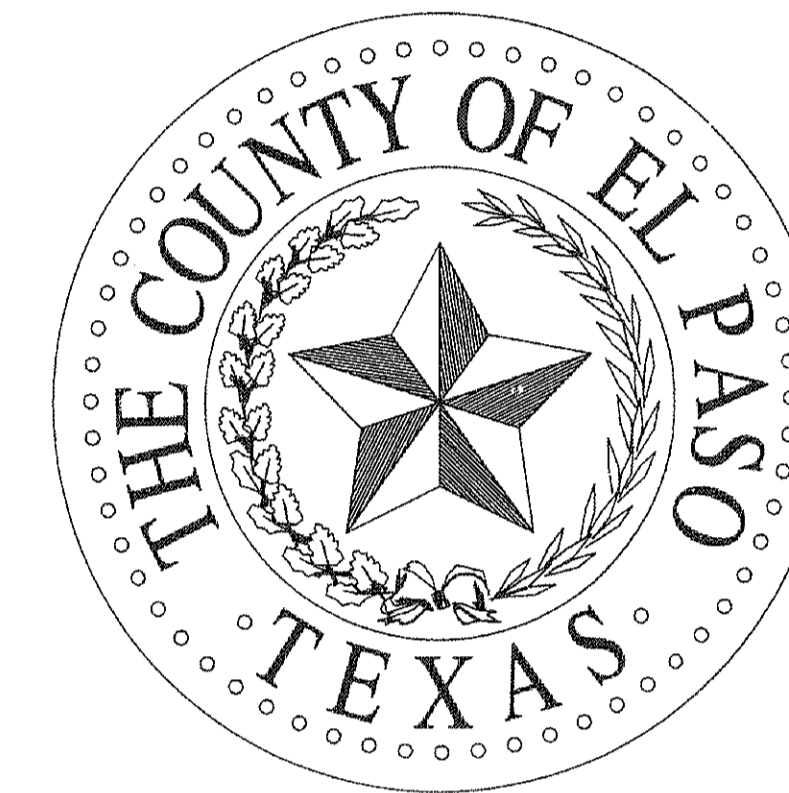
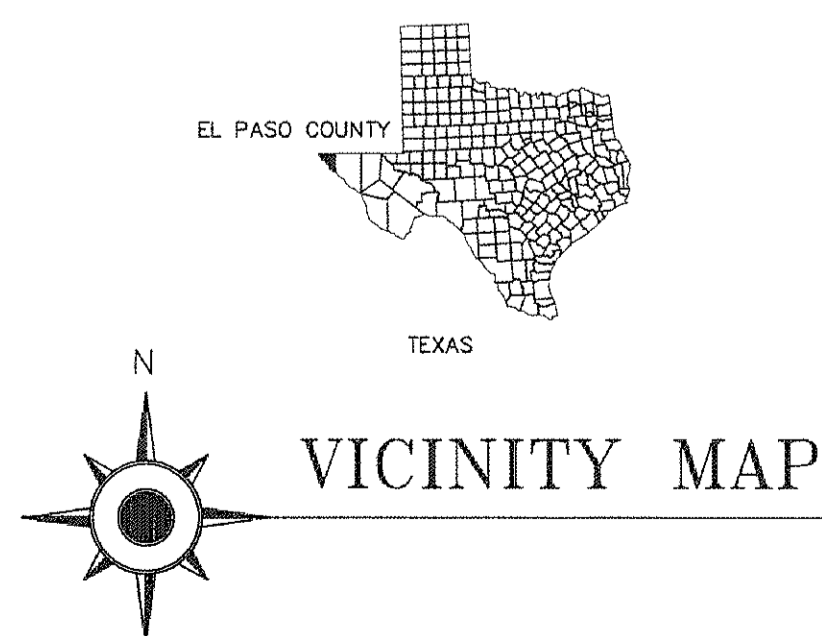
COUNTY OF EL PASO, TEXAS
**LOURDES ESTATES &
 EL CONQUISTADOR DEL PASO SUBDIVISIONS**
WATER MAIN EXTENSION FACILITIES
 (TEXAS DEPARTMENT OF RURAL AFFAIRS/ C.D.B.G. 710066)

JUNE 2011

EL PASO COUNTY, TEXAS



PROJECT LOCATION



COUNTY OF EL PASO

COUNTY JUDGE
 HON. VERONICA ESCOBAR

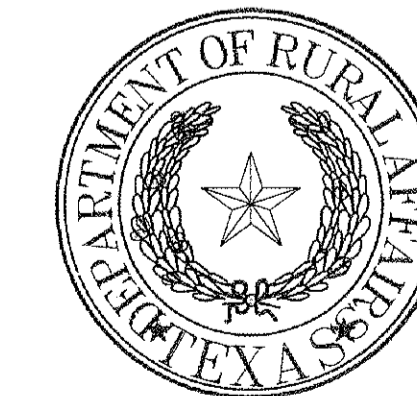
COUNTY COMMISSIONERS
 COMM. ANNA PEREZ, PCT. 1
 COMM. SERGIO LEWIS, PCT. 2
 COMM. WILLIE GANDARA JR., PCT. 3
 COMM. DANIEL R. HAGGERTY, PCT. 4

ROAD & BRIDGE
 ROBERT RIVERA, P.E. PUBLIC WORKS DIRECTOR

CONSULTING ENGINEER



FUNDING AGENCY

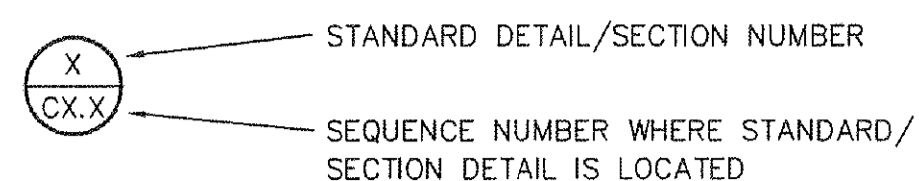


FOR MATERIAL ESTIMATING ONLY

PROPOSED UTILITY DESIGNATION

PLAN	PROFILE
NEW C-900 P.V.C. PIPE	APPROXIMATE EXISTING GROUND
NEW C-900 P.V.C. PIPE BY OTHERS	NEW C-900 P.V.C. PIPE
NEW FIRE HYDRANT KENNEDY OR MUELLER MODEL	NEW STEEL CASING
NEW WATER SERVICE	NEW GATE VALVE
NEW GATE VALVE	EXISTING UNDERGROUND PIPE/CULVERT
NEW TEE	
NEW 90° BEND	
NEW 45° BEND	
NEW 22.5° BEND	
NEW 11.25° BEND	
NEW VERTICAL BENDS	
NEW REDUCER	
NEW PLUG (BLIND FLANGE)	

SECTION AND DETAIL SYMBOLS



DETAILS THAT ARE CROSS-REFERENCED ON PLANS ARE DESIGNATED AS:

X/CX.X

WHERE FIRST NUMBER IS THE SECTION NUMBER AND THE SECOND NUMBER IS THE SHEET NUMBER WHERE DETAIL IS LOCATED.

CIVIL / SURVEY SYMBOLS

	EXISTING CONTOUR
	OVERHEAD ELECTRIC LINE
	GAS LINE
	SANITARY SEWER LINE
	WATER LINE
	TELEPHONE LINE
	CHAIN LINK FENCE
	WOOD FENCE
	UNDERGROUND PIPE
	NATURAL GAS TANK
	MONUMENT/RAILROAD SPIKE
	TRAFFIC SIGNAL LIGHT
	FOUND REBAR
	RAILROAD TRACKS
	COVERED AREA
	MANHOLE
	CURB
	SIGN
	POWER POLE
	ANCHOR
	PEDESTAL
	PEDESTAL W/ SIGN
	WATER VALVE
	PAVEMENT
	CONCRETE
	TREE
	WATER METER
	GAS METER
	GAS VALVE
	ELECTRIC BOX
	ELECTRIC TRANSFORMER
	INLET
	TELEPHONE MANHOLE
	ROCKWALL
	METAL FENCE

UTILITY LOCATOR SERVICES

COUNTY OF EL PASO	(915) 546-2015
LOWER VALLEY WATER DISTRICT	(915) 791-4480
FABENS I.S.D.	(915) 765-2803
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO ELECTRIC COMPANY	(915) 543-5720
TEXAS GAS SERVICE	(915) 680-7200
TIME WARNER COMMUNICATIONS	(915) 772-1123
U.S. SPRINT TELECOMM	(800) 521-0579
MCI SURVEILLANCE	(800) MCI-WORK
AT&T	(800) 852-3786

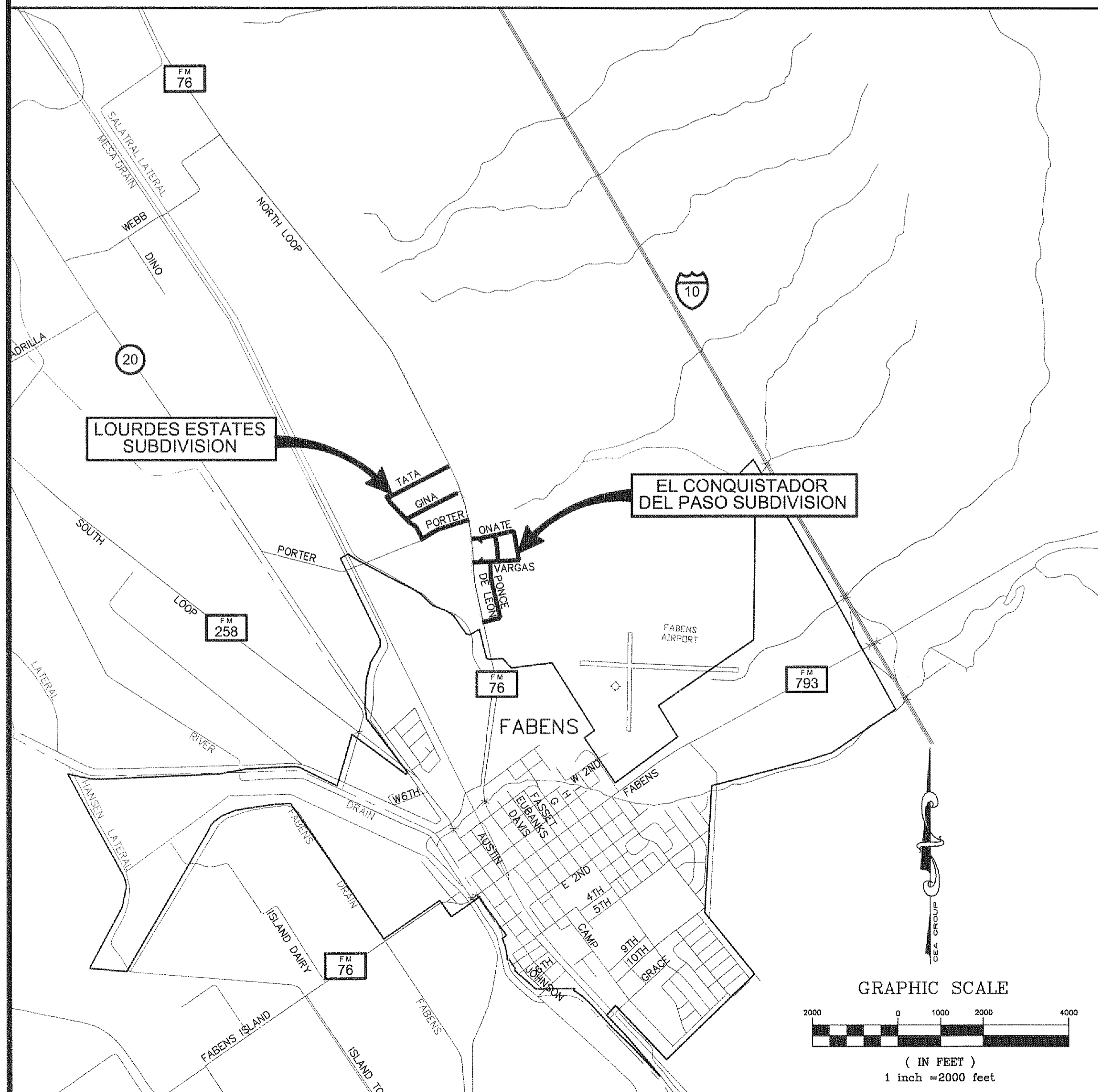
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1-800-344-8377
FOR FIELD LOCATING EXISTING UTILITIES

INDEX OF DRAWINGS

SHEET NO.	DRAWING NAME
GENERAL	
-	COVER
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C1.2	GENERAL NOTES & UTILITY INFORMATION
C2.1	GENERAL WATER MAP
LOURDES ESTATES SUBDIVISION	
C3.1	LOURDES ESTATES SUBDIVISION WATER MAIN IMPROVEMENTS (SHEET 1 OF 2)
C3.2	LOURDES ESTATES SUBDIVISION WATER MAIN IMPROVEMENTS (SHEET 2 OF 2)
EL CONQUISTADOR DEL PASO SUBDIVISION	
C4.1	EL CONQUISTADOR DEL PASO SUBDIVISION WATER MAIN IMPROVEMENTS (SHEET 1 OF 2)
C4.2	EL CONQUISTADOR DEL PASO SUBDIVISION WATER MAIN IMPROVEMENTS (SHEET 2 OF 2)
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C5.1	TRENCH DETAILS
C5.2	TYPICAL GATE VALVE & THRUST BLOCKING DETAILS
C5.3	TYPICAL WATER SERVICE DETAILS
C5.4	TYPICAL METER BOX, COVER, & FRAME DETAILS
C5.5	TYPICAL FIRE HYDRANT DETAILS

LOCATION MAP



GENERAL SYMBOLS

	RIGHT-OF-WAY LINE
	PROPERTY LINE/TRACT LINE
	CENTERLINE
	EASEMENT
	MATCHLINE
	BORING LOG NUMBER
	APPROXIMATE BORING LOG LOCATION
	APPROXIMATE GROUND WATER ELEVATION AND DATE OF BORE
	FARM ROAD

ABBREVIATIONS

A.S.T.M.	AMERICAN SOCIETY FOR TESTING AND MATERIAL STANDARDS
O.S.H.A.	OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION
T.X.D.O.T.	TEXAS DEPARTMENT OF TRANSPORTATION
E.P.C.W.I.D.#1	EL PASO COUNTY WATER IMPROVEMENT DISTRICT NO.1
L.V.W.D.	LOWER VALLEY WATER DISTRICT
BM	BENCHMARK
PVMT	PAVEMENT
CONC.	CONCRETE
CL	CENTERLINE
PL	PROPERTY LINE
R.O.W.	RIGHT-OF-WAY LINE
MIN.	MINIMUM
MAX.	MAXIMUM
REF.	REFERENCE
STD.	STANDARD
TYP.	TYPICAL
TEMP.	TEMPORARY
W/	WITH
FT	FEET
L.F.	LINEAR FEET
L	LENGTH
S	SLOPE
STA.	STATION
INV.	INVERT ELEVATION
APPR.	APPROVED
@	AT
WTR	WATER
C.I.	CAST IRON
S.S.	STAINLESS STEEL
P.V.C.	POLYVINYL CHLORIDE PIPE
D.I.P.	DUCTILE IRON PIPE
A.C.P.	ASBESTOS CEMENT PIPE
C.M.P.	CORRUGATED METAL PIPE
R.C.P.	REINFORCED CONCRETE PIPE
P.C.P.	PORTLAND CEMENT PLASTER PIPE
P.P.E.	POLYETHYLENE PIPE (GAS ONLY)
GAL.	GALLON
G.P.M.	GALLONS PER MINUTE
W.W.F.	WELDED WIRE FABRIC
DIA.	DIAMETER
Ø	DIAMETER
I.D.	INSIDE DIAMETER
O.D.	OUTSIDE DIAMETER
O.C.	OFF CENTER
P.S.I.	POUNDS PER SQUARE INCH
H.M.A.C.	HOT MIX ASPHALTIC CONCRETE

BENCHMARK

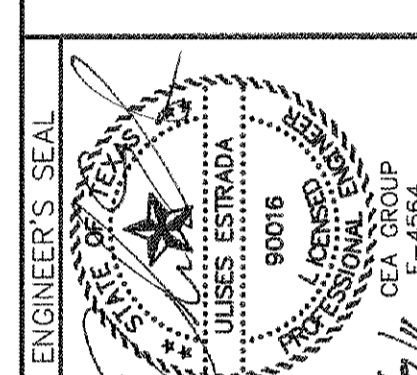
- BEARINGS SHOWN ARE GRID BEARINGS DERIVED FROM RTK OBSERVATIONS. REFERRED TO THE TEXAS PLANE COORDINATE SYSTEM CENTRAL ZONE OF TEXAS. DISTANCES ARE GRID DISTANCE.
- BENCHMARK: BRASS CAP IN CULVERT A 1073 1956. ELEVATION: 3640.45 (NAVD 88)
- THESE NAVD 88 ELEVATIONS ARE DERIVED FROM APPLICATION OF THE GEOID 2003 MODEL TO RTK CO-OP ELLIPSOID HEIGHTS.

REFERENCES - BENCHMARKS

- BEARINGS SHOWN ARE GRID BEARINGS DERIVED FROM RTK OBSERVATIONS. REFERRED TO THE TEXAS PLANE COORDINATE SYSTEM CENTRAL ZONE OF TEXAS. DISTANCES ARE GRID DISTANCE.
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DATE	REVISIONS	BY

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Office: 915.544.5232 Fax: 915.544.5233 www.csaengr.net



SCALE

Horizontal:	AS SHOWN
Vertical:	N/A
Contour Interval:	N/A
DATE:	AUGUST 2011
DESIGN BY:	M.C.
DRAWN BY:	A.G.
CHKD. BY:	U.E.
APPROV. BY:	
JOB NO.:	1030-023-WD

PROJECT NAME
LOURDES ESTATES & EL CONQUISTADOR DEL PASO SUBDIVISIONS WATER MAIN EXTENSION FACILITIES
(TEXAS DEPARTMENT OF RURAL AFFAIRS/C.D.B.G. NO. 710066)

SHEET TITLE
LEGEND, LOCATION MAP & SHEET INDEX

SHEET NO.

C1.1

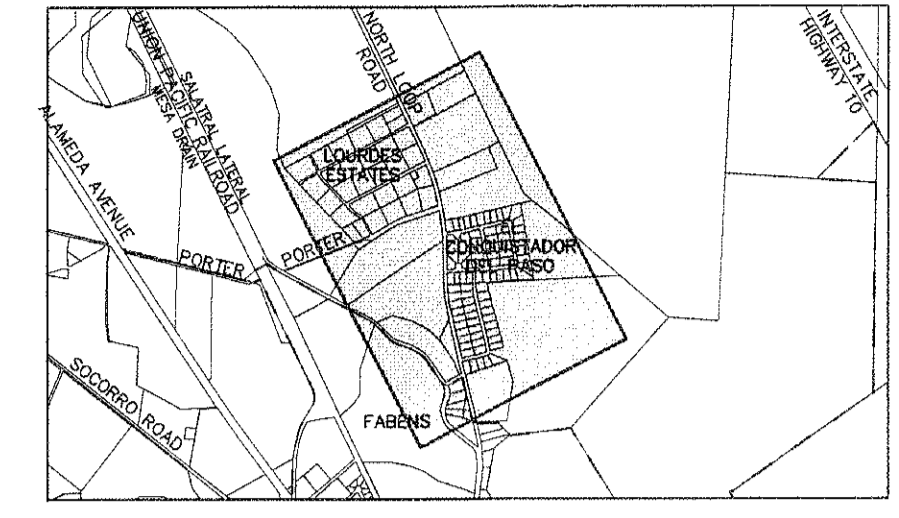
FOR MATERIAL ESTIMATING ONLY

UTILITY LOCATOR SERVICES	
COUNTY OF EL PASO	(915) 546-2015
LOWER VALLEY WATER DISTRICT	(915) 781-4460
FABENS I.S.D.	(915) 765-2603
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO ELECTRIC COMPANY	(915) 543-5720
TEXAS GAS SERVICE	(915) 680-7200
TIME WARNER COMMUNICATIONS	(915) 772-1123
U.S. SPRINT TELECOMM	(800) 521-0579
MCI SURVEILLANCE	(800) MCI-WORK
AT&T	(800) 852-3786

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1-800-344-8377

FOR FIELD LOCATING EXISTING UTILITIES



DATE	REVISIONS	BY

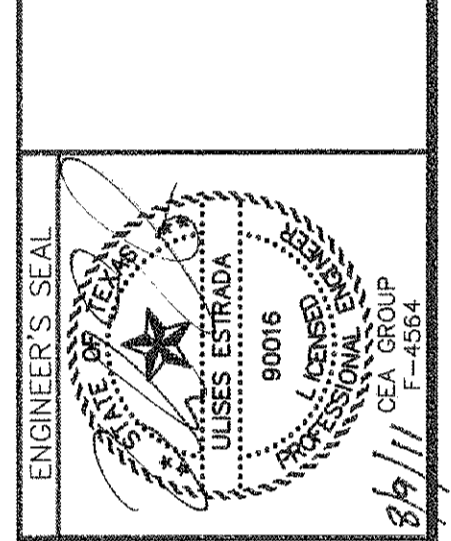
REFERENCES - BENCHMARKS

1. BENCHMARKS SHOWN ARE GRID BENCHMARKS DERIVED FROM RTK OBSERVATIONS OF THE LOWER VALLEY WATER DISTRICT SYSTEM GENERAL ZONE OF TEXAS. DISTANCES ARE GRID DISTANCES.

2. ELEVATION BENCHMARKS ARE FROM THE 1928 MEAN SEA LEVEL DATUM.

3. ELEVATION BENCHMARKS ARE FROM THE 1988 MEAN SEA LEVEL DATUM.

4. ELEVATION BENCHMARKS ARE FROM THE 1988 MEAN SEA LEVEL DATUM.



SCALE

Horizontal: AS SHOWN
 Vertical: N/A
 Contour Interval: N/A
 DATE: AUGUST 2011
 DESIGN BY: M.C.
 DRAWN BY: M.C.
 CHKD. BY: A.G.
 APPVD. BY: U.E.
 JOB No. 1030-023-WD

PROJECT NAME

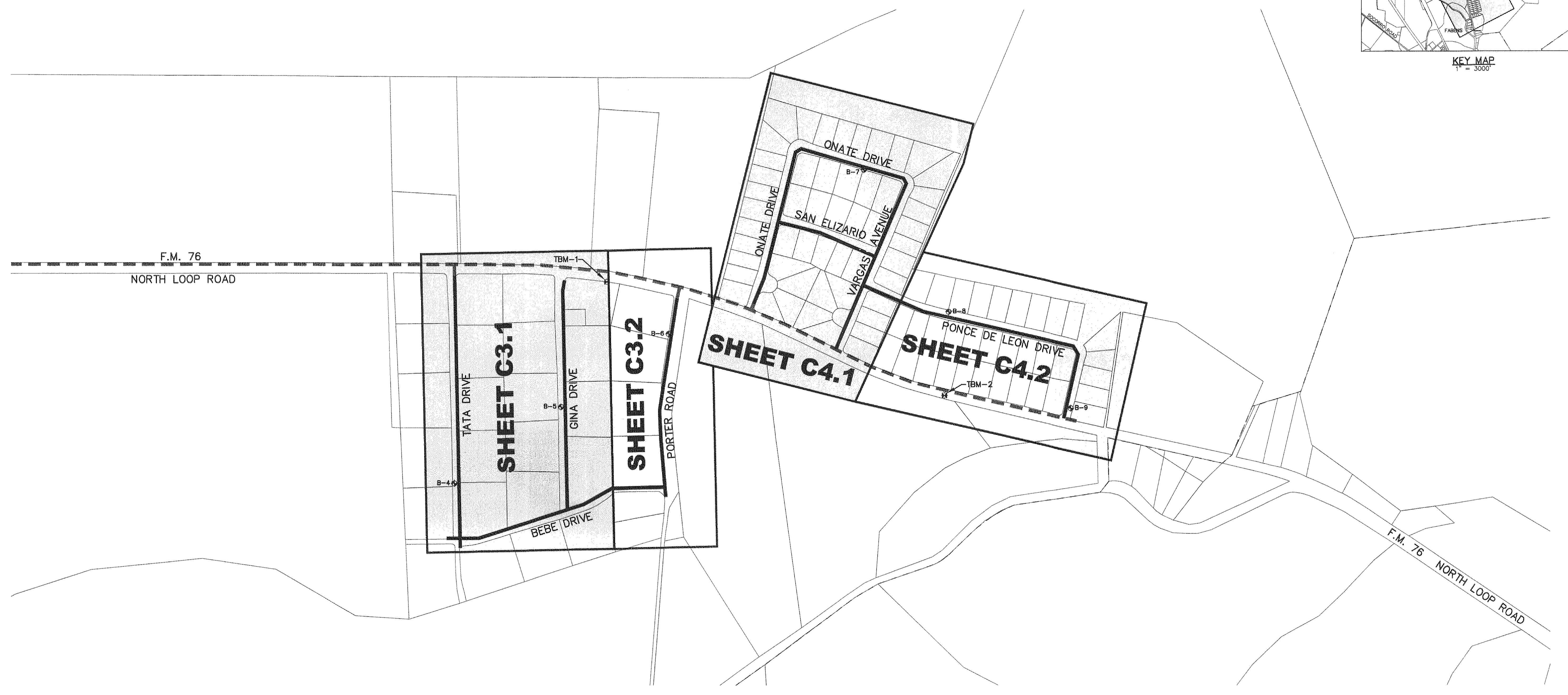
LOURDES ESTATES & EL CONQUISTADOR DEL PASO SUBDIVISIONS WATER MAIN EXTENSION FACILITIES
 (TEXAS DEPARTMENT OF RURAL AFFAIRS/C.D.B.G. NO. 710066)

SHEET TITLE

GENERAL WATER MAP

SHEET NO.

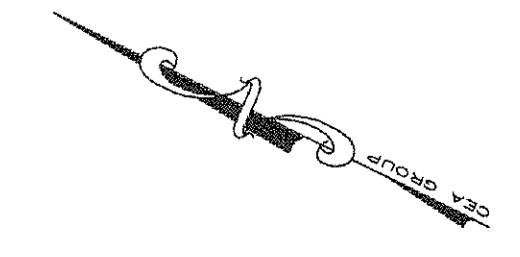
C2.1



- NOTES:**
- A SOILS INVESTIGATION REPORT WAS PERFORMED ON MARCH 1, 2010. THIS STUDY IS AVAILABLE FOR THE CONTRACTORS REVIEW AT ANY TIME AT THE ENGINEER'S OFFICE.
 - WATER IMPROVEMENTS WILL BE INSTALLED ALONG NORTH LOOP ROAD (F.M. 76) CONCURRENTLY. CONTRACTOR SHALL COORDINATE TIE-INS AT ALL LOCATIONS WITH OTHER CONTRACTORS/AREA RESIDENTS.

SURVEY CONTROL: (*NAVD88 DATUM)				
#	COORDINATES		ELEV. (*)	DESCRIPTION
	N	E		
TBM-1	10566765.46	481214.48	3915.78	5/8" REBAR
TBM-2	10564534.28	481529.71	3913.74	FOUND RAILROAD SPIKE

TBM = TEMPORARY BENCH MARK



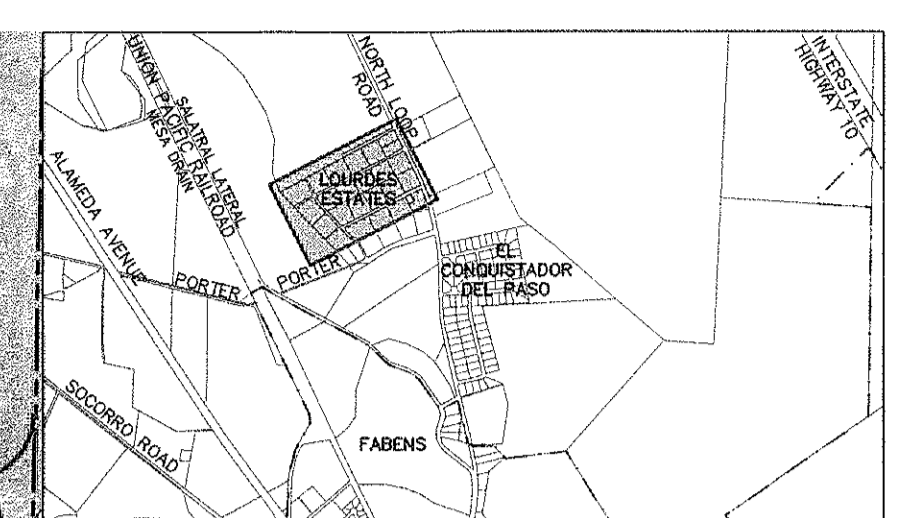
GENERAL WATER MAP
 SCALE: 1" = 300'

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UTILITY LOCATOR SERVICES	
COUNTY OF EL PASO	(915) 546-2015
LOWER VALLEY WATER DISTRICT	(915) 791-4480
FABENS I.S.D.	(915) 765-2603
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO ELECTRIC COMPANY	(915) 543-5720
TEXAS GAS SERVICE	(915) 680-7200
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U.S. SPRINT TELECOMM	(800) 521-0579
MCI SURVEILLANCE	(800) MCI-WORK
AT&T	(800) 852-3786

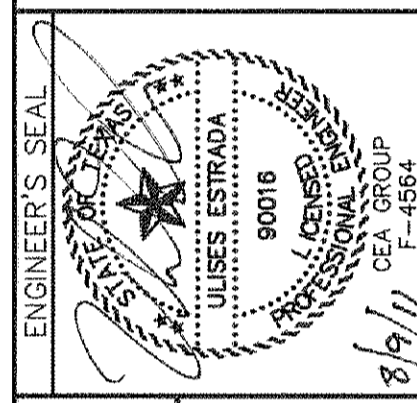
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DATE	REVISIONS	BY



- KEYED NOTES:**
- 1 8" TEE
 - 2 8" CROSS
 - 3 8" GATE VALVE
 - 4 8" PLUG (BLIND FLANGE)
 - 5 8" - 45° BEND
 - 6 8" - 22.5° BEND
 - 7 8" - 11.25° BEND
 - 8 8" VERTICAL BEND
 - 9 8" x 6" TEE
 - 10 8" x 6" REDUCER
 - 11 6" GATE VALVE
 - 12 6" PLUG
 - 13 FIRE HYDRANT
 - 14 SERVICE METER
- NOTES:**
- STATIONING FOR THIS PROJECT IS ALONG CENTERLINE OF THE PROPOSED PIPE.
 - PROPOSED WATER LINE TO BE AT FOUR (4') FEET MINIMUM COVER.
 - ALL DIMENSIONS ARE TO EXISTING FENCE LINES AND POWER POLES. DIMENSIONS ARE APPROXIMATE.
 - MINIMUM SEPARATION DISTANCE OF FIRE HYDRANT TO POWER POLE IS TEN (10') FEET.
 - SPARKPLUG TO COORDINATE FINAL LOCATION WATER SERVICE INSTALLATIONS WITH PROPERTY OWNER

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 Office: 915.544.5222 Fax: 915.544.5223 www.csaonline.net



SCALE	
Horizontal: 1" = 60'	N/A
Vertical: N/A	N/A
Contour Interval: N/A	N/A
DATE: AUGUST 2011	M.C.
DESIGN BY: M.C.	M.C.
DRAWN BY: M.C.	A.G.
CHKD. BY: U.E.	U.E.
APPRD. BY: U.E.	U.E.
JOB No. 1030-C023-WD	

PROJECT NAME
 LOURDES ESTATES &
 EL CONQUISTADOR DEL PASO SUBDIVISIONS
 WATER MAIN EXTENSION FACILITIES
 (TEXAS DEPARTMENT OF RURAL AFFAIRS/C.D.B.G. NO. 710066)

SHEET TITLE
 LOURDES ESTATES
 SUBDIVISION
 WATER MAIN
 IMPROVEMENTS
 (SHEET 1 OF 2)

SHEET NO.
 C3.1

MATCHLINE SEE SHEET C3.2

SITE PLAN
 SCALE: 1" = 60'

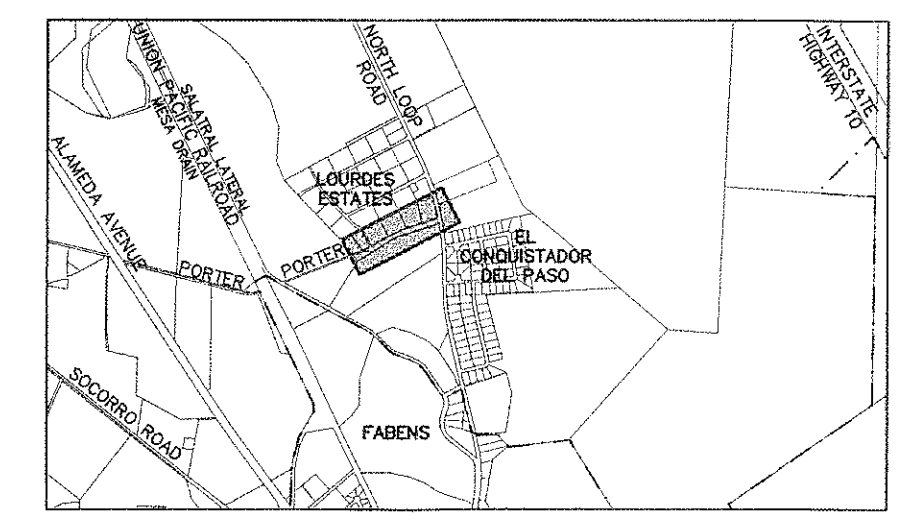
FOR MATERIAL ESTIMATING ONLY

UTILITY LOCATOR SERVICES	
COUNTY OF EL PASO	(915) 546-2015
LOWER VALLEY WATER DISTRICT	(915) 791-4480
FABENS I.S.D.	(915) 765-2603
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO ELECTRIC COMPANY	(915) 543-5720
TEXAS GAS SERVICE	(915) 680-7200
TIME WARNER COMMUNICATIONS	(915) 772-1123
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MCI SURVEILLANCE	(800) MCI-WORK
AT&T	(800) 852-3786

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1-800-344-8377

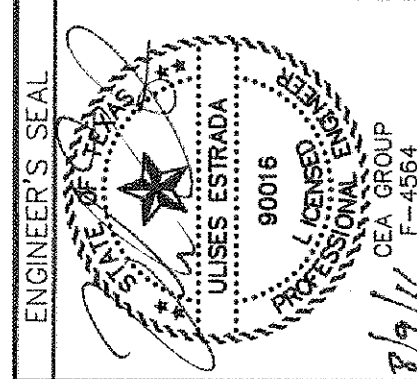
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REFERENCES - BENCHMARKS	
1. BENCHMARKS SHOWN ARE GROUND BENCHMARKS DERIVED FROM THE OBSERVATIONS OF THE TEXAS STATE SURVEY.	
2. BENCHMARKS SHOWN ARE GROUND BENCHMARKS DERIVED FROM THE OBSERVATIONS OF THE TEXAS STATE SURVEY.	
3. BENCHMARKS SHOWN ARE GROUND BENCHMARKS DERIVED FROM THE OBSERVATIONS OF THE TEXAS STATE SURVEY.	

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SCALE	
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Contour Interval: 10'	DATE: AUGUST 2011
DESIGN BY: M.C.	DRAWN BY: M.C.
CHKD. BY: A.G.	APPVD. BY: U.E.
JOB No. 1030-023-WD	

PROJECT NAME
**LOURDES ESTATES &
EL CONQUISTADOR DEL PASO SUBDIVISIONS
WATER MAIN EXTENSION FACILITIES**
(TEXAS DEPARTMENT OF RURAL AFFAIRS/C.D.B.G. NO. 710066)

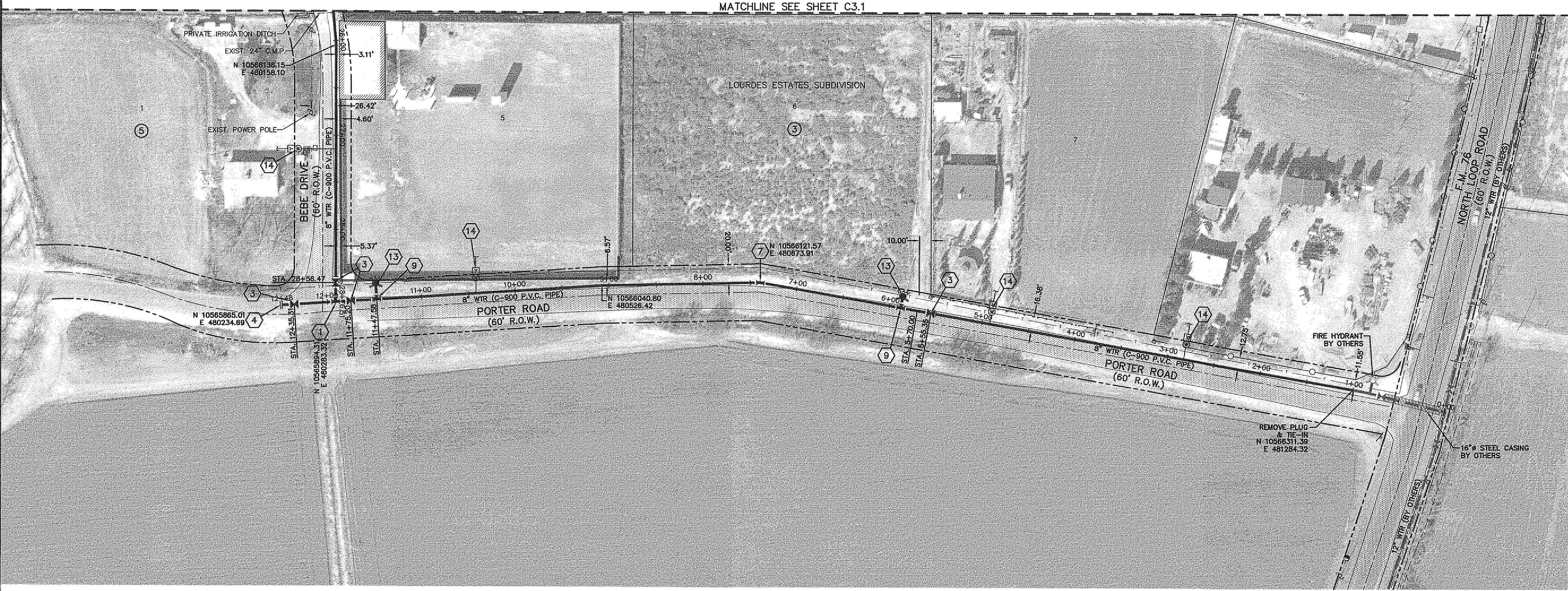
SHEET TITLE

LOURDES ESTATES
SUBDIVISION
WATER MAIN
IMPROVEMENTS

(SHEET 2 OF 2)

SHEET NO.

C3.2



KEYED NOTES:

- ① 8" TEE
- ② 8" CROSS
- ③ 8" GATE VALVE
- ④ 8" PLUG (BLIND FLANGE)
- ⑤ 8" - 45° BEND
- ⑥ 8" - 22.5° BEND
- ⑦ 8" - 11.25° BEND
- ⑧ 8" VERTICAL BEND
- ⑨ 8" X 6" TEE
- ⑩ 8" X 6" REDUCER
- ⑪ 6" GATE VALVE
- ⑫ 6" PLUG
- ⑬ FIRE HYDRANT
- ⑭ SERVICE METER

NOTES:

1. STATIONING FOR THIS PROJECT IS ALONG CENTERLINE OF THE PROPOSED PIPE.
2. PROPOSED WATER LINE TO BE AT FOUR (4') FEET MINIMUM COVER.
3. ALL DIMENSIONS ARE TO EXISTING FENCE LINES AND POWER POLES. DIMENSIONS ARE APPROXIMATE.
4. MINIMUM SEPARATION DISTANCE OF FIRE HYDRANT TO POWER POLE IS TEN (10') FEET.
5. SPARKPLUG TO COORDINATE FINAL LOCATION WATER SERVICE INSTALLATIONS WITH PROPERTY OWNER

SITE PLAN
SCALE: 1" = 60'

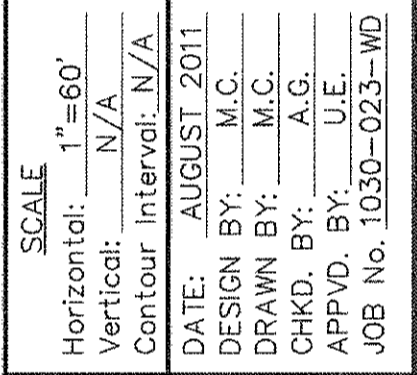
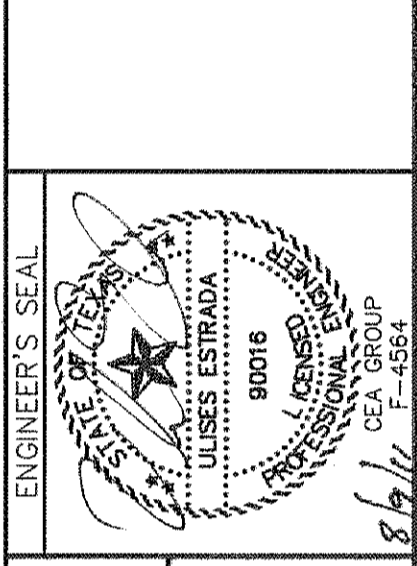
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UTILITY LOCATOR SERVICES	
COUNTY OF EL PASO	(915) 546-2015
LOWER VALLEY WATER DISTRICT	(915) 791-4480
FABENS I.S.D.	(915) 765-2603
EL PASO ENERGY CORPORATION	(915) 496-5244
EL PASO ELECTRIC COMPANY	(915) 543-5720
TEXAS GAS SERVICE	(915) 680-7200
TIME WARNER COMMUNICATIONS	(915) 772-1123
U.S. SPRINT TELECOMM	(800) 521-0579
MCI SURVEILLANCE	(800) MCI-WORK
A&T	(800) 852-3786

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DATE	BY	REVISIONS

REFERENCES - BENCHMARKS
 1. BENCHMARKS REFERRED TO IN THIS PLAN...
 2. BENCHMARKS REFERRED TO IN THIS PLAN...
 3. ELEVATION READINGS...
 4. COORDINATE READINGS...



PROJECT NAME
 LOURDES ESTATES &
 EL CONQUISTADOR DEL PASO SUBDIVISIONS
 WATER MAIN EXTENSION FACILITIES
 (TEXAS DEPARTMENT OF RURAL AFFAIRS/C.D.B.G. NO. 710066)

SHEET TITLE
 EL CONQUISTADOR DEL PASO SUBDIVISION
 WATER MAIN IMPROVEMENTS
 (SHEET 1 OF 2)

SHEET NO.
 C4.1

FOR MATERIAL ESTIMATING ONLY



KEYED NOTES:

- ① 8" TEE
- ② 8" CROSS
- ③ 8" GATE VALVE
- ④ 8" PLUG (BLIND FLANGE)
- ⑤ 8" - 45° BEND
- ⑥ 8" - 22.5° BEND
- ⑦ 8" - 11.25° BEND
- ⑧ 8" VERTICAL BEND
- ⑨ 8" X 6" TEE
- ⑩ 8" X 6" REDUCER
- ⑪ 6" GATE VALVE
- ⑫ 6" PLUG
- ⑬ FIRE HYDRANT
- ⑭ SERVICE METER

NOTES:

1. STATIONING FOR THIS PROJECT IS ALONG CENTERLINE OF THE PROPOSED PIPE.
2. PROPOSED WATER LINE TO BE AT FOUR (4') FEET MINIMUM COVER.
3. ALL DIMENSIONS ARE TO EXISTING FENCE LINES AND POWER POLES. DIMENSIONS ARE APPROXIMATE.
4. MINIMUM SEPARATION DISTANCE OF FIRE HYDRANT TO POWER POLE IS TEN (10') FEET.
5. SPARKPLUG TO COORDINATE FINAL LOCATION WATER SERVICE INSTALLATIONS WITH PROPERTY OWNER

SITE PLAN
 SCALE: 1" = 60'

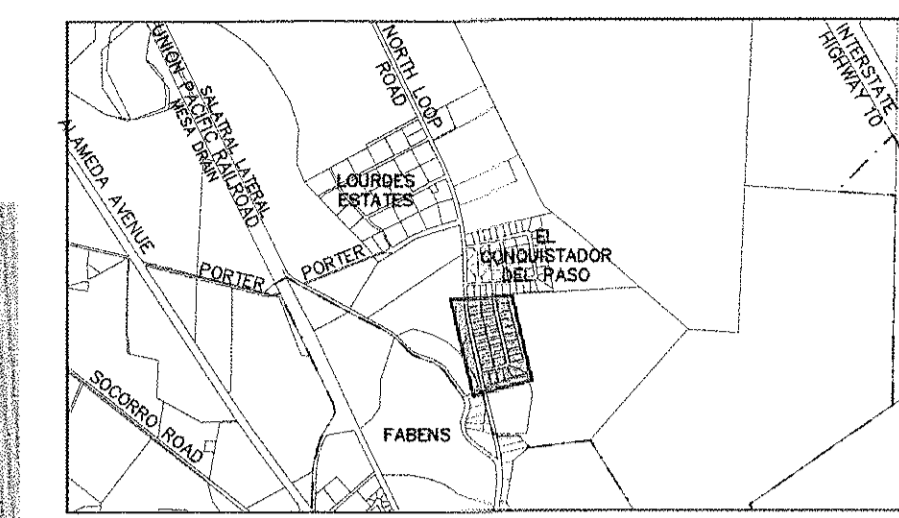
MATCHLINE SEE SHEET C4.2

UTILITY LOCATOR SERVICES		
COUNTY OF EL PASO	(915) 546-2015	
LOWER VALLEY WATER DISTRICT	(915) 791-4480	
FABENS I.S.D.	(915) 765-2603	
EL PASO ENERGY CORPORATION	(915) 496-5244	
EL PASO ELECTRIC COMPANY	(915) 543-5720	
TEXAS GAS SERVICE	(915) 680-7200	
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U.S. SPRINT TELECOMM	(800) 521-0579	
MCI SURVEILLANCE	(800) MCI-WORK	
AT&T	(800) 852-3786	

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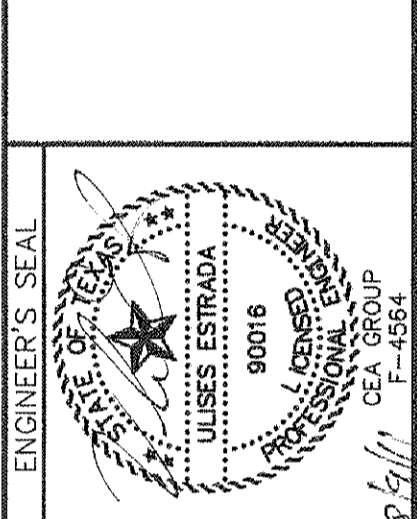
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engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4584
4712 Woodrow Egan, Ste. F El Paso, TX 79924
Cite: 713/441-8222 Fax: 713/441-8223 www.ceea.com



SCALE	
Horizontal:	1" = 60'
Vertical:	N/A
Contour Interval:	N/A
DATE:	AUGUST 2011
DESIGN BY:	M.C.
DRAWN BY:	M.C.
CHKD. BY:	A.G.
APPROV. BY:	J.G.
JOB NO.	1030-023-WD

KEYED NOTES:

- ① 8" TEE
- ② 8" CROSS
- ③ 8" GATE VALVE
- ④ 8" PLUG (BLIND FLANGE)
- ⑤ 8" - 45° BEND
- ⑥ 8" - 22.5° BEND
- ⑦ 8" - 11.25° BEND
- ⑧ 8" VERTICAL BEND
- ⑨ 8" X 6" TEE
- ⑩ 8" X 6" REDUCER
- ⑪ 6" GATE VALVE
- ⑫ 6" PLUG
- ⑬ FIRE HYDRANT
- ⑭ SERVICE METER

NOTES:

1. STATIONING FOR THIS PROJECT IS ALONG CENTERLINE OF THE PROPOSED PIPE.
2. PROPOSED WATER LINE TO BE AT FOUR (4') FEET MINIMUM COVER.
3. ALL DIMENSIONS ARE TO EXISTING FENCE LINES AND POWER POLES. DIMENSIONS ARE APPROXIMATE.
4. MINIMUM SEPARATION DISTANCE OF FIRE HYDRANT TO POWER POLE IS TEN (10') FEET.
5. SPARKPLUG TO COORDINATE FINAL LOCATION WATER SERVICE INSTALLATIONS WITH PROPERTY OWNER.
6. SERVICE CONNECTIONS FOR LOTS 15-24, BLOCK 4 NOT PART OF THIS CONTRACT. YARDLINES TO BE INSTALLED UNDER THIS PROJECT.



SITE PLAN
SCALE: 1" = 60'

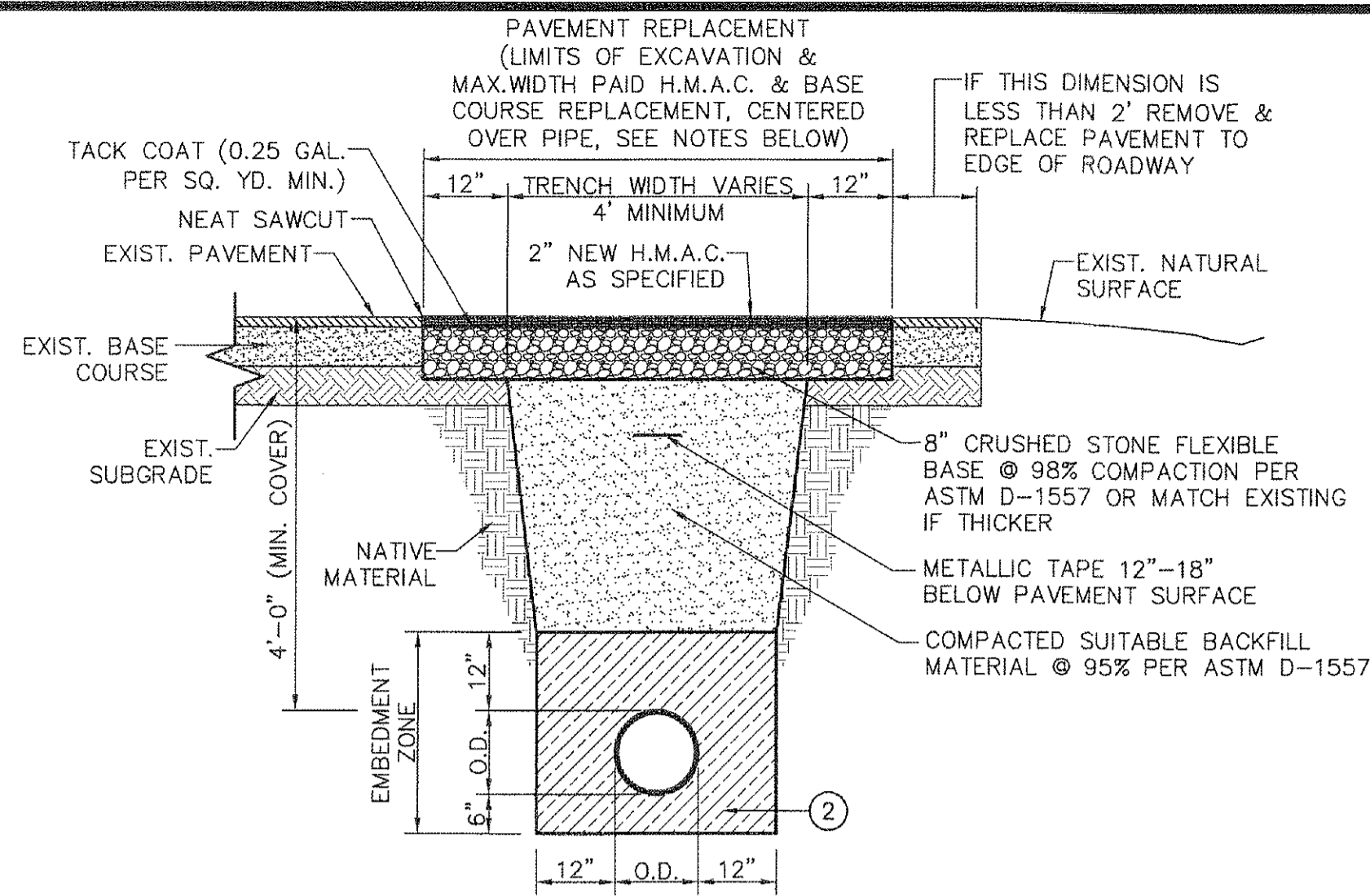
SHEET TITLE

EL CONQUISTADOR DEL PASO SUBDIVISION WATER MAIN IMPROVEMENTS (SHEET 2 OF 2)

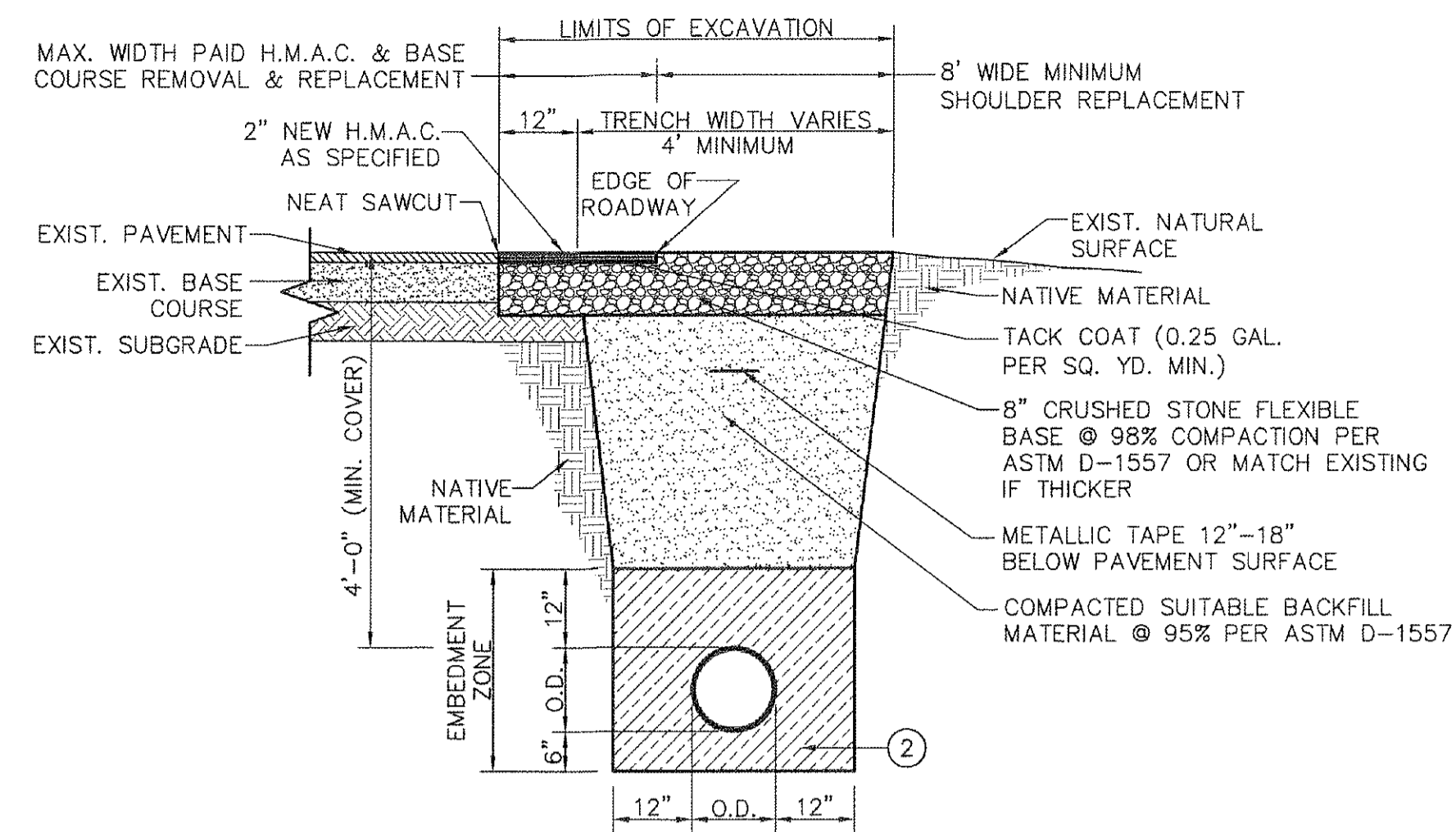
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C4.2

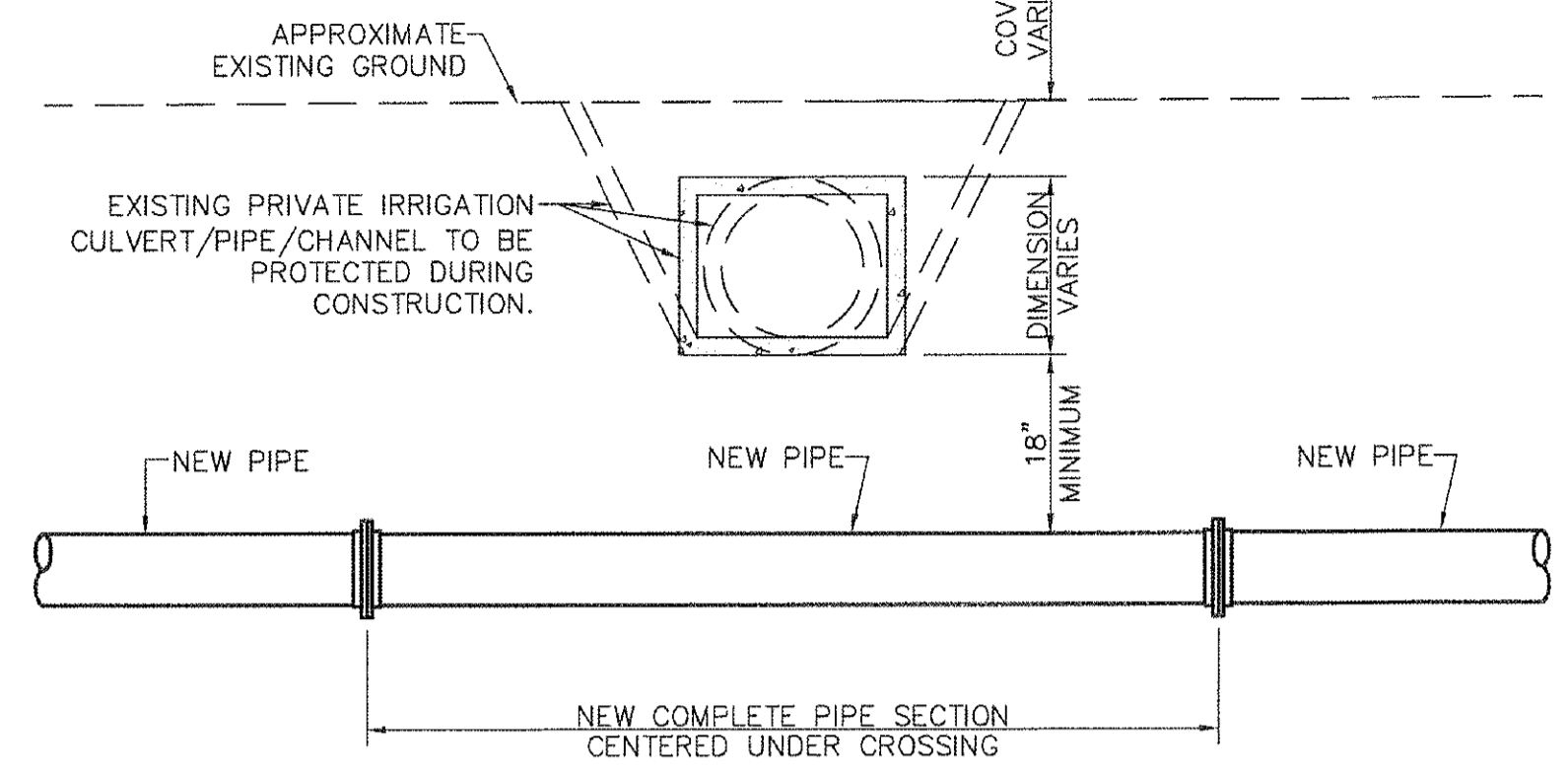
FOR MATERIAL ESTIMATING ONLY



1
C5.1
TYPICAL TRENCH & PAVEMENT REPLACEMENT W/ C.S.B.C. UNDER COUNTY R.O.W. DETAIL
SCALE: N.T.S.

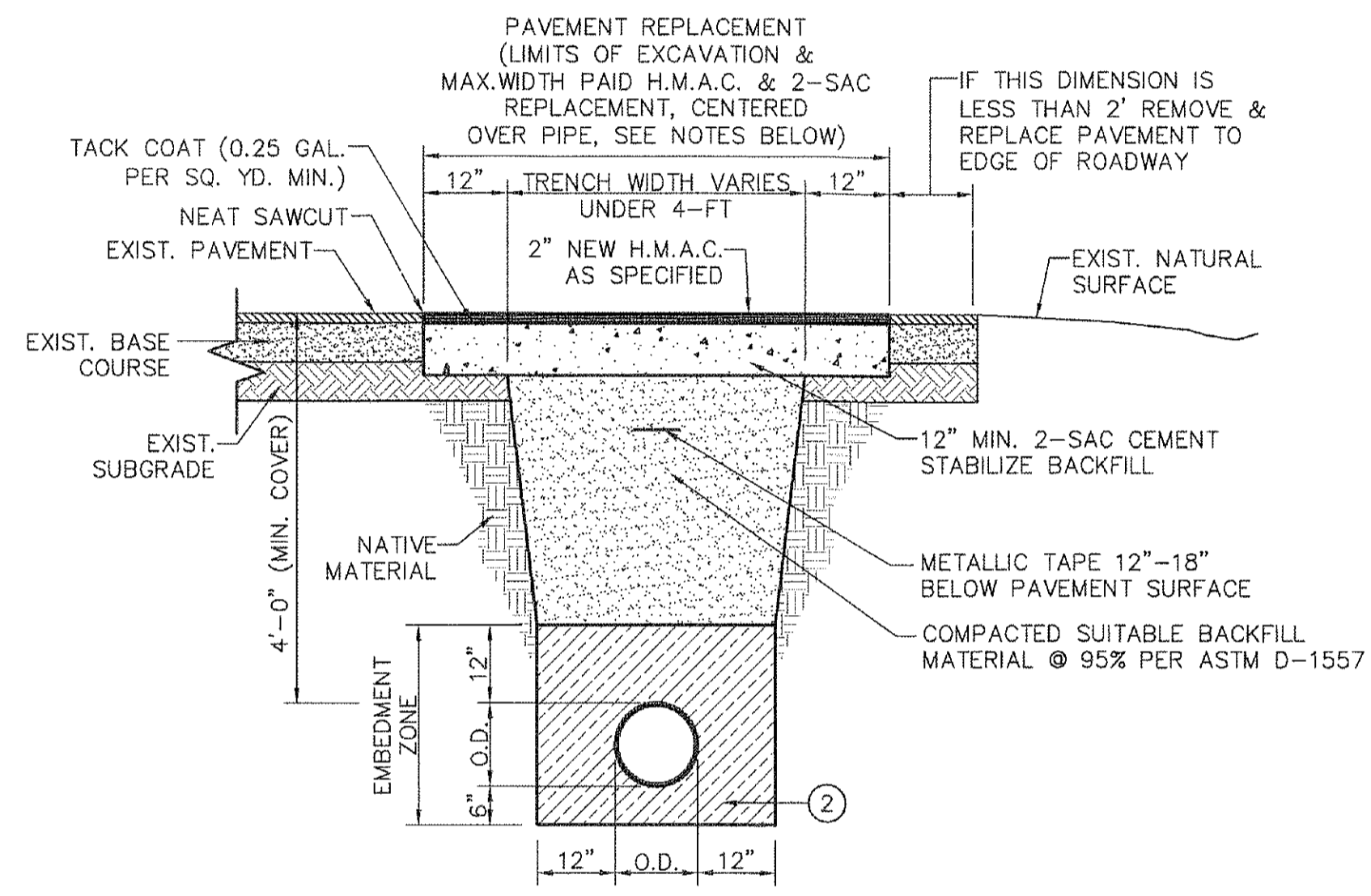


2
C5.1
TYPICAL TRENCH & PAVEMENT & APRON REPLACEMENT UNDER COUNTY R.O.W. DETAIL
SCALE: N.T.S.

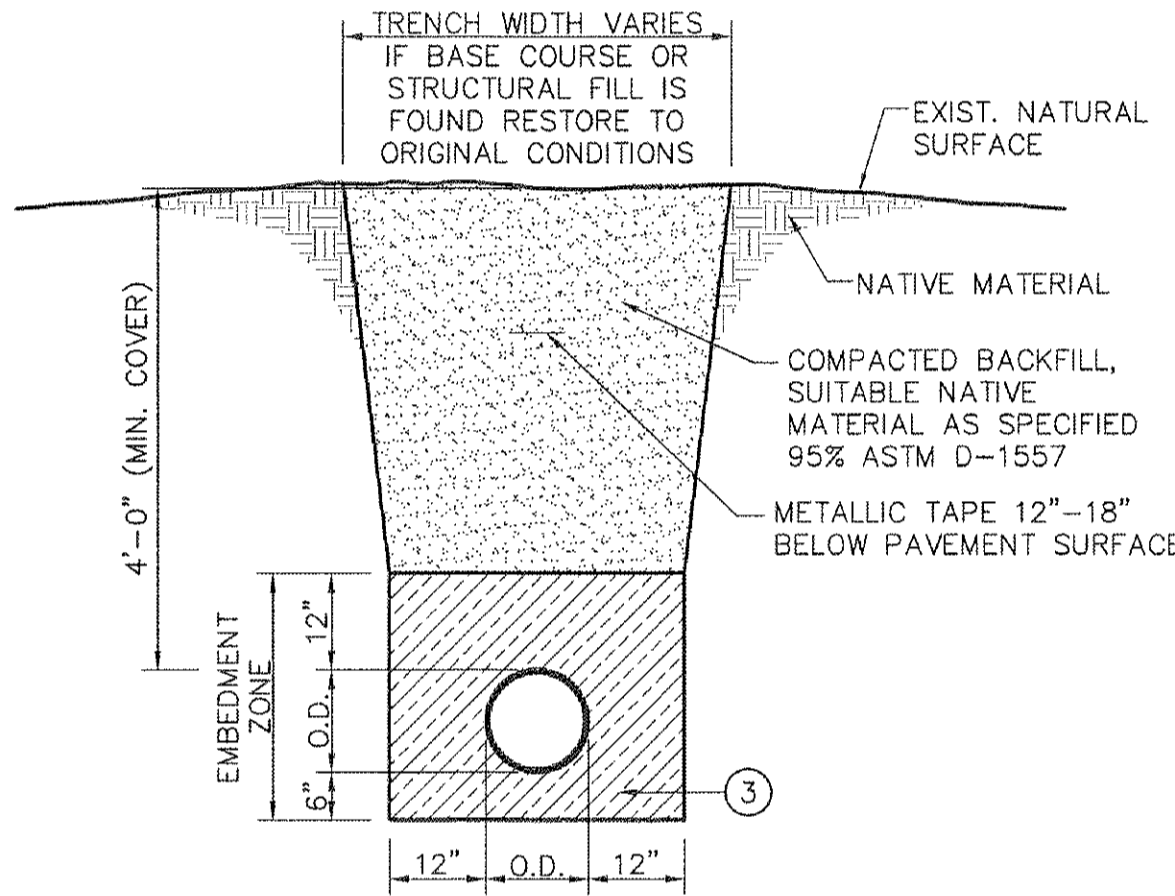


- NOTES:**
1. CONTRACTOR SHALL VERIFY LOCATION, DEPTH, SIZE AND TYPE OF CULVERT/PIPE BEFORE CONSTRUCTION.
 2. CONTRACTOR SHALL MAINTAIN A MINIMUM SEPARATION DISTANCE OF EIGHTEEN INCHES BELOW IRRIGATION CULVERT/PIPE TO TOP OF NEW SEWER PIPE.
 3. CONTRACTOR TO INSTALL A MINIMUM 20 L.F. PIPE SECTION CENTERED UNDER CROSSING.

5
C5.1
TYPICAL CROSSING UNDER PRIVATE CULVERT/PIPE/CHANNEL DETAIL
SCALE: 3/8" = 1'-0"



3
C5.1
TYPICAL TRENCH & PAVEMENT REPLACEMENT W/ 2-SAC UNDER COUNTY R.O.W. DETAIL
SCALE: N.T.S.



4
C5.1
TYPICAL TRENCH UNDER NATURAL GROUND DETAIL
SCALE: N.T.S.

- TRENCH & BACKFILL NOTES:**
1. THE PAVEMENT REPLACEMENT SYSTEM (HMAC, BASE, SUBGRADE) SHOWN ARE GENERAL REQUIREMENTS AND WILL WORK IN GOOD TO MODERATE SOIL CONDITIONS. REFER TO SITE SPECIFIC GEOTECHNICAL STUDY FOR PAVEMENT RECOMMENDATIONS IN AREAS OF BAD SOIL CONDITIONS AND FOR NEW SUBDIVISIONS.
 2. **UNIFORM TRENCH BOTTOM** - PIPE SHALL GENERALLY BE LAID ON UNIFORM, EVENLY GRADED TRENCH BOTTOM. TRENCH BOTTOM SHALL BE SHAPED AT EVERY BELL TO PROVIDE UNIFORM BEARING OF PIPE BARREL.
 3. **NON-UNIFORM TRENCH BOTTOM** - WHEN A UNIFORM TRENCH BOTTOM IS UNATTAINABLE (ie ROCKY OR UNEVENLY GRADED) A 6" SAND BEDDING SHALL BE REQUIRED.
 4. **EMBEDMENT BACKFILL** - USE CLASS II COARSE GRAVELS PER ASTM D-2487 W/<12% FINES & MAX SIZE 1-1/2". NATIVE MATERIAL OR IMPORTED SELECT MATERIAL, MEETING OR EXCEEDING CLASS II REQUIREMENTS, MAY BE USED. CLASS I MATERIAL (MAXIMUM 1-1/2" SIZE) IS ACCEPTABLE AT THE DISCRETION OF THE CONTRACTOR.
 5. **FINAL BACKFILL** - SUITABLE COMPACTED NATIVE MATERIAL, MINIMUM 3" SIZE IS ACCEPTABLE.
 6. SHORING (TRENCH SAFETY) SHALL BE AS PER O.S.H.A. REQUIREMENTS. CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM R.O.W. OWNER TO PERFORM "ANGLE OF REPOSE" ON TRENCH WALLS.
 7. SUITABLE BACKFILL MATERIAL SHALL MEET OR EXCEED ASTM D-2487 CLASS II REQUIREMENTS, W/<12% FINES AND MAX. SIZE 1 1/2".
 8. THE SLOPING OF THE TRENCH WALLS WILL NOT BE PERMITTED ALONG TXDOT RIGHT-OF-WAY.

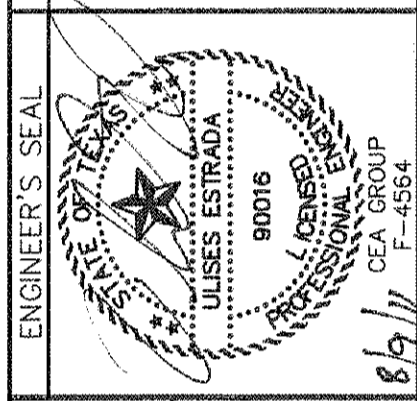
- EXCAVATION NOTES:**
9. CONTRACTOR SHALL COORDINATE WITH EL PASO COUNTY INSPECTOR AND TXDOT INSPECTOR FOR INSPECTION AND TESTING ABOVE THE EMBEDMENT ZONE.
 10. IF MORE THAN 50% OF THE ROADWAY PAVEMENT WIDTH IS DAMAGED, CONTRACTOR SHALL REPLACE THE ENTIRE ROADWAY PAVEMENT WIDTH.
 11. CONTRACTOR TO COORDINATE EXISTING PAVEMENT LIMITS WITH OWNER/ENGINEER'S RESPONSIBILITY BEFORE REMOVING PAVEMENT. CONTRACTOR TO REPLACE PAVEMENT TO ORIGINAL PAVEMENT LIMITS.
 12. IF PAVEMENT REPLACEMENT IS SIX (6') FEET OR LESS REFER TO DETAIL C5.1. IF PAVEMENT REPLACEMENT IS SIX (6') FEET OR GREATER REFER TO DETAIL C5.1.

REFERENCES - BENCHMARKS

1. BENCHMARKS SHOWN ARE THE BENCHMARKS SHOWN ON THE PLANS AND ARE TO BE USED FOR ALL CONSTRUCTION.
2. BENCHMARKS ARE TO BE USED FOR ALL CONSTRUCTION.
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DATE	REVISIONS	BY

CSA
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM #4584
4712 Woodrow Bean, Ste. F El Paso, TX 79924
Office 915.544.5202 Fax 915.544.5203 www.csaengr.com



SCALE
Horizontal: AS SHOWN
Vertical: 1/4" = 1'-0"
Contour Interval: 1'-0"
DATE: AUGUST 2011
DESIGN BY: M.C.
DRAWN BY: M.C.
CHKD. BY: A.G.
APPVD. BY: U.E.
JOB No. 1030-023-WD

PROJECT NAME
LOURDES ESTATES & EL CONQUISTADOR DEL PASO SUBDIVISIONS WATER MAIN EXTENSION FACILITIES (TEXAS DEPARTMENT OF RURAL AFFAIRS/C.D.B.G. NO. 710066)

SHEET TITLE

TRENCH DETAILS

SHEET NO.

C5.1

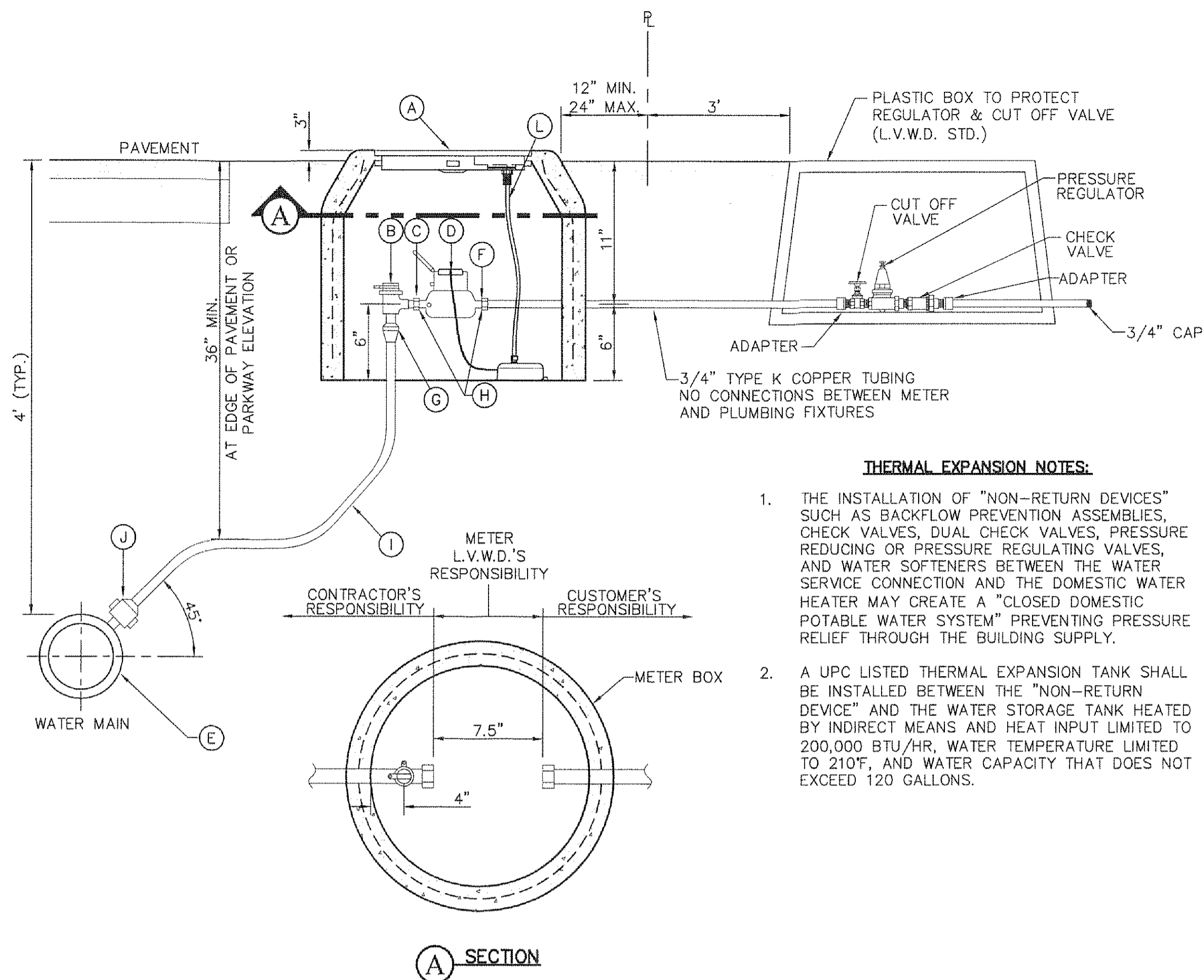
FOR MATERIAL ESTIMATING ONLY

NOTES:

- WHERE NO CURB AND GUTTER EXISTS, METER IS TO BE SET NEAR PROPERTY LINE, AS SHOWN.
- CONTRACTOR SHALL FURNISH AND INSTALL ALL FITTINGS, PIPING AND VALVES FROM MAINLINE CONNECTION TO THE INLET SIDE OF THE METER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A PLUMBER EXTEND THE SERVICE FROM THE DISCHARGE SIDE OF THE METER OR BACKFLOW PREVENTOR, TO THE RESIDENCE.

KEYED NOTES:

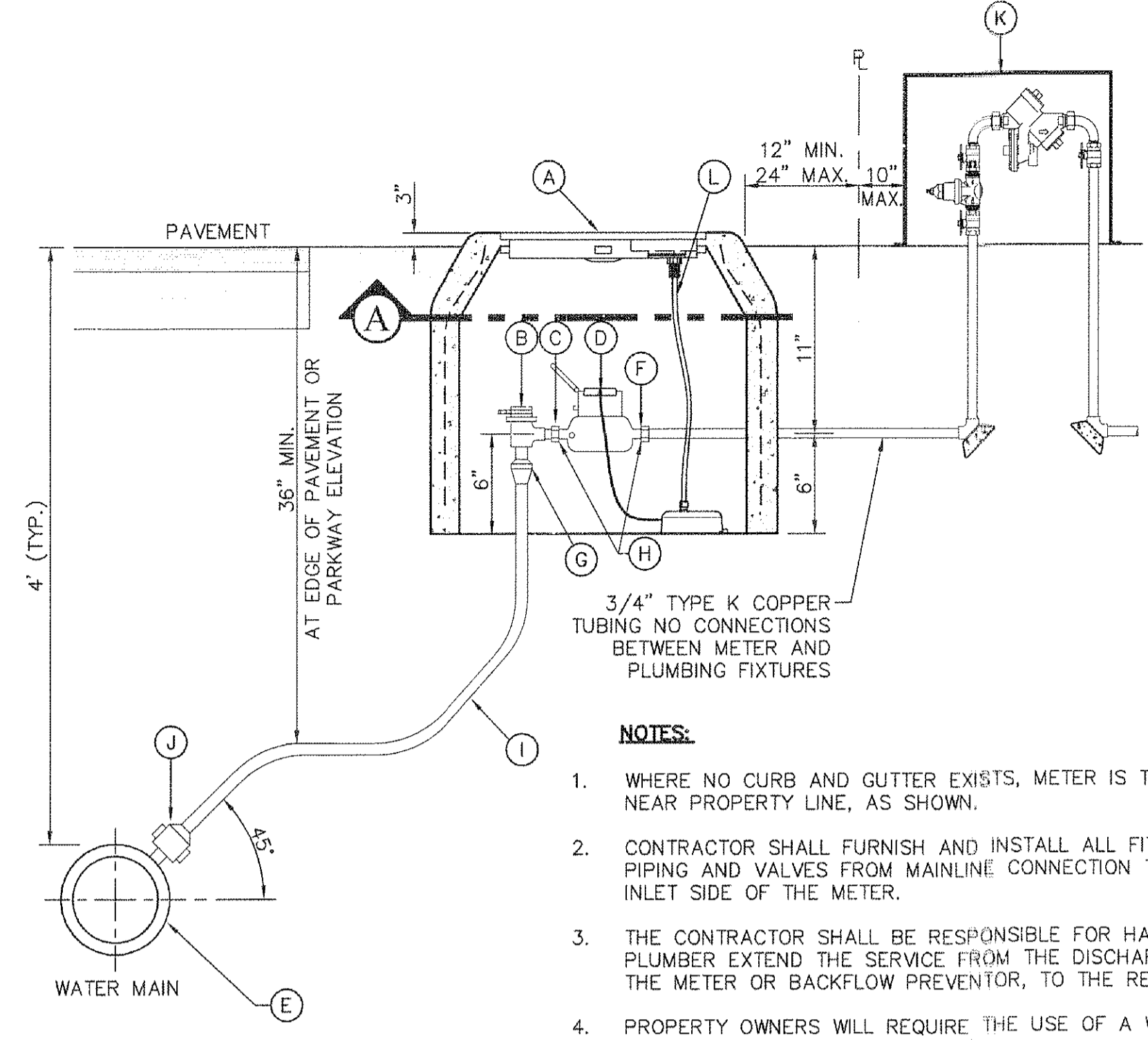
- L.V.W.D. STD. METER BOX TYPE "A" SHALL BE SET 3" HIGHER THAN SURROUNDING GROUND OR AT CURB LEVEL.
- 3/4" ANGLE BALL VALVE. COPPER COMPRESSION BY METER COUPLING WITH LOCK-WING.
- END OF CONTRACTORS RESPONSIBILITY, BEGINNING OF L.V.W.D.'S.
- WATER METER TO BE INSTALLED BY LVWD. AN 8" GAP SHALL BE LEFT FOR METER INSTALLATION.
- DOUBLE STRAP SERVICE SADDLE ON EXISTING PIPE. NEW PIPE TO USE MANUFACTURER SPECIFIED SINGLE STRAP SADDLE.
- END OF L.V.W.D.'S RESPONSIBILITY AND BEGINNING OF CUSTOMERS.
- COMPRESSION FITTING OF SERVICE LINE.
- INLET AND OUTLET COUPLING; CONTRACTOR'S AND CUSTOMER'S RESPONSIBILITY.
- 3/4" (TYPE K) COPPER TUBING.
- 3/4" CORPORATION STOP, COMPRESSION X COMPRESSION.
- PRESSURE REGULATOR ASSEMBLY LOCATED WITHIN PROPERTY (TYP.).
- NEPTUNE R9000 TRANSPONDER.



1 TYPICAL 3/4" SERVICE INSTALLATION DETAIL
SCALE: N.T.S.

KEYED NOTES:

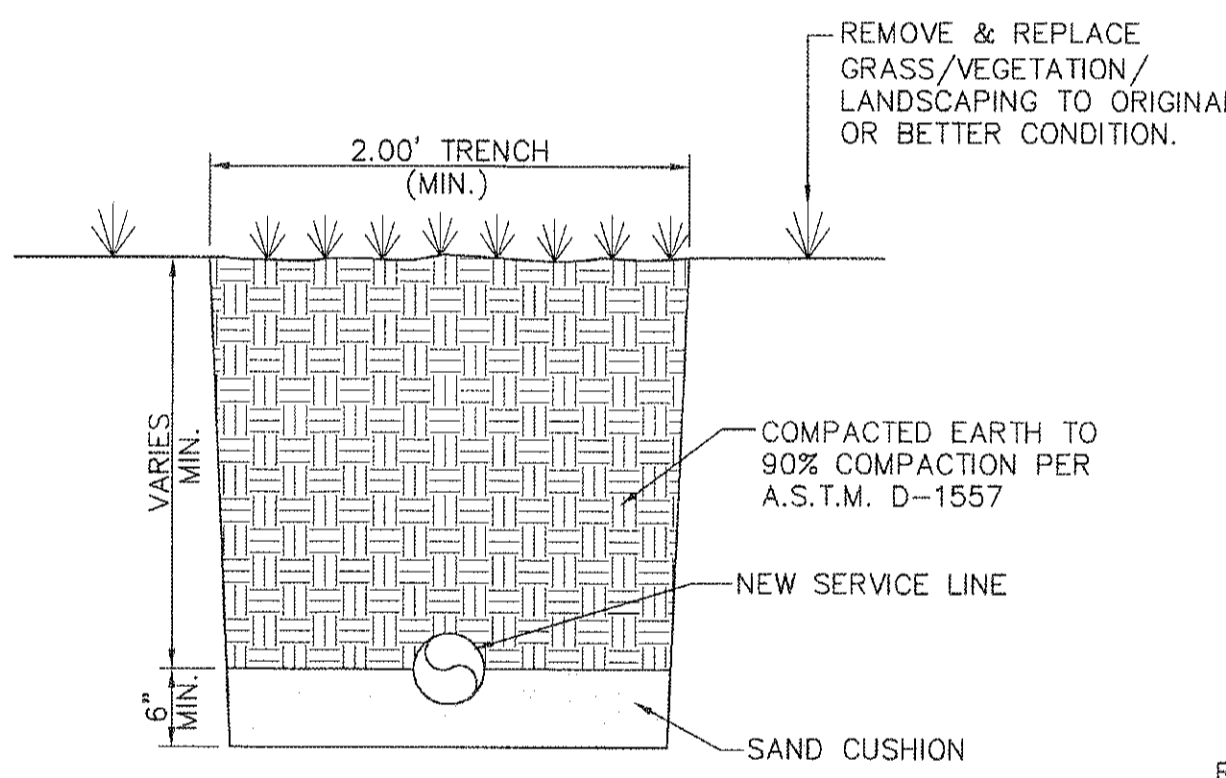
- L.V.W.D. STD. METER BOX TYPE "B" SHALL BE SET 3" HIGHER THAN SURROUNDING GROUND OR AT CURB LEVEL.
- 1" ANGLE BALL VALVE. COPPER COMPRESSION BY METER COUPLING WITH LOCK-WING.
- END OF CONTRACTORS RESPONSIBILITY, BEGINNING OF L.V.W.D.'S.
- WATER METER TO BE INSTALLED BY LVWD. AN 8" GAP SHALL BE LEFT FOR METER INSTALLATION.
- DOUBLE STRAP SERVICE SADDLE ON EXISTING PIPE. NEW PIPE TO USE MANUFACTURER SPECIFIED SINGLE STRAP SADDLE.
- END OF L.V.W.D.'S RESPONSIBILITY AND BEGINNING OF CUSTOMERS.
- COMPRESSION FITTING OF SERVICE LINE.
- INLET AND OUTLET COUPLING; CONTRACTOR'S AND CUSTOMER'S RESPONSIBILITY.
- 1" (TYPE K) COPPER TUBING.
- 1" CORPORATION STOP, COMPRESSION X COMPRESSION.
- BACKFLOW PREVENTOR AND ENCLOSURE ASSEMBLY AS REQUIRED BY L.V.W.D.
- NEPTUNE R9000 TRANSPONDER.



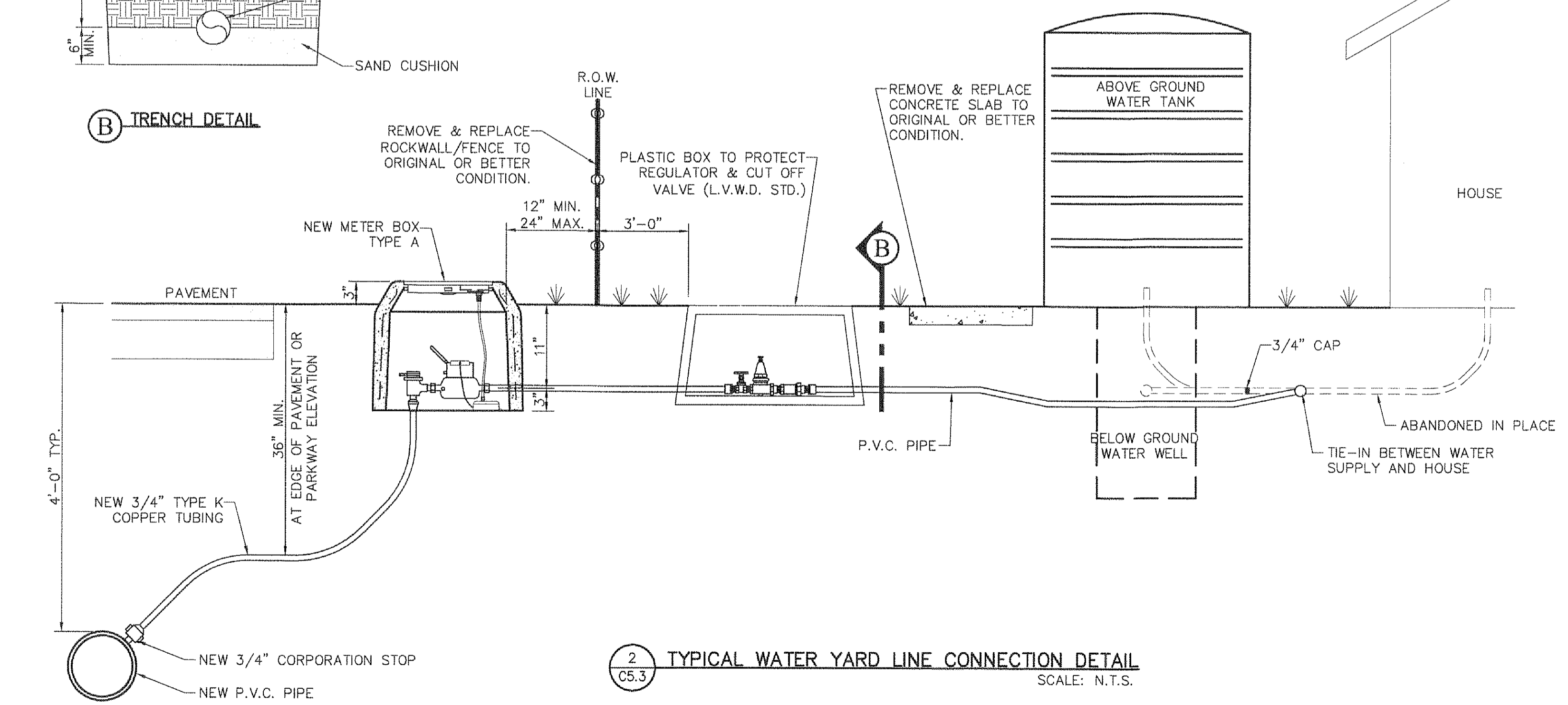
3 TYPICAL 1" SERVICE INSTALLATION DETAIL
SCALE: N.T.S.

THERMAL EXPANSION NOTES:

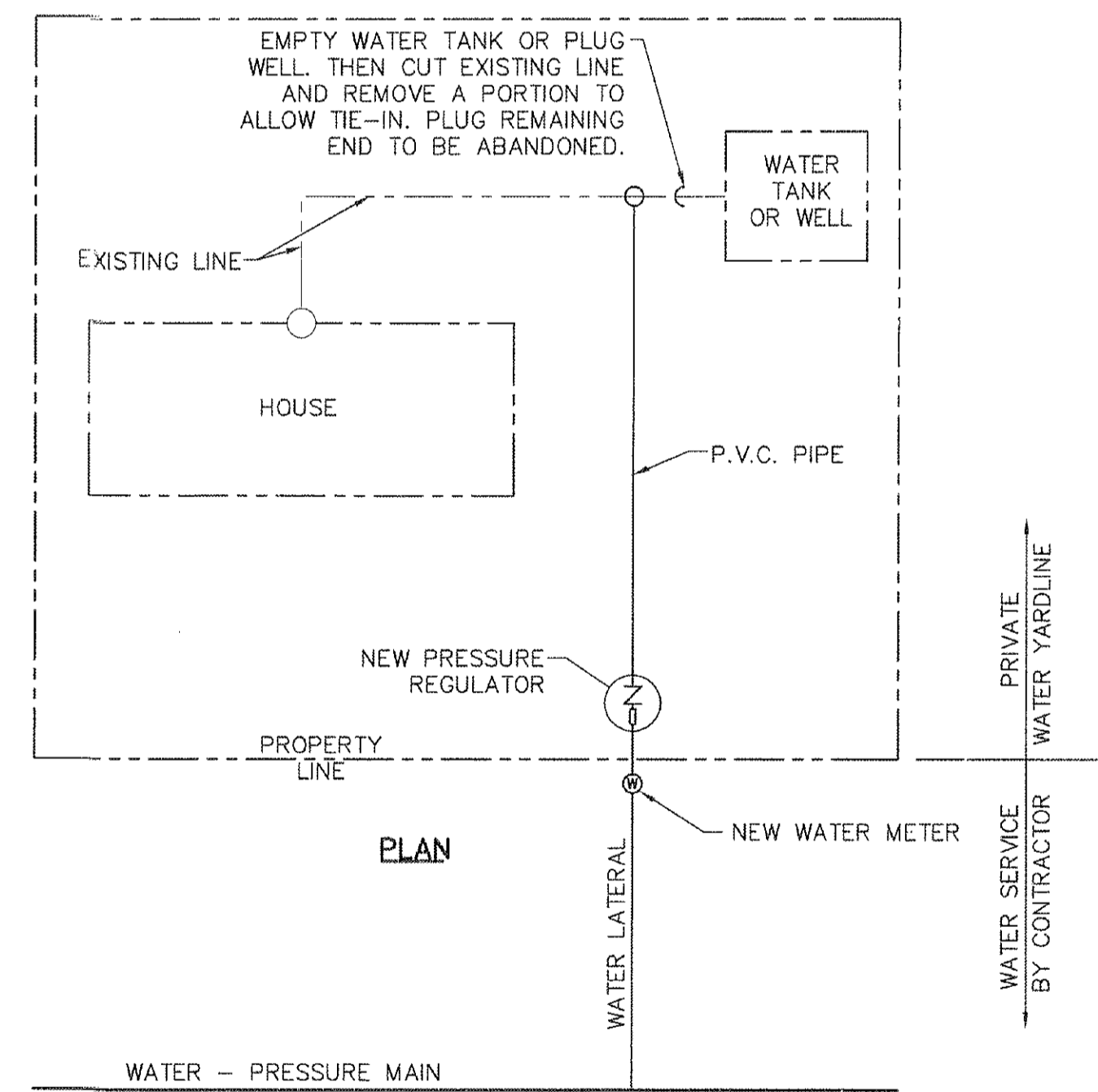
- THE INSTALLATION OF "NON-RETURN DEVICES" SUCH AS BACKFLOW PREVENTION ASSEMBLIES, CHECK VALVES, DUAL CHECK VALVES, PRESSURE REDUCING OR PRESSURE REGULATING VALVES, AND WATER SOFTENERS BETWEEN THE WATER SERVICE CONNECTION AND THE DOMESTIC WATER HEATER MAY CREATE A "CLOSED DOMESTIC POTABLE WATER SYSTEM" PREVENTING PRESSURE RELIEF THROUGH THE BUILDING SUPPLY.
- A UPC LISTED THERMAL EXPANSION TANK SHALL BE INSTALLED BETWEEN THE "NON-RETURN DEVICE" AND THE WATER STORAGE TANK HEATED BY INDIRECT MEANS AND HEAT INPUT LIMITED TO 200,000 BTU/HR, WATER TEMPERATURE LIMITED TO 210°F, AND WATER CAPACITY THAT DOES NOT EXCEED 120 GALLONS.



2 TRENCH DETAIL



4 TYPICAL WATER YARD LINE CONNECTION DETAIL
SCALE: N.T.S.



NOTES:

- THIS PLAN VIEW IS APPROVED FOR ILLUSTRATION ONLY. ACTUAL FIELD CONDITIONS WILL VARY.
- ELBOWS OF 45 DEGREE ANGLE OR LESS MUST BE USED FOR THE ENTIRE WORK. ALL INSTALLATIONS MUST PASS PLUMBING INSPECTION AND COMPLY WITH APPLICABLE CODES REQUIREMENTS.
- LOCATE ALL EXISTING UTILITIES AND MAINTAIN THE REQUIRED SEPARATION BETWEEN WATER AND WASTE WATER LINE.
- ADDITIONAL LINES SEPARATELY CONNECTED TO THE TANK OR DRAINED TO THE YARD WILL ALSO BE CONNECTED TO THE NEW 3/4 INCH PRIVATE WATER YARDLINE.
- UNDER CERTAIN CONDITIONS FIELD INVESTIGATIONS WILL BE REQUIRED TO DETERMINE THE ADEQUACY OF THE DEPTH ON THE LATERAL.

5 TYPICAL WATER YARD LINE TIE-IN PLAN VIEW
SCALE: N.T.S.

DATE	REVISIONS	BY

REFERENCES - BENCHMARKS

1. BENCHMARKS SHOWN ARE PER OBSERVATIONS FROM THE PROJECT. THE LOCATION OF THE BENCHMARKS ARE AS SHOWN ON THE PLAN. THE BENCHMARKS ARE TO BE USED FOR THE LOCATION OF THE METER AND BACKFLOW PREVENTOR.

ENGINEER'S SEAL

CEA GROUP
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-4584
4712 Woodrow Boen, Ste. F El Paso, TX 79924
Office: 915.541.5322 Fax: 915.541.5233 www.ceagroup.net

ENGINEER'S SEAL

90016
CEA GROUP
Professional Seal

SCALE	PROJECT NAME
Horizontal: AS SHOWN Vertical: N/A Contour Interval: N/A	LOURDES ESTATES & EL CONQUISTADOR DEL PASO SUBDIVISIONS WATER MAIN EXTENSION FACILITIES (TEXAS DEPARTMENT OF RURAL AFFAIRS/C.D.B.G. NO. 710066)

PROJECT NAME

LOURDES ESTATES & EL CONQUISTADOR DEL PASO SUBDIVISIONS WATER MAIN EXTENSION FACILITIES
(TEXAS DEPARTMENT OF RURAL AFFAIRS/C.D.B.G. NO. 710066)

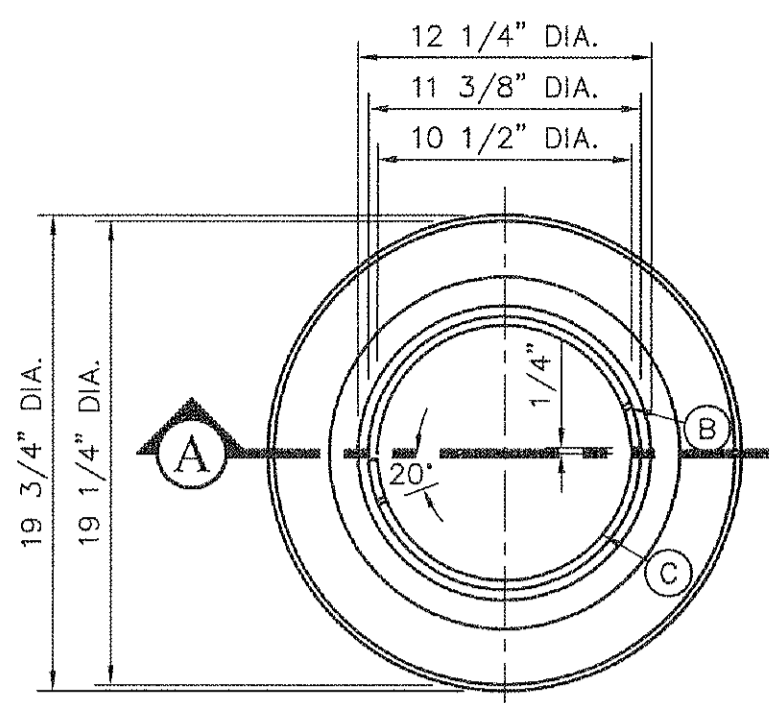
SHEET TITLE

TYPICAL WATER SERVICE DETAILS

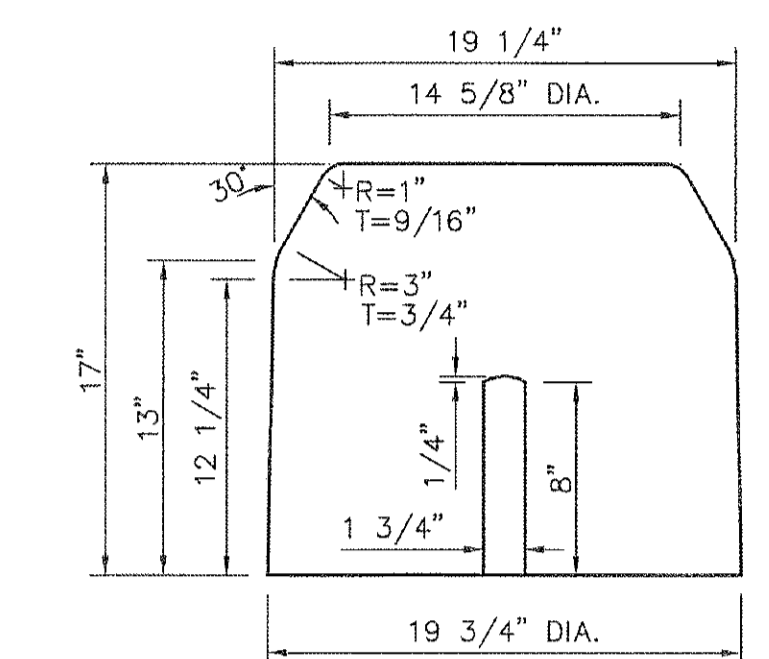
SHEET NO.

C5.3

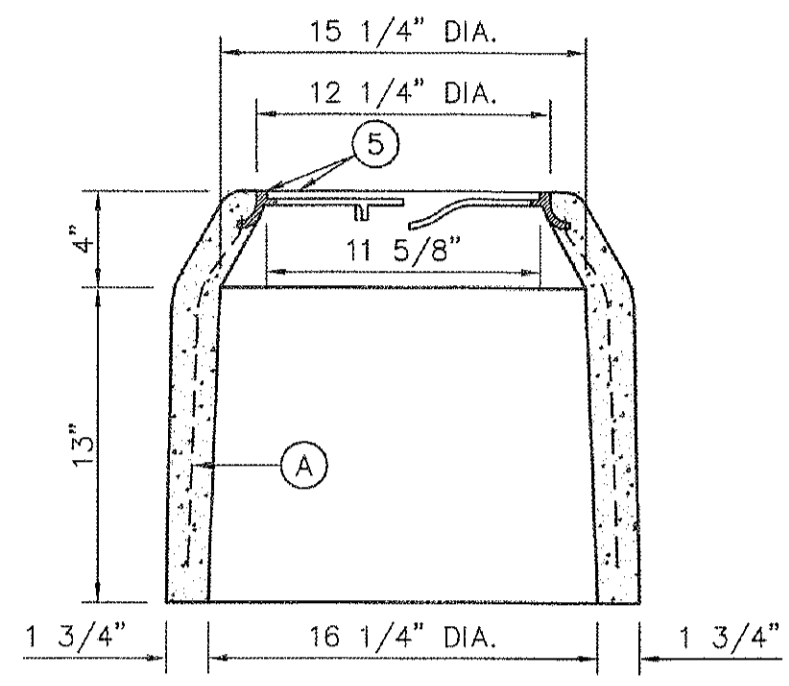
FOR MATERIAL ESTIMATING ONLY



TOP VIEW



SIDE VIEW



A SECTION

KEYED NOTES:

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

METER BOX TYPE "A"
3/4" SERVICE INSTALLATION
SCALE: 1 1/2" = 1'-0"

CS.4

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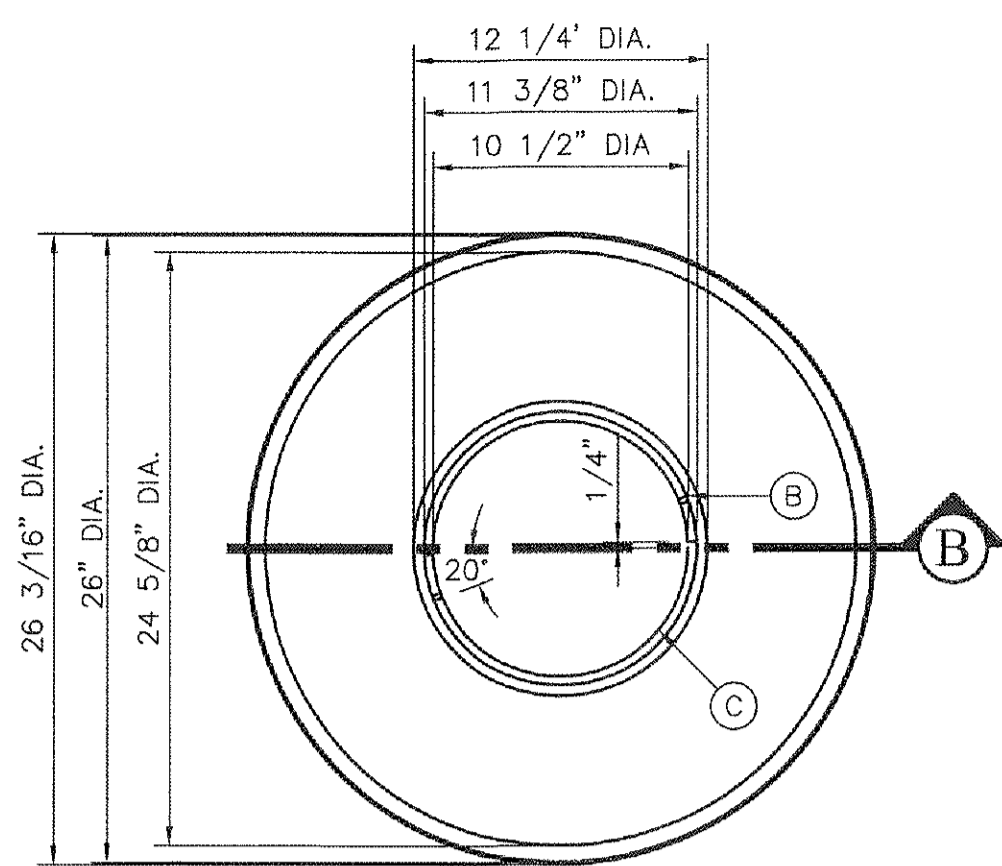
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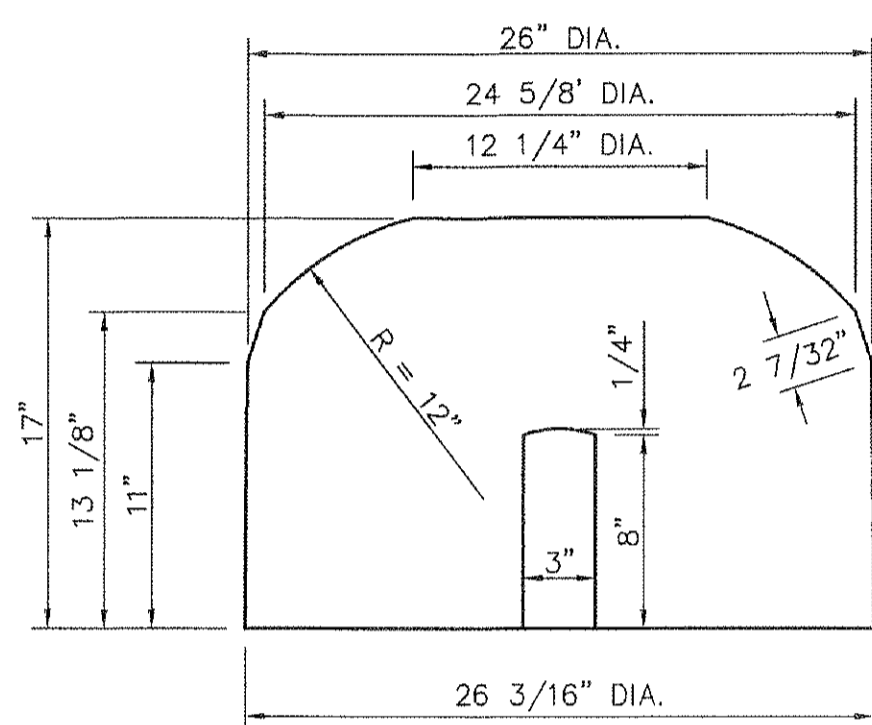
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TOP VIEW



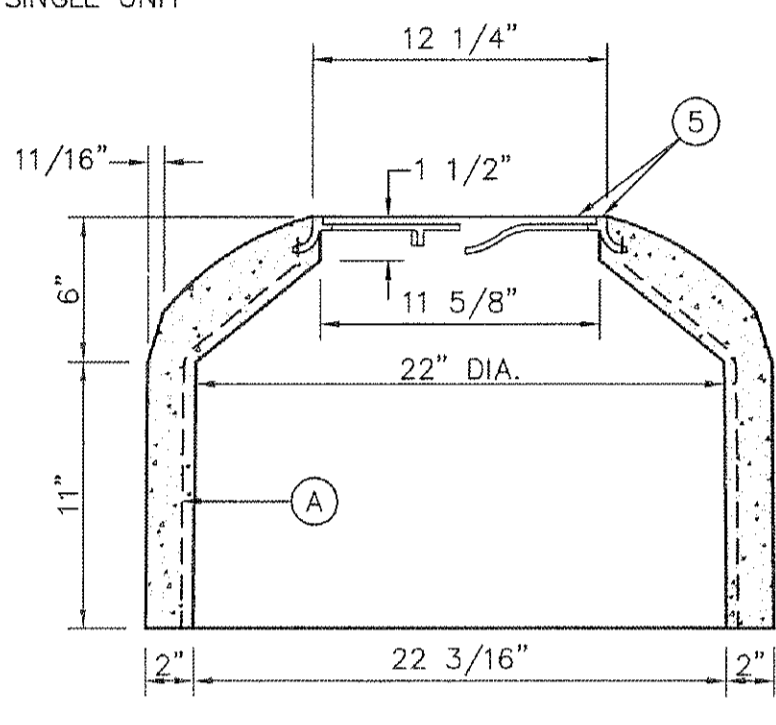
SIDE VIEW

NOTES:

1. INSTALL TO GRADE MATCHING TOP OF CURB.
2. ANGLE VALVE SHALL BE IN LINE WITH THE INLET/OUTLET PORTS OF THE METER BOX.
3. METER BOXES SHALL NOT BE INSTALLED UNDER SIDEWALKS, DRIVEWAYS, OR PROPOSED ABOVE GROUND STRUCTURES.
4. WHERE NO CURBING EXIST, INSTALL BOXES IN ACCESSIBLE LOCATIONS BEYOND LIMITS OF STREET SURFACING, WALKS AND DRIVEWAYS.
5. STANDARD METER BOX RING AND COVER AS PER DETAILS 4 AND 5 THIS SHEET.
6. WHERE IT IS NECESSARY TO INSTALL A TYPE "B" BOX FOR 1" METER UNDER ROADWAYS OF TRAFFIC BEARING SURFACES, BOX SHALL BE ENCASED IN 12" CONCRETE, 3000 PSI MINIMUM.

KEYED NOTES:

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



B SECTION

METER BOX TYPE "B"
1" SERVICE INSTALLATION
SCALE: 1 1/2" = 1'-0"

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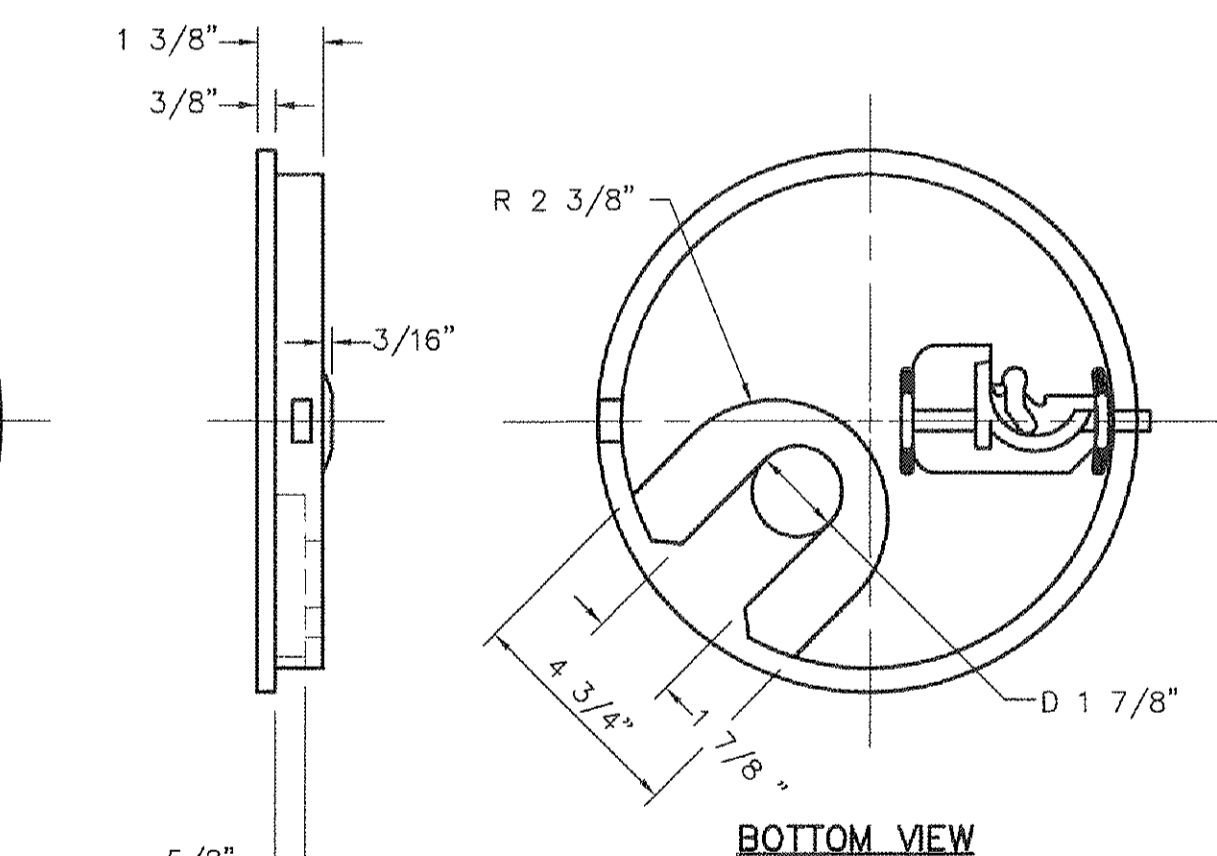
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D SECTION

PLASTIC LID:

1. THE LID SHALL BE BLACK.
2. THE LID CAN HAVE A LOGO MOLDED ON ITS SURFACE.
3. THE LID SHALL HAVE THE WORDING "WATER METER" MOLDED ON ITS SURFACE.
4. THE LID SHALL HAVE A DIAMOND PATTERN FOR SKID RESISTANCE.
5. THE LID SHALL BE SOLID AND WEIGH A MINIMUM OF 4LBS.
6. THE LID SHALL HAVE A MOLDED ERT POCKET ON ITS BOTTOM SIDE THAT WILL ACCOMIDATE AN "NEPTUNE R9000 TRANSPONDER".
7. THE LID SHALL HAVE A PLASTIC LOCKING MECHANISM STAINLESS STEEL COIL SPRING THAT CAN BE OPENED AND CLOSED USING A STANDARD BRASS KEY.
8. THE LID DIMENSIONS SHALL BE APPROXIMATELY: 11 1/4 DIA X 1 3/8 INCHES

METER BOX COVER DETAIL
SCALE: 3" = 1'-0"

CS.4

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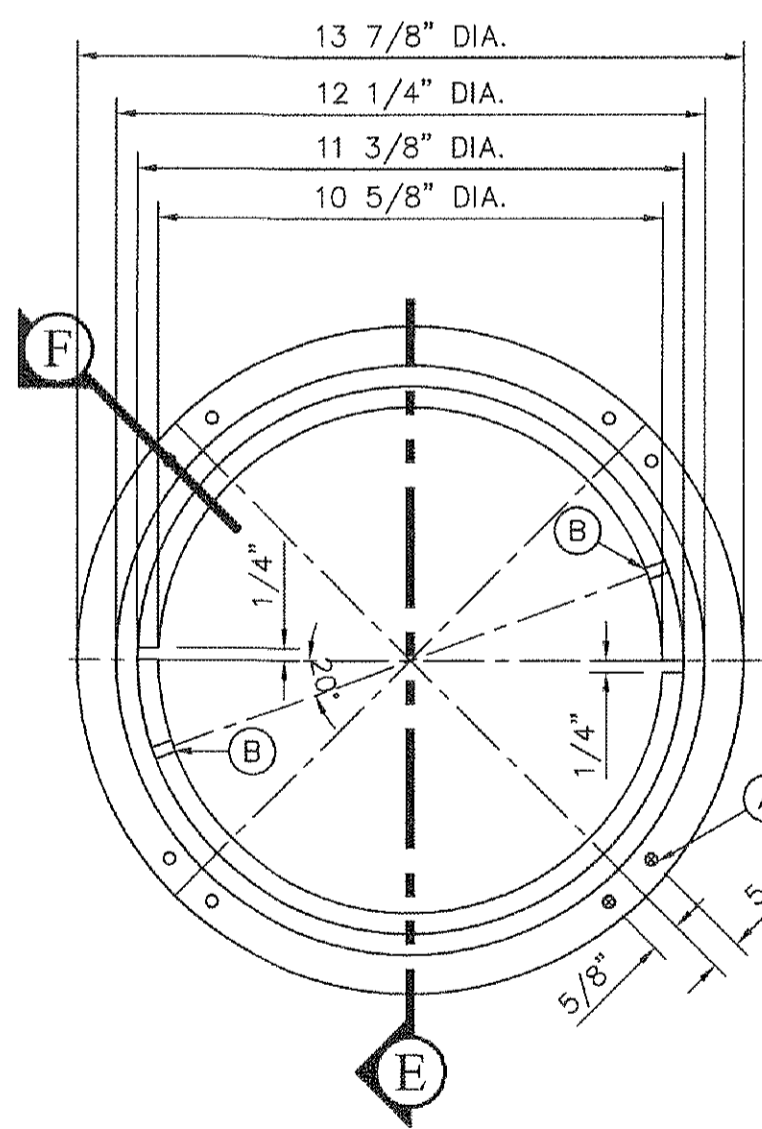
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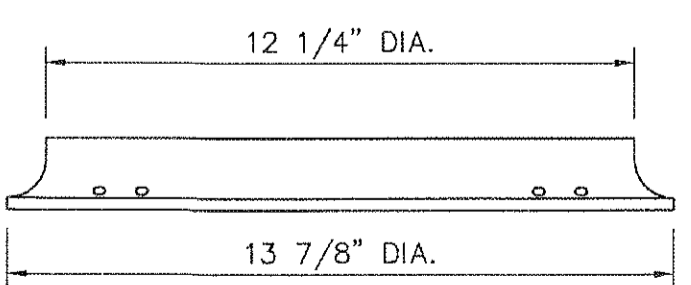
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TOP VIEW
SCALE: 3" = 1'-0"



E SECTION
SCALE: 3" = 1'-0"

METER BOX RING DETAIL
SCALE: AS SHOWN

CS.4

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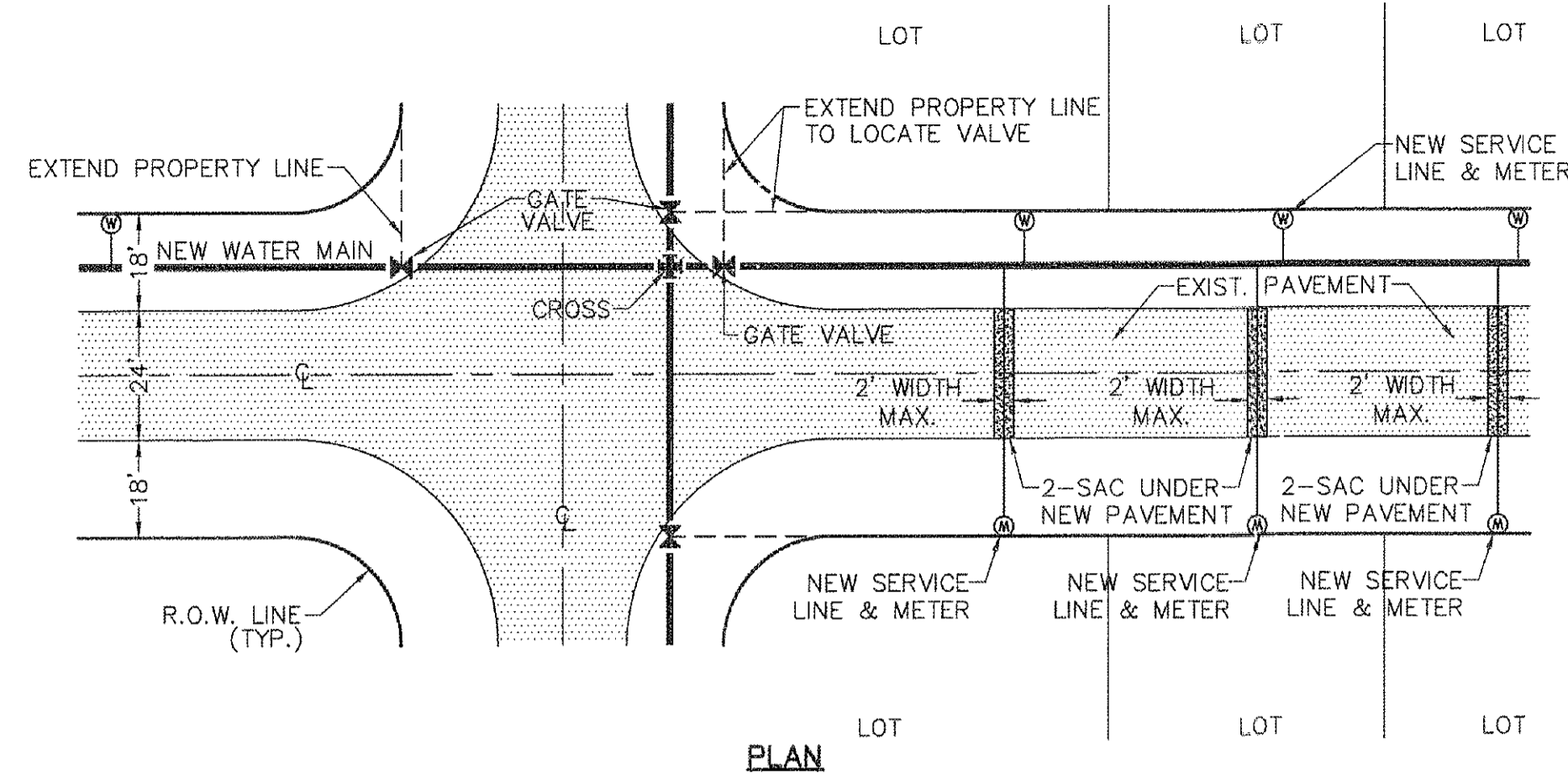
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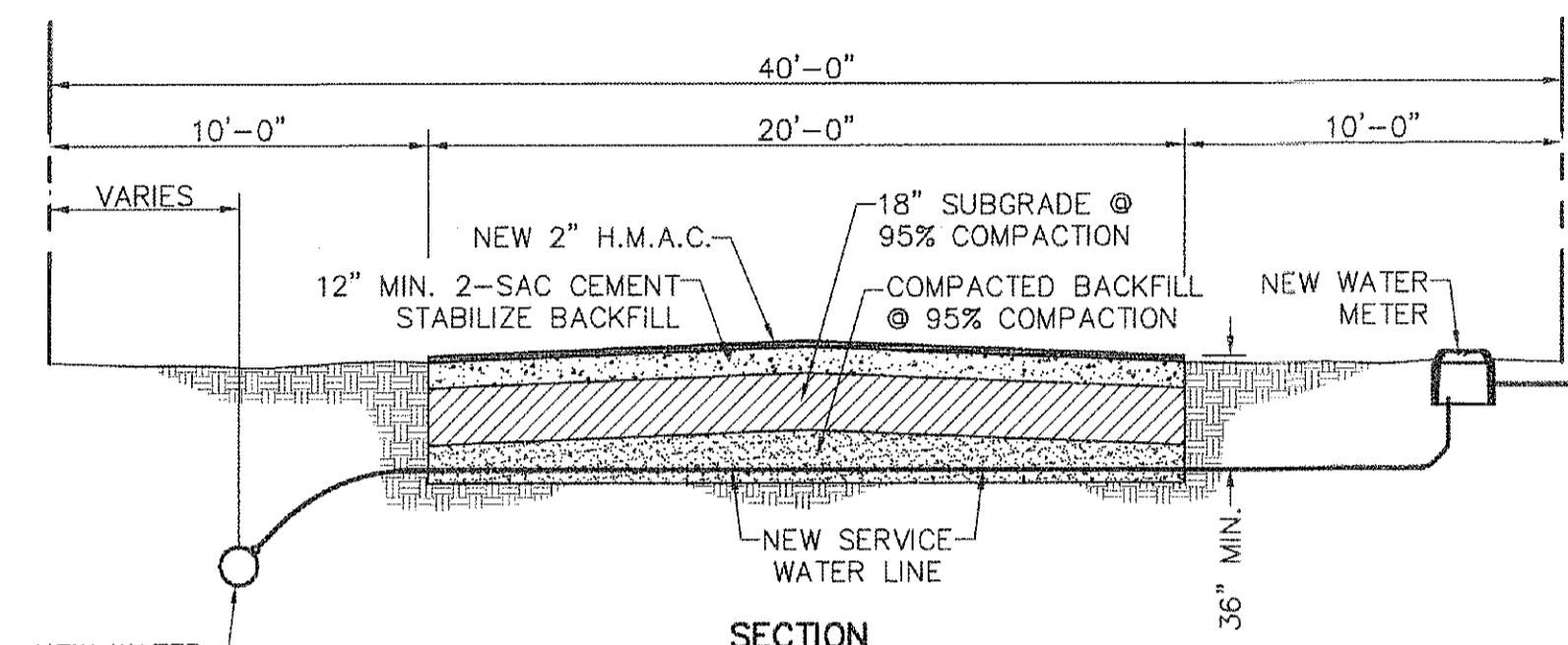
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PLAN



SECTION

NOTES:

1. COMPACTION FOR BACKFILL AND SUBGRADE TO BE 95% AS PER ASTM D-1557. SUITABLE NATIVE MATERIAL COULD BE USED AS SUBGRADE AS PER SPECIFICATIONS.
2. SERVICES INSTALLED BY BORING METHODS ARE ACCEPTABLE.

TYPICAL SERVICE TRENCH DETAILS
SCALE: N.T.S.

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DATE	REVISIONS	BY

REFERENCES - BENCHMARKS

1. TEXAS REGISTERED ENGINEERING FIRM 4-4564
2. TEXAS REGISTERED ARCHITECTS & PLANNERS
3. TEXAS REGISTERED ENGINEERING FIRM 4-4564
4. TEXAS REGISTERED ARCHITECTS & PLANNERS
5. TEXAS REGISTERED ENGINEERING FIRM 4-4564
6. TEXAS REGISTERED ARCHITECTS & PLANNERS

9/11

ENGINEER'S SEAL

9/11

SCALE: AS SHOWN

Vertical Interval: N/A

Horizontal Interval: N/A

DATE: AUGUST 2011

DESIGN BY: M.C.

DRAWN BY: M.C.

CHKD. BY: A.G.

APPVD. BY: U.E.

JOB NO. 1030-023-WD

PROJECT NAME

LOURDES ESTATES & EL CONQUISTADOR DEL PASO SUBDIVISIONS WATER MAIN EXTENSION FACILITIES (TEXAS DEPARTMENT OF RURAL AFFAIRS/C.D.B.G. NO. 710066)

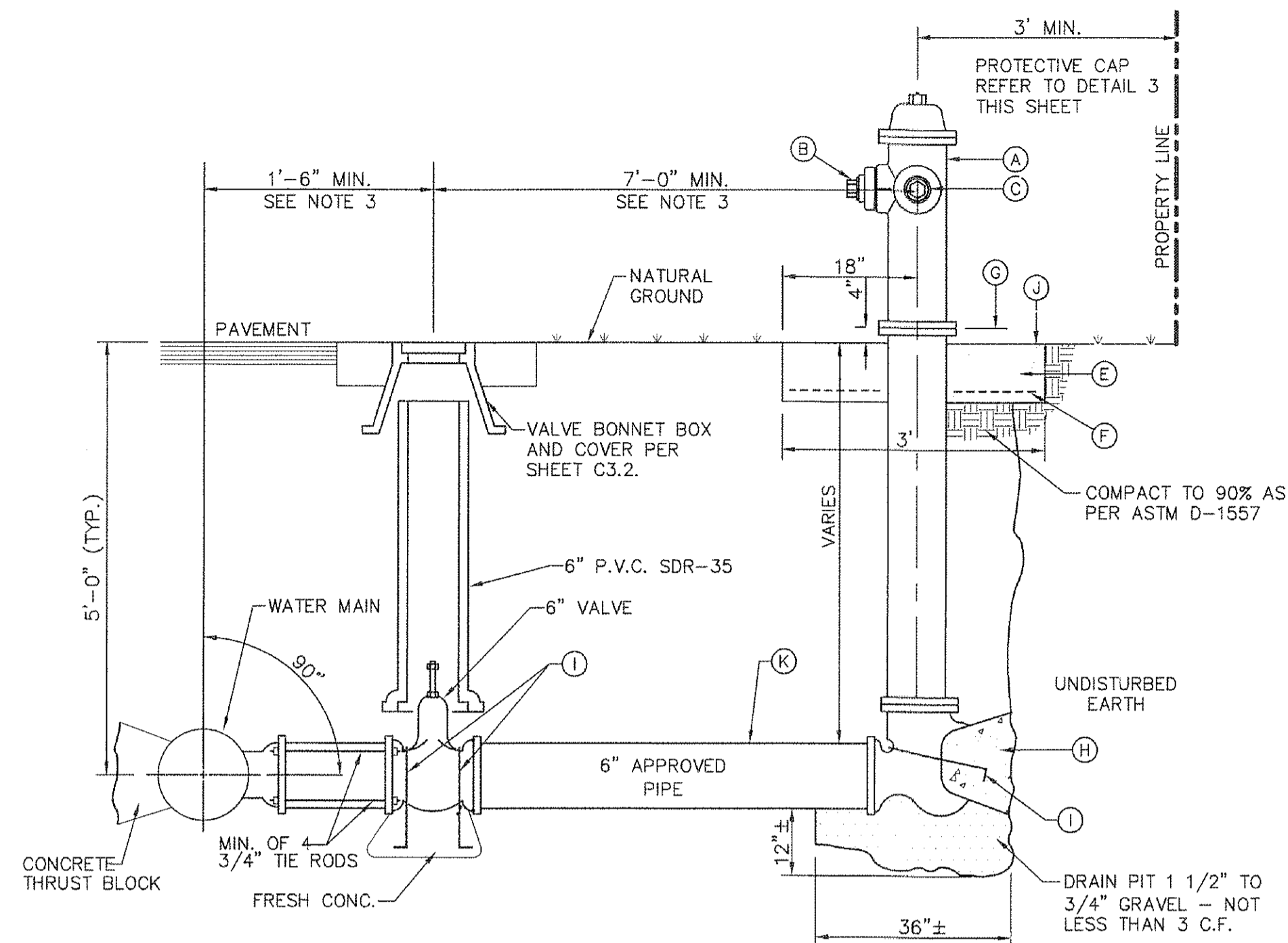
SHEET TITLE

TYPICAL METER BOX COVER AND FRAME DETAILS

SHEET NO.

C5.4

FOR MATERIAL ESTIMATING ONLY



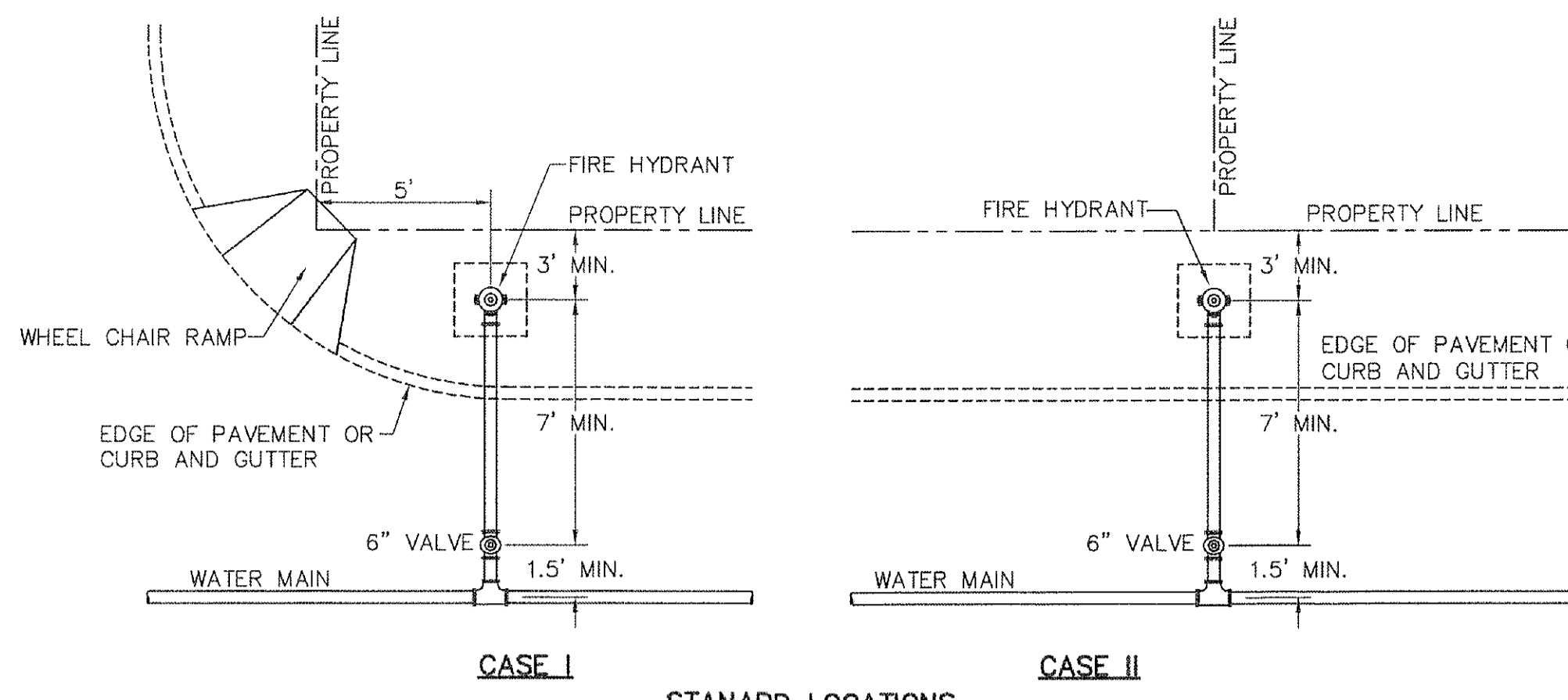
1 STANDARD FIRE HYDRANT INSTALLATION
SCALE: N.T.S.

NOTES:

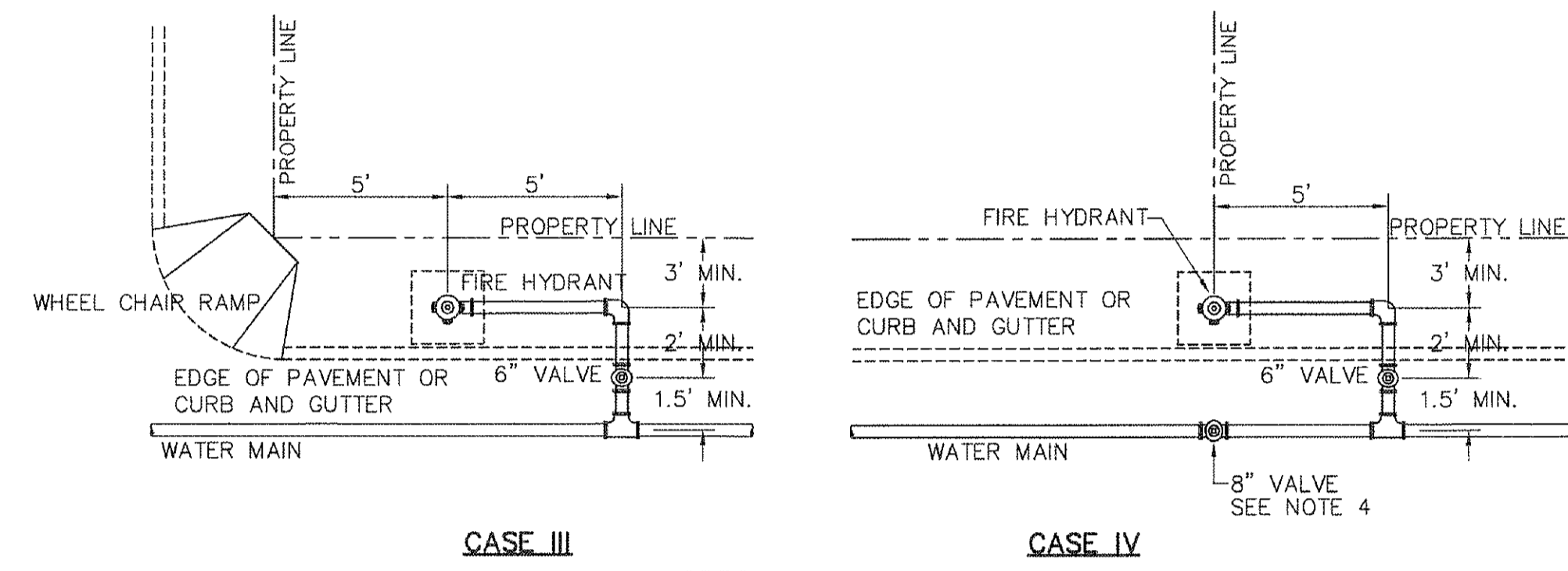
- NO OBSTRUCTIONS WILL BE PERMITTED WITHIN 3 FT. IN ALL DIRECTIONS OF FIRE HYDRANT. FIRE HYDRANT SHALL NOT BE PLACED IN WHEEL CHAIR RAMP OR DRIVEWAY.
- FIRE HYDRANT SHALL BE LOCATED AT THE BEGINNING OF CURB RETURN OR AT THE PROPERTY LINE COMMON TO ADJOINING LOTS, UNLESS OTHERWISE SHOWN ON PLANS. REFER TO DETAIL 2 THIS SHEET FOR SPECIAL CASES.
- WHERE DISTANCE IS LESS THAN 7', HYDRANT SHALL BE INSTALLED IN ACCORDANCE WITH DETAIL 2 THIS SHEET.
- VALVE MAY BE CONNECTED TO TEE AT MAIN LINE. USE FLANGED MECHANICAL JOINT ENDS. WHERE SPOOL IS REQUIRED BETWEEN TEE AND VALVE, USE FLANGED MECHANICAL ENDS WITH 3/4" DIAMETER TIE RODS.
- COMPLY WITH REQUIREMENTS OF AWWA C-502, DRY BARREL FIRE HYDRANTS AND AWWA C-550, PROTECTIVE EPOXY INTERIOR COATINGS FOR VALVES AND HYDRANTS.
- ALL JOINTS TO BE RESTRAINED WITH "MEGA-LUG" OR BETTER.
- BOLLARDS WILL BE REQUIRED TO PROTECT FIRE HYDRANT IN AREAS OF HIGH TRAFFIC. COORDINATE WITH L.V.W.D.

KEYED NOTES:

- FIRE HYDRANT TO BE MUELLER, KENNEDY MODEL OR APPROVED EQUAL.
- PUMPER NOZZLE 4 1/2" TO BE FACING THE TRAVELED WAY, UNLESS OTHERWISE NOTED IN THE PLANS.
- HOSE NOZZLE 2 1/2".
- 1/2" PREMOLDED EXPANSION JOINT WITH 1" TOP FILLER.
- 3'x3'x6" CONC. SQ. PAD, TO BE CONSTRUCTED AROUND FIRE HYDRANT'S CENTER LINE WHEN NOT LOCATED WITHIN SIDEWALK OR CONC. AREA.
- #10, 6/6 WWF.
- CONTROLLED ELEVATION LINE, LEVEL IN ALL DIRECTIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR SETTING TOP FLANGE OF THE HYDRANT TO CONTROLLED ELEVATION.
- CONC. THRUST BLOCK, APPROX. 2'x2'x3' TO BE POURED AGAINST UNDISTURBED EARTH. F.H. WEEP HOLE MUST BE UNOBSTRUCTED.
- No. 5 REBAR ANCHOR PINS.
- TOP OF SLAB SHALL BE AT CURB LEVEL 4" BELOW THE BREAK LINE OF THE HYDRANT. UNDER SPECIAL CONDITIONS THE ENGINEER MAY ALLOW VARIATIONS TO THIS CONSTRUCTION.
- CONTRACTOR IS TO PROVIDE ADDITIONAL SPOOLS IF NEEDED TO MAINTAIN THE 4" MIN. CLEARANCE FROM THE CONTROLLED ELEV. LINE TO TOP OF SLAB.
- GREASE ALL NUTS AND BOLTS PRIOR TO WRAPPING WITH POLYETHYLENE.



2 STANDARD LOCATIONS

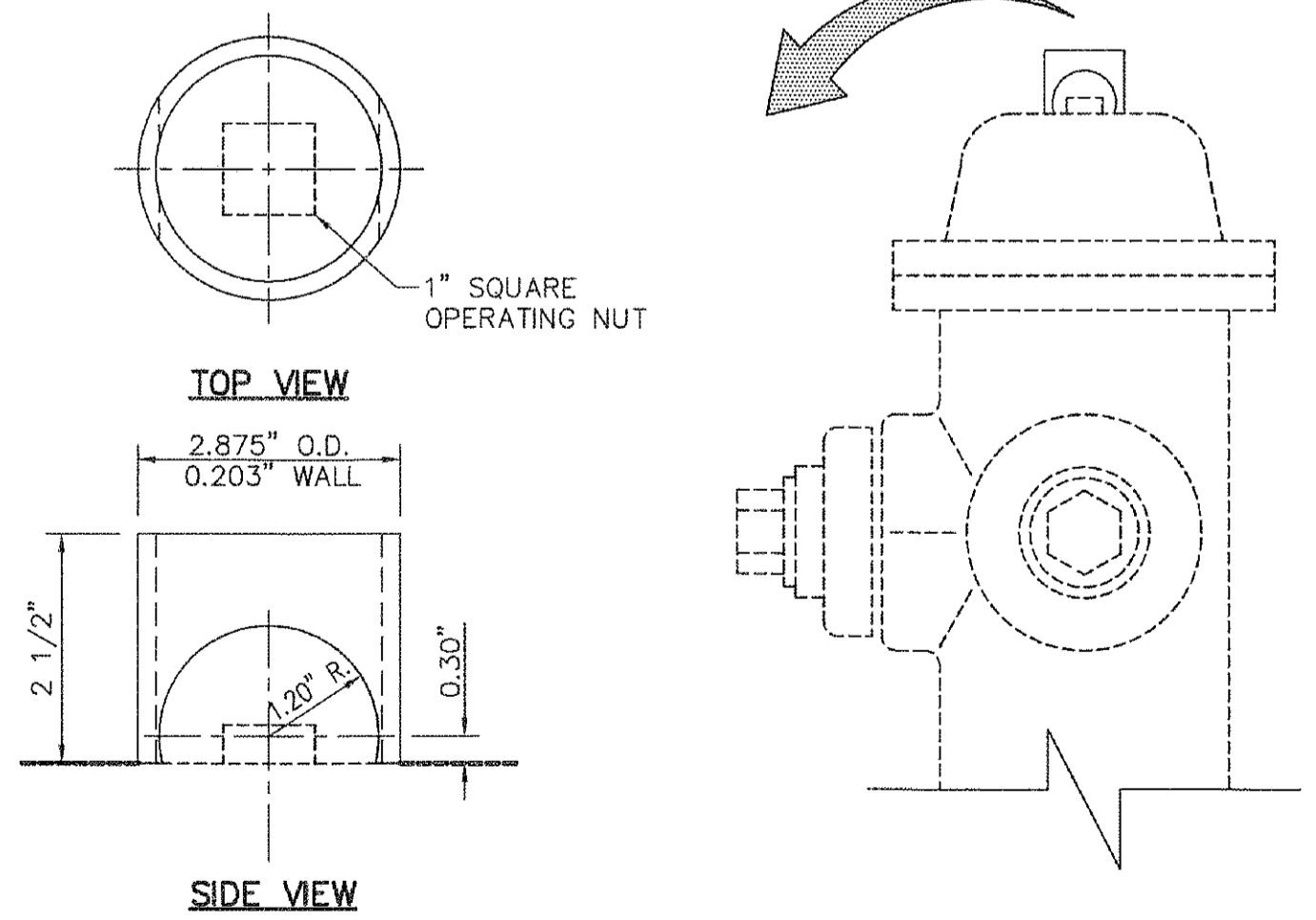


3 SPECIAL LOCATIONS

2 FIRE HYDRANT LOCATIONS
SCALE: N.T.S.

NOTES:

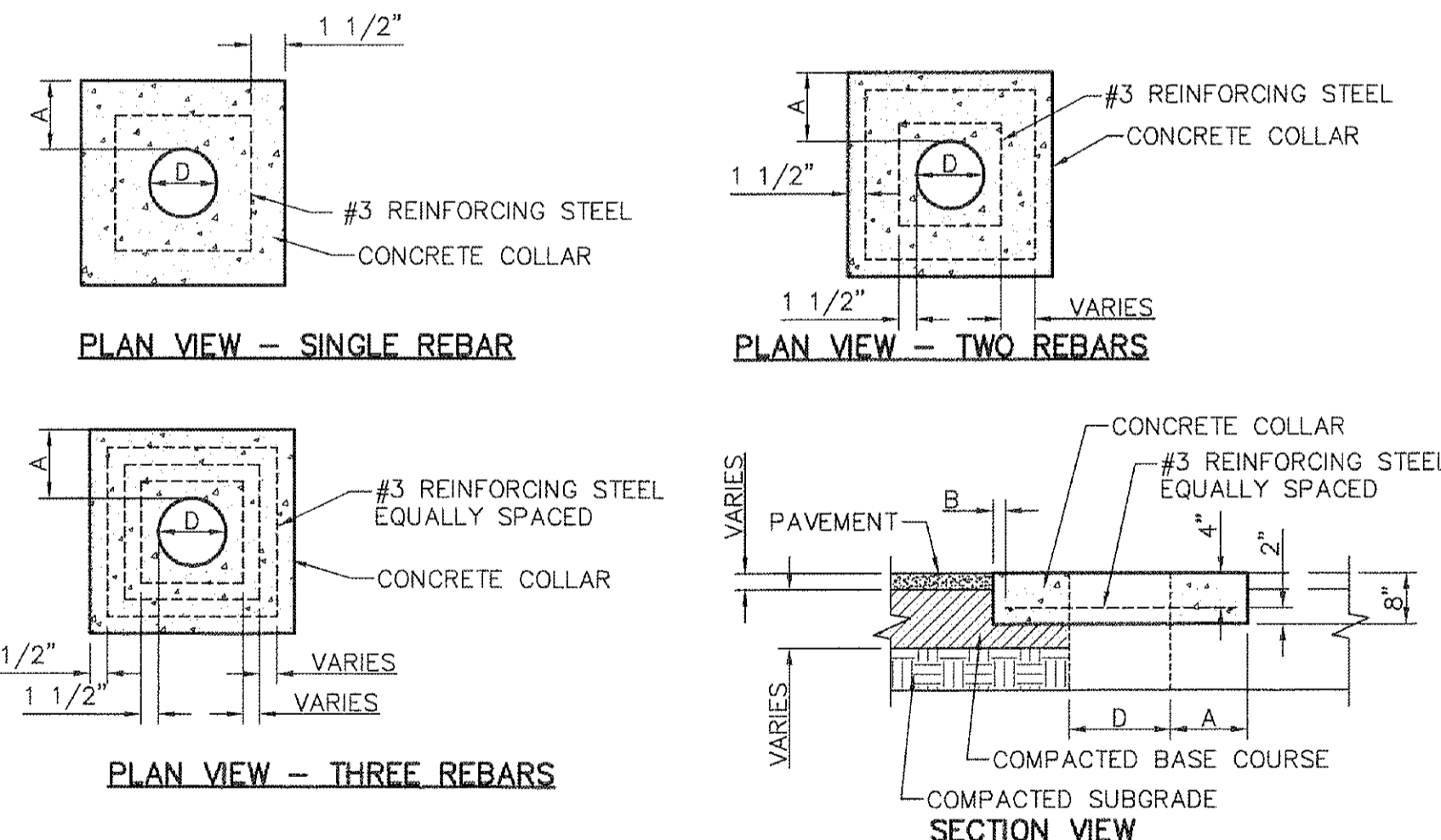
- FOR CASE I FIRE HYDRANT SHALL BE LOCATED AT A DISTANCE OF 5 FT. MINIMUM FROM THE PROPERTY LINE OR AT THE BEGINNING OF CURB RETURN.
- FOR CASE II FIRE HYDRANT SHALL BE LOCATED AT THE PROPERTY LINE COMMON TO ADJOINING LOTS.
- FOR CASE III AND IV WHERE THE DISTANCE BETWEEN THE VALVE AND THE HYDRANT IS LESS THAN 7 FT. PLACE HYDRANT AS SHOWN.
- FOR CASE IV PLACE WATER MAIN VALVE PERPENDICULAR TO PROPERTY LINE.
- FOR INSTALLATION OF FIRE HYDRANT SEE DETAIL 1 THIS SHEET.
- 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.)
- LOCATION OF FIRE HYDRANT WITHIN SIDEWALK AND/OR PARKWAY SHALL CONSIDER ALL A.D.A. REQUIREMENTS.



3 FIRE HYDRANT CAP
SCALE: N.T.S.

NOTES:

- 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
- CAPS ARE TO BE TACK WELDED OR BRAZED ON FIRE HYDRANT BONNET OR WEATHER CAP.
- THE CAPS OVER THE OPERATING NUT WILL PREVENT ACCESS TO THE UNAUTHORIZED USE OF HYDRANT WATER.



CONCRETE COLLARS FOR CIRCULAR PENETRATIONS IN ASPHALT				
"D" DIAMETER OF PENETRATION	"A" MINIMUM CONCRETE HORIZONTAL DIMENSION FROM PENETRATION	NUMBER OF #3 REINFORCING STEEL BARS	"B" MINIMUM CLEARANCE FROM EDGE OF CONCRETE APRON TO CENTER OF NEAREST REBAR	"C" MINIMUM CLEARANCE FROM PENETRATION EDGE TO CENTER OF NEAREST REBAR
0" TO 6.01"	6"	1	1 1/2"	1 1/2"
6.01" TO 18.01"	6"	2	1 1/2"	1 1/2"
18.01" AND OVER	9"	3	1 1/2"	1 1/2"

4 SQUARE CONCRETE COLLAR DETAIL
SCALE: N.T.S.

NOTES:

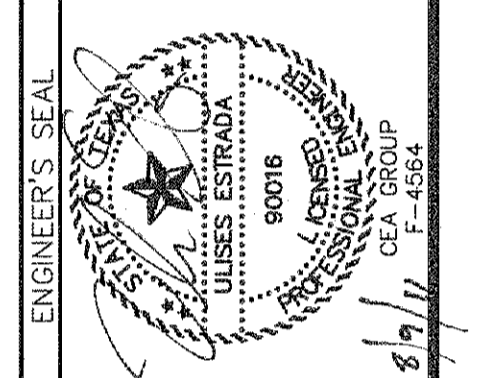
- THE PENETRATION COLLAR SHOULD BE CAST IN-PLACE CONCRETE. (MINIMUM 28 DAY COMPRESSIVE STRENGTH 4000 PSI. HIGH EARLY CONCRETE IS REQUIRED.)
- TOPS OF PENETRATION COLLAR SHALL BE FLUSH WITH ROADWAY SURFACE OR FINISHED GRADE UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.
- ANY DISTURBED SUBGRADE UNDER THE CONCRETE COLLAR SHALL BE COMPACTED TO 95% DENSITY ± 3% OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D-1557.
- ANY DISTURBED COARSE UNDER THE CONCRETE COLLAR 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.

KEY NOTES:

- #3 REINFORCING STEEL.
- CONCRETE COLLAR.
- #3 REINFORCING STEEL EQUALLY SPACED.
- COMPACTED BASE COARSE.
- PAVEMENT.
- COMPACTED SUBGRADE.

REFERENCES - BENCHMARKS	BY
1. BENCHMARKS SHOWN ARE GRID BENCHMARKS DERIVED FROM RTK OBSERVATIONS. THESE BENCHMARKS ARE NOT TO BE USED FOR ANY OTHER PURPOSES.	
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3. THESE ELEVATIONS ARE DERIVED FROM APPLICATION OF THE CURVE DATA TABLE TO THE CURVE DATA.	
DATE	REVISIONS

CSA
engineers • architects • planners
TEXAS REGISTERED ENGINEERING FIRM F-464
4712 Woodrow Beam, Ste. F, El Paso, TX 79924
Office: 915.541.5232 Fax: 915.541.5233 www.csaengr.com



SCALE	AS SHOWN
Horizontal:	N/A
Vertical:	N/A
Contour Interval:	N/A
DATE:	AUGUST 2011
DESIGN BY:	M.C.
DRAWN BY:	M.C.
CHKD. BY:	A.G.
APPVD. BY:	U.E.
JOB No.	1030-023-WD

LOURDES ESTATES & EL CONQUISTADOR DEL PASO SUBDIVISIONS
WATER MAIN EXTENSION FACILITIES
(TEXAS DEPARTMENT OF RURAL AFFAIRS/C.D.B.G. NO. 710066)

SHEET TITLE
TYPICAL FIRE HYDRANT DETAILS

SHEET NO.
C5.5

FOR MATERIAL ESTIMATING ONLY