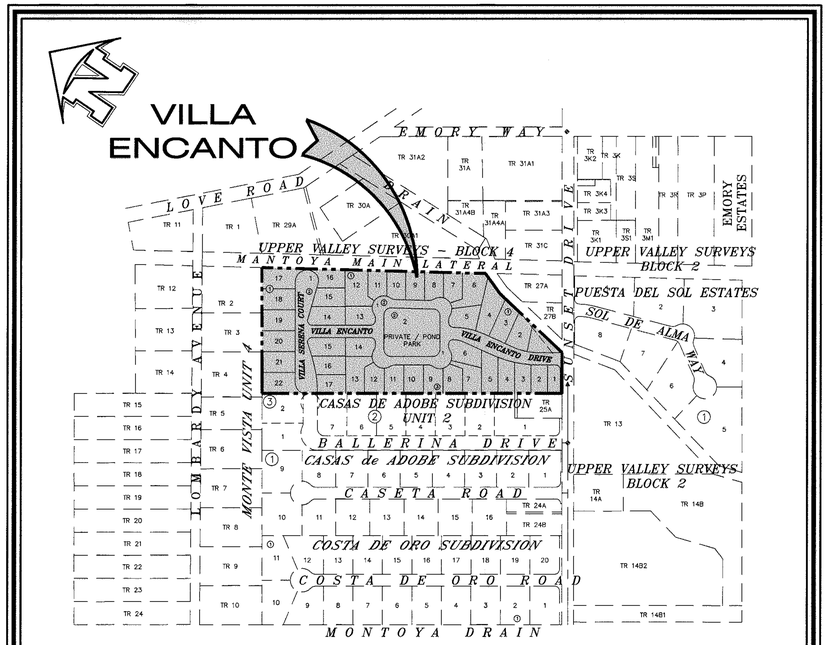
# VILLA ENCANTO

## STREET IMPROVEMENT PACKAGE (PRIVATE)

### LOCATION MAP




SCALE: 1" = 300'

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**OWNER / DEVELOPER**


**VILLA ENCANTO, L.P.: VILLA ENCANTO, L.P.'S GENERAL PARTNER IS CCA. L.C., A TEXAS LIMITED LIABILITY COMPANY IN WHICH CARROLL S. MAXON IS IT'S MANAGER**
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**(915) 581-1163 OFFICE - (915) 581-1588 FAX**

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ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING


STATE OF TEXAS REGISTERED BRADLEY ROE 2449 PROFESSIONAL LAND SURVEYOR

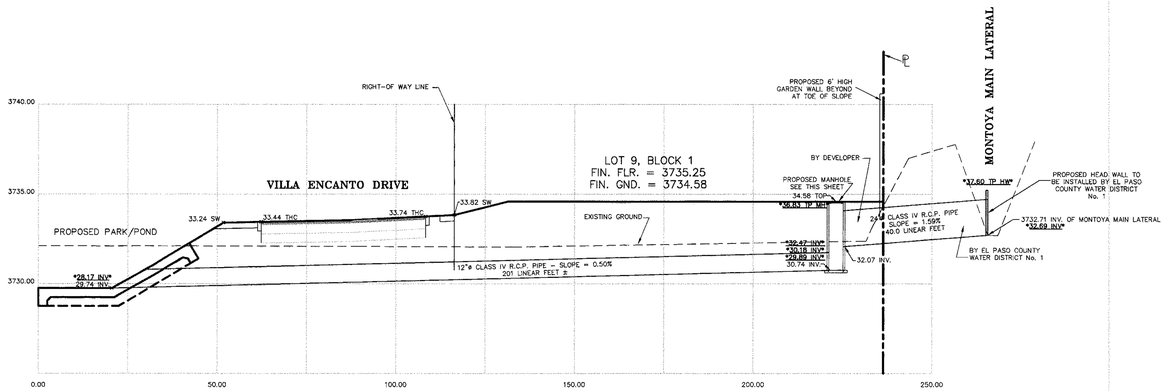
STATE OF TEXAS BRADLEY ROE 91860 REGISTERED PROFESSIONAL ENGINEER

**RECORD DRAWINGS**

These record drawings have been prepared by Roe Engineering, L.C. based on periodic construction observations and information provided by others and reflects changes made during construction. The accuracy and/or completeness of this information have been verified by Roe Engineering, L.C. Bradley Roe, R.P.L.S. P.E. Those relying on this record drawing are advised to obtain independent verification of its accuracy before applying it for any purpose.

Date May 30, 2008 By Bradley Roe, R.P.L.S. 2449, P.E. 91860

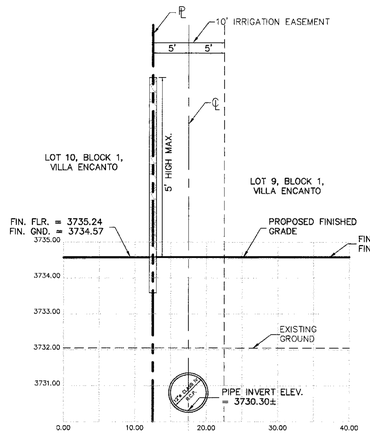
***AS-BUILTS***
**05-28-2008**




## SECTION "E" – "E"

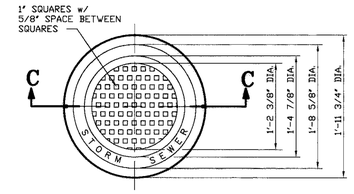
## PROPOSED IRRIGATION LINE THROUGH LOT 9, BLOCK 1

HOR. SCALE 1" = 20'
VER. SCALE 1" = 5'



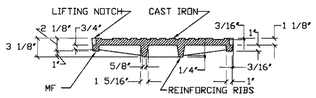

## SECTION "E1" – "E1"

HOR. SCALE 1" = 10'
VER. SCALE 1" = 2'

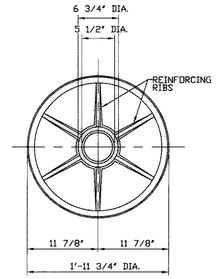



TOP VIEW

NOTE:
1. MATCHING SURFACES MARKED 'MF' TO BE MACHINE FINISHED OF ANY IRREGULARITIES THAT WOULD PREVENT SNUG FIT.
2. CASTING TO BE SMOOTH & VOID OMAIR HOLES.




## SECTION C – C

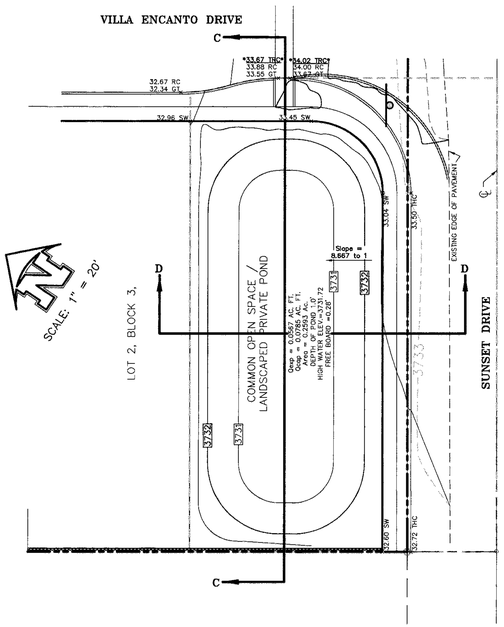


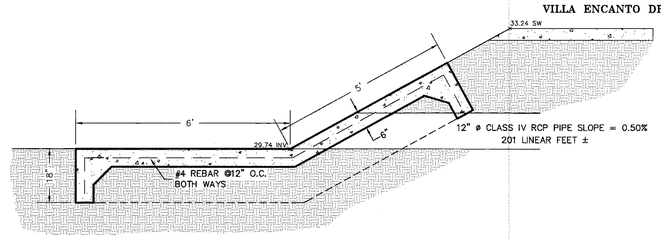

BOTTOM VIEW

NOTE:
1. MATCHING SURFACES MARKED 'MF' TO BE MACHINE FINISHED OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
2. CASTING TO BE SMOOTH & VOID OF AIR HOLES.

## SOLID / SLOTTED MANHOLE COVER

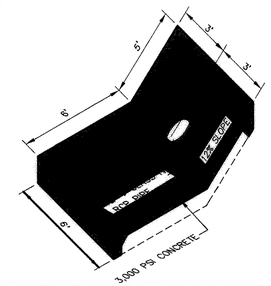
SCALE 1" = 10'




## CONCRETE HEADWALL FOR IRRIGATION PIPE
## SECTION "E" – "E"

HOR. SCALE 1" = 2'

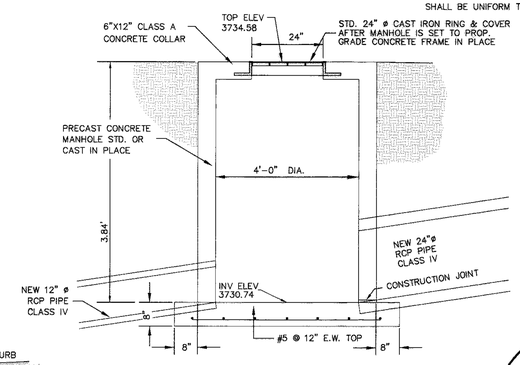



## CONCRETE HEADWALL ISOMETRIC

HOR. SCALE 1" = 2'

STANDARD MANHOLE NOTES

1. THE PRE-CAST MANHOLE RISER AND CONICAL SECTIONS SHALL BE 48" DIAMETER OR 72" DIAMETER OF REINFORCED CONCRETE AND SHALL CONFORM TO ASTM SPECIFICATIONS C-478.
2. THE CONICAL SECTIONS CAN BE CONCENTRIC OR ECCENTRIC AND SHALL BE ADAPTED TO THE 48" RING AT ONE END TO THE CITY OF EL PASO STANDARD CAST IRON FRAME AT THE OTHER. ECCENTRIC WHEREVER STEPS ARE REQUIRED.
3. THE FLAT SLABS OPENING SHALL BE CONCENTRIC WHERE NO LADDER RUNGS ARE REQUIRED, AND SHALL BE ADAPTED TO THE 48" OR 72" RING AT THE ONE END, AND TO THE CITY OF EL PASO STANDARD CAST IRON FRAME AT THE OTHER.
4. THE PRE-CAST CONCRETE SHALL HAVE A MINIMUM ALLOWABLE COMPRESSIVE STRENGTH AT 28 DAYS OF 4000 POUNDS PER SQUARE INCH FOR THE RISER SECTIONS AND FOR THE CONICAL SECTION.
5. THE RISER SECTION SHALL BE REINFORCED WITH STEEL WIRE MESH 6x6x10x10 AND THE CONICAL SECTION SHALL HAVE 6x6x10x10 STEEL WIRE MESH REINFORCEMENT AND 3/8 ROD AT THE TOP AND BOTTOM. (SEE ATSM STANDARDS PART 16 – C – 478)
6. THE BASE SHALL BE 3000 P.S.I. CONCRETE POURED ON UNDISTURBED OR THOROUGHLY COMPACTED SUB-BASE.
7. MASONRY TO BE COMMON BRICK LAID UP WITH 1:3 MORTAR.
8. LADDER RUNGS WILL BE REQUIRED IF DEPTH OF MANHOLE EXCEEDS 4 FEET.
9. LADDER RUNGS TO BE OF NON-CORROSIVE MATERIAL CONFORMING TO O.S.H.A. REGULATIONS.
10. THE DISTANCE BETWEEN RUNGS SHALL NOT EXCEED 12" INCHES AND SHALL BE UNIFORM THROUGHOUT THE LENGTH OF LADDER.




## MANHOLE 48" DIAMETER

SCALE 1" = 2'

RECORD DRAWINGS

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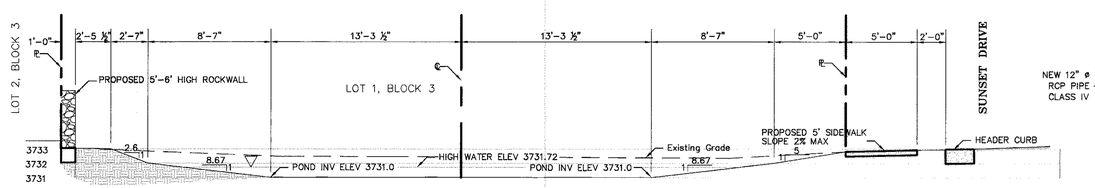
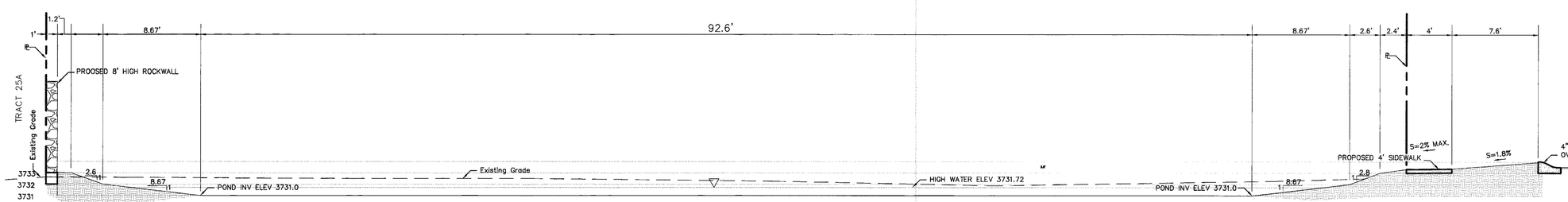
Date: May 30, 2008 By: Bradley Roe, R.P.L.S. 3886, P.E. 31886

***AS-BUILTS***
**05-30-2008**



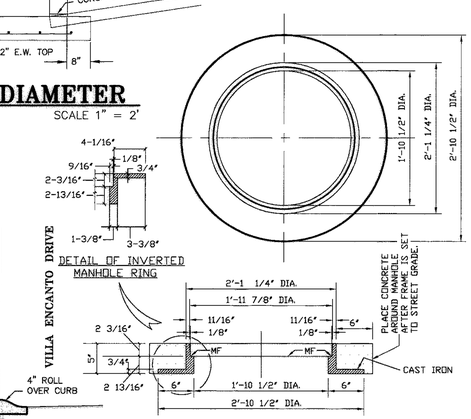

## SECTION D-D

SCALE: 1 = 5'




## SECTION C-C

SCALE: 1 = 5'




## MANHOLE RING DETAIL

SCALE 1" = 10'

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| DATE | REVISIONS |
|---|---|
| 12/23/03 | CITY COMMENTS |

PRIMARY BENCHMARK
EXISTING CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUNSET DRIVE AND EMORY ROAD
ELEVATION: 3732.68 (CITY DATUM)

SECONDARY BENCHMARK

| SCALE | |
|---|---|
| HOR: | 1" = 100' |
| VER: | N/A |
| W.O. | 061702-3 |
| FILE: | VE_irr.DWG |
| DATE: | NOVEMBER, 2003 |
| DESIGN BY: | B.R. |
| DRAWN BY: | CAD STAFF |
| CHKD. BY: | H.P. |
| APPD. BY: | B.R. |

ENGINEER'S NOTE

ENGINEER'S SEAL
STATE OF TEXAS
BRADLEY ROE
31886
LICENSED
PROFESSIONAL ENGINEER
BRADLEY ROE, P.E. 31886

IRRIGATION and POND 3 PLAN AND SECTIONS

*VILLA ENCANTO*

# IRRIGATION PLAN and POND 3 AND SECTIONS

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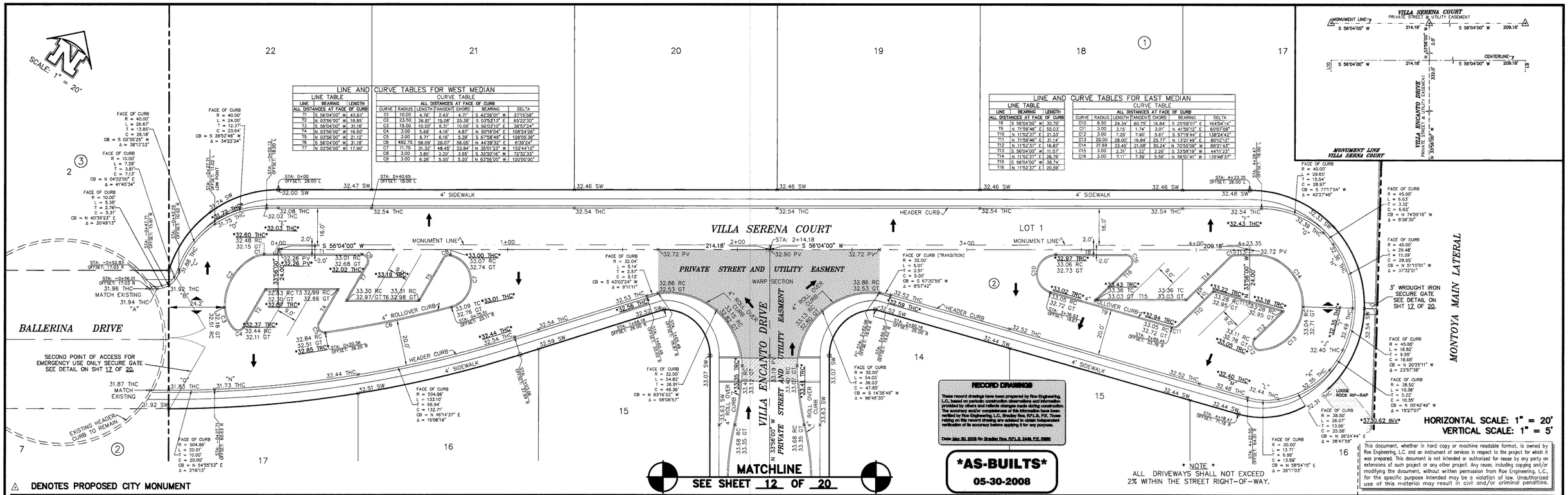
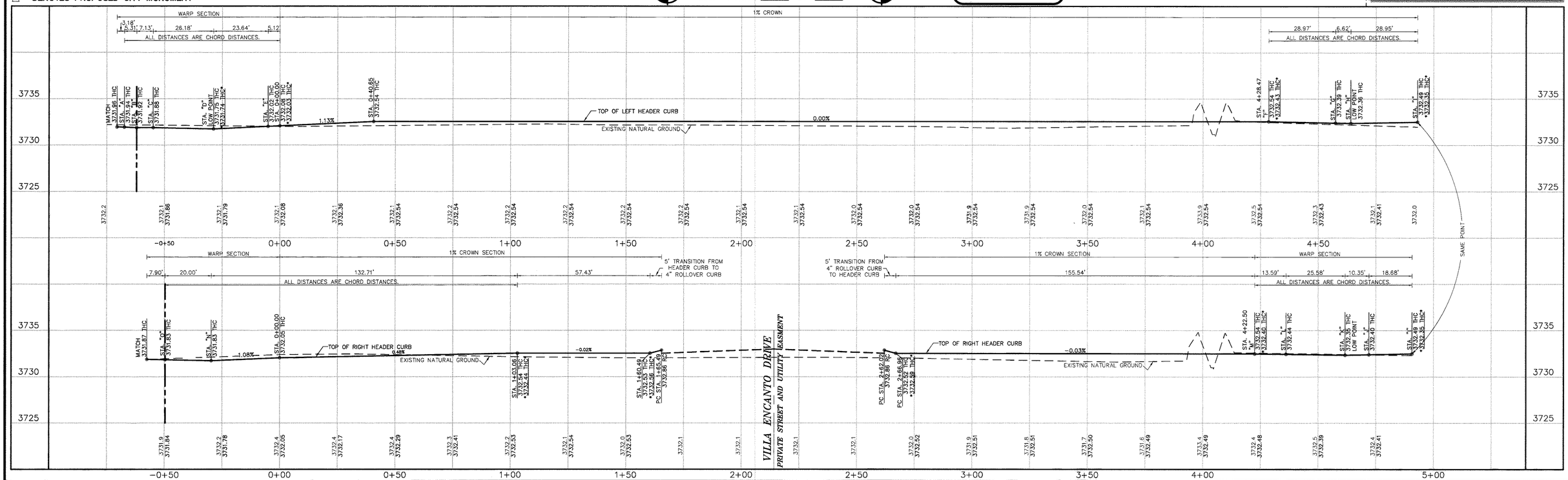
Email : roeeng@swbell.net
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

SHEET 10 OF 20




△ DENOTES PROPOSED CITY MONUMENT




## LEGEND

| | |
|---|---|
| × 44.51 THC | PROPOSED TOP OF HEADER CURB |
| × 44.27 RC | PROPOSED TOP OF ROLLOVER CURB |
| × 44.27 TC | PROPOSED TOP OF STANDARD CURB AND GUTTER |
| × 44.27 FG | PROPOSED FINISHED GRADE ELEVATION |
| × 45.00 PV | PROPOSED TOP OF PAVEMENT |
| × 45.00 SW | PROPOSED SIDEWALK |
| △ | PROPOSED CITY MONUMENT |
| | SUBDIVISION BOUNDARY LINE |
| | PROPOSED STREET CENTERLINE |
| | PROPOSED DRAINAGE FLOW |

EXISTING GRADE 3940.4 — PROPOSED GRADE 3939.33

10+00 STATION NUMBER

| DATE | REVISIONS | BY |
|---|---|---|
| | | |

## BENCHMARK

EXISTING CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF EMORY ROAD AND SUNSET DRIVE
ELEVATION: 3732.68 (CITY DATUM)
ELEVATION: 3741.16 (NGVD DATUM)

## SCALE

HOR: 1"=20' VER: 1"=5'
FILE NAME: VE_VSPP1
W.O. 061702-3
DATE: NOVEMBER, 2003
DESIGN BY: B.R.
DRAWN BY: CAD STAFF
CHKD. BY: H.P.
APPD. BY: BR

## ENGINEER'S SEAL

STATE OF TEXAS — BRADLEY ROE — 31886 — LICENSED PROFESSIONAL ENGINEER

BRADLEY ROE, P.E. 31886

## SEAL NOTE

## PLAN AND PROFILE

# VILLA ENCANTO

## VILLA SERENA COURT

## STATION 0+00 TO 4+23.35

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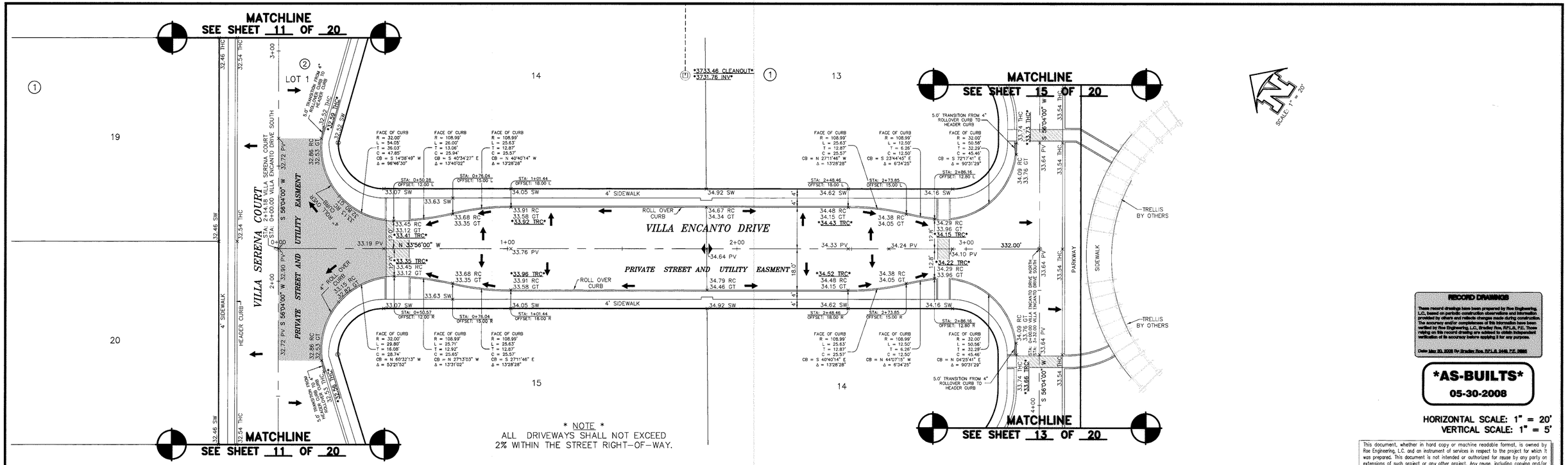


* NOTE *
ALL DRIVEWAYS SHALL NOT EXCEED 2% WITHIN THE STREET RIGHT-OF-WAY.

△ DENOTES PROPOSED CITY MONUMENT

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Date May 30, 2008 By Bradley Roe, RPLS, 2449, P.E. 31886

***AS-BUILTS***
**05-30-2008**

**HORIZONTAL SCALE: 1" = 20'**
**VERTICAL SCALE: 1" = 5'**

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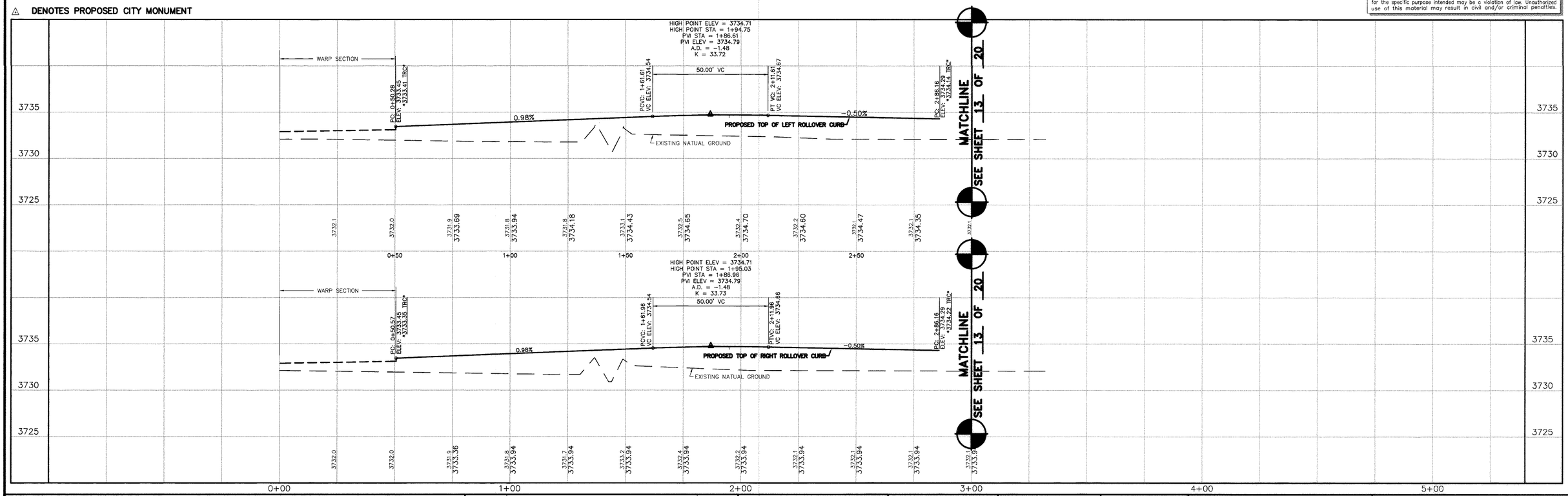


**LEGEND**

- × 44.51 THC PROPOSED TOP OF HEADER CURB
- × 44.27 RC PROPOSED TOP OF ROLLOVER CURB
- × 44.27 TC PROPOSED TOP OF STANDARD CURB AND GUTTER
- × 44.27 FG PROPOSED FINISHED GRADE ELEVATION
- × 45.00 PV PROPOSED TOP OF PAVEMENT
- × 45.00 SW PROPOSED SIDEWALK
- △ PROPOSED CITY MONUMENT
- SUBDIVISION BOUNDARY LINE
- PROPOSED STREET CENTERLINE
- PROPOSED DRAINAGE FLOW
- EXISTING GRADE / PROPOSED GRADE — 3940.4 / 3939.33
- 10+00 STATION NUMBER

| DATE | REVISIONS | BY |
|---|---|---|
| | | |

**BENCHMARK**

EXISTING CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF EMORY ROAD AND SUNSET DRIVE
ELEVATION: 3732.68 (CITY DATUM)
ELEVATION: 3741.16 (NGVD DATUM)

**SCALE**

HOR: 1"=20' VER: 1"=5'
FILE NAME: VE_VESPP1
W.O. 061702-3
DATE: NOVEMBER, 2003
DESIGN BY: B.R.
DRAWN BY: CAD STAFF
CHKD. BY: H.P.
APPD. BY: BR

**ENGINEER'S SEAL**

STATE OF TEXAS — BRADLEY ROE — 31886 — LICENSED — PROFESSIONAL ENGINEER

BRADLEY ROE, P.E. 31886

**SEAL NOTE**

**PLAN AND PROFILE**

***VILLA ENCANTO***

**VILLA ENCANTO DRIVE (SOUTH)**
**STATION 0+00 TO 3+32.00**

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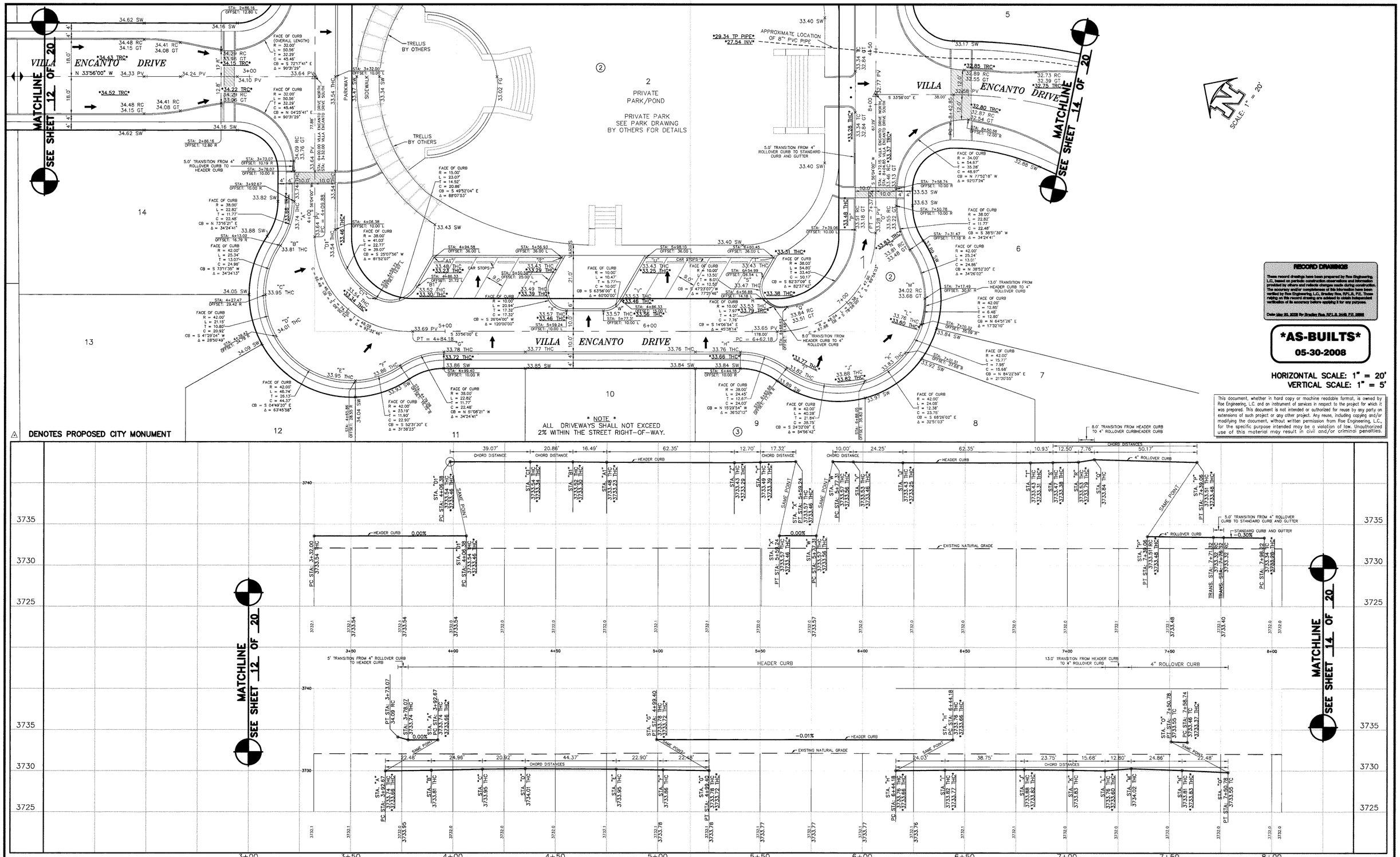


## LEGEND

| | |
|---|---|
| × 44.51 THC | PROPOSED TOP OF HEADER CURB |
| × 44.27 RC | PROPOSED TOP OF ROLLOVER CURB |
| × 44.27 TC | PROPOSED TOP OF STANDARD CURB AND GUTTER |
| × 44.27 FG | PROPOSED FINISHED GRADE ELEVATION |
| × 45.00 PV | PROPOSED TOP OF PAVEMENT |
| × 45.00 SW | PROPOSED SIDEWALK |
| △ | PROPOSED CITY MONUMENT |
| | SUBDIVISION BOUNDARY LINE |
| | PROPOSED STREET CENTERLINE |
| | PROPOSED DRAINAGE FLOW |

EXISTING GRADE — PROPOSED GRADE — 3940.4 / 3939.33 — 10+00 — STATION NUMBER

| DATE | REVISIONS | BY |
|---|---|---|
| | | |

**BENCHMARK**

EXISTING CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF EMORY ROAD AND SUNSET DRIVE
ELEVATION: 3732.68 (CITY DATUM)
ELEVATION: 3741.16 (NGVD DATUM)

**SCALE**

HOR: 1"=20' VER: 1"=5'
FILE NAME: VE_vespp2
W.O. 061702-3
DATE: NOVEMBER, 2003
DESIGN BY: B.R.
DRAWN BY: CAD STAFF
CHKD. BY: H.P.
APPD. BY: BR

**ENGINEER'S SEAL**

STATE OF TEXAS — BRADLEY ROE — 31886 — LICENSED — PROFESSIONAL ENGINEER

BRADLEY ROE, P.E. 31886

**SEAL NOTE**

**PLAN AND PROFILE**

## *VILLA ENCANTO*

## VILLA ENCANTO DRIVE (SOUTH)
## STATION 3+32.00 TO 8+04.85


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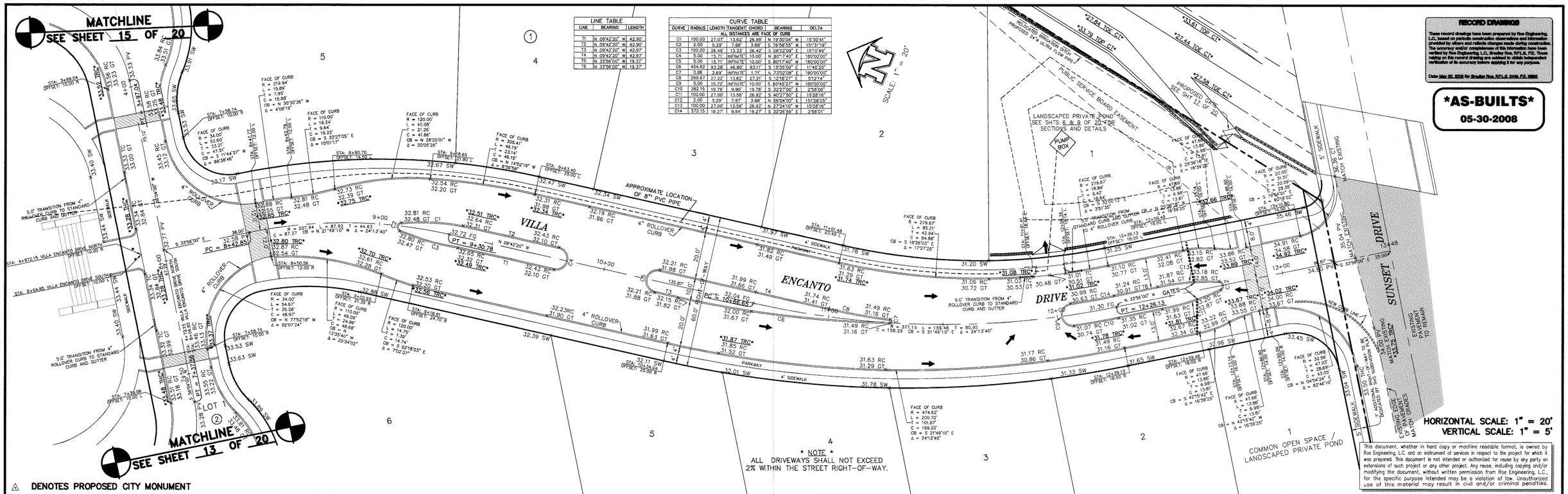



| LINE TABLE | | |
|---|---|---|
| LINE | BEARING | LENGTH |
| T1 | N 09°42'20" W | 42.90' |
| T2 | N 09°42'20" W | 42.90' |
| T3 | N 09°42'20" W | 42.90' |
| T4 | N 09°42'20" W | 42.97' |
| T5 | N 33°56'00" W | 19.37' |
| T6 | N 33°56'00" W | 19.37' |

| CURVE TABLE | | | | | | |
|---|---|---|---|---|---|---|
| ALL DISTANCES ARE FACE OF CURB | | | | | | |
| CURVE | RADIUS | LENGTH | TANGENT | CHORD | BEARING | DELTA |
| C1 | 100.00 | 27.07' | 13.62' | 26.99' | N 19°30'04" W | 15°30'41" |
| C2 | 2.00 | 5.29' | 7.88' | 3.88' | S 76°58'55" W | 151°31'19" |
| C3 | 100.00 | 26.49' | 13.33' | 26.42' | S 06°22'09" E | 15°10'49" |
| C4 | 5.00 | 15.71' | INFINITE' | 10.00' | N 80°17'40" E | 180°00'00" |
| C5 | 5.00 | 15.71' | INFINITE' | 10.00' | S 80°17'40" W | 180°00'00" |
| C6 | 454.62 | 93.28' | 46.80' | 93.11' | S 19°35'00" E | 11°45'20" |
| C7 | 0.86 | 2.69' | INFINITE' | 1.71' | N 73°02'08" E | 180°00'00" |
| C8 | 299.67 | 27.22' | 13.62' | 27.21' | S 12°18'27" E | 5°12'14" |
| C9 | 5.00 | 15.72' | INFINITE' | 10.00' | S 80°45'27" W | 180°00'00" |
| C10 | 382.15 | 19.29' | 9.90' | 19.28' | S 32°27'00" E | 2°53'00" |
| C11 | 100.00 | 27.00' | 13.58' | 26.92' | S 40°27'90" E | 15°28'16" |
| C12 | 2.00 | 5.29' | 7.87' | 3.88' | N 56°04'00" E | 151°28'05" |
| C13 | 100.00 | 27.00' | 13.58' | 26.92' | N 27°24'10" W | 15°28'16" |
| C14 | 372.15 | 19.27' | 9.64' | 19.27' | S 32°26'59" E | 2°58'01" |

△ DENOTES PROPOSED CITY MONUMENT

## LEGEND

| | |
|---|---|
| × 44.51 THC | PROPOSED TOP OF HEADER CURB |
| × 44.27 RC | PROPOSED TOP OF ROLLOVER CURB |
| × 44.27 TC | PROPOSED TOP OF STANDARD CURB AND GUTTER |
| × 44.27 FG | PROPOSED FINISHED GRADE ELEVATION |
| × 45.00 PV | PROPOSED TOP OF PAVEMENT |
| × 45.00 SW | PROPOSED SIDEWALK |
| △ | PROPOSED CITY MONUMENT |
| | SUBDIVISION BOUNDARY LINE |
| | PROPOSED STREET CENTERLINE |
| | PROPOSED DRAINAGE FLOW |
| EXISTING GRADE / PROPOSED GRADE | 3940.4 / 3939.33 |
| 10+00 | STATION NUMBER |

| DATE | REVISIONS | BY |
|---|---|---|
| | | |

**BENCHMARK**

EXISTING CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF EMORY ROAD AND SUNSET DRIVE
ELEVATION: 3732.68 (CITY DATUM)
ELEVATION: 3741.16 (NGVD DATUM)

**SCALE**

HOR: 1"=20' VER: 1"=5'
FILE NAME: VE_VESPP3
W.O. 061702-3
DATE: NOVEMBER, 2003
DESIGN BY: B.R.
DRAWN BY: CAD STAFF
CHKD. BY: H.P.
APPD. BY: BR

**ENGINEER'S SEAL**

STATE OF TEXAS
BRADLEY ROE
31886
LICENSED
PROFESSIONAL ENGINEER
BRADLEY ROE, P.E. 31886

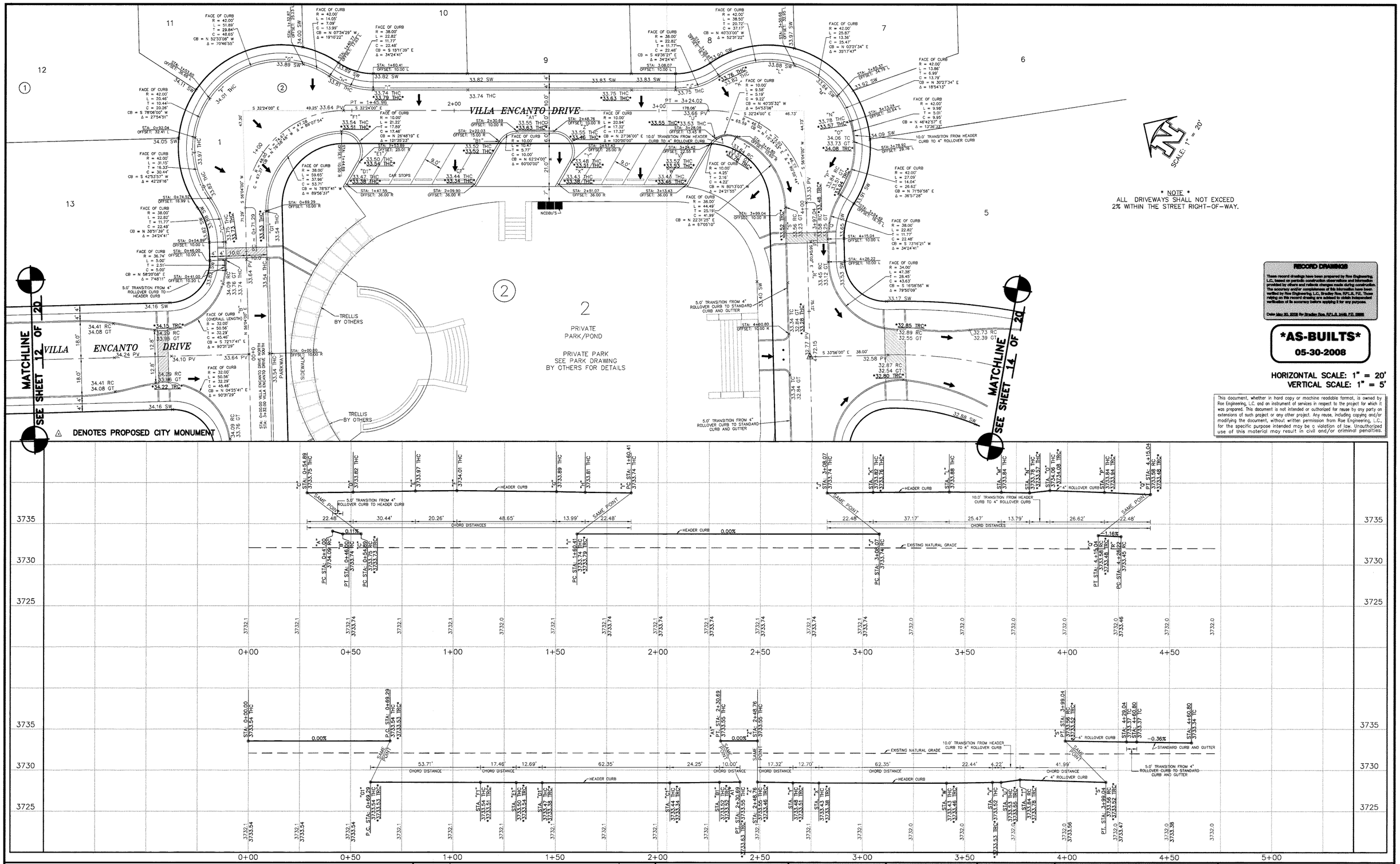
**SEAL NOTE**

**PLAN AND PROFILE**

# VILLA ENCANTO

## VILLA ENCANTO DRIVE (SOUTH)
## STATION 8+04.85 TO 13+16.00


Roe Engineering, L.C.
601 N. Cotton St. Suite No.6 El Paso, Tx. 79902
(915) 533-1418 - FAX: (915) 533-4972
e-mail roeeng@swbell.net
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING




**RECORD DRAWINGS**

These record drawings have been prepared by Roe Engineering, L.C. based on periodic construction observations and information provided by others and reflects changes made during construction. The accuracy and/or completeness of this information have been verified by Roe Engineering, L.C., Bradley Roe, RPLS, P.E. Those relying on this record drawing are advised to obtain independent verification of its accuracy before applying it for any purpose.

Date: May 30, 2008 By: Bradley Roe, RPLS, P.E.

***AS-BUILTS***
**05-30-2008**

**HORIZONTAL SCALE: 1" = 20'**
**VERTICAL SCALE: 1" = 5'**

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## LEGEND

| | |
|---|---|
| × 44.51 THC | PROPOSED TOP OF HEADER CURB |
| × 44.27 RC | PROPOSED TOP OF ROLLOVER CURB |
| × 44.27 TC | PROPOSED TOP OF STANDARD CURB AND GUTTER |
| × 44.27 FG | PROPOSED FINISHED GRADE ELEVATION |
| × 45.00 PV | PROPOSED TOP OF PAVEMENT |
| × 45.00 SW | PROPOSED SIDEWALK |
| △ | PROPOSED CITY MONUMENT |
| ——— | SUBDIVISION BOUNDARY LINE |
| — — — | PROPOSED STREET CENTERLINE |
| ← | PROPOSED DRAINAGE FLOW |

EXISTING GRADE — PROPOSED GRADE
3940.4 / 3939.33
10+00
STATION NUMBER

| DATE | REVISIONS | BY |
|---|---|---|
| | | |

**BENCHMARK**

EXISTING CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF EMORY ROAD AND SUNSET DRIVE
ELEVATION: 3732.68 (CITY DATUM)
ELEVATION: 3741.16 (NGVD DATUM)

**SCALE**

HOR: 1"=20' VER: 1"=5'
FILE NAME: VE_venpp1.dwg
W.O. 061702-3
DATE: NOVEMBER, 2003
DESIGN BY: B.R.
DRAWN BY: CAD STAFF
CHKD. BY: H.P.
APPD. BY: BR

**ENGINEER'S SEAL**

STATE OF TEXAS — BRADLEY ROE — 31886 — LICENSED — PROFESSIONAL ENGINEER
BRADLEY ROE, P.E. 31886

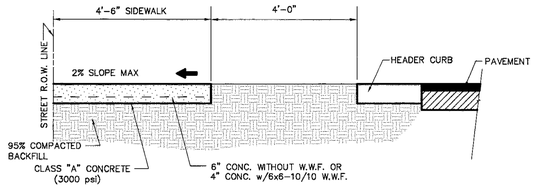
**SEAL NOTE**

**PLAN AND PROFILE**

## *VILLA ENCANTO*

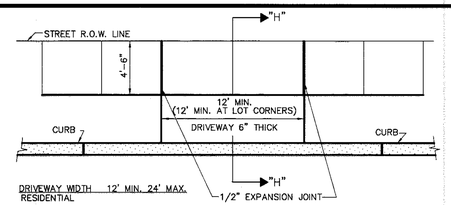
**VILLA ENCANTO DRIVE (NORTH)**
**STATION 0+00.00 TO 4+72.15**

Roe Engineering, L.C.
601 N. Cotton St. Suite No.6 El Paso, Tx. 79902
(915) 533-1418 – FAX: (915) 533-4972
e-mail: roeeng@swbell.net
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING




## SECTION "H - H"

SCALE : 1" = 2'

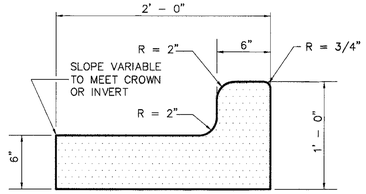



## PLAN VIEW/HEADER TYPE CURB

SCALE : 1" = 6'

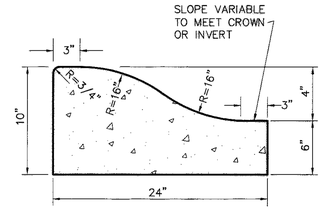
NOTES FOR CURB AND GUTTER:

1. EXPANSION JOINTS WILL BE REQUIRED AT THE END OF CURB RETURNS, AT 50' O.C. & POINT OF TANGENCY WITH STRAIGHT RUNS OF CURB AT EVERY INTERSECTION
2. CONTRACTION JOINTS (1/2 INCH MIN. SCORED JOINTS) MUST BE INSTALLED EVERY 10 FEET IN CURB OR CURB AND GUTTER.
3. ALL EXPANSION JOINTS WILL BE PREFORMED BITUMINOUS FIBER 1/2 INCH THICK.
4. CONCRETE TO BE CLASS "A", 3000 P.S.I.



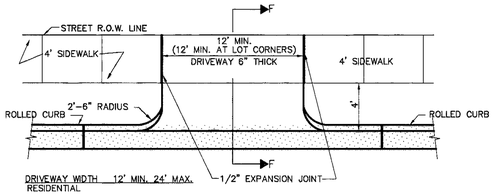

## STANDARD CURB AND GUTTER DETAIL

SCALE 1 1/2" = 1'




## ROLL-OVER CURB

SCALE 1 1/2" = 1'

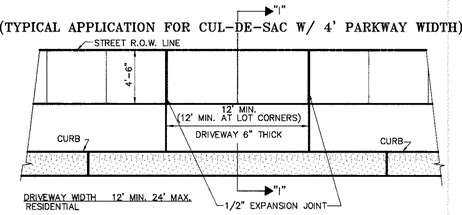



## PLAN VIEW/STANDARD CURB & GUTTER

SCALE : 1" = 6'

(TYPICAL APPLICATION FOR 8' PARKWAY WIDTH)

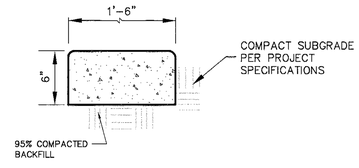
(TYPICAL APPLICATION FOR CUL-DE-SAC W/ 4' PARKWAY WIDTH)




## PLAN VIEW/ROLL-OVER TYPE CURB

SCALE : 1" = 6'

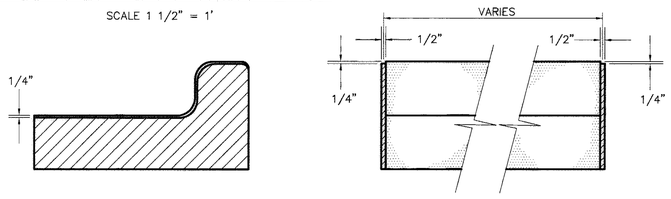
(TYPICAL APPLICATION FOR CUL-DE-SAC W/ 4' PARKWAY WIDTH)




## HEADER CURB

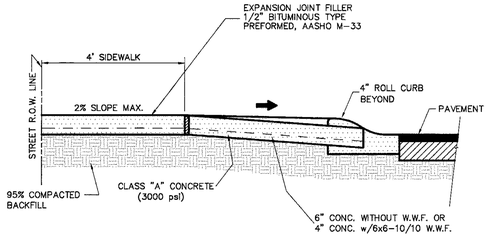
SCALE 1 1/2" = 1'

IMPORTED STRUCTURAL FILL



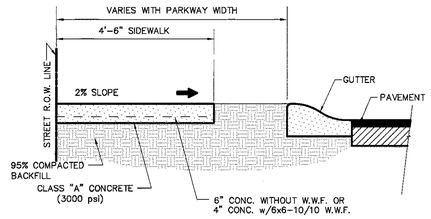

## CURB AND GUTTER EXPANSION JOINT DETAIL

END ELEVATION SCALE 1 1/2"= 1' SIDE ELEVATION




## SECTION F - F

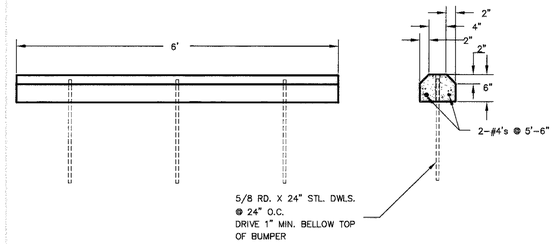
SCALE : 1" = 2'




## SECTION "I - I"

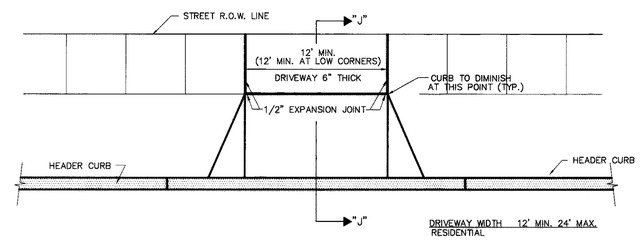
SCALE : 1" = 2'

(TYPICAL APPLICATION FOR CUL-DE-SAC W/ 5' PARKWAY WIDTH)




## CONCRETE BUMPER

SCALE: 1"=1'-0"




## PLAN VIEW

SCALE : 1" = 6'

SIZE AND CONSTRUCTION:
THE STANDARD CITY MONUMENT SHALL BE POURED-IN-PLACE CONCRETE CONE. EIGHT (8) INCHES MINIMUM DIAMETER AT THE TOP, EIGHTEEN (18) INCHES MINIMUM DIAMETER AT THE BOTTOM, THIRTY-SIX (36) INCHES MINIMUM IN DEPTH WITH THE MONUMENT CAP IN PLACE ON TOP.

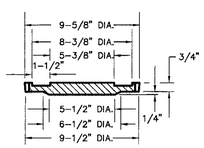
THE MONUMENT SHALL BE COVERED WITH A CAST IRON BOX AND COVER.

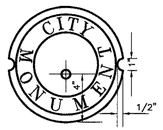
NUMBER AND LOCATIONS:
THE MONUMENTS SHALL BE INSTALLED WHERE SHOWN ON THE SUBDIVISION PLAT AS APPROVED BY THE CITY ENGINEER.

ANY MONUMENT MUST BE WITHIN THE LINE OF SIGHT OF ANY OTHER MONUMENT (2000 FEET MAXIMUM DISTANCE BETWEEN MONUMENTS).
THE SIZE, TOPOGRAPHY AND LAYOUT OF THE SUBDIVISION SHALL GOVERN THE NUMBER OF MONUMENTS REQUIRED.

NO FEWER THAN TWO MONUMENTS SHALL BE PLACED IN A ONE STREET SUB-DIVISION.

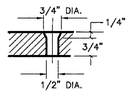
AT LEAST ONE (1) MONUMENT SHALL BE PLACED ON EACH HORIZONTAL CURVE. TWO SHALL BE PLACED IF THE POINT OF INTERSECTION (P.I.) OF THE TANGENTS LEADING INTO THE CURVE FALLS OUTSIDE OF CITY RIGHT-OF-WAY. MONUMENTS SHALL BE INSTALLED SO THAT ALL FRONT PROPERTY CORNERS OF ALL LOTS IN THE SUBDIVISION ARE WITHIN LINE OF SIGHT OF A MONUMENT, OR WITHIN SIGHT OF LINE BETWEEN TWO ADJACENT MONUMENTS.



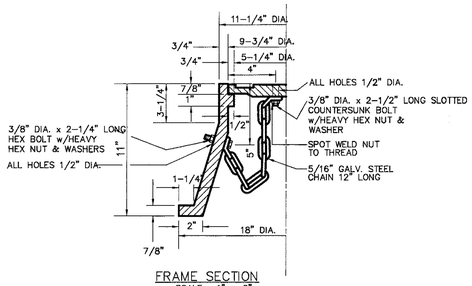

COVER

SCALE : 1" = 6"



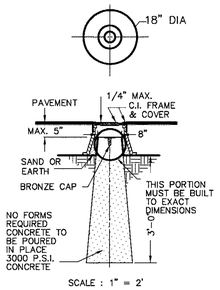

COUNTERSUNK DETAIL

SCALE : 1" = 3"

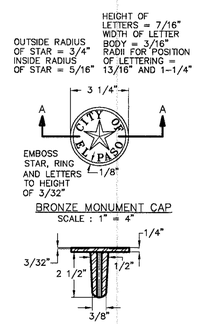



FRAME SECTION

SCALE : 1" = 6"




SCALE : 1" = 2'

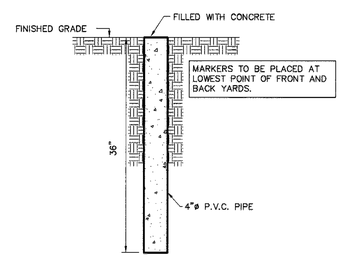



BRONZE MONUMENT CAP

SCALE : 1" = 4"

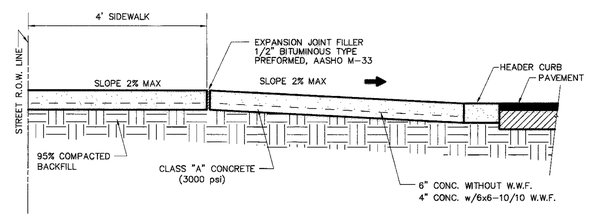
SECTION A -A

## CITY MONUMENT DETAIL



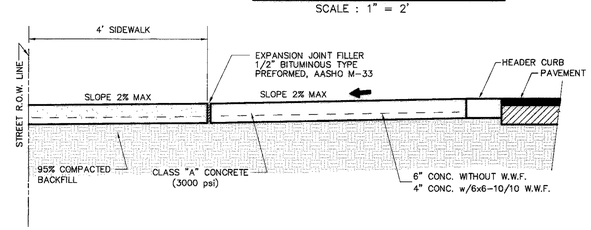

## TYPICAL PERMANENT ELEVATION MARKER

SCALE 1" = 1'




## SECTION "J - J"

SCALE : 1" = 2'




## SECTION "J1 - J1"

SCALE : 1" = 2'

RECORD DRAWINGS

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Date: May 30, 2008 By: Bradley Roe, R.P.L.S. 2449, P.E. 31886

***AS-BUILTS***
**05-30-2008**

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| DATE | REVISIONS | BY |
|---|---|---|
| 12/23/03 | CITY COMMENTS | |
| 6/24/04 | CHANGED HEADER CURB FROM 12" TO 18" WIDE | |

PRIMARY BENCHMARK

EXISTING CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUNSET DRIVE AND EMORY ROAD
ELEVATION: 3732.68 (CITY DATUM)

SECONDARY BENCHMARK

| SCALE | |
|---|---|
| HOR: | AS SHOWN |
| VER: | N/A |
| W.O. | 061702-3 |
| FILE: | VE_typdtl.DWG |
| DATE: | OCTOBER, 2003 |
| DESIGN BY: | B.R. |
| DRAWN BY: | CADD STAFF |
| CHKD. BY: | H.P. |
| APPD. BY: | B.R. |

ENGINEER'S NOTE

ENGINEER'S SEAL

STATE OF TEXAS — BRADLEY ROE — 31886 — LICENSED PROFESSIONAL ENGINEER

BRADLEY ROE, P.E. 31886

TYPICAL DETAILS AND SECTIONS

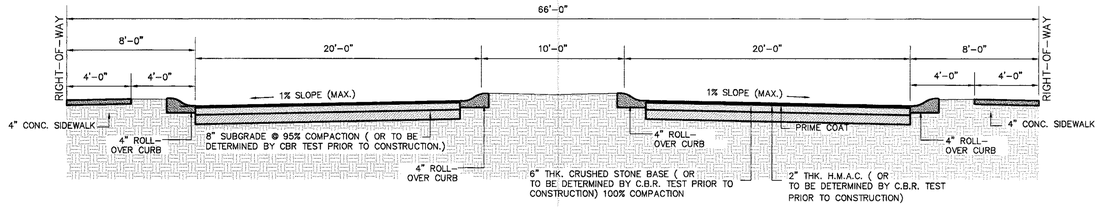
*VILLA ENCANTO*

*TYPICAL DETAILS AND SECTIONS*

Roe Engineering L.C.
801 N. Cotton St. Suite No.6 El Paso, Tx. 79902
(915) 533-1418 FAX: (915) 533-4972
Email : roeeng@swbell.net
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

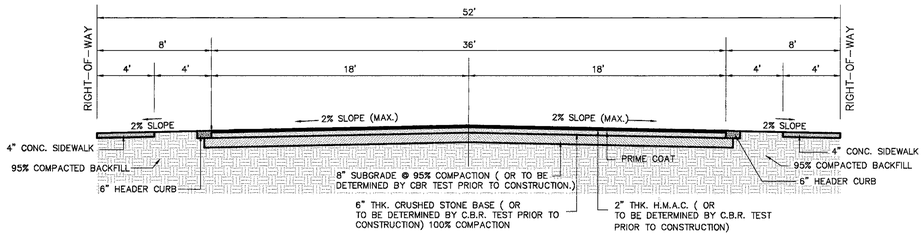
**NOTES FOR STREETS:**

1. BASE TO BE COMPACTED TO 100% COMPACTION BY A.S.T.M. D1557
2. H.M.A.C., BASE, AND SUBGRADE WILL PLACED BE IN STRICT ACCORDANCE WITH THE LATEST CITY OF EL PASO SPECIFICATIONS
3. SUBGRADE TO BE COMPACTED TO 95% COMPACTION BY A.S.T.M. D1557
4. PRIME COAT TO BE 0.25 GALLON PER SQUARE YARD ( MIN. COVERAGE ).
5. ALL ELEVATIONS ON PLANS BASED ON CITY DATUM.
6. SUBGRADE UNDER CURB MUST BE FORMED AND COMPACTED AS SHOWN OR EXCESS CUT MUST BE BACKFILLED WITH CONCRETE.
7. COMPACTION BEHIND CURB A. ONE FOOT MIN. ON CUTS
   B. TWO FOOT MIN. ON FILLS
8. C.B.R. TEST TO BE APPROVED BY THE CITY ENGINEER PRIOR TO PAVING.
9. COMPACTION TEST WHERE REQUIRED BY THE CITY ENGINEER MUST BE PAID FOR BY THE DEVELOPER. THIS INCLUDES BUT IS NOT LIMITED TO SUBGRADE AND BASE COURSE.
10. ALL PLANS MUST BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CITY OF EL PASO SUBDIVISION DESIGN AND IMPROVEMENT STANDARDS.
11. C.B.R. TEST REQUIRED AT EVERY 500' AFTER SUBGRADE IS IN PLACE OR A MIN. OF TWO TESTS IF STREET IS LESS THAN 500'
12. STREET VERTICAL CONTROL OF ALL CURB AND GUTTER ELEVATIONS WILL BE MAINTAINED. ( BLUE TOPPING REQUIRED THROUGHOUT )



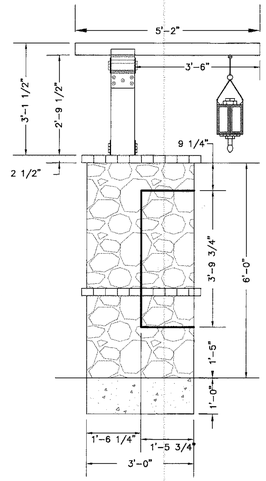

## 66' RIGHT-OF-WAY TYPICAL MEDIAN STREET SECTION

SCALE 1" = 5'



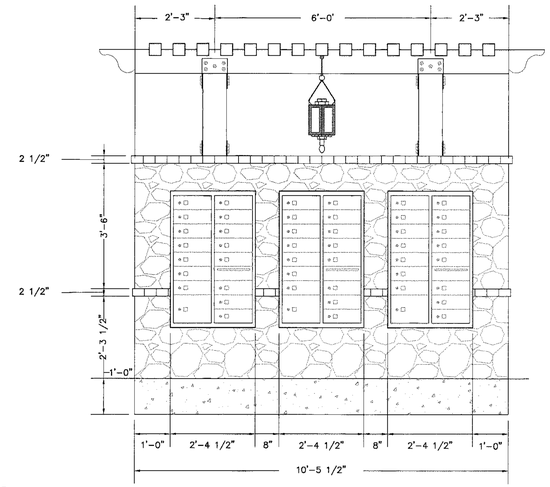

## 52' RIGHT-OF-WAY TYPICAL CROWN STREET SECTION

SCALE 1" = 5'




## NCDBU SIDE ELEVATION

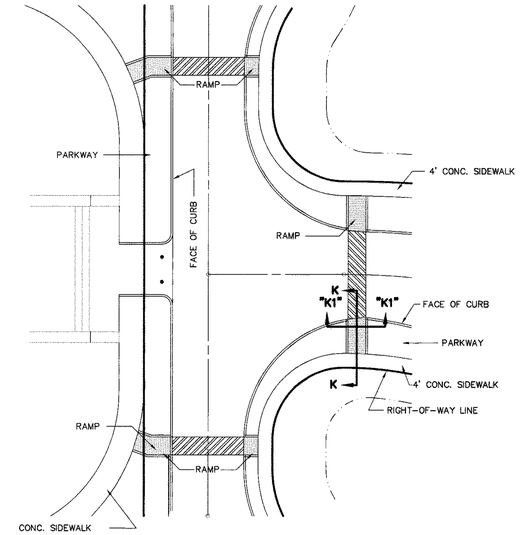
SCALE: 1/4" = 1'




## NCDBU FRONT ELEVATION AT NORTHSIDE OF POND PARK

SCALE: 1/4" = 1'

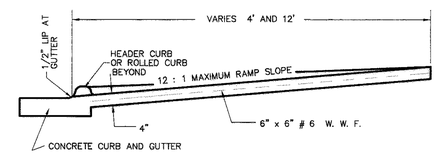
NOTE: SEE SUBDIVISION PLAT FOR LOCATION OF NCDBU, LOCATED IN LOT 2, BLOCK2




## PLAN VIEW DETAIL

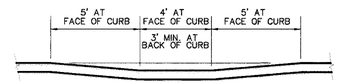
SCALE 1" = 20'

NOTE:
SPECIFICATIONS AS PER SUBDIVISION DESIGN STANDARDS NO. C-7 AND C-8 CITY OF EL PASO



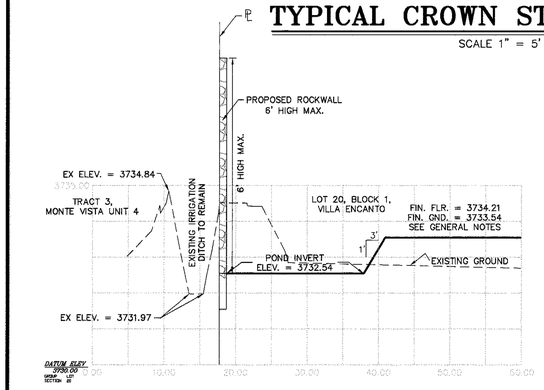

## SECTION "K - K"

HANDICAP RAMP SCALE: 1" = 2'




## SECTION "K1 - K1"

HANDICAP RAMP SCALE: 1" = 2'

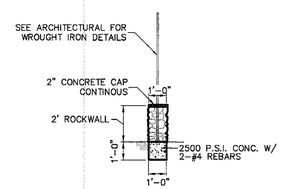



## SECTION L-L

HOR SCALE: 1" = 10'
VER SCALE: 1" = 2'

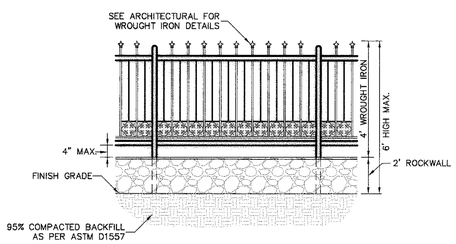
**ROCK WALL NOTES**

1. STONE FOR ROCK WALLS SHALL BE SOUND AND FREE FROM LOOSE OR FRIABLE INCLUSIONS. THE STONE SHALL BE DENSE AND RESISTANT TO THE ACTION OF AIR AND WATER. THE STONE SHALL BE AS NEARLY UNIFORM IN SECTION AS IS PRACTICABLE.
2. MORTAR FOR ROCKWALLS SHALL BE ASTM C-270, TYPE "S", AND PROPORTIONED BY VOLUME AS FOLLOWS:
   PORTLAND CEMENT: 1 (ONE) PART
   LIME: 1/4 PART
   SAND: 3-1/2 PARTS
3. CONCRETE FOR ROCKWALL FOOTING SHALL HAVE A COMPRESSIVE STRENGTH OF 3,000 PSI @ 28 DAYS; REINFORCING STEEL SHALL MEET THE REQUIREMENTS FOR ASTM A-615, GRADE 60.
4. ROCK WALL FOOTING SHALL BEAR ON COMPACTED SUBGRADE: 95 % ASTM D-1557
5. OVER-EXCAVATION FOR ROCK WALL FOOTING SHALL BE BACKFILLED WITH LEAN CONCRETE.
6. ROCK SHALL BE EMBEDED 4-INCHES IN FOOTING WHILE CONCRETE IS PLASTIC.
7. IF ROCKWALL IS FREQUENTLY EXPOSED TO WATER, LIME SHALL NOT BE USED, AND THE PORTIONS SHALL BE ONE PART PORTLAND CEMENT AND THREE PARTS SAND.



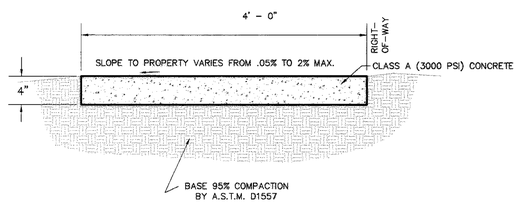

## ROCKWALL

SCALE: 1/4" = 1'




## ROCKWALL W/ WROUGHT IRON FENCE

SCALE: 1/4" = 1'

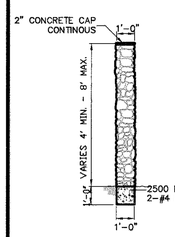



## TYPICAL SIDEWALK CROSS-SECTION

SIDEWALK DETAIL SCALE: 1" = 1'

**NOTES FOR SIDEWALKS**

1. CONCRETE TO BE 3000 P.S.I. MINIMUM.
2. DUMMY JOINT REQUIRED AT 10' O.C. FOR HEADERS AND 5' O.C. FOR SIDEWALKS.
3. EXPANSION MATERIAL REQUIRED AT CURB RETURNS WITH 1/2" PREMOLDED ASPHALT IMPREGNATED MATERRIAL OR EQUAL.
4. EXPANSION JOINTS REQUIRED AT 50' O.C. WHEN FORMING FOR HEADERS.
5. EXPANSION JOINTS REQUIRED FOR SIDEWALK AT 20' O.C.



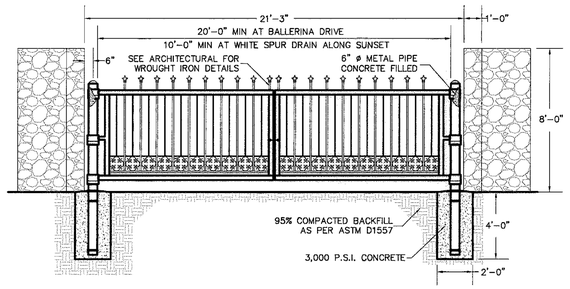

**NOTE:**
WALLS ADJACENT TO PONDING AREAS OR DRAINAGE DITCHES MAY BE CONSTRUCTED OF BRICK OR CINDER BLOCK.

DEPTH AND WIDTH OF FOOTING DETERMINED BY LOCAL SOIL CONDITIONS

STEEL AS REQUIRED

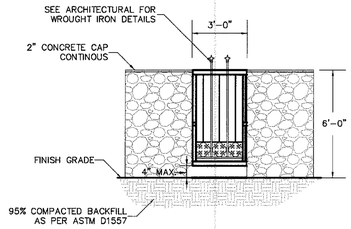
## ROCKWALL

SCALE: 1/4" = 1'




## GATE AT BALLERINA DRIVE AND VILLA SERENA COURT AND WHITE SPUR DRAIN

SCALE: 1/4" = 1'




## 3' PEDESTRIAN GATE ALONG MONTOYA LATERAL

SCALE: 1/4" = 1'

*RECORD DRAWINGS*

*These record drawings have been prepared by Roe Engineering, L.C. based on periodic construction observations and information provided by others and reflects changes made during construction. The accuracy and/or completeness of this information have been verified by Roe Engineering, L.C. Bradley Roe, R.P.L.S., P.E. Those relying on this record drawing are advised to obtain independent verification of its accuracy before applying it for any purpose.*

*Date: May 30, 2008 By: Bradley Roe, R.P.L.S. 2449, P.E. 31886*

***AS-BUILTS***
**05-30-2008**

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| DATE | REVISIONS | BY |
|---|---|---|
| 12/23/03 | CITY COMMENTS | |

**PRIMARY BENCHMARK**
EXISTING CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUNSET DRIVE AND EMORY ROAD
ELEVATION: 3732.68 (CITY DATUM)

**SECONDARY BENCHMARK**

| SCALE | |
|---|---|
| HOR: | 1" = 100' |
| VER: | N/A |
| W.O. | 061702-3 |
| FILE: | VE_typdt2.DWG |
| DATE: | OCTOBER, 2003 |
| DESIGN BY: | B.R. |
| DRAWN BY: | CADD STAFF |
| CHKD. BY: | H.P. |
| APPD. BY: | B.R. |

**ENGINEER'S NOTE**

**ENGINEER'S SEAL**
STATE OF TEXAS · BRADLEY ROE · 31886 · LICENSED · PROFESSIONAL ENGINEER
BRADLEY ROE, P.E. 31886

**TYPICAL DETAILS AND SECTIONS**

*VILLA ENCANTO*

*TYPICAL DETAILS AND SECTIONS*

Roe Engineering L.C.
601 N. Cotton St. Suite No.6 El Paso, Tx. 79902
(915) 533-1418 FAX (915) 533-4972
Email : roeeng@swbell.net
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

NO PARKING AREA — NO PARKING AREA AT ALL TRAFFIC CALMING AREAS (TYPICAL)

DENOTES LOCATION OF 5' x 5' SIDEWALK PASSING ZONES

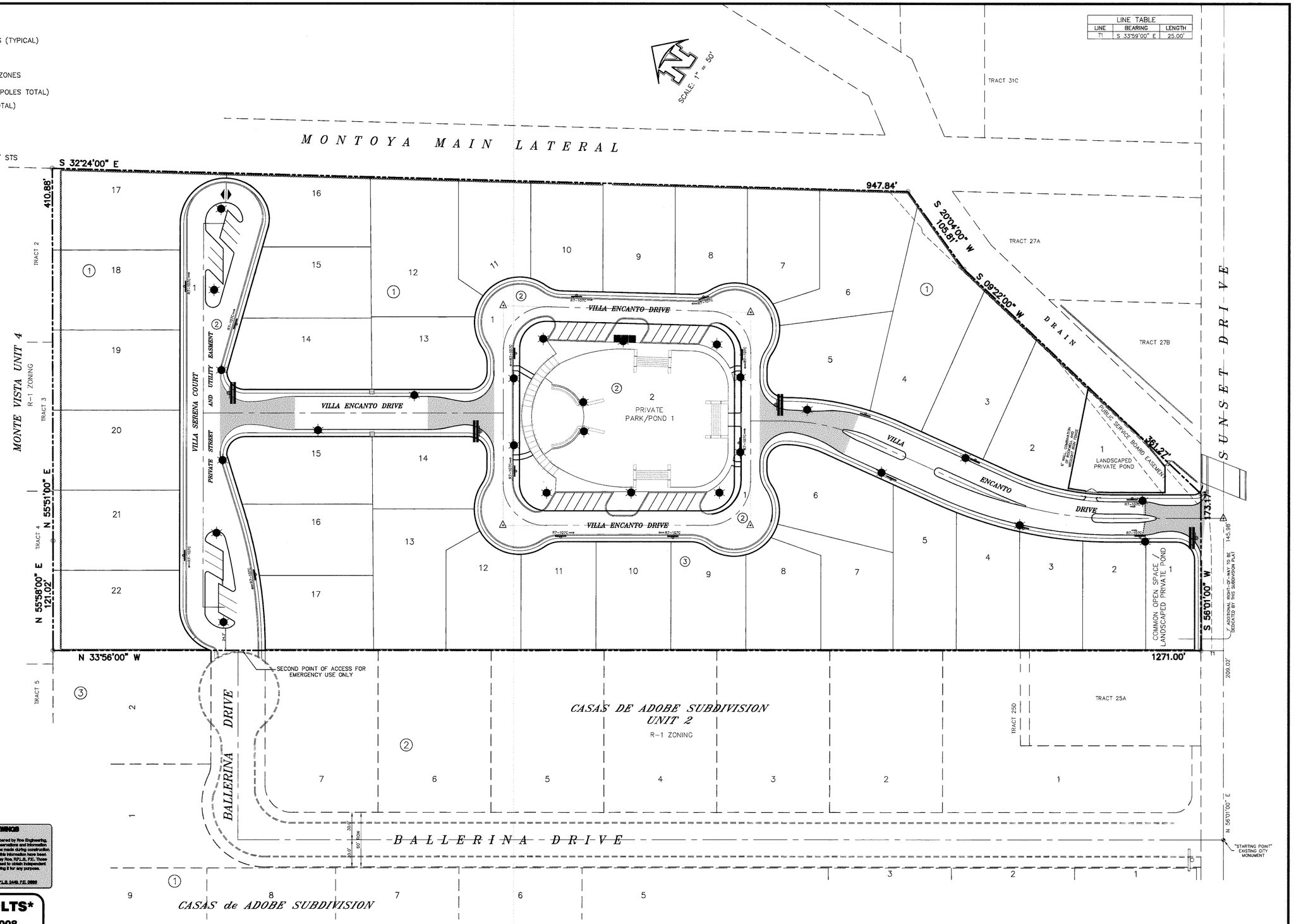
DENOTES LOCATION OF PROPOSED LIGHT POLE (20 POLES TOTAL)

DENOTES LOCATION OF NCDBU (4' X 6'-3 SITES TOTAL)

EXISTING SNS WITH STS

DENOTES LOCATION OF PROPOSED 9" SNS WITH 30" STS

| LINE TABLE | | |
|---|---|---|
| LINE | BEARING | LENGTH |
| T1 | S 33°59'00" E | 25.00' |




**RECORD DRAWINGS**

These record drawings have been prepared by Roe Engineering, L.C. based on periodic construction observations and information provided by others and reflects changes made during construction. The accuracy and/or completeness of this information have been verified by Roe Engineering, L.C. Bradley Roe, R.P.L.S. P.E. Those relying on this record drawing are advised to obtain independent verification of its accuracy before applying it for any purpose.

Date: May 30, 2008 By: Bradley Roe, R.P.L.S. 2449, P.E. 31886

***AS-BUILTS***
**05-30-2008**

NOTE; SEE SHEET 19 OF 20 FOR DETAILS

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| DATE | REVISIONS | BY |
|---|---|---|
| | | |

**PRIMARY BENCHMARK**

EXISTING CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUNSET DRIVE AND EMORY ROAD
ELEVATION: 3732.68 (CITY DATUM)

**SECONDARY BENCHMARK**

| SCALE | |
|---|---|
| HOR: | 1" = 100' |
| VER: | N/A |
| W.O. | 061702-3 |
| FILE: | VE_Illum1.DWG |
| DATE: | NOVEMBER, 2003 |
| DESIGN BY: | B.R. |
| DRAWN BY: | CAD STAFF |
| CHKD. BY: | H.P. |
| APPD. BY: | B.R. |

ENGINEER'S NOTE

ENGINEER'S SEAL

STATE OF TEXAS — BRADLEY ROE — 31886 — REGISTERED PROFESSIONAL ENGINEER

BRADLEY ROE, P.E. 31886

ILLUMINATION PLAN

# VILLA ENCANTO

## ILLUMINATION PLAN

Roe Engineering L.C.
601 N. Cotton St. Suite No.6 El Paso, Tx. 79902
(915) 533-1418 FAX: (915) 533-4972
Email : roeeng@swbell.net
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

City of El Paso
Specifications for Reflectorized Street Name Signs

1. Color of Sign: The finished sign must have a reflectorized green background. The green must conform with the Bureau of Public Roads Highway Green. The legend must be reflectorized silver white (green reverse screened background with silver copy).

2. Letter Design: The lettering of all legends must be upper case letters in accordance with "standard alphabets for highway sign" published by the Federal Highway Administration.

3. Letter Spacing: The control for the spacing values in traffic layout is the distance recognized as aesthetic spacing between two straight letters (HN). A spacing control of two times the width of the stoke of the letter series to be used must be the aesthetic control (100%). Two and one–half times (2–1/2) this control must be used as the aesthetic word space between elements in the primary legend.

4. Layout: The maximum number of letters to be accommodated on a given length street name face must be determined by widest letter series possible for that legend and the spacing control (100%) for the series used must be expanded or condensed up to 25% in 5% increments.

5. The spacing control (100%) for the series used must be expanded or condensed up to 25% in 5% increments for the end margin with minimum of 1".

6. The word space must be expanded up to 25% in 5% increments but not condensed.

7. Space between primary and block number area must be ½ the aesthetic work space used in the primary legend.

8. Size of legend: For 6" street name signs the primary legend or street name must have capital letters four inches (4") high and all secondary legends, including the suffix, the clock numbers must have upper case letters two inches (2") high.

9. Suffix letter size for all length must be 2" Capitals, C series, except that series A or B where suffix abbreviation exceeds two letters, may be used.

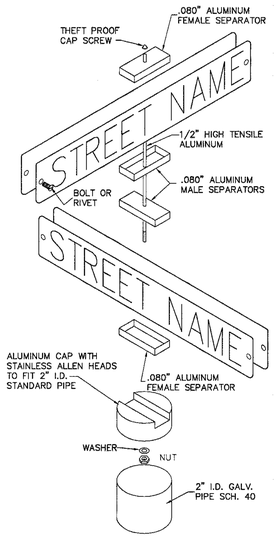
10. Size of Legend: For 9" street name signs, the primary legend, or street name must have capital letters six inches (6") high and all secondary legends, including the suffix, block numbers, must have upper case letters two and one–half inches (2–1/2") high.

11. Suffix letter size for all length must be 2–1/2" capitals, C series, except that series A and B where suffix abbreviation exceeds two letters, may be used.

12. Position of Legend: Each sign face will consist of the street name, suffix and two zeros of the block number. The additional numbers of the block number will be applied by the city of El Paso. The suffix will be located in the upper right corner and the block number in the lower right corner of the sign face and the street name centered in the remaining space.

13. 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 face must be comprised or one piece or panel of reflective sheeting.

14. Type of sheeting: Engineer grade reflective sheeting must be used in the fabrication of the street name sign faces.




City of El Paso
Specifications for Aluminum Sign Blanks

These specifications describe details and minimum requirements for Aluminum Sign Blanks, to which reflective sheeting will be applied.

1. All materials shall be new and unweathered and shall be of domestic origin, milled, rolled and finished in domestic mills.

2. Sign blanks shall be .080 gauge alodized–treated aluminum, 5052–H38 alloy, free of burrs, corrosion, white rust and dirt, suitable for application of reflective sheeting without further preparation.

3. Edges of blanks shall be cut true and square, corner radii, hole diameters and hole locations shall be as described in the aluminum sign blank bid D.H.T. standard.

4. All sign blanks will be treated as follows:

A. Degreasing

1. Vapor Degreasing – By total immersion of sign blank in a saturated vapor of trichloroethylene or perchloroethylene. Trademark printing shall be remove with lacquer thinner before degreasing.

Or

2. Alkaline Degreasing – By total immersion of sign blank in a tank containing alkaline solutions, controlled and titrated to the solution manufacturer's specification for time, temperature and concentration. Immersion time shall depend upon the amount of soil present, gauge of the metal and solution strength, rinse thoroughly with running water.

B. Etching

1. Acid Etch – Etch well in 6 – 8 % phosphoric solution at 100 degrees Fahrenheit of proprietory acid etching solution. Rinse thoroughly with running water.

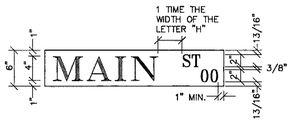
Or

2. Alkaline Etch – Etch well the pre–cleaned aluminum surface in an alkaline etching material that is controlled by titration. Use time, temperature, and concentration specified by solution manufacturer. Rinse thoroughly. Remove smut with an acidic chromium compound–type solution as specified by the solution manufacturer and then rinse thoroughly.

C. Chromate conversion coating

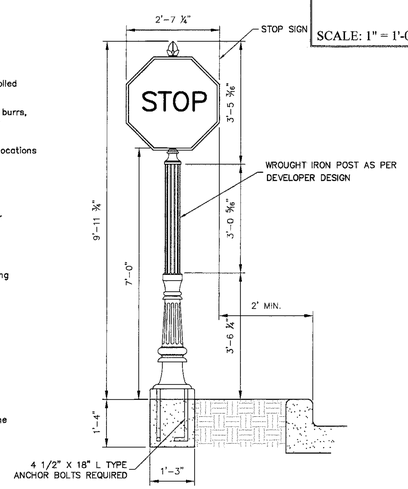
Coat the aluminum blanks according to the chromate conversion coating manufacturer's instructions. The coating shall conform to ASTM – B448067, class 2, and shall range in color from silvery iridescent to pale yellow. The coating weight shall be 10 to 35 MG per square foot with a median of 25 MG per square foot as the optimum coating weight.

| SIGN CLASS | SIGN LENGTH | PRIMARY LETTERS SIZE & SERIES | SUFFIX & BLOCK NUMBER SIZE AND SERIES |
|---|---|---|---|
| 6" ARTERIAL STREETS | 24" | 4" C,D, SERIES | 2" C SERIES |
| | 30" | 4" C,D, SERIES | 2" C SERIES |
| | 36" | 4" A,B,C,D, SERIES | 2" C SERIES |




## LAYOUT FOR 6" STREET NAME SIGN

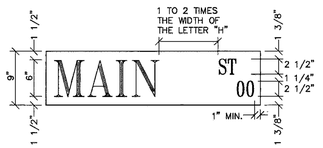
SCALE : 1" = 1'




## SIGN POST INSTALLATION

NOT TO SCALE

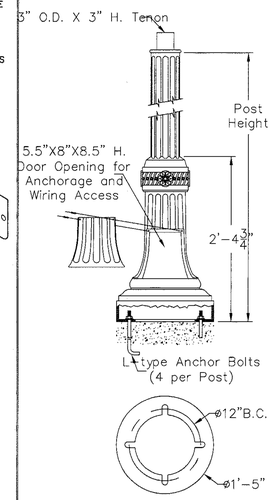
| SIGN CLASS | SIGN LENGTH | PRIMARY LETTERS SIZE & SERIES | SUFFIX & BLOCK NUMBER SIZE AND SERIES |
|---|---|---|---|
| 9" ARTERIAL STREETS | 36" | 6" C,D, SERIES | 3" C SERIES |
| | 42" | 6" C,D, SERIES | 3" C SERIES |
| | 48" | 6" A,B,C,D, SERIES | 3" C SERIES |




## LAYOUT FOR 9" STREET NAME SIGN

SCALE : 1" = 1'

# CLEVELAND SERIES




SCALE: 1" = 1'-0"

Catalog Code Description: CL-17-F5-ht-top-globe

Name of base (Cleveland); Diameter of Base (17")
Type of Pole (Fluted 5"); Height of Pole (None)

Post Selection: Specify pole height from bottom of base.

| Catalog Code | Shaft Type | Heights |
|---|---|---|
| CL-17-S4-__ | 4" dia. smooth | 8'-16' |
| CL-17-F4-__ | 4" dia. fluted | 8'-16' |
| CL-17-S5-__ | 5" dia. smooth | 8'-16' |
| CL-17-F5-__ | 5" dia. fluted | 8'-16' |
| CL-17-TF35-__ | 3"-5" dia. tapered-fluted | 8'-16' |

Check Appropriate Boxes for Finish and Material

Finish
- ❑- Flat Black
- ❑- Hunter Green
- ❑- Forest Green
- ❑- Dark Bronze
- ❑- Custom

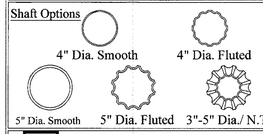
Material
- ❑- Cast Aluminum
- ❑- Cast Iron
- ❑- Steel
- ❑- Custom

Optional Equipment
- ❑- Receptacles (see Accessories section)
- ❑- Banner Arms (see Accessories section)
- ❑- Flag Pole Holders (see Accessories section)
- ❑- Signage (see Signage section)

Ordering Instructions

To order, simply follow the format for the Catalog Code. The code description is: Base-Diameter-Pole-Height-Top-Globe Once the base has been selected, use the base initials to begin your catalog code. The next entry to the code is the diameter of the base. Next, you will choose the type of pole that the product will have whether it is smooth, fluted, tapered fluted, etc. The height of pole is next and it is measured from the bottom of the base. The post top style is next and followed by the globe type. Codes can be found under each item.

Shaft Options

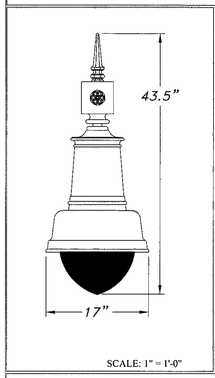



Niland Company
NILAND COMPANY • PH: (915) 779-1405 • FAX: (915) 779-3618 • E-MAIL:INFO@NILANDCO.COM
520 N. Clark El Paso, Tx.79905 • PH: 800-648-9013 •FAX: 888-779-3065 • WEB PAGE: HTTP://www.nilandco.com

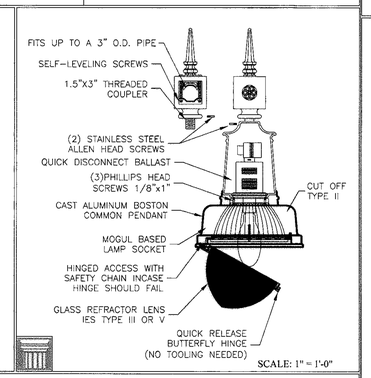
# BOSTON COMMON SERIES

MOD-BC-17

FULL CUTOFF OPTICS




SCALE: 1" = 1'-0"




SCALE: 1" = 1'-0"

EXAMPLE
MOD-BC-17-MH-250-120-II-TB

MOD-BC-17-__MH__ Ballast __250__ Watts __120__ Volts __CLEAR__ Reflector __TB__ Color

| BALLAST | WATTS | VOLTS | REFLECTOR | COLOR (POWDER COATED) |
|---|---|---|---|---|
| INC. ❑ | 50 ❑ 150 ❑ | 120 ■ ❑ | TYPE II ■ | (TB) TEXTURED BLACK ■ (GG) GLOSS GREEN ❑ |
| HPS. ❑ | 70 ❑ 175 ❑ | 208 ❑ 277 ❑ MULTI TAP 120 240 | TYPE V ❑ | (TG) TEXTURED FOREST GREEN ❑ (GB) GLOSS BRONZE ❑ |
| MH ■ | 100 ❑ 250 ■ | 240 ❑ 480 ❑ 208 277 | | (TB) TEXTURED BRONZE ❑ (VG) HAND BRUSHED VERDE GRIS ❑ |
| MV ❑ | | | | (GB) GLOSS BLACK ❑ CUSTOM _____ |

## CAMBRIDGE STREET ROADWAY LUMINAIRE SPECIFICATIONS

HOUSING
The post top shall be core cast aluminum. Aluminum shall be certified as pure #356 alloy, free of any porosity, foreign materials or cosmetic fillers. Castings shall be uniform wall thickness with no warping or mold shifting. Minimum wall thickness shall be 3/16". Electrical components are mounted to the fitter and ballast canister. The ballast canister shall be mounted in the post top with three stainless steel screws. The optional refractor shall be moulded of borosilicate glass or an upgraded globe with external refractor designed for either a type III or type V light distribution pattern.

ELECTRICAL:
All electrical components and materials shall be UL-recognized and wired by a certified UL technician. All Niland ballasts are high power factor rated for -30° starting. Medium and Mogul base sockets are 4KV rated. The electrical assembly is prewired with quick disconnects for servicing. Fixture shall be UL certified for wet locations.

MOUNTING
Fixture shall be mounted to the davit arm pole by the self-leveling mechanism.

RELAMPING
To relamp, remove locking tool free butterfly hinge to allow fixture to open.

FINISH
Fixture finish shall consist of degreasing, phosphate acid etching with 140°± deionized water, rinsed, oven dry off and top coated with a thermoset TGIC super polyester powder coat finish designed not to chalk or fade for many years. All Niland Company powders must pass a minimum 3000-hour salt spray test for corrosion resistance.

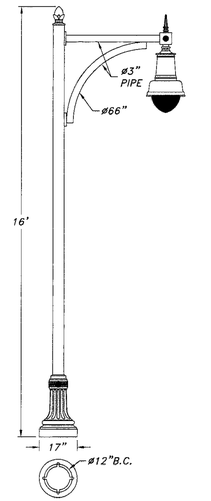
CERTIFICATION
The fixture shall be UL-listed for wet location use, and all HID listings.

WARRANTY
Fixture shall be warranted to be free of defects for five years. Ballast components shall carry the ballast manufacturers limited warranty of two years.

PHOTOMETRICS
Complete photometric data for all fixtures is available in IES-formatted 3.5 disks. A certified independent laboratory performs all testing. Call the Niland Company directly for more information.

Niland Company
NILAND COMPANY • PH: (915) 779-1405 • FAX: (915) 779-3618 • E-MAIL:INFO@NILANDCO.COM
520 N. Clark El Paso, Tx.79905 • PH: 800-648-9013 •FAX: 888-779-3065 • WEB PAGE: HTTP://www.nilandco.com

# CLEVELAND SERIES




SCALE: 3/8" = 1'-0"

CL-17-S5-16-OAH-ET-BC-17

## CSI POLE SPECIFICATION

### I. POLE

Base shall be cast aluminum. Aluminum shall be certified as pure 356 alloy free of any porosity, foreign materials or cosmetic fillers. Base casting shall be of uniform wall thickness with no warping or mold shifting. Minimum wall thickness shall be .250". The base casting shall have an internal sleeve up to 25" deep (depending on style chosen) to accept the pole shaft. Pole shaft shall be seated into the base sleeve and circumferentially welded around the inside of the base. Exterior transition ring shall be cast in to the top of the base to mirror the design of the fluted shaft. There are no exterior welds to finish. The anchor bolt locations in the base shall be cast in place as part of the base casting, for maximum strength. Pole shaft shall be seamless, deep-fluted extruded 6063-T6 aluminum. Cast aluminum access cover shall be secured with two to four tamper proof stainless steel screws.

### II. FINISH

Fixture finish shall consist of degreasing, phosphate acid etching with 140°± de-ionizing water, rinsed, oven dryoff and top coated with a thermoset TGIC super polyester powder coat finish designed not to chalk or fade for many years. All Niland Company powders must pass a minimum 3000-hour salt spray test for corrosion resistance.

### III. ANCHOR BOLTS

Standards 12 foot high or less shall use 1/2" x 18" L-type anchor bolts. Standards higher that 12 feet shall use 3/4" x 24" L-type bolts.

### FINISHES

#### Five Year Powder Coating Warranty

Niland Company factory-applied powder coatings are warranted against peeling, excessive fading and cracking under normal climatic exposure for a period of five years from date of shipment. Damage to finish coating caused by abuse or mishandling during installation is not covered by this warranty. This warranty is limited to the repair or replacement of the material involved and does not include reimburse- ment of consequential expenses such as installation or removal of equipment or transportation costs.

#### I. STANDARD FINISH

Satin aluminum achieved by rotary sanding, blasting and chemical etching.

#### II. THERMOSET POWDER PAINT FINISH

Pretreatment shall consist of degreasing phosphate acid-etching with 140° and de-ionizing water, rinsed and oven dried.

#### FINISH COAT

Thermoset TGIC super polyester powder coat finish electrostatically applied, oven cured and bonded at approximately 420° F to a minimum dry film thickness of 1.6 mils. All Niland powders must pass a minimum 3000-hour salt-spray test for corrosion resistance. The National Association of Architectural Metal Manufacturers, Metal Finishes Manual rates the outdoor life of these powders at 15-plus years.

#### HOUSING

The post top shall be core cast aluminum. Aluminum shall be certified as pure #356 alloy, free of any porosity, foreign materials or cosmetic fillers. Castings shall be uniform wall thickness with no warping or mold shifting. Minimum wall thickness shall be 3/16". Electrical components are mounted to the fitter and ballast canister. The ballast canister shall be mounted in the post top with three stainless steel screws. The optional refractor shall be moulded of borosilicate glass or an upgraded globe with external refractor designed for either a type III or type V light distribution pattern.

#### III. ELECTRICAL

All electrical components and materials shall be UL-recognized and wired by a certified technician. All Niland ballasts are high power factor rated for 30° starting. Medium and Mogul base sockets are 4KV rated. The electrical assembly is pre-wired with quick-disconnects for servicing. The fixture shall be UL-listed for wet locations use and carry all HID listings required. Ballast components shall carry the ballast manufacturers limited warranty of two years. Optional QL Induction ballasts and lamps.

#### WARRANTY

Niland Company warrants to repair or replace, at our option, any equipment that fails due to defects in material or workmanship within one year from date of shipment. This warranty does not include failures as a result of improper installation, mishandling or misapplication. This guarantee is limited to repair or replacement only and does not include reimbursement for expense of installation, removal of equipment, transportation or any other expenses that may be incurred. Authorization must be obtained from Niland Company in El Paso, Texas before any material is returned.

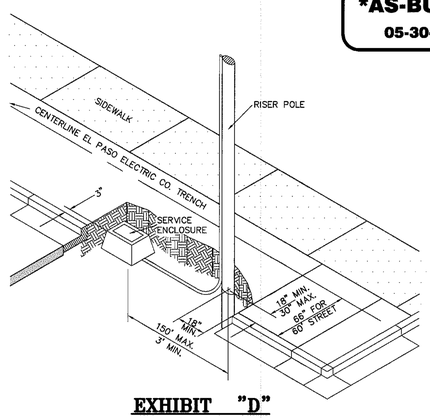
## RESIDENTIAL STREET LIGHT POLE

RECORD DRAWINGS

These record drawings have been prepared by Roe Engineering, L.C., based on periodic construction observations and information provided by others and reflects changes made during construction. The accuracy and/or completeness of this information have been verified by Roe Engineering, L.C.; Bradley Roe, R.P.L.S.; P.E.. Those relying on this record drawing are advised to obtain independent verification of its accuracy before applying it for any purpose.

Date: May 30, 2008 By: Bradley Roe, R.P.L.S. 2449, P.E. 31886

***AS-BUILTS***
**05-30-2008**




## EXHIBIT "D"

SCALE : 1" = 5'

STREET LIGHT LOCATION

THE FOLLOWING GENERAL STANDARDS SHALL GOVERN THE INSTALLATION OF STREET LIGHT IN RESIDENTIAL SUBDIVISIONS.

THE CENTER OF THE INTERSECTION AND THE CENTER OF THE CURVE'S ARC SHALL HAVE A MINIMUM ILLUMINATION OF 0.2 FOOTCANDLES. ILLUMINATION MAY DERIVE FROM MORE THAN ONE SOURCE. A CITY OF EL PASO STANDARD 30–FOOT HIGH, 100–WATT, HIGH PRESSURE, SODIUM RESIDENTIAL STREET LIGHT HAS AN ILLUMINATION OF 0.2 FOOTCANDLES AT A DISTANCE OF APPROXIMATELY 185 FEET FROM THE LIGHT.

## EXHIBIT "E"

KEYED NOTES

1. MOUNT SO THAT CONTROL FACES NORTH.

DESIGN NOTES

1. INSTALLATION MUST COMPLY WITH ALL LOCAL CODE REQUIREMENTS.

2. STEEL POLE TO HAVE A BREAKAWAY BASE AS REQUIRED BY THE CITY OF EL PASO.

3. FOR ANY CLARIFICATION, EXCEPTIONS OR QUESTIONS REGARDING CODE INTERPRETATION, CALL THE EL PASO ELECTRIC COMPANY DISTRIBUTION DESIGN DEPARTMENT.

4. POLE SHALL BE GROUNDED AS REQUIRED BY N.E.C. – LATEST EDITION.

5. A GROUND ROD MUST BE USED.

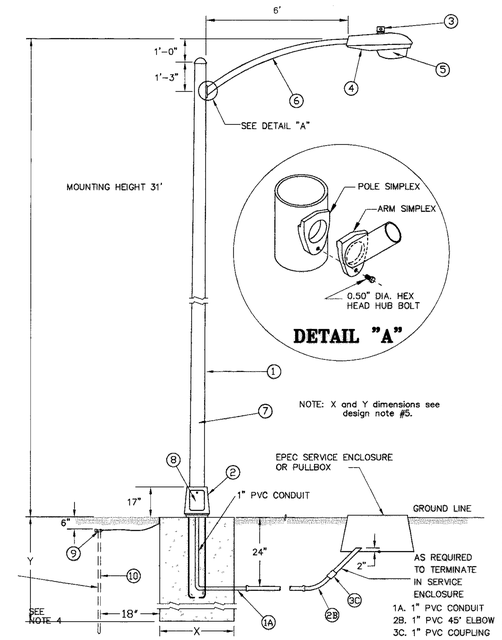
6. FOR NORMAL SOIL THE DIMENSIONS ARE X=24" AND Y=72'. THE DIMENSIONS FOR ROCKY SOIL ARE X=24" AND Y=60".

STREET LIGHT LOCATION

THE FOLLOWING GENERAL STANDARDS SHALL GOVERN THE INSTALLATION OF STREET LIGHT IN RESIDENTIAL SUBDIVISIONS.

THE CENTER OF THE INTERSECTION AND THE CENTER OF THE CURVE'S ARC SHALL HAVE A MINIMUM ILLUMINATION OF 0.2 FOOTCANDLES. ILLUMINATION MAY DERIVE FROM MORE THAN ONE SOURCE. A CITY OF EL PASO STANDARD 30–FOOT HIGH, 100–WATT, HIGH PRESSURE, SODIUM RESIDENTIAL STREET LIGHT HAS AN ILLUMINATION OF 0.2 FOOTCANDLES AT A DISTANCE OF APPROXIMATELY 185 FEET FROM THE LIGHT.

| ITEM NO. | DESCRIPTION | STOCK/DSO NO. | QTY. |
|---|---|---|---|
| 1 | STEEL POLE VALMONT, CAT. # DSX0660A3006SGV OR EQUIVALENT. | | 1 |
| 2 | ALUMINUM TRANSFORMER BASE VALMONT CAT.# M104 WITH PLASTIC DOOR | | 1 |
| 3 | PHOTOCELL, 240 V – SEE NOTE 1 | 21–225 | 1 |
| 4 | LUMINAIRE, 100 W H.P.S. | 21–335 | 1 |
| 5 | HPS LAMP, 100 W | 21–085 | 1 |
| 6 | #10 SOLID CABLE 600 V | 13–600 | 40' PLUS |
| 7 | CABLE, #10, 2 CONDUCTOR, | 13–600 | AS REQD. |
| 8 | BREAKAWAY FUSES 30 AMP | 21–250 | 2 |
| 9 | 5/8" GROUND ROD CLAMP | 07–461 | 1 |
| 10 | 5/8"x10' CU BONDED GROUND ROD | 08–626 | 1 |




## ALTERNATE UNDERGROUND RESIDENTIAL BREAKAWAY STREET LIGHT POLE

N.T.S.

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| DATE | REVISIONS | BY |
|---|---|---|
| | | |

PRIMARY BENCHMARK
EXISTING CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUNSET DRIVE AND EMORY ROAD
ELEVATION: 3732.68 (CITY DATUM)

SECONDARY BENCHMARK

SCALE

HOR: 1" = 100'
VER: N/A
W.O. 061702-3
FILE: VE_grplan.DWG
DATE: OCTOBER, 2003
DESIGN BY: L.A.J./H.P.
DRAWN BY: L.A.J.
CHKD. BY: H.P.
APPD. BY: B.R.

ENGINEER'S NOTE

ENGINEER'S SEAL
STATE OF TEXAS · BRADLEY ROE · 31886 · LICENSED · PROFESSIONAL ENGINEER
BRADLEY ROE, P.E. 31886

ILLUMINATION DETAILS

VILLA ENCANTO

ILLIMINATION PLAN AND TRAFFIC SIGNAGE DETAILS

Roe Engineering L.C.
601 N. Cotton St. Suite No.6 El Paso, Tx. 79902
(915) 533-1418 FAX: (915) 533-4972
Email : roeeng@swbell.net
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

SHEET 19 OF 20

# VILLA ENCANTO

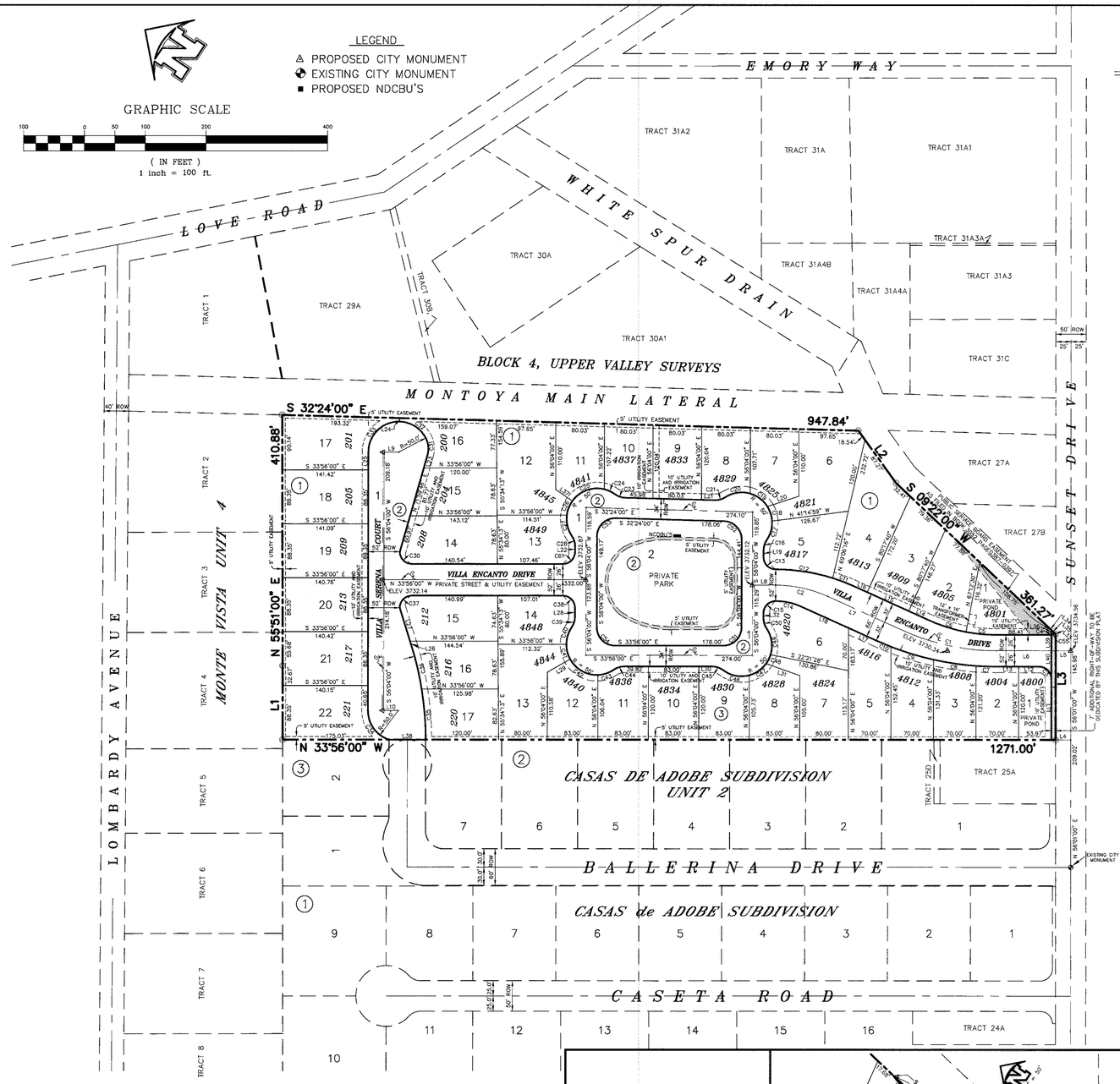
## BEING ALL OF TRACTS 26, 28 AND 29B, BLOCK 4, UPPER VALLEY SURVEYS, CITY OF EL PASO, EL PASO COUNTY, TEXAS

## CONTAINING IN ALL 598,393.44 SQUARE FEET OR 13.7372 ACRES MORE OR LESS

| CURVE TABLE | | | | | | |
|---|---|---|---|---|---|---|
| CURVE | RADIUS | LENGTH | TANGENT | CHORD | BEARING | DELTA |
| C1 | 377.15 | 159.48' | 80.95' | 158.29' | S 21°49'10" E | 24°13'40" |
| C2 | 207.94 | 87.93' | 44.63' | 87.27' | N 21°49'10" W | 24°13'40" |
| C3 | 20.00 | 31.40' | 19.98' | 28.27' | N 11°02'30" E | 89°57'00" |
| C4 | 10.00 | 1.44' | 0.72 | 1.44' | N 38°04'08" W | 08°16'16" |
| C5 | 271.67 | 50.83' | 25.49' | 50.75' | S 28°34'24" E | 10°43'12" |
| C6 | 271.67 | 64.05' | 32.17' | 63.90' | S 16°27'34" E | 13°30'28" |
| C7 | 482.62 | 34.00' | 17.01' | 33.99' | S 31°54'55" E | 4°02'10" |
| C8 | 482.62 | 70.79' | 35.46' | 70.73' | S 25°41'42" E | 8°24'16" |
| C9 | 482.62 | 73.19' | 36.66' | 73.11' | S 17°08'55" E | 8°41'18" |
| C10 | 482.62 | 26.10' | 13.05' | 26.10' | S 11°15'18" E | 3°05'56" |
| C11 | 313.41 | 36.92' | 18.48' | 36.90' | N 13°04'49" W | 6°44'59" |
| C12 | 313.41 | 95.61' | 48.18' | 95.24' | N 25°11'39" W | 17°28'41" |
| C13 | 20.00 | 31.42' | 20.00' | 28.28' | S 11°04'00" W | 90°00'00" |
| C14 | 102.46 | 43.33' | 21.99' | 43.00' | N 21°49'10" W | 24°13'40" |
| C15 | 20.00 | 31.42' | 20.00' | 28.28' | N 78°56'00" W | 90°00'00" |
| C16 | 30.00 | 18.02' | 9.29' | 17.75' | S 73°16'21" W | 34°24'41" |
| C17 | 50.00 | 32.92' | 17.08' | 32.33' | N 71°37'01" E | 37°43'20" |
| C18 | 50.00 | 25.27' | 12.91' | 25.00' | N 38°16'42" E | 28°57'18" |
| C19 | 50.00 | 36.07' | 18.86' | 35.29' | N 03°08'07" E | 41°19'51" |
| C20 | 50.00 | 43.01' | 22.93' | 41.69' | N 42°10'15" W | 49°16'53" |
| C21 | 30.00 | 18.02' | 9.29' | 17.75' | S 49°36'21" E | 34°24'41" |
| C23 | 30.00 | 18.02' | 9.29' | 17.75' | S 15°11'39" E | 34°24'41" |
| C24 | 50.00 | 19.13' | 9.68' | 19.01' | N 08°56'49" W | 21°55'12" |
| C25 | 50.00 | 59.60' | 33.91' | 56.13' | N 54°03'11" W | 68°17'44" |
| C26 | 50.00 | 25.27' | 12.91' | 25.00' | S 77°19'18" W | 28°57'18" |
| C27 | 50.00 | 35.94' | 18.79' | 35.18' | S 42°14'59" W | 41°11'20" |
| C28 | 30.00 | 18.02' | 9.29' | 17.75' | N 38°51'39" E | 34°24'41" |
| C29 | 20.00 | 31.42' | 20.00' | 28.28' | S 78°56'00" E | 90°00'00" |
| C30 | 20.00 | 31.42' | 20.00' | 28.28' | S 11°04'00" W | 90°00'00" |
| C31 | 38.00 | 28.84' | 15.15' | 28.15' | N 50°15'27" E | 43°28'39" |
| C32 | 50.00 | 53.16' | 29.40' | 50.69' | N 01°56'26" W | 60°55'07" |
| C33 | 50.00 | 79.88' | 51.36' | 71.65' | N 78°10'00" W | 91°32'00" |
| C34 | 50.00 | 63.34' | 36.72' | 59.19' | S 19°46'37" W | 72°34'47" |
| C35 | 512.86 | 82.99' | 41.59' | 82.90' | N 51°25'51" E | 9°16'17" |
| C36 | 512.86 | 72.54' | 36.33' | 72.48' | N 42°44'35" E | 8°06'15" |
| C37 | 20.00 | 31.42' | 20.00' | 28.28' | N 78°56'00" W | 90°00'00" |
| C38 | 20.00 | 31.42' | 20.00' | 28.28' | N 11°04'00" E | 90°00'00" |
| C39 | 30.00 | 18.02' | 9.29' | 17.75' | N 73°16'21" E | 34°24'41" |
| C40 | 50.00 | 30.15' | 15.55' | 29.69' | S 73°12'21" W | 34°32'41" |
| C41 | 50.00 | 25.27' | 12.91' | 25.00' | S 41°27'21" W | 28°57'18" |
| C42 | 50.00 | 55.19' | 30.78' | 52.43' | N 04°38'30" W | 63°14'23" |
| C43 | 50.00 | 28.00' | 14.38' | 27.63' | S 52°18'11" E | 32°05'00" |
| C44 | 30.00 | 18.02' | 9.29' | 17.75' | N 51°08'21" W | 34°24'41" |
| C45 | 30.00 | 19.31' | 10.00' | 18.97' | N 15°29'54" W | 36°52'12" |
| C46 | 50.00 | 45.36' | 24.37' | 43.82' | S 23°03'07" E | 51°58'37" |
| C47 | 50.00 | 34.07' | 17.72' | 33.41' | S 68°13'35" E | 39°02'20" |
| C48 | 50.00 | 16.50' | 8.33' | 16.43' | N 82°27'52" E | 18°54'48" |
| C49 | 50.00 | 44.81' | 24.04' | 43.33' | N 47°19'53" E | 51°21'09" |
| C50 | 30.00 | 18.02' | 9.29' | 17.75' | S 38°51'39" W | 34°24'41" |
| C51 | 30.00 | 47.12' | 30.00' | 42.43' | S 78°56'00" E | 90°00'00" |
| C52 | 30.00 | 46.32' | 29.21' | 41.85' | N 11°50'00" E | 88°28'00" |
| C53 | 30.00 | 47.93' | 30.81' | 42.99' | N 78°10'00" W | 91°32'00" |
| C54 | 30.00 | 47.12' | 30.00' | 42.43' | S 11°04'00" W | 90°00'00" |
| C55 | 10.00 | 6.07' | 3.13' | 5.97' | N 59°35'07" W | 34°45'42" |

| LINE TABLE | | |
|---|---|---|
| LINE | BEARING | LENGTH |
| L1 | N 55°58'00" E | 121.02' |
| L2 | S 20°04'00" W | 105.81' |
| L3 | S 56°01'00" W | 173.17' |
| L4 | S 33°59'00" E | 25.00' |
| L5 | S 33°56'00" E | 25.00' |
| L6 | N 33°56'00" W | 96.87' |
| L7 | N 09°42'20" W | 135.87' |
| L8 | S 33°56'00" E | 38.00' |
| L9 | N 33°56'00" W | 24.00' |
| L10 | S 33°56'00" E | 24.00' |
| L11 | S 56°01'00" W | 100.02' |
| L12 | S 33°56'00" E | 33.88' |
| L13 | S 33°56'00" E | 36.03' |
| L14 | N 09°42'20" W | 36.49' |
| L15 | N 09°42'20" W | 75.00' |
| L16 | N 09°42'20" W | 24.38' |
| L17 | N 09°42'20" W | 50.35' |
| L18 | N 09°42'20" W | 85.52' |
| L19 | S 56°04'00" W | 11.11' |
| L20 | N 51°56'00" W | 54.51' |

| LINE TABLE | | |
|---|---|---|
| LINE | BEARING | LENGTH |
| L21 | S 32°24'00" E | 21.66' |
| L22 | S 56°04'00" W | 8.89' |
| L23 | S 71°59'46" W | 21.88' |
| L24 | N 57°36'00" E | 5.68' |
| L25 | S 56°04'00" W | 29.30' |
| L26 | N 38°41'28" E | 8.49' |
| L27 | N 38°41'28" E | 57.24' |
| L28 | S 56°04'00" W | 14.67' |
| L29 | S 63°27'19" E | 42.84' |
| L30 | S 33°56'00" E | 21.97' |
| L31 | N 14°22'48" W | 58.90' |
| L32 | S 56°04'00" W | 8.08' |
| L33 | S 09°22'00" W | 2.22' |
| L34 | S 09°22'00" W | 3.25' |
| L35 | S 09°22'00" W | 7.41' |
| L36 | S 56°01'00" W | 7.67' |
| L37 | N 00°28'44" E | 33.07' |
| L38 | N 33°56'00" W | 33.07' |
| L39 | N 56°01'00" E | 26.10' |
| L40 | N 56°01'00" E | 45.98' |




NOTES:

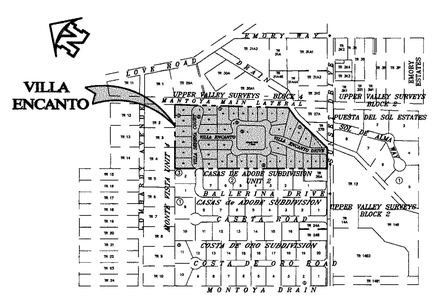
1. SUBDIVISION TO SERVICED BY THE U.S. POSTAL SERVICE, ANY ALTERNATE AND / OR ADDITIONAL NCDBU LOCATION IS TO BE COORDINATED WITH THE GROWTH MANAGEMENT DIVISION OF THE U.S. POSTAL SERVICE.

2. SIDEWALKS FOR ALL STREETS WITHIN AND ABUTTING THIS SUBDIVISION WILL BE PROVIDED.

3. RESTRICTIVE COVENANTS FOR THIS SUBDIVISION ARE FILED IN THE OFFICE OF THE COUNTY CLERK, DEED AND RECORD SECTION, INSTRUMENT No._____, BOOK_____, PAGE _____, DATE _____.

4. LOTS 14-22, BLOCK 1, LOTS 15-17, BLOCK 3, WITHIN THIS SUBDIVISION ARE SUBJECT TO ON-SITE PONDING OF STORM WATER AS PER SECTION 19.60.080 OF THE EL PASO MUNICIPAL CODE. THE TYPICAL STREET AND LOT DRAINAGE SECTION MUST BE ADHERED TO AND IS SHOWN ON THE DRAINAGE PLANS ON FILE IN THE CITY OF EL PASO ENGINEERING DEPARTMENT.

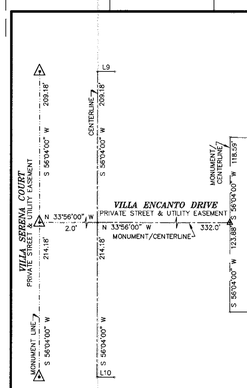
**LOCATION MAP** **SCALE: 1" = 600'**



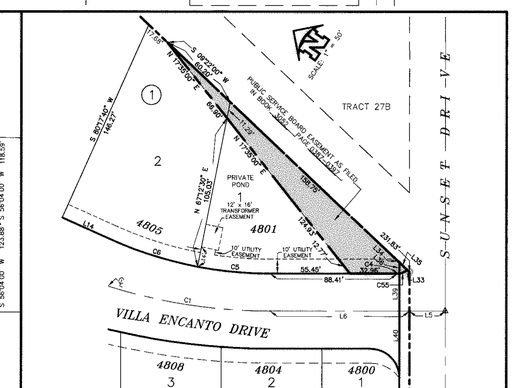

| LOT AREAS TABLE | | |
|---|---|---|
| LOT/BLOCK | SQUARE FOOTAGE | ACREAGE |
| LOT 1, BLOCK 1 | 8,775.29 | 0.2014 |
| LOT 2, BLOCK 1 | 11,361.90 | 0.2608 |
| LOT 3, BLOCK 1 | 11,942.50 | 0.2741 |
| LOT 4, BLOCK 1 | 15,893.14 | 0.3648 |
| LOT 5, BLOCK 1 | 11,018.44 | 0.2529 |
| LOT 6, BLOCK 1 | 14,630.04 | 0.3358 |
| LOT 7, BLOCK 1 | 9,420.87 | 0.2162 |
| LOT 8, BLOCK 1 | 9,084.03 | 0.2085 |
| LOT 9, BLOCK 1 | 9,603.43 | 0.2204 |
| LOT 10, BLOCK 1 | 9,407.98 | 0.2159 |
| LOT 11, BLOCK 1 | 9,115.89 | 0.2092 |
| LOT 12, BLOCK 1 | 15,617.38 | 0.3585 |
| LOT 13, BLOCK 1 | 9,712.15 | 0.2229 |
| LOT 14, BLOCK 1 | 12,019.55 | 0.2759 |
| LOT 15, BLOCK 1 | 10,344.38 | 0.2374 |
| LOT 16, BLOCK 1 | 9,662.48 | 0.2218 |
| LOT 17, BLOCK 1 | 13,357.46 | 0.3066 |
| LOT 18, BLOCK 1 | 12,480.32 | 0.2865 |
| LOT 19, BLOCK 1 | 12,450.80 | 0.2858 |
| LOT 20, BLOCK 1 | 12,421.28 | 0.2851 |
| LOT 21, BLOCK 1 | 12,392.85 | 0.2845 |
| LOT 22, BLOCK 1 | 12,820.90 | 0.2943 |

| LOT AREAS TABLE | | |
|---|---|---|
| LOT/BLOCK | SQUARE FOOTAGE | ACREAGE |
| LOT 1, BLOCK 2 | 124,389.10 | 2.8556 |
| LOT 2, BLOCK 2 | 48,444.79 | 1.1121 |
| LOT 1, BLOCK 3 | 6,384.32 | 0.1465 |
| LOT 2, BLOCK 3 | 8,413.54 | 0.1931 |
| LOT 3, BLOCK 3 | 8,777.31 | 0.2014 |
| LOT 4, BLOCK 3 | 9,864.60 | 0.2264 |
| LOT 5, BLOCK 3 | 11,725.77 | 0.2691 |
| LOT 6, BLOCK 3 | 11,165.64 | 0.2563 |
| LOT 7, BLOCK 3 | 10,774.03 | 0.2473 |
| LOT 8, BLOCK 3 | 9,478.74 | 0.2176 |
| LOT 9, BLOCK 3 | 9,340.15 | 0.2144 |
| LOT 10, BLOCK 3 | 9,960.00 | 0.2286 |
| LOT 11, BLOCK 3 | 9,643.56 | 0.2213 |
| LOT 12, BLOCK 3 | 9,687.04 | 0.2223 |
| LOT 13, BLOCK 3 | 13,768.28 | 0.3160 |
| LOT 14, BLOCK 3 | 9,700.96 | 0.2227 |
| LOT 15, BLOCK 3 | 11,485.54 | 0.2636 |
| LOT 16, BLOCK 3 | 10,551.68 | 0.2422 |
| LOT 17, BLOCK 3 | 10,069.82 | 0.2311 |

**Roe Engineering, L.C.**
EL PASO, TEXAS




*MONUMENT LINE VILLA SERNA COURT*




*ENLARGED DETAIL OF PUBLIC SERVICE BOARD EASEMENT*

### DEDICATION

STATE OF TEXAS
COUNTY OF EL PASO

VILLA ENCANTO, L.P. VILLA ENCANTO, L.P.'S GENERAL PARTNER IS CCA, L.C., A TEXAS LIMITED LIABILITY COMPANY IN WHICH CARROLL S. MAXON IS IT'S MANAGER, PROPERTY OWNER(S) OF THIS LAND HEREBY PRESENT THIS MAP AND DEDICATE TO THE USE OF THE PUBLIC THE ADDITIONAL STREET RIGHT-OF-WAY FOR SUNSET DRIVE, AND UTILITY EASEMENTS AS HEREON LAID DOWN AND DESIGNATED, INCLUDING EASEMENTS FOR OVERHANG OF SERVICE WIRES FOR POLE TYPE UTILITIES, AND 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.

S/ CARROLL S. MAXON, MANAGER

VILLA ENCANTO, L.P. VILLA ENCANTO, L.P.'S GENERAL PARTNER IS CCA, L.C., A TEXAS LIMITED LIABILITY COMPANY IN WHICH CARROLL S. MAXON IS IT'S MANAGER

### ACKNOWLEDGEMENT

STATE OF TEXAS
COUNTY OF EL PASO

BEFORE ME, THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED CARROLL S. MAXON, MANAGER OF VILLA ENCANTO, L.P. VILLA ENCANTO, L.P.'S GENERAL PARTNER IS CCA, L.C., A TEXAS LIMITED LIABILITY COMPANY; KNOWN BY ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT SHE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS THEREIN STATED.

GIVEN UNDER MY HAND AND SEAL THIS 8TH DAY OF JUNE, 2004 A.D.

S/ SUSIE VILLALOBOS
NOTARY PUBLIC IN AND FOR EL PASO COUNTY, TEXAS
MY COMMISSION EXPIRES NOVEMBER 12, 2006

### CITY PLAN COMMISSION

THIS SUBDIVISION IS HEREBY APPROVED AS TO THE PLATTING AND AS TO THE CONDITIONS OF THE DEDICATION IN ACCORDANCE WITH CHAPTER 212 OF THE LOCAL GOVERNMENT CODE OF TEXAS THIS DAY OF 10 APRIL 20.04 A.D.

S/ FRED LOPEZ
SECRETARY

S/ OSCAR VENEGAS
CHAIRPERSON

APPROVED FOR FILING THIS 16TH DAY OF JUNE, 2004 A.D.

S/ IRENE RAMIREZ
CITY ENGINEER – INTERIM

### FILING

FILED AND RECORDED IN THE OFFICE OF THE COUNTY CLERK OF EL PASO COUNTY, TEXAS THIS 13 DAY OF SEPT., 20 04 A.D. IN VOLUME 79 OF THE PLAT RECORDS, PAGE 75
FILE No. 20040085572

S/ WALDO ALARCON
COUNTY CLERK

S/ C. MACIAS
BY DEPUTY

I HEREBY CERTIFY THAT THIS PLAT REPRESENTS A SURVEY MADE ON THE GROUND UNDER MY SUPERVISION AND IS IN COMPLIANCE WITH THE CURRENT TEXAS BOARD OF PROFESSIONAL LAND SURVEYING, PROFESSIONAL AND TECHNICAL STANDARDS, REGISTERED PUBLIC LAND SURVEYOR No. 2449

S/ BRADLEY ROE
BRADLEY ROE, R.P.L.S. 2449

PREPARED BY AND UNDER THE SUPERVISION OF BRADLEY ROE, REGISTERED PROFESSIONAL ENGINEER No. 31886

S/ BRADLEY ROE
BRADLEY ROE, P.E. 31886

RESTRICTIVE CONVENANTS FOR THIS SUBDIVISION ARE FILED IN THE OFFICE OF THE COUNTY CLERK, DEEDS AND RECORDS SECTION, INSTRUMENT No. 20040085576, BOOK_____, PAGE _____
DATE 9/13/04.

VEHICULAR ACCESS TO LOT 1, BLOCK 1 AND LOT 1, BLOCK 3 AS THEY ABUTT SUNSET DRIVE SHALL BE FROM OTHER DEDICATED STREETS ONLY. THE INSTRUMENT ASSURING RELEASE OF ACCESS IS FILED IN THE OFFICE OF THE COUNTY CLERK, DEEDS AND RECORDS SECTION, INSTRUMENT No. 20040085577, BOOK_____, PAGE_____,
DATE 9/13/04.

"THIS IS TO CERTIFY THAT WATER AND SEWER SERVICES WILL BE PROVIDED TO VILLA ENCANTO BY THE EL PASO WATER UTILITIES 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 SUNSET DRIVE AND WILL BE CONSTRUCTED TO SERVE THE SUBDIVISION ON (DATE: 1 NOVEMBER, 2004 )."

"TAX CERTIFICATE(S) FOR THIS SUBDIVISION ARE FILED IN THE OFFICE OF THE COUNTY CLERK, DEED AND RECORDS SECTION, INSTRUMENT NO 20040085573, BOOK_____, PAGE _____, DATE 9/13/04."

W.O. 061702-3
FILE NAME: VEncanto_Mp.DWG
PREPARATION DATE: MARCH 4, 2003
REVISED DATE:

## GENERAL CONTRACTOR CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND THE TERMS AND CONDITIONS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT THAT AUTHORIZES STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY FROM THE CONSTRUCTION SITE IDENTIFIED AS PART OF THIS CERTIFICATION.

SIGNED: _____ COMPANY: _____

NAME: _____ ADDRESS: _____

TITLE: _____ TELEPHONE: _____

DATE: _____

## SUB – CONTRACTOR CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT I WILL COORDINATE, EITHER THROUGH THE GENERAL CONTRACTOR, OWNER, OR DIRECTLY WITH THE CONTRACTOR(S) AND/OR SUBCONTRACTOR(S) IDENTIFIED IN THE POLLUTION PREVENTION PLAN HAVING RESPONSIBILITY FOR IMPLEMENTING STORM WATER CONTROL MEASURES TO MINIMIZE ANY IMPACT MY ACTIONS MAY HAVE ON THE EFFECTIVENESS OF THESE STORM WATER CONTROL MEASURES.

| | |
|---|---|
| SIGNED: _____ | SIGNED: _____ |
| NAME: _____ | NAME: _____ |
| TITLE: _____ | TITLE: _____ |
| COMPANY: _____ | COMPANY: _____ |
| ADDRESS: _____ | ADDRESS: _____ |
| TELEPHONE: _____ | TELEPHONE: _____ |
| DATE: _____ | DATE: _____ |

## OWNERS CERTIFICATION

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

_____
OWNER: SIGNED DATE

_____
OWNER: NAME DATE

_____
TITLE DATE

## EROSION AND SEDIMENT CONTROL

### SOIL STABILIZATION PRACTICES

_____ TEMPORARY SEEDING

_____ PERMANENT PLANTING, SODDING, OR SEEDING

_____ MULCHING

_____ SOIL RETENTION BLANKET

_____ BUFFER ZONES

_____ PRESERVATION OF NATURAL RESOURCES

OTHER: _____

### STRUCTURAL PRACTICES:

_____ SILT FENCES

_____ HAY BALES

_____ ROCK BERMS

_____ DIVERSION, INTERCEPTOR, OR PERIMETER DIKES

_____ DIVERSION, INTERCEPTOR, OR PERIMETER SWALES

_____ DIVERSION DIKE AND SWALE COMBINATIONS

_____ PIPE SLOPE DRAINS

_____ CONCRETE FLUMES

__X__ ROCK BEDDING AT CONSTRUCTION EXIT

_____ TIMBER MATTING AT CONSTRUCTION EXIT

_____ CHANNEL LINERS

_____ SEDIMENT TRAPS

_____ SEDIMENT BASINS

_____ STORM INLET SEDIMENT TRAP

_____ STONE OUTLET STRUCTURES

__X__ CURBS AND GUTTERS

__X__ STORM DRAINS

_____ VELOCITY CONTROL DEVICES

_____ VEGETATED SWALES & NATURAL DEPRESSIONS

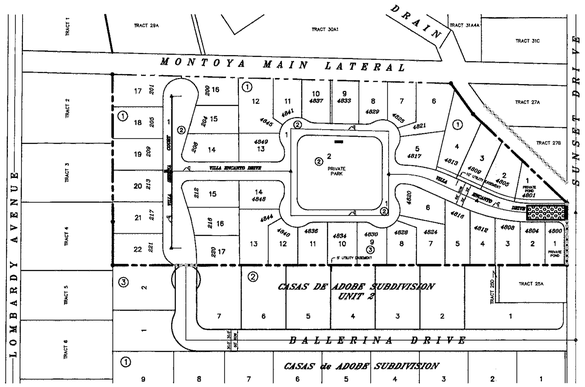
OTHER: _____

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

1. INSTALL TEMPORARY EROSION AND SEDIMENT CONTROLS (e.g. SILT FENCE AND/ OR EARTHEN BERM, AND STABILIZED CONSTRUCTION ENTRANCE).
2. PERFORM CLEARING AND GRUBBING;
3. EXCAVATION FOR UTILITIES;
4. COMPLETE LOT GRADING;
5. CONSTRUCTION OF SITE IMPROVEMENTS;
6. AFTER STABILIZATION OF 70% OF SITE IS COMPLETE, REMOVE TEMPORARY CONTROLS IN # 1 ABOVE AND SUBMIT NOTICE OF TERMINATION FORM TO CITY ENGINEERING AND E.P.A.

GRAPHIC SCALE

( IN FEET )
1 inch = 200 ft.




## LEGEND

PROPOSED STABILIZED ENTRANCE / EXIT

SILT FENCING

## BEST MANAGEMENT PRACTICES CONTROLS

### I WASTE MATERIALS

ALL WASTE MATERIALS, INCLUDING CONSTRUCTION DEBRIS, SHALL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. NO CONSTRUCTION WASTE MATERIAL SHALL BE BURIED ON SITE. THE TRANSIT DUMPSTER SHALL COMPLY WITH ORDINANCE 18.52.010 (ENCLOSURE & 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 DEPARTMENT AND TNRCC.

### III SANITARY WASTE:

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

### IV SPILL PREVENTION:

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

### V GOOD HOUSEKEEPING:

A. STORE ONLY ENOUGH PRODUCTS REQUIRED TO DO THE JOB

B. NEATLY STORE MATERIALS ON-SITE IN AN ORDERLY MANNER

C. KEEP PRODUCTS IN THEIR ORIGINAL CONTAINER

D. DO NOT MIX SUBSTANCES WITH ONE ANOTHER, UNLESS OTHERWISE RECOMMENDED BY THE MANUFACTURER

E. USE ENTIRE CONTENTS OF A PRODUCT BEFORE DISPOSING THE CONTAINER

F. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL

### VI HAZARDOUS PRODUCTS:

PRACTICES USED TO REDUCE RISKS:

A. KEEP PRODUCTS IN THEIR ORIGINAL CONTAINER IF AT ALL POSSIBLE

B. RETAIN ORIGINAL LABELS, PRODUCT INFORMATION AND MATERIAL SAFETY DATA SHEETS (MSDS)

C. DISPOSE SURPLUS PRODUCT IN ACCORDANCE WITH MANUFACTURER'S OR LOCAL & STATE RECOMMENDED METHODS

### VII PETROLEUM PRODUCTS:

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

### VIII SPILL CONTROL PRACTICES:

A. MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP SHALL BE CLEARLY POSTED AND SITE PERSONNEL SHALL BE MADE AWARE OF THE PROCEDURES:

B. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP SHALL BE KEPT IN THE MATERIAL STORAGE AREA ON-SITE:

C. ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY

D. SPILL AREA SHALL BE WELL VENTILATED AND APPROPRIATE CLOTHING WILL BE WORN:

E. ANY SPILL SHALL BE REPORTED TO THE APPROPRIATE GOVERNMENTAL AGENCY

F. MEASURES SHALL BE TAKEN TO PREVENT A SPILL FROM REOCCURRING

### IX MAINTENANCE AND INSPECTION PROCEDURES:

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

### X REMARKS:

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

### XI OFFSITE VEHICLE TRACKING:

IN ADDITION TO THE STABILIZED CONSTRUCTION ENTRANCE'S, THE FOLLOWING MEASURES SHALL BE OBSERVED DURING CONSTRUCTION:

__X__ HAUL ROADS SHALL BE DAMPENED FOR DUST CONTROL

__X__ LOADED HAUL TRUCKS SHALL BE COVERED WITH TARPAULIN

__X__ EXCESS DIRT ON ROAD SHALL BE REMOVED IMMEDIATELY

__X__ STABILIZED CONSTRUCTION ENTRANCE

_____ OTHER: _____

NOTES:
1. THERE ARE NO LISTED ENDANGERED OR THREATENED SPECIES OR DESIGNATED CRITICAL HABITAT IN THE PROJECT AREA.
2. A COPY OF THE TPDES GENERAL PERMIT TXR150000 (PERMIT LANGUAGE) SHALL BE READ, UNDERSTOOD, AND MAINTAINED ON SITE BY THE OPERATOR.

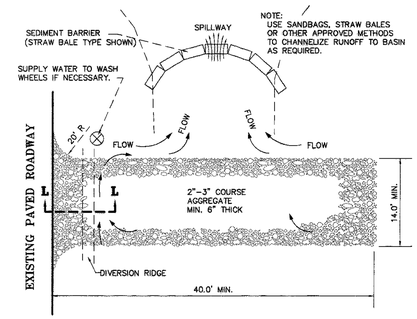
## SECTION L-L

### INSPECTION AND MAINTENANCE

1. SILT FENCES AND FILTER BARRIERS SHALL BE INSPECTED WEEKLY AND AFTER EACH SIGNIFICANT STORM (1" IN 24 HR.). ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
2. SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/3 HEIGHT OF THE FENCE OR 9 INCHES MAXIMUM.
3. THE REMOVED SEDIMENT SHALL VEGETATE OR OTHERWISE BE STABILIZED.

### DUST AND EROSION PLAN

1. CONTRACTOR SHALL WATER DOWN THE GRADING AREA PERIODICALLY, SO AS TO LIMIT THE DISTRIBUTION OF DUST FROM THE WORK SITE IN COMPLIANCE WITH THE CITY APPROVED GRADING ORDINANCE.
2. CONTRACTOR SHALL INSTALL SILT FENCING IN ACCORDANCE WITH THE DETAILS AND SPECIFICATIONS, OUTLINED ON THIS SHEET.
3. CONTRACTOR SHALL TAKE ADDITIONAL MEASURES AS NEEDED TO CONTROL EROSION AND SEDIMENTATION WITHIN THE PROJECT AREA IN COMPLIANCE WITH THE CITY APPROVED GRADING ORDINANCE.

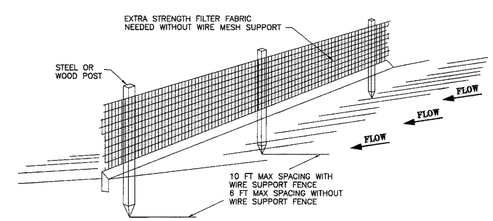


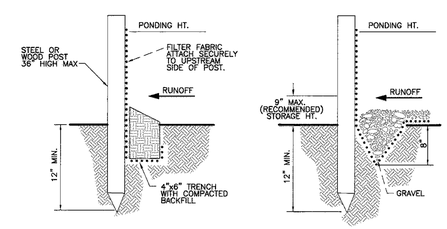

## TEMPORARY GRAVEL CONSTRUCTION ENTRANCE / EXIT

### PLAN VIEW

### TEMPORARY GRAVEL ENTRANCE/EXIT NOTES

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABLIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.




**STANDARD DETAIL**
TRENCH WITH NATIVE BACKFILL

**ALTERNATE DETAIL**
TRENCH WITH GRAVEL

### CONSTRUCTION SPECIFICATIONS

1. THE HEIGHT OF A SILT FENCE SHALL NOT EXCEED 36 INCHES. STORAGE HEIGHT SHALL NEVER EXCEED 18".
2. THE FENCE LINE SHALL FOLLOW THE CONTOUR AS CLOSELY AS POSSIBLE
3. IF POSSIBLE, THE FILTER FABRIC SHALL BE CUT FROM A CONTINOUS ROLL TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED ONLY AT A SUPPORT POST, WITH A MINIMUM 6-INCH OVERLAP AND BOTH ENDS SECURELY FASTENED TO THE POST.
4. POSTS SHALL BE SPACED A MAXIMUM OF 10 FEET APART AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 12 INCHES). WHEN EXTRA STRENGHT FABRIC IS USED WITHOUT THE WIRE SUPPORT FENCE, POST SPACING SHALL NOT EXCEED 6 FEET.
5. TURN THE ENDS OF THE FENCE UPHILL.
6. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4 INCHES WIDE AND 6 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
7. WHEN STANDARD-STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH LONG, TIE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MAXIMUM OF 2 INCHES AND SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
8. THE STANDARD-STRENGTH FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND 6 INCHES OF THE FABRIC SHALL EXTEND INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.
9. WHEN EXTRA-STRENGTH FILTER AND CLOSER POST SPACING ARE USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED. IN SUCH A CASE, THE FILTER FABRIC IS STAPLED OR WIRED DIRECTLY TO THE POSTS.
10. THE TRENCH SHALL BE BACKFILLED AND THE SOIL COMPACTED OVER THE TOE OF THE FILTER FABRIC.
11. SILT FENCES PLACED AT THE TOE OF A SLOPE SHALL BE SET AT LEAST 6 FEET FROM THE TOE IN ORDER TO INCREASE PONDING VOLUME.
12. SILT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED, AND ANY SEDIMENT STORED BEHIND THE SILT FENCE HAS BEEN REMOVED.

## SILT FENCE DETAIL

NOT TO SCALE

**RECORD DRAWINGS**

These record drawings have been prepared by Roe Engineering, L.C., based on periodic construction observations and information provided by others and reflects changes made during construction. The accuracy and/or completeness of this information have been verified by Roe Engineering, L.C., Bradley Roe, RPLS, PE. Those relying on this record drawing are advised to obtain independent verification of its accuracy before applying it for any purpose.

Date: May 30, 2008 By: Bradley Roe, RPLS, 3486, P.E. 31886

***AS-BUILTS***
**05-30-2008**

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| DATE | REVISIONS | BY |
|---|---|---|
| | | |

**PRIMARY BENCHMARK**
EXISTING CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUNSET DRIVE AND EMORY ROAD
ELEVATION: 3732.68 (CITY DATUM)

**SECONDARY BENCHMARK**

| SCALE | |
|---|---|
| HOR: | 1" = 100' |
| VER: | N/A |
| W.O. | 061702-3 |
| FILE: | VE_dst.DWG |
| DATE: | OCTOBER, 2003 |
| DESIGN BY: | L.A.J./H.P. |
| DRAWN BY: | L.A.J. |
| CHKD. BY: | H.P. |
| APPD. BY: | B.R. |

ENGINEER'S NOTE

ENGINEER'S SEAL
STATE OF TEXAS
BRADLEY ROE
31886
LICENSED
PROFESSIONAL ENGINEER
BRADLEY ROE, P.E. 31886

DUST/EROSION CONTROL PLAN

# VILLA ENCANTO

# DUST/ EROSION CONTROL PLAN

Roe Engineering L.C.
601 N. Cotton St. Suite No.6 El Paso, Tx. 79902
(915) 533-1418 FAX: (915) 533-4972
Email : roeeng@swbell.net
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

SHEET 20 OF 20

## GENERAL GRADING NOTES:

1. THIS GRADING PLAN SHALL BE COORDINATED WITH OTHER APPLICABLE CONSTRUCTION DRAWINGS FOR DIMENSIONS AND LAYOUT.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING IMPROVEMENTS IN THE PROJECT AREA AND IT'S VICINITY. ANY DAMAGES RESULTING FROM CONTRACTOR'S CONSTRUCTION WORK SHALL BE RESTRICTED TO ITS ORIGINAL CONDITION BY THE CONTRACTOR.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF EXISTING UTILITIES IN THE PROJECT AREA. CONTRACTOR SHALL CONTRACT UTILITY LOCATOR SERVICE FOR FIELD LOCATION OF ALL PRIOR TO COMMENCING WORK. ANY DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY OWNER BY THE CONTRACTOR.
4. FILL MATERIALS FOR SITE GRADING AND BACKFILL MATERIALS MAY CONSIST OF ON-SITE AND/OR IMPORTED MATERIALS IN COMPLIANCE WITH THE FOLLOWING SPECIFICATIONS.
5. FILL MATERIALS FOR SITE GRADING AND BACKFILL MATERIALS SHALL BE FREE OF ANY ORGANIC OR DELETERIOUS SUBSTANCE AND SHALL NOT CONTAIN ROCKS OR LUMPS OVER 4 INCHES IN GREATEST DIMENSION.
6. FILL MATERIALS SHALL BE CLASSIFIED IN ACCORDANCE WITH ASTM D-2487. SOILS WILL BE CONSIDERED SATISFACTORY FOR FILL MATERIAL WHEN CLASSIFIED AS FOLLOWS: GW, GP, GC, GM, GC-GM, GP-GC, SW, SP, SC, SM, SC-SM, SP-SM, SP-SC. SOILS WILL BE CONSIDERED UNSATISFACTORY FOR FILL MATERIAL WHEN CLASSIFIED AS FOLLOWS: PT, OL, OH, ML, CL, AND CH OR WHERE THE PLASTICITY INDEX EXCEEDS 12.
7. THE SURFACE ON WHICH FILL MATERIAL IS TO BE PLACED SHALL BE SCARIFIED TO A DEPTH OF 6 INCHES, WATERED TO ADD THE AMOUNT OF MOISTURE REQUIRED FOR OPTIMUM COMPACTION, AND THEN COMPACTED TO THE REQUIRED DENSITY. FILL MATERIAL SHALL BE PLACED IN LIFTS NOT EXCEEDING 6 INCHES IN DEPTH AND THEN COMPACTED. MOISTURE CONTENT OF FILL MATERIALS SHALL BE UNIFORM AND WITHIN PLUS OR MINUS TWO PERCENT OF THE OPTIMUM VALUE AS DETERMINED BY ASTM D-1557.
8. EACH LIFT OF FILL SHALL BE COMPACTED TO 95 PERCENT (85 PERCENT ON SLOPE ONLY) OF MAXIMUM DENSITY. MAXIMUM DENSITY SHALL BE DETERMINED IN ACCORDANCE WITH ASTM D-1557 FIELD DENSITY SHALL DETERMINED IN ACCORDANCE WITH ASTM D-1556 OR D-2922.
9. CONTRACTOR SHALL WATER DOWN GRADING AREA DAILY (MINIMUM, SO AS TO LIMIT THE DISTRIBUTION OF DUST FROM THE WORK SITE IN COMPLIANCE WITH THE CITY APPROVED GRADING ORDINANCE.
10. CONTRACTOR SHALL CO-ORDINATE WITH ALL UTILITY COMPANIES PRIOR TO ANY EXCAVATION AND/OR POSSIBLE RELOCATION OF UTILITIES ENCOUNTERED.
11. CONTRACTOR SHALL COMPLY WITH SECTION 13.08.170 OF THE EL PASO MUNICIPAL CODE FOR "EXCESSIVE PAVING CUTS".

### GENERAL NOTES:

1. SEE SHEET 20 OF 20 FOR DETAILS ON STORM WATER POLLUTION CONTROL PLAN.
2. LOTS 14-22, BLOCK 1 AND LOTS 15-17, BLOCK 3, IN VILLA ENCANTO ARE SUBJECT TO ON-SITE PONDING.
3. THE ABOVE REFERENCED PROPERTY IS WITHIN ZONES "AH", "B" AND "C" (EXPLANATION ZONE "AH": AREAS OF 100-YEAR SHALLOW FLOODING WHERE DEPTHS ARE BETWEEN ONE (1) AND THREE (3) FEET; BASE FLOOD ELEVATIONS ARE SHOWN, BUT NO FLOOD HARZARD FACTORS ARE DETERMINED.) (EXPLANTION ZONE "B": AREAS BETWEEN LIMITS OF THE 100-YEAR FLOOD AND THE 500-YEAR FLOOD; OR CERTAIN AREAS SUBJECT TO 100-YEAR FLOOFDING WITH AVERAGE DEPTHS LESS THAN ONE (1) FOOT OR WHERE THE CONTRIBUTING DRAINAGE AREA IS LESS THAN ONE SQUARE MILE; OR AREAS PROTECTED BY LEVEES FROM THE BASE FLOOD.) (EXPLANTION ZONE "C": AREA OF MINIMAL FLOODING.)ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER AREA COMMUNITY PANELS No. 480212-0126 D DATED REVISED JANUARY 3, 1997.
4. DEVELOPER WILL COMPLY WITH SECTION 19.16050 STORM WATER DESIGN OF THE EL PASO MUNICIPAL CODE.
5. MAXIMUM STORAGE CAPACITY DEPTH SHALL NOT EXCEED ONE (1) FOOT.
6. LOTS 14-22, BLOCK 1 AND LOTS 15-17, BLOCK 3, IN VILLA ENCANTO WILL REQUIRE TWO (1 EACH) PERMANENT ELEVATION MARKERS TO PLACED AT THE LOWEST POINT OF FRONT AND BACK YARDS.
7. THE PERMANENT ELEVATION MARKERS SHALL BE PLACE AND INSTALLED BY THE BUILDER / CONTRACTOR PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
8. THE CITY SHALL BE GRANTED PERMANENT RIGHT OF ACCESS TO INSPECT THE LOT ELEVATION AND THE PERMANENT ELEVATION MARKERS.
9. NO PERSON SHALL BE PERMITTED TO IMPAIR THE FUNCTIONALITY OF A RESIDENTIAL ON-SITE POND. NO MORE THAN FIFTY (50) PERCENT OF THE AREA OF ANY RESIDENTIAL LOT CONVEYED BY DEED SHALL BE COVERED BY IMPROVEMENTS, EITHER TEMPORARY OR PERMANENT, WHICH SHED STORM WATER, INCLUDING BUT NOT LIMITED TO, BUILDINGS, DRIVEWAYS, PATIOS OR LANDSCAPING UNDERLAID WITH PLASTIC SHEETING OR OTHER IMPERMEABLE MATERIAL;
10. ANY FUTURE GRADING RELATED TO NEW EXPANSION OR RENOVATION OF HOME IMPROVEMENTS WITHIN THIS APPROVED DEVELOPMENT SHALL BE REVIEWED AND APPROVED BY BUILDING SERVICES AND MUST COMPLY WITH ITEMS OUTLINED IN SECTION 19.16.060 RESIDENTIAL ONSITE PONDING OF THE CITY OF EL PASO SUBDIVISION DESIGN ORDINANCE.
11. ALL LOTS IN VILLA ENCANTO WILL REQUIRE AN ELEVATION CERTIFICATE.
12. LOTS 14-22, BLOCK 1 AND LOTS 15-17, BLOCK 3 IN VILLA ENCANTO WILL BE SUBJECT TO SITE-SPECIFIC GRADING AND DRAINAGE DESIGN AT THE TIME OF ISSUANCE OF BUILDING PERMIT (GRADING PERMIT REQUIRED). FINISH FLOOR ELEVATIONS ARE TO BE EQUAL TO OR ABOVE THE BASE FLOOD ELEVATION (B.F.E.) OR AT SUGGESTED ELEVATION INDICATED ON PLANS.
13. BASE FLOOD ELEVATION IS 3733.54 (CITY OF EL PASO DATUM).
14. ALL DRIVEWAYS SHALL NOT EXCEED 2% WITHIN THE STREET RIGHT-OF-WAY.

## UTILITY COMPANIES

TEXAS GAS SERVICE
4700 POLLARD STREET
EL PASO, TEXAS 79930
EMERGENCY 562-2003 (GAS)

EL PASO PUBLIC SERVICE BOARD
1154 HAWKINS BOULEVARD
EL PASO, TEXAS 79925
MR. ALFONSO ORTIZ 594-5527
(WATER, SEWER)

EL PASO ELECTRIC COMPANY
501 WEST SAN ANTONIO STREET
EL PASO, TEXAS 79901
MR. PAT KEITH, 543-2917 (ELECTRIC)

SOUTHWESTERN BELL TELEPHONE
11200 PELLICANO DRIVE
EL PASO, TEXAS 79935
828-5127 (TELEPHONE)

TIME WARNER COMMUNICATIONS
7010 AIRPORT ROAD
EL PASO, TEXAS 79906
775-7414 (CABLE)

## WARNING!! BEFORE YOU DIG

TEXAS LAW REQUIRES TWO (2) WORKING DAYS NOTICE PRIOR TO ANY EXCAVATION

CALL TEXAS EXCAVATION SAFETY SYSTEM ANYWHERE IN TEXAS 1-800-344-8377

TEXAS EXCAVATION SAFETY SYSTEM DIG CONFIRMATION NUMBER (#040-071-465) TO BE UPDATED EVERY 10 DAYS

1-800-DIG-TXSS

SCALE: 1" = 50'

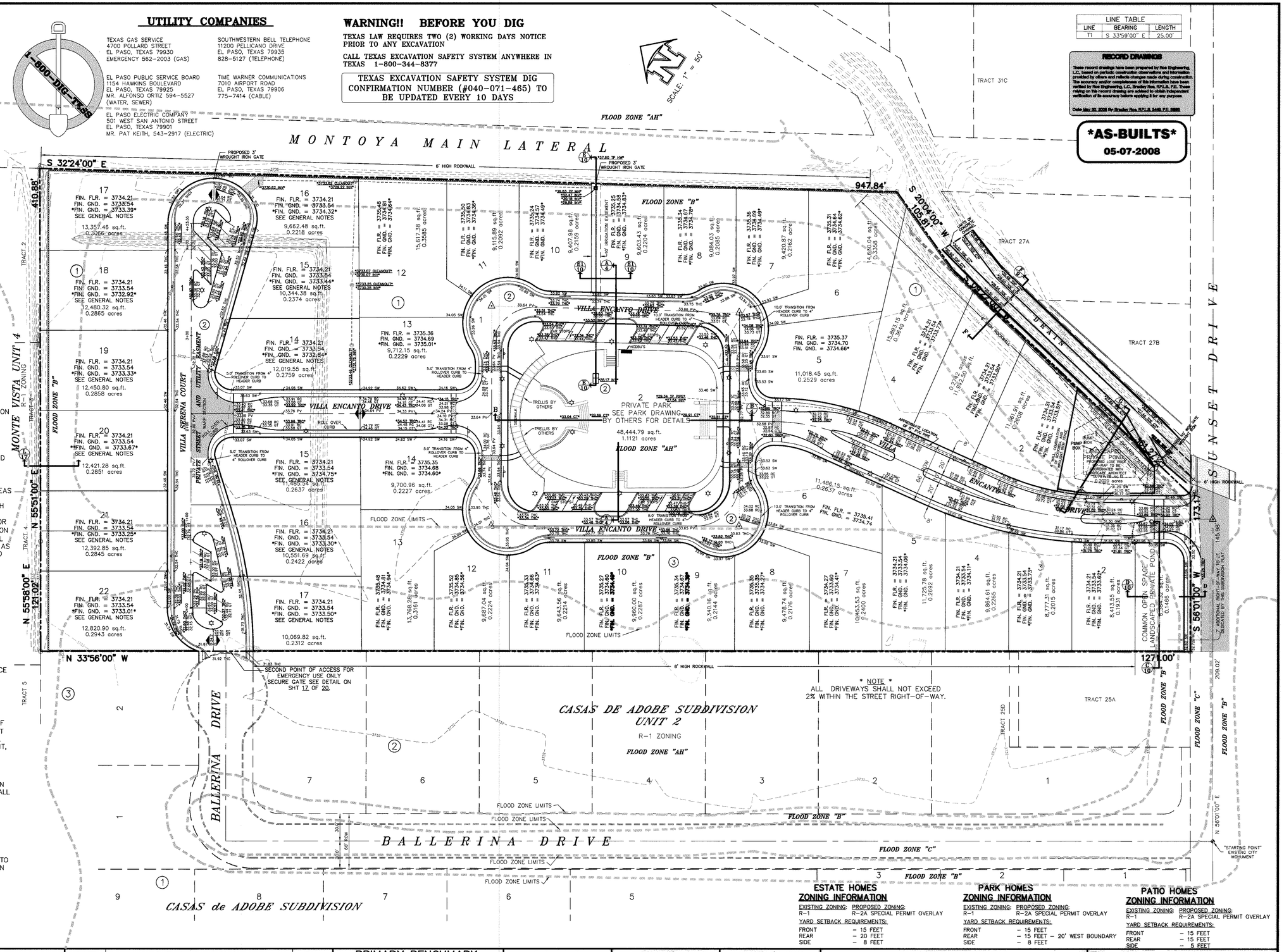
| LINE TABLE | | |
|---|---|---|
| LINE | BEARING | LENGTH |
| T1 | S 33°59'00" E | 25.00' |

RECORD DRAWINGS

These record drawings have been prepared by Roe Engineering, L.C., based on periodic construction observations and information provided by others and reflects changes made during construction. The accuracy and/or completeness of this information have been verified by Roe Engineering, L.C., Bradley Roe, P.E., P.E. Those relying on this record drawing are advised to obtain independent verification of its accuracy before applying it for any purpose.

Date: May 30, 2008 By: Bradley Roe, R.P.L.S. 3486, P.E. 31886

***AS-BUILTS***
**05-07-2008**




### ESTATE HOMES ZONING INFORMATION

EXISTING ZONING: R-1
PROPOSED ZONING: R-2A SPECIAL PERMIT OVERLAY

YARD SETBACK REQUIREMENTS:

| | |
|---|---|
| FRONT | - 15 FEET |
| REAR | - 20 FEET |
| SIDE | - 8 FEET |

### PARK HOMES ZONING INFORMATION

EXISTING ZONING: R-1
PROPOSED ZONING: R-2A SPECIAL PERMIT OVERLAY

YARD SETBACK REQUIREMENTS:

| | |
|---|---|
| FRONT | - 15 FEET |
| REAR | - 15 FEET - 20' WEST BOUNDARY |
| SIDE | - 8 FEET |

### PATIO HOMES ZONING INFORMATION

EXISTING ZONING: R-1
PROPOSED ZONING: R-2A SPECIAL PERMIT OVERLAY

YARD SETBACK REQUIREMENTS:

| | |
|---|---|
| FRONT | - 15 FEET |
| REAR | - 15 FEET |
| SIDE | - 5 FEET |

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| DATE | REVISIONS | BY |
|---|---|---|
| | | |

**PRIMARY BENCHMARK**

EXISTING CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUNSET DRIVE AND EMORY ROAD
ELEVATION: 3732.68 (CITY DATUM)

**SECONDARY BENCHMARK**

| SCALE | |
|---|---|
| HOR: | 1" = 100' |
| VER: | N/A |
| W.O. | 061702-3 |
| FILE: | VE_grplan.DWG |
| DATE: | OCTOBER, 2003 |
| DESIGN BY: | B.R. |
| DRAWN BY: | CAD STAFF |
| CHKD. BY: | H.P. |
| APPD. BY: | B.R. |

**ENGINEER'S NOTE**

THIS SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY BRADLEY ROE P.E. 31886

ON MAY 30, 2008, ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

**ENGINEER'S SEAL**

STATE OF TEXAS
BRADLEY ROE
31886
LICENSED
PROFESSIONAL ENGINEER

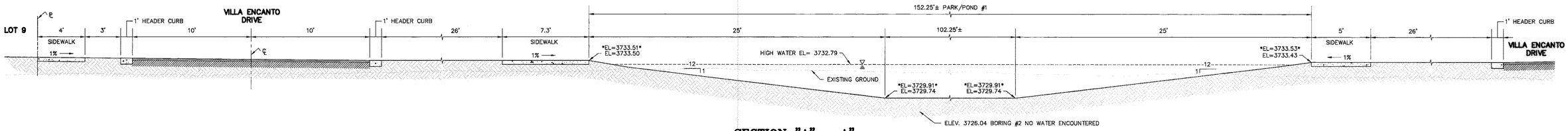
BRADLEY ROE, P.E. 31886

**GRADING PLAN**

# VILLA ENCANTO

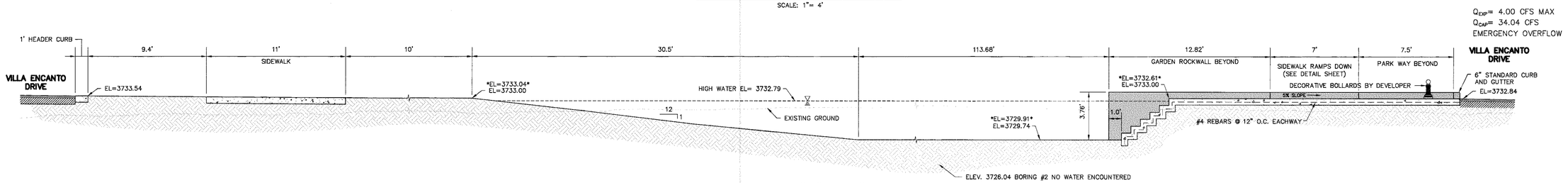
# GRADING PLAN

Roe Engineering L.C.
601 N. Cotton St. Suite No.6 El Paso, Tx. 79902
(915) 533-1418 FAX: (915) 533-4972
Email : roeeng@swbell.net
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING



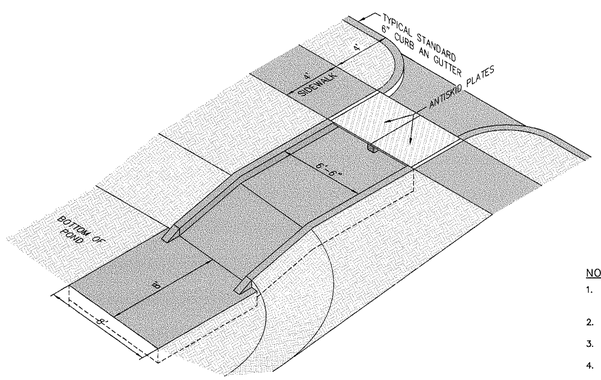

## SECTION "A" – A"
## SECTION THRU PARK/POND 1

SCALE: 1"= 4'




## SECTION "B" – B"
## SECTION THRU PARK/POND 1

SCALE: 1"= 4'

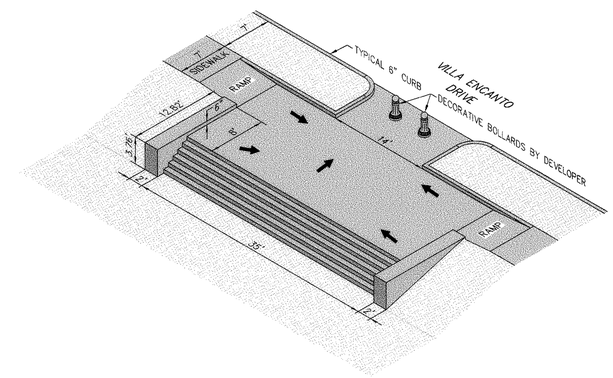



## ISOMETRIC FLUME AT POND 2

SCALE: 1"= 10'

NOTES:

1. CONCRETE FOR ALL DRAINAGE STRUCTURES SHALL BE CLASS–A CONCRETE, AND SHALL HAVE A MINIMUM 28–DAY COMPRESSIVE STRENGTH OF 3000 POUNDS PER SQUARE INCH.
2. SUBGRADE UNDER ALL DRAINAGE STRUCTURES SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D–1557.
3. ALL CONSTRUCTION AND MATERIAL SHALL BE IN ACCORDANCE WITH THE CURRENT CITY OF EL PASO STANDARD SPECIFICATIONS.
4. SHARP EDGES RESULTING FROM FABRICATION SHALL BE DULLED BY ANY ACCEPTABLE METHOD FOR SAFETY IN HANDLING.
5. ALL WELDS SHALL CONFORM TO THE SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND TO THE AWS STRUCTURAL WELDING CODE. ELECTRODES SHALL BE COMPATIBLE TO THE DIFFERENT GRADES OF STEEL THAT COMPRISE THE GRATE MEMBERS.
6. ALL STEEL USED SHALL BE AS PER ASTM A153 CLASS A.
7. MINIMUM SLOPE AT FLOOR OF FLUME SHALL BE 2%




## ISOMETRIC AT EAST SIDE OF POND

SCALE: 1"= 10'

**RECORD DRAWINGS**

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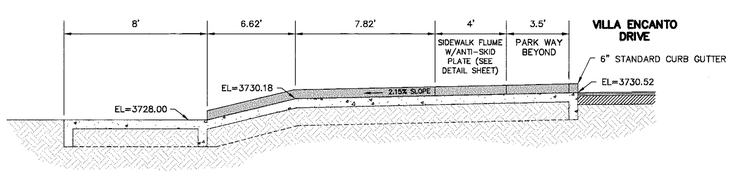
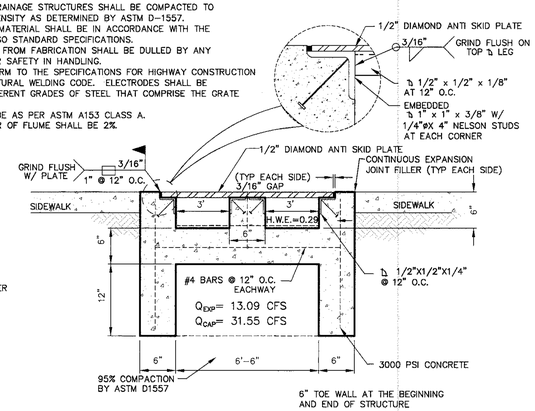
Date: May 30, 2008 By: Bradley Roe, R.P.L.S. 3449, P.E. 31886

***AS-BUILTS***
**05-30-2008**



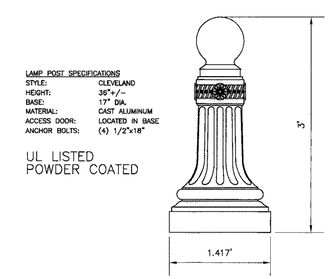

## FLUME SECTION AT POND 2

SCALE: 1"= 4'



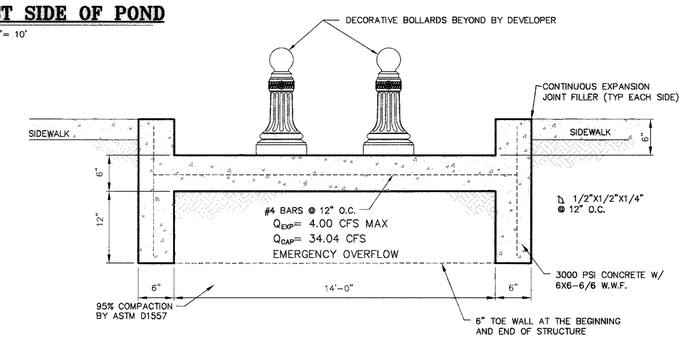

## SIDEWALK FLUME @ POND 2

SCALE: 1" = 1'




## DECORATIVE BOLLARD

SCALE: 1" = 1'




## SIDEWALK FLUME @ PARK/POND 1

SCALE: 1" = 1'

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| DATE | REVISIONS | BY |
|---|---|---|
| | | |

**PRIMARY BENCHMARK**

EXISTING CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUNSET DRIVE AND EMORY ROAD
ELEVATION: 3732.68 (CITY DATUM)

**SECONDARY BENCHMARK**

| SCALE | |
|---|---|
| HOR: | 1" = 100' |
| VER: | N/A |
| W.O. | 061702–3 |
| FILE: | VE_grdt1.DWG |
| DATE: | NOVEMBER, 2003 |
| DESIGN BY: | B.R. |
| DRAWN BY: | CAD STAFF |
| CHKD. BY: | H.P. |
| APPD. BY: | B.R. |

**ENGINEER'S NOTE**

**ENGINEER'S SEAL**

STATE OF TEXAS · BRADLEY ROE · 31886 · LICENSED · PROFESSIONAL ENGINEER

BRADLEY ROE, P.E. 31886

**GRADING DETAILS AND SECTIONS**

*VILLA ENCANTO*

# GRADING TYPICAL DETAILS AND SECTIONS

Roe Engineering L.C.
601 N. Cotton St. Suite No.6 El Paso, Tx. 79902
(915) 533–1418 FAX: (915) 533–4972
Email : roeeng@swbell.net
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

**GENERAL NOTES:**

1. SEE SHEET 20 OF 20 FOR DETAILS ON STORM WATER POLLUTION CONTROL PLAN.
2. LOTS 14–22, BLOCK 1 AND LOTS 15–17, BLOCK 3, IN VILLA ENCANTO ARE SUBJECT TO ON-SITE PONDING.
3. THE ABOVE REFERENCED PROPERTY IS WITHIN ZONES "AH", "B" AND "C" (EXPLANATION ZONE "AH":AREAS OF 100–YEAR SHALLOW FLOODING WHERE DEPTHS ARE BETWEEN ONE (1) AND THREE (3) FEET; BASE FLOOD ELEVATIONS ARE SHOWN, BUT NO FLOOD HARZARD FACTORS ARE DETERMINED.) (EXPLANTION ZONE "B": AREAS BETWEEN LIMITS OF THE 100–YEAR FLOOD AND THE 500–YEAR FLOOD; OR CERTAIN AREAS SUBJECT TO 100–YEAR FLOOFDING WITH AVERAGE DEPTHS LESS THAN ONE (1) FOOT OR WHERE THE CONTRIBUTING DRAINAGE AREA IS LESS THAN ONE SQUARE MILE; OR AREAS PROTECTED BY LEVEES FROM THE BASE FLOOD.) (EXPLANTION ZONE "C":AREA OF MINIMAL FLOODING.)ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER AREA COMMUNITY PANELS No. 480212–0126 D DATED REVISED–JANUARY 3, 1997.
4. DEVELOPER WILL COMPLY WITH SECTION 19.16050 STORM WATER DESIGN OF THE EL PASO MUNICIPAL CODE.
5. MAXIMUM STORAGE CAPACITY DEPTH SHALL NOT EXCEED ONE (1) FOOT.
6. LOTS 14–22, BLOCK 1 AND LOTS 15–17, BLOCK 3, IN VILLA ENCANTO WILL REQUIRE TWO (1 EACH) PERMANENT ELEVATION MARKERS TO PLACED AT THE LOWEST POINT OF FRONT AND BACK YARDS.
7. THE PERMANENT ELEVATION MARKERS SHALL BE PLACE AND INSTALLED BY THE BUILDER / CONTRACTOR PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
8. THE CITY SHALL BE GRANTED PERMANENT RIGHT OF ACCESS TO INSPECT THE LOT ELEVATION AND THE PERMANENT ELEVATION MARKERS.
9. NO PERSON SHALL BE PERMITTED TO IMPAIR THE FUNCTIONALITY OF A RESIDENTIAL ON-SITE POND. NO MORE THAN FIFTY (50) PERCENT OF THE AREA OF ANY RESIDENTIAL LOT CONVEYED BY DEED SHALL BE COVERED BY IMPROVEMENTS, EITHER TEMPORARY OR PERMANENT, WHICH SHED STORM WATER, INCLUDING BUT NOT LIMITED TO, BUILDINGS, DRIVEWAYS, PATIOS OR LANDSCAPING UNDERLAID WITH PLASTIC SHEETING OR OTHER IMPERMEABLE MATERIAL;
10. ANY FUTURE GRADING RELATED TO NEW EXPANSION OR RENOVATION OF HOME IMPROVEMENTS WITHIN THIS APPROVED DEVELOPMENT SHALL BE REVIEWED AND APPROVED BY BUILDING SERVICES AND MUST COMPLY WITH ITEMS OUTLINED IN SECTION 19.16.060 RESIDENTIAL ONSITE PONDING OF THE CITY OF EL PASO SUBDIVISION DESIGN ORDINANCE.
11. ALL LOTS IN VILLA ENCANTO WILL REQUIRE AN ELEVATION CERTIFICATE.
12. LOTS 14–22, BLOCK 1 AND LOTS 15–17, BLOCK 3 IN VILLA ENCANTO WILL BE SUBJECT TO SITE–SPECIFIC GRADING AND DRAINAGE DESIGN AT THE TIME OF ISSUANCE OF BUILDING PERMIT (GRADING PERMIT REQUIRED). FINISH FLOOR ELEVATIONS ARE TO BE EQUAL TO OR ABOVE THE BASE FLOOD ELEVATION (B.F.E.) OR AT SUGGESTED ELEVATION INDICATED ON PLANS.
13. BASE FLOOD ELEVATION IS 3733.54 (CITY OF EL PASO DATUM).
14. ALL DRIVEWAYS SHALL NOT EXCEED 2% WITHIN THE STREET RIGHT–OF–WAY.

## UTILITY COMPANIES

TEXAS GAS SERVICE
4700 POLLARD STREET
EL PASO, TEXAS 79930
EMERGENCY 562–2003 (GAS)

EL PASO PUBLIC SERVICE BOARD
1154 HAWKINS BOULEVARD
EL PASO, TEXAS 79925
MR. ALFONSO ORTIZ 594–5527
(WATER, SEWER)

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501 WEST SAN ANTONIO STREET
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SOUTHWESTERN BELL TELEPHONE
11200 PELLICANO DRIVE
EL PASO, TEXAS 79935
828–5127 (TELEPHONE)

TIME WARNER COMMUNICATIONS
7010 AIRPORT ROAD
EL PASO, TEXAS 79906
775–7414 (CABLE)

## WARNING!! BEFORE YOU DIG

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CALL TEXAS EXCAVATION SAFETY SYSTEM ANYWHERE IN TEXAS 1–800–344–8377

TEXAS EXCAVATION SAFETY SYSTEM DIG CONFIRMATION NUMBER (#040–071–465) TO BE UPDATED EVERY 10 DAYS

| LINE TABLE | | |
|---|---|---|
| LINE | BEARING | LENGTH |
| T1 | S 33°59'00" E | 25.00' |

**RECORD DRAWINGS**

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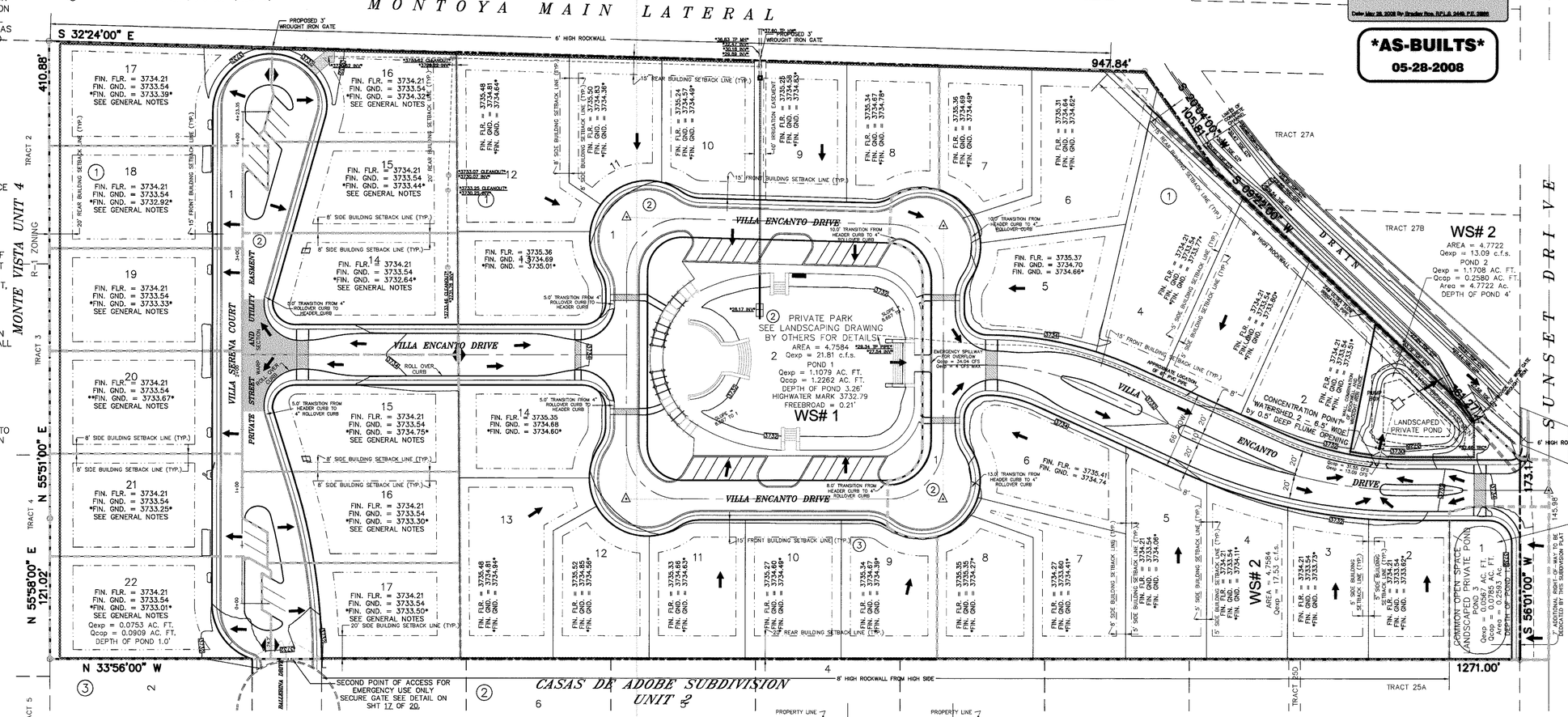
Date: May 28, 2008 By: Bradley Roe, R.P.L.S. 2449, P.E. 31886

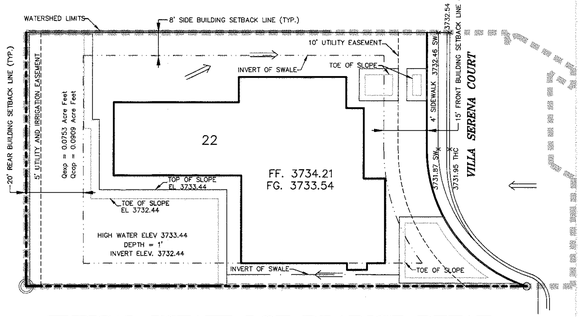
***AS-BUILTS***
**05-28-2008**




NOTE: ALL PERTINENT DATA LISTED IN THE TABLE BELOW WAS OBTAINED FROM SHEETS 2–10, 2–12, 2–13 AND 2–14 OF THE CITY OF EL PASO SUBDIVISION DESIGN STANDARDS.

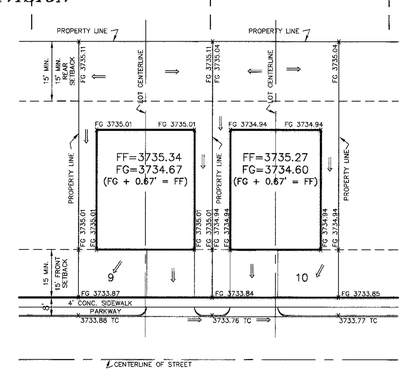
DRAINAGE COMPUTATIONS
COMPUTATIONS BASED ON RATIONAL FORMULA Q = C.I.A. – 100 YEAR STORM FREQUENCY

| WATERSHED AREA No. | Tc MINUTES | C COEFFICIENT | A AREA | I 100 INCHES/HOUR | Q 100 c.f.s. CU. FT. PER SECOND | CONCENTRATION POINT |
|---|---|---|---|---|---|---|
| 1 | 2.16 | 0.53 | 4.7584 | 8.57 | 21.81 | POND 1 |
| 2 | 13.62 | 0.56 | 4.7722 | 4.87 | 13.09 | POND 2 / PUMP |
| 3 | 1.49 | 0.62 | 0.2593 | 9.00 | 1.44 | POND 2 |
| | | | | | | |
| LOT 14, BLOCK 1 | 2.08 | 0.61 | 0.4475 | 8.62 | 2.35 | ON–SITE |
| LOT 15, BLOCK 1 | 2.08 | 0.52 | 0.3212 | 8.62 | 1.44 | ON–SITE |
| LOT 16, BLOCK 1 | 2.08 | 0.56 | 0.2936 | 8.62 | 1.42 | ON–SITE |
| LOT 17, BLOCK 1 | 2.08 | 0.53 | 0.3831 | 8.62 | 1.73 | ON–SITE |
| LOT 18, BLOCK 1 | 2.08 | 0.56 | 0.3527 | 8.62 | 1.69 | ON–SITE |
| LOT 19, BLOCK 1 | 2.08 | 0.54 | 0.3386 | 8.62 | 1.58 | ON–SITE |
| LOT 20, BLOCK 1 | 2.08 | 0.54 | 0.3379 | 8.62 | 1.58 | ON–SITE |
| LOT 21, BLOCK 1 | 2.08 | 0.56 | 0.3533 | 8.62 | 1.70 | ON–SITE |
| LOT 22, BLOCK 1 | 2.08 | 0.54 | 0.3789 | 8.62 | 1.77 | ON–SITE |
| | | | | | | |
| LOT 15, BLOCK 3 | 2.08 | 0.61 | 0.4324 | 8.62 | 2.27 | ON–SITE |
| LOT 16, BLOCK 3 | 1.22 | 0.54 | 0.3228 | 9.18 | 0.90 | ON–SITE |
| LOT 17, BLOCK 3 | 2.08 | 0.58 | 0.3161 | 8.62 | 1.58 | ON–SITE |




## TYPICAL ESTATE LOT DRAINGE DETAIL

ALL ESTATE LOTS ARE ON SITE PONDING
NOTE: ALL LOT PADS SHOWN GRAPHICALLY




## TYPICAL PARK/PATIO LOT DRAINGE DETAIL

NOTE: ALL LOT PADS SHOWN GRAPHICALLY

**NOTE: DRAINAGE QUANTITIES BASED ON 100 YEAR STORM FREQUENCY**

DESILTING AREAS – DRAINAGE COMPUTATIONS
COMPUTATIONS BASED ON – Qexp = ARC/12, FOR 100 YEAR STORM FREQUENCY

| WATERSHED | AREA IN ACRES | RAINFALL IN INCHES PER 3 HOURS | "C" RUNOFF FACTOR | REQUIRED CAPACITY ACRE–FEET | EMERGENCY CAPACITY ACRE–FEET | SILT VOLUME ACRE–FEET (0.012) | EXPECTED RUNOFF ACRE–FEET | Q TOTAL CAPACITY ACRE–FEET | DEPTH OF POND |
|---|---|---|---|---|---|---|---|---|---|
| WS 1 | 4.7584 | 4 | 0.53 | 0.84 | 0.21 | 0.0571 | 1.1079 | 1.2262 | 3.26' |
| WS 2 | 4.7722 | 4 | 0.56 | 0.89 | 0.22 | 0.0573 | 1.1708 | 0.2580 | 4.0' |
| WS 3 | 0.2593 | 4 | 0.62 | 0.09 | 0.00 | 0.0029 | 0.0613 | 0.0802 | 1.0' |
| LOT 22, BLK 1 (TYP.) | 0.3789 | 4 | 0.56 | 0.07 | 0.00 | 0.0045 | 0.0753 | 0.0909 | 1.0' |

| POND #1 VOLUME | | |
|---|---|---|
| ELEVATION (FEET) | AREA (ACRES) | CUMM AVE (AC–FT) |
| 3729.74 | 0.2182 | 0.0000 |
| 3730 | 0.3368 | 0.3496 |
| 3731 | 0.4216 | 0.7288 |
| 3732 | 0.5341 | 1.2067 |

| POND #2 VOLUME | | |
|---|---|---|
| ELEVATION (FEET) | AREA (ACRES) | CUMM AVE (AC–FT) |
| 3728 | 0.0702 | 0.0000 |
| 3729 | 0.0805 | 0.0754 |
| 3730 | 0.0913 | 0.1612 |
| 3731 | 0.1028 | .02583 |

| POND #3 VOLUME | | |
|---|---|---|
| ELEVATION (FEET) | AREA (ACRES) | CUMM AVE (AC–FT) |
| 3731 | 0.0540 | 0.0000 |
| 3732 | 0.1030 | 0.0785 |

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| DATE | REVISIONS | BY |
|---|---|---|
| | | |

**PRIMARY BENCHMARK**
EXISTING CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUNSET DRIVE AND EMORY ROAD
ELEVATION: 3732.68 (CITY DATUM)

**SECONDARY BENCHMARK**

| SCALE | |
|---|---|
| HOR: | 1" = 100' |
| VER: | N/A |
| W.O. | 061702–3 |
| FILE: | VE_drplan.DWG |
| DATE: | NOVEMBER, 2003 |
| DESIGN BY: | B.R. |
| DRAWN BY: | CAD STAFF |
| CHKD. BY: | H.P. |
| APPD. BY: | B.R. |

**ENGINEER'S NOTE**

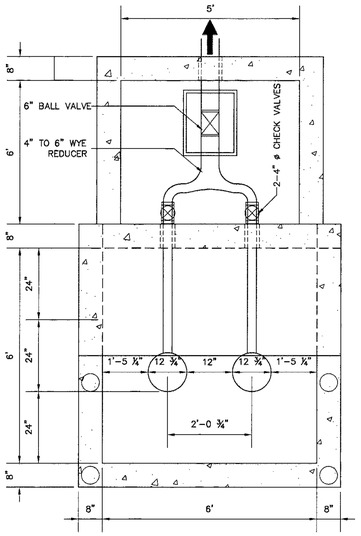
**ENGINEER'S SEAL**
STATE OF TEXAS
BRADLEY ROE
31886
LICENSED
PROFESSIONAL ENGINEER
BRADLEY ROE, P.E. 31886

**DRAINAGE PLAN**

*VILLA ENCANTO*

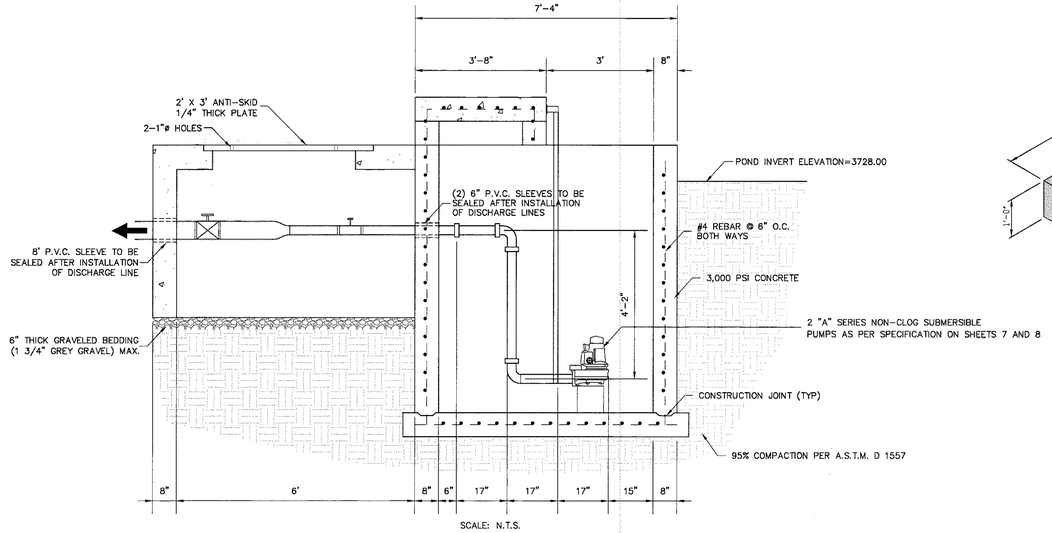
# DRAINAGE PLAN

Roe Engineering L.C.
601 N. Cotton St. Suite No.6 El Paso, Tx. 79902
(915) 533–1418 FAX: (915) 533–4972
Email : roeeng@swbell.net
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING




## PLAN VIEW OF LIFT STATION

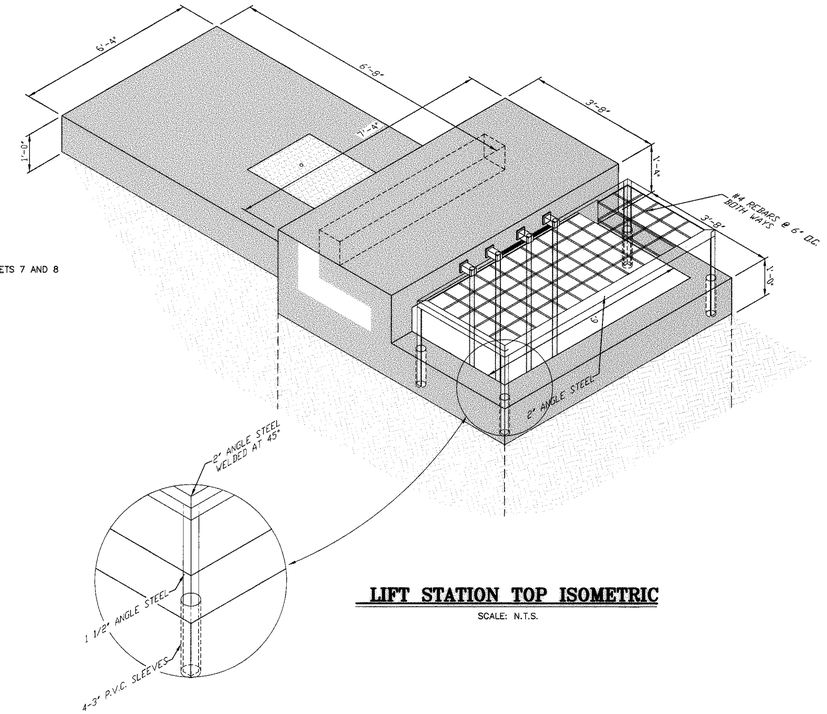
SCALE: 1" = 2'




SCALE: N.T.S.

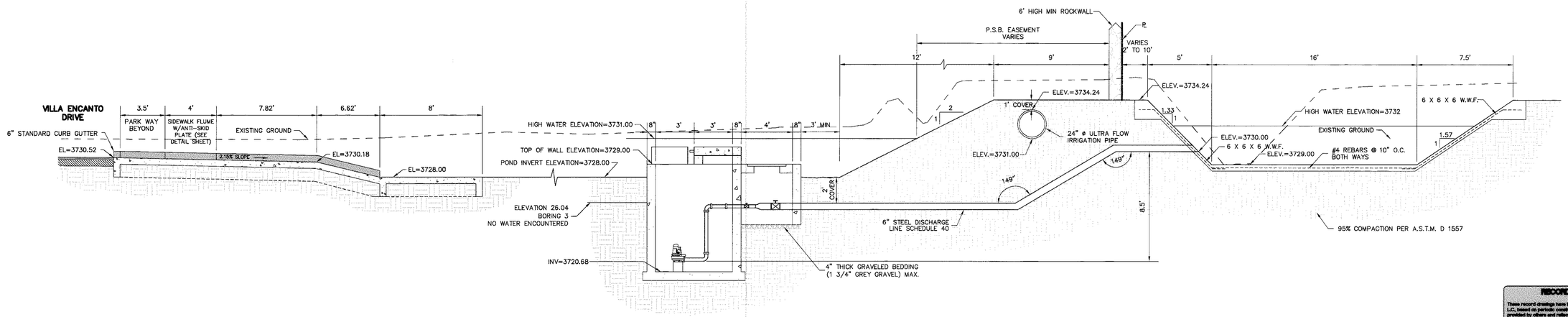
## CROSS SECTION THRU LIFT STATION

NOTE: ELECTRICAL DESIGN BY OTHERS
SCALE: 1" = 2'




## LIFT STATION TOP ISOMETRIC

SCALE: N.T.S.




## SECTION G-G

SCALE: 1" = 4'

**RECORD DRAWINGS**

These record drawings have been prepared by Roe Engineering, L.C., based on periodic construction observations and information provided by others and reflects changes made during construction. The accuracy and/or completeness of the information here has been verified by Roe Engineering L.C., Bradley Roe, R.P.L.S., P.E. Those relying on this record drawing are advised to obtain independent verification of its accuracy before applying it for any purpose.

Date May 30, 2008 By Bradley Roe, R.P.L.S. 3486, P.E. 3886

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**05-30-2008**

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| DATE | REVISIONS | BY |
|---|---|---|
| 12/23/03 | CITY COMMENTS | |

**PRIMARY BENCHMARK**
EXISTING CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUNSET DRIVE AND EMORY ROAD
ELEVATION: 3732.68 (CITY DATUM)

**SECONDARY BENCHMARK**

| SCALE | |
|---|---|
| HOR: | AS SHOWN |
| VER: | N/A |
| W.O. | 061702-3 |
| FILE: | VE_dtdt1plan.DWG |
| DATE: | NOVEMBER, 2003 |
| DESIGN BY: | B.R. |
| DRAWN BY: | CAD STAFF |
| CHKD. BY: | H.P. |
| APPD. BY: | B.R. |

**ENGINEER'S NOTE**

**ENGINEER'S SEAL**
STATE OF TEXAS · BRADLEY ROE · 31886 · LICENSED · PROFESSIONAL ENGINEER
BRADLEY ROE, P.E. 31886

**PUMP TYPICAL DETAILS AND SECTIONS**

*VILLA ENCANTO*

# PUMP TYPICAL DETAILS AND SECTIONS

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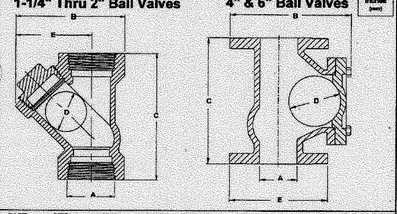
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

| | |
|---|---|
| SECTION | C |
| PAGE | 40 |
| DATE | 12/99 |
| REPLACES | 2/98 |

## 1-1/4" Thru 2" Ball Valves — 4" & 6" Ball Valves

Inches (mm)




| PART NO. | SIZE A | WIDTH B | LENGTH C | BALL DIA D | E | BOLT CIRCLE | BOLT HOLE DIA.-QTY. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|
| 077891 | 1-1/4" (32) | 4.50 (114) | 6.00 (127) | 1.62 (41) | 3.00 (76) | N/A | N/A | 4.5 (2.0kg) |
| 085446 | 1-1/4" (32) | 4.50 (114) | 5.63 (143) | 1.50 (38) | | N/A | N/A | 1.0 (0.46kg) |
| 099727 | 1-1/2" (38) | 5.50 (165) | 7.56 (192) | 2.50 (64) | | N/A | N/A | 1.5 (0.68kg) |
| 077882 | 2" (51) | 6.00 (152) | 6.87 (175) | 2.50 (64) | 4.25 (107) | N/A | N/A | 9.0 (4.1kg) |
| 069874 | 2" (51) | 6.50 (165) | 7.06 (179) | 2.50 (64) | | N/A | N/A | 1.5 (0.68kg) |
| 077889 | 4" (102) | 11.12 (282) | 11.81 (300) | 4.75 (121) | 9.00 (229) | 7.50 (191) | .75 (19) - 8 | 65 (30kg) |
| 077890 | 6" (152) | 15.68 (398) | 16.56 (421) | 7.25 (184) | 11.00 (279) | 9.50 (241) | .87 (22) - 8 | 132 (60kg) |

**CRANE** PUMPS & SYSTEMS

*A Crane Co. Company*

Barnes Pumps, Inc
Distributor Sales & Service Dept.
420 Third Street/P.O. Box 603
Piqua, Ohio 45356-0603
Ph: (937) 615-3595
Fax: (937) 773-7157

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Fax: (419) 774-1530

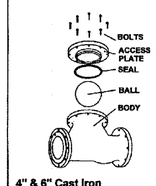
Barnes Pumps Canada, Inc.
83 West Drive
Brampton, Ontario
Canada L6T 2J6
Ph: (905) 457-6223
Fax: (905) 457-2650

# BARNES® BALL CHECK VALVES

1-1/4", 2", 4" & 6", Cast Iron and 1-1/4, 1-1/2 & 2" PVC

| | |
|---|---|
| SECTION | C |
| PAGE | 39 |
| DATE | 12/99 |
| REPLACES | 2/98 |

1-1/4" Thru 2" Cast Iron & PVC




4" & 6" Cast Iron

## Specifications:

### 1-1/4" & 2", Cast Iron

| | |
|---|---|
| HOUSING: | ASTM Class 30 Cast Iron |
| BALL: | Natural Rubber |
| PLUG: | Schedule 40 PVC |
| TEMPERATURE: | 80°C and a potential peak of 100°C. |
| PRESSURE TEST: | 150 Lbs./Sq. In.(10.6 kgs/sq. meter). |
| P/N: 1-1/4" (32mm) | 077881 |
| P/N: 2" (51mm) | 077882 |

### 1-1/4", 1-1/2" & 2", PVC

| | |
|---|---|
| HOUSING: | PVC |
| BALL: | Nitrile or Buna-N |
| PLUG: | PVC |
| TEMPERATURE: | 80°C and a potential peak of 100°C. |
| PRESSURE TEST: | 150 Lbs./Sq. In.(10.6 kgs/sq. meter). |
| P/N: 1-1/4" (32mm) | 085446 |
| P/N: 1-1/2" (38mm) | 099727 |
| P/N: 2" (51mm) | 069874 |

### 4" & 6"

| | |
|---|---|
| HOUSING: | ASTM Class 30 Cast Iron |
| SEAL: | Natural Rubber |
| BALL: | Natural Rubber Covered Hollow Iron |
| HARDWARE: | 18-8 Stainless Steel |
| ACCESS PLATE: | ASTM Class 30 Cast Iron |
| TEMPERATURE: | 80°C and a potential peak of 100°C. |
| PRESSURE TEST: | 125 Lbs./Sq. In. (8.8 kgs/sq meter) |
| P/N: 4" (102mm) | 077889 |
| P/N: 6" (152mm) | 077890 |

## Features:

- Works both vertically and horizontally (in the latter case, place the "bulge" above the axe of flow- the ball can thus return to its seat by the pull of gravity).
- Ball has sufficient weight to seat tightly and moves freely to open.
- Low headlosses as the ball is set completely to one side at a maximum rate of flow
- Works in silence.
- No maintenance.
- Easy dismantling.
- Supplied with clean out port and plug.

**APPLICATIONS:**
Waste water or fluids of varying viscosity, liquid manture, etc.

**CRANE** PUMPS & SYSTEMS

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Ph: (419) 774-1511

Barnes Pumps Canada, Inc.
83 West Drive
Brampton, Ontario
Canada L6T 2J6
Ph: (905) 457-6223

# BARNES® MERCURY LEVEL CONTROL

Wide Angle, Pipe Mounted

| | |
|---|---|
| SECTION | K-3 |
| PAGE | 23 |
| DATE | 5/94 |
| REPLACES | |

P/N's: 073618 & 074785

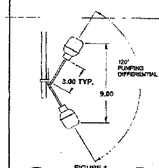


FIGURE 1

## Specification:

| | | |
|---|---|---|
| CABLE: | *Material:* | 16-2 SJO W-A, 66 Strand #34, 60°C |
| | *Size:* | .22 Dia. x (See Chart for Length) |
| PLUG: | | 115V Molded Male & Female (Piggy-Back) w/Ground (*Lengths over 50ft. DO NOT Include Plug). |
| HOUSING: | *Material:* | Polypropylene |
| | *Color:* | Normally Open - Blue<br>Normally Closed - Red |
| CLAMP: | | Stainless Steel with Polypropylene Saddle, Adjustable, 1" to 3" |
| TEMPERATURE RATING: | | 60°C |
| SWITCH: | | Mercury, Wide Angle, 120° |
| SWITCH RATINGS: | | 13A. @ 115VAC; Continuous<br>Current Inrush NOT to Exceed 22A. |

## Description:

The Wide Angle Mercury Level Control is a direct acting, in-line control system for automatically controlling 1/2 HP and smaller pump motors. The unit has a piggy-back plug attached to the cord, allowing the user to plug the pump plug directly into it, and then plug the entire unit into a standard grounded outlet. The Wide Angle Mercury Level Control is furnished with an adjustable strap for mounting to the pump discharge pipe. Standard units are preset at the factory for a nine inch pump down range, but can easily be adjusted to various pump cycles by shortening or lengthening the cord length at the pivot point, (see Table 1 and Figure 1). The Level Control is also omni-directional; the pumping differential is maintained in any horizontal plane.

- No wiring
- Single float in sump
- Omni-directional
- Adjustable clamp
- Variable pumping range
- Corrosion resistant
- Easy to install

LEVEL CONTROL SELECTION CHART

| Control Number | * Cord Length | Type Installation | Contacts |
|---|---|---|---|
| 073618 | 15 to 100Ft. | Pipe Mounted | Open |
| 074785 | 15 to 100Ft. | Pipe Mounted | Closed |

*State cord length at time of ordering*

**CRANE** PUMPS & SYSTEMS

Barnes Pumps, Inc.
Distributor Sales & Service Dept.
420 Third Street/P.O. Box 603
Piqua, Ohio 45356-0603
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Fax: (513) 773-2156

Barnes Pumps, Inc.
Bid-To-Spec & Project Sales
1485 Lexington Ave.
Mansfield, Ohio 44907-2674
Ph: (419) 774-1511
Fax: (419) 774-1530

This product contains Mercury. Dispose of in accordance with Local, State, and Federal Regulations so that mercury does not contaminate the environment. Not for use in potable water.

| | |
|---|---|
| SECTION | K-3 |
| PAGE | 24 |
| DATE | 5/94 |
| REPLACES | |

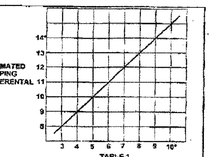



TABLE 1

NOTE: Apply liquid soap to the cable and clamp for ease in sliding.

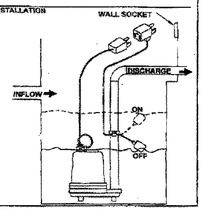
* Maximum drawdown differential will vary from 12" to 10" at this point depending on temperature of liquid being pumped.

TYPICAL INSTALLATION

GENERAL COMMENTS:

1. Never work in sump with the power on.
2. Level Controls are factory set for a pumping differential of 9", if that is the cycle desired, simply circle the discharge pipe with the pipe mounting strap, feed the cord through the worm drive, and tighten with a screwdriver. Be certain that the Level Control cannot hang up or fouls in its swing from "ON" to "OFF". Also make certain the pump impeller is still submerged when the Level Control is in the "OFF" mode.
3. If a higher pump differential is needed, consult Table 1. for tether length needed. Loosen the screw on the pipe/cable clamp, measure the cable tether length from the neck of the float housing to the bottom of the pipe/cable clamp. Tighten the screw at the desired tether length and attach to the pipe.
4. Plug the unit into the wall receptacle, then plug the pump into the piggyback plug. One cycle of operation should be observed, so that any potential problems can be corrected.

IMPORTANT NOTE: Do not use the Wide Angle Mercury Level Control in gasoline, volatiles, or other combustibles.

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Ph: (513) 773-2442
Fax: (513) 773-2156

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Mansfield, Ohio 44907-2674
Ph: (419) 774-1511
Fax: (419) 774-1530

# Duplex Heavy Duty Controllers

Class 83, 84

General

### Features

- Heavy Duty NEMA Starters
- Solid State or Thermal Overload Relays
- Fusible or MCP
- Heavy Duty Disconnect Handle
- Flexibility with Field Modifications
- Alternator Transfer on De-energization
- UL Listed for Outdoor Use and Service Equipment File #E14900
- CSA Certified File #LR6635

### Application

Duplex pump controls are designed to perform either or both of two distinct functions: **duplexing** and **alternation**. The duplexing function provides capacity for system peaking or above normal demand without having the full motor capacity spinning at all times. It also provides standby capacity for use when one of the motors or pumps is disabled. The duplexing function is also referred to as leading or main/standby. When two pumps or compressors are controlled by a duplex controller, they are started in sequence as necessary to attain preset values of pressure, flow or liquid level.

Two pilot devices such as pressure switches or float switches provide electrical signals to the duplex controller. One pilot device is set to initiate the starting of the lead motor. This motor is rated to handle normal system demand. The second motor is usually the same rating and is referred to as the lag motor. It is only energized when the system demand is greater than the capacity of the lead motor. The lag motor is started when the second pilot device is signalling for more output than the lead motor can produce.

The alternation function reverses the lead and lag mode for the two motors in a duplex system. Upon alternation the first motor as described above becomes the lag motor and the second motor assumes the lead function.

This alternation is usually programmed to occur every time both pumps come to rest. The alternation function equalizes wear on the two machines and extends the life of seals and bearings.

**Features**

Two control transformers may be provided for low voltage control to safeguard personnel from high voltage. One transformer is required for each starter to provide independent control circuits.

A Hand-Off-Auto selector switch for each starter may be assembled in the enclosure door or furnished separately for remote control. Test push buttons or pilot lights may also be installed on the enclosure.

Solid-state or Ambient Compensated Bimetal Overload Relays are supplied as standard.

**Auxiliary Equipment**

- Siemens has an extensive line of water and air pressure switches. If pilot control requires a pressure switch see pages 461–462.
- For undervoltage and phase sensing relays see pages 637–638.

NEMA and IEP Rated Control

Pressure Switch

Voltage Monitor

Class 83 Controller Only

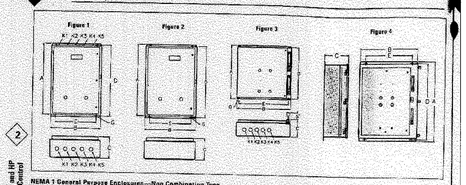
Class 84 Combination Controller with 2 MCPs



# Duplex Heavy Duty Controllers

Class 83, 84

Dimensions




NEMA and IEP Rated Control

**NEMA 1 General Purpose Enclosures—Non Combination Type**

| Size | Fig. | Outline Dimensions A | B | C | Mtg. Dimensions D | E | Mtg. Screw G | Conduit Size B1 | K1 | K2 | K3 | B4 | K5 | Approx. Ship Wt. Lbs (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1/0 | 1 | 13(.485) | 13(.485) | 7(.276) | 10(.394) | 11(.44) | ¼ | 1-1/2 | ¾ | — | 3/4 | 1-1/2 | 3/4 | 20 (9) |
| 2–3 | 1 | 20(.787) | 20(.787) | 7(.276) | 16(.63) | 14 (55) | ½ | 1-1/2 | 2 | — | 3/4 | 1-1/2 | 3/4 | 37 (17) |
| 4 | 1 | 30(.118) | 30(.118) | 7(.276) | 27(1.06) | 20 (80) | ½ | 2 | 2-1/2 | 3/4 | 1-1/2 | 2-1/2 | 3/4 | 57 (26) |
| 5–6 | 1 | 36(1.18) | 30(.118) | 10(.39) | 32(1.26) | 20 (80) | ½ | 2-1/2 | 3 | 1-1/2 | 1-1/2 | 2-1/2 | 3/4 | 87 (40) |

**NEMA 12 Industrial Use Enclosures—Non Combination Type**

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1/0 | 2 | 16(.485) | 16(.63) | 8(.315) | 13(.51) | 13(.51) | ½ | — | — | — | — | — | — | 20 (9) |
| 2–3 | 2 | 20(.787) | 20(.787) | 7(.276) | 16(.63) | 14 (55) | ½ | — | — | — | — | — | — | 37 (17) |
| 4 | 2 | 30(.118) | 30(.118) | 10(.39) | 27(1.06) | 20 (80) | ½ | — | — | — | — | — | — | 57 (26) |
| 5–6 | 2 | 36(1.18) | 30(.118) | 10(.39) | 32(1.26) | 20 (80) | ½ | — | — | — | — | — | — | 87 (40) |

**NEMA 4 Watertight Enclosures—Non Combination Type**

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1/0 | 2 | 16(.485) | 16(.63) | 8(.315) | 13(.51) | 13(.51) | ½ | — | — | — | — | — | — | 20 (9) |
| 2–3 | 2 | 20(.787) | 20(.787) | 7(.276) | 16(.63) | 14 (55) | ½ | — | — | — | — | — | — | 37 (17) |
| 4 | 2 | 30(.118) | 30(.118) | 10(.39) | 27(1.06) | 20 (80) | ½ | — | — | — | — | — | — | 57 (26) |
| 5–6 | 2 | 36(1.18) | 30(.118) | 10(.39) | 32(1.26) | 20 (80) | ½ | — | — | — | — | — | — | 87 (40) |

**NEMA 1 General Purpose Enclosures—Combination Type**

| Size | Fig. | Outline Dimensions A | B | C | Mtg. Dimensions D | E | Mtg. Screw G | Conduit Size B1 | K1 | K2 | K3 | B4 | K5 | Approx. Ship Wt. Lbs (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–2/0 | 3 | 34(.882) | 24(.945) | 27(.630) | 23 (90) | 20 (80) | ½ | 2-1/2 | 3-1/2 | 4-1/2 | 4-1/2 | 1-1/2 | 1-1/2 | 78 (35) |

**NEMA 4, 4X and 12 Enclosures—Combination Type**

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–2/0 | 3 | 34(.882) | 24(.945) | 27(.630) | 23 (90) | 20 (80) | ½ | — | — | — | — | — | — | — |

**NEMA 3, 4, 12 Deadfront Enclosures With Padlockable Door—Combination Type**

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–2/0 | 4 | 34(.882) | 20 (.630) | 18(1.04) | 20 (.630) | 20(.630) | ½ | — | — | — | — | — | — | — |



**RECORD DRAWINGS**

These record drawings have been prepared by Roe Engineering, L.C., based on periodic construction observations and information provided by others and reflects changes made during construction. The accuracy and/or completeness of this information have been verified by Roe Engineering, L.C., Bradley Roe, R.P.L.S., P.E. Those relying on this record drawing are advised to obtain independent verification of its accuracy before applying it for any purpose.

Date: May 30, 2008 By: Bradley Roe, R.P.L.S. 3469, P.E. 31886

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**05-30-2008**

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| DATE | REVISIONS | BY |
|---|---|---|
| | | |

PRIMARY BENCHMARK

EXISTING CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUNSET DRIVE AND EMORY ROAD
ELEVATION: 3732.68 (CITY DATUM)

SECONDARY BENCHMARK

| SCALE | |
|---|---|
| HOR: | AS SHOWN |
| VER: | N/A |
| W.O. | 061702-3 |
| FILE: | PUMPSPECS 2.DWG |
| DATE: | OCTOBER, 2003 |
| DESIGN BY: | BR |
| DRAWN BY: | CADD STAFF |
| CHKD. BY: | H.P. |
| APPD. BY: | B.R. |

ENGINEER'S NOTE

ENGINEER'S SEAL

STATE OF TEXAS — BRADLEY ROE — 31886 — LICENSED — PROFESSIONAL ENGINEER

BRADLEY ROE, P.E. 31886

TYPICAL DETAILS AND SECTIONS

*VILLA ENCANTO*

# PUMP DETAILS AND SECTIONS

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ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

SHEET 7 OF 20

# HOMA

## Technical Specifications

A Series Non-Clog Submersible Pump
Installation: Wet well with Auto Coupling

. SCOPE
These specifications cover the description, performance, and installation of the electric submersible pump(s) to be procured for customer's project. The pump(s) described here are intended for use in a "wet well only" pumping station and will include a self-engaging Auto coupling Assembly. The pump assembly including Impeller, Volute, Motor and Auto coupling, shall be in full compliance with these specifications.
. GENERAL CONDITIONS
Furnish and Install _2_ Homa Model _____ Electric Submersible Wastewater Pump(s), each consisting of a single stage, non-clog centrifugal pump, close-coupled to a squirrel cage induction type electric motor assembled in a single-body, watertight aggregate, capable of maintaining its watertight integrity submerged under 80 feet of water, complete with Auto coupling Base and Adapter Flange, for automatic operation in a Wet Well. The Auto coupling discharge flange shall be ANSI Class 125 size — Inch Cast Iron.
. PERFORMANCE GUARANTEE
The pump shall be designed to handle raw, unscreened sewage, storm water, sludge or similar contaminated liquid at an operating point of _____ GPM at _____ FT TDH with a Hydraulic Efficiency of at least ____% Shut-off head shall be ____ FT minimum. As this pump will be utilized for solids handling, it must be capable of repeatably passing spherical solids up to ____ inch in diameter.
. MATERIALS OF CONSTRUCTION
Major castings: ASTM A48 Class 40B Cast Iron. — Wear Ring: ASTM B144 Bronze. — Shaft: AISI 430F Stainless Steel. —
Fasteners: AISI 304 Stainless Steel. — O-Rings: Nitrile Rubber. — Shaft Seals: Silicon Carbide/Silicon Carbide (impeller and motor side). Cable Jacket: Neoprene. — Cable Entry: elastomer grommet, stainless steel washers. — Protective Coating (on outside surface): High Solids Epoxy
. IMPELLER
Impeller will be cast as one piece and shall be one of the following designs:
( ) Single-vane closed (double-shrouded), radial non-clog ("AM" & "AMX" Models)
( ) Two-vane closed (double-shrouded), radial non-clog ("AK" Models)
( ) Multi-vane open (single-shrouded), torque-flow (vortex, 4" and 6" "AV" models)
Statically and dynamically balanced, to assure that vibration amplitudes, measured at the level of the upper bearing while operating in a vertical position, remain within the limits specified by the Hydraulic Institute Standards.
. VOLUTE
Volute will be cast in one piece, with smooth internal contours and surfaces, providing obstruction-free passageways with low friction losses. A stationary Wear Ring, made of bronze, shall maintain close tolerances between the rotating Impeller and the stationary Volute.
. SHAFT
Pump shaft must have generous shoulder fillet radii to minimize stress concentration and fatigue. Deflection at the Shaft Seal within the operating range shall not be more than 0.002 inch.
. BEARINGS
Pump shaft shall be supported by anti-friction bearings, designed for 50,000 hours B-10 Life at the pumps Best Efficiency Point, and shall be factory pre-lubricated for life. The lower impeller-side bearing will be a double-row, deep groove ball bearing, axially retained, to sustain both axial and radial loads. The upper motor-end bearing is a single-row, deep groove ball bearing axially floating, to sustain radial loads only.

. WATERTIGHT INTEGRITY
The watertight integrity of the single-body pump-motor assembly shall be assured.
The Cable Entry shall contain an elastomer grommet, flanked by two washers, closely fitted to the cable O.D. A watertight seal shall be maintained by screwing a threaded gland down to a positive stop (metal-to-metal, to prevent permanent deformation by over tightening), thereby tightly compressing the grommet around the cable. The gland will provide a strain-relieving, anti-kink feature, functioning independently from the separate sealing action. For pumps above 30 horsepower an isolated Junction Box containing the Terminal Board, and sealed from the Motor Compartment by a watertight isolation plate, will provide a secondary barrier against water or moisture penetration. Each pump shall be supplied with 30 feet of SO Type power cable.
. SEALS
Motor Compartment shall be isolated from the Liquid End by Single Mechanical Shaft Seals in tandem arrangement (dual-independent, both oriented to resist pressure from the impeller). The upper motor side seal shall run in an Oil Chamber, which separates the Motor Compartment from the Liquid End and provides permanent lubrication and cooling. The lower impeller side seal will also get lubrication from the Oil Chamber. Each seal will have a stationary portion and a positively driven rotary portion. Springs must be protected from the pumped liquid; and under no circumstances can solid particles accumulate on the external spring and hamper its effectiveness. Seals must not require repeated checking or re-adjustment, except periodic inspection of the oil chamber. At the interfaces of major castings, sealing shall by accomplished by resilient Buna-N O-Rings, confined within closely fitted, high surface quality rabbet joints, compressed only to the prescribed dimension by metal-to-metal contact, allowing radial movement and preventing permanent set. Flat gaskets and seal rings, which may be squeezed unevenly or beyond the permanent deformation limit, are not allowed.
. SEAL PROBE
A single wire, conductive seal probe shall be provided with pump. Probe shall be mounted into mechanical seal chamber and shall be accessible without disassembly of pump. When interlocked with control panel, probe shall indicate the presence of contaminants within mechanical seal chamber.
. ELECTRIC MOTOR
Each pump shall be driven by a Submersible Squirrel Cage Induction Motor, rated at ____ HP ____ RPM ____ Volts ____ Phase. Motor shall be NEMA Design B for continuous duty, capable of sustaining a minimum of 10 starts per hour. The pump and motor shall be produced by one manufacturer and shall be of the air-filled, watertight design.
All stator windings and leads shall be insulated with moisture-resistant Class F Insulation, capable of withstanding 155° C maximum temperature, dipped and baked three times. Upon assembly the stator shall be heat-shrink-fitted into the stator housing; the use of bolts, pins or other fastening devices, which would require penetration of the stator housing, shall not be acceptable.
In each phase winding there shall be embedded a bi-metallic temperature sensor, wired in series and interlocked with the motor overload protection in the Control Panel. Any of these thermal sensors shall cut out electric power if the temperature in its winding exceeds 140° C, but shall automatically reset when the winding temperature returns to normal. The motor shall be non- overloading through the selected performance curve and have a Service Factor of 1.15.
When the application requires, motor shall be approved for use in Hazardous (Classified) areas. Pumps shall be suitable for operation in Class 1, Division 1, Groups C & D Areas only, and shall be approved by Factory Mutual (FM) for use in the area classification indicated. Seal leak probe, if required, shall be dual wire. All FM approved pumps supplied for use in Hazardous areas shall be supplied with an isolated junction box as described above.
. INSTALLATION MODE
An Auto coupling assembly shall be employed to eliminate the need for entering the wet well to service pumps. The system shall allow the lowering of the pump unit(s) into the well along rigid guide pipes, resulting in a self-engaging, firm, leak proof coupling of the volute outlet to a receiving Base anchored to the floor which forms the discharge pipe connection. To assure a leak proof junction between movable and stationary components, a resilient seal ring shall be employed which is easily replaceable as part of the pump assembly, is axially and evenly compressed upon contact. Metal-to-metal contact faces shall not be allowed. Once seated, the pump shall be entirely supported by the Auto coupling Base, without any reliance on additional supports.
. SPARE PARTS
The following spare parts shall be furnished for each unit:
One (1) Spare Impeller of appropriate size for application.
One (1) Complete Mechanical Seal Kit including both upper and lower seals.
One (1) Complete O-ring Kit to permit routine service of pump.
One (1) Volute Wear Ring
One (1) Complete Cable Entry Grommet Assembly

# HOMA

## Technical Specifications

A Series Non-Clog Submersible Pump

Installation: Wet well with Ring Stand (Transportable)

. SCOPE

These specifications cover the description, performance, and installation of the electric submersible pump(s) to be procured for customer's project. The pump(s) described here are intended for use in a wet well pumping station and will include a support stand. The complete pump assembly shall be in full compliance with these specifications.

. GENERAL CONDITIONS

Furnish and install _2_ Homa Model _____ Electric Submersible Wastewater Pump(s), each consisting of a single stage, non-clog centrifugal pump, close-coupled to a squirrel cage induction type electric motor assembled in a single-body, watertight aggregate, capable of maintaining its watertight integrity submerged under 80 feet of water, complete with HOMA Ring Stand for automatic operation in a Wet Well. The Pump Discharge flange shall be ANSI Class 125 size _____ Inch Cast Iron.

. PERFORMANCE GUARANTEE

The pump shall be designed to handle raw, unscreened sewage, storm water, sludge or similar contaminated liquid at an operating point of — GPM at — FT TDH with a Hydraulic Efficiency of at least _____%
Shut-off head shall be — FT minimum. As this pump will be utilized for solids handling, it must be capable of repeatably passing spherical solids up to _____ inch in diameter.

. MATERIALS OF CONSTRUCTION

Major castings: ASTM A48 Class 40B Cast Iron. — Wear Ring: ASTM B144 Bronze. — Shaft: AISI 430F Stainless Steel. —

Fasteners: AISI 304 Stainless Steel. — O-Rings: Nitrile Rubber. — Shaft Seals: Silicon Carbide/Silicon Carbide (motor and impeller side). Cable Jacket: Neoprene. — Cable Entry: elastomer grommet, stainless steel washers. — Protective Coating (on outside surface): High Solids Epoxy.

. IMPELLER

Impeller will be cast as one piece and shall be of the following design:
( ) Single-vane closed (double-shrouded), radial non-clog ("AM" & "AMX" Models)
( ) Two-vane closed (double-shrouded), radial non-clog ("AK" Models)
( ) Multi-vane open (single-shrouded), torque-flow (vortex, 4" and 6" "AV" Models)
Statically and dynamically balanced, to assure that vibration amplitudes, measured at the level of the upper bearing while operating in a vertical position, remain within the limits specified by the Hydraulic Institute Standards.

. VOLUTE

Volute will be cast in one piece, with smooth internal contours and surfaces, providing obstruction-free passageways with low friction losses. When using double shrouded impeller, a stationary Wear Ring, made of bronze, shall maintain close tolerances between the rotating Impeller and the stationary Volute.

. SHAFT

Pump shaft must have generous shoulder fillet radii to minimize stress concentration and fatigue. Deflection at the Shaft Seal within the operating range shall not be more than 0.002 inch.

. BEARINGS

Pump shaft shall be supported by anti-friction bearings, designed for 50,000 hours B-10 life at the pump's Best Efficiency Point, and shall be factory pre-lubricated for life. The lower impeller-side bearing will be a double-row, deep groove ball bearing, axially retained, to sustain both axial and radial loads. The upper motor-end bearing is a single-row, deep groove ball bearing axially floating, to sustain radial loads only.

. WATERTIGHT INTEGRITY

The watertight integrity of the single-body pump-motor assembly shall be assured.
The Cable Entry shall contain an elastomer grommet, flanked by two washers, closely fitted to the cable O.D. A watertight seal shall be maintained by screwing a threaded gland down to a positive stop (metal-to-metal, to prevent permanent deformation by over tightening), thereby tightly compressing the grommet around the cable. The gland will provide a strain-relieving, anti-kink feature, functioning independently from the separate sealing action. For pumps above 30 horsepower an isolated Junction Box containing the Terminal Board, and sealed from the Motor Compartment by a watertight isolation plate, will provide a secondary barrier against water or moisture penetration. Each pump shall be supplied with 30 feet of SO Type power cable.

. SEALS

Motor Compartment shall be isolated from the Liquid End by Single Mechanical Shaft Seals in tandem arrangement (dual-independent, both oriented to resist pressure from the impeller). The upper motor side seal shall run in an Oil Chamber, which separates the Motor Compartment from the Liquid End and provides permanent lubrication and cooling. The lower impeller side seal will also get lubrication from the Oil Chamber. Each seal will have a stationary portion and a positively driven rotary portion. Springs must be protected from the pumped liquid; and under no circumstances can solid particles accumulate on the external spring and hamper its effectiveness. Seals must not require repeated checking or re-adjustment, except periodic inspection of the oil chamber. At the interfaces of major castings, sealing shall by accomplished by resilient Buna-N O-Rings, confined within closely fitted, high surface quality rabbet joints, compressed only to the prescribed dimension by metal-to-metal contact, allowing radial movement and preventing permanent set. Flat gaskets and seal rings, which may be squeezed unevenly or beyond the permanent deformation limit, are not allowed.

. SEAL PROBE

A single wire, conductive seal probe shall be provided with pump. Probe shall be mounted into mechanical seal chamber and shall be accessible without disassembly of pump. When interlocked with control panel, probe shall indicate the presence of contaminants within mechanical seal chamber.

. ELECTRIC MOTOR

Each pump shall be driven by a Submersible Squirrel Cage Induction Motor, rated at ____ HP ____ RPM Volts ____ Phase. Motor shall be NEMA Design B for continuous duty, capable of sustaining a minimum of 10 starts per hour. The pump and motor shall be produced by one manufacturer and shall be of the air-filled, watertight design.
All stator windings and leads shall be insulated with moisture-resistant Class F Insulation, capable of withstanding 155° C maximum temperature, dipped and baked three times. Upon assembly the stator shall be heat-shrink-fitted into the stator housing; the use of bolts, pins or other fastening devices, which would require penetration of the stator housing, shall not be acceptable.
In each phase winding there shall be embedded a bi-metallic temperature sensor, wired in series and interlocked with the motor overload protection in the Control Panel. Any of these thermal sensors shall cut out electric power if the temperature in its winding exceeds 140° C, but shall automatically reset when the winding temperature returns too normal. The motor shall be non-overloading through the selected performance curve and have a Service Factor of 1.15.
When the application requires, motor shall be approved for use in Hazardous (Classified) areas. Pumps shall be suitable for operation in Class 1, Division 1 Groups C & D Areas only, and shall be approved by Factory Mutual (FM) for use in the area classification indicated. Seal leak probe, if required, shall be dual wire. All FM Approved pumps supplied for use in Hazardous areas shall be supplied with an isolated junction box as described above.

. INSTALLATION MODE

A Ring Stand shall be employed which will fully support the pump-motor aggregate. No additional supports or brackets shall be required for pump installation. Unit shall be suitable for portable or permanent installations without modification.

. SPARE PARTS

The following spare parts shall be furnished for each unit:
One (1) Spare Impeller of appropriate size for application.
One (1) Complete Mechanical Seal Kit including both upper and lower seals.
One (1) Complete O-Ring Kit to permit routine service of pump.
One (1) Volute Wear Ring
One (1) Complete Cable Entry Grommet Assembly

# HOMA

## Technical Specifications

A Series Non-Clog Submersible Pump Installation: Vertical Dry Pit

. SCOPE

These specifications cover the description, performance, and installation of the electric submersible pump(s) to be procured for customer's project. The pump(s) described here are intended for use in a dry well pumping station, installed in the dry well and connected to piping via ANSI Class 125 Cast Iron inlet and outlet flanges. The pump assembly including Impeller, Volute, Motor and Pipe Connections shall be in full compliance with these specifications.

. GENERAL CONDITIONS

Furnish and install _2_ Homa Model _____ Electric Submersible Wastewater Pump(s), each consisting of a single stage, non-clog centrifugal pump, close-coupled to a squirrel cage induction type electric motor assembled in a single-body, watertight aggregate, capable of maintaining its watertight integrity submerged under 80 feet of water, complete with Base Elbow for automatic operation in a Dry Well. The Pump Discharge connection shall be _ inch ANSI Class 125 Cast Iron and the Base Elbow inlet shall be _inch ANSI Class 125 Cast Iron.

. PERFORMANCE GUARANTEE

The pump shall be designed to handle raw, unscreened sewage, storm water, sludge or similar contaminated liquid at an operating point of — GPM at — FT TDH with a Hydraulic Efficiency of at least _____%
— % Shut-off head shall be — FT minimum. As this pump will be utilized for solids handling, it must be capable of repeatably passing spherical solids up to — inch in diameter.

. MATERIALS OF CONSTRUCTION

Major castings: ASTM A48 Class 40B Cast Iron. — Wear Ring: ASTM B144 Bronze. — Shaft: AISI 430F Stainless Steel. — Fasteners: AISI 304 Stainless Steel. — O-Rings: Nitrile Rubber. — Shaft Seals: Silicon Carbide/Silicon Carbide (motor and impeller side). Cable Jacket: Neoprene. — Cable Entry: elastomer grommet, stainless steel washers. — Protective Coating (on outside surface): High Solids Epoxy.

. IMPELLER

Impeller will be cast as one piece and shall be one of the following designs:
( ) Single-vane closed (double-shrouded), radial non-clog ("AM" or "AMX" Models)
( ) Two-vane closed (double-shrouded), radial non-clog ("AK" Models)
( ) Multi-vane open (single-shrouded), torque-flow (vortex, 4" and 6" "AV" models)
Statically and dynamically balanced, to assure that vibration amplitudes, measured at the level of the upper bearing while operating in a vertical position, remain within the limits specified by the Hydraulic Institute Standards.

. VOLUTE

Volute will be cast in one piece, with smooth internal contours and surfaces, providing obstruction-free passageways with low friction losses. A stationary Wear Ring, made of bronze, shall maintain close tolerances between the rotating Impeller and the stationary Volute.

. SHAFT

Pump shaft must have generous shoulder fillet radii to minimize stress concentration and fatigue. Deflection at the Shaft Seal within the operating range shall not be more than 0.002 inch.

. BEARINGS

Pump shaft shall be supported by anti-friction bearings, designed for 50,000 hours B-10 Life at the pumps Best Efficiency Point, and shall be factory pre-lubricated for life. The lower impeller-side bearing will be a double-row, deep groove ball bearing, axially retained, to sustain both axial and radial loads. The upper motor-end bearing is a single-row, deep groove ball bearing axially floating, to sustain radial loads only.

. WATERTIGHT INTEGRITY

The watertight integrity of the single-body pump-motor assembly shall be assured.
The Cable Entry shall contain an elastomer grommet, flanked by two washers, closely fitted to the cable O.D. A watertight seal shall be maintained by screwing a threaded gland down to a positive stop (metal-to-metal, to prevent permanent deformation by over tightening), thereby tightly compressing the grommet around the cable. The gland will provide a strain-relieving, anti-kink feature, functioning independently from the separate sealing action. For pumps above 30 horsepower an isolated junction Box containing the Terminal Board, and sealed from the Motor Compartment by a watertight isolation plate, will provide a secondary barrier against water or moisture penetration. Each pump shall be supplied with 30 feet of SO Type power cable.

. SEALS

Motor Compartment shall be isolated from the Liquid End by Single Mechanical Shaft Seals in tandem arrangement (dual- independent, both oriented to resist pressure from the impeller). The upper motor side seal shall run in an Oil Chamber, which separates the Motor Compartment from the Liquid End and provides permanent lubrication and cooling. The lower impeller side seal will also get lubrication from the Oil Chamber. Each seal will have a stationary portion and a positively driven rotary portion. Springs must be protected from the pumped liquid; and under no circumstances can solid particles accumulate on the external spring and hamper its effectiveness. Seals must not require repeated checking or re-adjustment, except periodic inspection of the oil chamber. At the interfaces of major castings, sealing shall by accomplished by resilient Buna-N O-Rings, confined within closely fitted, high surface quality rabbet joints, compressed only to the prescribed dimension by metal-to-metal contact, allowing radial movement and preventing permanent set. Flat gaskets and seal rings, which may be squeezed unevenly or beyond the permanent deformation limit, are not allowed.

. SEAL PROBE

A single wire, conductive seal probe shall be provided with pump. Probe shall be mounted into mechanical seal chamber and shall be accessible without disassembly of pump. When interlocked with control panel, probe shall indicate the presence of contaminants within mechanical seal chamber.

. ELECTRIC MOTOR

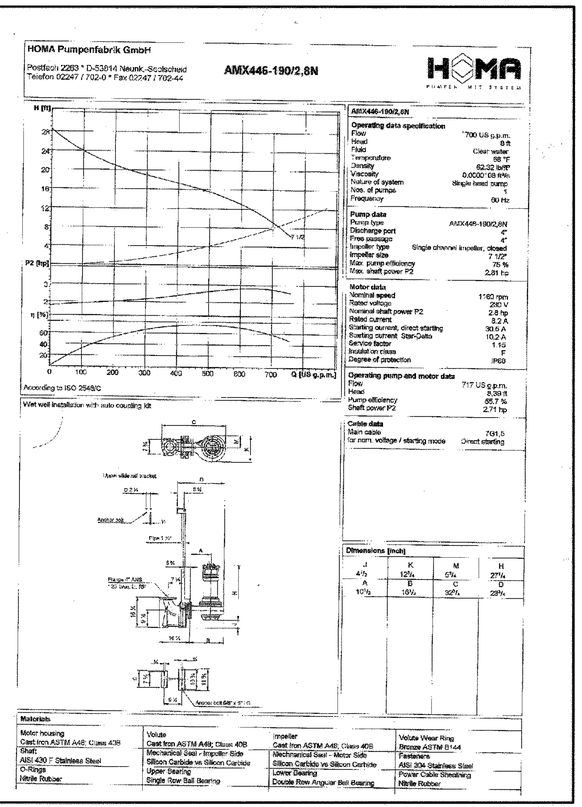
Each pump shall be driven by a Submersible Squirrel Cage Induction Motor, rated at ____ HP ____ RPM Volts ____ Phase. Motor shall be NEMA Design B for continuous duty, capable of sustaining a minimum of 10 starts per hour. The pump and motor shall be produced by one manufacturer and shall be of the air-filled, watertight design.
All stator windings and leads shall be insulated with moisture-resistant Class F Insulation, capable of withstanding 155° C maximum temperature, dipped and baked three times. Upon assembly the stator shall be heat-shrink-fitted into the stator housing; the use of bolts, pins or other fastening devices, which would require penetration of the stator housing, shall not be acceptable.
In each phase winding there shall be embedded a bi-metallic temperature sensor, wired in series and interlocked with the motor overload protection in the Control Panel. Any of these thermal sensors shall cut out electric power if the temperature in its winding exceeds 140° C, but shall automatically reset when the winding temperature returns too normal. The motor shall be non-overloading through the selected performance curve and have a Service Factor of 1.15.
When the application requires, the motor shall be approved for use in Hazardous (Classified) areas. Pumps shall be suitable for operation in Class 1, Division 1, Groups C & D Areas only, and shall be approved by Factory Mutual (FM) for use in the area classification indicated. Seal leak probe, if required, shall be dual wire. All FM Approved pumps supplied for use in Hazardous areas shall be supplied with an isolated junction box as described above.

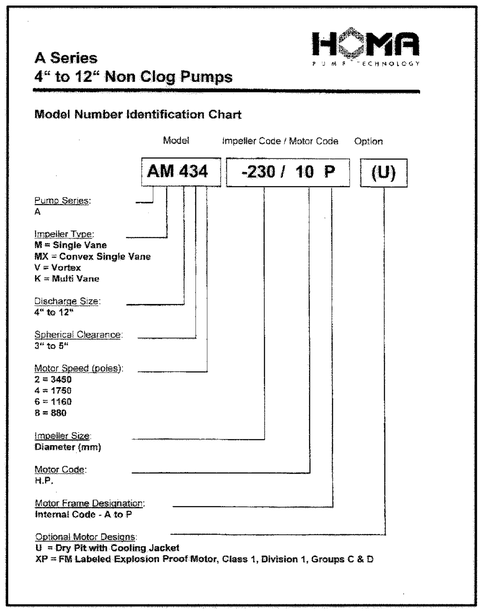
. COOLING JACKET

Motors shall be equipped with a Cooling Jacket around the Stator Housing, filled during operation with the pumped liquid, to provide adequate cooling of the motor under any operating point on the selected performance curve. Impeller back vanes shall be employed to keep liquid in forced circulation throughout the cooling jacket and a properly sized and positioned air vent pipe shall assure air is not trapped within jacket.

. SPARE PARTS

The following spare parts shall be furnished for each unit:
One (1) Spare Impeller of appropriate size for application.
One (1) Complete Mechanical Seal Kit including both upper and lower seals.
One (1) Complete O-ring Kit to permit routine service of pump.
One (1) Volute Wear Ring
One (1) Complete Cable Entry Grommet Assembly




**RECORD DRAWINGS**

These record drawings have been prepared by Roe Engineering, L.C., based on periodic construction observations and information provided by others and reflects changes made during construction. The accuracy and/or completeness of this information have been verified by Roe Engineering, L.C., Bradley Roe, RPLS, P.E. Those relying on this record drawing are advised to obtain independent verification of its accuracy before applying it for any purpose.

Date: May 30, 2008 By: Bradley Roe, RPLS, Reg. No. 31886, P.E. 31886

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**05-30-2008**

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| DATE | REVISIONS | BY |
|---|---|---|
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PRIMARY BENCHMARK
EXISTING CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUNSET DRIVE AND EMORY ROAD
ELEVATION: 3732.68 (CITY DATUM)

SECONDARY BENCHMARK

| SCALE | |
|---|---|
| HOR: | 1" = 100' |
| VER: | N/A |
| W.O. | 061702-3 |
| FILE: | PUMPSPECS.DWG |
| DATE: | OCTOBER, 2003 |
| DESIGN BY: | BR |
| DRAWN BY: | CADD STAFF |
| CHKD. BY: | H.P. |
| APPD. BY: | B.R. |

ENGINEER'S NOTE

ENGINEER'S SEAL
STATE OF TEXAS
BRADLEY ROE
31886
PROFESSIONAL ENGINEER
BRADLEY ROE, P.E. 31886

TYPICAL DETAILS AND SECTIONS

*VILLA ENCANTO*

PUMP DETAILS AND SECTIONS

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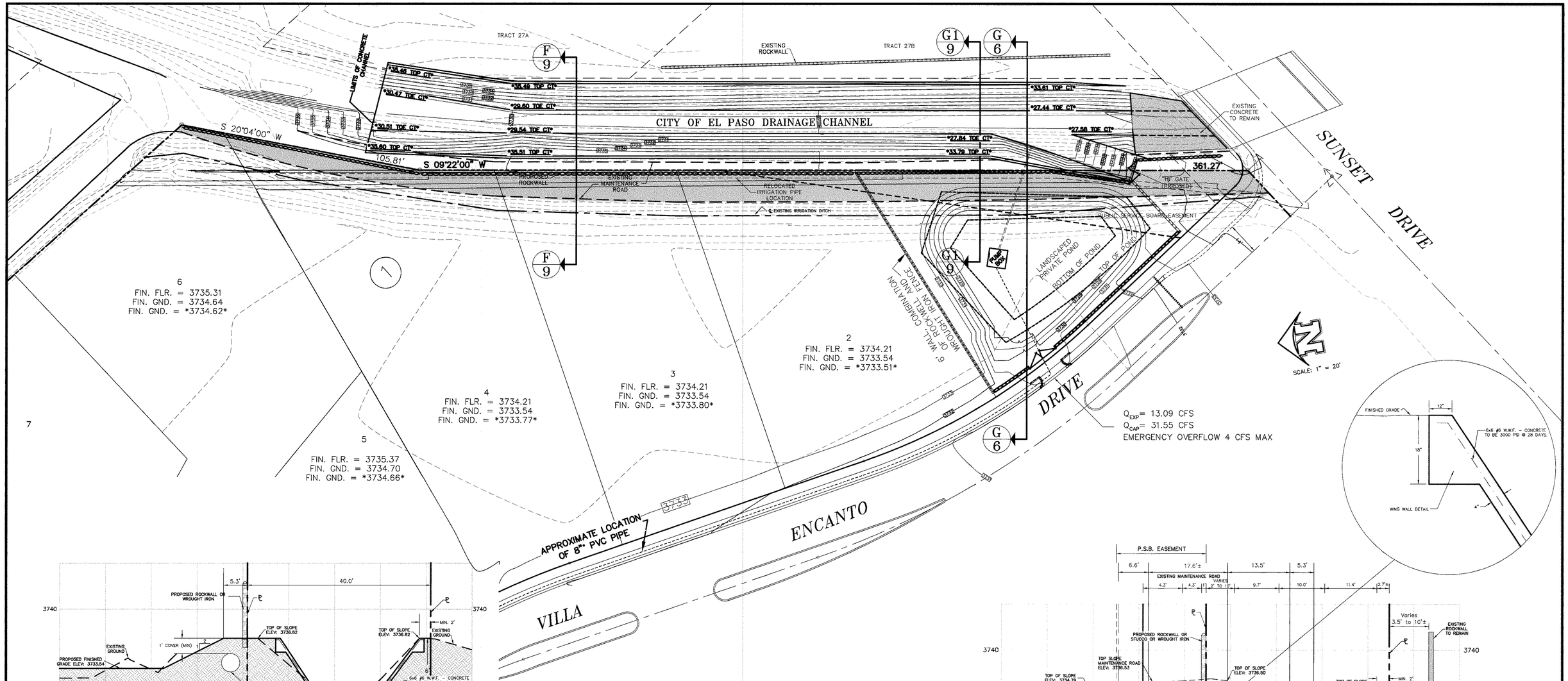
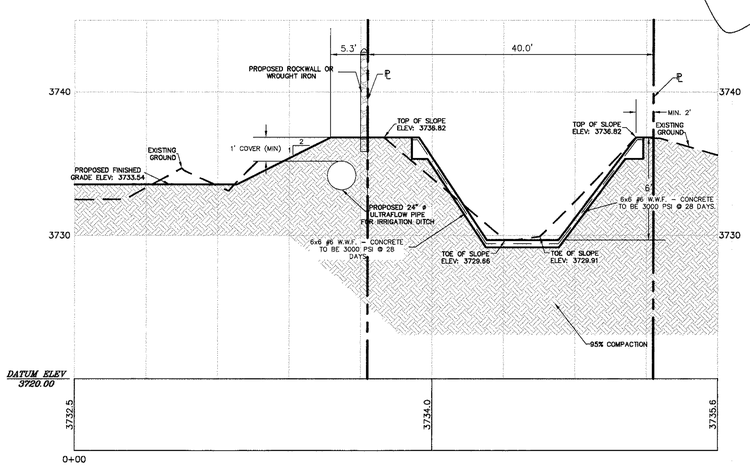
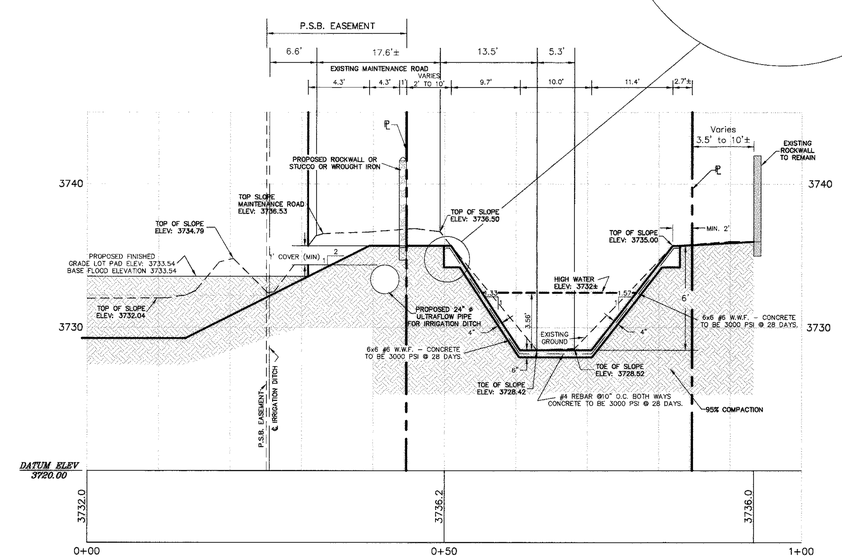
SHEET 8 OF 20




## SECTION F – F

HOR. SCALE: 1" = 10'
VER. SCALE: 1" = 5'




## SECTION G1 – G1

HOR. SCALE: 1" = 10'
VER. SCALE: 1" = 5'

**RECORD DRAWINGS**

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Date: May 30, 2008 By: Bradley Roe, R.P.L.S. 24HR, P.E. 31886

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**05-30-2008**

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NOTE: The above referenced property is within Zones "AH and B". (Explanation Zone "AH": Areas of 100 year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factor are determined) (Explanation Zone "B": Areas between limits of the 100–year flood and 500–year flood; or certain areas subject to 100–year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood.) according to the Federal Emergency Management Agency Flood Insurance Rate Maps, as per Area Community Panel No. 480214 0026 D, dated January 3, 1997.

| DATE | REVISIONS | BY |
|---|---|---|
| | | |

**PRIMARY BENCHMARK**

EXISTING CITY MONUMENT LOCATED AT THE CENTERLINE INTERSECTION OF SUNSET DRIVE AND EMORY ROAD
ELEVATION: 3732.68 (CITY DATUM)

**SECONDARY BENCHMARK**

**SCALE**

| | |
|---|---|
| HOR: | 1" = 100' |
| VER: | N/A |
| W.O. | 061702–3 |
| FILE: | VE_drainex.DWG |
| DATE: | NOVEMBER, 2003 |
| DESIGN BY: | B.R. |
| DRAWN BY: | CAD STAFF |
| CHKD. BY: | H.P. |
| APPD. BY: | B.R. |

**ENGINEER'S NOTE**

**ENGINEER'S SEAL**

STATE OF TEXAS — BRADLEY ROE — 31886 — LICENSED — PROFESSIONAL ENGINEER

BRADLEY ROE, P.E. 31886

**DRAINAGE CHANNEL PLAN DETAILS AND SECTIONS**

*VILLA ENCANTO*

# DRAINAGE CHANNEL PLAN DETAILS AND SECTIONS

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