

# ENCHANTED HILLS UNIT THREE

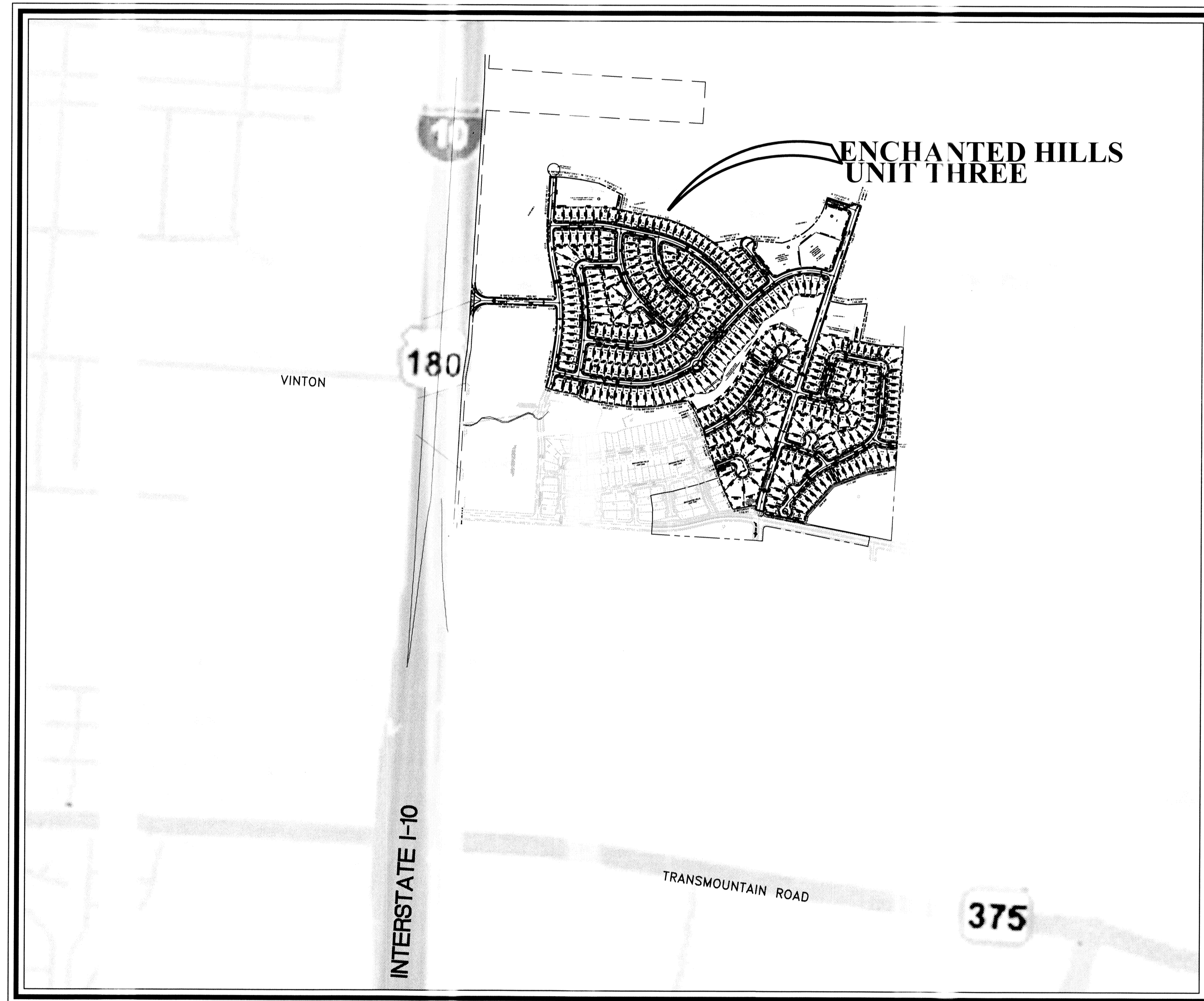
ENCHANTED HILLS UNIT THREE

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### LOCATION MAP

SCALE 1" = 600'



### VICINITY MAP

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**CITY DEVELOPMENT DEPARTMENT**  
**SITE PLAN REVIEW**

Reviewed For Conformance For Conditions Related To:

<input type="checkbox"/> Easements Only	<input type="checkbox"/> Sidewalks
<input type="checkbox"/> Grading & Drainage	<input type="checkbox"/> Driveways
<input type="checkbox"/> Wheelchair Ramps	<input type="checkbox"/> Retaining Rock Walls
<input type="checkbox"/> On Site Parking Layout	<input type="checkbox"/> On Site Ponding of Storm Waters

Contractors Must Call 24 Hours Prior To Construction for Inspection

BY: *Bradley Roe* DATE: 2/26/2013

*Bradley Roe*  
BRADLEY ROE P.E. 31886  
REGISTERED PROFESSIONAL ENGINEER  
STATE OF TEXAS  
DATE: 2/26/2013

*Bradley Roe*  
BRADLEY ROE P.E. 2449  
REGISTERED PROFESSIONAL ENGINEER  
STATE OF TEXAS  
DATE: 02/13

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OWNER:		NAME		PRINCIPAL CONTACTS:	
ENGINEER:		ADDRESS	CITY & ZIP	PHONE	FAX
EP, TRANSMOUNTAIN RESIDENTIAL, LLC.		6060 Surety Drive, Suite 300	EL PASO, TEXAS 79902	915-592-0291	915-590-8127
BRADLEY ROE, P.E. 31886		601 N. COTTON STREET, SUITE 6	EL PASO, TEXAS 79902	915-533-1418	915-533-4972
SURVEYOR:		BRADLEY ROE, R.P.L.S. 2449	601 N. COTTON STREET, SUITE 6	915-533-1418	915-533-4972

**brp** **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

ENCHANTED HILLS UNIT THREE COVER SHEET					
DATE PREPARED	DRAWN BY	DESIGNED BY		CHECKED BY	APPROVED BY
REVISION NUMBER	SHEET NAME OR NUMBER	DESCRIPTION OF REVISION		DATE OF REVISION	REVISION APPROVED BY

# ENCHANTED HILLS UNIT THREE

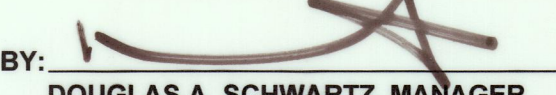
BEING A PORTION OF TRACTS 8, 9C AND 9A,  
LAURA E. MUNDY SURVEY No. 238,  
CITY OF EL PASO, EL PASO COUNTY, TEXAS  
CONTAINING IN ALL 4,287,108.46 SQ. FT. OR  
98.4185 ACRES OF LAND MORE OR LESS

### OWNER'S DEDICATION, CERTIFICATION

STATE OF TEXAS  
COUNTY OF EL PASO

EP TRANSMOUNTAIN RESIDENTIAL, L.L.C., PROPERTY OWNER(S) OF THIS LAND HEREBY PRESENT THIS MAP AND DEDICATE TO THE USE OF THE PUBLIC THE STREET RIGHT-OF-WAYS, PUBLIC DRAINAGE RIGHT-OF-WAYS / PONDS / WITH PEDESTRIAN ACCESS, PUBLIC OPEN SPACE, PUBLIC DRAINAGE / SLOPE EASEMENT, PARKS 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.

EP TRANSMOUNTAIN RESIDENTIAL L.L.C.

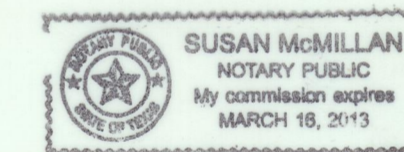
BY:   
DOUGLAS A. SCHWARTZ, MANAGER

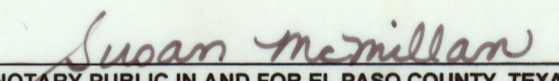
### ACKNOWLEDGMENT

STATE OF TEXAS  
COUNTY OF EL PASO

BEFORE ME, THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED DOUGLAS A. SCHWARTZ, MANAGER OF EP TRANSMOUNTAIN RESIDENTIAL, L.L.C., KNOWN BY ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS THEREIN STATED.


GIVEN UNDER MY HAND AND SEAL THIS 5th DAY OF March, 2013 A.D.




  
NOTARY PUBLIC IN AND FOR EL PASO COUNTY, TEXAS  
MY COMMISSION EXPIRES 3-18-15


### 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 March, 2013 A.D.

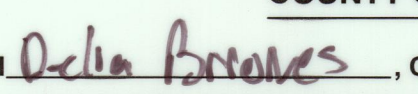
EXECUTIVE SECRETARY 

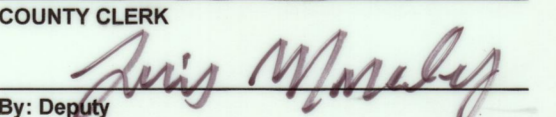
CHAIRPERSON 

APPROVED FOR FILING THIS 21st DAY OF March, 2013 A.D.

  
CITY DEVELOPMENT DIRECTOR

### COUNTY CLERK'S RECORDING CERTIFICATE FOR RECORDING PURPOSES ONLY

  
COUNTY CLERK OF EL PASO COUNTY, CERTIFY THAT THE PLAT BEARING THIS CERTIFICATE WAS FILED AND RECORDED UNDER THE INSTRUMENT NO. 20150079275 IN THE PLAT RECORDS OF THE EL PASO COUNTY.

COUNTY CLERK  DATE 5-14-2015  
By: Deputy

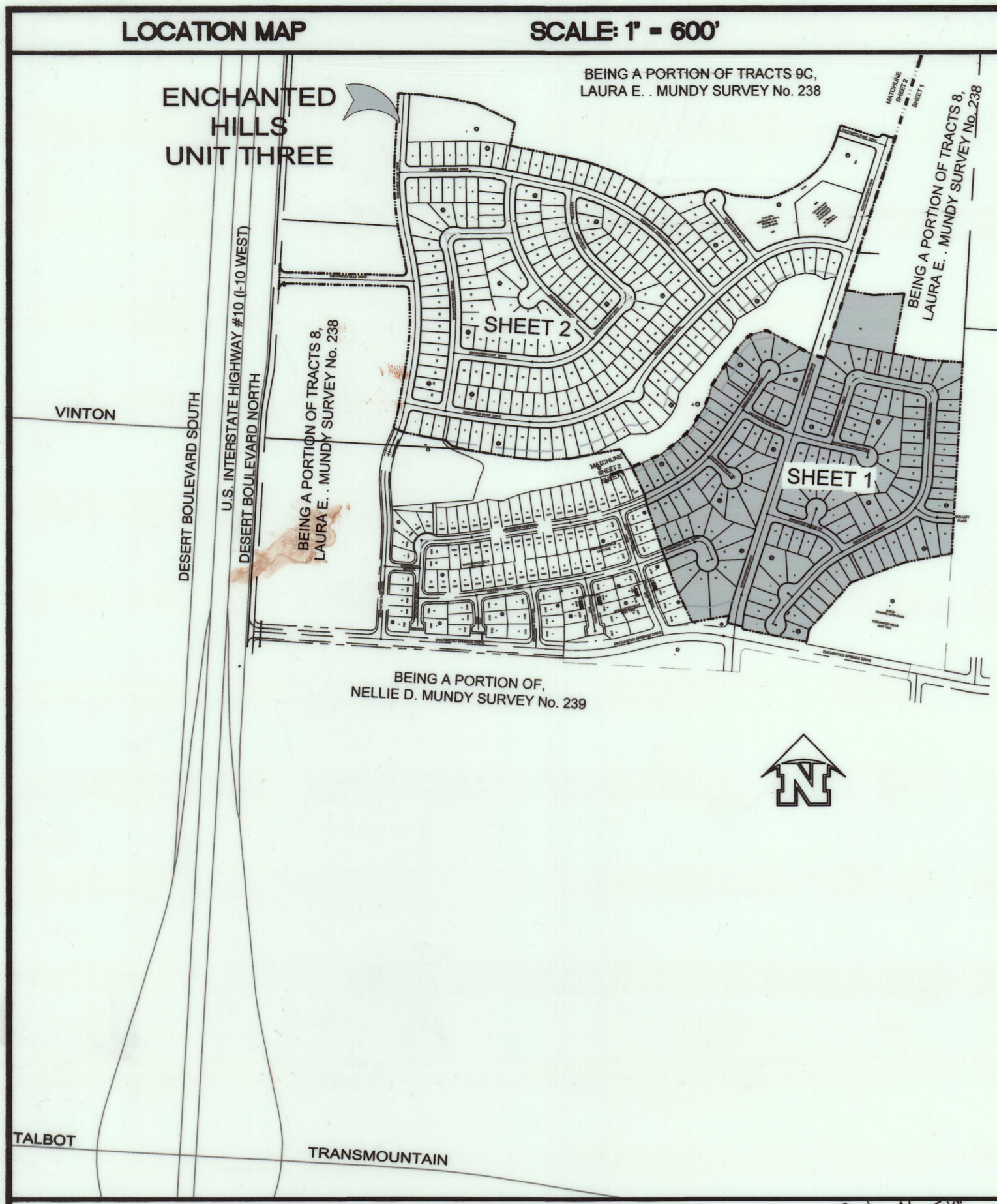
I HEREBY CERTIFY THAT THIS PLAT REPRESENTS A SURVEY MADE ON THE GROUND UNDER MY SUPERVISION AND IS IN COMPLIANCE WITH THE CURRENT TEXAS BOARD OF PROFESSIONAL LAND SURVEYING, PROFESSIONAL AND TECHNICAL STANDARDS, REGISTERED PUBLIC LAND SURVEYOR No. 2449

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

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

  
BRADLEY ROE, P.E. 31886  
ROE ENGINEERING, L.C.  
TEXAS REGISTERED  
ENGINEERING FIRM F-2103

"TAX CERTIFICATE(S) FOR THIS SUBDIVISION ARE FILED IN THE OFFICE OF THE COUNTY CLERK, DEED AND RECORDS SECTION, INSTRUMENT NO. 2015007974-276  
DATE 5-4-2015"



- NOTES:
- FOR CURVE, LINE AND PARCEL TABLES SEE SHEET 2 OF 3.
  - SUBDIVISION TO BE SERVED BY THE U.S. POSTAL SERVICE. ANY ALTERNATE AND/OR ADDITIONAL NDCBU LOCATION IS TO BE COORDINATED WITH THE GROWTH MANAGEMENT DIVISION OF THE U.S. POSTAL SERVICE.
  - SIDEWALKS FOR ALL STREETS WITHIN AND ADJUTING THIS SUBDIVISION WILL BE PROVIDED BY BUILDER AND DEVELOPER (SEE STREET IMPROVEMENT PLANS).
  - RESTRICTIVE COVENANTS FOR THIS SUBDIVISION ARE FILED IN THE OFFICE OF THE COUNTY CLERK, DEED AND RECORD SECTION, INSTRUMENT NO. \_\_\_\_\_ DATE \_\_\_\_\_
  - THE ABOVE REFERENCED SUBDIVISION IS WITHIN ZONES "A" and "C". EXPLANATION OF ZONE "A": AREAS OF 100-YEAR FLOOD; BASE FLOOD ELEVATIONS AND FLOOD HAZARDS NOT DETERMINED. NONE OF THE RESIDENTIAL LOTS ARE WITHIN ZONE "A". EXPLANATION OF ZONE "C": AREA OF MINIMAL FLOODING ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER AREA COMMUNITY PANEL NO. 480214 0011 C, DATED FEBRUARY 5, 1986.
  - VEHICULAR ACCESS TO LOT 1, BLOCK 15, LOT 2, BLOCK 17, LOTS 1 AND 14-29, BLOCK 20 ADJUTING ENCHANTED PASS DRIVE, LOTS 45-47 AND 50, BLOCK 1, BLOCK 13, LOTS 21-27, BLOCK 14, LOT 42, BLOCK 15 ADJUTING NORTHWESTERN DRIVE, LOT 2, BLOCK 10 AND LOT 1, BLOCK 12, ADJUTING ENCHANTED SPRINGS SHALL BE FROM OTHER DEDICATED STREETS ONLY. THE INSTRUMENT ASSURING RELEASE OF ACCESS IS FILED IN EL PASO COUNTY CLERK'S OFFICE.  
INSTRUMENT NO. \_\_\_\_\_ DATE \_\_\_\_\_
  - "THIS IS TO CERTIFY THAT WATER AND SEWER SERVICES WILL BE PROVIDED TO ENCHANTED HILLS UNIT THREE BY THE EL PASO PUBLIC SERVICE BOARD IN ACCORDANCE WITH THEIR RULES AND REGULATIONS AND WITH SECTION 16.343 OF THE TEXAS WATER CODE. WATER AND SEWER SERVICES WILL BE EXTENDED TO THE SUBDIVISION FROM EXISTING FACILITIES LOCATED ON DESERT BOULEVARD NORTH, AND WILL BE CONSTRUCTED TO SERVE THIS SUBDIVISION WITHIN TWO (2) YEARS OF DATE OF THE FILING OF THIS PLAT.
  - THIS SUBDIVISION LIES WITHIN THE CANUTILLO INDEPENDENT SCHOOL DISTRICT

This property is subject to impact fees. Impact fees shall be calculated based on the table below:





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

METER SIZE	METER CAPACITY RATIO	WATER	WASTEWATER
LESS THAN 1 INCH	1.00	\$659.00	\$927.00
1 INCH	1.67	\$1,101.00	\$1,548.00
1 1/2 INCH	3.33	\$2,195.00	\$3,087.00
2 INCH	5.33	\$3,514.00	\$4,941.00
3 INCH	10.00	\$6,593.00	\$9,270.00
4 INCH	16.67	\$10,890.00	\$15,453.00
6 INCH	33.33	\$21,973.00	\$30,897.00
8 INCH	53.33	\$35,158.00	\$49,437.00
10 INCH	76.67	\$50,545.00	\$71,073.00
12 INCH	143.33	\$94,490.00	\$132,867.00

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

REG. 0115009-1A (UNIT THREE)  
PREPARATION DATE: NOVEMBER 2, 2011  
REVISION DATE: FEBRUARY 13, 2012

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- LEGEND
-  PROPOSED CITY MONUMENT
  -  EXISTING CITY MONUMENT
  -  PROPOSED NDCBU
  -  FLOOD ZONE LIMITS

# ENCHANTED HILLS UNIT THREE

BEING A PORTION OF TRACTS 8, 9C AND 9A, LAURA E. MUNDY SURVEY No. 238,  
CITY OF EL PASO, EL PASO COUNTY, TEXAS

CONTAINING IN ALL 4,287,108.46 SQ. FT. OR 98.4185 ACRES OF LAND MORE OR LESS.

BEING A PORTION OF TRACT 9A,  
LAURA E. MUNDY SURVEY No. 238.

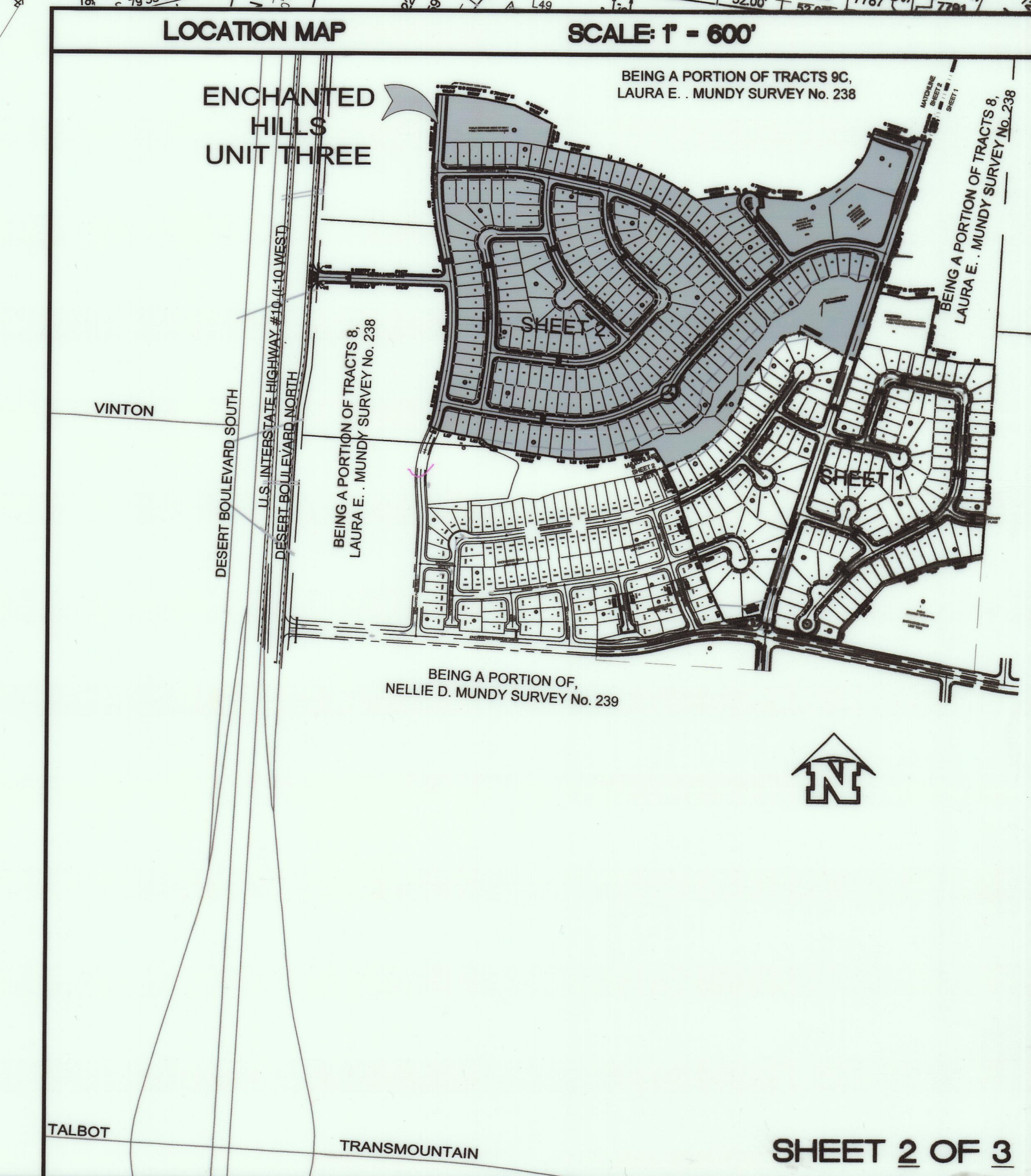
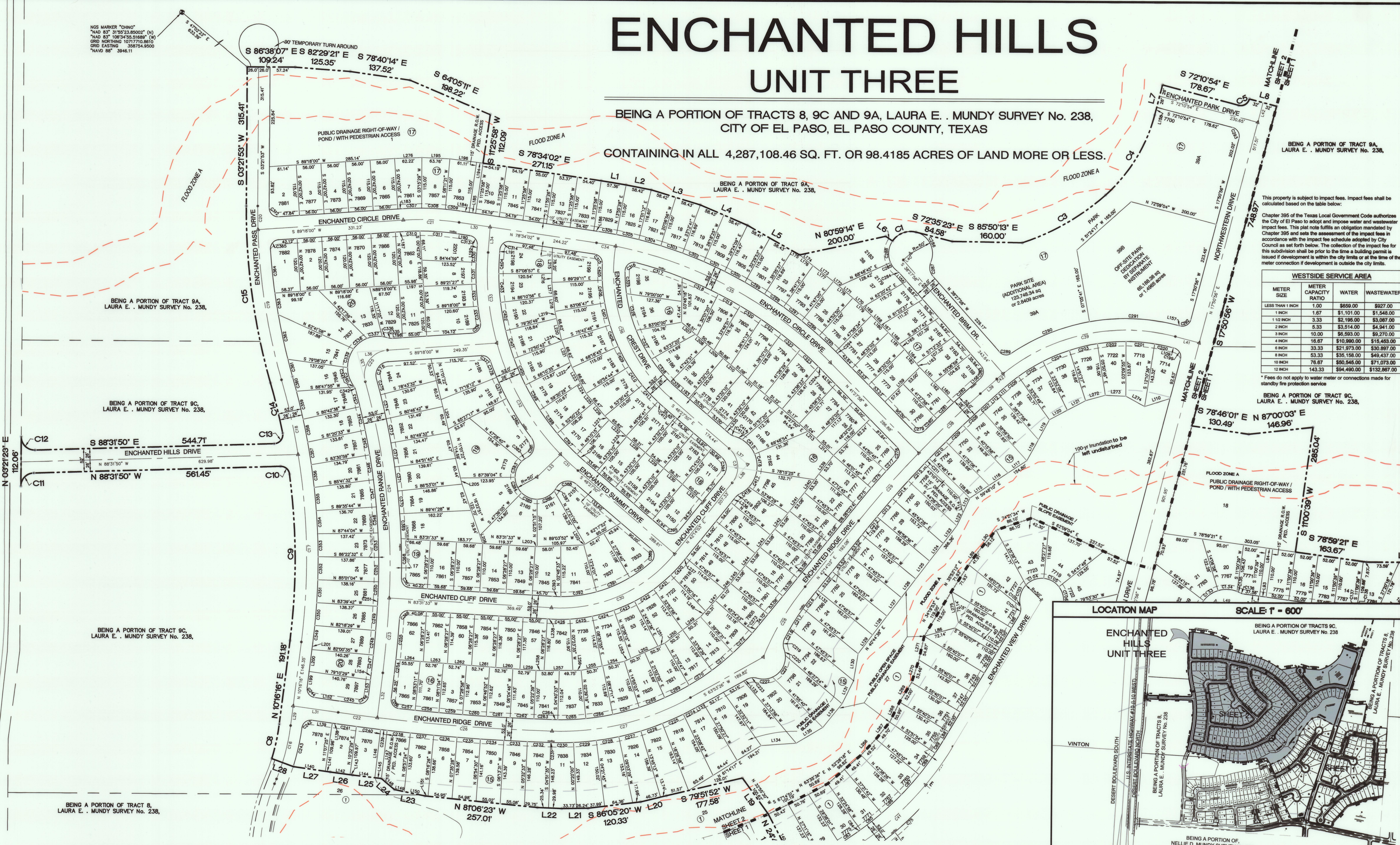
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WESTSIDE SERVICE AREA			
METER SIZE	METER CAPACITY RATIO	WATER	WASTEWATER
LESS THAN 1 INCH	1.00	\$659.00	\$827.00
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1 1/2 INCH	3.33	\$2,196.00	\$3,087.00
2 INCH	5.33	\$3,514.00	\$4,941.00
3 INCH	10.00	\$6,583.00	\$9,270.00
4 INCH	16.67	\$10,980.00	\$15,483.00
6 INCH	33.33	\$21,973.00	\$30,967.00
8 INCH	53.33	\$35,158.00	\$49,437.00
10 INCH	76.67	\$50,545.00	\$71,073.00
12 INCH	143.33	\$94,490.00	\$132,867.00

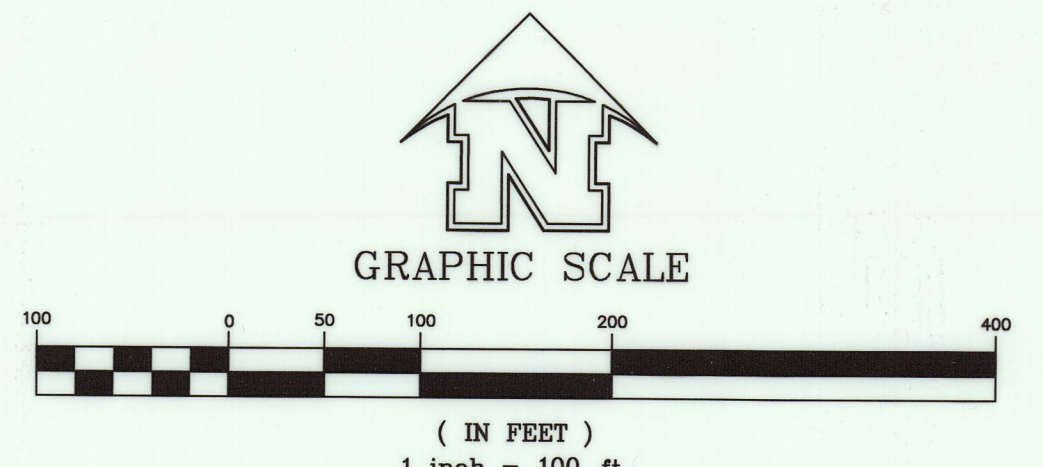
\* Fees do not apply to water meter or connections made for standby fire protection service

BEING A PORTION OF TRACT 9C,  
LAURA E. MUNDY SURVEY No. 238.



- LEGEND**
- ▲ PROPOSED CITY MONUMENT
  - ◆ EXISTING CITY MONUMENT
  - ncdbu PROPOSED NDCBU
  - FLOOD ZONE LIMITS
  - DENOTES SET 5/8" REBAR WITH YELLOW PLASTIC CAP STAMPED TX 2449, ROE ENGR., L.C. UNLESS OTHERWISE NOTED.

- NOTES**
1. FOR CURVE, LINE AND PARCEL TABLES SEE SHEET 3 OF 3.
  2. SUBDIVISION TO BE SERVICED BY THE U.S. POSTAL SERVICE. ANY ALTERNATE AND/OR ADDITIONAL NDCBU LOCATION IS TO BE COORDINATED WITH THE GROWTH MANAGEMENT DIVISION OF THE U.S. POSTAL SERVICE.
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  8. THIS SUBDIVISION LIES WITHIN THE CANUTILLO INDEPENDENT SCHOOL DISTRICT



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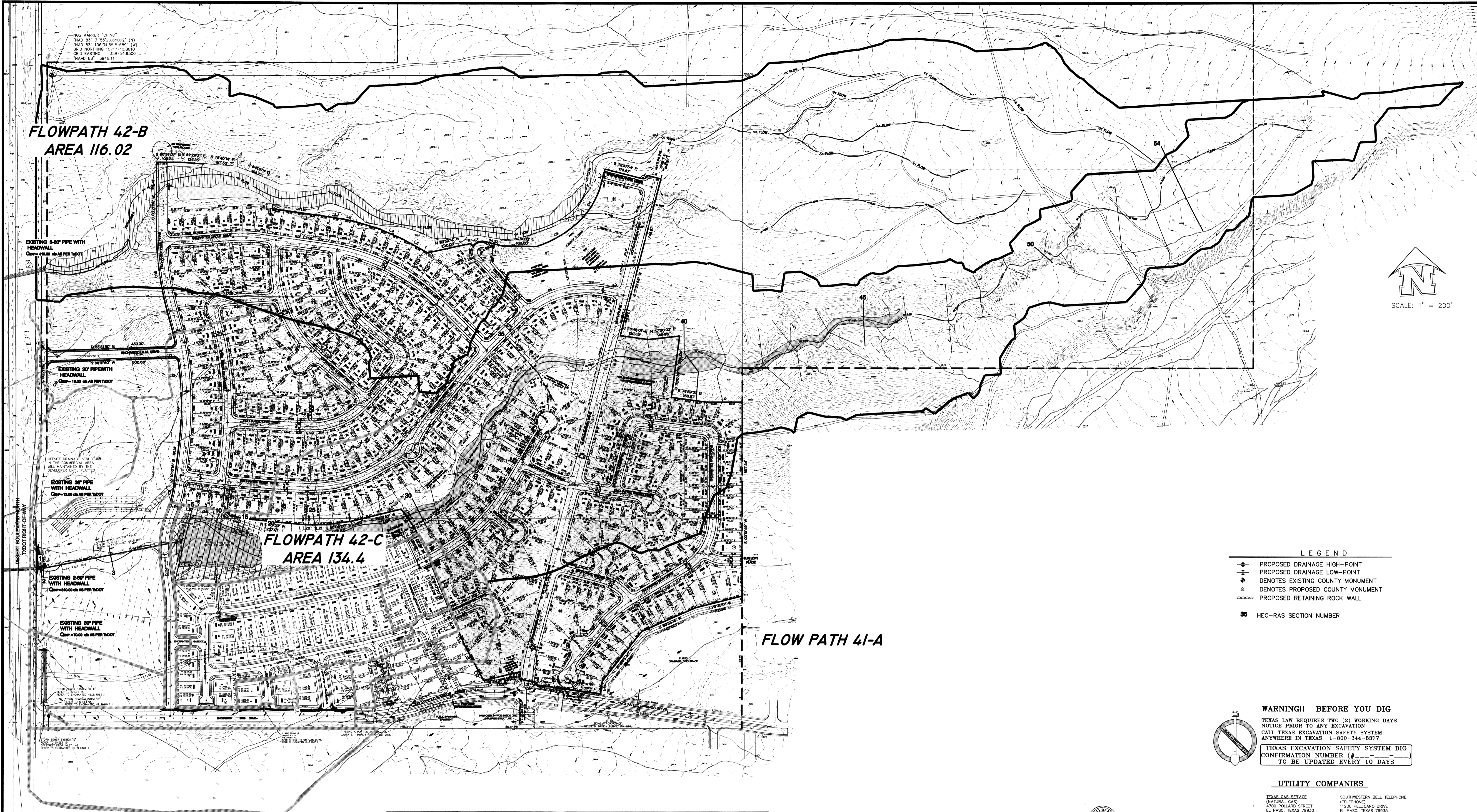
PROJECT: 011509-1 A Enchanted Hills Unit Three 01/04/2011 ELS PRO-CLTH 02112013\_FINAL.PLA1.DWG 02/27/13 1:45PM

Roe Engineering, L.C.  
EL PASO, TEXAS

# ENCHANTED HILLS UNIT THREE

BEING A PORTION OF TRACTS 8, 9C AND 9A, LAURA E. MUNDY SURVEY No. 238, CITY OF EL PASO, EL PASO COUNTY, TEXAS CONTAINING IN ALL 4,287,108.46 SQ. FT OR 98,418.85 ACRES OF LAND MORE OR LESS

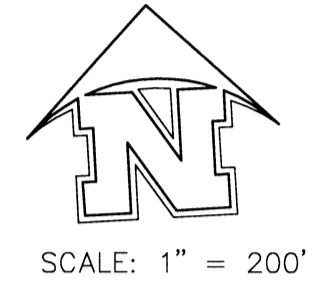
LINE TABLE			CURVE TABLE				CURVE TABLE				CURVE TABLE				CURVE TABLE				CURVE TABLE				PARCEL TABLE				PARCEL TABLE						
LINE	BEARING	LENGTH	CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA	CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA	CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA	LOT	SQUARE FOOTAGE	ACRES	LOT	SQUARE FOOTAGE	ACRES				
L126	S 72°45' E	57.96	C1	50.00	60.85	34.84	57.16	N 72°34' E	19.29	C132	65.00	45.15	24.53	44.25	S 202°14' W	39.8501	C263	4418.04	42.14	21.08	42.14	N 84°32' W	0.724	C394	30.00	46.44	78.33	41.82	S 62°59' E	89.8153	B74	127.88750 sq ft.	0.2956 acres
L127	S 73°52' E	58.42	C1	53.216	219.47	119.74	217.01	N 63°10' E	63.9450	C133	65.00	45.15	24.53	44.25	S 202°14' W	39.8501	C264	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C395	20.00	31.67	20.46	28.69	S 42°33' W	91.8107	B75	128.82757 sq ft.	0.2927 acres
L128	S 74°45' E	58.90	C1	56.861	258.21	129.11	256.42	N 62°16' E	63.9450	C134	65.00	44.14	22.96	43.91	S 203°00' W	39.8501	C265	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C396	39.00	58.63	37.90	56.89	S 42°33' W	91.8107	B76	129.81307 sq ft.	0.2927 acres
L129	S 75°36' E	59.37	C1	60.00	31.41	18.99	28.28	N 62°50' E	63.9450	C135	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C266	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C397	60.00	90.00	59.99	89.99	S 42°33' W	91.8107	B77	130.82463 sq ft.	0.2927 acres
L130	S 76°28' E	59.84	C1	66.14	38.11	21.35	30.99	N 62°50' E	63.9450	C136	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C267	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C398	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B78	131.84128 sq ft.	0.2927 acres
L131	S 77°20' E	60.31	C1	72.52	45.45	24.53	44.25	N 62°50' E	63.9450	C137	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C268	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C399	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B79	132.85793 sq ft.	0.2927 acres
L132	S 78°13' E	60.78	C1	80.00	56.25	28.12	37.48	N 62°50' E	63.9450	C138	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C269	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C400	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B80	133.87458 sq ft.	0.2927 acres
L133	S 79°08' E	61.25	C1	88.00	72.88	35.46	46.59	N 62°50' E	63.9450	C139	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C270	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C401	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B81	134.89123 sq ft.	0.2927 acres
L134	S 79°53' E	61.72	C1	96.00	91.22	41.85	53.44	N 62°50' E	63.9450	C140	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C271	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C402	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B82	135.90788 sq ft.	0.2927 acres
L135	S 80°38' E	62.19	C1	104.00	112.53	48.20	61.01	N 62°50' E	63.9450	C141	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C272	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C403	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B83	136.92453 sq ft.	0.2927 acres
L136	S 81°23' E	62.66	C1	112.00	130.89	52.28	73.89	N 62°50' E	63.9450	C142	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C273	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C404	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B84	137.94118 sq ft.	0.2927 acres
L137	S 82°08' E	63.13	C1	120.00	169.36	58.04	95.30	N 62°50' E	63.9450	C143	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C274	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C405	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B85	138.95783 sq ft.	0.2927 acres
L138	S 82°53' E	63.60	C1	128.00	207.89	62.56	116.51	N 62°50' E	63.9450	C144	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C275	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C406	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B86	139.97448 sq ft.	0.2927 acres
L139	S 83°38' E	64.07	C1	136.00	246.42	67.03	145.12	N 62°50' E	63.9450	C145	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C276	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C407	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B87	140.99113 sq ft.	0.2927 acres
L140	S 84°23' E	64.54	C1	144.00	284.89	71.51	183.93	N 62°50' E	63.9450	C146	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C277	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C408	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B88	142.00778 sq ft.	0.2927 acres
L141	S 85°08' E	65.01	C1	152.00	323.36	75.99	221.85	N 62°50' E	63.9450	C147	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C278	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C409	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B89	143.02443 sq ft.	0.2927 acres
L142	S 85°53' E	65.48	C1	160.00	361.83	80.48	260.76	N 62°50' E	63.9450	C148	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C279	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C410	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B90	144.04108 sq ft.	0.2927 acres
L143	S 86°38' E	65.95	C1	168.00	399.79	84.93	299.69	N 62°50' E	63.9450	C149	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C280	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C411	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B91	145.05773 sq ft.	0.2927 acres
L144	S 87°23' E	66.42	C1	176.00	437.75	89.38	337.59	N 62°50' E	63.9450	C150	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C281	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C412	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B92	146.07438 sq ft.	0.2927 acres
L145	S 88°08' E	66.89	C1	184.00	475.71	93.82	375.43	N 62°50' E	63.9450	C151	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C282	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C413	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B93	147.09103 sq ft.	0.2927 acres
L146	S 88°53' E	67.36	C1	192.00	513.67	98.27	413.27	N 62°50' E	63.9450	C152	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C283	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C414	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B94	148.10768 sq ft.	0.2927 acres
L147	S 89°38' E	67.83	C1	200.00	551.63	102.76	451.11	N 62°50' E	63.9450	C153	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C284	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C415	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B95	149.12428 sq ft.	0.2927 acres
L148	S 90°23' E	68.30	C1	208.00	589.59	107.25	488.95	N 62°50' E	63.9450	C154	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C285	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C416	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B96	150.14088 sq ft.	0.2927 acres
L149	S 91°08' E	68.77	C1	216.00	627.55	111.74	526.79	N 62°50' E	63.9450	C155	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C286	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C417	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B97	151.15748 sq ft.	0.2927 acres
L150	S 91°53' E	69.24	C1	224.00	665.51	116.23	564.63	N 62°50' E	63.9450	C156	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C287	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C418	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B98	152.17408 sq ft.	0.2927 acres
L151	S 92°38' E	69.71	C1	232.00	703.47	120.72	602.47	N 62°50' E	63.9450	C157	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C288	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C419	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B99	153.19068 sq ft.	0.2927 acres
L152	S 93°23' E	70.18	C1	240.00	741.43	125.21	640.31	N 62°50' E	63.9450	C158	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C289	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C420	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B100	154.20728 sq ft.	0.2927 acres
L153	S 94°08' E	70.65	C1	248.00	779.39	129.70	678.19	N 62°50' E	63.9450	C159	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C290	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C421	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B101	155.22388 sq ft.	0.2927 acres
L154	S 94°53' E	71.12	C1	256.00	817.35	134.19	716.07	N 62°50' E	63.9450	C160	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C291	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C422	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B102	156.24048 sq ft.	0.2927 acres
L155	S 95°38' E	71.59	C1	264.00	855.31	138.68	753.93	N 62°50' E	63.9450	C161	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C292	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C423	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B103	157.25708 sq ft.	0.2927 acres
L156	S 96°23' E	72.06	C1	272.00	893.27	143.17	791.79	N 62°50' E	63.9450	C162	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C293	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C424	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B104	158.27368 sq ft.	0.2927 acres
L157	S 97°08' E	72.53	C1	280.00	931.23	147.66	829.65	N 62°50' E	63.9450	C163	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C294	581.05	11.86	5.98	11.86	N 84°32' W	0.724	C425	581.05	11.86	5.98	11.86	S 42°33' W	91.8107	B105	159.29028 sq ft.	0.2927 acres
L158	S 97°53' E	73.00	C1	288.00	969.19	152.15	867.51	N 62°50' E	63.9450	C164	65.00	45.15	24.53	44.25	S 203°00' W	39.8501	C295	581.05	11.86	5													



**FLOWPATH 42-B  
AREA 116.02**

**FLOWPATH 42-C  
AREA 134.4**

**FLOW PATH 41-A**



- LEGEND**
- PROPOSED DRAINAGE HIGH-POINT
  - x— PROPOSED DRAINAGE LOW-POINT
  - ⊕ DENOTES EXISTING COUNTY MONUMENT
  - △ DENOTES PROPOSED COUNTY MONUMENT
  - ⊖ PROPOSED RETAINING ROCK WALL
- 35 HEC-RAS SECTION NUMBER

**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 (# \_\_\_\_\_)  
 TO BE UPDATED EVERY 10 DAYS

- UTILITY COMPANIES**
- TEXAS GAS SERVICE (NATURAL GAS) 4702 POLLARD STREET EL PASO, TEXAS 79930 EMERGENCY 562-2003
  - SOUTHWESTERN BELL TELEPHONE (TELEPHONE) 1100 PELICANO DRIVE EL PASO, TEXAS 79935 628-5127
  - EL PASO PUBLIC SERVICE BOARD (WATER, SEWER) 1104 HARKINS BOULEVARD EL PASO, TEXAS 79925 MR. ALFONSO ORTIZ 594-5527
  - TIME WARNER COMMUNICATIONS (CABLE) 7010 AIRPORT ROAD EL PASO, TEXAS 79908 775-7414
  - EL PASO ELECTRIC COMPANY (ELECTRIC) 501 WEST SAN ANTONIO STREET EL PASO, TEXAS 79901 MR. PAT KEITH, 543-2917

**ENGINEERING & CONSTRUCTION  
MANAGEMENT DEPARTMENT**

**REVIEWED**

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

WATERSHED AREA No.	TYPE INLET	Tc MIN.	C COEFFICIENT	I 100 INCHES/HOUR	A AREA	Q 100 c.f.s. CU. FT. PER SECOND	CONCENTRATION POINT
42-C	2-60" CULVERT	29.27	0.67	3.19	134.4	287.25	①
42-B	3-60" CULVERT	24.52	0.67	3.54	116.02	275.5	②

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**FLOOD NOTE:**  
 THE ABOVE REFERENCED PROPERTY IS WITHIN ZONE "A" AND ZONE "X"  
 (EXPLANATION: ZONE "A" NO BASE FLOOD ELEVATIONS DETERMINED; EXPLANATION: ZONE "X" AREAS DETERMINED TO BE OUTSIDE THE 500 YEAR FLOODPLAIN), ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER THE UNINCORPORATED AREAS COMMUNITY PANEL NO. 480212 0025 B.  
 DATED SEPTEMBER 4, 1991.

DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	NBS MONUMENT (ROUND 1889 1905 580474) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981; LOCATED ABOUT 1.85 MILES EAST OF THE OLD GRIDGE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	HOR: 1:100 VER: 1:100
9/20/12	CITY COMMENTS	STAFF	SECONDARY BENCHMARK EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANTILLO HEIGHTS UNIT TWO AND LOT 15, BLOCK 2, CANTILLO HEIGHTS UNIT ONE ELEVATION: 3857.21	FILE NAME: W.O. 011509-1 A EH-3 DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: L.D.R. CHKD. BY: H.P. APPD. BY: BR



**ENCHANTED HILLS  
UNIT THREE**

**EXISTING WATERSHED BOUNDARY**

**Roe Engineering, L.C.**  
 601 N. Cotton St. Suite No. 6 El Paso, Tx. 79902  
 (915) 533-1418 - FAX (915) 533-4972  
 e-mail: roeing@earthlink.net

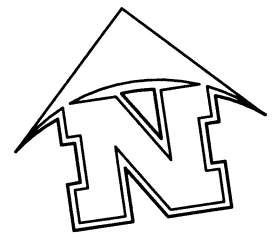
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

SHEET 5 OF 77

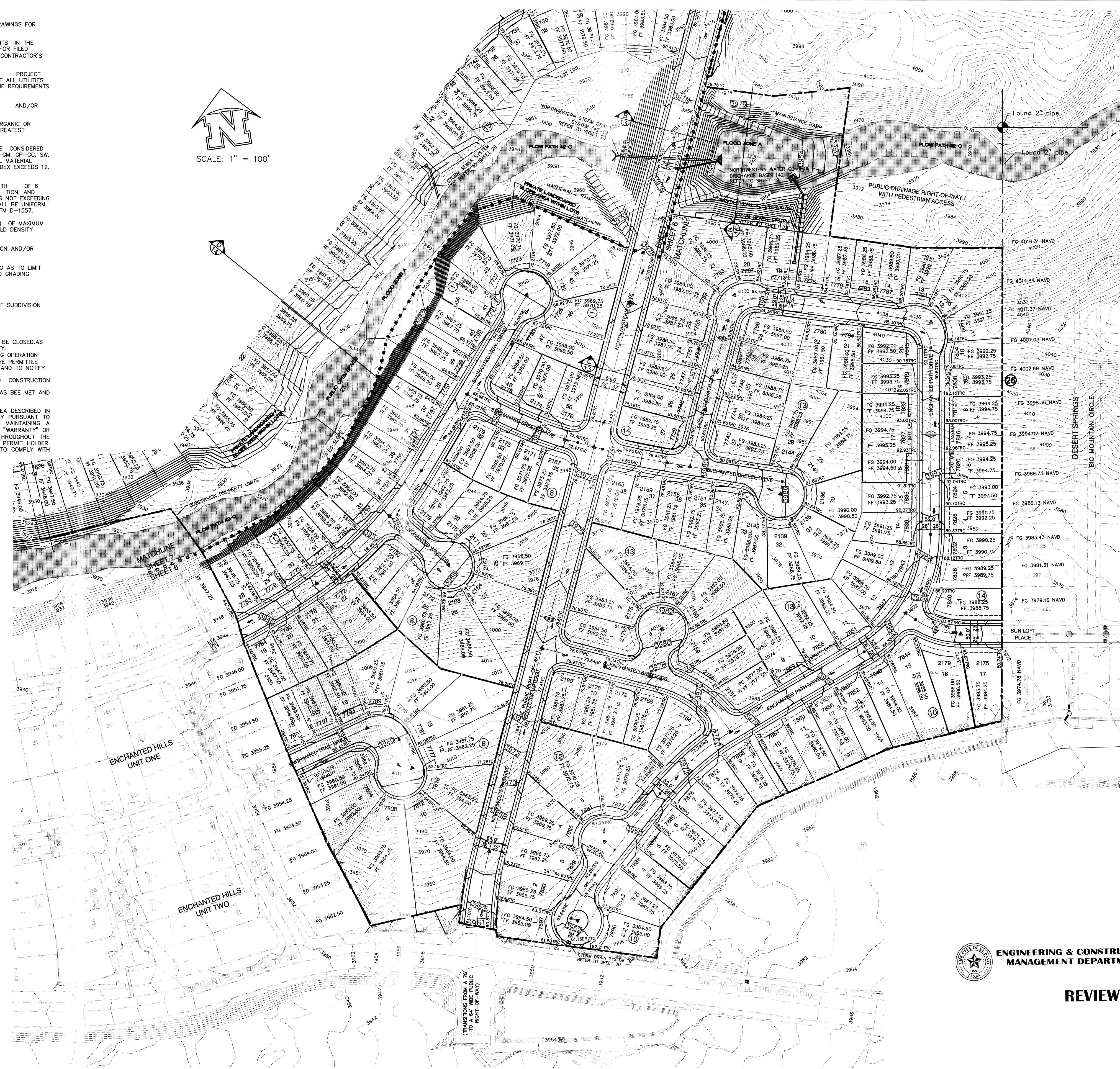
**GENERAL GRADING NOTES**

- THIS GRADING PLAN SHALL BE COORDINATED WITH OTHER APPLICABLE CONSTRUCTION DRAWINGS FOR DIMENSIONS AND LAYOUT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING IMPROVEMENTS IN THE PROJECT AREA AND ITS VICINITY. CONTRACTOR SHALL CONTACT UTILITY LOCATOR SERVICE FOR FILED LOCATION OF ALL UTILITIES PRIOR TO COMMENCING WORK. ANY DAMAGES RESULTING FROM CONTRACTOR'S CONSTRUCTION WORK SHALL BE RESTRICTED TO ITS ORIGINAL CONDITION BY CONTRACTOR.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF EXISTING UTILITIES IN THE PROJECT AREA. CONTRACTOR SHALL CONTACT UTILITY LOCATOR SERVICE FOR FILED LOCATION OF ALL UTILITIES PRIOR TO COMMENCING WORK. ANY DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY OWNER BY CONTRACTOR.
- FILL MATERIALS FOR SITE GRADING AND BACKFILL MATERIALS MAY CONSIST OF ON-SITE AND/OR IMPORTED MATERIALS IN COMPLIANCE WITH THE FOLLOWING SPECIFICATIONS.
- 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.
- 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, GP-SC. SOILS WILL BE CONSIDERED UNSATISFACTORY FOR FILL MATERIAL WHEN CLASSIFIED AS FOLLOWS: PT, O, OH, M, CL AND CH OR WHERE THE PLASTICITY INDEX EXCEEDS 12. (SEE SOILS REPORT FOR CLASSIFICATION)
- 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 OPTIMUM VALUE AS DETERMINED BY ASTM D-1557.
- 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 BE DETERMINED IN ACCORDANCE WITH ASTM D-1556 OR D-2922.
- CONTRACTOR SHALL CO-ORDINATE WITH ALL UTILITY COMPANIES PRIOR TO ANY EXCAVATION AND/OR POSSIBLE RELOCATION OF UTILITIES ENCOUNTERED.
- CONTRACTOR SHALL EXCAVATE AND 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.
- DEVELOPER SHALL COMPLY WITH SECTION 13.08.170 EXCESSIVE PAVING CUTS.
- RETAINING ROCKWALL 4' AND HIGHER SHALL BE CONSTRUCTED BY DEVELOPER AS PART OF SUBDIVISION IMPROVEMENT.
- DEVELOPER IS RESPONSIBLE TO MAINTAIN ALL SLOPE OUTSIDE SUBDIVISION LIMITS. PERMIT CLOSEOUT PROCEDURE.
- AFTER THE PERMITEE COMPLETES THE GRADING UNDER THE PERMIT, THE PERMIT SHALL BE CLOSED AS PART OF THE CLOSEOUT PROCEDURE. THE APPLICANT MUST SUBMIT THE FOLLOW TO THE CITY:
  - A STATEMENT FROM THE ENGINEER OF RECORDS THAT STATES, "THE GRADING OPERATION HAS BEEN SUBSTANTIALLY AND GENERALLY CONFORMS TO THE APPROVED SET OF PLANS" THE PERMITEE SHALL CALL THE PERMIT OFFICIAL TO ESTABLISH THE BEGINNING OF THE WARRANTY PERIOD AND TO NOTIFY THE PERMIT OFFICIAL THAT THE GSP HAS BEEN IMPLEMENTED.
  - A COPY OF THE NOTICE OF TERMINATION FILED WITH THE STATE OR DATED CONSTRUCTION SITE NOTICE, IF APPLICABLE, IN ACCORDANCE WITH CHAPTER 15, THE CITY WILL ISSUE A LETTER STATING GENERAL CONFORMANCE TO THE PERMIT HAS BEEN MET AND THE WARRANTY PERIOD REQUIREMENT WILL CONTINUE TO BE IN EFFECT.

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

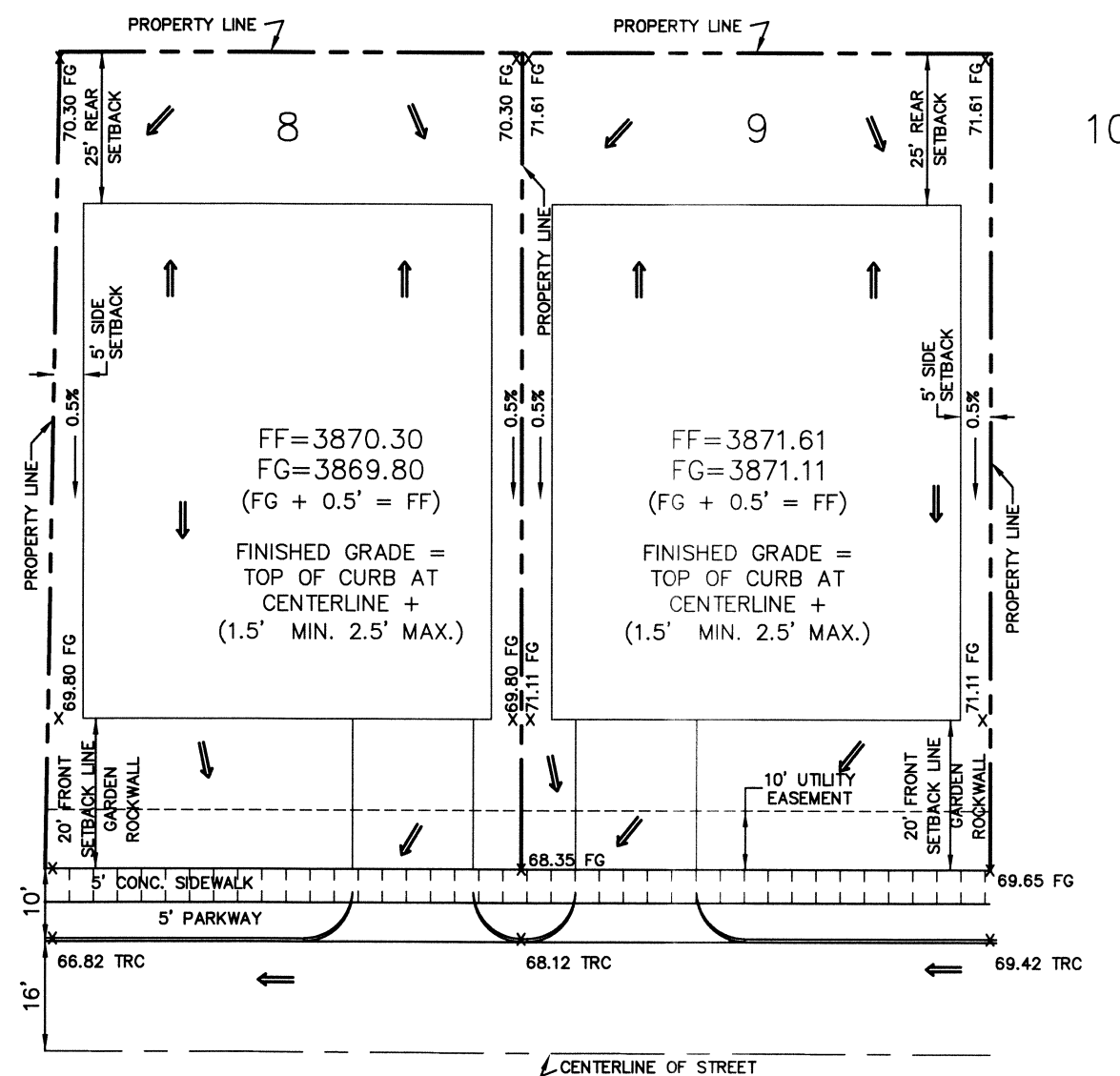


SCALE: 1" = 100'



# ENCHANTED HILLS UNIT THREE

- LEGEND**
- ▲ PROPOSED DRAINAGE HIGH-POINT
  - ▼ PROPOSED DRAINAGE LOW-POINT
  - DENOTES EXISTING CITY MONUMENT
  - DENOTES EXISTING SANITARY SEWER MANHOLE
  - PROPOSED RETAINING WALL
  - FG=4037.68 PROPOSED FINISHED GRADE ELEVATION
  - FF=4038.35 PROPOSED FINISHED FLOOR ELEVATION
  - ▨ EXISTING FINISHED AREA
  - △ PROPOSED CITY MONUMENT
  - PROPOSED DRAINAGE FLOWS
  - EXISTING DRAINAGE FLOWS
  - DENOTES EXISTING SANITARY SEWER LINE
  - 35.32 TC PROPOSED TOP OF CURB ELEVATION
  - 4040 EXISTING CONTOURS
  - PROPOSED CONTOURS
  - ▨ PROPOSED FLOOD AREA



**TYPICAL LOT GRADING DETAIL**  
SCALE: 1" = 30'

**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 (# \_\_\_\_\_) TO BE UPDATED EVERY 10 DAYS

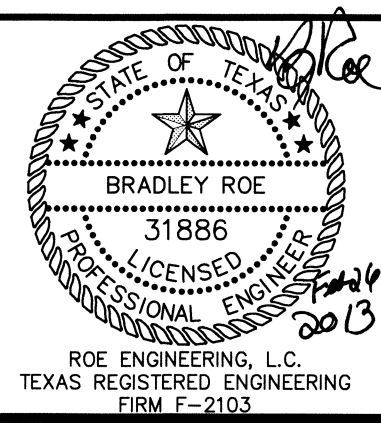
**UTILITY COMPANIES**

- TEXAS GAS SERVICE (NATURAL GAS) 4700 HOLLAND STREET EL PASO, TEXAS 79930 EMERGENCY 562-2023
- ATAI (TELEPHONE) 11200 PELLICANO DRIVE EL PASO, TEXAS 79935 828-5127
- EL PASO PUBLIC SERVICE BOARD (WATER, SEWER) 1154 HAWKINS BOULEVARD EL PASO, TEXAS 79925 MR. ALFONSO ORTIZ 594-5527
- THE WARNER COMMUNICATIONS (CABLE) 7010 AIRPORT ROAD EL PASO, TEXAS 79906 775-7414
- EL PASO ELECTRIC COMPANY (ELECTRIC) 501 WEST SAN ANTONIO STREET EL PASO, TEXAS 79901 MR. PAT KEITH 543-2917

ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT

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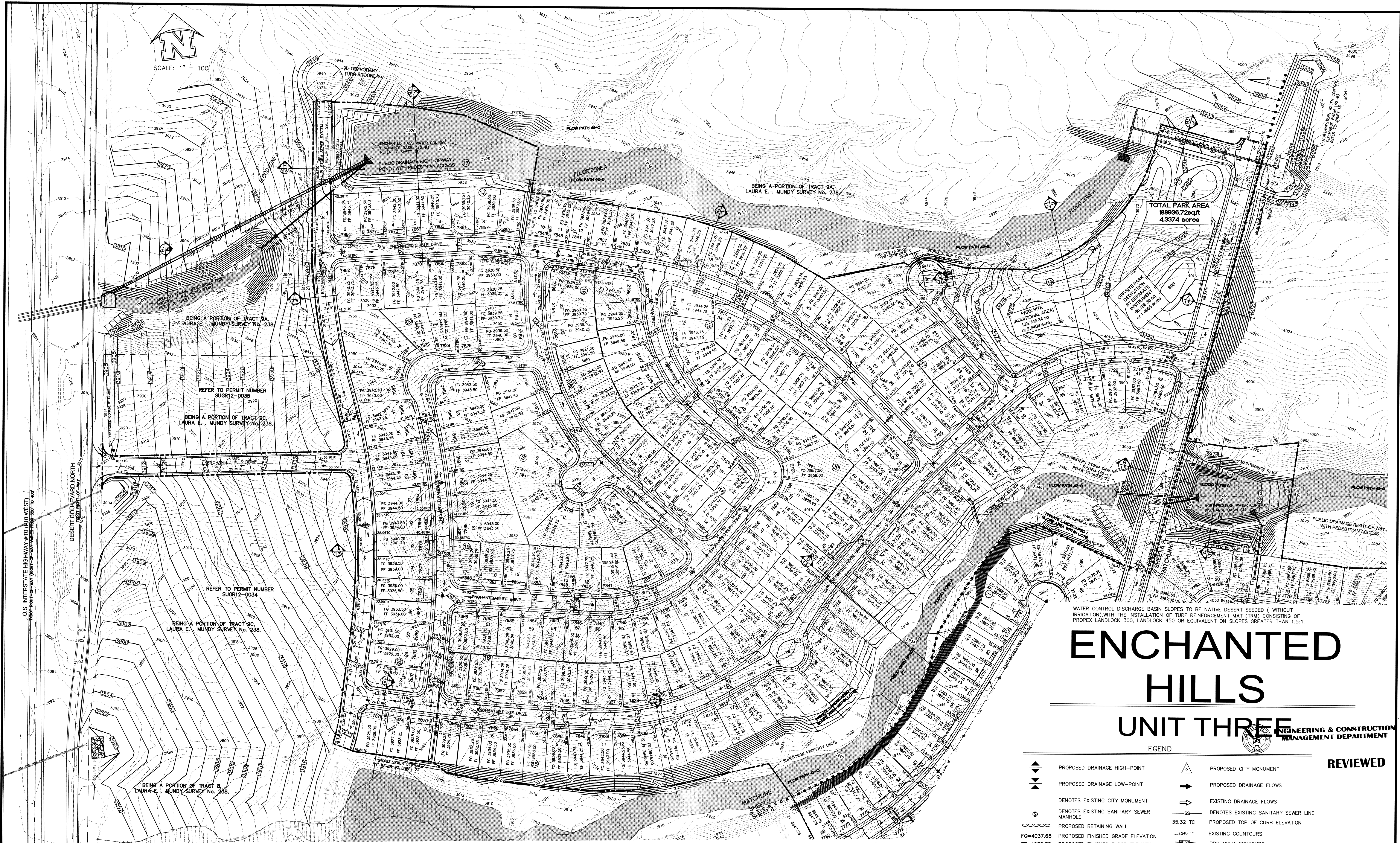
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DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	NZ MONUMENT (ORINO 1980) (P.C. 061443) LOCATION AS PER NATIONAL GEODETIC SURVEY 1984; LOCATED ABOUT 1.25 MILES EAST OF THE RD GRADE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	HOR: 1" = 100' VER: FILE NAME: EH_3_GD_PLAN W.O. 011509-1 A EH-3 DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR
9/20/12	CITY COMMENTS	STAFF	EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHIS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	

GRADING PLAN  
**ENCHANTED HILLS UNIT THREE**  
GRADING PLAN  
**ENCHANTED HILLS UNIT THREE**

**Roe Engineering, L.C.**  
801 N. Cotton St. Suite No. 6 El Paso, Tx. 79902  
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SHEET 6 OF 77



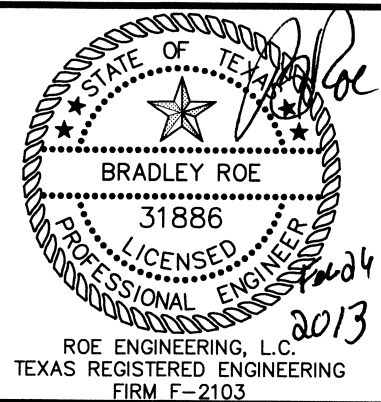
# ENCHANTED HILLS UNIT THREE

ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT

LEGEND	
	PROPOSED DRAINAGE HIGH-POINT
	PROPOSED DRAINAGE LOW-POINT
	PROPOSED DRAINAGE FLOWS
	EXISTING DRAINAGE FLOWS
	PROPOSED TOP OF CURB ELEVATION
	EXISTING COUNTOURS
	PROPOSED CONTOURS
	PROPOSED FLOOD AREA
	PROPOSED CITY MONUMENT
	EXISTING CITY MONUMENT
	PROPOSED TOP OF SANITARY SEWER MANHOLE
	EXISTING TOP OF SANITARY SEWER MANHOLE
	PROPOSED RETAINING WALL
	PROPOSED FINISHED GRADE ELEVATION
	PROPOSED FINISHED FLOOR ELEVATION
	EXISTING FLOOD AREA

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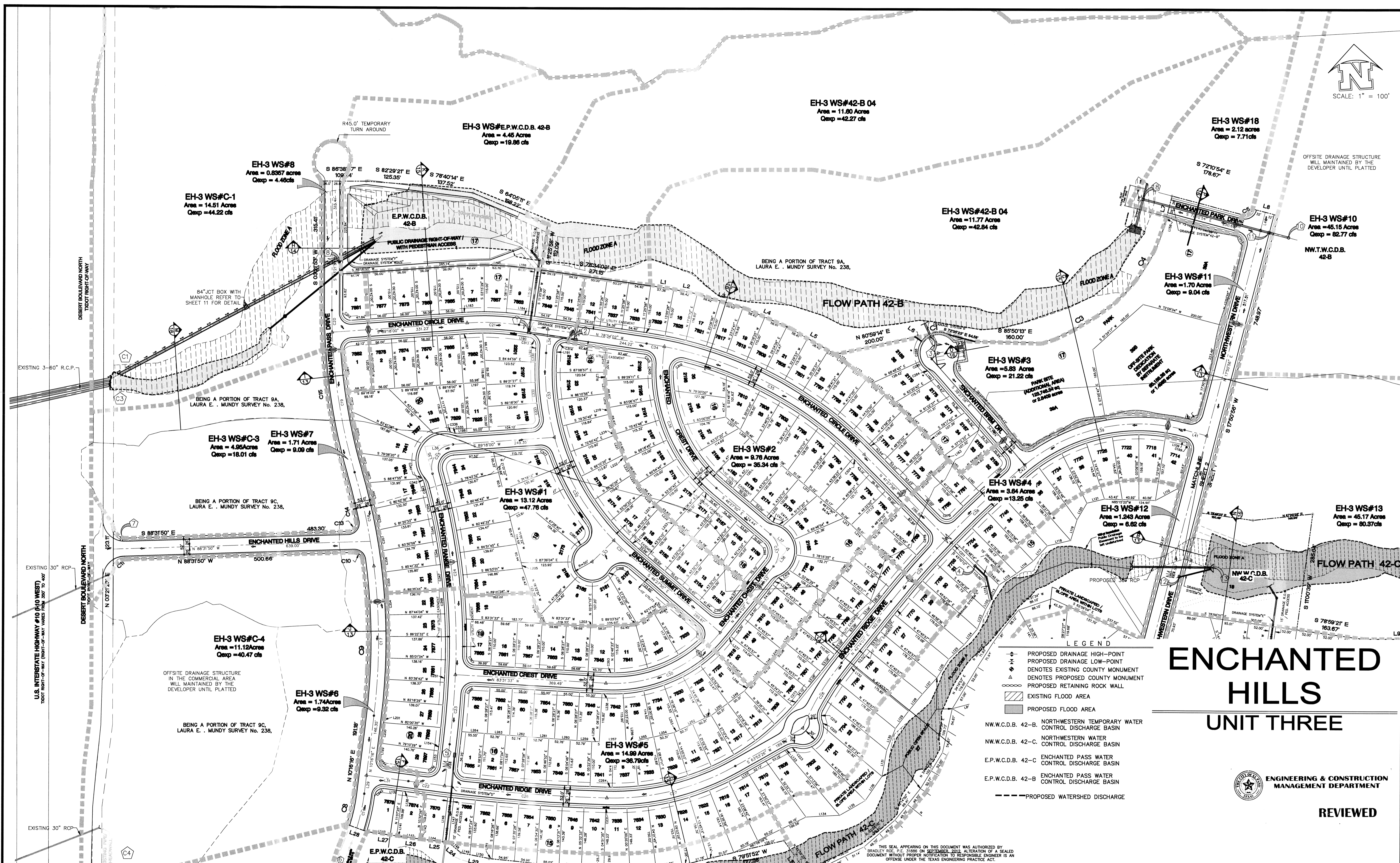
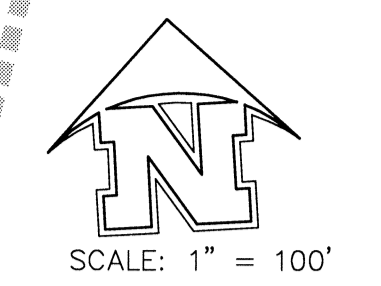
GRADING PLAN  
**ENCHANTED HILLS UNIT THREE**  
 GRADING PLAN  
**ENCHANTED HILLS UNIT THREE**

**RoE Engineering, L.C.**  
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 e-mail: roeng@roebell.net  
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DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	US NATIONAL GEODETIC SURVEY 1981 LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED ABOUT 1.25 MILES EAST OF THE RIO GRANDE 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	HOR: 1" = 100' VER: FILE NAME: EH_3_GD_PLAN W.O. 011509-1 A EH-3
9/20/12	CITY COMMENTS	STAFF	EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANTILLO HEIGHTS UNIT ONE ELEVATION: 3857.21	DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR
			N.A.V.D. 88 DATUM -10.16 = CITY OF EL PASO DATUM	



- LEGEND**
- ◆ PROPOSED DRAINAGE HIGH-POINT
  - ◆ PROPOSED DRAINAGE LOW-POINT
  - ◆ DENOTES EXISTING COUNTY MONUMENT
  - ◆ DENOTES PROPOSED COUNTY MONUMENT
  - PROPOSED RETAINING ROCK WALL
  - ▨ EXISTING FLOOD AREA
  - ▨ PROPOSED FLOOD AREA
  - NW.W.C.D.B. 42-B NORTHWESTERN TEMPORARY WATER CONTROL DISCHARGE BASIN
  - NW.W.C.D.B. 42-C NORTHWESTERN WATER CONTROL DISCHARGE BASIN
  - E.P.W.C.D.B. 42-C ENCHANTED PASS WATER CONTROL DISCHARGE BASIN
  - E.P.W.C.D.B. 42-B ENCHANTED PASS WATER CONTROL DISCHARGE BASIN
  - PROPOSED WATERSHED DISCHARGE

# ENCHANTED HILLS UNIT THREE

ENGINEERING & CONSTRUCTION  
MANAGEMENT DEPARTMENT

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DATED SEPTEMBER 4, 1991.

DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	NBS MONUMENT (ORINO 1880) (PDC 000424) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED ABOUT 1.25 MILES EAST OF THE RIO GRANDE 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	HOR: 1:100 VER: 1:100
9/20/12	CITY COMMENTS	STAFF	SECONDARY BENCHMARK EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTILLO HEIGHTS UNIT TWO ELEVATION: 3857.21	FILE NAME: W.O. 011509-1 A EH-3 DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR

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**ENCHANTED HILLS  
UNIT THREE**

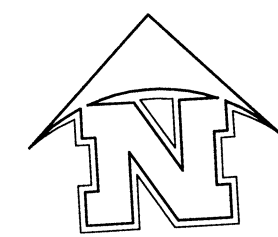
**PROPOSED DRAINAGE PLAN**

**hnp** 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@hnp.net

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SCALE: 1" = 100'

# ENCHANTED HILLS UNIT THREE

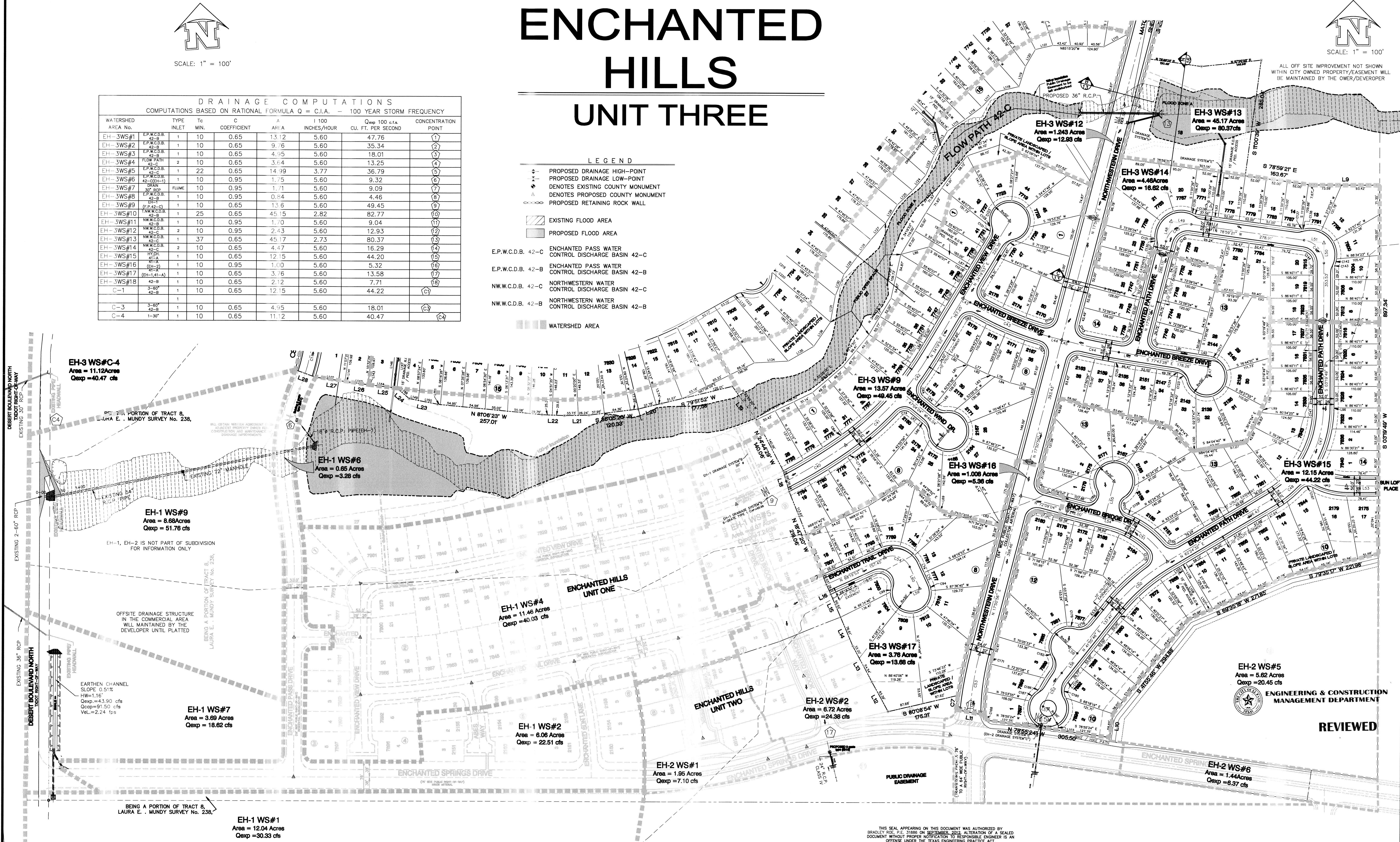


SCALE: 1" = 100'

ALL OFF SITE IMPROVEMENT NOT SHOWN WITHIN CITY OWNED PROPERTY/EASEMENT WILL BE MAINTAINED BY THE OWNER/DEVELOPER

DRAINAGE COMPUTATIONS									
COMPUTATIONS BASED ON RATIONAL FORMULA Q = C.I.A. - 100 YEAR STORM FREQUENCY									
WATERSHED AREA No.	TYPE	Tc MIN.	C COEFFICIENT	A AREA	I 100 INCHES/HOUR	Q <sub>100</sub> C.U. FT. PER SECOND	CONCENTRATION POINT		
EH-3WS#1	EP.W.C.D.B. 42-B	1	10	0.65	13.12	5.60	47.76		(1)
EH-3WS#2	EP.W.C.D.B. 42-B	1	10	0.65	9.76	5.60	35.34		(2)
EH-3WS#3	EP.W.C.D.B. 42-B	1	10	0.65	4.95	5.60	18.01		(3)
EH-3WS#4	FLOW PATH 42-C	2	10	0.65	3.64	5.60	13.25		(4)
EH-3WS#5	EP.W.C.D.B. 42-B	1	22	0.65	14.99	3.77	36.79		(5)
EH-3WS#6	EP.W.C.D.B. 42-B	1	10	0.95	1.75	5.60	9.32		(6)
EH-3WS#7	DRAIN 30' RCP	FLUME	10	0.95	1.71	5.60	9.09		(7)
EH-3WS#8	EP.W.C.D.B. 42-B	1	10	0.95	0.84	5.60	4.46		(8)
EH-3WS#9	EP.W.C.D.B. 42-B	1	10	0.65	13.6	5.60	49.45		(9)
EH-3WS#10	EP.W.C.D.B. 42-B	1	25	0.65	45.15	2.82	82.77		(10)
EH-3WS#11	N.W.C.D.B. 42-C	1	10	0.95	1.70	5.60	9.04		(11)
EH-3WS#12	N.W.C.D.B. 42-C	2	10	0.95	2.43	5.60	12.93		(12)
EH-3WS#13	N.W.C.D.B. 42-C	1	37	0.65	45.17	2.73	80.37		(13)
EH-3WS#14	N.W.C.D.B. 42-C	2	10	0.65	4.47	5.60	16.29		(14)
EH-3WS#15	EP.W.C.D.B. 42-B	1	10	0.65	12.15	5.60	44.20		(15)
EH-3WS#16	EP.W.C.D.B. 42-B	1	10	0.95	1.00	5.60	5.32		(16)
EH-3WS#17	EP.W.C.D.B. 42-B	1	10	0.65	3.76	5.60	13.58		(17)
EH-3WS#18	EP.W.C.D.B. 42-B	1	10	0.65	2.12	5.60	7.71		(18)
C-1	3-60" 42-B	1	10	0.65	12.15	5.60	44.22		(C1)
C-3	3-60" 42-B	1	10	0.65	4.95	5.60	18.01		(C3)
C-4	1-30" 42-B	1	10	0.65	11.12	5.60	40.47		(C4)

- LEGEND**
- PROPOSED DRAINAGE HIGH-POINT
  - PROPOSED DRAINAGE LOW-POINT
  - ▲ DENOTES EXISTING COUNTY MONUMENT
  - ▲ DENOTES PROPOSED COUNTY MONUMENT
  - PROPOSED RETAINING ROCK WALL
  - ▨ EXISTING FLOOD AREA
  - ▨ PROPOSED FLOOD AREA
  - ▨ WATERSHED AREA
- E.P.W.C.D.B. 42-C ENCHANTED PASS WATER CONTROL DISCHARGE BASIN 42-C  
 E.P.W.C.D.B. 42-B ENCHANTED PASS WATER CONTROL DISCHARGE BASIN 42-B  
 N.W.C.D.B. 42-C NORTHWESTERN WATER CONTROL DISCHARGE BASIN 42-C  
 N.W.C.D.B. 42-B NORTHWESTERN WATER CONTROL DISCHARGE BASIN 42-B



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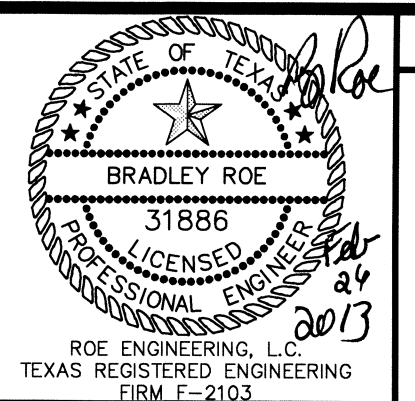
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DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	"105 MONUMENT" (GRID 1880' TYP. "C4844") LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED ABOUT 1.25 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (FRANKMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.17 NAVD 88	HOR: 1:100 VER: 1:100
9/20/12	CITY COMMENTS	STAFF	SECONDARY BENCHMARK EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MICHOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21 N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR

**ENCHANTED HILLS UNIT THREE**

**PROPOSED DRAINAGE PLAN**



**ENCHANTED HILLS UNIT THREE**

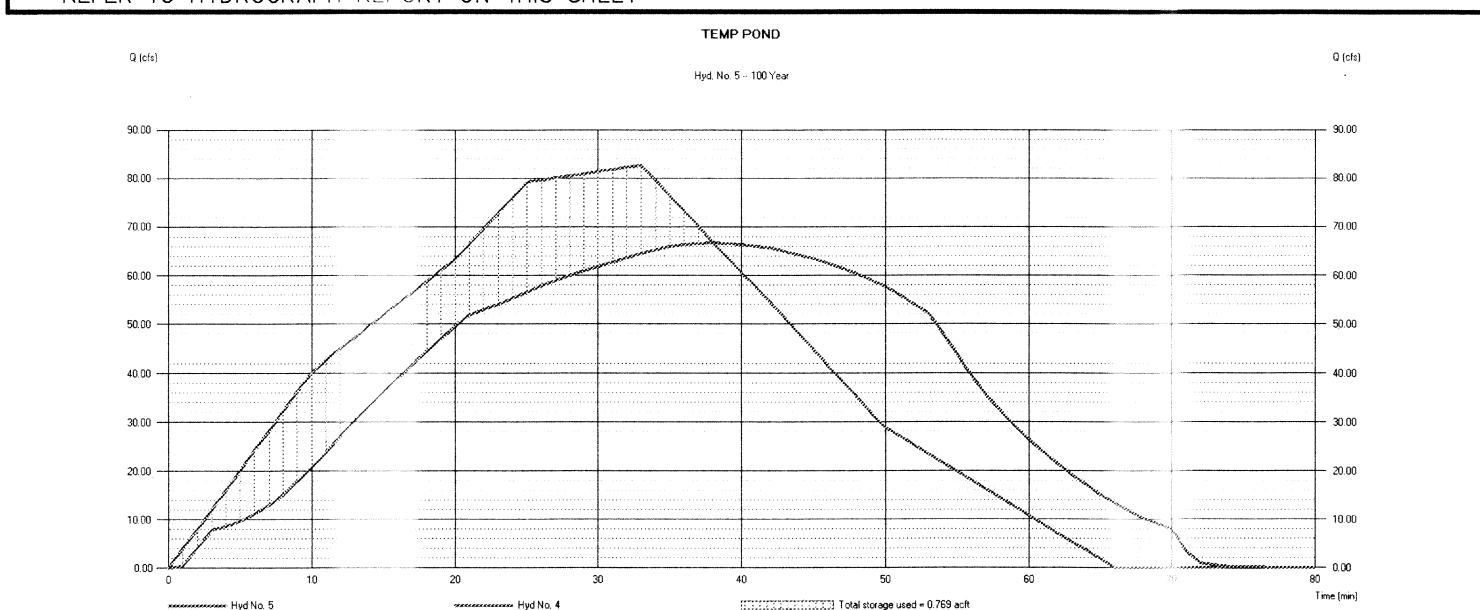
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SHEET 9 OF 77

NORTHWESTERN TEMPORARY W.C.D.B. 42-B COMPUTATIONS COMPUTATIONS BASED ON RATIONAL FORMULA, FOR 100 YEAR STORM FREQUENCY								
BASIN	REQUIRED CAPACITY ACRE-FEET	AVAILABLE CAPACITY ACRE-FEET	PEAK INFLOW C.F.S.	OUTFLOW DISCHARGE C.F.S.	H.W.E.	BOTTOM ELEVATION (FEET)	TOP ELEVATION (FEET)	FREE BOARD
BASIN	0.769	1.32	82.77	66.70	3990.82	3987.00	3992.00	1.18



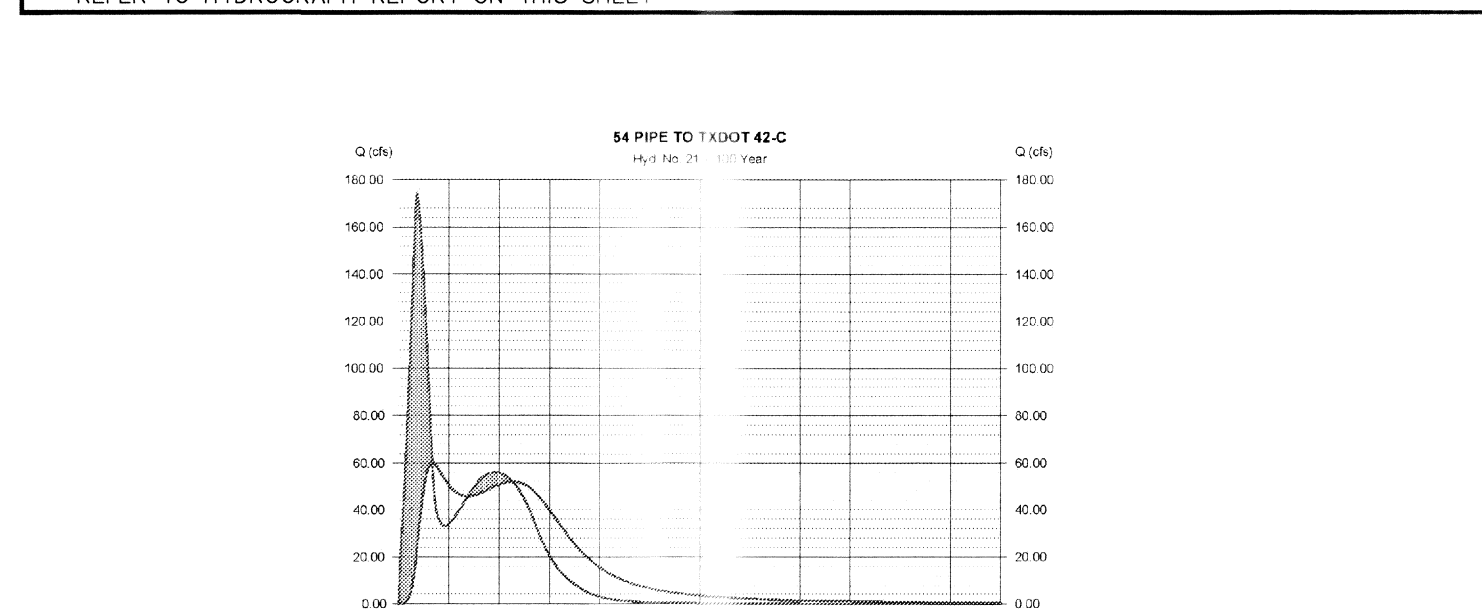
### Hydrograph Report

Hyd. No. 5  
TEMP POND  
Reservoir Name: Reservoir  
Storm Frequency: 100 Yrs  
Time Interval: 1 min  
Inflow Hyd. No.: 4.4 - CT AT NW UNDERPASS AND BRIDGE  
Max Elevation: 3990.82 ft  
Peak discharge: 86.70 cfs  
Time to peak: 28 min  
High Volume: 4.001 ac-ft  
Reservoir Name: NW WC 42-B  
Max Storage: 0.769 ac-ft

Hydrograph Discharge Table

Time (min)	Inflow (cfs)	Reservoir (cfs)	Peak (cfs)
0	0.00	0.00	0.00
1	0.00	0.00	0.00
2	0.00	0.00	0.00
3	0.00	0.00	0.00
4	0.00	0.00	0.00
5	0.00	0.00	0.00
6	0.00	0.00	0.00
7	0.00	0.00	0.00
8	0.00	0.00	0.00
9	0.00	0.00	0.00
10	0.00	0.00	0.00
11	0.00	0.00	0.00
12	0.00	0.00	0.00
13	0.00	0.00	0.00
14	0.00	0.00	0.00
15	0.00	0.00	0.00
16	0.00	0.00	0.00
17	0.00	0.00	0.00
18	0.00	0.00	0.00
19	0.00	0.00	0.00
20	0.00	0.00	0.00
21	0.00	0.00	0.00
22	0.00	0.00	0.00
23	0.00	0.00	0.00
24	0.00	0.00	0.00
25	0.00	0.00	0.00
26	0.00	0.00	0.00
27	0.00	0.00	0.00
28	0.00	0.00	0.00
29	0.00	0.00	0.00
30	0.00	0.00	0.00
31	0.00	0.00	0.00
32	0.00	0.00	0.00
33	0.00	0.00	0.00
34	0.00	0.00	0.00
35	0.00	0.00	0.00
36	0.00	0.00	0.00
37	0.00	0.00	0.00
38	0.00	0.00	0.00
39	0.00	0.00	0.00
40	0.00	0.00	0.00
41	0.00	0.00	0.00
42	0.00	0.00	0.00
43	0.00	0.00	0.00
44	0.00	0.00	0.00
45	0.00	0.00	0.00
46	0.00	0.00	0.00
47	0.00	0.00	0.00
48	0.00	0.00	0.00
49	0.00	0.00	0.00
50	0.00	0.00	0.00

ENCHANTED PASS 42-C W.C.D.B. COMPUTATIONS COMPUTATIONS BASED ON RATIONAL FORMULA, FOR 100 YEAR STORM FREQUENCY								
BASIN	REQUIRED CAPACITY ACRE-FEET	AVAILABLE CAPACITY ACRE-FEET	PEAK INFLOW C.F.S.	OUTFLOW DISCHARGE C.F.S.	H.W.E.	BOTTOM ELEVATION (FEET)	TOP ELEVATION (FEET)	FREE BOARD
BASIN	2.23	37.91	174.75	60.41	3902.83	3902.00	3916.00	9.75



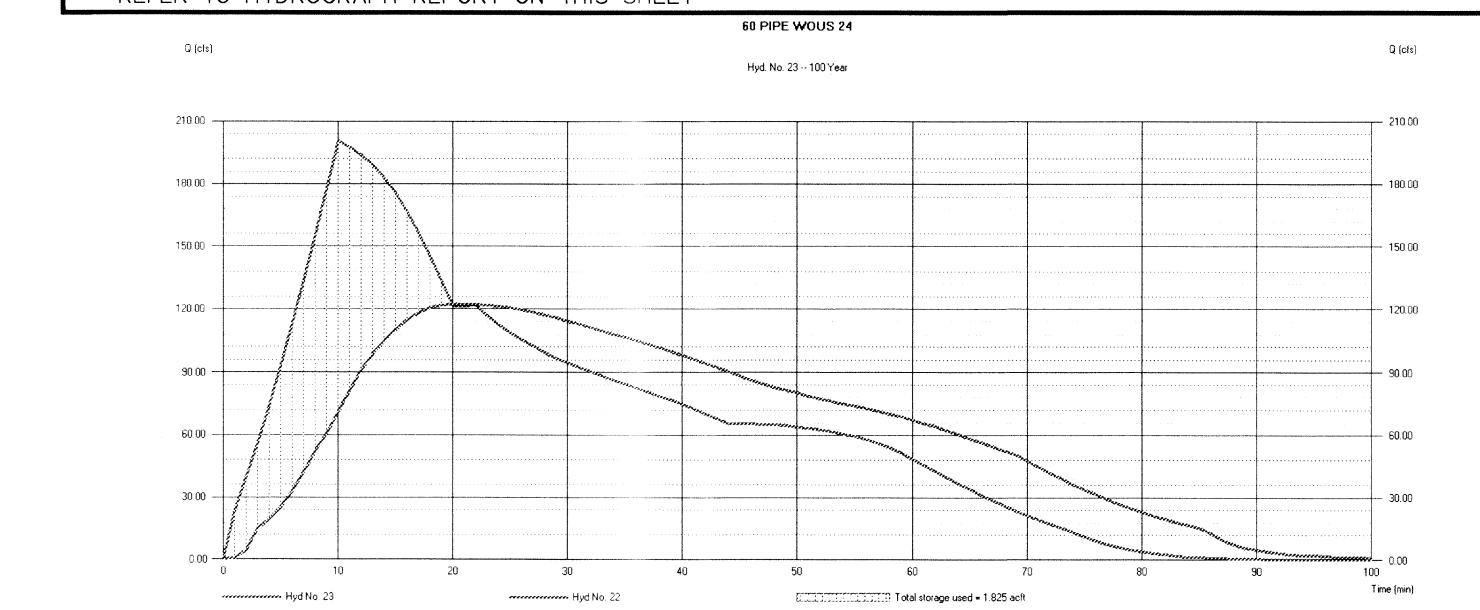
### Hydrograph Report

Hyd. No. 21  
54 PIPE TO TXDOT 42-C  
Reservoir Name: Reservoir  
Storm Frequency: 100 Yrs  
Time Interval: 1 min  
Inflow Hyd. No.: 22 - JCT AT E P W C B N  
Max Elevation: 3902.83 ft  
Peak discharge: 60.41 cfs  
Time to peak: 7:59 min  
High Volume: 2.132 ac-ft  
Reservoir Name: ENCH PASS DETENTION  
Max Storage: 2.23 ac-ft

Hydrograph Discharge Table

Time (min)	Inflow (cfs)	Reservoir (cfs)	Peak (cfs)
0	0.00	0.00	0.00
1	0.00	0.00	0.00
2	0.00	0.00	0.00
3	0.00	0.00	0.00
4	0.00	0.00	0.00
5	0.00	0.00	0.00
6	0.00	0.00	0.00
7	0.00	0.00	0.00
8	0.00	0.00	0.00
9	0.00	0.00	0.00
10	0.00	0.00	0.00
11	0.00	0.00	0.00
12	0.00	0.00	0.00
13	0.00	0.00	0.00
14	0.00	0.00	0.00
15	0.00	0.00	0.00
16	0.00	0.00	0.00
17	0.00	0.00	0.00
18	0.00	0.00	0.00
19	0.00	0.00	0.00
20	0.00	0.00	0.00
21	0.00	0.00	0.00
22	0.00	0.00	0.00
23	0.00	0.00	0.00
24	0.00	0.00	0.00
25	0.00	0.00	0.00
26	0.00	0.00	0.00
27	0.00	0.00	0.00
28	0.00	0.00	0.00
29	0.00	0.00	0.00
30	0.00	0.00	0.00
31	0.00	0.00	0.00
32	0.00	0.00	0.00
33	0.00	0.00	0.00
34	0.00	0.00	0.00
35	0.00	0.00	0.00
36	0.00	0.00	0.00
37	0.00	0.00	0.00
38	0.00	0.00	0.00
39	0.00	0.00	0.00
40	0.00	0.00	0.00
41	0.00	0.00	0.00
42	0.00	0.00	0.00
43	0.00	0.00	0.00
44	0.00	0.00	0.00
45	0.00	0.00	0.00
46	0.00	0.00	0.00
47	0.00	0.00	0.00
48	0.00	0.00	0.00
49	0.00	0.00	0.00
50	0.00	0.00	0.00

ENCHANTED PASS 42-B W.C.D.B. COMPUTATIONS COMPUTATIONS BASED ON RATIONAL FORMULA, FOR 100 YEAR STORM FREQUENCY								
BASIN	REQUIRED CAPACITY ACRE-FEET	AVAILABLE CAPACITY ACRE-FEET	PEAK INFLOW C.F.S.	OUTFLOW DISCHARGE C.F.S.	H.W.E.	BOTTOM ELEVATION (FEET)	TOP ELEVATION (FEET)	FREE BOARD
BASIN	1.809	20.83	200.48	120.67	3926.57	3923.00	3937.00	10.63



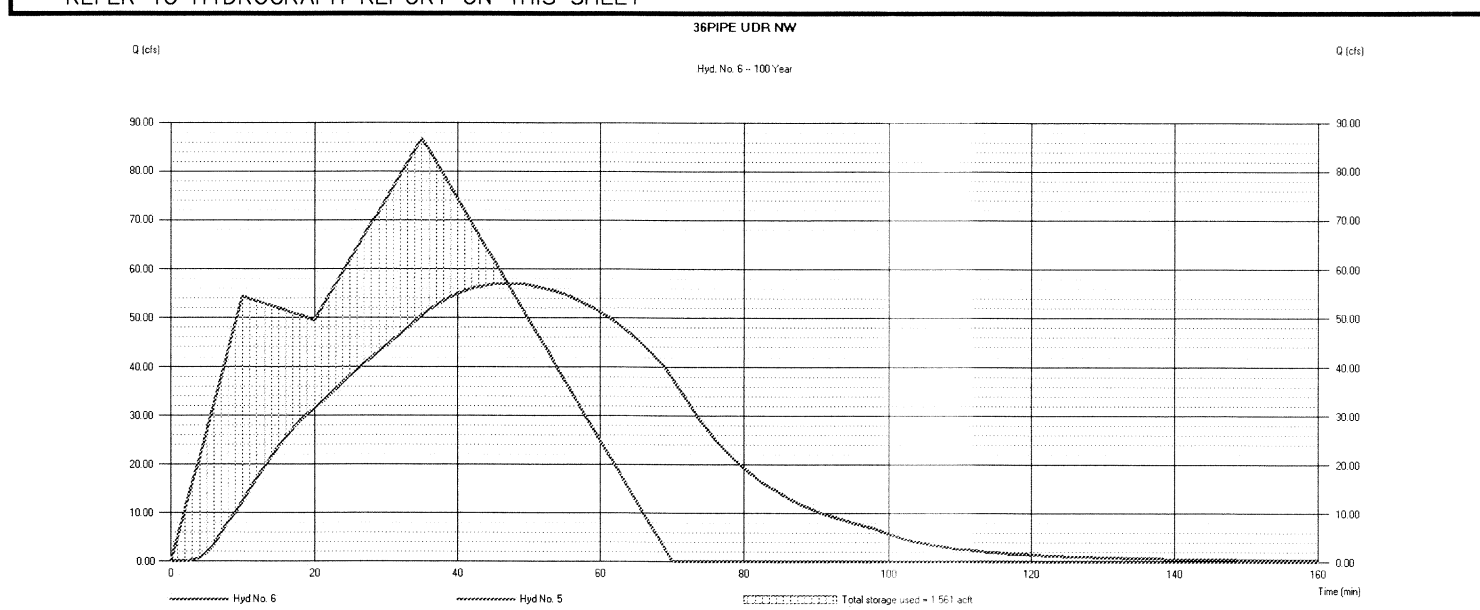
### Hydrograph Report

Hyd. No. 23  
50 PIPE W/US 24  
Reservoir Name: Reservoir  
Storm Frequency: 100 Yrs  
Time Interval: 1 min  
Inflow Hyd. No.: 22 - JCT AT E P W C B N  
Max Elevation: 3926.57 ft  
Peak discharge: 120.67 cfs  
Time to peak: 22 min  
High Volume: 1.625 ac-ft  
Reservoir Name: E P W C B 42-B  
Max Storage: 1.809 ac-ft

Hydrograph Discharge Table

Time (min)	Inflow (cfs)	Reservoir (cfs)	Peak (cfs)
0	0.00	0.00	0.00
1	0.00	0.00	0.00
2	0.00	0.00	0.00
3	0.00	0.00	0.00
4	0.00	0.00	0.00
5	0.00	0.00	0.00
6	0.00	0.00	0.00
7	0.00	0.00	0.00
8	0.00	0.00	0.00
9	0.00	0.00	0.00
10	0.00	0.00	0.00
11	0.00	0.00	0.00
12	0.00	0.00	0.00
13	0.00	0.00	0.00
14	0.00	0.00	0.00
15	0.00	0.00	0.00
16	0.00	0.00	0.00
17	0.00	0.00	0.00
18	0.00	0.00	0.00
19	0.00	0.00	0.00
20	0.00	0.00	0.00
21	0.00	0.00	0.00
22	0.00	0.00	0.00
23	0.00	0.00	0.00
24	0.00	0.00	0.00
25	0.00	0.00	0.00
26	0.00	0.00	0.00
27	0.00	0.00	0.00
28	0.00	0.00	0.00
29	0.00	0.00	0.00
30	0.00	0.00	0.00
31	0.00	0.00	0.00
32	0.00	0.00	0.00
33	0.00	0.00	0.00
34	0.00	0.00	0.00
35	0.00	0.00	0.00
36	0.00	0.00	0.00
37	0.00	0.00	0.00
38	0.00	0.00	0.00
39	0.00	0.00	0.00
40	0.00	0.00	0.00
41	0.00	0.00	0.00
42	0.00	0.00	0.00
43	0.00	0.00	0.00
44	0.00	0.00	0.00
45	0.00	0.00	0.00
46	0.00	0.00	0.00
47	0.00	0.00	0.00
48	0.00	0.00	0.00
49	0.00	0.00	0.00
50	0.00	0.00	0.00

NORTHWESTERN 42-C W.C.D.B. COMPUTATIONS COMPUTATIONS BASED ON RATIONAL FORMULA, FOR 100 YEAR STORM FREQUENCY								
BASIN	REQUIRED CAPACITY ACRE-FEET	AVAILABLE CAPACITY ACRE-FEET	PEAK INFLOW C.F.S.	OUTFLOW DISCHARGE C.F.S.	H.W.E.	BOTTOM ELEVATION (FEET)	TOP ELEVATION (FEET)	FREE BOARD
BASIN	4.59	21.53	86.74	56.99	3957.31	3953.00	3974.50	16.69



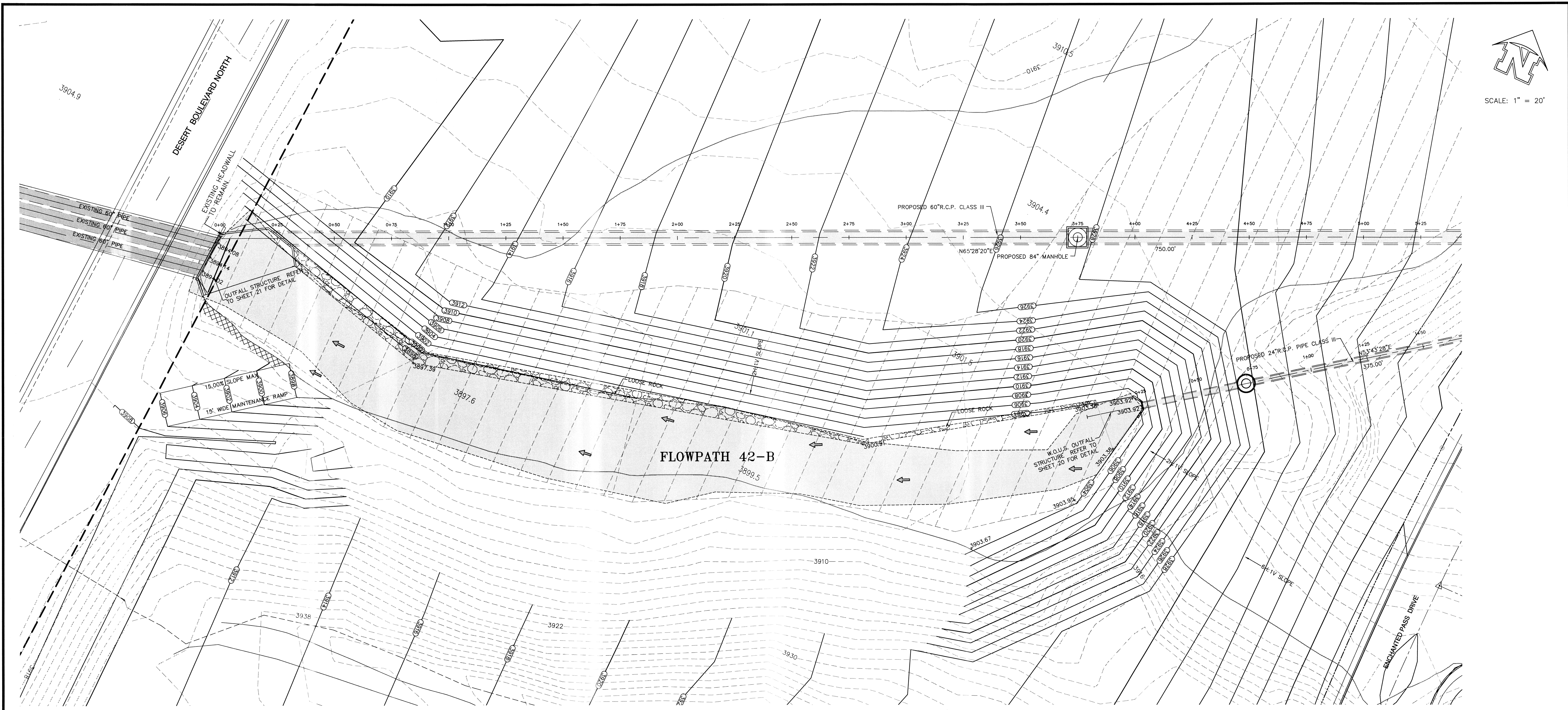
### Hydrograph Report

Hyd. No. 6  
36 PIPE LDR NW  
Reservoir Name: Reservoir  
Storm Frequency: 100 Yrs  
Time Interval: 1 min  
Inflow Hyd. No.: 5 - JCT AT POND NW  
Max Elevation: 3957.31 ft  
Peak discharge: 56.99 cfs  
Time to peak: 4:59 min  
High Volume: 4.59 ac-ft  
Reservoir Name: NW WC 42-C  
Max Storage: 4.59 ac-ft

Hydrograph Discharge Table

Time (min)	Inflow (cfs)	Reservoir (cfs)	Peak (cfs)
0	0.00	0.00	0.00
1	0.00	0.00	0.00
2	0.00	0.00	0.00
3	0.00	0.00	0.00
4	0.00	0.00	0.00
5	0.00	0.00	0.00
6	0.00	0.00	0.00
7	0.00	0.00	0.00
8	0.00	0.00	0.00
9	0.00	0.00	0.00
10	0.00	0.00	0.00
11	0.00	0.00	0.00
12	0.00	0.00	0.00
13	0.00	0.00	0.00
14	0.00	0.00	0.00
15	0.00	0.00	0.00
16	0.00	0.00	0.00
17	0.00	0.00	0.00
18	0.00	0.00	0.00
19	0.00	0.00	0.00
20	0.00	0.00	0.00
21	0.00	0.00	0.00
22	0.00	0.00	0.00
23	0.00	0.00	0.00
24	0.00	0.00	0.00
25	0.00	0.00	0.00
26	0.00	0.00	0.00
27	0.00	0.00	0.00
28	0.00	0.00	0.00
29	0.00	0.00	0.00
30	0.00	0.00	0.00
31	0.00	0.00	0.00
32	0.00	0.00	0.00
33	0.00	0.00	0.00
34	0.00	0.00	0.00
35	0.00	0.00	0.00
36	0.00	0.00	0.00
37	0.00	0.00	0.00
38	0.00	0.00	0.00
39	0.00	0.00	0.00
40	0.00	0.00	0.00
41	0.00	0.00	0.00
42	0.00	0.00	0.00
43	0.00	0.00	0.00
44	0.00	0.00	0.00
45	0.00	0.00	0.00
46	0.00	0.00	0.00
47	0.00	0.00	0.00
48	0.00	0.00	0.00
49	0.00	0.00	0.00
50	0.00	0.00	0.00

SYSTEM #	INLET #	PROFILE STA.	STREET NAME	TOP OF CURB ELEVATION (ft.)	INVERT ELEVATION (ft.)	DEPTH (ft.)	PIPE SIZE	No. OF GRATES	DROP INLET	Drop Proposed (total)	Drop Future (total)
SYSTEM #A	INLET #1-A	5+82	ENCHANTED CIRCLE DRIVE	3936.53 TC 3936.03 GT RM	3929.00	7.00'	36"	5	54.65 c.f.a.	48.10 c.f.a.	
SYSTEM #A	INLET #2-A	7+37	ENCHANTED CIRCLE DRIVE	3937.18 TC 3936.68 GT RM	3931.53	5.15'	36"	5	54.65 c.f.a.	35.34c.f.a.	
SYSTEM #B	INLET #B	N/A	ENCHANTED BRIM DRIVE	3959.11 TC 3958.61 GT RM	3954.21	4.40'	24"	3	32.29 c.f.a.	18.01 c.f.a.	
SYSTEM #C	INLET #C	N/A	ENCHANTED RIDGE DRIVE	3963.74 TC 3963.24 GT RM	3959.39	4.35'	24"	3	27.99 c.f.a.	12.46 c.f.a.	
SYSTEM #D	INLET #D	1+59.85	ENCHANTED RANGE DRIVE	3926.25 TC 3925.75 GT RM	3918.00	5.9'	30"	5	54.65 c.f.a.	36.79 c.f.a.	
SYSTEM #E	INLET #E	N/A	ENCHANTED CROSSING DRIVE	3984.12 TC 3983.62 GT RM	3977.00	7.75'	18"	3	27.99 c.f.a.	16.29 c.f.a.	
SYSTEM #F	INLET #F	N/A	ENCHANTED PASS DRIVE	3940.22 TC 3939.72 GT RM	3935	4.72'	24"	3	32.29 c.f.a.	4.21 c.f.a.	28.08 c.f.a. (future development)
SYSTEM #G	INLET #G	N/A	ENCHANTED PATH DRIVE	3961.13 TC 3960.63 GT RM	3958.00	2.63'	30"	5	54.65 c.f.a.	44.20 c.f.a.	
SYSTEM #H	INLET #H	18+38.42	NORTHWESTERN DR	3975.95 TC 3975.45 GT RM	3971.00	4.76'	24"	3	32.29 c.f.a.	6.62 c.f.a.	
ENCH HILLS #1	INLET #1B	16+01.95	ENCHANTED VIEW DRIVE	3943.14 TC 3942.64 GT RM	3939.00	4.18'	30"	6	49.45 c.f.a.	65.60 c.f.a.	



**FLOW PATH 42-B WATER OF UNITED STATES ENCHANTED PASS DR**

SCALE 1" = 20'

**LEGEND**

- PROPOSED DRAINAGE HIGH-POINT
- PROPOSED DRAINAGE LOW-POINT
- DENOTES EXISTING CITY MONUMENT
- DENOTES EXISTING SANITARY SEWER MANHOLE
- PROPOSED RETAINING WALL
- FG=4037.68 PROPOSED FINISHED GRADE ELEVATION
- FF=4038.35 PROPOSED FINISHED FLOOR ELEVATION
- EXISTING FLOOD AREA
- PROPOSED CITY MONUMENT
- PROPOSED DRAINAGE FLOWS
- EXISTING DRAINAGE FLOWS
- DENOTES EXISTING SANITARY SEWER LINE
- 35.32 TC PROPOSED TOP OF CURB ELEVATION
- EXISTING COUNTOURS
- PROPOSED CONTOURS
- PROPOSED FLOOD AREA



**ENGINEERING & CONSTRUCTION  
MANAGEMENT DEPARTMENT**

**REVIEWED**

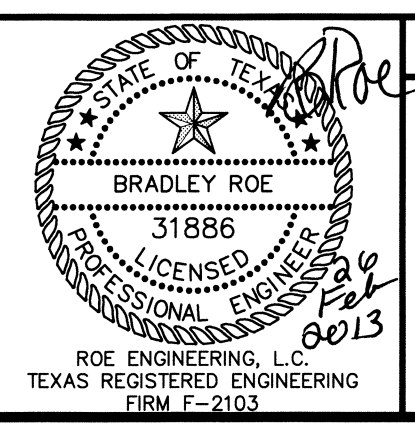
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DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	NIS MONUMENT (2000) 1880 (P.C. 620444) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981 LOCATED ABOUT 1.25 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	HOR: 1"=30' VER: 1"=10'
9/20/12	CITY COMMENTS	STAFF	EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHIS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21 N.A.V.D. 88 DATUM -10.16 = CITY OF EL PASO DATUM	FILE NAME: W.O. 011509-1 A EH-3 DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR

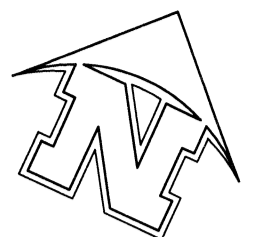
DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	NIS MONUMENT (2000) 1880 (P.C. 620444) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981 LOCATED ABOUT 1.25 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	HOR: 1"=30' VER: 1"=10'
9/20/12	CITY COMMENTS	STAFF	EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHIS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21 N.A.V.D. 88 DATUM -10.16 = CITY OF EL PASO DATUM	FILE NAME: W.O. 011509-1 A EH-3 DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR



E. P. W. o. U. S. GRADING  
**ENCHANTED HILLS  
UNIT THREE  
FLOW PATH 42-B  
E. P. W. OF U. S.  
GRADING**

**Roe Engineering, L.C.**  
601 N. Cotton St. Suite No. 8 El Paso, Tx. 79902  
(915) 539-1418 - FAX (915) 539-4972  
e-mail: roeeng@swbell.net  
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING  
SHEET 11 OF 77

REFER TO SHEET 51 FOR DETAIL



SCALE: 1" = 30'

**FLOWPATH 42-B**

DEVELOPER IS RESPONSIBLE TO MAINTAIN ALL SLOPE OUTSIDE SUBDIVISION LIMITS PERMIT-CLOSEOUT PROCEDURE.

GRADED SLOPES TO BE NATIVE DESERT SEEDS (WITHOUT IRRIGATION) WITH THE INSTALLATION OF TURF REINFORCEMENT MAT (TRM) CONSISTING OF PROPEX LANDLOCK 300; LANDLOCK 450 OR EQUIVALENT ON SLOPES GREATER THAN 1.5:1.

**PARK SITE (ADDITIONAL AREA)**  
123,748.34 sq  
or 2.8409 acres

**OFF-SITE PARK DEDICATION BY SEPARATE INSTRUMENT**  
65,188.38 sq  
or 1.4965 acres

LINE	BEARING	LENGTH
PL13	N 83°15'17" E	25.05'
PL14	N 06°46'03" W	55.50'
PL15	S 83°15'57" W	20.61'

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
PC1	617.13	179.49	90.38	178.85	S 71°10'1" E	16°39'50"
PC2	28.51	28.99	14.60	26.00	S 26°47'23" E	5°14'22"
PC3	55.78	3.70	1.85	3.70	S 19°39'40" W	3°48'11"
PC4	24927.38	34.62	17.31	34.62	N 151°4'34" E	0°04'46"
PCS	616.33	92.41	46.20	92.32	N 191°3'23" E	8°35'27"
PC6	565.64	61.55	30.80	61.52	S 22°29'19" W	6°14'03"
PC7	569.95	80.17	40.15	80.10	S 15°20'31" W	8°03'32"
PC8	608.71	55.11	27.57	55.09	N 135°42'11" E	6°11'13"
PC9	1147.31	58.94	29.48	58.93	N 175°8'16" E	2°56'36"
PC10	1444.21	43.76	21.88	43.76	N 201°8'38" E	1°44'09"
PC11	18.82	21.84	12.34	20.63	S 65°34'38" W	66°29'41"
PC12	32.18	7.29	3.66	7.27	S 76°16'55" E	12°58'43"
PC13	243.36	48.10	24.13	48.02	N 75°56'08" W	11°19'28"
PC14	196.19	23.89	11.95	23.87	S 73°05'50" E	6°58'34"
PC15	2308.56	35.32	17.66	35.32	S 75°23'50" W	0°52'35"
PC16	108.48	40.00	20.23	39.77	N 86°23'55" W	21°07'34"
PC17	312.77	32.63	16.32	32.62	S 80°02'58" W	5°58'40"
PC18	192.19	42.02	21.09	41.94	N 83°19'27" E	12°31'39"
PC19	353.82	32.53	16.28	32.52	S 86°57'15" W	5°16°04"
PC20	75.20	33.46	17.01	33.18	S 73°11'45" W	2°22'39"
PC21	259.56	61.12	30.70	60.98	N 65°46'31" E	13°29'32"
PC22	227.41	56.11	28.20	55.97	S 62°40'32" W	14°08'13"
PC23	18.94	19.37	10.63	18.54	N 80°39'06" W	58°36'25"
PC24	19.46	3.90	1.96	3.89	S 43°45'43" E	11°28'42"
PC25	341.52	76.17	38.24	76.01	S 36°02'20" E	12°46'42"
PC26	248.60	72.38	36.45	72.12	N 37°59'24" W	16°40'51"
PC27	565.66	81.06	40.60	80.95	S 42°13'30" E	8°12'39"
PC28	30.00	24.37	12.90	23.71	S 151°13'6" E	46°32'44"
PC29	5.00	6.56	3.85	6.10	S 45°39'22" W	75°09'11"
PC30	5.00	5.17	2.84	4.94	S 67°09'51" E	59°12'25"

**LEGEND**

	PROPOSED DRAINAGE HIGH-POINT		PROPOSED CITY MONUMENT
	PROPOSED DRAINAGE LOW-POINT		PROPOSED DRAINAGE FLOWS
	DENOTES EXISTING CITY MONUMENT		EXISTING DRAINAGE FLOWS
	DENOTES EXISTING SANITARY SEWER MANHOLE		DENOTES EXISTING SANITARY SEWER LINE
	PROPOSED RETAINING WALL		PROPOSED TOP OF CURB ELEVATION
	FG=4037.68 PROPOSED FINISHED GRADE ELEVATION		EXISTING CONTOURS
	FF=4038.35 PROPOSED FINISHED FLOOR ELEVATION		PROPOSED CONTOURS
	EXISTING FLOOD AREA		PROPOSED FLOOD AREA

**ENCHANTED HILLS PARK**  
SCALE 1" = 30'

ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT  
**REVIEWED**

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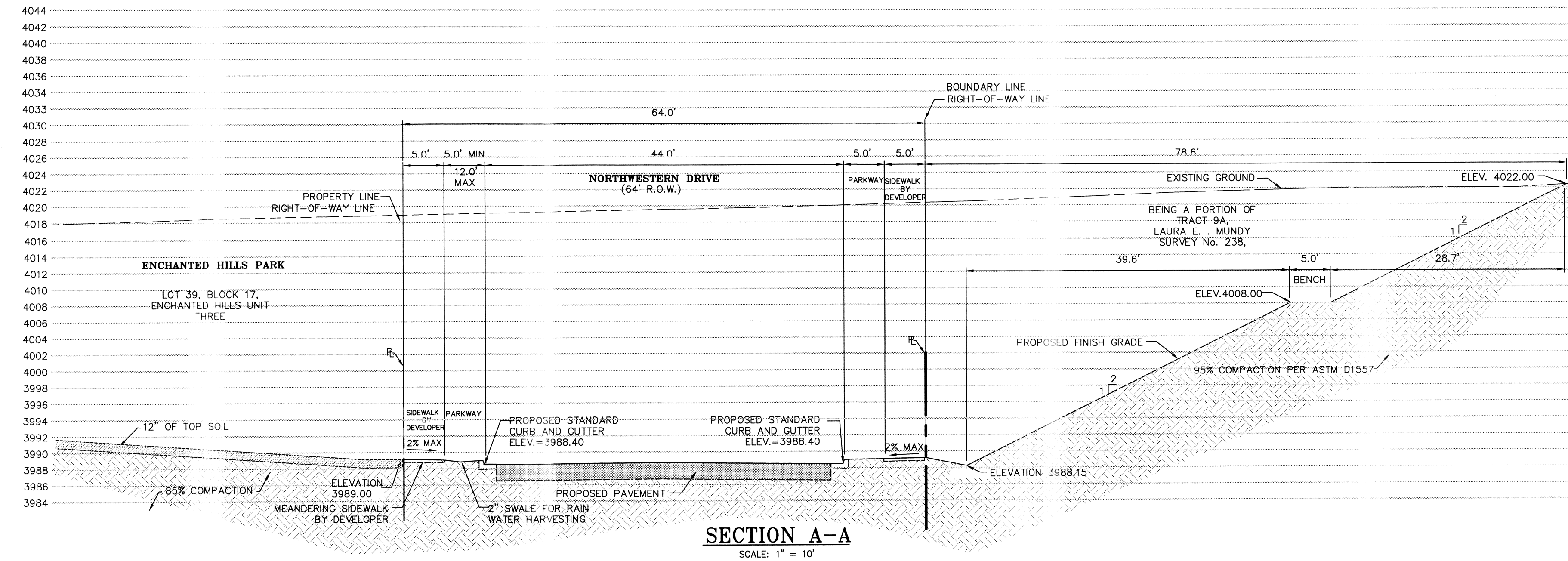
DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	EXISTING CITY MONUMENT "BRADLEY 1880" (PDC 020447) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED ABOUT 1.25 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 376 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	HOR: 1"=30' VER: 1"=10'
9/20/12	CITY COMMENTS	STAFF	EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOJOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE. ELEVATION 3857.21	DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR

**STATE OF TEXAS**  
BRADLEY ROE  
REGISTERED PROFESSIONAL ENGINEER  
NO. 31888  
EXPIRES 09/01/2013

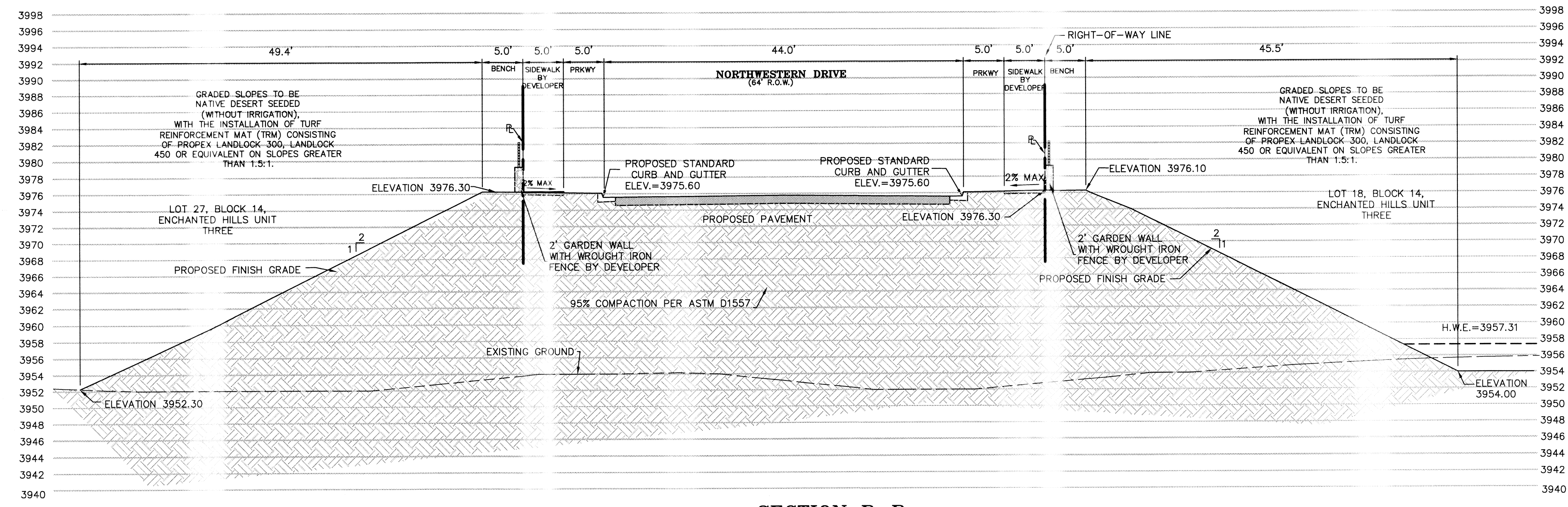
ROE ENGINEERING, L.C.  
TEXAS REGISTERED ENGINEERING FIRM # 2-103

**PARK SITE GRADING**  
**ENCHANTED HILLS UNIT THREE**  
**ENCHANTED HILLS PARK**  
7700 ENCHANTED PARK DR.  
ENCHANTED HILLS UNIT THREE,  
BEING ALL OF LOT 39A, 39B BLOCK 17,  
CITY OF EL PASO, EL PASO COUNTY, TEXAS  
CONTAINING ALL 188,936 SQ. FT. OR 4.33 ACRES

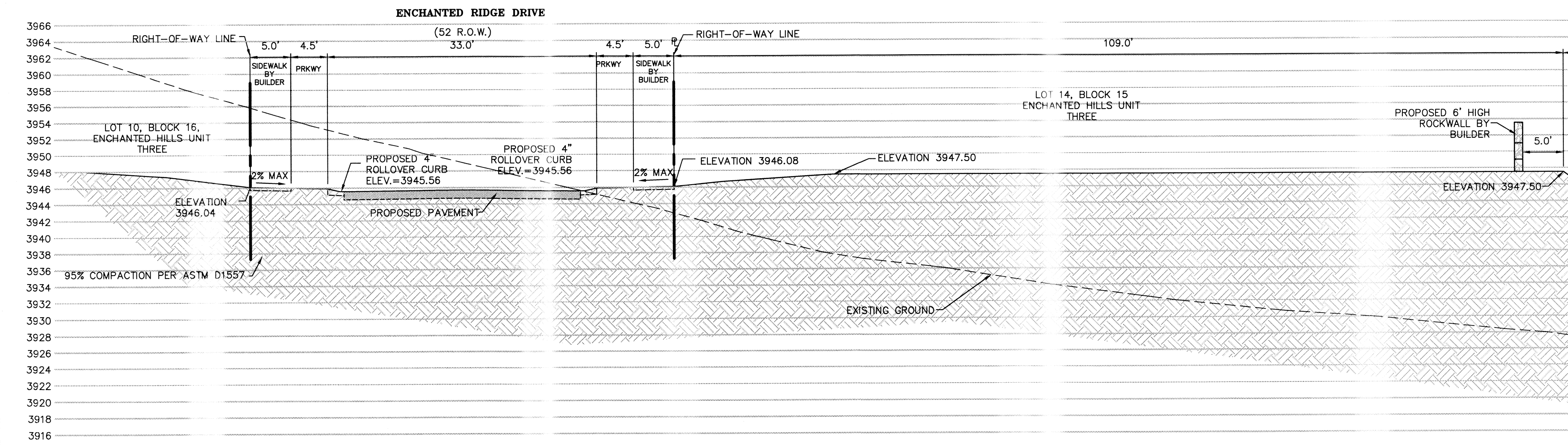
**RoE Engineering, L.C.**  
601 N. Cotton St. Suite No.6 El Paso, Tx, 79902  
(915) 533-1418 - FAX: (915) 533-4972  
e-mail: roeeng@roebell.net  
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING  
SHEET 12 OF 77



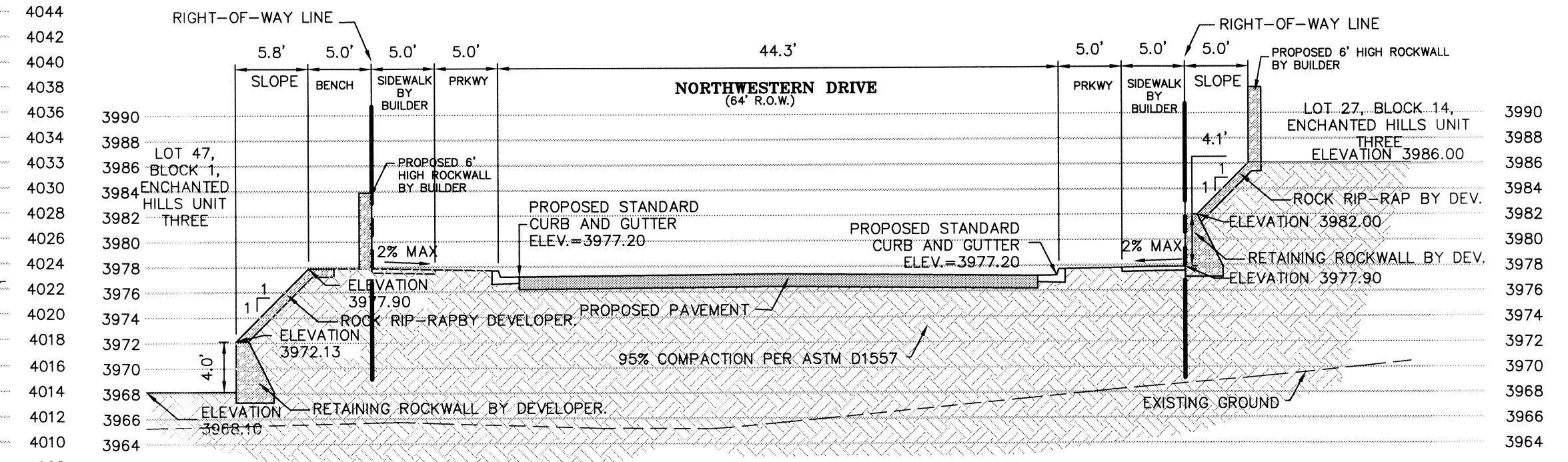
**SECTION A-A**  
SCALE: 1" = 10'



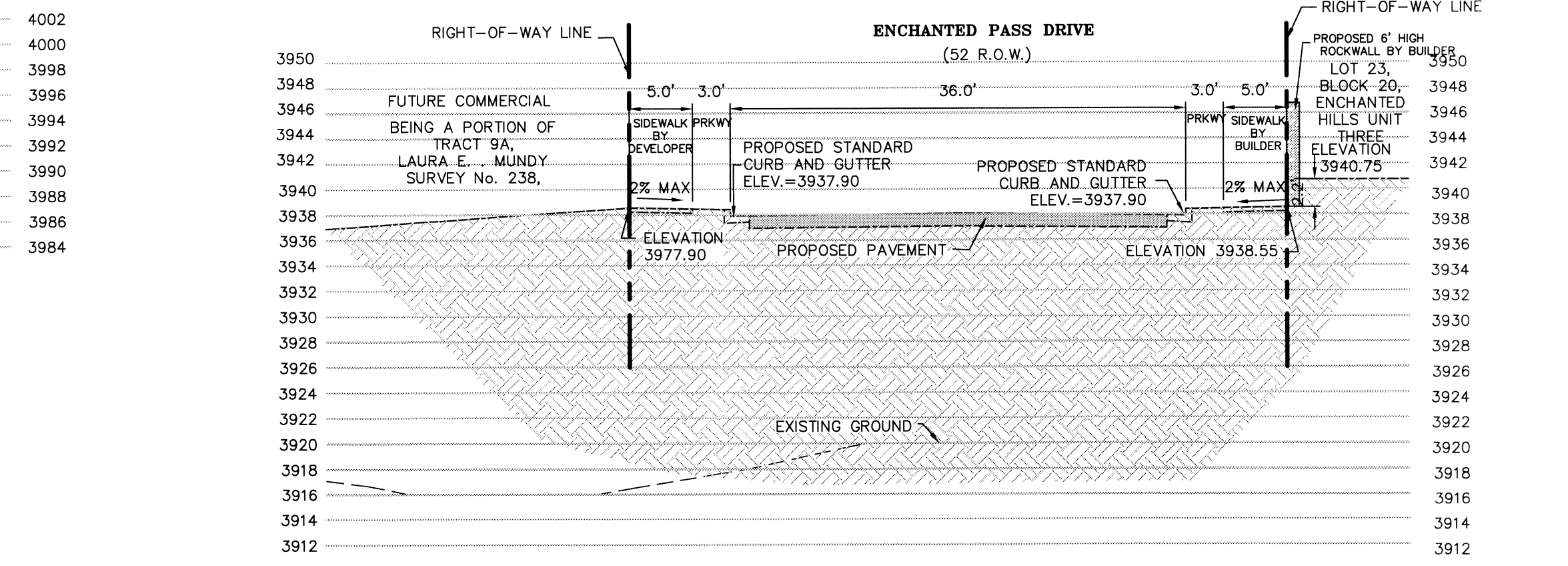
**SECTION B-B**  
SCALE: 1" = 10'



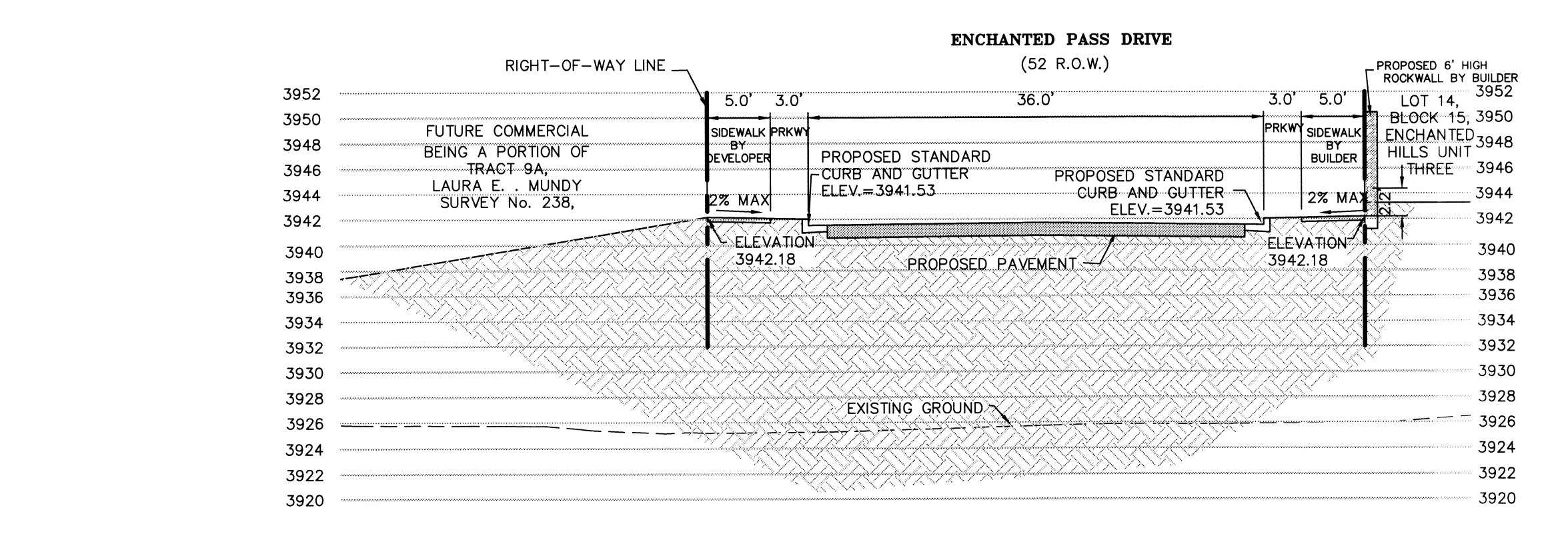
**SECTION E-E**  
SCALE: 1" = 10'



**SECTION C-C**  
SCALE: 1" = 10'



**SECTION J-J**  
SCALE: 1" = 10'



**SECTION I-I**  
SCALE: 1" = 10'



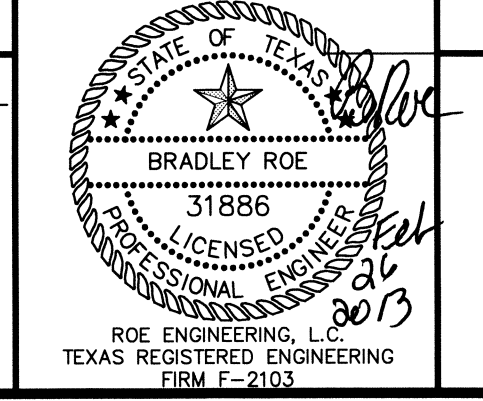
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DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	NIS MONUMENT (2000) 1550 (PRC 600444) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981 LOCATED ABOUT 1.23 MILES EAST OF THE RD GRADE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	HOR: 1"=10' VER: 1"=10' FILE NAME: W.O. 011509-1 A EH-3 DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR
9/20/12	CITY COMMENTS	STAFF	SECONDARY BENCHMARK EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE ELEVATION: 3857.21 N.A.V.D.88 DATUM -10.16 = CITY OF EL PASO DATUM	



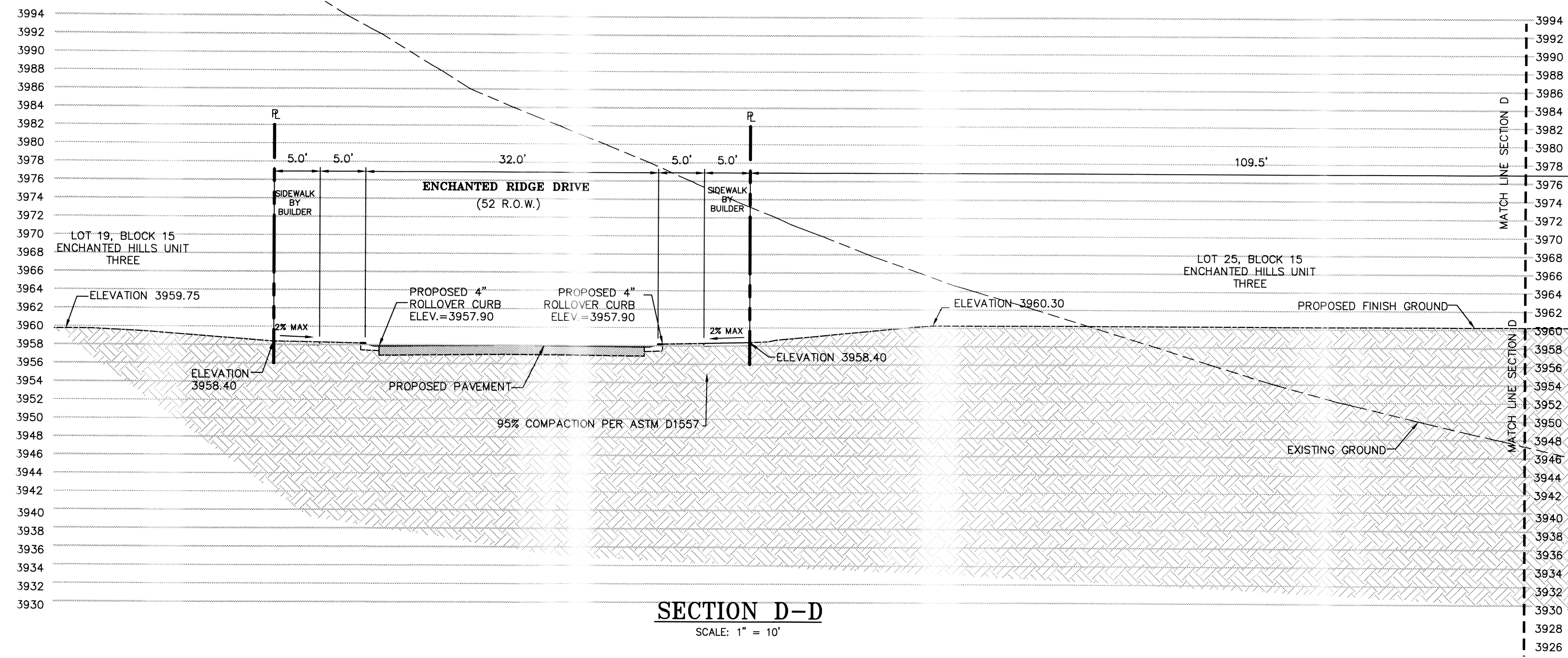
**SECTIONS**  
**ENCHANTED HILLS UNIT THREE**

**SECTIONS**

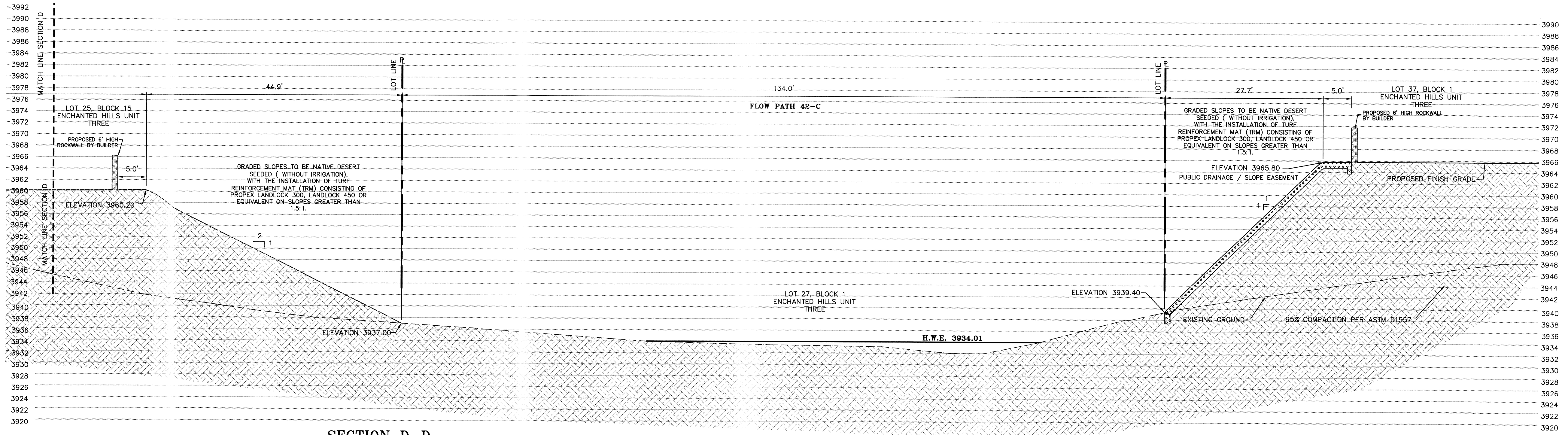
**Roe Engineering, L.C.**  
601 N. Cotton St. Suite No.8 El Paso, Tx. 79902  
(915) 633-1418 - FAX: (915) 633-4972  
e-mail: roeeng@swbell.net

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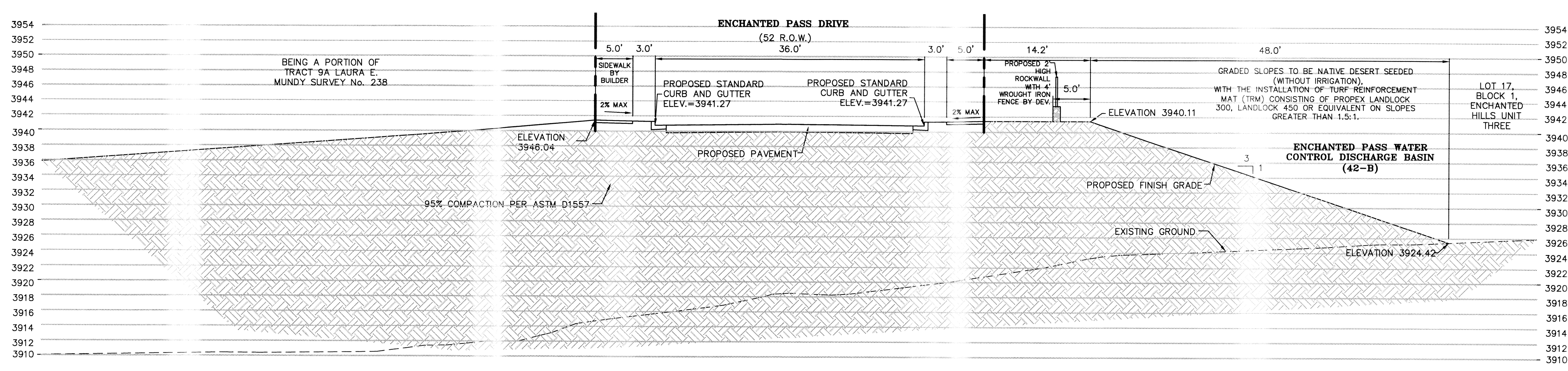
SHEET **13** OF **77**



SECTION D-D  
SCALE: 1" = 10'



SECTION D-D  
SCALE: 1" = 10'



SECTION H-H  
SCALE: 1" = 10'



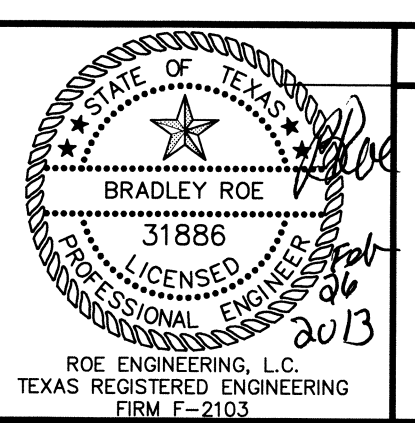
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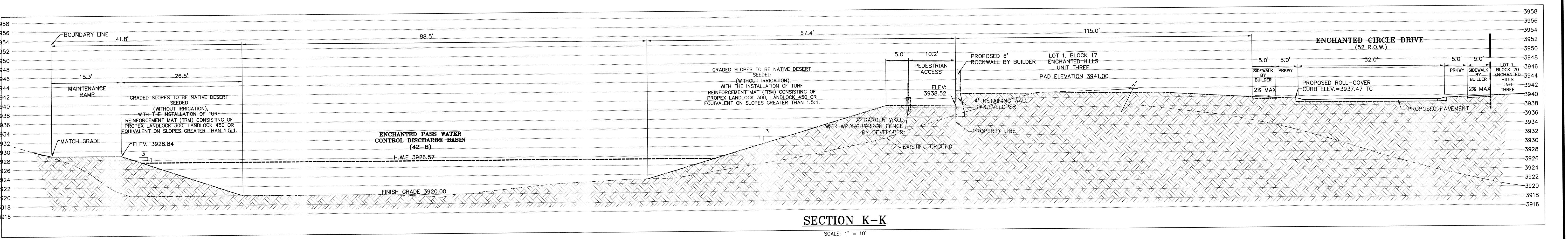
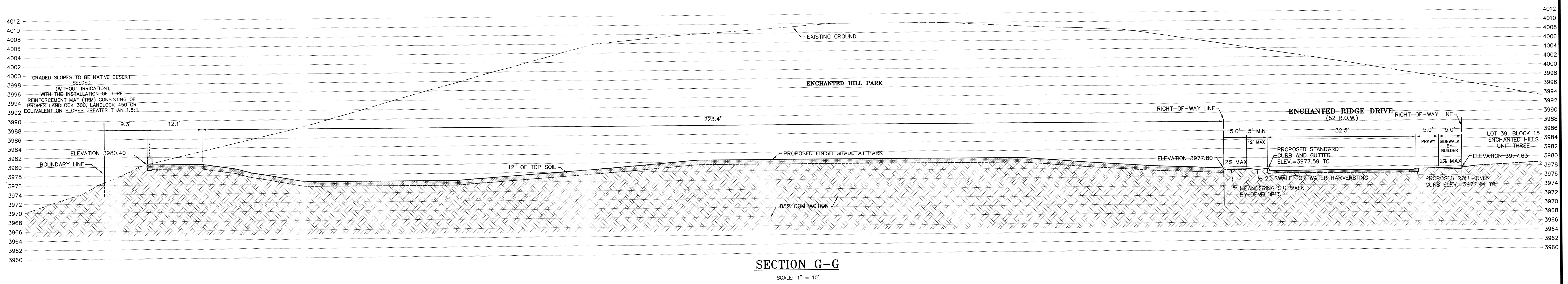
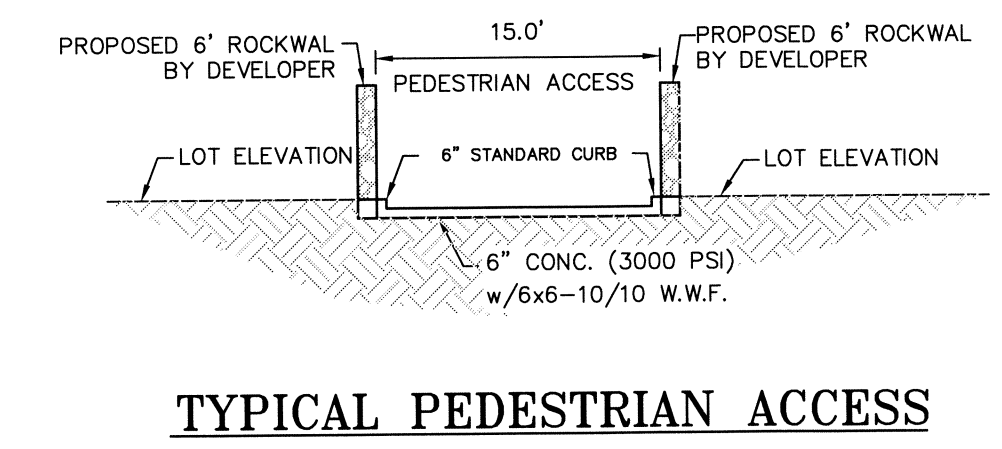
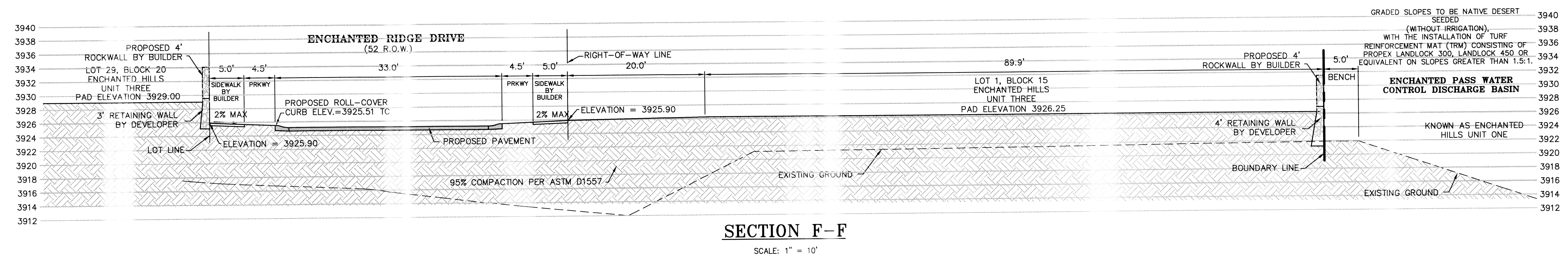
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DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	N/S MONUMENT (CIRCU 1350) (SIC 06444)	HOR: 1"=10' VER: 1"=10'
9/20/12	CITY COMMENTS	STAFF	LOCATION AS PER NATIONAL GEODETIC SURVEY 1981; LOCATED ABOUT 1.25 MILES EAST OF THE RIDGE DRIVE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANS MOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	FILE NAME: W.O. 011509-1 A EH-3
			EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHIS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	DATE: NOVEMBER, 2011
			N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	DESIGN BY: STAFF
				DRAWN BY: I.D.R.
				CHKD. BY: H.P.
				APPD. BY: BR



SECTIONS  
**ENCHANTED HILLS UNIT THREE**  
SECTIONS

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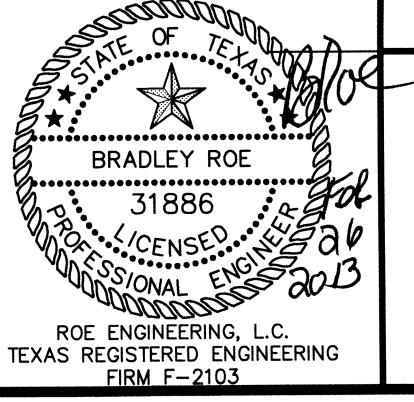
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DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	MISS MONUMENT "ORIG 1980" (P.O. 480444) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED ABOUT 1.25 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 83	HOR: 1"=10' VER: 1"=10'
9/20/12	CITY COMMENTS	STAFF	EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOJOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21 N.A.V.D.88 DATUM -10.18 = CITY OF EL PASO DATUM	FILE NAME: W.O. 011509-1 A EH-3 DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR

**SECTIONS ENCHANTED HILLS UNIT THREE**

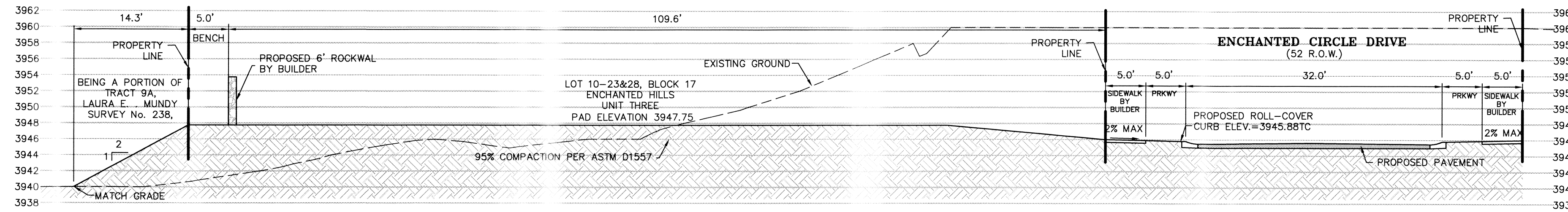
**SECTIONS**

**SHEET 15 OF 77**

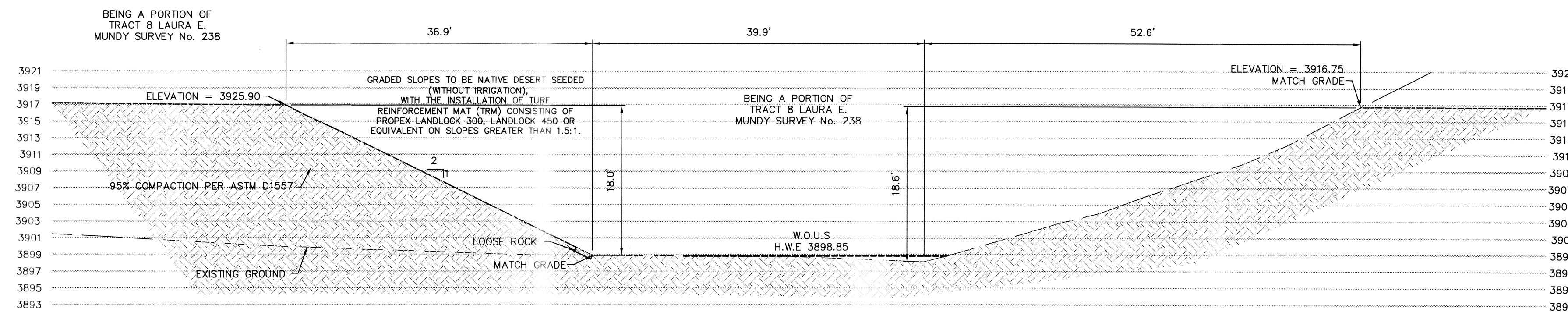


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e-mail: roeeng@vbell.net

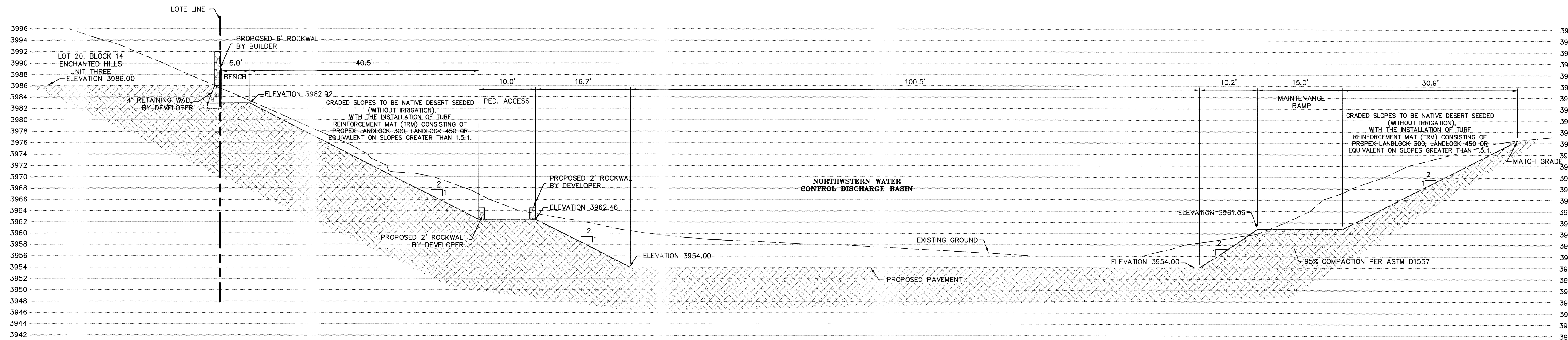
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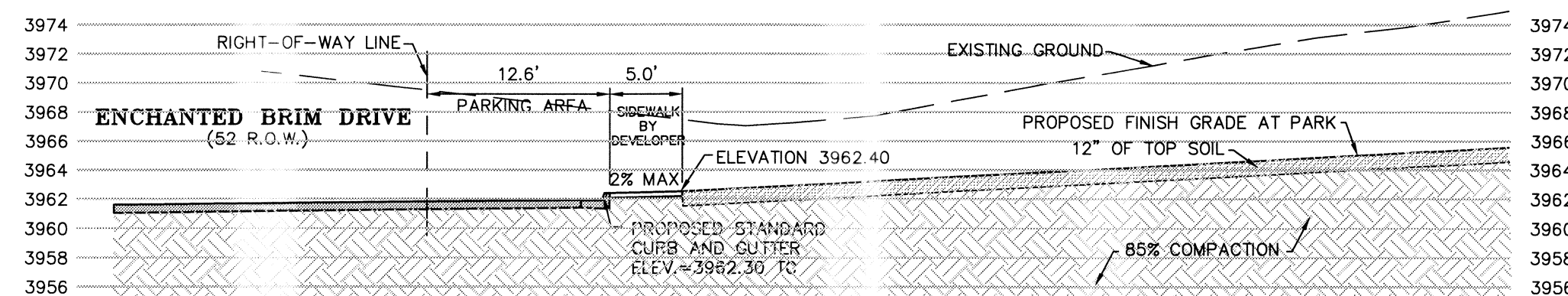
SECTION L-L  
SCALE: 1" = 10'



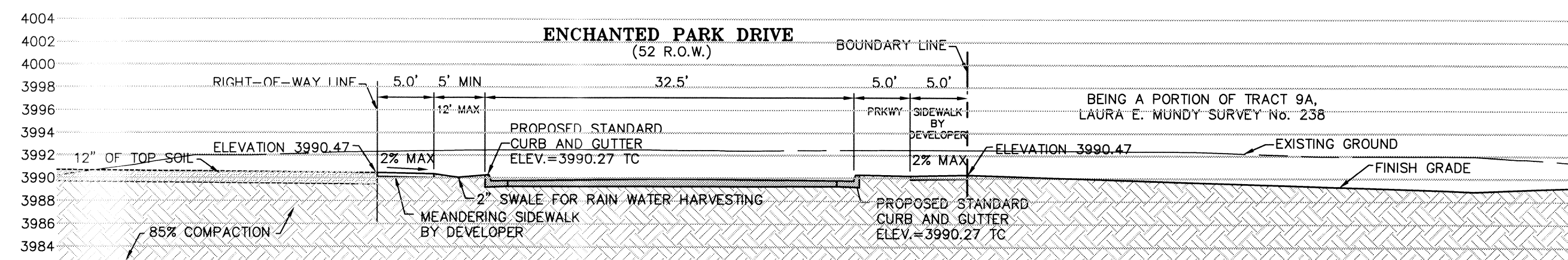
SECTION M-M  
SCALE: 1" = 10'



SECTION N-N  
SCALE: 1" = 10'



SECTION O-O  
SCALE: 1" = 10'



SECTION P-P  
SCALE: 1" = 10'



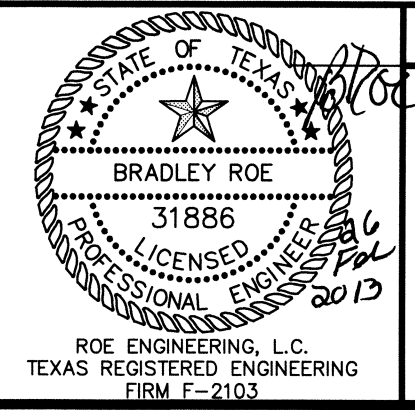
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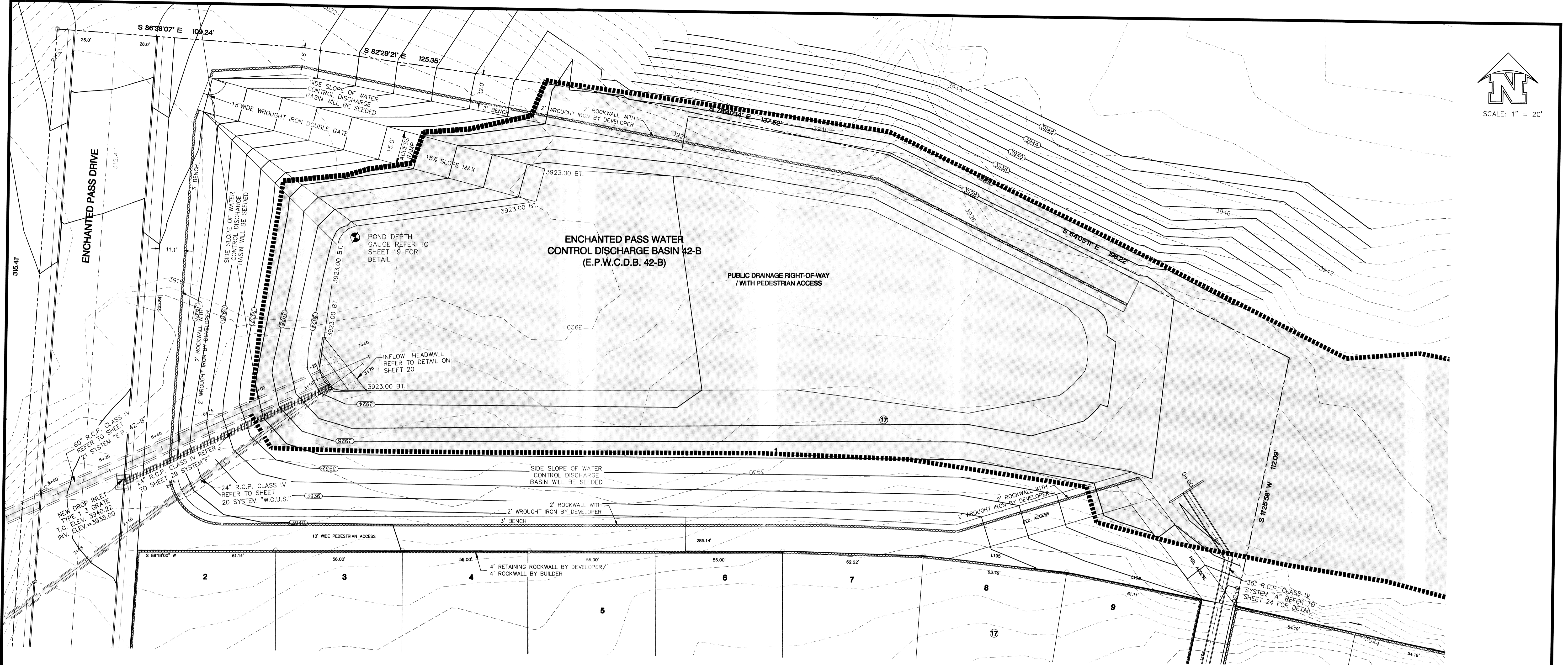
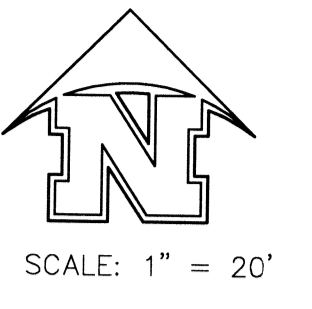
DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	NIS MONUMENT (SHND 1980) (P.C. 260444) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED ABOUT 1.25 MILES EAST OF THE RD GRADE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	HOR: 1"=10' VER: 1"=10' FILE NAME: W.O. 011509-1 A EH-3 DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR
9/20/12	CITY COMMENTS	STAFF	SECONDARY BENCHMARK EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MICHIS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21 N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	



SECTIONS  
**ENCHANTED HILLS  
UNIT THREE**  
SECTIONS

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SHEET 16 OF 77





**TABLE 1**  
Proposed species to be included in seed mix and live plantings.  
Substitutions may be made based on availability.

Seed Mix		Plants (for Additive Alternate No. 2)	
Grasses		Yucca ( <i>Yucca torreyi</i> )	up to 20 plants
Sideoats Grama ( <i>Bouteloua curtipendula</i> )		Ocotillo ( <i>Fouquieria splendens</i> )	up to 60 plants
Sand Dropseed ( <i>Sporobolus cryptandrus</i> )		Agave ( <i>Agave tequilanum</i> )	up to 100 plants
Indian Ricegrass ( <i>Achnatherum hymenoides</i> )		Sotol ( <i>Dasylirion wheeleri</i> )	up to 20 plants
Alkali Sacaton ( <i>Sporobolus airoides</i> )			
Cane Bluestem ( <i>Bothriochloa barbata</i> )		Substitute/Alternate Species	
Wildflowers		Prickly Pear cactus	
Desert Marigold ( <i>Baileya multiradiata</i> )		Texas Rainbow cactus	
Penstemon ( <i>Penstemon</i> spp.)		Claret cup cactus	
Blanket flower ( <i>Calceolaria</i> spp.)		Barrel Cactus	
Globe-mallow ( <i>Sphaeralcea</i> spp.)			
Shrubs			
Fourwing saltbush ( <i>Atriplex canescens</i> )			
Cholla cactus ( <i>Cylindropuntia</i> )			
Winterfat ( <i>Krascheninnikovia lanata</i> )			
Rabbitbrush ( <i>Ericameria nauseosa</i> )			

**NOTE:**  
REVEGETATION AND RESTORATION WORK AT THIS SITE WILL BE CONDUCTED WITH A SEED IMPRINTER, AS WITH THE HOME LOTS SITE, A SEED MIX OF NATIVE GRASSES, WILDFLOWERS AND SHRUBS WILL BE USED (SEE TABLE 1).

**LEGEND**

- ▲ PROPOSED DRAINAGE HIGH-POINT
- ▼ PROPOSED DRAINAGE LOW-POINT
- DENOTES EXISTING CITY MONUMENT
- ⊙ DENOTES EXISTING SANITARY SEWER MANHOLE
- PROPOSED RETAINING WALL
- FG=4037.68 PROPOSED FINISHED GRADE ELEVATION
- FF=4038.35 PROPOSED FINISHED FLOOR ELEVATION
- ▨ EXISTING FLOOD AREA
- ▩ PROPOSED FLOOD AREA
- ▲ PROPOSED CITY MONUMENT
- PROPOSED DRAINAGE FLOWS
- ⇨ EXISTING DRAINAGE FLOWS
- SS — DENOTES EXISTING SANITARY SEWER LINE
- 35.32 TC PROPOSED TOP OF CURB ELEVATION
- 4040 EXISTING COUNTOURS
- 4035 PROPOSED COUNTOURS
- ▩ PROPOSED FLOOD AREA

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DATE	REVISIONS	BY
9/4/12	CITY COMMENTS	STAFF
9/20/12	CITY COMMENTS	STAFF

DATE	REVISIONS	BY
9/4/12	CITY COMMENTS	STAFF
9/20/12	CITY COMMENTS	STAFF

DATE	REVISIONS	BY
9/4/12	CITY COMMENTS	STAFF
9/20/12	CITY COMMENTS	STAFF

DATE	REVISIONS	BY
9/4/12	CITY COMMENTS	STAFF
9/20/12	CITY COMMENTS	STAFF

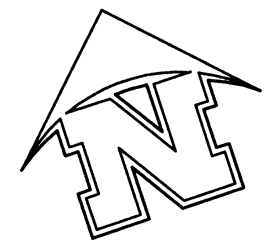
DATE	REVISIONS	BY
9/4/12	CITY COMMENTS	STAFF
9/20/12	CITY COMMENTS	STAFF

DATE	REVISIONS	BY
9/4/12	CITY COMMENTS	STAFF
9/20/12	CITY COMMENTS	STAFF

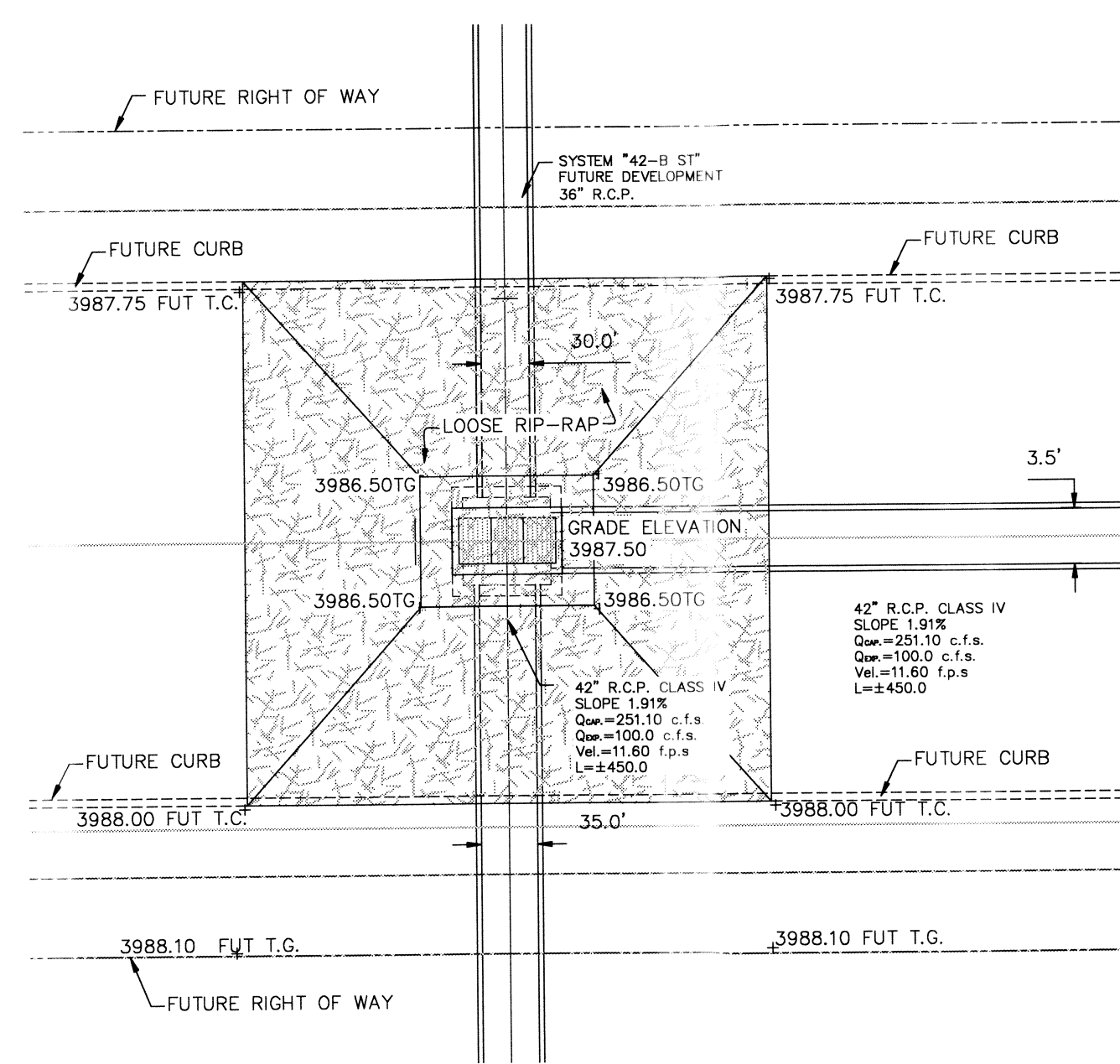


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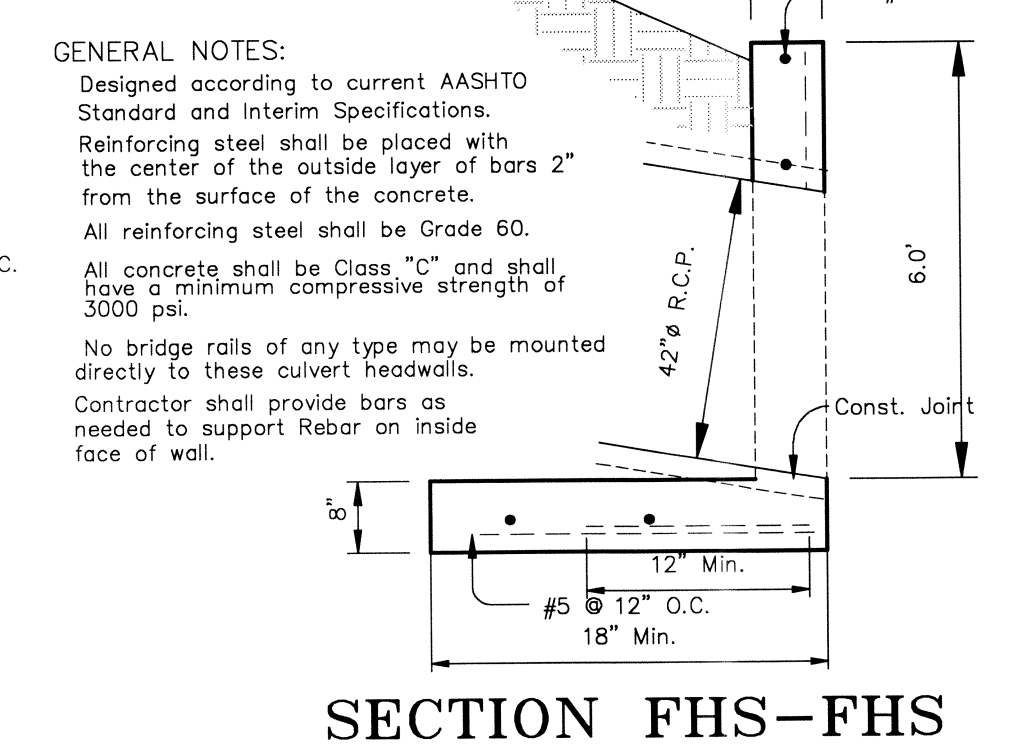
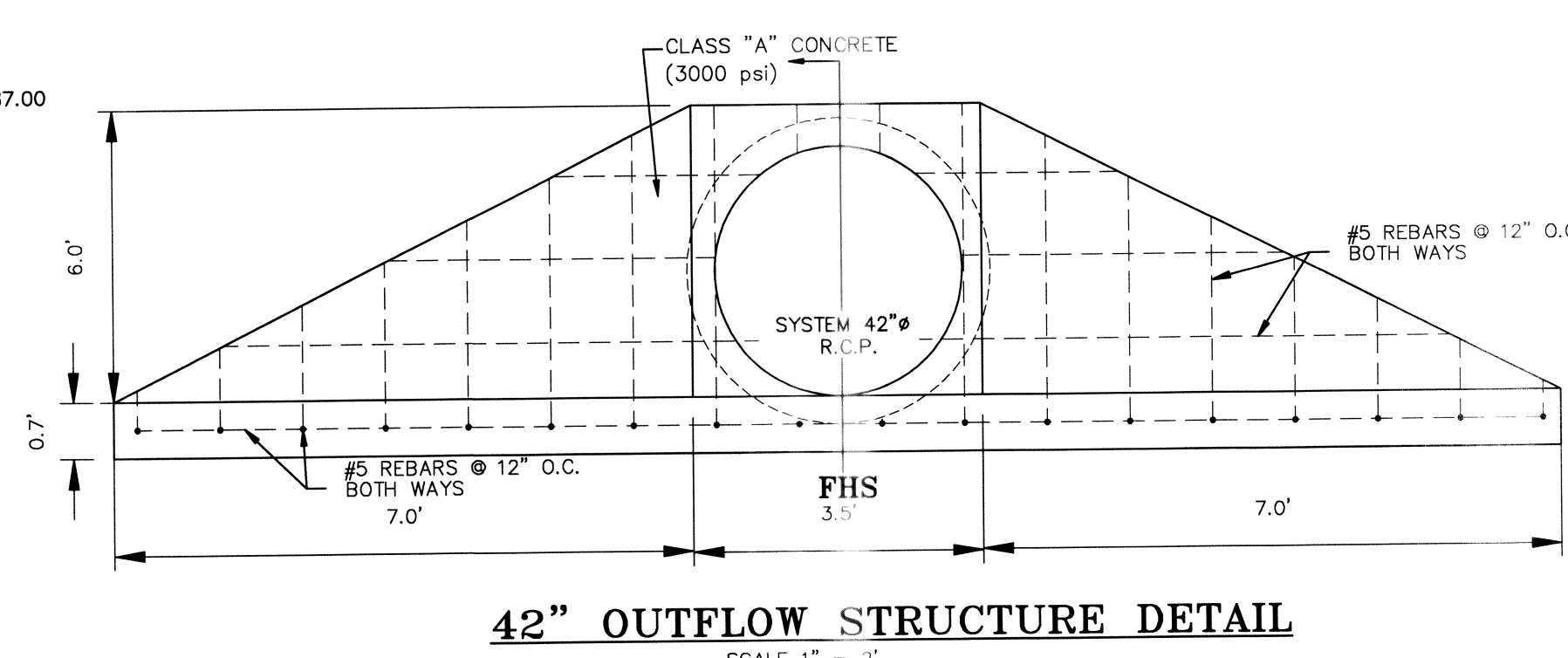
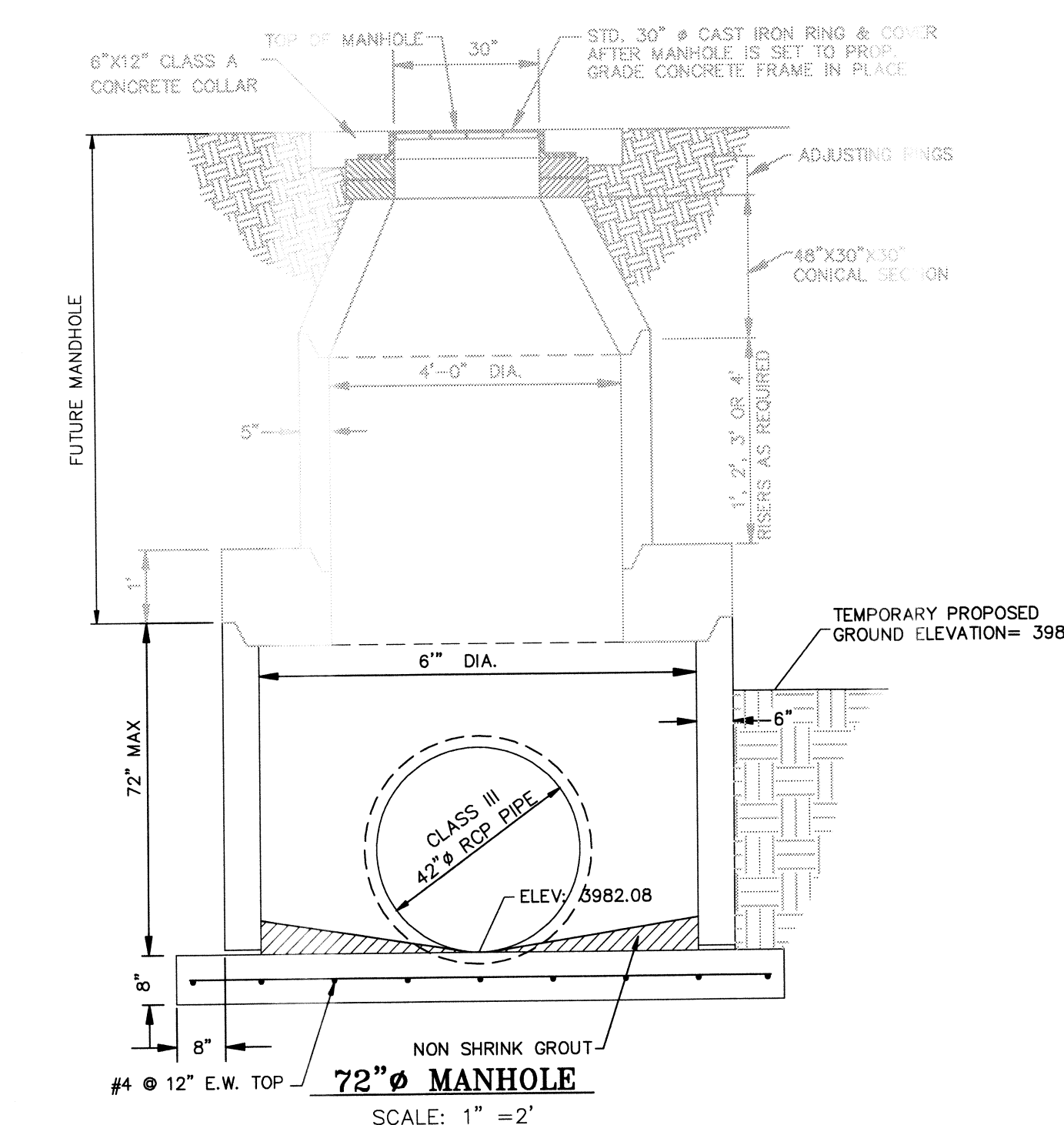
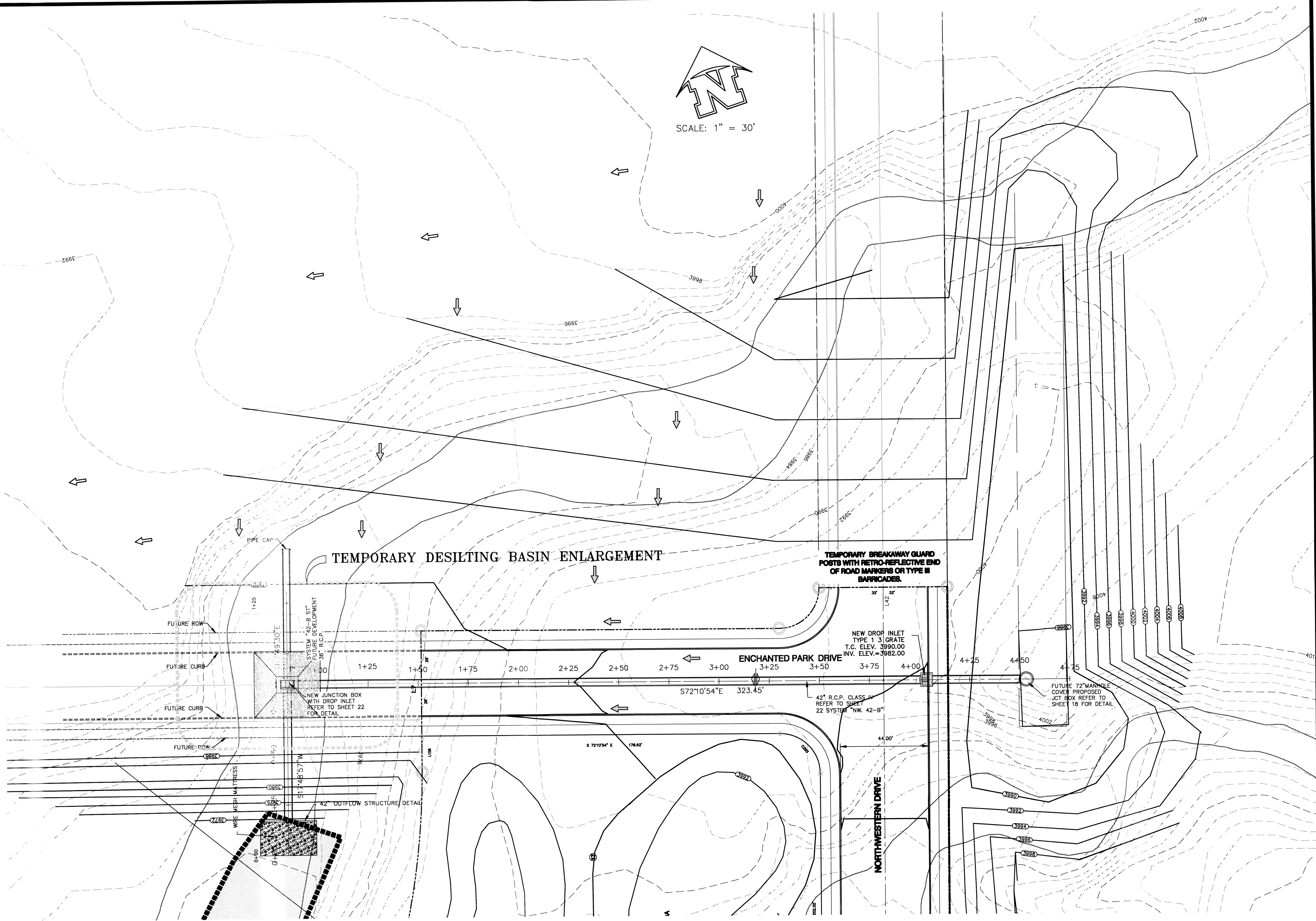


SCALE: 1" = 10'



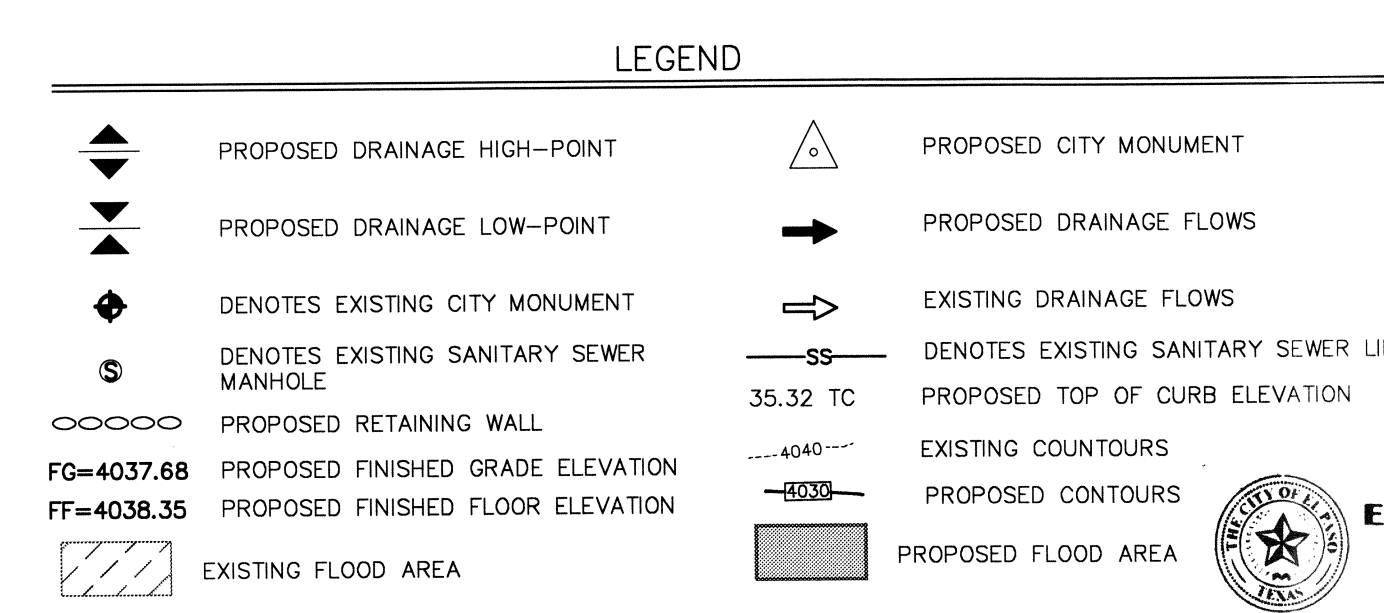
**TEMPORARY DESILTING BASIN FUTURE ENCHANTED PARK DETAIL**

SCALE: 1" = 10'



**TEMPORARY DESILTING BASIN AT SCHOOL SITE**

SCALE: 1" = 30'



**GENERAL NOTES:**  
 Designed according to current AASHTO Standard and Interim Specifications.  
 Reinforcing steel shall be placed with the center of the outside layer of bars 2" from the surface of the concrete.  
 All reinforcing steel shall be Grade 60.  
 All concrete shall be Class "C" and shall have a minimum compressive strength of 3000 psi.  
 No bridge rails of any type may be mounted directly to these culvert headwalls.  
 Contractor shall provide bars as needed to support Rebar on inside face of wall.



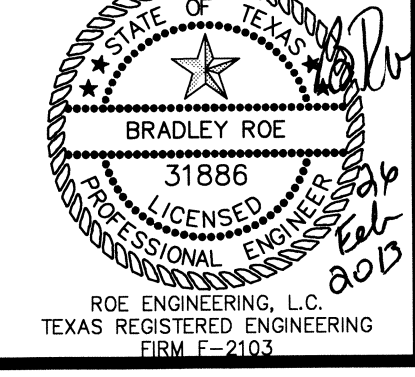
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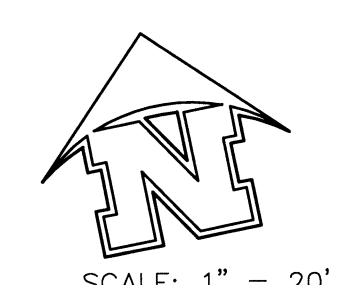
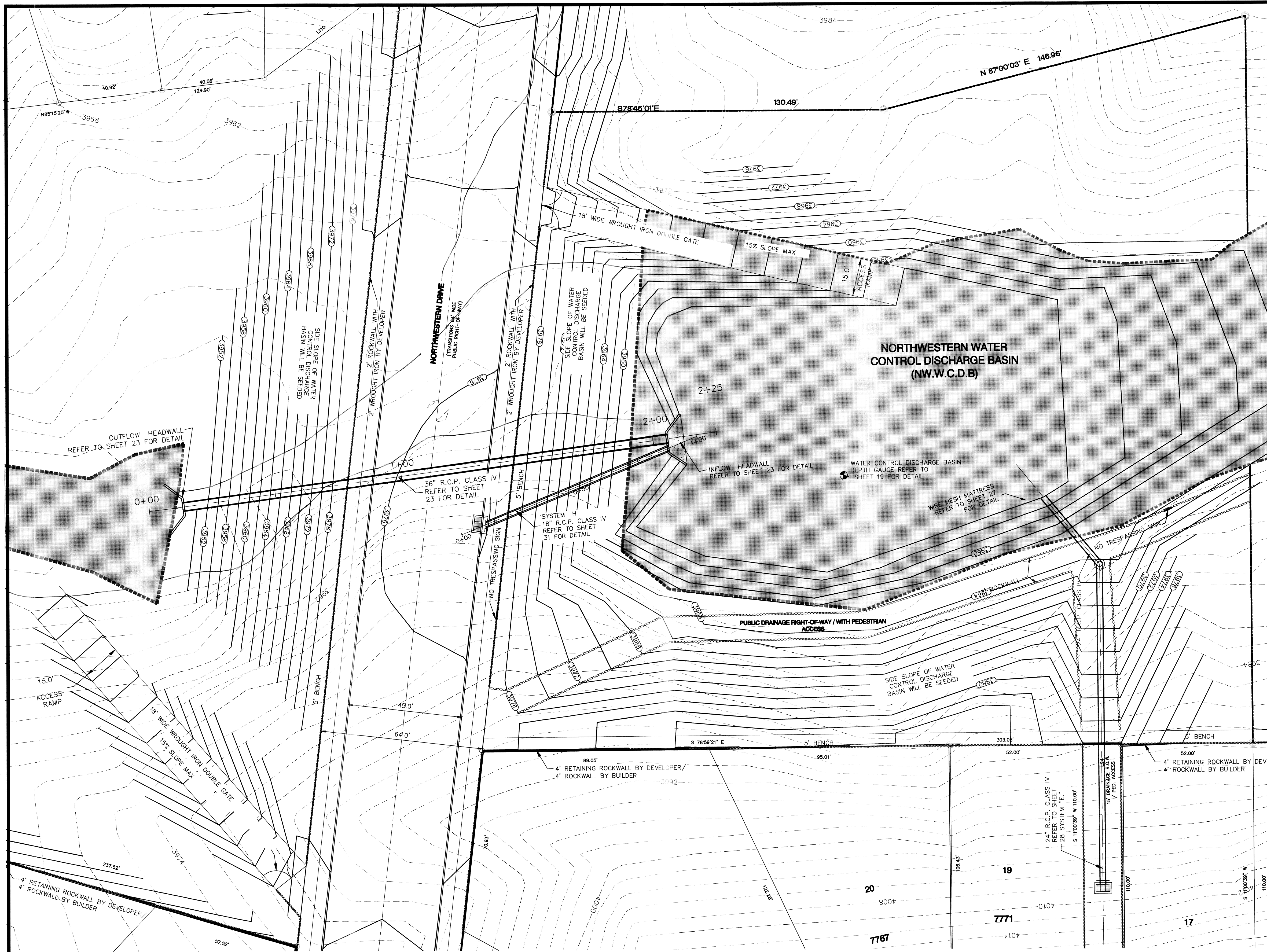
LEGEND	DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
44.51 TC PROPOSED TOP OF CURB ELEVATION	9/4/12	CITY COMMENTS	STAFF	N/S MONUMENT CH201 1980 (P.C. 260444)	HOR: N/A VER: N/A
44.34 TRC PROPOSED TOP OF ROLLER CURB ELEVATION	9/20/12	CITY COMMENTS	STAFF	LOCATION AS PER NATIONAL GEODETIC SURVEY 1983: LOCATED ABOUT 1.25 MILES EAST OF THE GRAND 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	W.O. 011509-1 A EH-3
44.01 PV PROPOSED PAVEMENT ELEVATION				SECONDARY BENCHMARK	DATE: NOVEMBER, 2011
EXISTING GRADE				EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHES DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTLEO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTLEO HEIGHTS UNIT ONE. ELEVATION: 3857.21	DESIGN BY: STAFF
PROPOSED TOP OF CURB GRADE				N.A. V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	DRAWN BY: I.D.R.
SUBDIVISION BOUNDARY LINE					CHKD. BY: H.P.
PROPOSED COUNTY MONUMENT					APPD. BY: BR
STREET CENTERLINE					
2% SLOPE					
STREET CROSS SLOPE					
STATION NUMBER					

LEGEND	DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
44.51 TC PROPOSED TOP OF CURB ELEVATION	9/4/12	CITY COMMENTS	STAFF	N/S MONUMENT CH201 1980 (P.C. 260444)	HOR: N/A VER: N/A
44.34 TRC PROPOSED TOP OF ROLLER CURB ELEVATION	9/20/12	CITY COMMENTS	STAFF	LOCATION AS PER NATIONAL GEODETIC SURVEY 1983: LOCATED ABOUT 1.25 MILES EAST OF THE GRAND 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	W.O. 011509-1 A EH-3
44.01 PV PROPOSED PAVEMENT ELEVATION				SECONDARY BENCHMARK	DATE: NOVEMBER, 2011
EXISTING GRADE				EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHES DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTLEO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTLEO HEIGHTS UNIT ONE. ELEVATION: 3857.21	DESIGN BY: STAFF
PROPOSED TOP OF CURB GRADE				N.A. V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	DRAWN BY: I.D.R.
SUBDIVISION BOUNDARY LINE					CHKD. BY: H.P.
PROPOSED COUNTY MONUMENT					APPD. BY: BR
STREET CENTERLINE					
2% SLOPE					
STREET CROSS SLOPE					
STATION NUMBER					

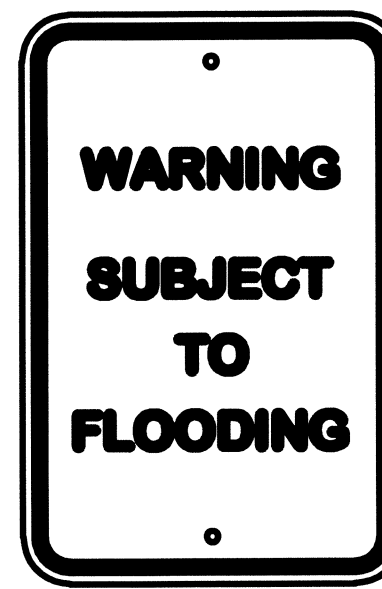


NW. W. C. D. B. DETAIL  
**ENCHANTED HILLS UNIT THREE**  
**FLOW PATH 42-B**  
**NORTHWESTERN WATER CONTROL DISCHARGE BASIN**

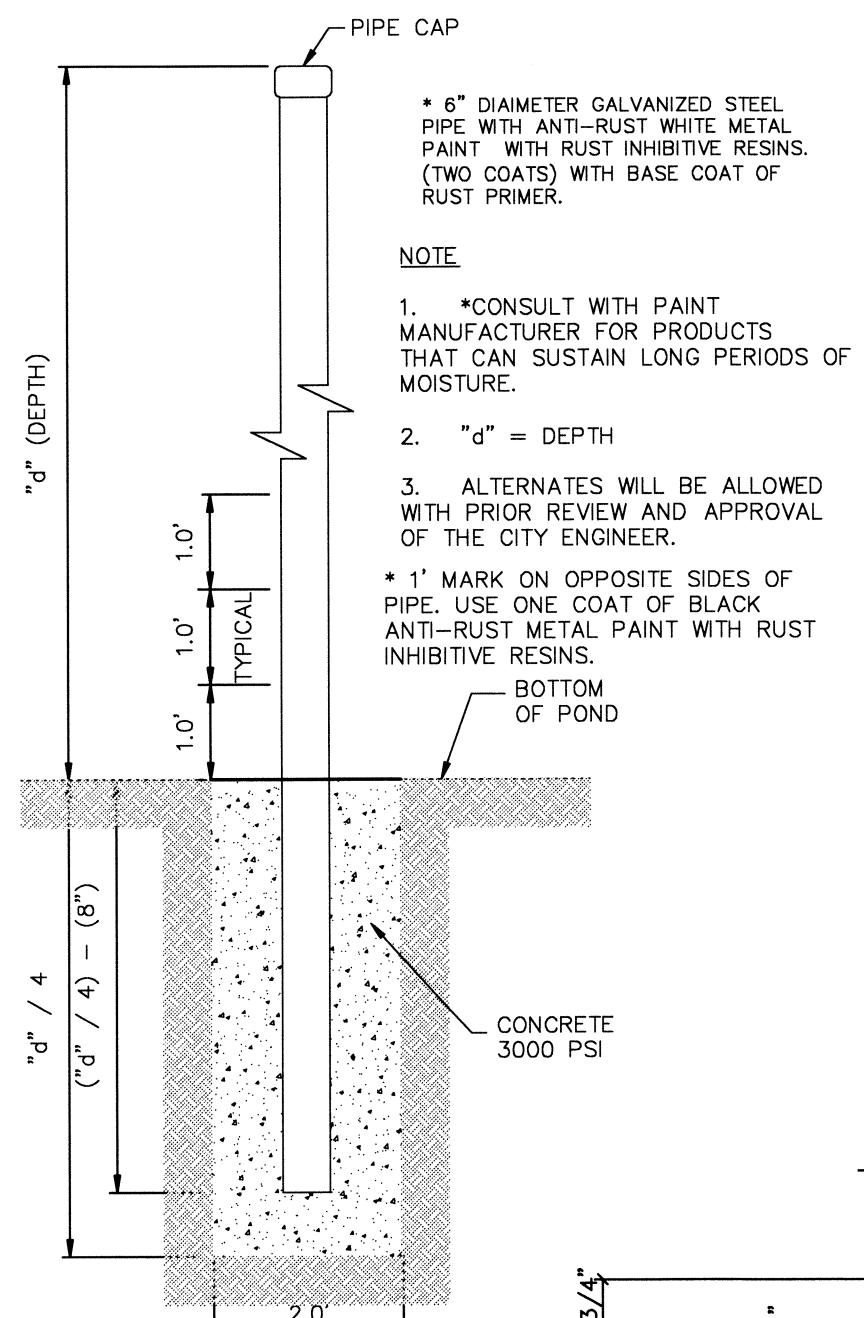
**ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT**  
 bhpRoe Engineering, L.C.  
 601 N. Cotton St. Suite No.6 El Paso, Tx, 79902  
 (915) 533-1418 - FAX: (915) 533-4972  
 e-mail: roeeng@swbell.net  
 ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING  
 SHEET 18 OF 77



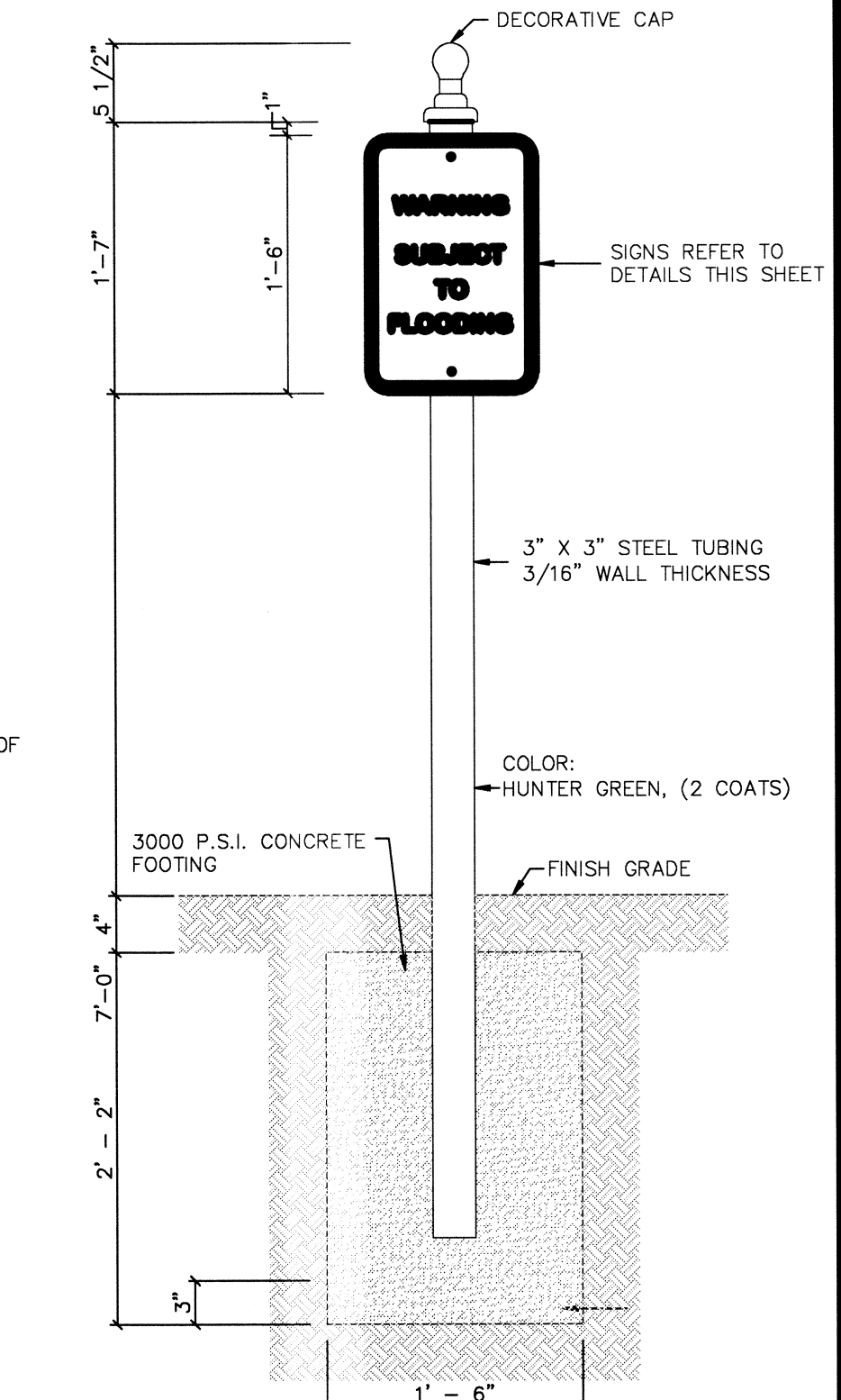
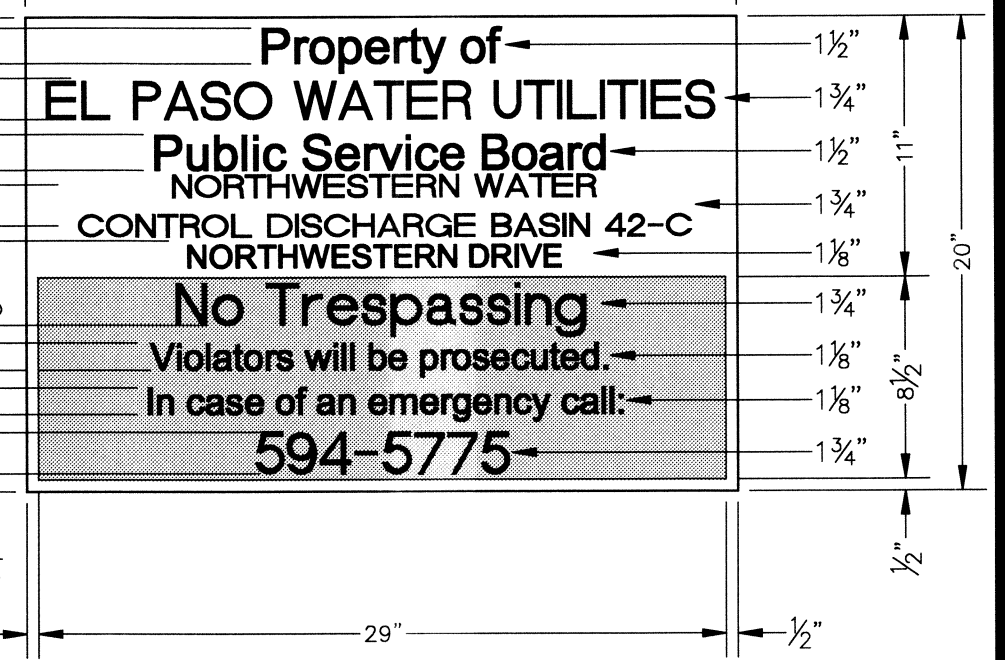
**GENERAL NOTES:**  
 1. SIGN MATERIAL TO BE 16 GAUGE GALVANIZED SHEET METAL.  
 2. TOP PART OF SIGN SHALL SHOW BLACK LETTERS ON A WHITE BACKGROUND.  
 3. BOTTOM PART OF SIGN SHALL SHOW WHITE LETTERS ON A BLACK BACKGROUND.



**WARNING SUBJECT TO FLOODING SIGN DETAIL**  
 SCALE: 1/2" = 1'



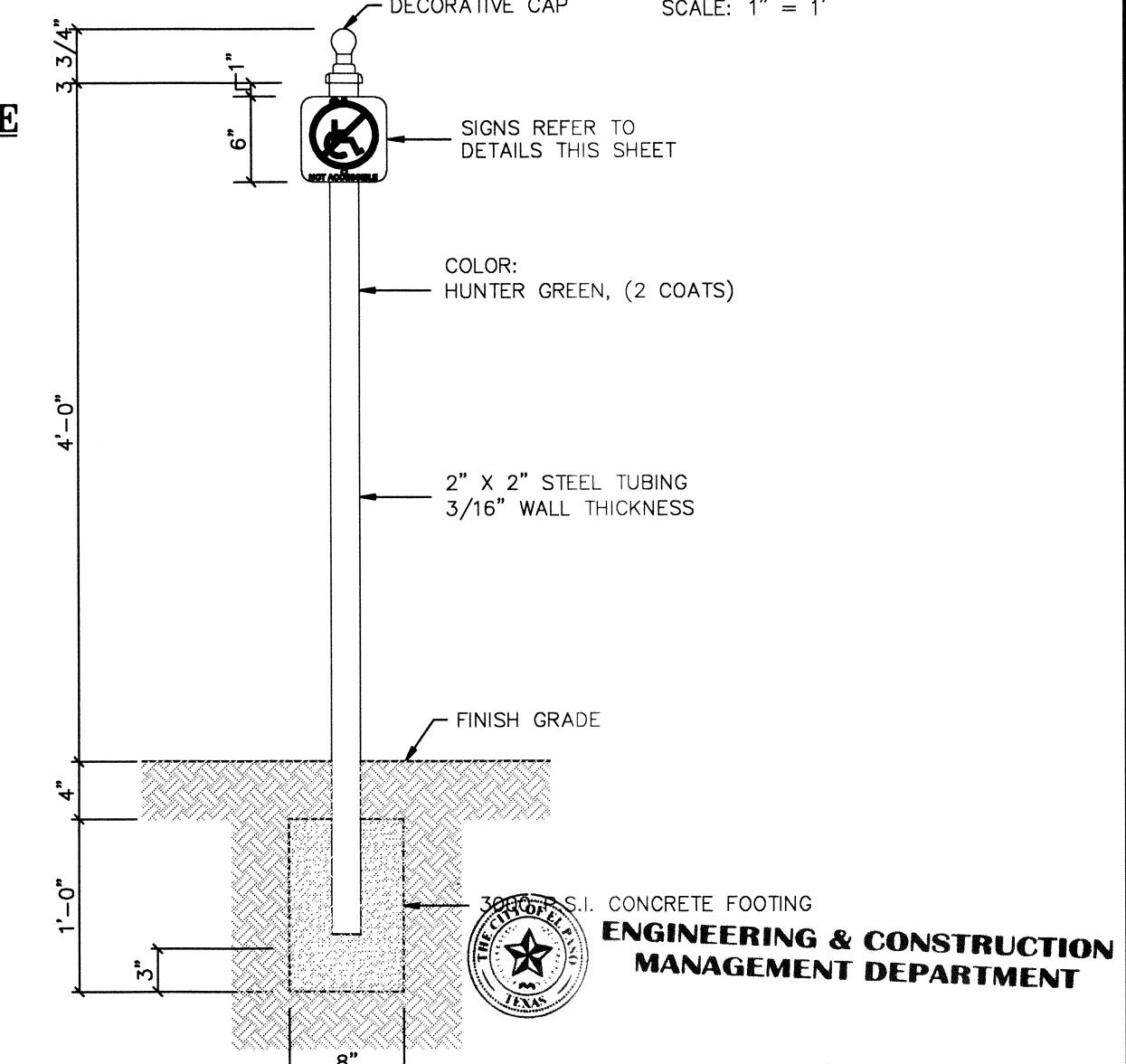
**W.C.D.B. DEPTH GAUGE**  
 SCALE: 1" = 2'



**WARNING SUBJECT TO FLOODING POST DETAIL**  
 SCALE: 1" = 1'



**NOT ACCESSIBLE SIGN DETAIL**  
 SCALE: 1/2" = 1'



**NOT ACCESSIBLE POST DETAIL**

**LEGEND**

▲	PROPOSED DRAINAGE HIGH-POINT	▲	PROPOSED CITY MONUMENT
▼	PROPOSED DRAINAGE LOW-POINT	→	PROPOSED DRAINAGE FLOWS
◆	DENOTES EXISTING CITY MONUMENT	→	EXISTING DRAINAGE FLOWS
⊙	DENOTES EXISTING SANITARY SEWER MANHOLE	SS	DENOTES EXISTING SANITARY SEWER LINE
○	EXISTING COUNTOURS	—	PROPOSED TOP OF CURB ELEVATION
○		—	PROPOSED CONTOURS
○		○	PROPOSED RETAINING WALL
○		○	PROPOSED FINISHED GRADE ELEVATION
○		○	PROPOSED FINISHED FLOOR ELEVATION
○		○	EXISTING FLOOD AREA
○		○	PROPOSED FLOOD AREA

**NORTHWESTERN WATER CONTROL DISCHARGE BASIN FLOWPATH 42-C DETAIL**  
 SCALE: 1" = 20'

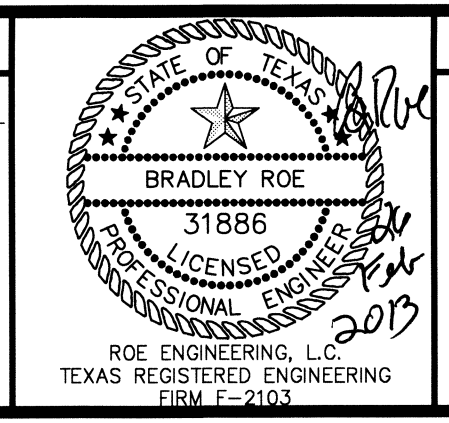
**FLOOD NOTE:**  
 THE ABOVE REFERENCED PROPERTY IS WITHIN ZONE "A" AND ZONE "C" (EXPLANATION: ZONE "A" NO BASE FLOOD ELEVATIONS DETERMINED; EXPLANATION: ZONE "C" AREAS DETERMINED TO BE OUTSIDE THE 500 YEAR FLOODPLAIN) ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER THE UNINCORPORATED AREAS COMMUNITY PANEL NO. 480212 1025 B. (DATED SEPTEMBER 4, 1981).

**LEGEND**

44.51 TC	PROPOSED TOP OF CURB ELEVATION	←	PROPOSED DRAINAGE FLOW
44.34 TRC	PROPOSED TOP OF ROLLVER CURB ELEVATION	—	SUBDIVISION BOUNDARY LINE
44.01 PV	PROPOSED PAVEMENT ELEVATION	▲	PROPOSED COUNTY MONUMENT
		—	STREET CENTERLINE
		2%	STREET CROSS SLOPE

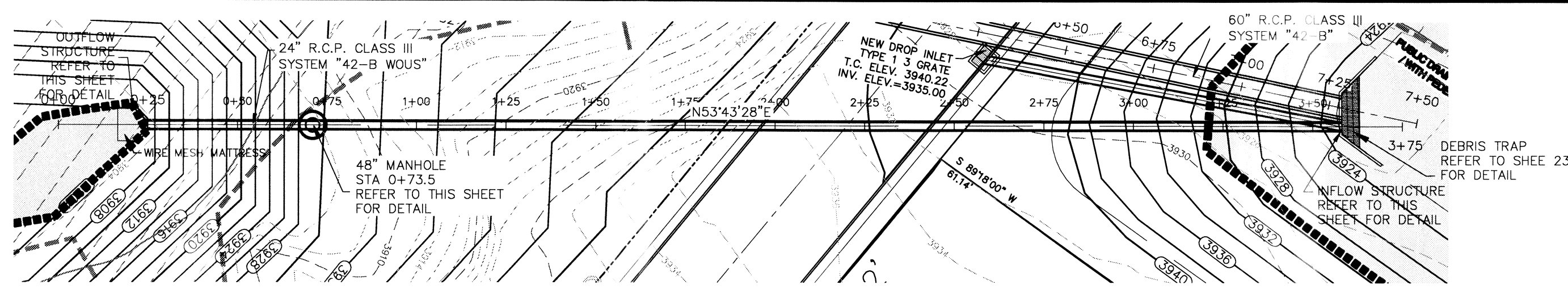
DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	NBS MONUMENT (2010) 1580' (PER GE0444) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981; LOCATED ABOUT 1.25 MILES EAST OF THE RD. GRADE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10, ELEVATION 3946.11 NAVD 88	HOR: 1"=30' VER: 1"=10'
9/20/12	CITY COMMENTS	STAFF	EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND 10111, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE, ELEVATION: 3857.21	

DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	NBS MONUMENT (2010) 1580' (PER GE0444) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981; LOCATED ABOUT 1.25 MILES EAST OF THE RD. GRADE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10, ELEVATION 3946.11 NAVD 88	HOR: 1"=30' VER: 1"=10'
9/20/12	CITY COMMENTS	STAFF	EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND 10111, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE, ELEVATION: 3857.21	



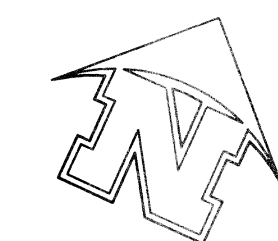
**NW. W. C. D. B. DETAIL**  
**ENCHANTED HILLS UNIT THREE**  
**FLOW PATH 42-C**  
**NORTHWESTERN WATER CONTROL DISCHARGE BASIN**

**REVIEWED**  
**ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT**  
**ROE ENGINEERING, L.L.C.**  
 601 N. Cotton St. Suite No. 6 El Paso, Tx. 79902  
 (915) 533-1418 - FAX: (915) 533-4972  
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 ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING  
 SHEET 19 OF 77

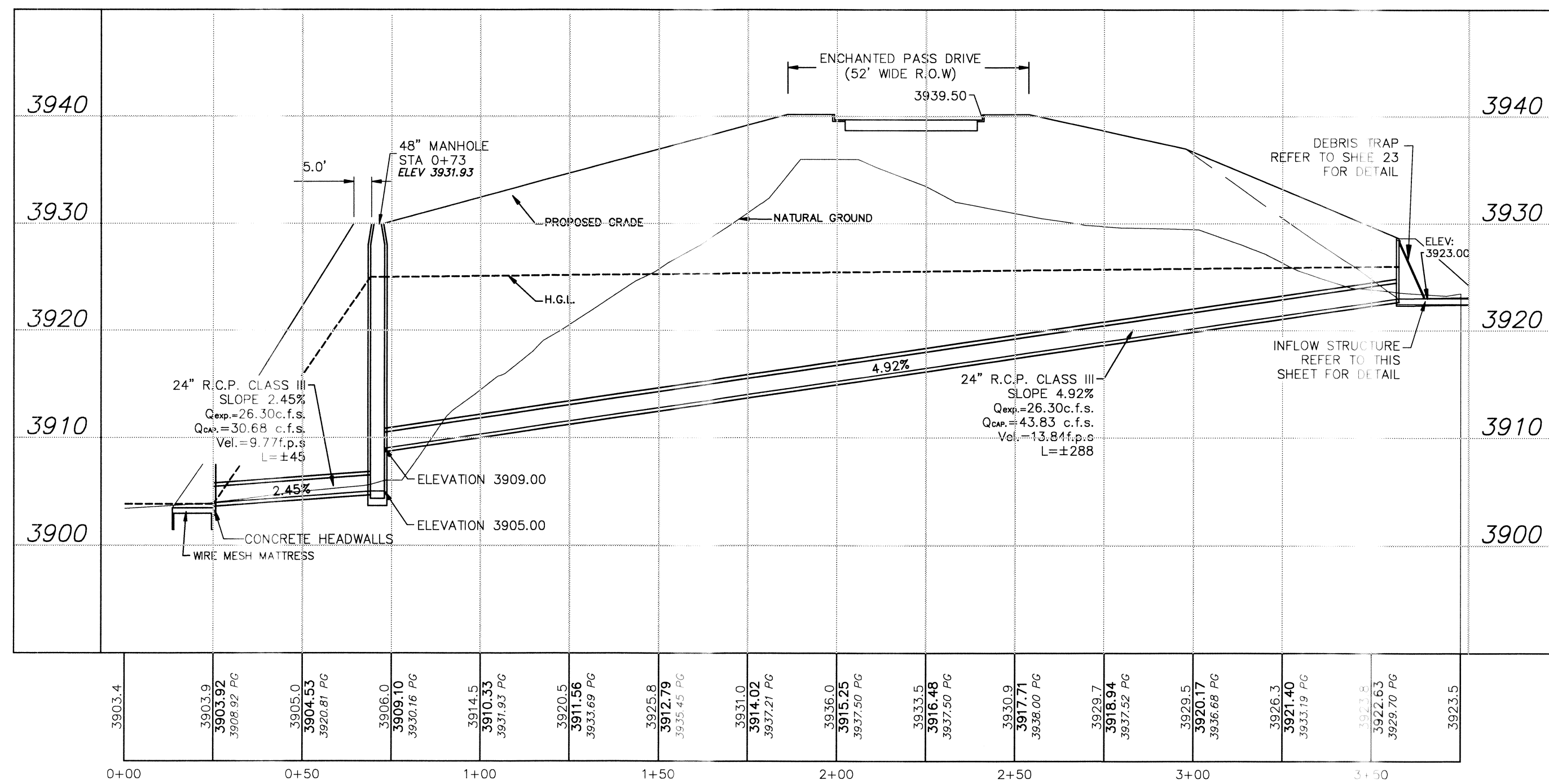


**DRAINAGE SYSTEM "42-B 24" WOUS PIPE" PLAN VIEW**

HOZ. SCALE: 1" = 30'

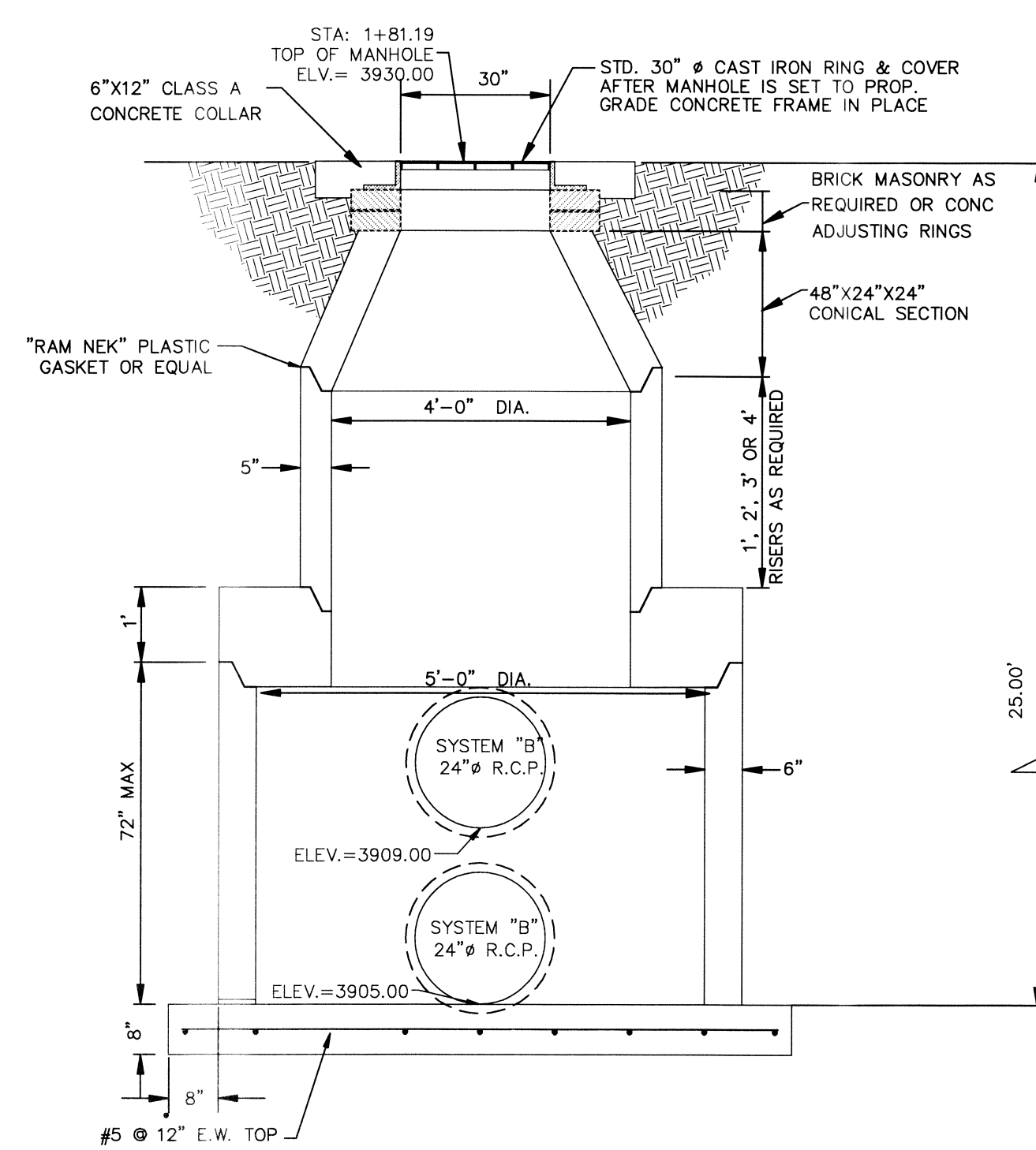


SCALE: 1" = 30'



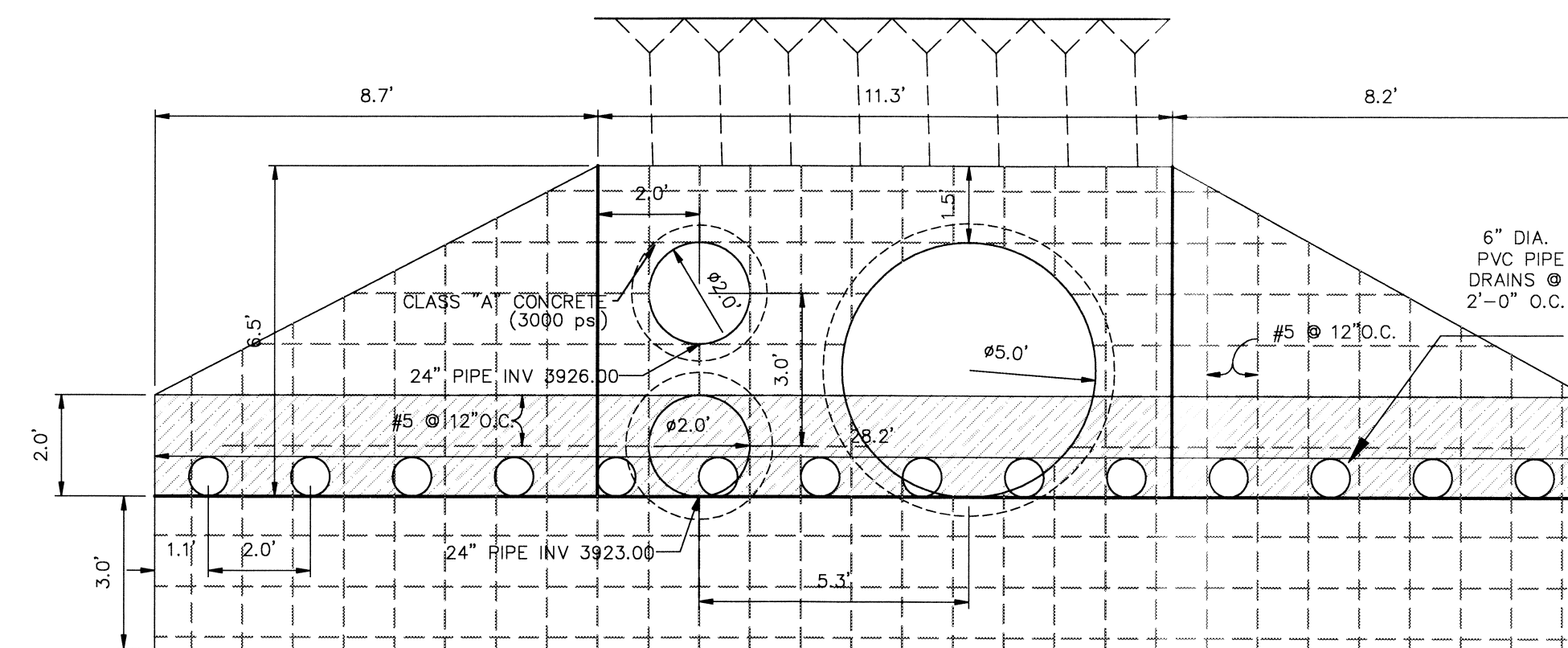
**DRAINAGE SYSTEM "42-B 24" WOUS PIPE" PROFILE**

HOZ. SCALE: 1" = 30'  
VER. SCALE: 1" = 10'



**ENERGY DISSIPATOR MANHOLE #WOUS 48" DIAMETER**

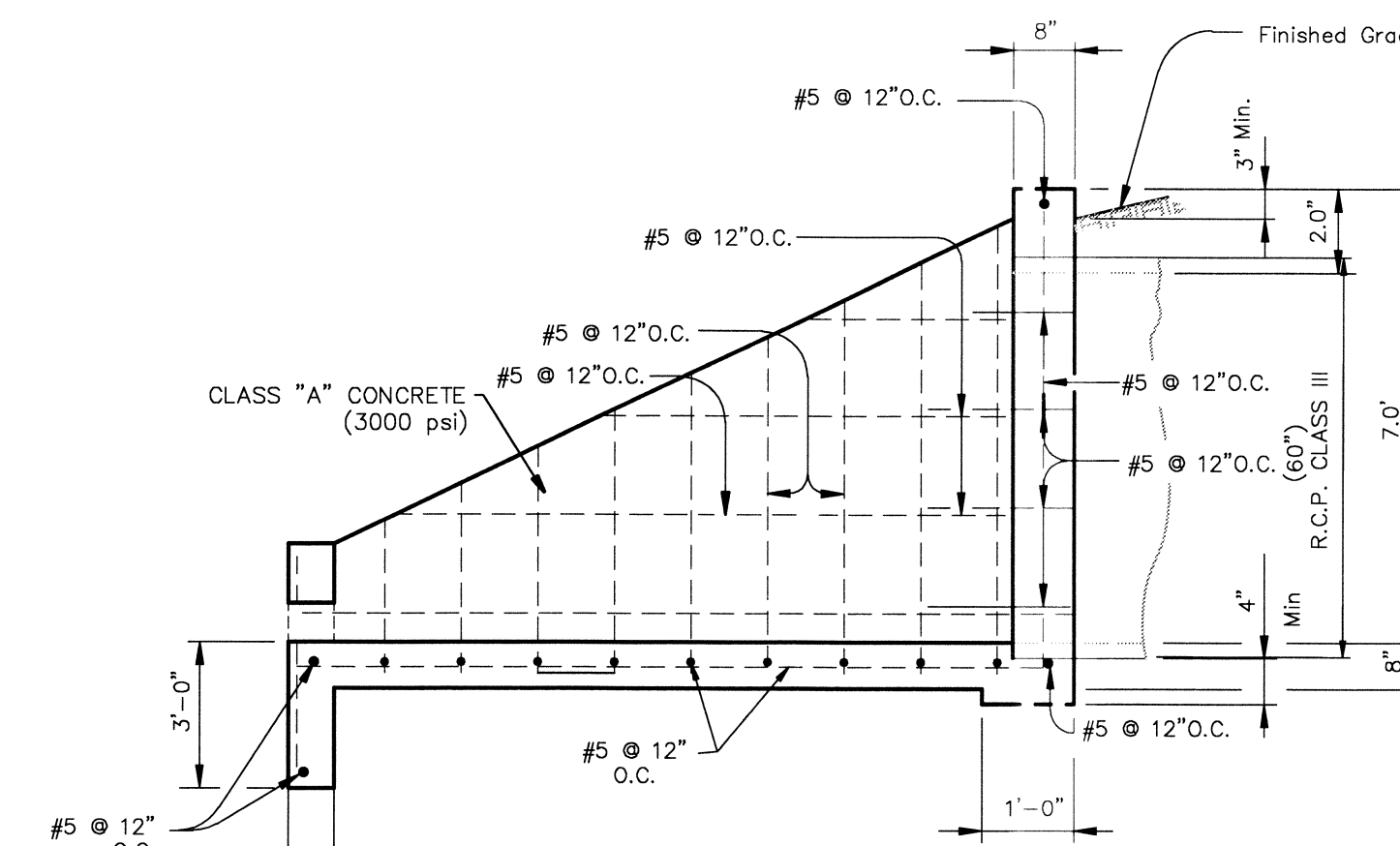
SCALE: N.T.S.



**INFLOW STRUCTURE DETAIL**

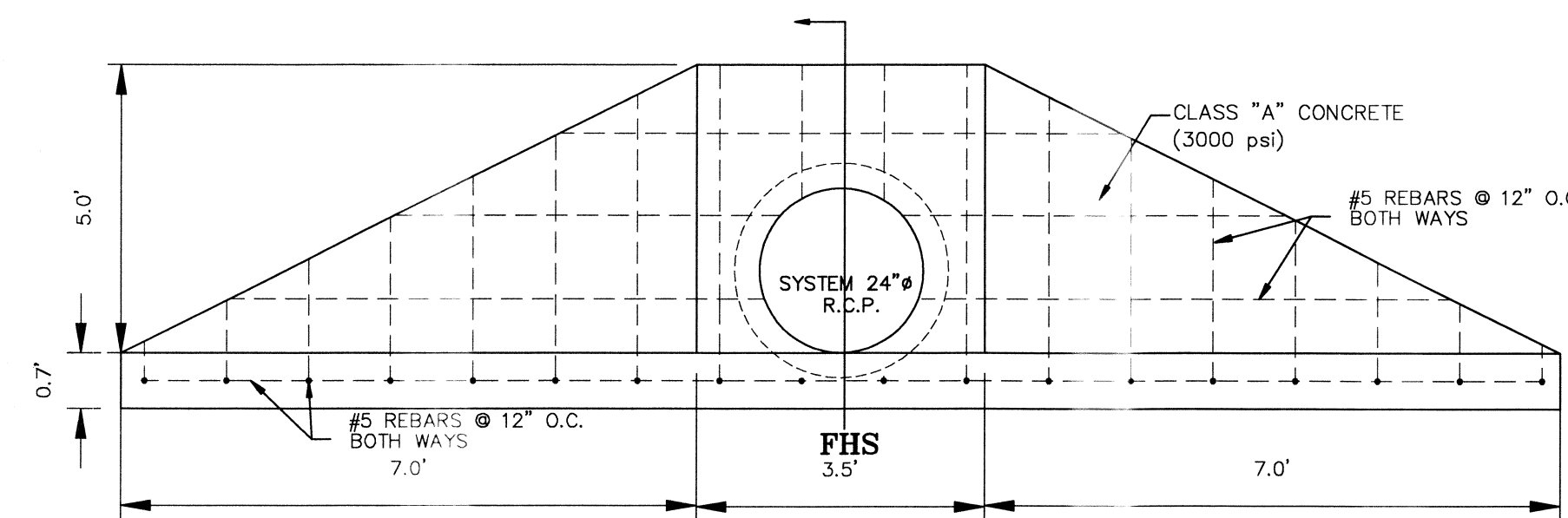
SCALE 1" = 3'

**NOTE:**  
THE DEBRIS TRAP/SAFETY GRATE WILL BE PROVIDED ON THE INFLOW STRUCTURES FOR BOTH THE 42-B SYSTEM AND THE 42-C SYSTEM



**SECTION IN60C TYPICAL WING ELEVATION**

SCALE N.T.S.

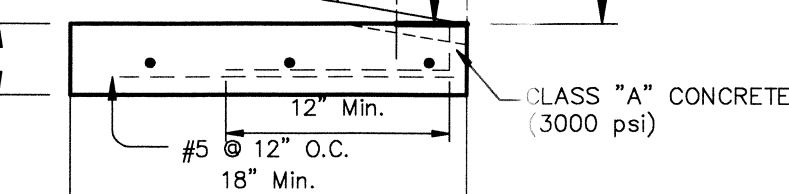


**24" OUTFLOW STRUCTURE DETAIL**

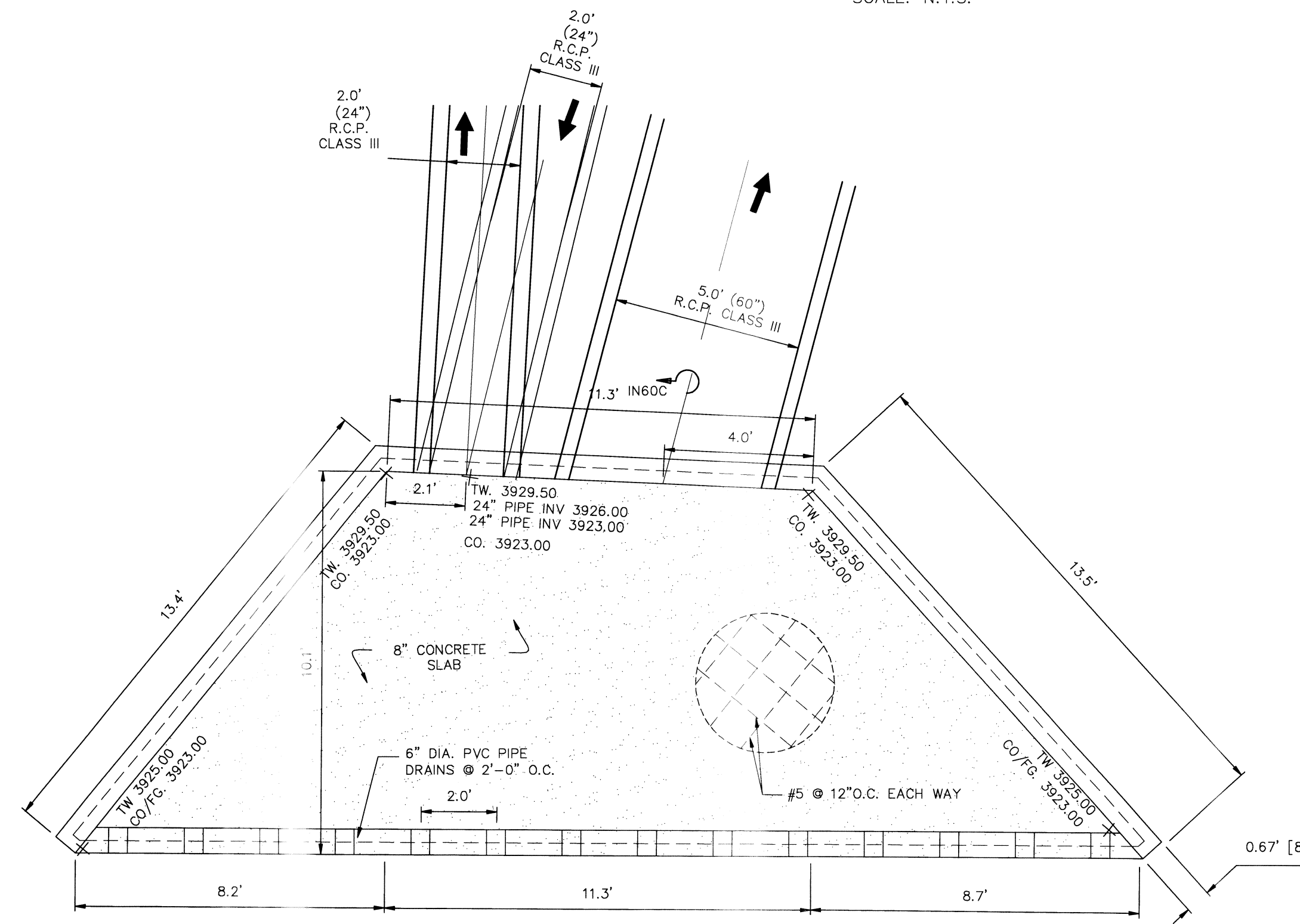
SCALE 1" = 2'

**GENERAL NOTES:**

- Designed according to current AASHTO Standard and Interim Specifications.
- Reinforcing steel shall be placed with the center of the outside layer of bars 2" from the surface of the concrete.
- All reinforcing steel shall be Grade 60.
- All concrete shall be Class "C" and shall have a minimum compressive strength of 3000 psi.
- No bridge rails of any type may be mounted directly to these culvert headwalls.
- Contractor shall provide bars as needed to support Rebar on inside face of wall.



**SECTION FHS-FHS**



**INFLOW STRUCTURE DETAIL**

SCALE 1" = 3'

THIS SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY BRADLEY ROE, P.E. 31866 ON SEPTEMBER 20, 2012. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO RESPONDING ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.



**REVIEWED**

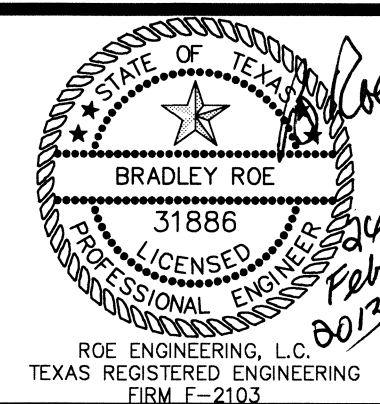
LEGEND	
	PROPOSED DRAINAGE HIGH-POINT
	PROPOSED DRAINAGE LOW-POINT
	DENOTES EXISTING CITY MONUMENT
	DENOTES EXISTING SANITARY SEWER
	PROPOSED RETAINING WALL
	PROPOSED FINISHED GRADE ELEVATION
	PROPOSED FINISHED FLOOR ELEVATION
	EXISTING FLOOD AREA
	PROPOSED CITY MONUMENT
	PROPOSED DRAINAGE FLOWS
	EXISTING DRAINAGE FLOWS
	DENOTES EXISTING SANITARY SEWER LINE
	PROPOSED TOP OF CURB ELEVATION
	EXISTING CONTOURS
	PROPOSED CONTOURS
	PROPOSED FLOOD AREA

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**FLOOD NOTE:**  
THE ABOVE REFERENCED PROPERTY IS WITHIN ZONE "A" AND ZONE "X" (EXPLANATION: ZONE "A" NO BASE FLOOD ELEVATIONS DETERMINED; EXPLANATION: ZONE "X" AREAS DETERMINED TO BE OUTSIDE THE 500 YEAR FLOODPLAIN) ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER THE UNINCORPORATED AREAS COMMUNITY PANEL NO. 480212 000'S B, DATED SEPTEMBER 4, 1991.

LEGEND	DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
44.51 TC PROPOSED TOP OF CURB ELEVATION	9/4/12	CITY COMMENTS	STAFF	THIS MONUMENT "MONUMENT 100" (24" R.C.P. CLASS III) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED APPROX 1.25 MILES EAST OF THE "HO" GRANGE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	HOR: 1"=30' VER: 1"=10'
44.34 TRC PROPOSED TOP OF ROLLOVER CURB ELEVATION	9/20/12	CITY COMMENTS	STAFF	EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 2, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR
44.01 PV PROPOSED PAVEMENT ELEVATION				N.A.V.D.88 DATUM -10.18 = CITY OF EL PASO DATUM	
44.01 BV PROPOSED GRADE					

LEGEND	DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
44.51 TC PROPOSED TOP OF CURB ELEVATION	9/4/12	CITY COMMENTS	STAFF	THIS MONUMENT "MONUMENT 100" (24" R.C.P. CLASS III) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED APPROX 1.25 MILES EAST OF THE "HO" GRANGE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	HOR: 1"=30' VER: 1"=10'
44.34 TRC PROPOSED TOP OF ROLLOVER CURB ELEVATION	9/20/12	CITY COMMENTS	STAFF	EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 2, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR
44.01 PV PROPOSED PAVEMENT ELEVATION				N.A.V.D.88 DATUM -10.18 = CITY OF EL PASO DATUM	
44.01 BV PROPOSED GRADE					



**PLAN AND PROFILE**

**ENCHANTED HILLS UNIT THREE**

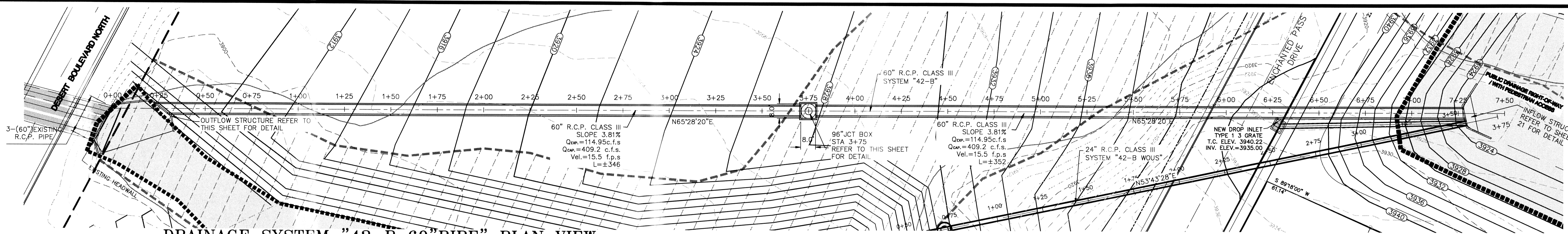
42-B 24" W.O.U.S. SYSTEM  
PLAN AND PROFILE

**Roe Engineering, L.C.**

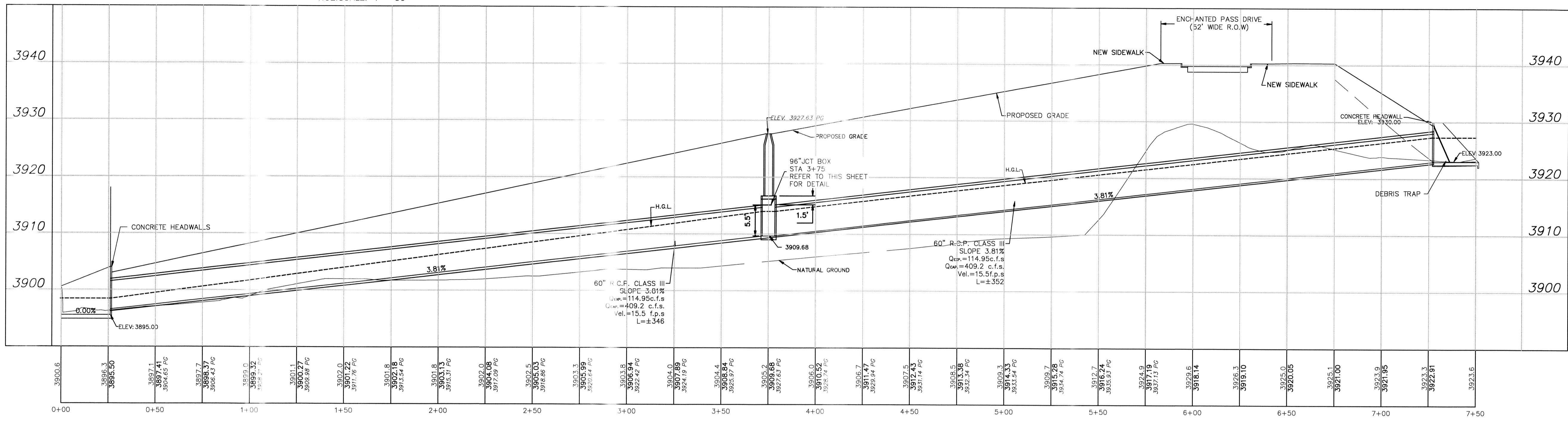
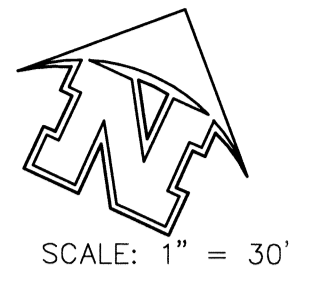
601 N. Cotton St. Suite No. 6 El Paso, TX, 79902  
(915) 589-1418 FAX: (915) 589-4972  
e-mail: roeeng@bellsouth.net

ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

SHEET 20 OF 77



**DRAINAGE SYSTEM "42-B 60" PIPE" PLAN VIEW**  
HOZ. SCALE: 1" = 30'



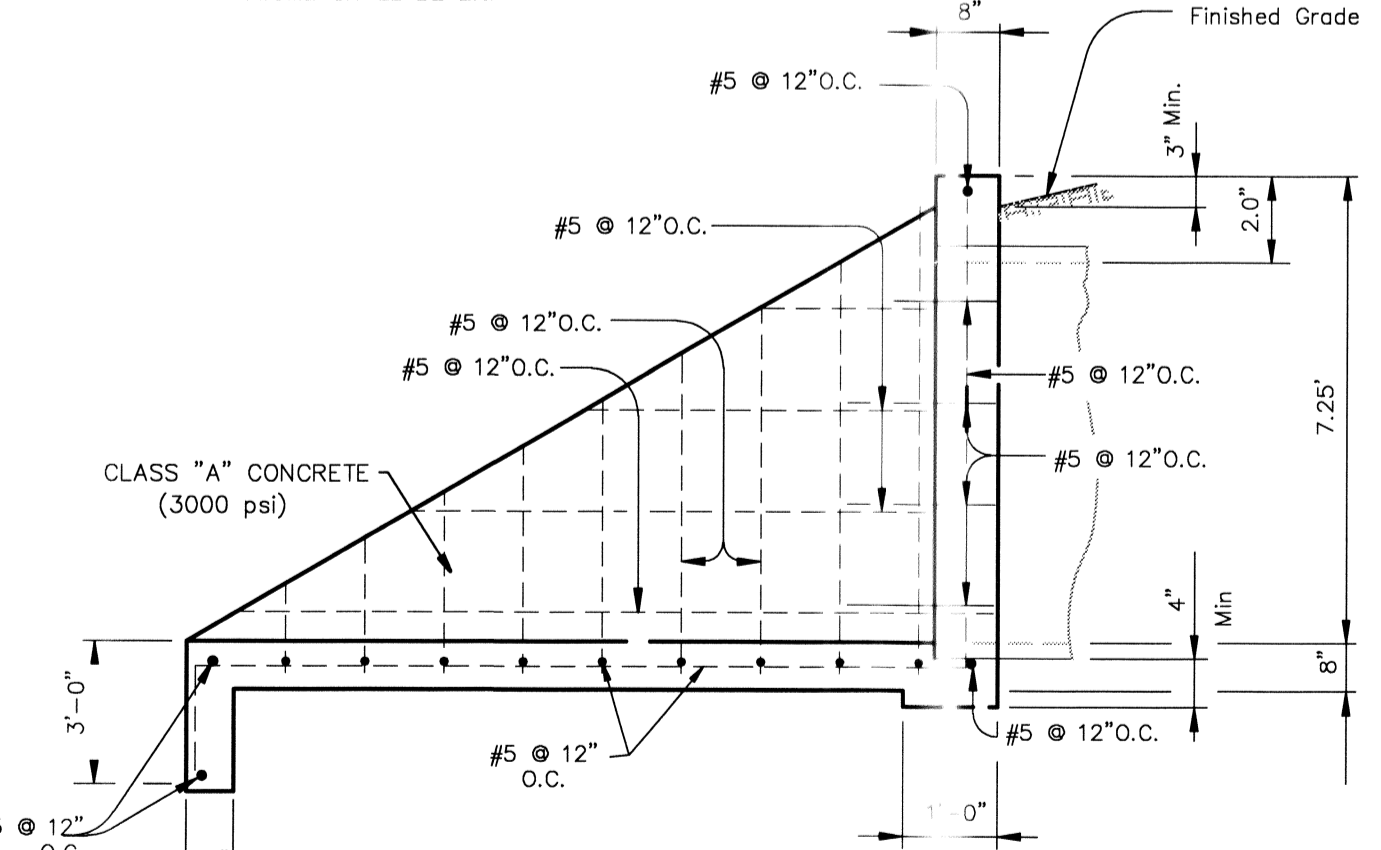
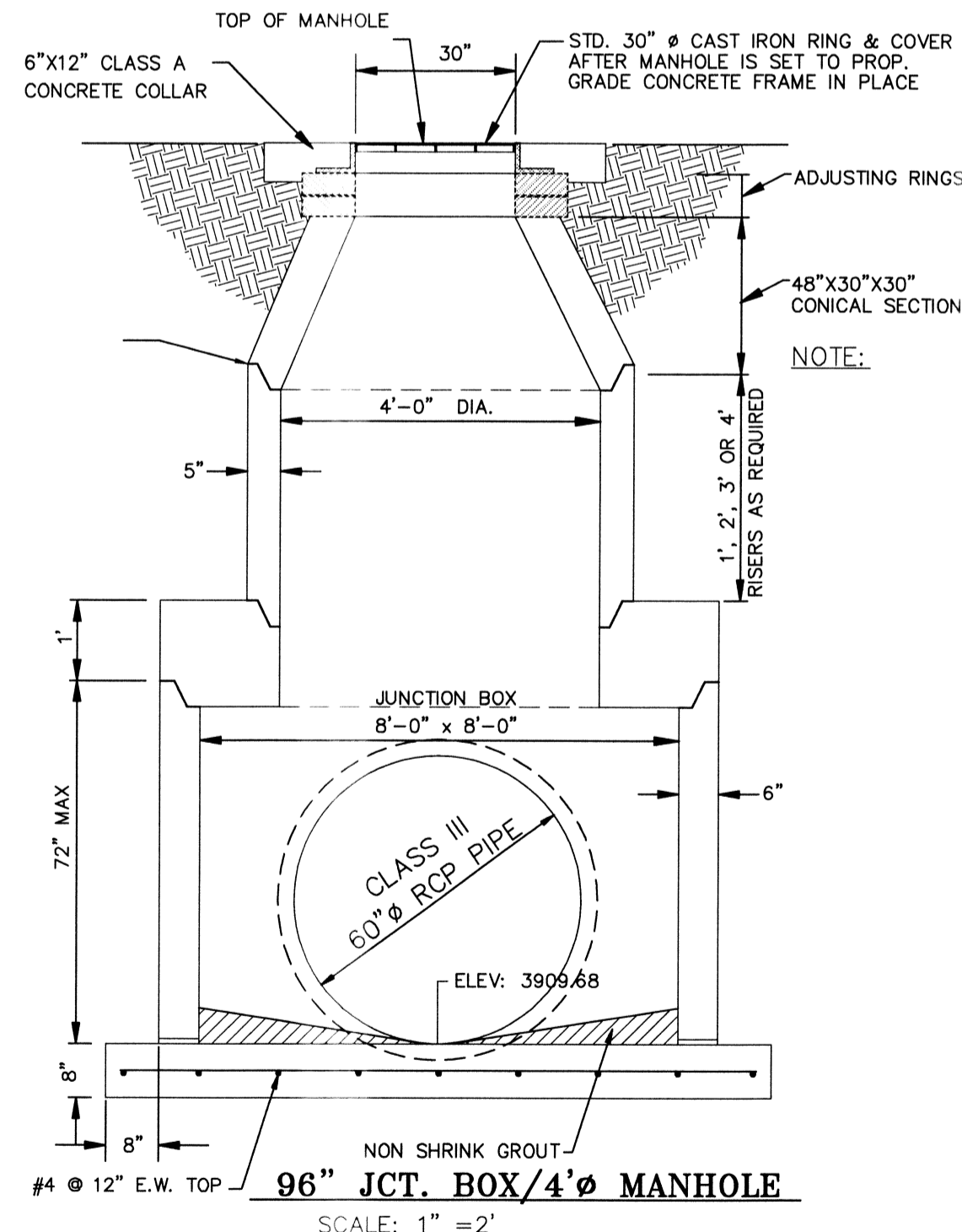
**DRAINAGE SYSTEM "42-B 60 PIPE" PROFILE**  
HOZ. SCALE: 1" = 30'  
VER. SCALE: 1" = 10'

**LEGEND**

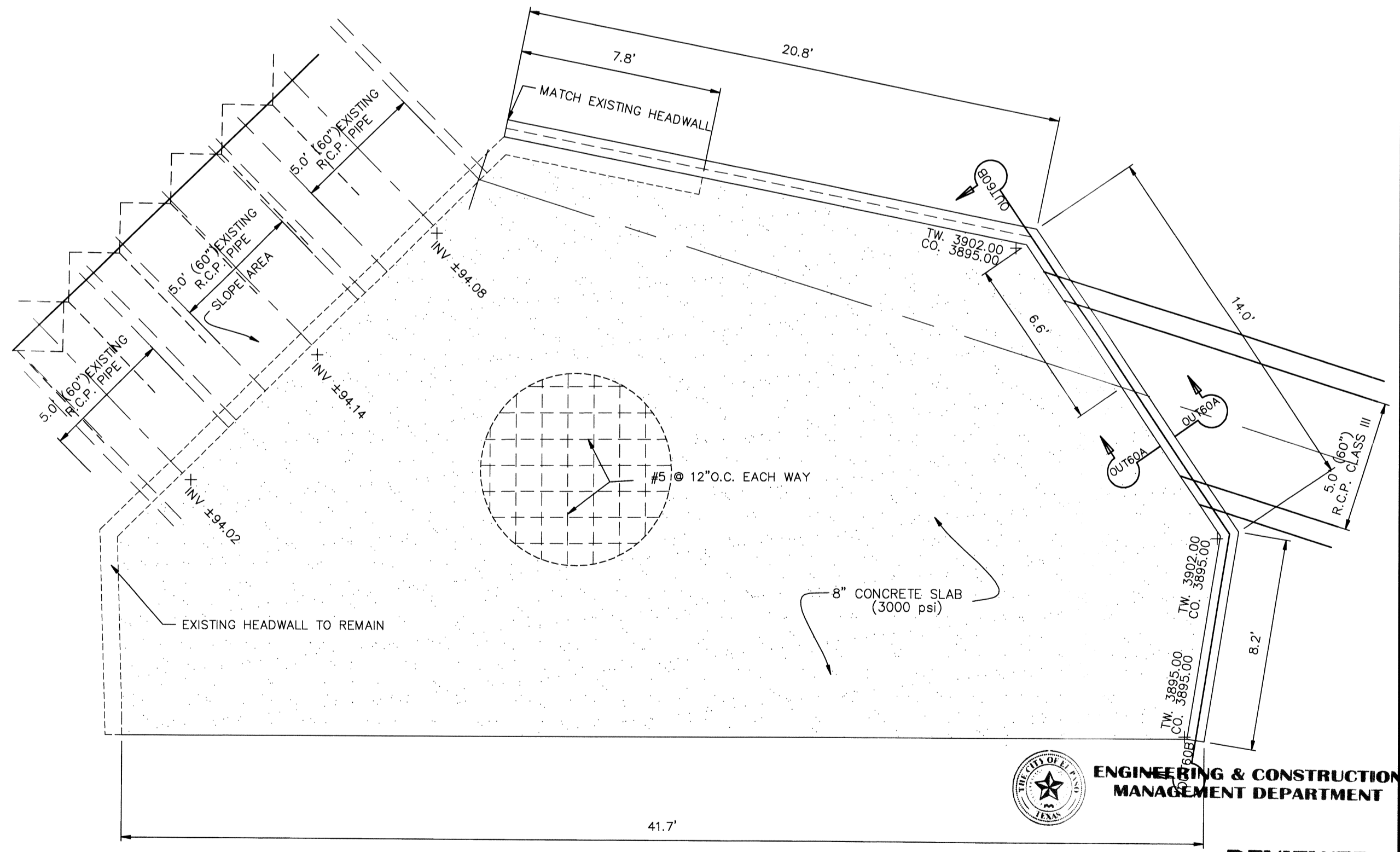
- ▲ PROPOSED DRAINAGE HIGH-POINT
- ▼ PROPOSED DRAINAGE LOW-POINT
- DENOTES EXISTING CITY MONUMENT
- DENOTES EXISTING SANITARY SEWER MANHOLE
- PROPOSED RETAINING WALL
- FG=4037.68 PROPOSED FINISHED GRADE ELEVATION
- FF=4038.35 PROPOSED FINISHED FLOOR ELEVATION
- ▨ EXISTING FLOOD AREA
- ▲ PROPOSED CITY MONUMENT
- PROPOSED DRAINAGE FLOWS
- EXISTING DRAINAGE FLOWS
- SS DENOTES EXISTING SANITARY SEWER LINE
- SS 35.32 TC PROPOSED TOP OF CURB ELEVATION
- EXISTING COUNTOURS
- PROPOSED COUNTOURS
- ▨ PROPOSED FLOOD AREA

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%.

**GENERAL NOTES:**  
Designed according to current AASHTO Standard and Interim Specifications.  
Reinforcing steel shall be placed with the center of the outside layer of bars 3" from the surface of the concrete.  
All reinforcing steel shall be Grade 60.  
All concrete shall be Class "C" and shall have a minimum compressive strength of 3000 psi.  
No bridge rails of any type may be mounted directly to these culvert headwalls.  
Contractor shall provide bars as needed to support Rebar on inside face of wall.



**SECTION OUT60A**  
SCALE N.T.S.



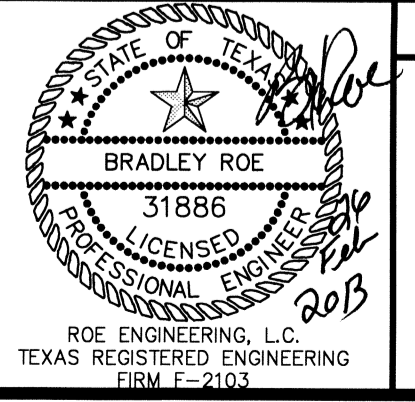
**OUTFLOW STRUCTURE DETAIL**  
SCALE 1" = 4'

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**FLOOD NOTE:**  
THE ABOVE REFERENCED PROPERTY IS WITHIN ZONE "A" AND "ZONE X" (EXPLANATION: ZONE "A" NO BASE FLOOD ELEVATIONS DETERMINED; EXPLANATION: ZONE "X" AREAS DETERMINED TO BE OUTSIDE THE 100 YEAR FLOODPLAIN, ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER THE UNINCORPORATED AREAS COMMUNITY PANEL NO. 4801212-1025-B, DATED SEPTEMBER 4, 1991.

DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	N2S MONUMENT (ORNI 1980) (PID: 063444)	HOR: 1"=30' VER: 1"=10'
9/20/12	CITY COMMENTS	STAFF	LOCATION AS PER NATIONAL GEODETIC SURVEY 1981; LOCATED ABOUT 1.25 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10, ELEVATION 3948.11 NAVD 88	FILE NAME: W.O. 011509-1 A EH-3
			EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHIS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANFIELD HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANFIELD HEIGHTS UNIT ONE, ELEVATION 3887.21	DATE: NOVEMBER, 2011
			N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	DESIGN BY: STAFF
				DRAWN BY: I.D.R
				CHKD. BY: H.P.
				APPD. BY: BR

DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	N2S MONUMENT (ORNI 1980) (PID: 063444)	HOR: 1"=30' VER: 1"=10'
9/20/12	CITY COMMENTS	STAFF	LOCATION AS PER NATIONAL GEODETIC SURVEY 1981; LOCATED ABOUT 1.25 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10, ELEVATION 3948.11 NAVD 88	FILE NAME: W.O. 011509-1 A EH-3
			EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHIS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANFIELD HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANFIELD HEIGHTS UNIT ONE, ELEVATION 3887.21	DATE: NOVEMBER, 2011
			N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	DESIGN BY: STAFF
				DRAWN BY: I.D.R
				CHKD. BY: H.P.
				APPD. BY: BR



STORM DRAINAGE PLAN AND PROFILE

**ENCHANTED HILLS UNIT THREE**

**42-B MAIN SYSTEM PLAN AND PROFILE**

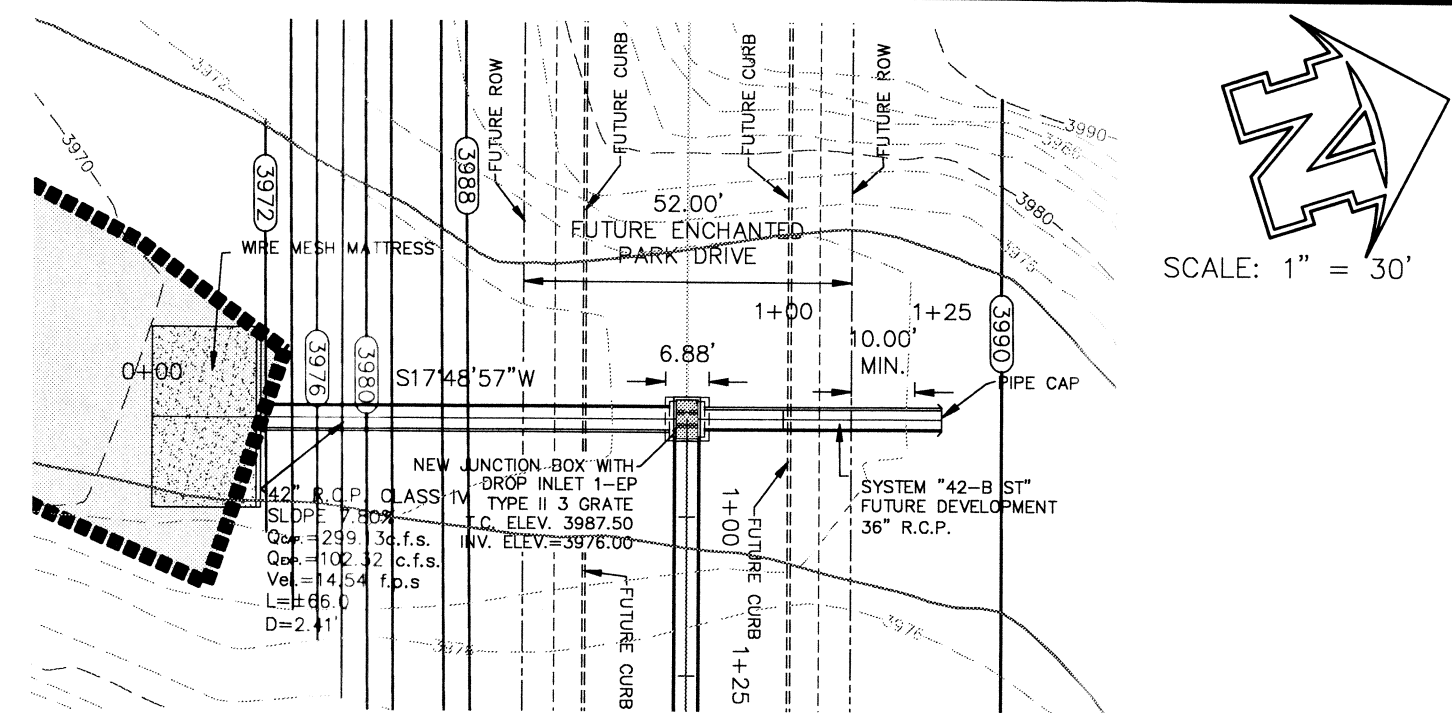
**ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT**

**REVIEWED**

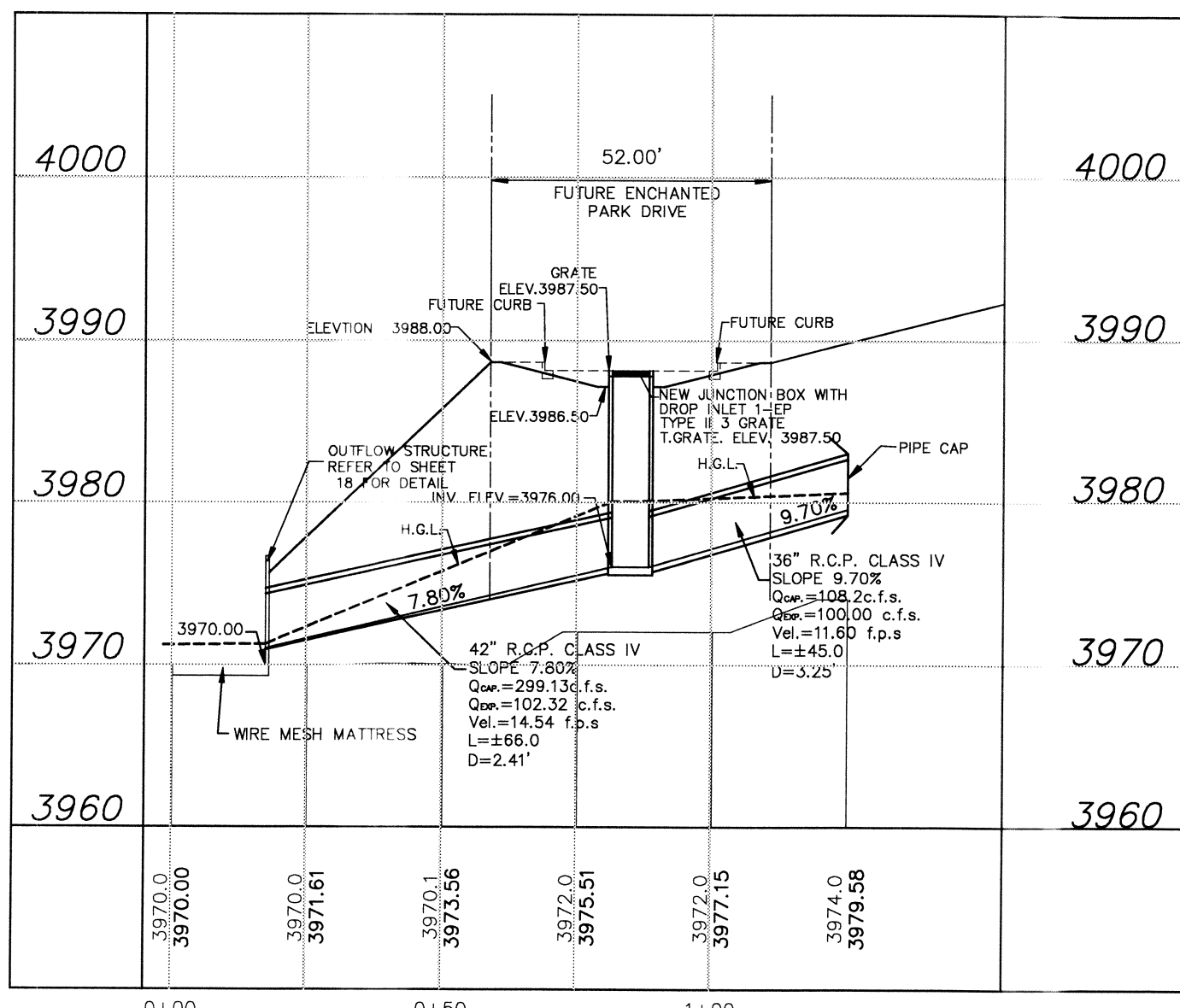
**Roe Engineering, L.C.**  
601 N. Cotton St. Suite No. 8 El Paso, Tx. 79902  
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e-mail: roeeng@earthlink.net

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SHEET 21 OF 77

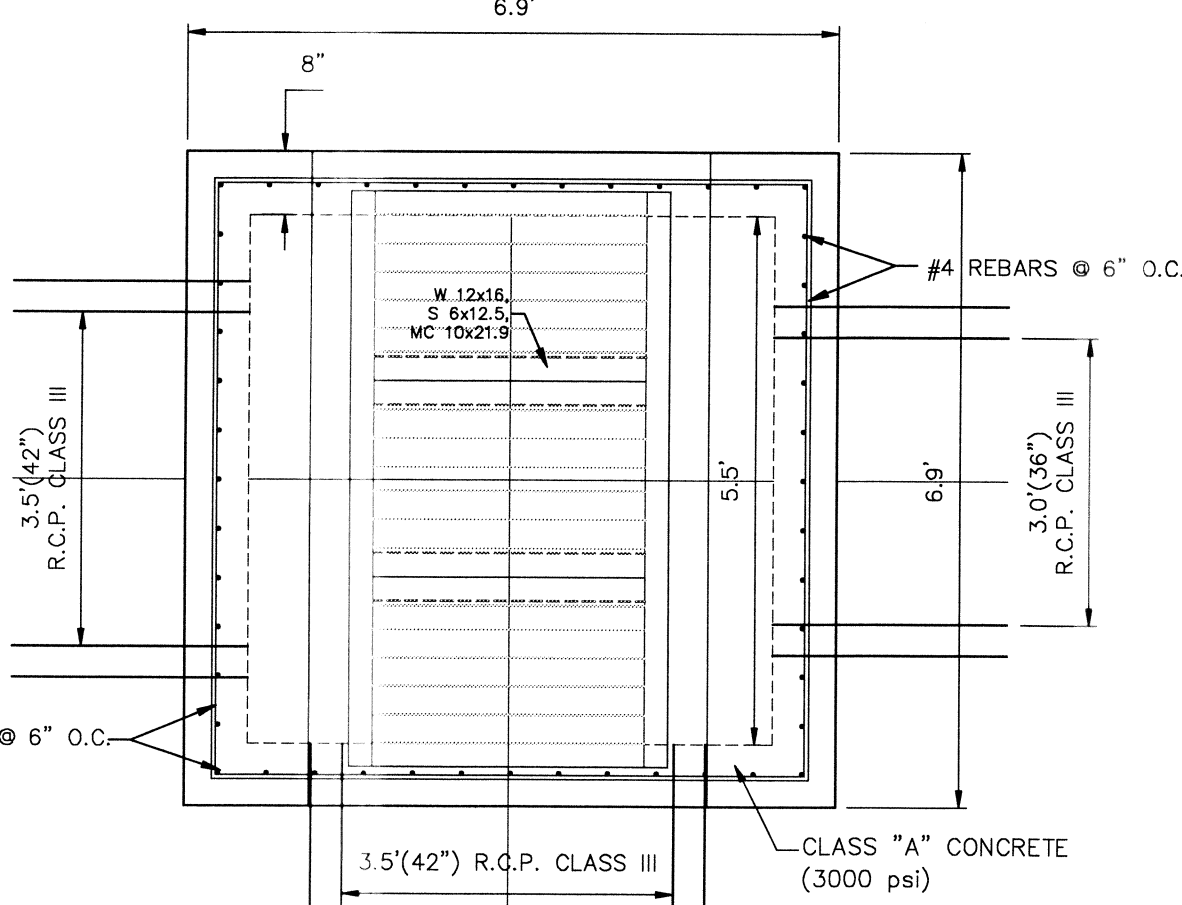


**DRAINAGE SYSTEM "42-B FUTURE DEVELOPMENT" PLAN**  
HOR. SCALE: 1"=30'



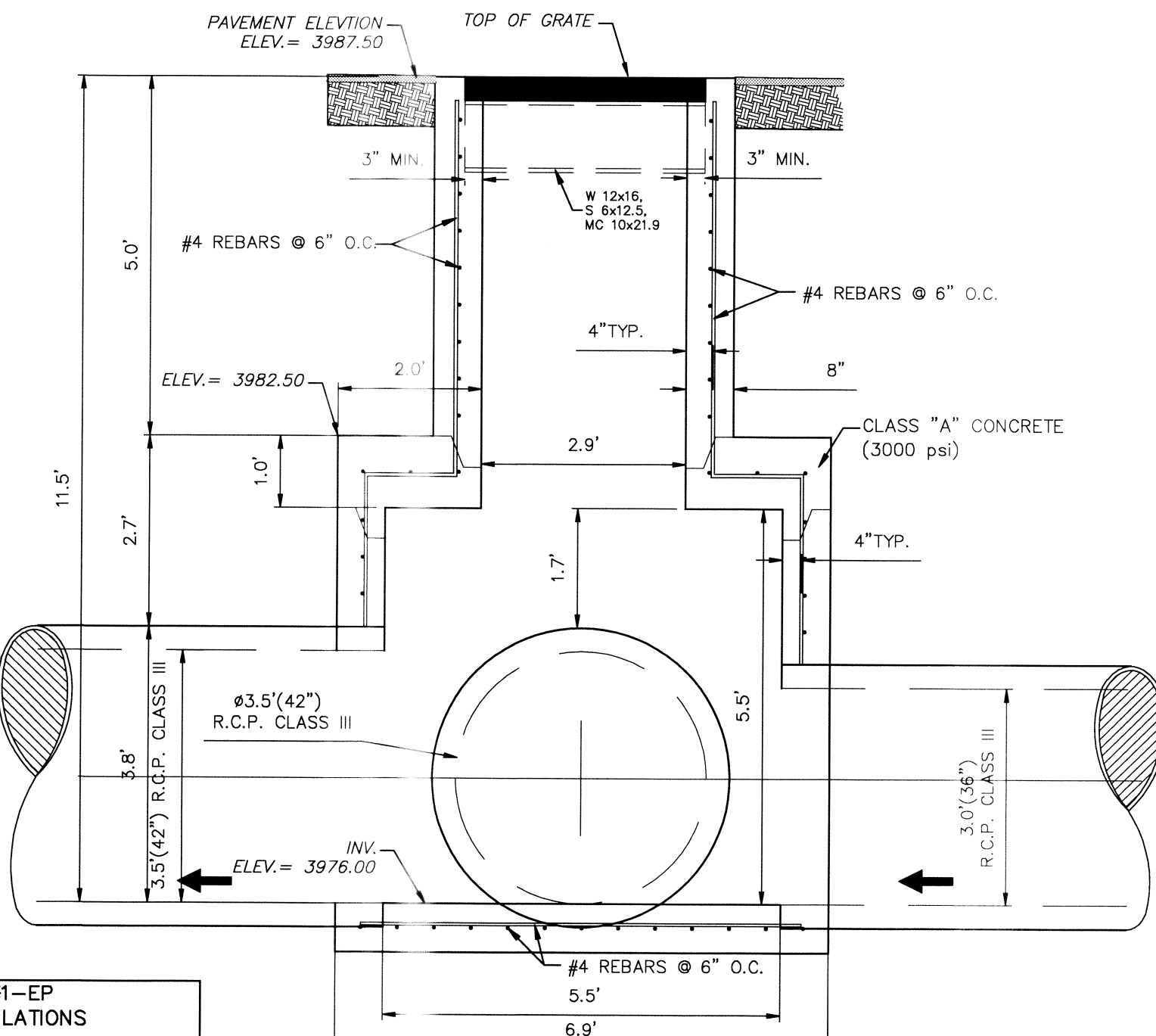
**DRAINAGE SYSTEM "42-B FUTURE DEVELOPMENT" PROFILE**  
HOR. SCALE: 1"=30'  
VER. SCALE: 1"=10'

DROP INLET	REQUIRED FLOW CAPACITY Q REG. (CFS)	AVAILABLE FLOW CAPACITY Q AVAIL. (CFS)	ADDITIONAL FLOW (CFS)	FLOW BYPASS	TYPE OF INLET	NUMBER OF GRATES
1-EP	7.71	27.99	0	0	2	3



**JUNCTION BOX WITH DROP INLET 1-EP DETAIL PLAN VIEW**  
SCALE: 1"=2'

- LEGEND**
- ▲ PROPOSED DRAINAGE HIGH-POINT
  - ▼ PROPOSED DRAINAGE LOW-POINT
  - ◆ DENOTES EXISTING CITY MONUMENT
  - DENOTES EXISTING SANITARY SEWER MANHOLE
  - PROPOSED RETAINING WALL
  - FG=4037.68 PROPOSED FINISHED GRADE ELEVATION
  - FF=4038.35 PROPOSED FINISHED FLOOR ELEVATION
  - ▨ EXISTING FLOOD AREA
  - ▲ PROPOSED CITY MONUMENT
  - PROPOSED DRAINAGE FLOWS
  - EXISTING DRAINAGE FLOWS
  - SS DENOTES EXISTING SANITARY SEWER LINE
  - 35.32 TC PROPOSED TOP OF CURB ELEVATION
  - EXISTING CONTOURS
  - ▨ PROPOSED FLOOD AREA



**JUNCTION BOX WITH DROP INLET 1-EP SECTION**  
SCALE: 1"=2'

**DROP INLET #1-EP DRAINAGE CALCULATIONS TYPE ONE**

GRATING  
 $Q_{cap} = 0.7 \times \text{AREA} \times (2 \times 32.2 \times H)^{1/2}$   
 $Q_{cap} = 0.7 \times 3.86 \times (2 \times 32.2 \times 0.42)^{1/2}$   
 $Q_{cap} = 14.00 \text{ cfs} \times 0.67 \text{ (CLOGGING FACTOR)}$   
 $Q_{cap} = 9.33 \text{ c.f.s.}$

# OF GRATES NEEDED FOR DROP INLET #1-E  
 $Q_{cap} = 9.33 \text{ c.f.s.}$   
 # OF GRATES =  $7.71 / 9.33 = 0.82$   
 USE 3 GRATES

DROP INLET	REQUIRED FLOW CAPACITY Q REG. (CFS)	AVAILABLE FLOW CAPACITY Q AVAIL. (CFS)	ADDITIONAL FLOW (CFS)	FLOW BYPASS	TYPE OF INLET	NUMBER OF GRATES
2-EP	8.57	32.79	0	0	I	3

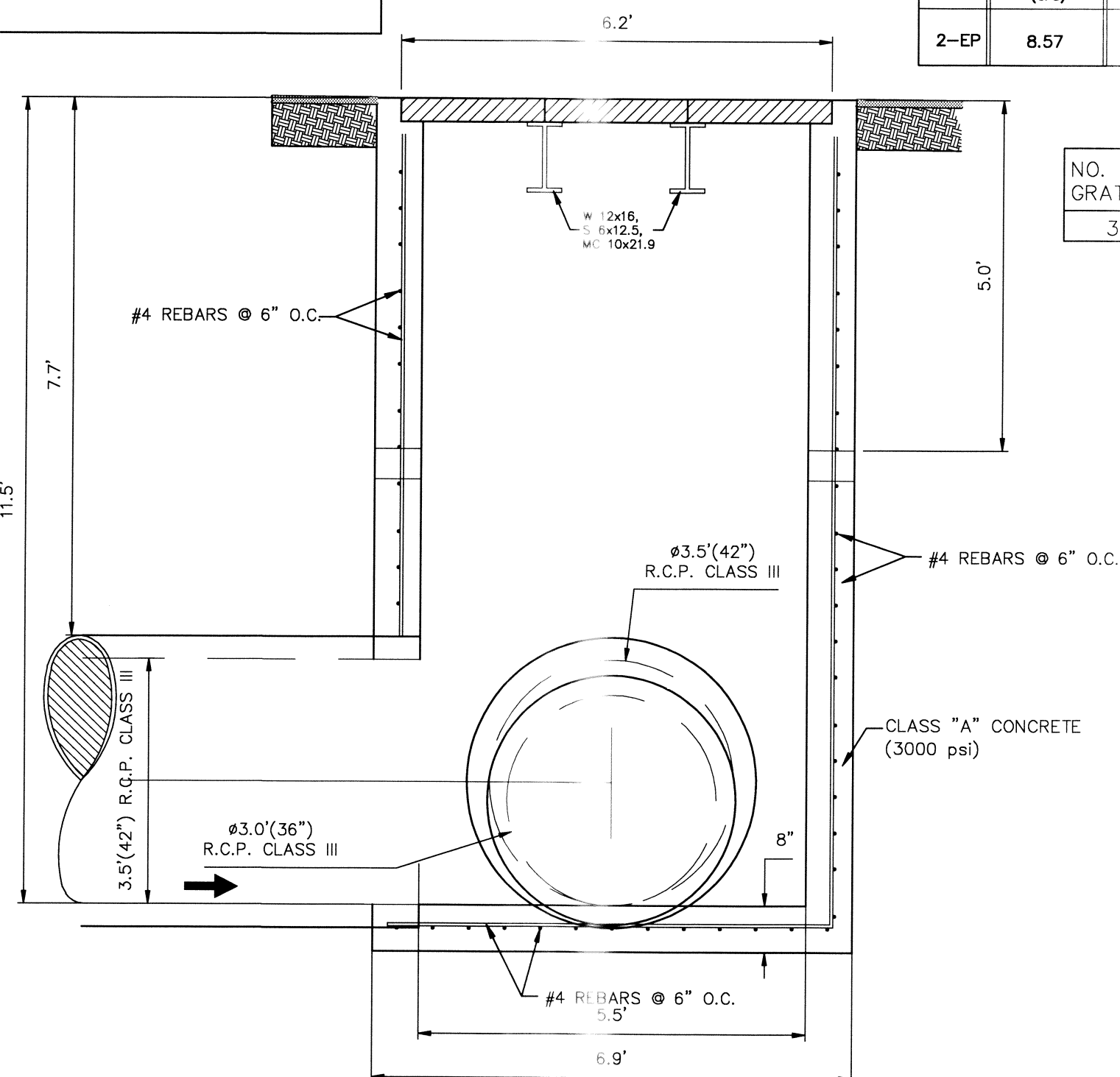
NO. OF GRATES	L'	BEAMS	
		LENGTH	MINIMUM SIZES
3	7'-1 7/8"	6'-7 7/8"	W8X15, S7X15.3, MC7X17.6

**DROP INLET #2-EP DRAINAGE CALCULATIONS TYPE ONE**

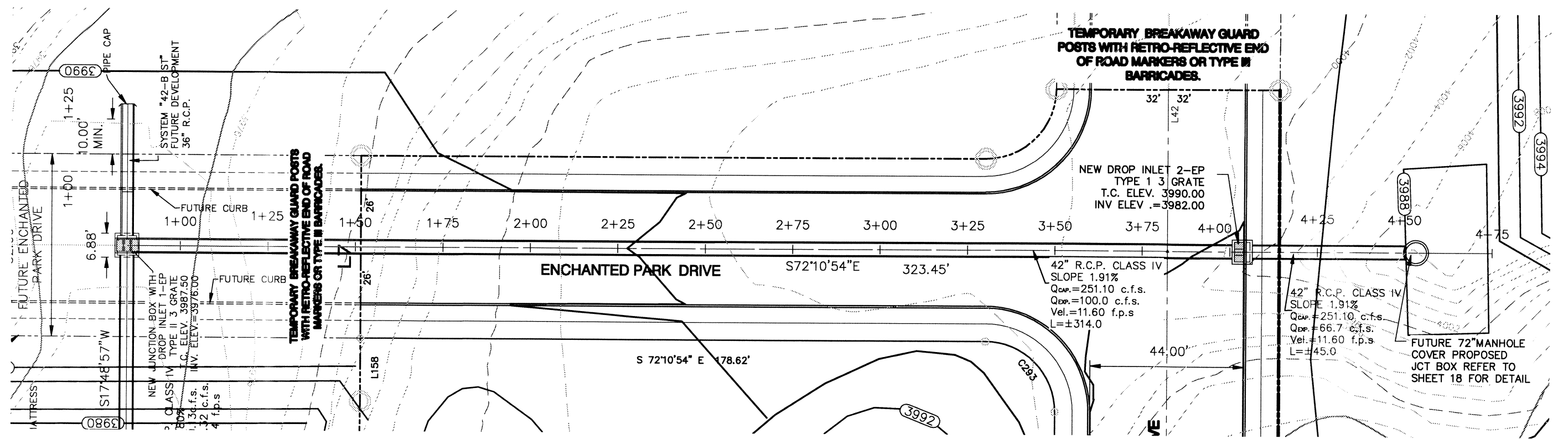
GRATING  
 $Q_{cap} = 0.7 \times \text{AREA} \times (2 \times 32.2 \times H)^{1/2}$   
 $Q_{cap} = 0.7 \times 3.86 \times (2 \times 32.2 \times 0.42)^{1/2}$   
 $Q_{cap} = 14.00 \text{ cfs} \times 0.67 \text{ (CLOGGING FACTOR)}$   
 $Q_{cap} = 9.33 \text{ c.f.s.}$

WEIR - CURB OPENING  
 $Q_{cap} = 3.087 \times L \times H^{3/2}$   
 $Q_{cap} = 3.087 \times 1.93 \times 0.42^{3/2}$   
 $Q_{cap} = 1.6 \text{ cfs}$

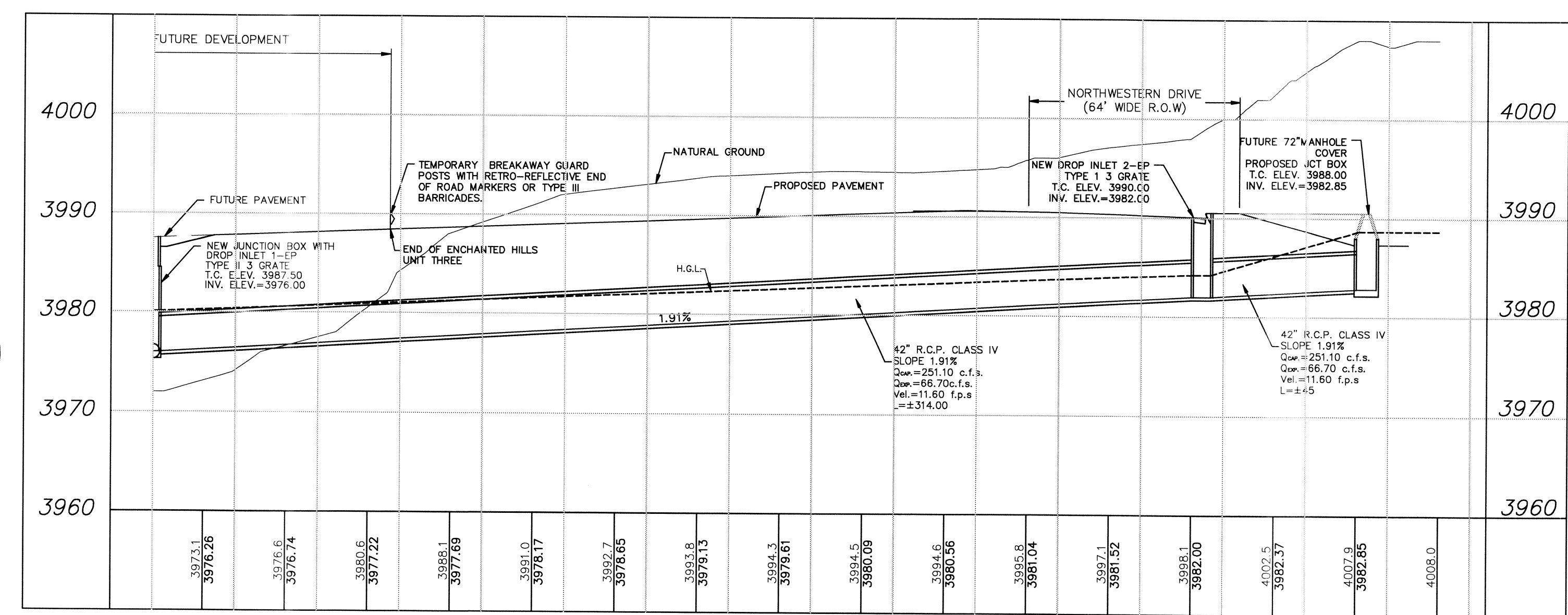
# OF GRATES NEEDED FOR DROP INLET #1-D  
 $Q_{cap} = 9.33 + 1.60 = 10.93 \text{ c.f.s.}$   
 # OF GRATES =  $8.57 / 10.93 = 3.36$   
 USE 3 GRATES



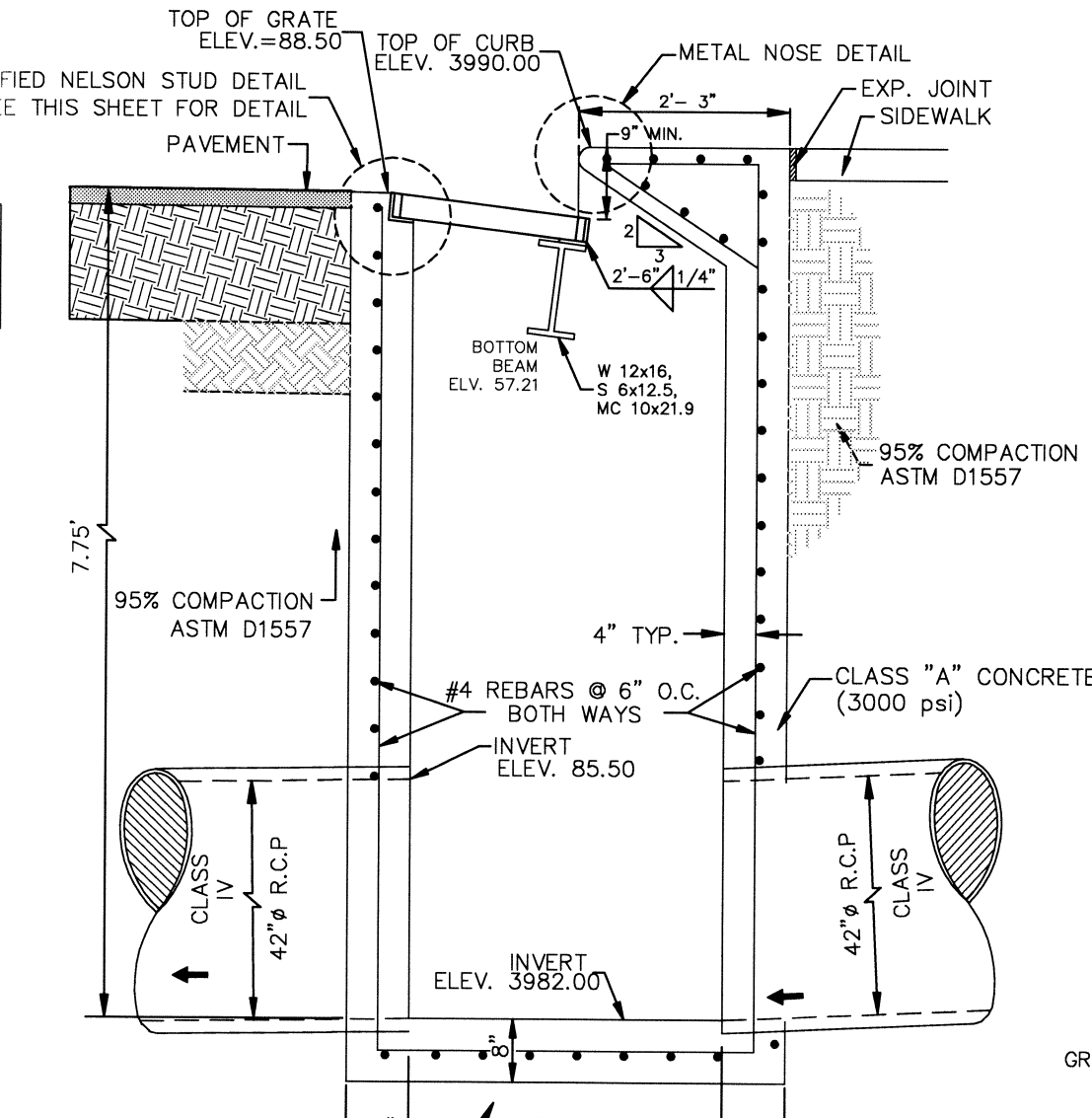
**JUNCTION BOX WITH DROP INLET 1-EP SECTION**  
SCALE: 1"=2'



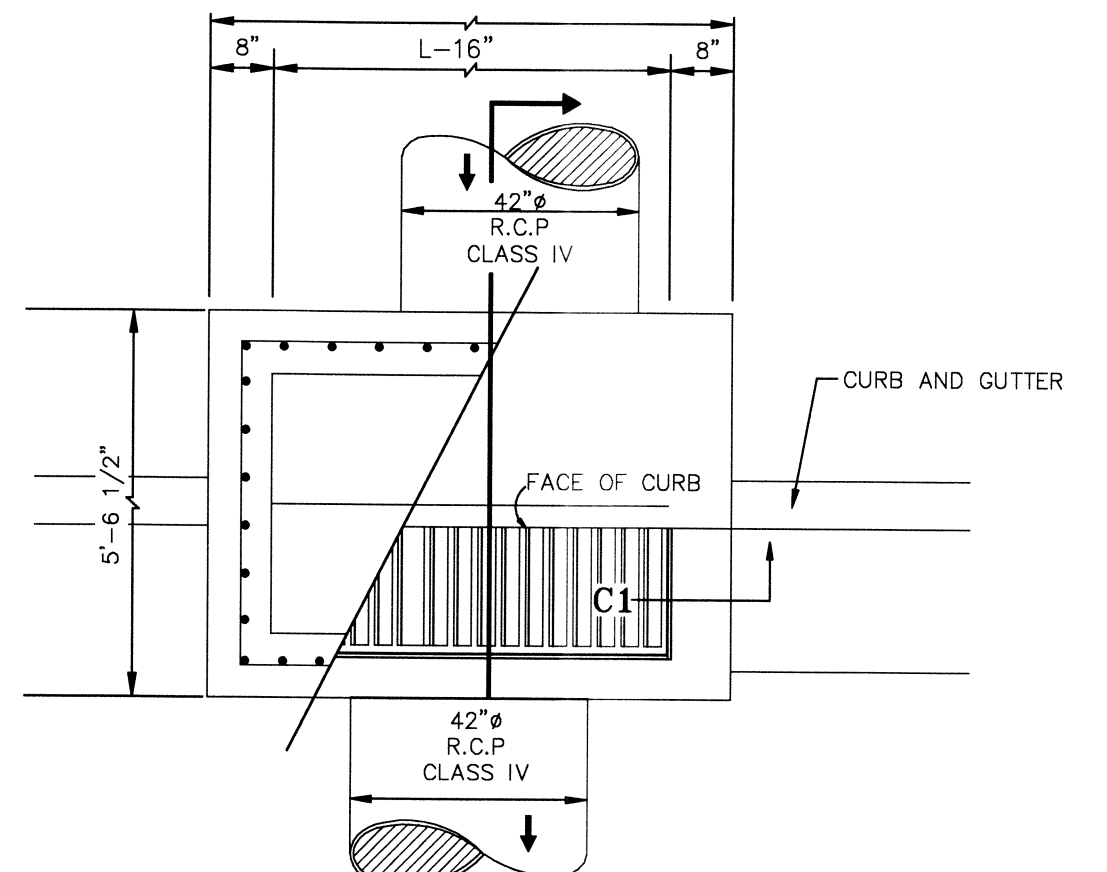
**DRAINAGE SYSTEM "42-B SCHOOL SITE" PLAN VIEW**  
HOR. SCALE: 1"=30'



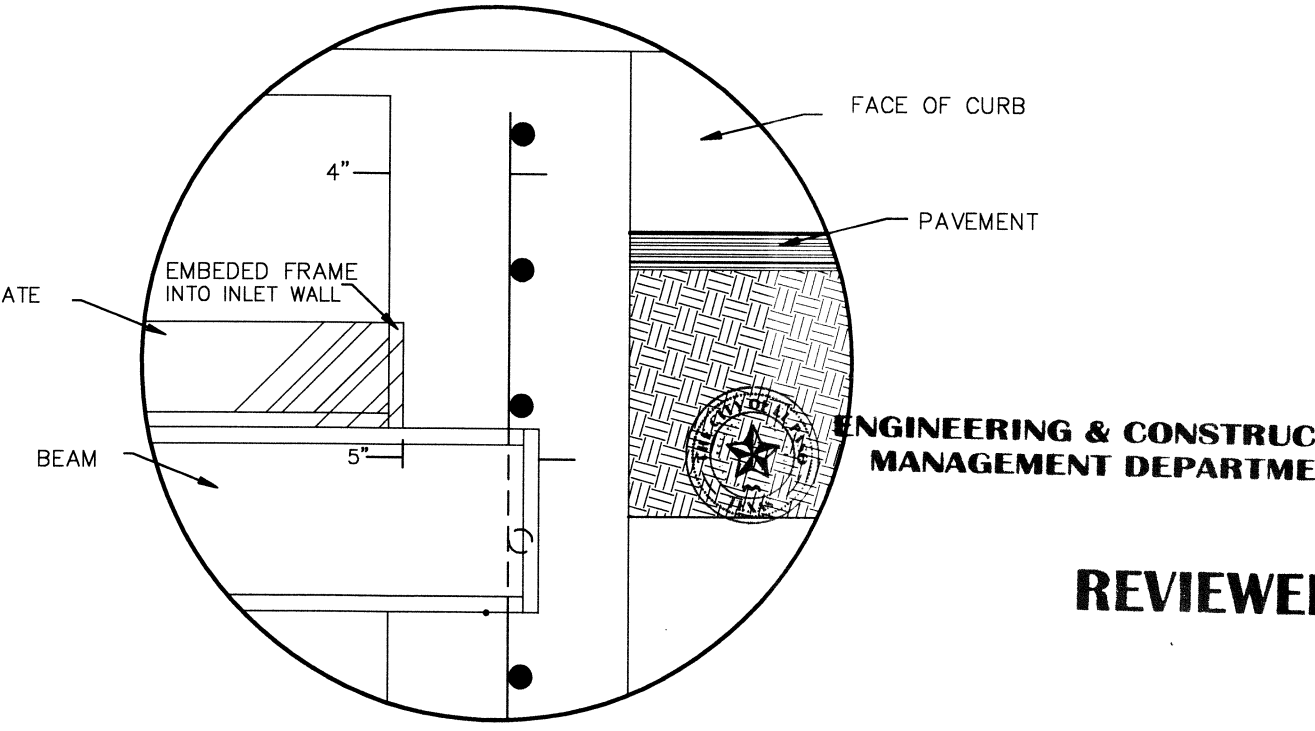
**DRAINAGE SYSTEM "42-B SCHOOL SITE" PROFILE**  
HOR. SCALE: 1"=30'  
VER. SCALE: 1"=10'



**SECTION DROP INLET 2-EP (TYPE 1)**  
SCALE: N.T.S. (3 GRATE)



**PLAN VIEW DROP INLET 2-EP (TYPE 1)**  
SCALE: N.T.S. (3 GRATE)



**SECTION C1-C1 THIS SHEET**

**FLOOD NOTE:**  
 THE ABOVE REFERENCED PROPERTY IS WITHIN ZONE "A" AND ZONE "X" (EXPLANATION: ZONE "A" NO BASE FLOOD ELEVATIONS DETERMINED; EXPLANATION: ZONE "X" AREAS DETERMINED TO BE OUTSIDE THE 500 YEAR FLOODPLAIN, ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER THE UNINCORPORATED AREAS COMMUNITY PANEL NO. 4801012 0025 B, DATED SEPTEMBER 4, 1991.

**LEGEND**

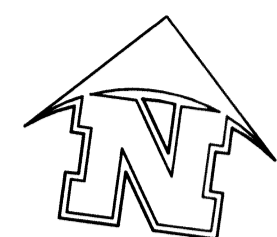
44.51 TC	PROPOSED TOP OF CURB ELEVATION	→	PROPOSED DRAINAGE FLOW	→	EXISTING GRADE	→	PROPOSED TOP OF CURB GRADE
44.34 TRC	PROPOSED TOP OF ROLL-OVER CURB ELEVATION	→	SUBDIVISION BOUNDARY LINE	→	PROPOSED DRAINAGE FLOW	→	PROPOSED TOP OF CURB GRADE
44.01 PV	PROPOSED PAVEMENT ELEVATION	→	PROPOSED CITY MONUMENT	▲	EXISTING GRADE	→	PROPOSED TOP OF CURB GRADE
		→	STREET CENTERLINE	→	EXISTING GRADE	→	PROPOSED TOP OF CURB GRADE
		→	STREET CROSS SLOPE	→	EXISTING GRADE	→	PROPOSED TOP OF CURB GRADE

DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	N.T.S.	HOR: 1"=30' VER: 1"=10'
9/20/12	CITY COMMENTS	STAFF	N.T.S.	HOR: 1"=30' VER: 1"=10'

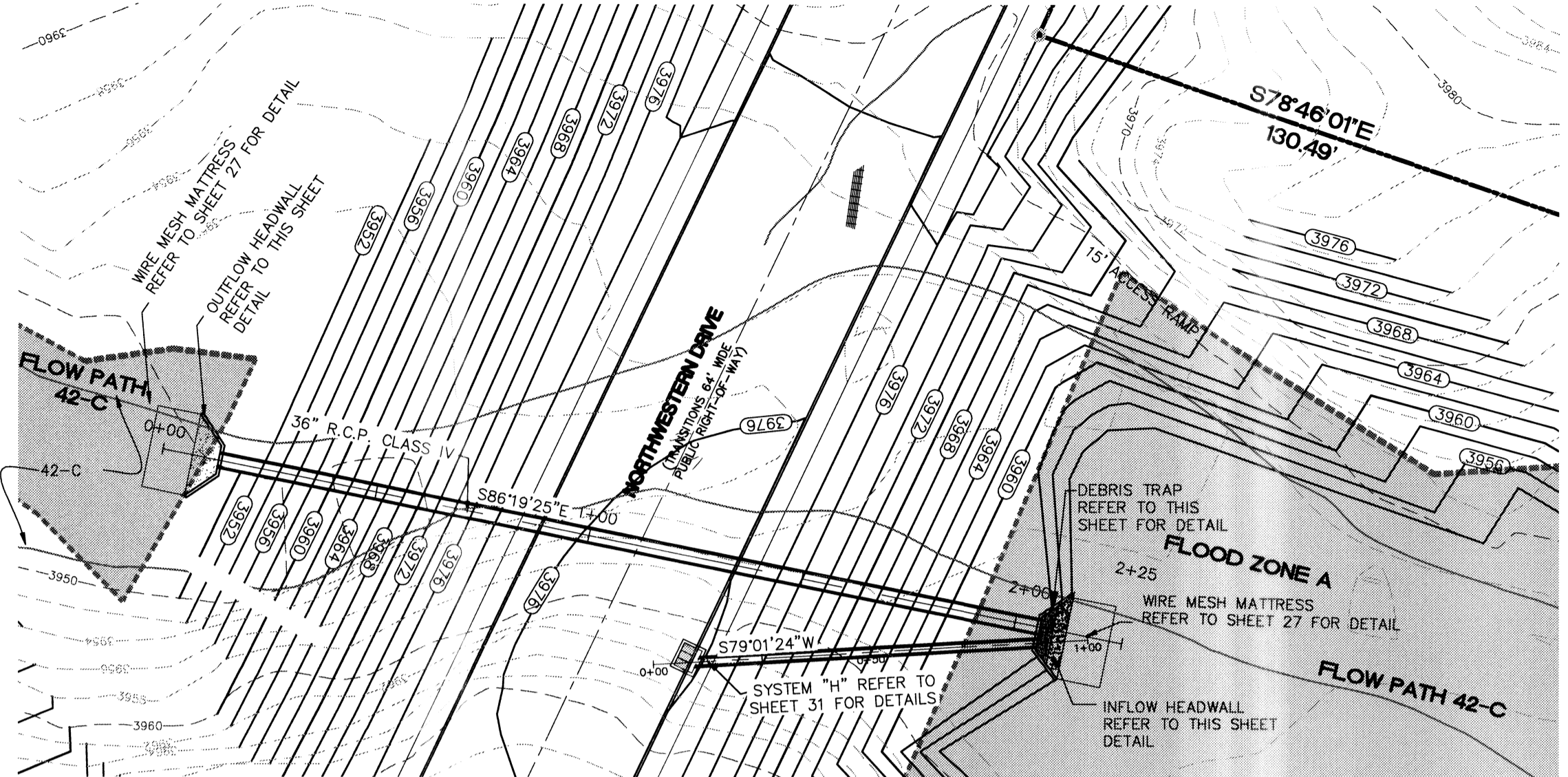
**SECONDARY BENCHMARK**  
 EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MORIS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANILLO HEIGHTS UNIT ONE ELEVATION: 3957.21  
 N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM

**PLAN AND PROFILE**  
**ENCHANTED HILLS UNIT THREE**  
 42-B NORTHWESTERN DR CROSSING SYSTEM  
 PLAN AND PROFILE

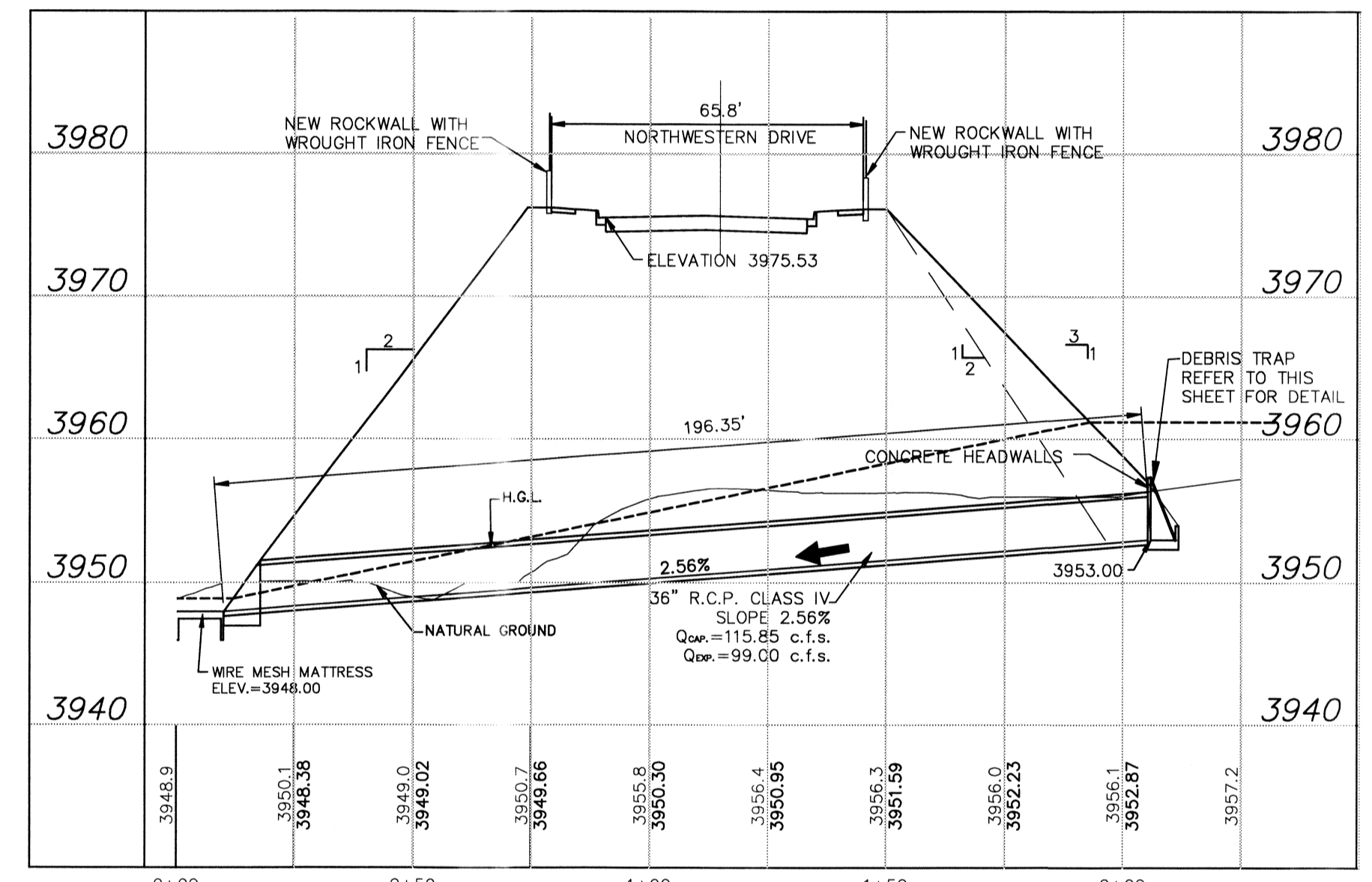
**ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT**  
**REVIEWED**  
 SHEET 22 OF 77



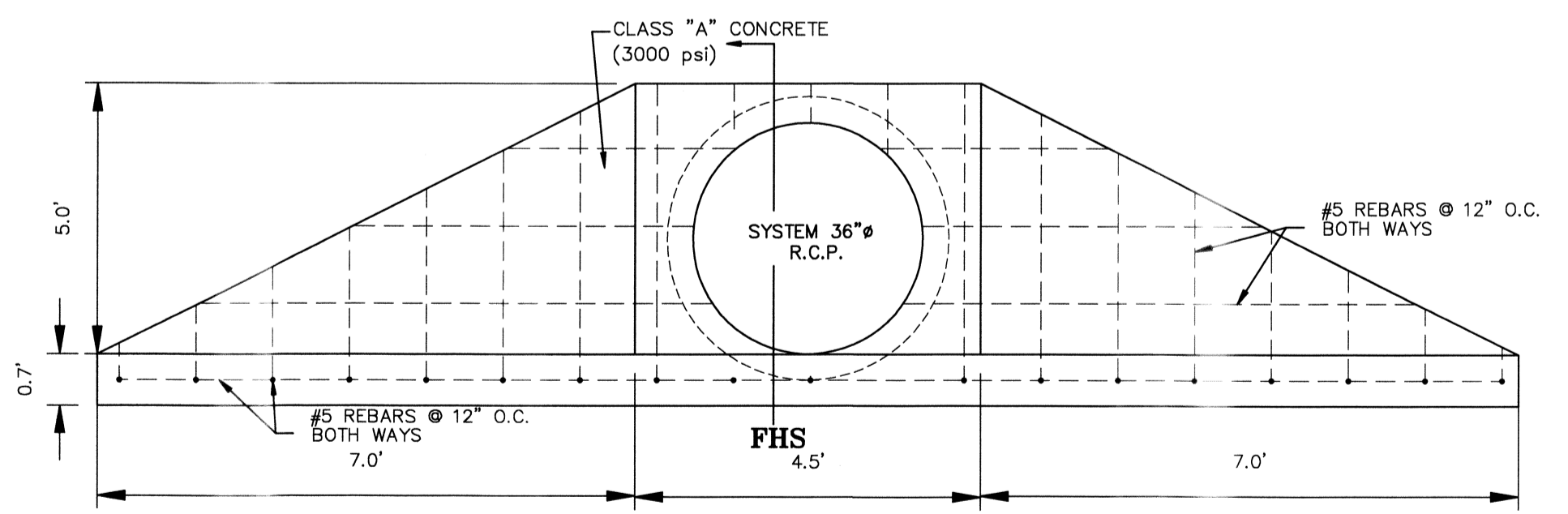
SCALE: 1" = 30'



NORTHWESTERN CROSSING FLOWPATH 42-C PIPE SYSTEM PLAN VIEW  
HOZ. SCALE: 1" = 30'



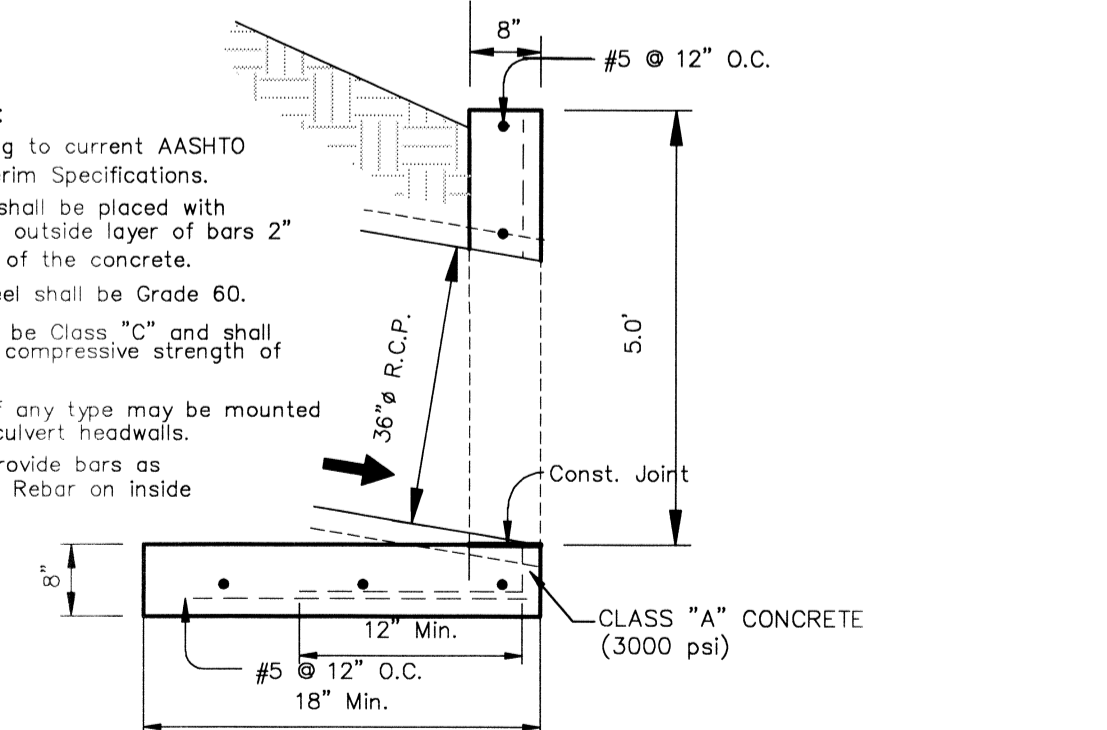
NORTHWESTERN CROSSING FLOWPATH 42-C PIPE SYSTEM PROFILE VIEW  
HOZ. SCALE: 1" = 30'  
VER. SCALE: 1" = 10'



36" OUTFLOW STRUCTURE DETAIL  
SCALE 1" = 2'

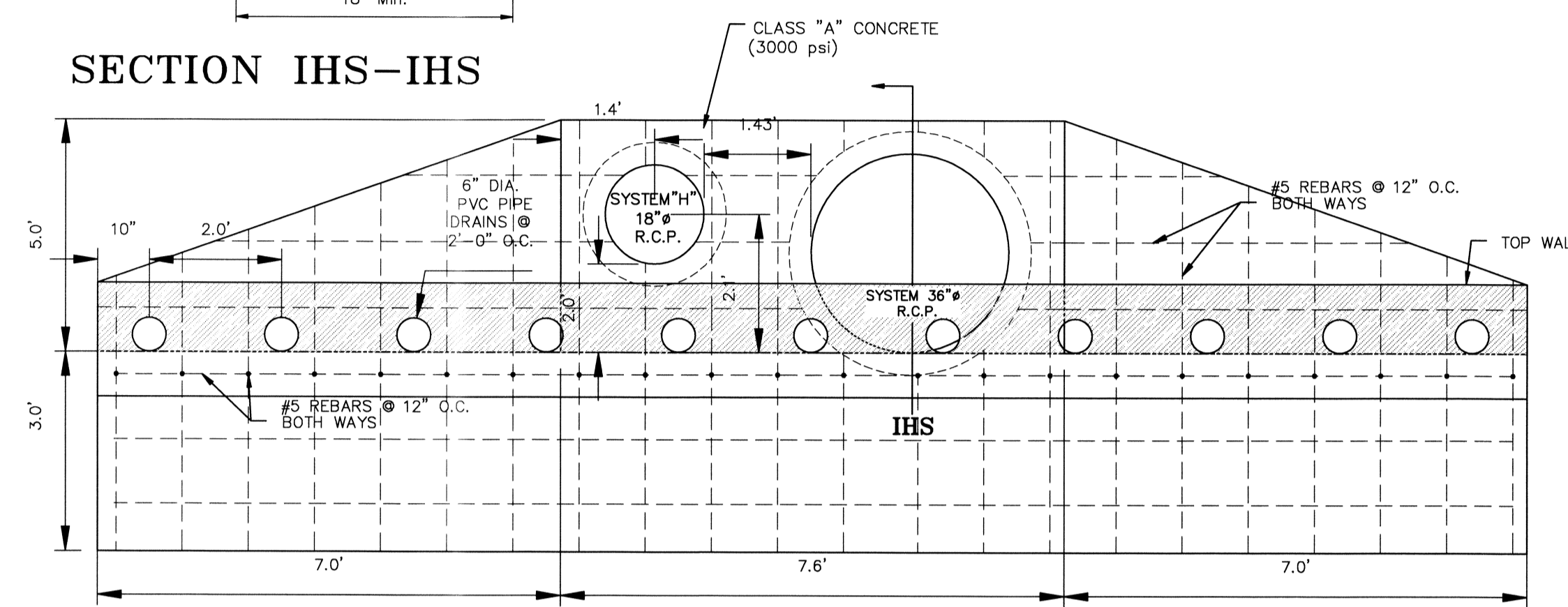
GENERAL NOTES:

Designed according to current AASHTO Standard and Interim Specifications. Reinforcing steel shall be placed with the center of the outside layer of bars 2" from the surface of the concrete. All reinforcing steel shall be Grade 60. All concrete shall be Class "C" and shall have a minimum compressive strength of 3000 psi. No bridge rails of any type may be mounted directly to these culvert headwalls. Contractor shall provide bars as needed to support rebar on inside face of wall.



SECTION FHS-FHS

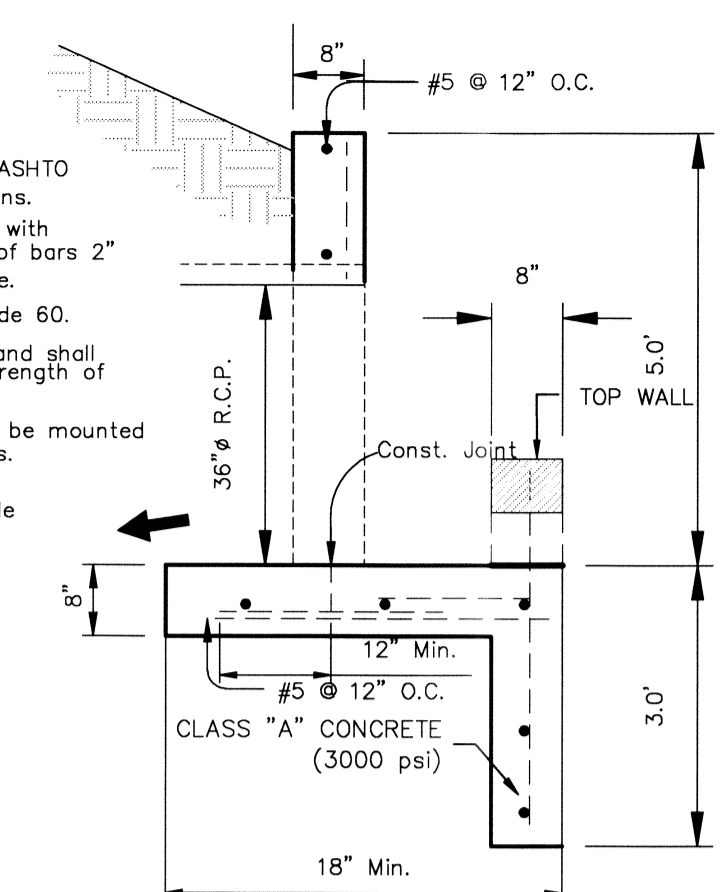
SECTION IHS-IHS



36" INFLOW STRUCTURE DETAIL  
SCALE 1" = 2'

GENERAL NOTES:

Designed according to current AASHTO Standard and Interim Specifications. Reinforcing steel shall be placed with the center of the outside layer of bars 2" from the surface of the concrete. All reinforcing steel shall be Grade 60. All concrete shall be Class "C" and shall have a minimum compressive strength of 3000 psi. No bridge rails of any type may be mounted directly to these culvert headwalls. Contractor shall provide bars as needed to support rebar on inside face of wall.



LEGEND

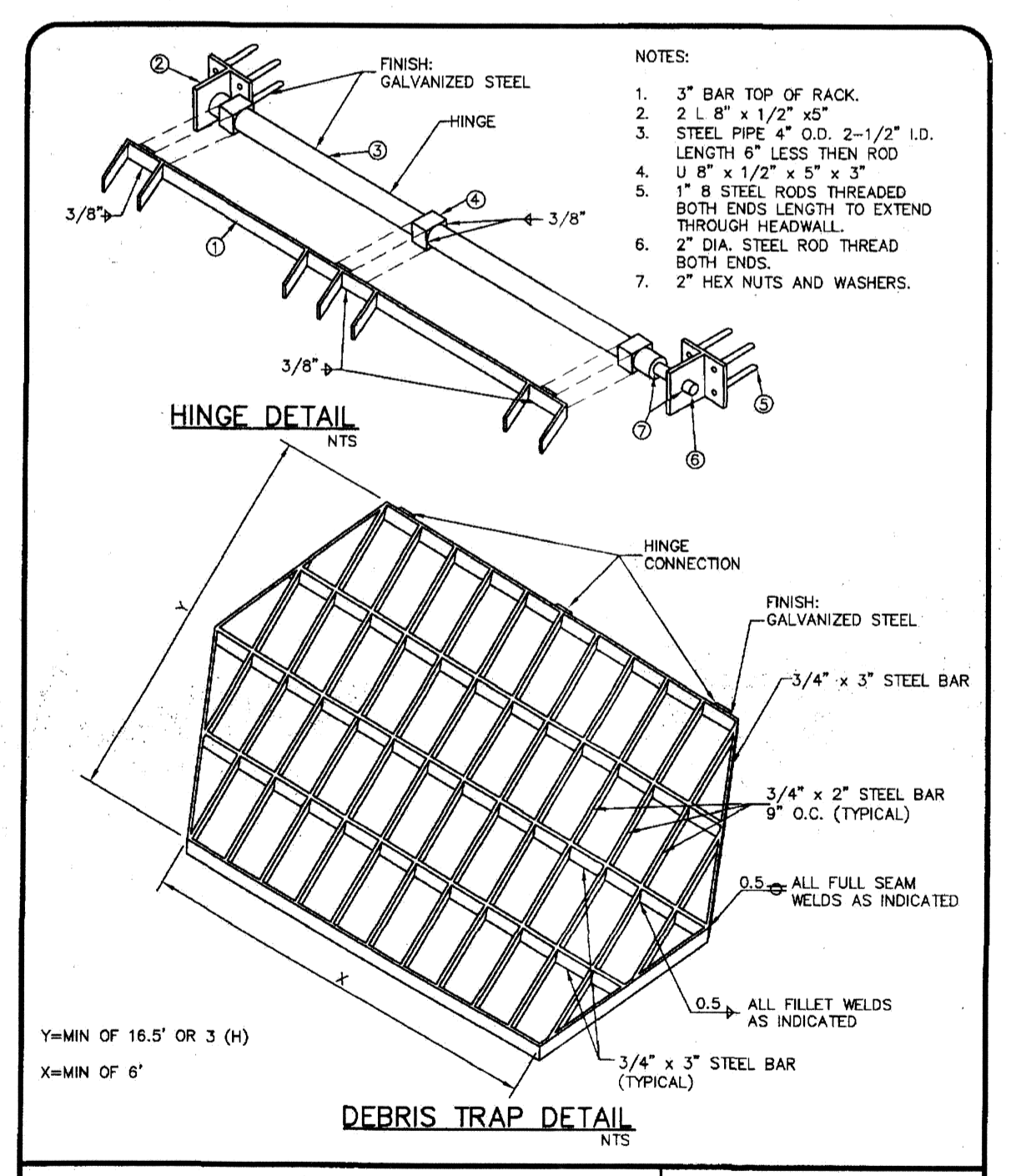
	PROPOSED DRAINAGE HIGH-POINT		PROPOSED CITY MONUMENT
	PROPOSED DRAINAGE LOW-POINT		PROPOSED DRAINAGE FLOWS
	DENOTES EXISTING CITY MONUMENT		EXISTING DRAINAGE FLOWS
	DENOTES EXISTING SANITARY SEWER MANHOLE		EXISTING SANITARY SEWER LINE
	PROPOSED RETAINING WALL		EXISTING CONTOURS
	PROPOSED FINISHED GRADE ELEVATION		PROPOSED CONTOURS
	PROPOSED FINISHED FLOOR ELEVATION		EXISTING FLOOD AREA
	EXISTING FLOOD AREA		PROPOSED FLOOD AREA



ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT

REVIEWED

NOTE: THE DEBRIS TRAP/SAFETY GRATE WILL BE PROVIDED ON THE INFLOW STRUCTURES FOR BOTH THE 42-B SYSTEM AND THE 42-C SYSTEM



DEBRIS TRAP DETAIL

TITLE 19 - SUBDIVISION ORDINANCE  
ENGINEERING DEPARTMENT  
DESIGN STANDARDS FOR CONSTRUCTION

DEBRIS TRAP/SAFETY GRATE  
2-42

Approved By: *[Signature]* Checked By: *[Signature]*  
Date: 10/25/2011 Drawn By: GRC/ELB

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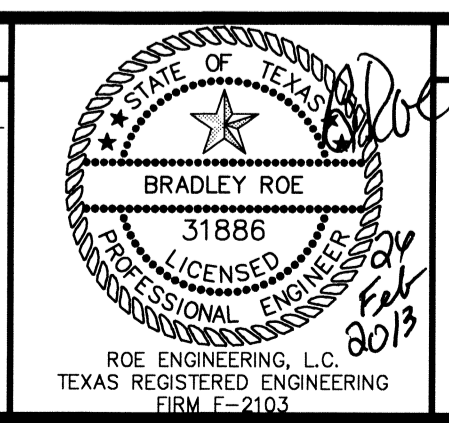
FLOOD NOTE:  
THE ABOVE REFERENCED PROPERTY IS WITHIN ZONE "A" AND ZONE "C" (EXPLANATION: ZONE "A" NO BASE FLOOD ELEVATIONS DETERMINED; EXPLANATION: ZONE "C" AREAS DETERMINED TO BE OUTSIDE THE 100-YEAR FLOODPLAIN). ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER THE UNINCORPORATED AREAS COMMUNITY PANEL NO. 480212 0225 B, DATED SEPTEMBER 4, 1991.

LEGEND

	PROPOSED TOP OF CURB ELEVATION		PROPOSED DRAINAGE FLOW		EXISTING GRADE		PROPOSED ELEVATION
	PROPOSED TOP OF ROLLOVER CURB ELEVATION		SUBDIVISION BOUNDARY LINE		STREET CENTERLINE		STREET CROSS SLOPE
	PROPOSED PAVEMENT ELEVATION		PROPOSED COUNTY MONUMENT		STATION NUMBER		

DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	N.S. MONUMENT (20ND 1285) (P.C. 020444) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED ABOUT 1.23 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	HOR: 1"=30' VER: 1"=10'
9/20/12	CITY COMMENTS	STAFF	EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS WOODS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANTILLO HEIGHTS UNIT TWO AND LOT 15, BLOCK 2, CANTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	

DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	N.S. MONUMENT (20ND 1285) (P.C. 020444) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED ABOUT 1.23 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	HOR: 1"=30' VER: 1"=10'
9/20/12	CITY COMMENTS	STAFF	EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS WOODS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANTILLO HEIGHTS UNIT TWO AND LOT 15, BLOCK 2, CANTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	



STORM DRAINAGE PLAN AND PROFILE

**ENCHANTED HILLS UNIT THREE**

**FLOWPATH 42-C CROSSING PLAN AND PROFILE**

HOR: 1"=30' VER: 1"=10'  
FILE NAME: W.O. 011509-1 A EH-3  
DATE: NOVEMBER, 2011  
DESIGN BY: STAFF  
DRAWN BY: I.D.R.  
CHKD. BY: H.P.  
APPD. BY: BR

**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@rll.net

ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

SHEET 23 OF 77

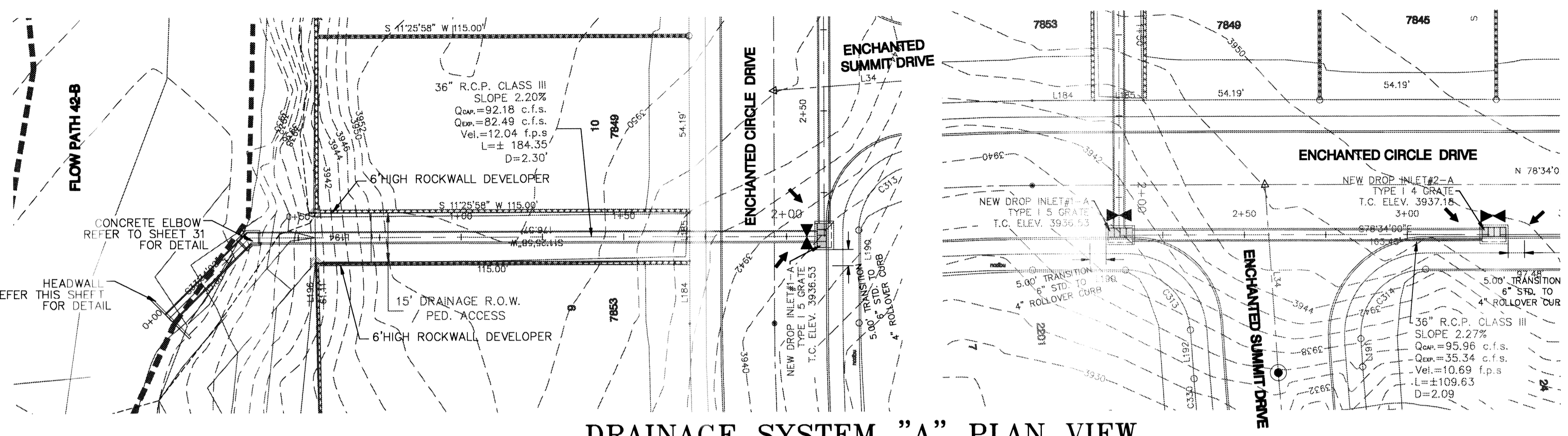
**DROP INLET #1-A  
DRAINAGE CALCULATIONS  
TYPE ONE**

**GRATING**  
 $Q_{cap} = 0.7 \times \text{AREA} \times (2 \times 32.2 \times H)^{1/2}$   
 $Q_{cap} = 0.7 \times 3.86 \times (2 \times 32.2 \times 0.42)^{1/2}$   
 $Q_{cap} = 14.00 \text{ cfs} \times 0.67 \text{ (CLOGGING FACTOR)}$   
 $Q_{cap} = 9.33 \text{ cfs}$

**WEIR - CURB OPENING**  
 $Q_{cap} = 3.087 \times L \times H^{3/2}$   
 $Q_{cap} = 3.087 \times 1.93 \times 0.42^{3/2}$   
 $Q_{cap} = 1.6 \text{ cfs}$

**# OF GRATES NEEDED FOR DROP INLET**  
 $Q_{cap} = 47.76 \text{ c.f.s.}$   
 $Q_{cap} = 9.33 + 1.60 = 10.93 \text{ c.f.s.}$   
**# OF GRATES = 47.76/10.93 = 4.36**  
**USE 5 GRATES**

SCALE: 1" = 30'

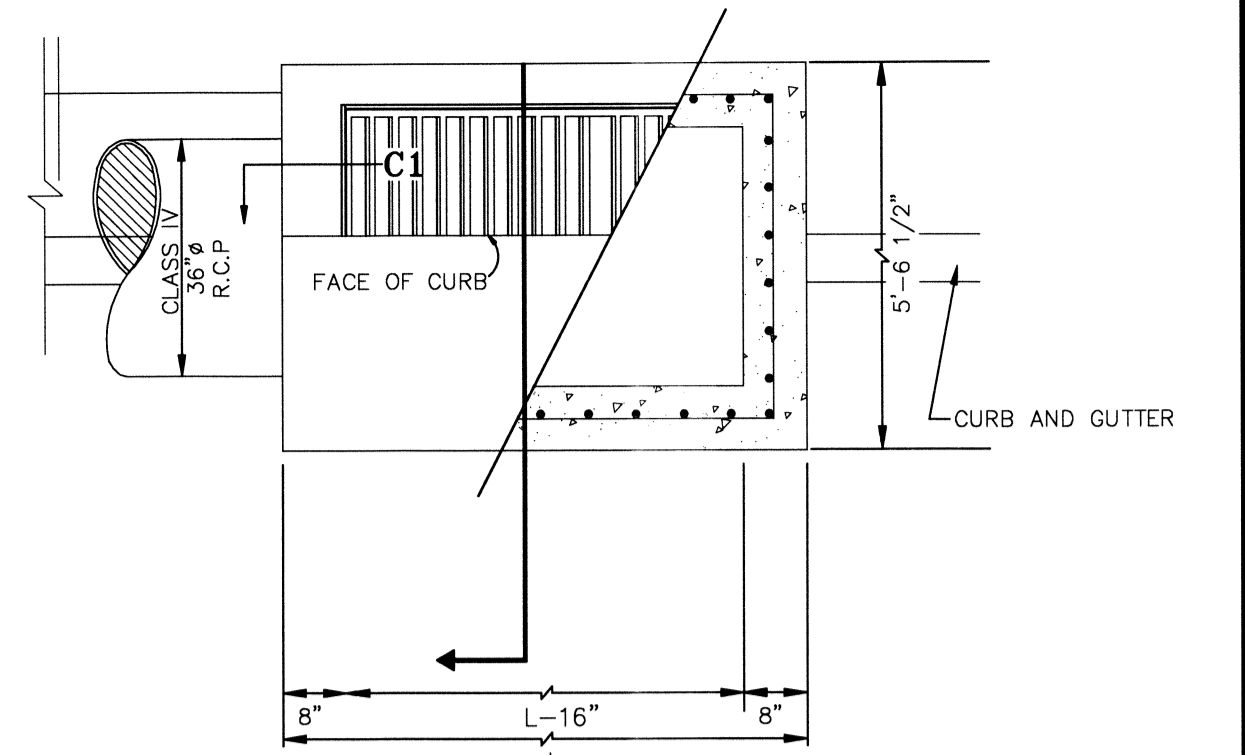


**DROP INLET #2-A  
DRAINAGE CALCULATIONS  
TYPE ONE**

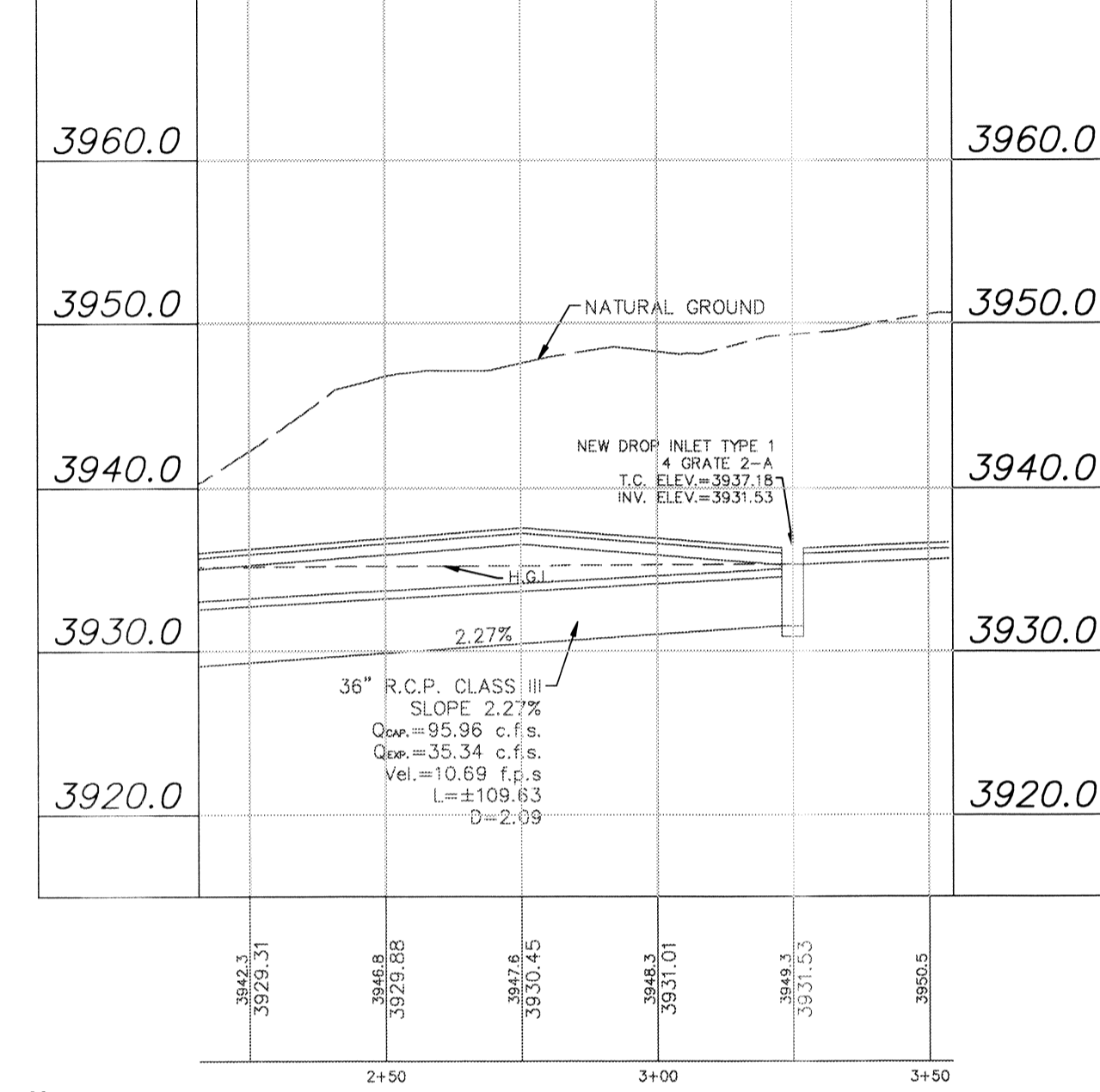
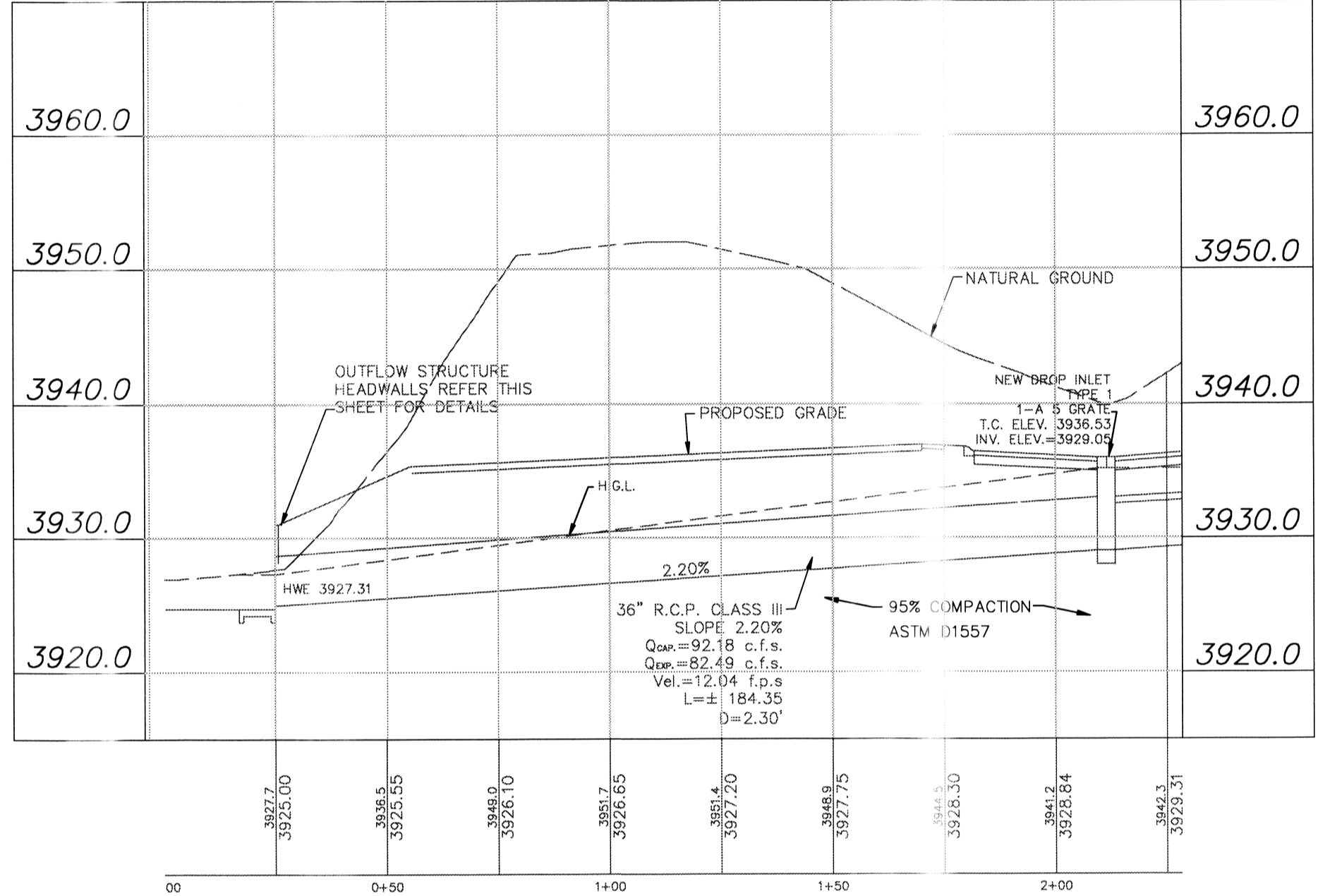
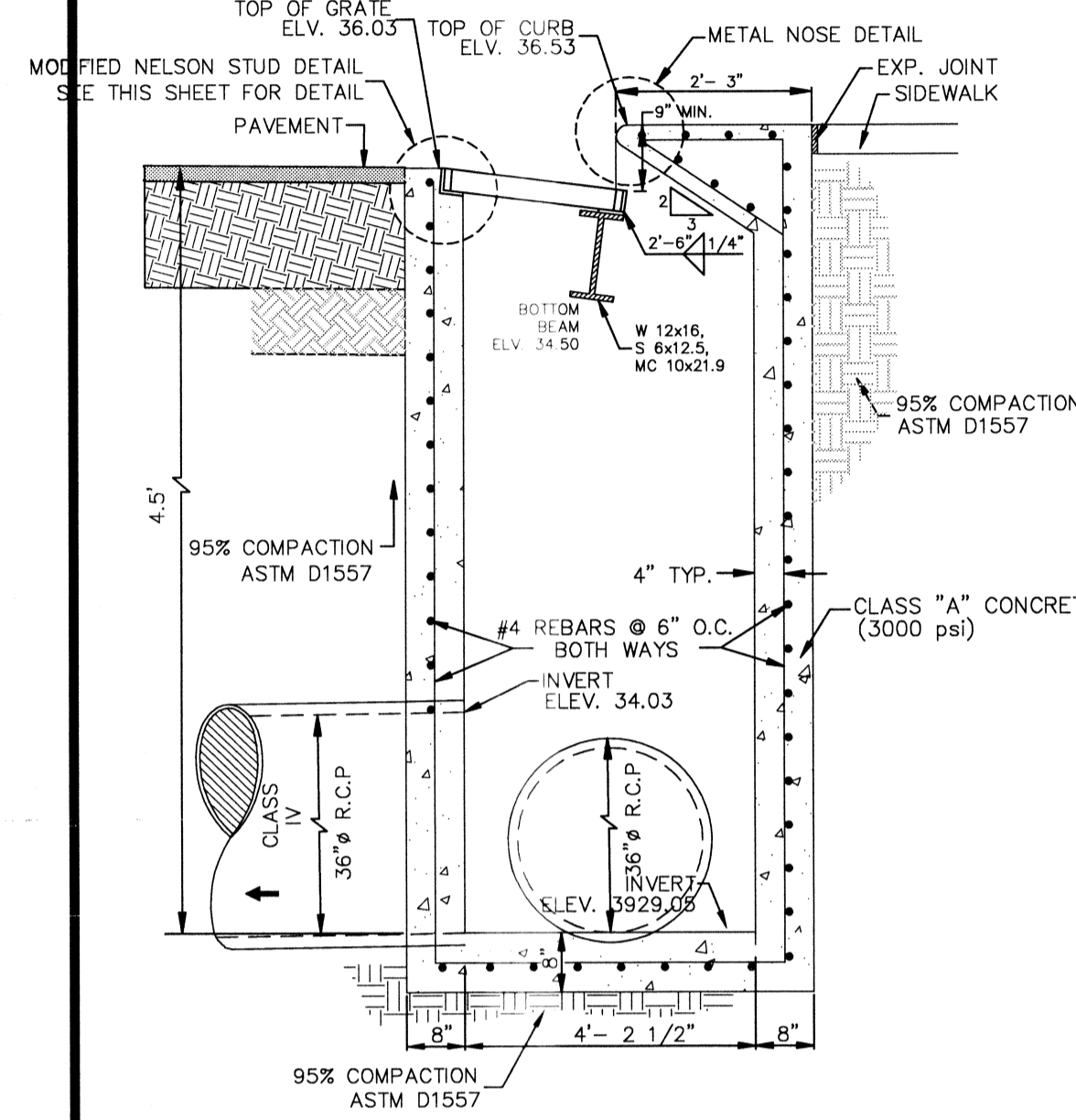
**GRATING**  
 $Q_{cap} = 0.7 \times \text{AREA} \times (2 \times 32.2 \times H)^{1/2}$   
 $Q_{cap} = 0.7 \times 3.86 \times (2 \times 32.2 \times 0.42)^{1/2}$   
 $Q_{cap} = 14.00 \text{ cfs} \times 0.67 \text{ (CLOGGING FACTOR)}$   
 $Q_{cap} = 9.33 \text{ cfs}$

**WEIR - CURB OPENING**  
 $Q_{cap} = 3.087 \times L \times H^{3/2}$   
 $Q_{cap} = 3.087 \times 1.93 \times 0.42^{3/2}$   
 $Q_{cap} = 1.6 \text{ cfs}$

**# OF GRATES NEEDED FOR DROP INLET**  
 $Q_{cap} = 35.34 \text{ c.f.s.}$   
 $Q_{cap} = 9.33 + 1.60 = 10.93 \text{ c.f.s.}$   
**# OF GRATES = 35.34/10.93 = 3.23**  
**USE 4 GRATES**

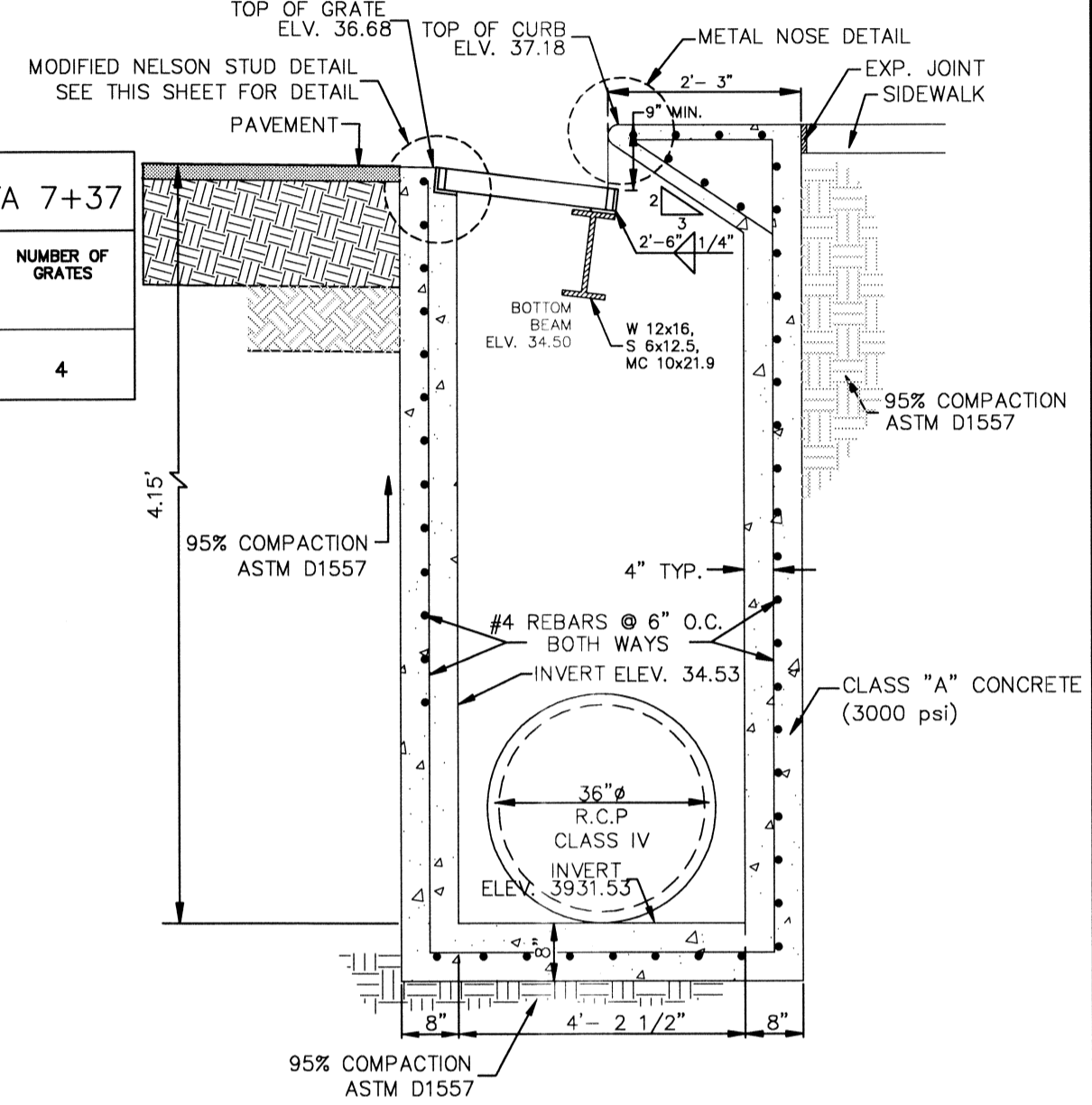


NO. OF GRATES	L'	BEAMS	
		LENGTH	MINIMUM SIZES
4	9'-1 1/2"	8'-7 1/2"	WX918, SBX18.4, MC10X21.9



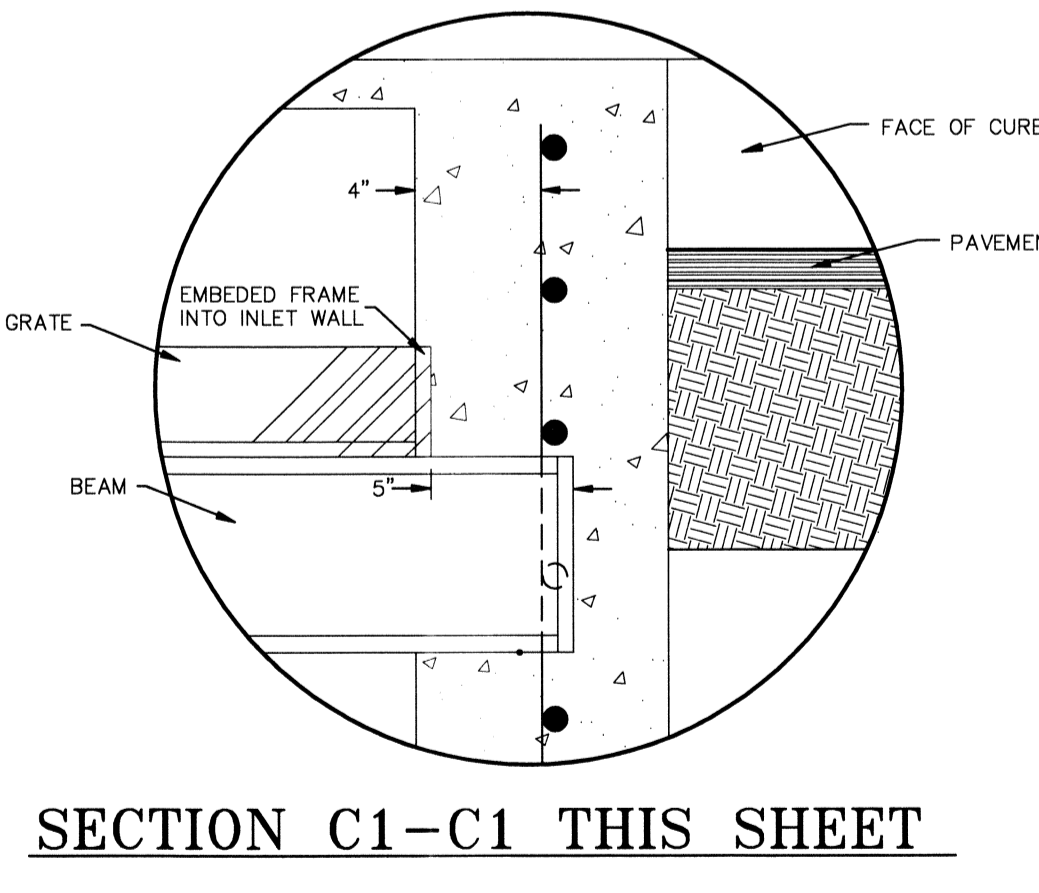
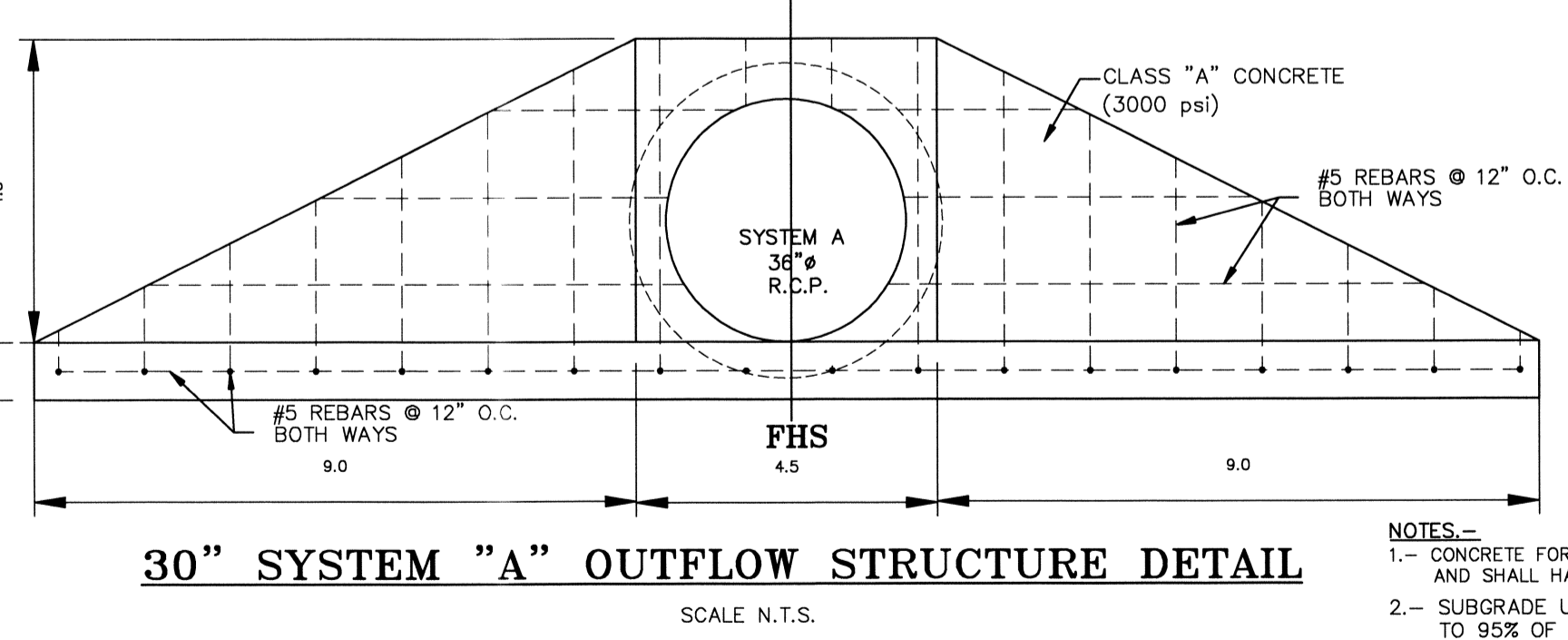
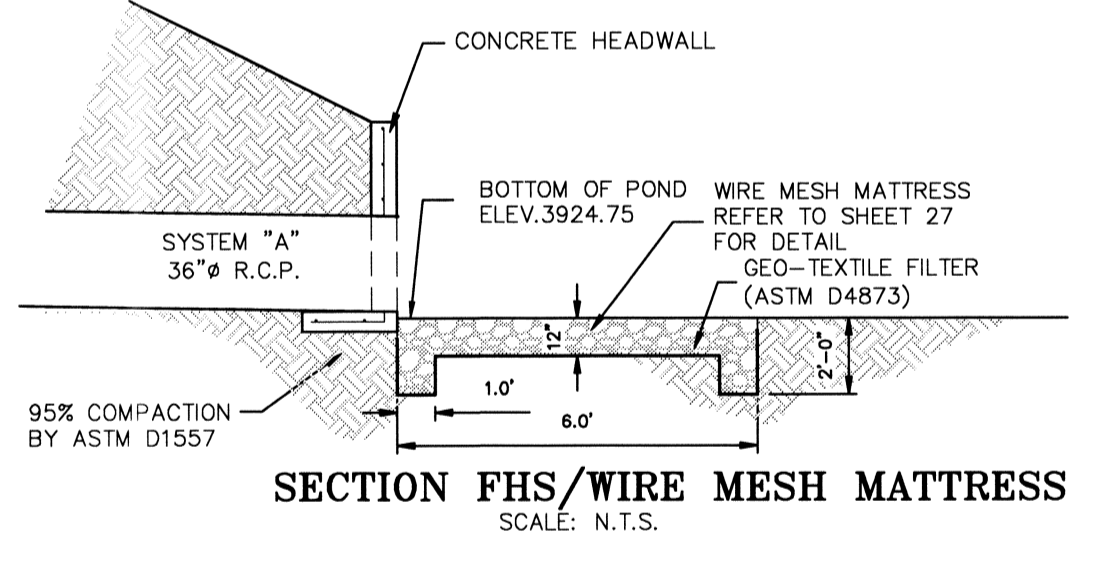
**DROP INLET TYP. I @ ENCHANTED CIRCLE DR. STA 7+37**

DROP INLET	REQUIRED FLOW CAPACITY @ REQ. (CFS)	AVAILABLE FLOW CAPACITY @ AVAIL. (CFS)	ADDITIONAL FLOW (CFS)	FLOW BYPASS	TYPE OF INLET	NUMBER OF GRATES
2-A	35.34	43.72	0	0	I	4



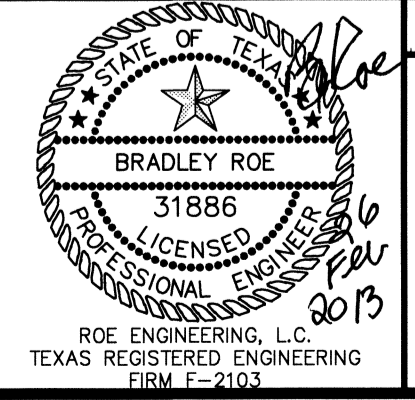
**DROP INLET NOTES**

- WELDED STEEL OR CAST GRATES AS DETAILED ARE ALL ACCEPTABLE GRATES. MIXING OF ALTERNATE TYPES OF GRATES ON THE SAME PROJECT WILL BE PERMITTED WITH THE APPROVAL OF THE CITY ENGINEER.
- ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARD SPECIFICATIONS.
- SHARP EDGES RESULTING FROM FABRICATION SHALL BE DULLED BY ANY ACCEPTABLE METHOD FOR SAFETY AND HANDLING.
- GRATES SHALL BE INSTALLED IN FRAME WITH FLOW ARROW POINTING DOWNSTREAM OR TOWARD THE LOW POINT IN A SUMP.
- WELDED GRATES SHALL BE STRUCTURAL STEEL CONFORMING TO THE REQUIREMENTS OF AASHTO M-183 OR OF CORROSION RESISTANT STRUCTURAL STEEL CONFORMING TO THE REQUIREMENTS OF AASHTO M-161 OR M-222 OR BE MADE OF OTHER APPROVED STEELS OF EQUAL QUALITY. MIXING GRATES OF STEEL ON THE SAME GRATE WILL NOT BE PERMITTED.
- GRATES MADE OF M-183 STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M-111 SPECIFICATIONS OR SHALL BE PAINTED WITH INORGANIC ZINC PAINTS, MEETING THE REQUIREMENTS OF CURRENT STANDARD SPECIFICATIONS.
- ALL WELDS SHALL BE A MINIMUM OF 1/4" FILLET AND SHALL CONFORM TO THE SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND TO THE A.S.S. STRUCTURAL WELDING CODE. ELECTRODES SHALL BE COMPATIBLE TO THE DIFFERENT GRADES OF STEEL THAT COMPRISE THE GRATE MEMBERS.
- CAST GRATES SHALL BE CAST STEEL CONFORMING TO THE REQUIREMENTS OF AASHTO M-103, GRADE 65-35 OR OF DUCTILE IRON CONFORMING TO THE REQUIREMENTS OF ASTM A-536, SPECIAL GRADE 60-45, OR OF GRAY IRON CONFORMING TO THE REQUIREMENTS OF AASHTO M-105, CLASS 35B OR ASTM A-48 CLASS 35B. THE SPECIFICATIONS OF GENERAL APPLICATION FOR CAST STEEL GRATES SHALL BE AASHTO M-103 SCOPE 1.2.1, GRADE N-1.
- FERROUS CASTINGS SHALL BE OF UNIFORM QUALITY, FREE OF BLOWHOLES, POROSITY, HARD SPOTS, SHRINKAGE DISTORTION OR OTHER DEFECTS. THEY SHALL BE SMOOTH AND WELL CLEANED BY SHOT BLASTING OR OTHER APPROVED CLEANING METHOD. AFTER CLEANING THEY SHALL BE COATED WITH ASPHALT BASE PAINT RESULTING IN A SMOOTH COATING, TOUGH AND TENACIOUS WHEN COLD, NOT TACKY NOR BRITTLE.
- ALL CASTINGS SHALL BE MANUFACTURED TRUE TO PATTERN. COMPONENT PARTS SHALL FIT TOGETHER IN A SATISFACTORY MANNER.
- ALL CONCRETE TO BE 3000 P.S.I. CHAMFER ALL EXPOSED EDGES 3/4". ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
- MINIMUM CONCRETE COVER SHALL BE 1 1/2" FOR STEEL REINFORCING.
- EXPANSION MATERIAL TO BE 1/2" BITUMINOUS FIBER AND TO BE PLACED WHERE PROPOSED CONCRETE COMES IN CONTACT WITH ANY EXISTING OR PROPOSED CONCRETE OR MASONRY STRUCTURE.
- STRUCTURAL STEEL SHALL BE SHOP PAINTED IN ACCORDANCE WITH T.H.D. ITEM 446 "PAINT AND PAINTING".
- SURFACE OF ALL EXPOSED CONCRETE SHALL CONFORM IN SLOPE AND GRADE TO EXISTING OR PROPOSED CURB AND WALK ADJACENT TO INLETS.
- GRATE WILL BE DEPRESSED 1" BELOW PROPOSED OR EXISTING GRADE.
- ALL REINFORCING BARS TO BE # 4 BARS AT 6" O.C. GRADE 60. BEND BARS AROUND PIPE OPENINGS.
- INLETS TO BE DESIGNATED IN PLANS BY NUMBER OF GRATES REQUIRED.
- LOCATION OF SEWER PIPES SHOWN ELSEWHERE IN PLANS.
- 2 - 1/2" DIA. X 4" LONG CONC. ANCHOR STUDS REQUIRED FOR EACH SIDE OF FRAME, WHERE RESTING ON CONCRETE, USE NELSON STUDS OR EQUAL.
- THE GRATES OF ALL INLETS WITHIN THE STREET PAVEMENT MUST BE CONSTRUCTED WITH THE GRATE BARS PERPENDICULAR TO THE CURB.
- EXCAVATION WHICH WILL EXCEED FIVE (5) FEET IN DEPTH SHALL PROVIDE FOR TRENCH SAFETY AS PER OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) GUIDELINES.



- NOTES:**
- CONCRETE FOR ALL DRAINAGE STRUCTURES SHALL BE CLASS-A CONCRETE AND SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000 P.S.I.
  - SUBGRADE UNDER ALL DRAINAGE STRUCTURE SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557
  - ALL CONSTRUCTION AND MATERIAL SHALL BE IN ACCORDANCE WITH THE CURRENT COUNTY OF EL PASO STANDARD SPECIFICATIONS.

THIS SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY BRADLEY ROE, P.E. 31886 ON SEPTEMBER, 2012. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.



**STORM DRAINAGE PLAN AND PROFILE**  
**ENCHANTED HILLS UNIT THREE**  
**SYSTEM A PLAN AND PROFILE**  
**ENCHANTED VIEW DR. STA 5+75**

HOR: 1:30 VER: 1:10  
 FILE NAME: 011509-1 A EH-3  
 DATE: NOVEMBER, 2011  
 DESIGN BY: STAFF  
 DRAWN BY: I.D.R.  
 CHKD. BY: H.P.  
 APPD. BY: BR

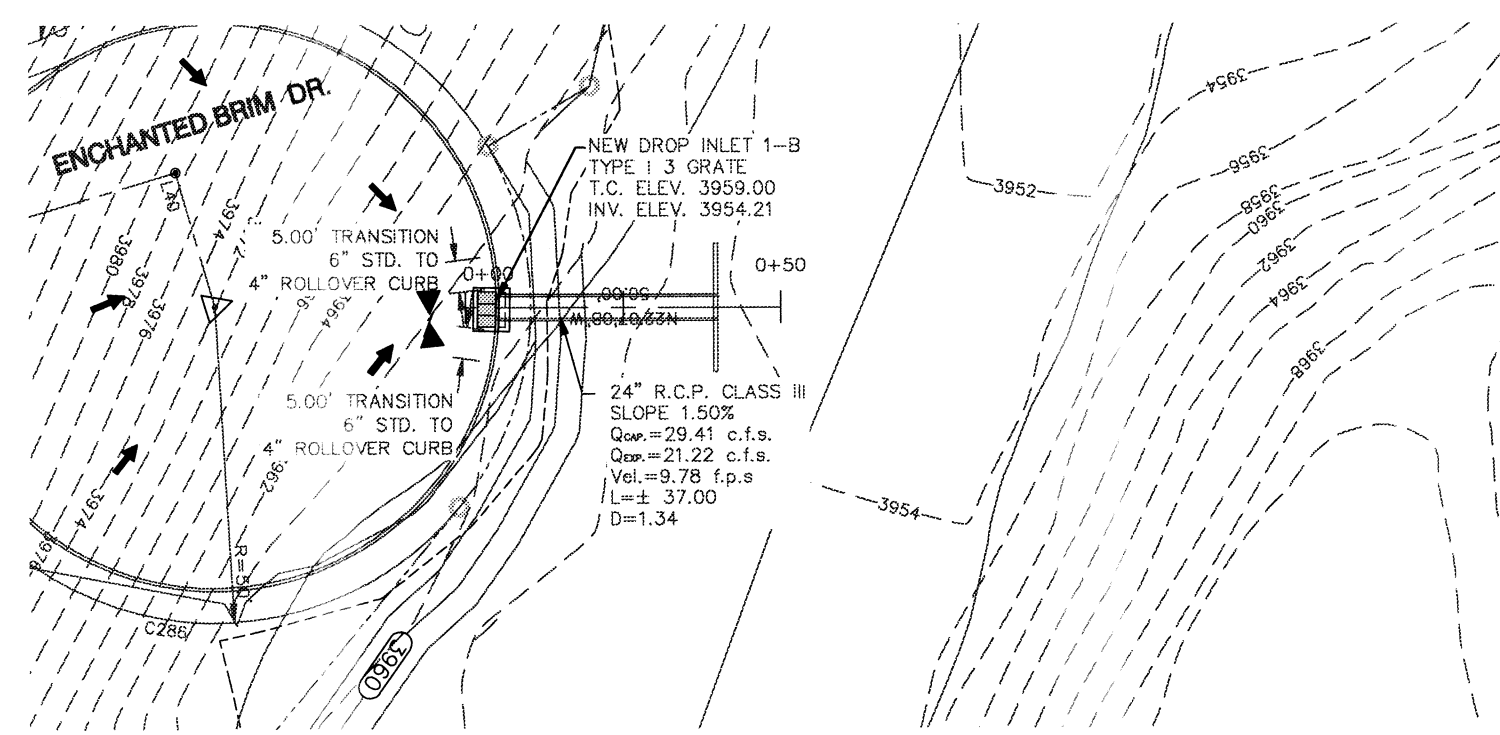
**Roeng Engineering, L.C.**  
 601 N. Cotton St. Suite No.6 El Paso, Tx. 79902  
 (915) 533-1418 - FAX: (915) 533-4972  
 e-mail: roeng@roell.net  
 ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING  
 SHEET 24 OF 77

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**FLOOD NOTE:**  
 THE ABOVE REFERENCED PROPERTY IS WITHIN ZONE "A" AND ZONE "X" (EXPLANATION: ZONE "A" NO BASE FLOOD ELEVATIONS DETERMINED; EXPLANATION: ZONE "X" AREAS DETERMINED TO BE OUTSIDE THE 500 YEAR FLOODPLAIN) ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS. AS PER THE UNINCORPORATED AREAS COMMUNITY PANEL NO. 480212 0025 B. DATED SEPTEMBER 4, 1991.

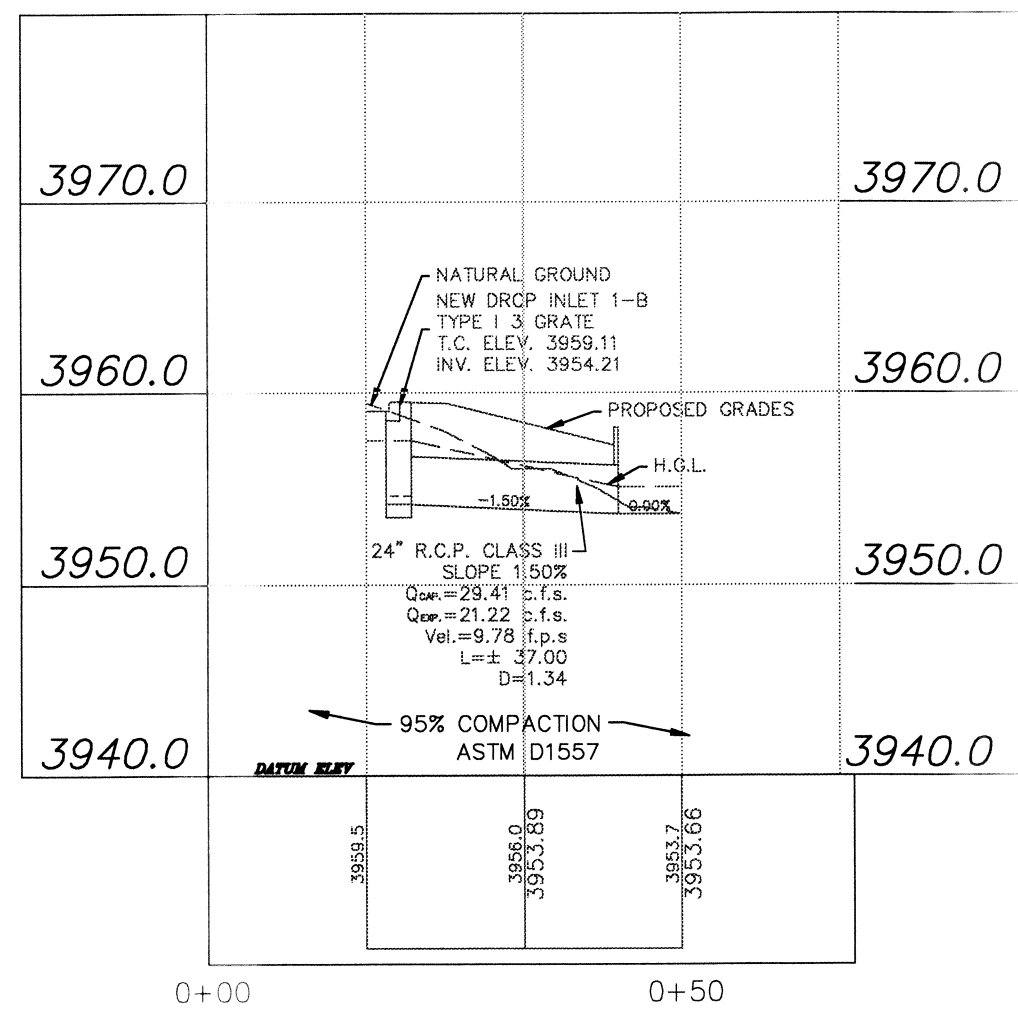
DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	NSS MONUMENT (MAYN 1855) (P.S. 820424) LOCATION AS PER NATIONAL GEODETIC SURVEY 1983: LOCATED ABOUT 155 FEET EAST OF THE RD GRADE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	HOR: 1:30 VER: 1:10
9/20/12	CITY COMMENTS	STAFF	EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHOS DRIVE IN FRONT OF LOT 12, BLOCK 7, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	





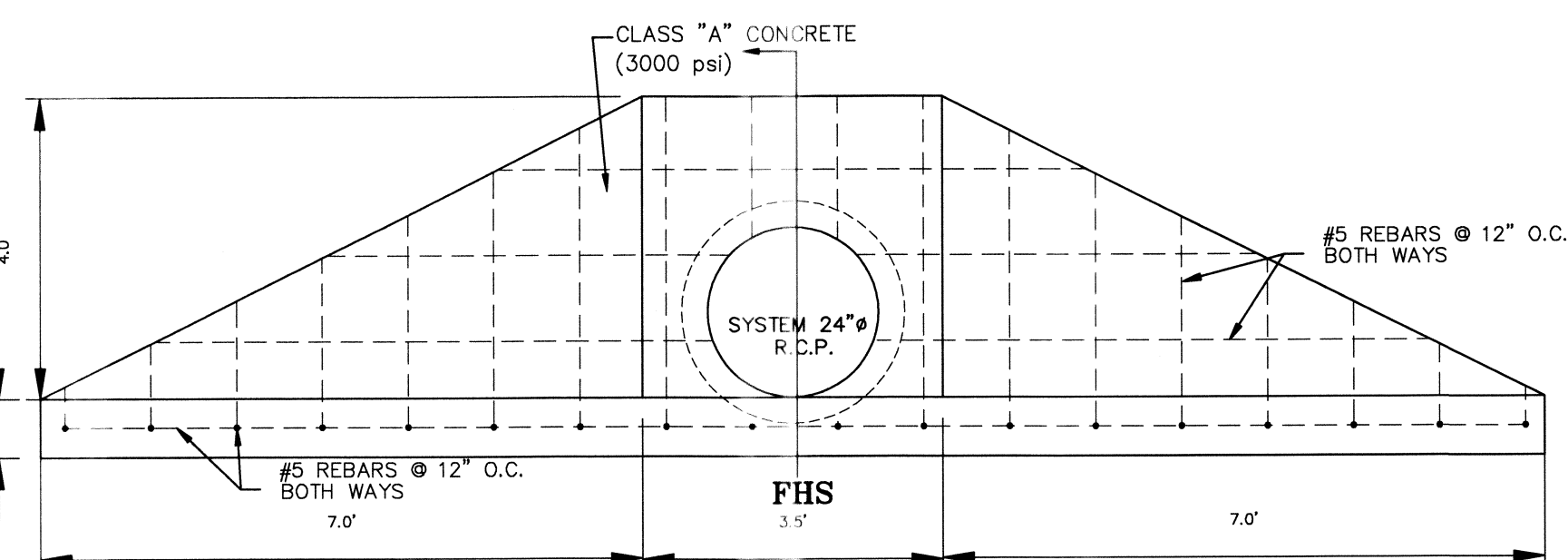
DRAINAGE SYSTEM "B" PLAN VIEW

HORZ. SCALE: 1" = 30'



DRAINAGE SYSTEM "B" PROFILE

HORZ. SCALE: 1" = 30'  
VER. SCALE: 1" = 10'



24" OUTFLOW STRUCTURE DETAIL

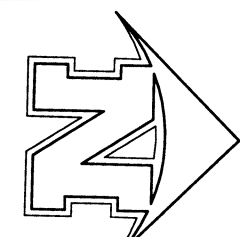
SCALE 1" = 2'

TEST RESULTS

THE OWNER / DEVELOPER FIELD SUPERINTENDENT SHALL PROVIDE ALL TEST RESULTS WITHIN FORTY-EIGHT (48) HOURS OF RECEIPT OF TEST RESULTS TO THE COUNTY CONSTRUCTION INSPECTOR.

NOTES-

- CONCRETE FOR ALL DRAINAGE STRUCTURES SHALL BE CLASS-A CONCRETE AND SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000 P.S.I.
- SUBGRADE UNDER ALL DRAINAGE STRUCTURE SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557.
- ALL CONSTRUCTION AND MATERIAL SHALL BE IN ACCORDANCE WITH THE CURRENT COUNTY OF EL PASO STANDARD SPECIFICATIONS.



SCALE: 1" = 30'

DROP INLET #1-B  
DRAINAGE CALCULATIONS  
TYPE ONE

<b>GRATING</b>	
$Q_{CAP} = 0.7 \times \text{AREA} \times (2 \times 32.2 \times H)^{1/2}$	
$Q_{CAP} = 0.7 \times 3.86 \times (2 \times 32.2 \times 0.42)^{1/2}$	
$Q_{CAP} = 14.00 \text{ cfs} \times 0.67 \text{ (CLOGGING FACTOR)}$	
$Q_{CAP} = 9.33 \text{ cfs}$	
<b>WEIR - CURB OPENING</b>	
$Q_{CAP} = 3.087 \times L \times H^{3/2}$	
$Q_{CAP} = 3.087 \times 1.93 \times 0.42^{3/2}$	
$Q_{CAP} = 1.6 \text{ cfs}$	
<b># OF GRATES NEEDED FOR DROP INLET</b>	
$Q_{CAP} = 9.33 + 1.60 = 10.93 \text{ c.f.s.}$	
# OF GRATES = $21.90 / 10.93 = 2.01$	
USE 3 GRATES	

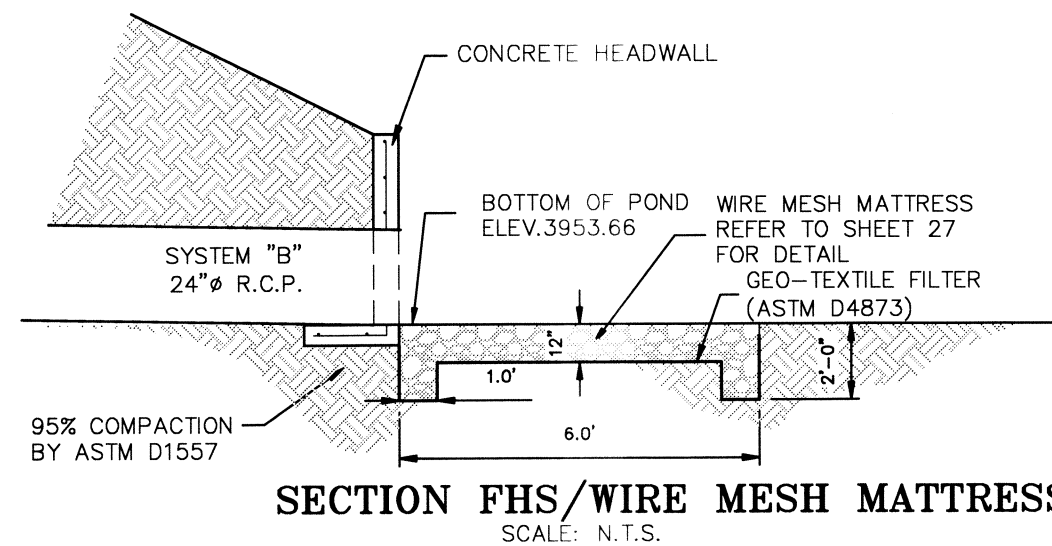
DROP INLET NOTES

- WELDED STEEL OR CAST GRATES AS DETAILED ARE ALL ACCEPTABLE GRATES. MIXING OF ALTERNATE TYPES OF GRATES ON THE SAME PROJECT WILL BE PERMITTED WITH THE APPROVAL OF THE CITY ENGINEER.
- ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARD SPECIFICATIONS.
- SHARP EDGES RESULTING FROM FABRICATION SHALL BE DULLED BY ANY ACCEPTABLE METHOD FOR SAFETY AND HANDLING.
- GRATES SHALL BE INSTALLED IN FRAME WITH FLOW ARROW POINTING DOWNSTREAM OR TOWARD THE LOW POINT IN A SUMP.
- WELDED GRATES SHALL BE STRUCTURAL STEEL CONFORMING TO THE REQUIREMENTS OF AASHTO M-183 OR OF CORROSION RESISTANT STRUCTURAL STEEL CONFORMING TO THE REQUIREMENTS OF AASHTO M-161 OR M-222 OR BE MADE OF OTHER APPROVED STEELS OF EQUAL QUALITY. MIXING GRATES OF STEEL ON THE SAME GRATE WILL NOT BE PERMITTED.
- GRATES MADE OF M-183 STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M-111 SPECIFICATIONS OR SHALL BE PAINTED WITH INORGANIC ZINC PAINTS, MEETING THE REQUIREMENTS OF CURRENT STANDARD SPECIFICATIONS.
- ALL WELDS SHALL BE A MINIMUM OF 1/4" FILLET AND SHALL CONFORM TO THE SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND TO THE A.W.S. STRUCTURAL WELDING CODE. ELECTRODES SHALL BE COMPATIBLE TO THE DIFFERENT GRADES OF STEEL THAT COMPRISE THE GRATE MEMBERS.
- CAST GRATES SHALL BE CAST STEEL CONFORMING TO THE REQUIREMENTS OF AASHTO M-103 GRADE 65-35 OR OF DUCTILE IRON CONFORMING TO THE REQUIREMENTS OF ASTM A-536, SPECIAL GRADE 60-45, OR OF GRAY IRON CONFORMING TO THE REQUIREMENTS OF AASHTO M-105, CLASS 35B OR ASTM A-48 CLASS 35B. THE SPECIFICATIONS OF GENERAL APPLICATION FOR CAST STEEL GRATES SHALL BE AASHTO M-103 SCOPE 1.2.1, GRADE N-1.
- FERROUS CASTINGS SHALL BE OF UNIFORM QUALITY, FREE OF BLOWHOLES, POROSITY, HARD SPOTS, SHRINKAGE DISTORTION OR OTHER DEFECTS. THEY SHALL BE SMOOTH AND WELL CLEANED BY SHOT BLASTING OR OTHER APPROVED CLEANING METHOD. AFTER CLEANING THEY SHALL BE COATED WITH ASPHALT BASE PAINT RESULTING IN A SMOOTH COATING, TOUGH AND TENACIOUS WHEN COLD, NOT TACKY NOR BRITTLE.
- ALL CASTINGS SHALL BE MANUFACTURED TRUE TO PATTERN. COMPONENT PARTS SHALL FIT TOGETHER IN A SATISFACTORY MANNER.
- MINIMUM CONCRETE COVER SHALL BE 1 1/2" FOR STEEL REINFORCING.
- EXPANSION MATERIAL TO BE 1/2" BITUMINOUS FIBER AND TO BE PLACED WHERE PROPOSED CONCRETE COMES IN CONTACT WITH ANY EXISTING OR PROPOSED CONCRETE OR MASONRY STRUCTURE.
- STRUCTURAL STEEL SHALL BE SHOP PAINTED IN ACCORDANCE WITH T.H.D. ITEM 446 "PAINT AND PAINTING".
- SURFACE OF ALL EXPOSED CONCRETE SHALL CONFORM IN SLOPE AND GRADE TO EXISTING OR PROPOSED CURB AND WALK ADJACENT TO INLETS.
- GRATE WILL BE DEPRESSED 1" BELOW PROPOSED OR EXISTING GRADE.
- ALL REINFORCING BARS TO BE # 4 BARS AT 6" O.C. GRADE 60. BEND BARS AROUND PIPE OPENINGS.
- INLETS TO BE DESIGNATED IN PLANS BY NUMBER OF GRATES REQUIRED.
- LOCATION OF SEWER PIPES SHOWN ELSEWHERE IN PLANS.
- 2 - 1/2" DIA. X 4" LONG CONC. ANCHOR STUDS REQUIRED FOR EACH SIDE OF FRAME, WHERE RESTING ON CONCRETE, USE NELSON STUDS OR EQUAL.
- THE GRATES OF ALL INLETS WITHIN THE STREET PAVEMENT MUST BE CONSTRUCTED WITH THE GRATE BARS PERPENDICULAR TO THE CURB.
- EXCAVATION WHICH WILL EXCEED FIVE (5) FEET IN DEPTH SHALL PROVIDE FOR TRENCH SAFETY AS PER OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) GUIDELINES.

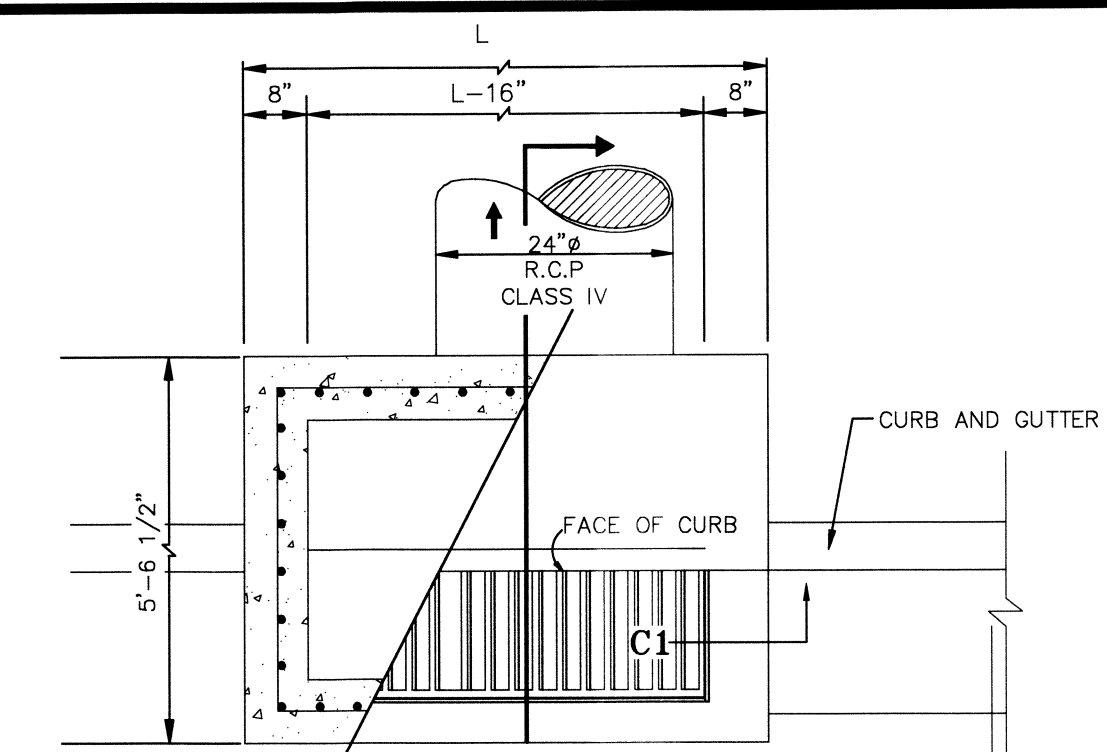
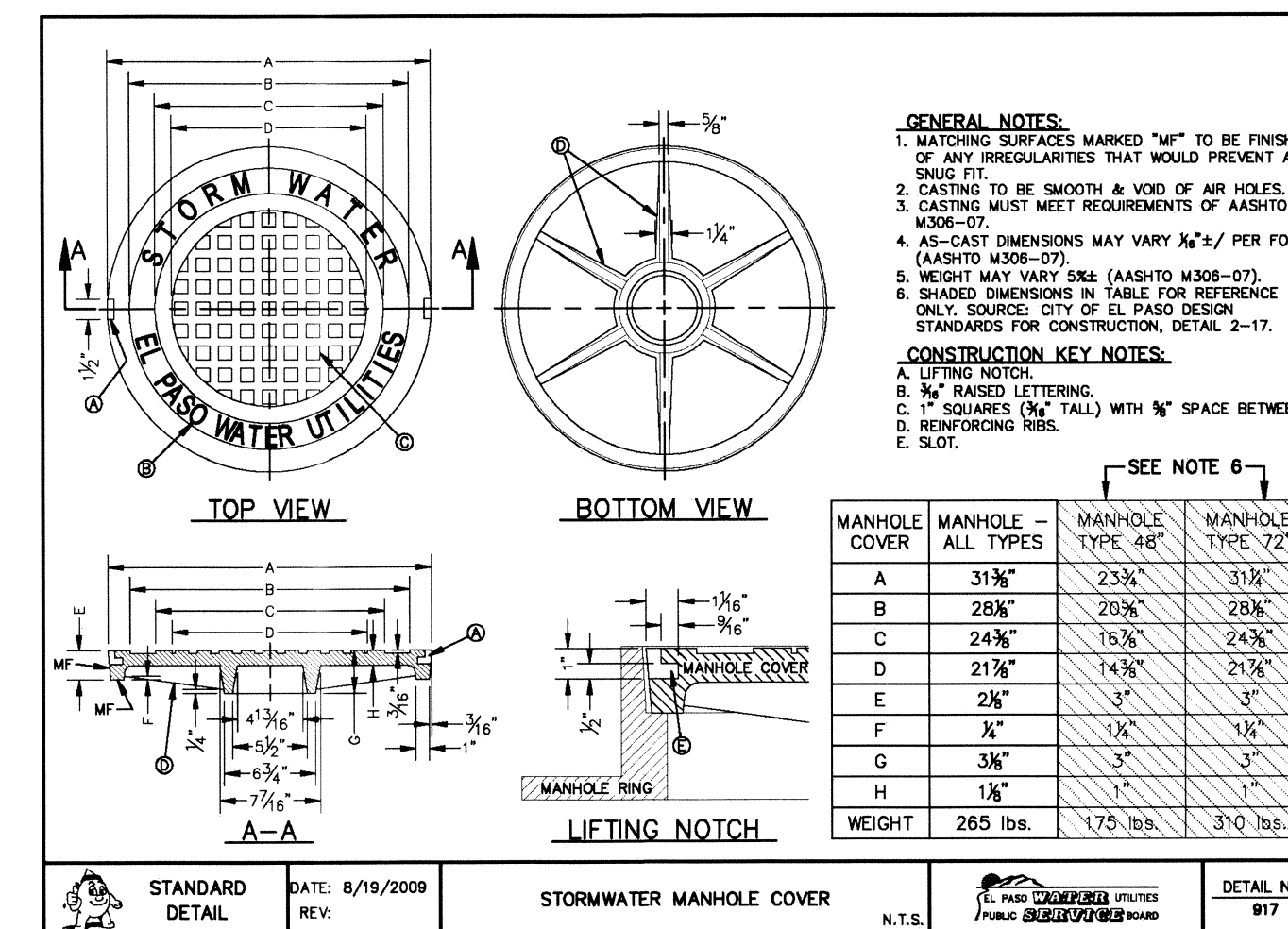
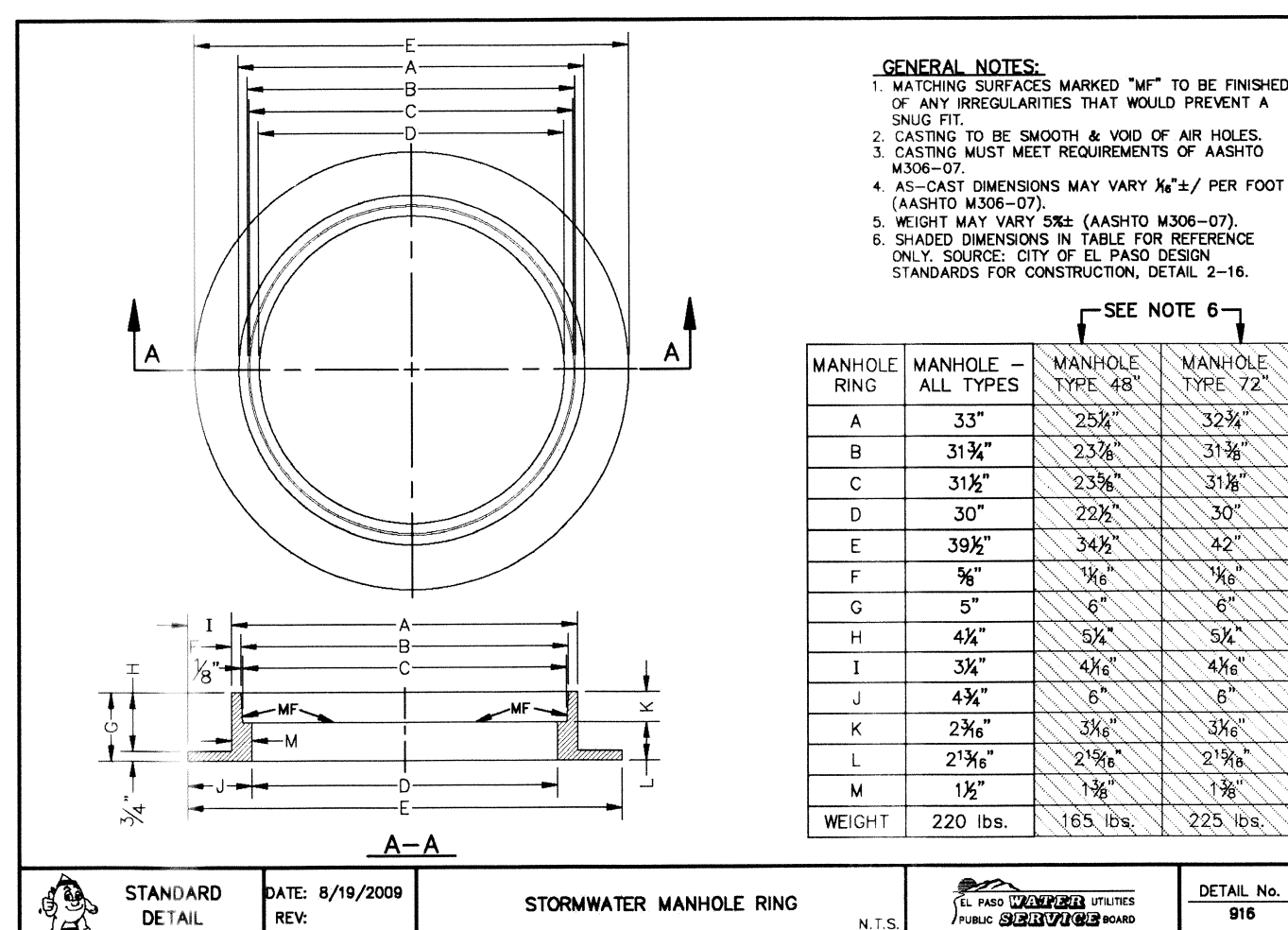
DROP INLET TYP. I @ ENCHANTED BRIM DR.

DROP INLET	REQUIRED FLOW CAPACITY Q REQ. (CFS)	AVAILABLE FLOW CAPACITY Q AVAIL. (CFS)	ADDITIONAL FLOW (CFS)	FLOW BYPASS	TYPE OF INLET	NUMBER OF GRATES
1-B	21.22	32.79	0	0	I	3

NO. OF GRATES	L'	BEAMS	
		LENGTH	MINIMUM SIZES
3	7'-1 7/8"	6'-7 7/8"	W8X15, S7X15.3, MC7X17.6

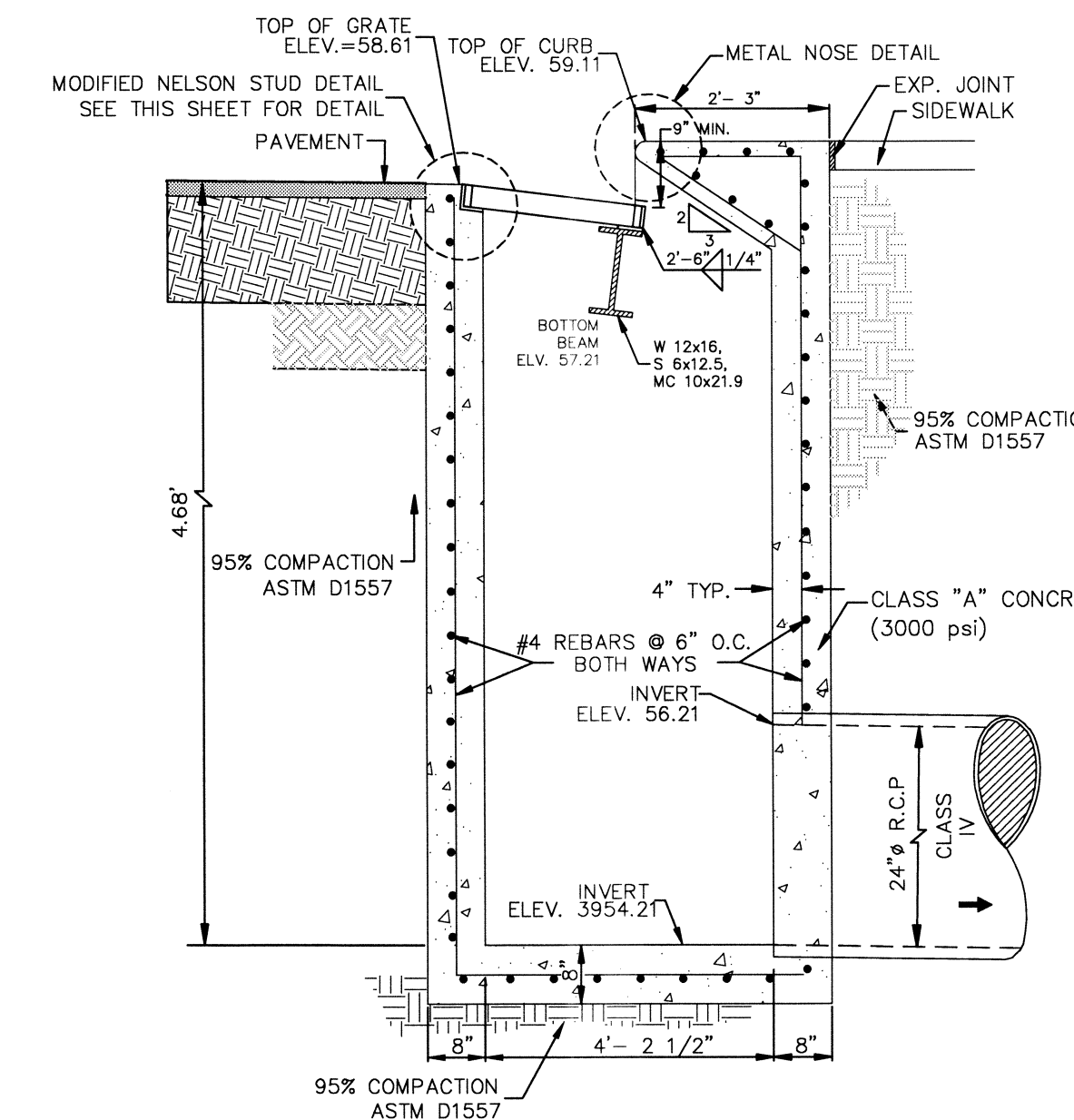


SECTION FHS/WIRE MESH MATTRESS  
SCALE: N.T.S.



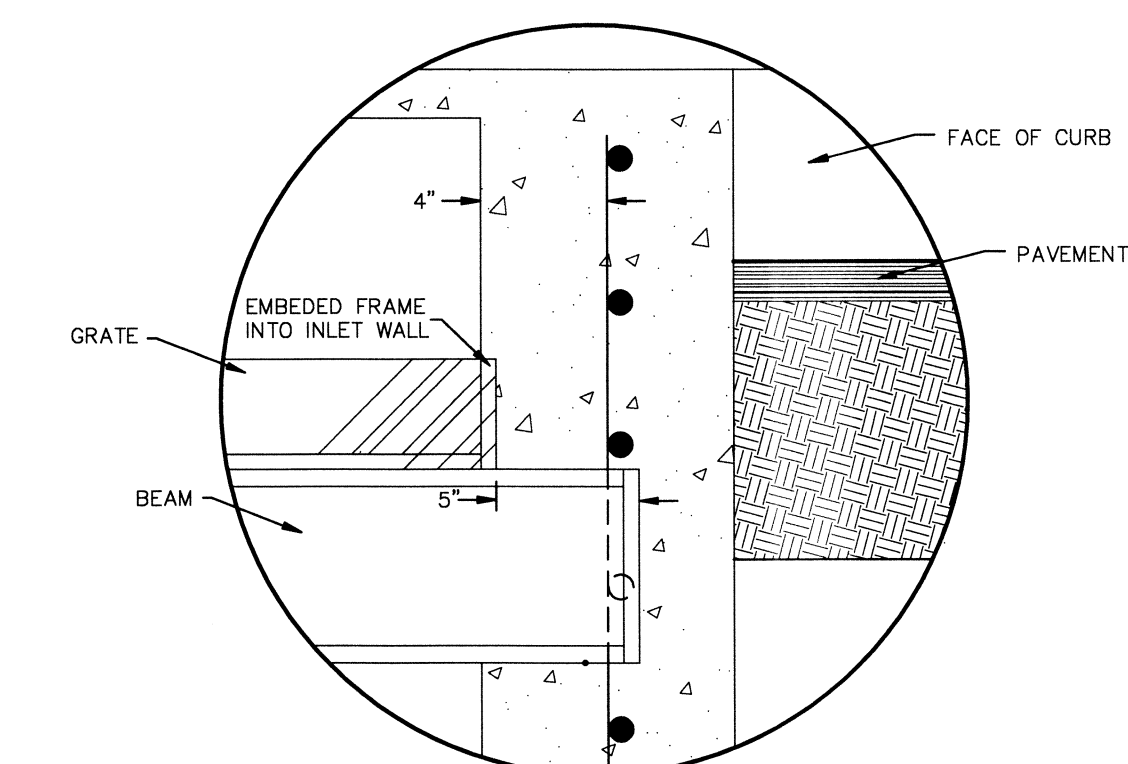
PLAN VIEW DROP INLET #1-B (TYPE 1)

SCALE N.T.S. (3 GRATE)



SECTION DROP INLET #1-B (TYPE 1)

SCALE N.T.S. (3 GRATE)

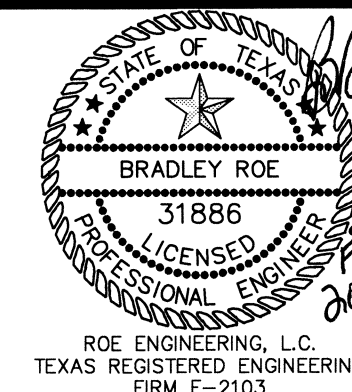


SECTION C1-C1 THIS SHEET

ENGINEERING & CONSTRUCTION  
MANAGEMENT DEPARTMENT

REVIEWED

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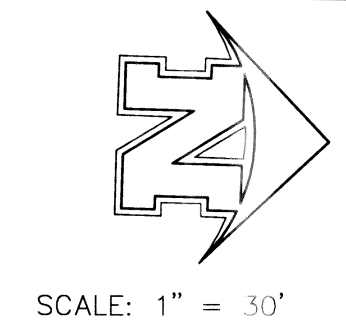
STORM DRAINAGE PLAN AND PROFILE  
**ENCHANTED HILLS  
UNIT THREE**  
SYSTEM B  
PLAN AND PROFILE  
ENCHANTED VIEW DR. STA 5+75

Roehp  
Roe Engineering, L.C.  
601 N. Cotton St. Suite No. 8 El Paso, Tx. 79902  
(915) 633-1418 - FAX: (915) 633-4972  
e-mail: roeeng@roebell.net  
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING  
SHEET 25 OF 77

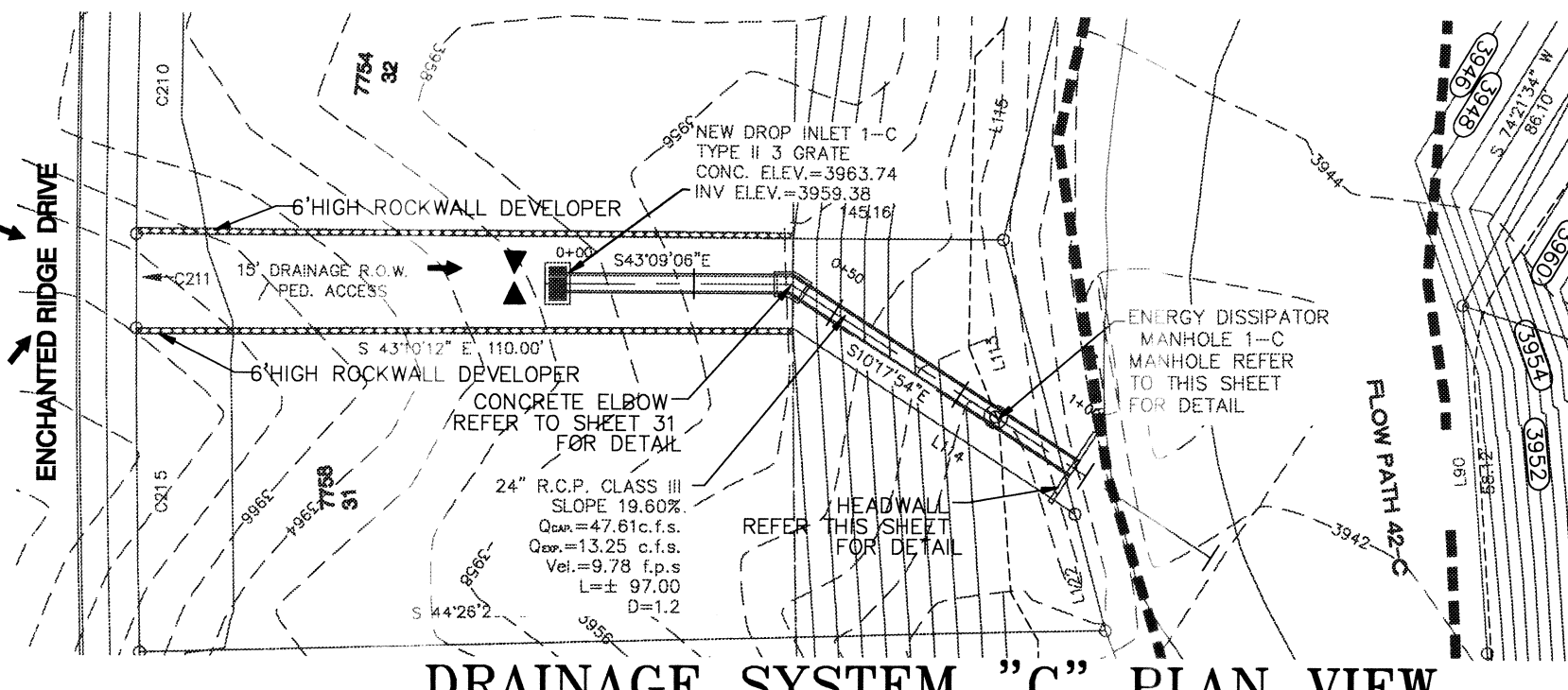
DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	N.S. MONUMENT (2000) 1580' (PRC 600444) LOCATION AS PER NATIONAL GEODETIC SURVEY 1983: LOCATION: 1.25 MILES EAST OF THE RD GRADE 1.1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10, ELEVATION 3946.11 NAVD 88	HOR: 1:30 VER: 1:10 FILE NAME: W.O. 011509-1 A EH-3
9/20/12	CITY COMMENTS	STAFF	EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 2, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21 N.A.V.D. 88 DATUM - 10.18' - CITY OF EL PASO DATUM	DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR

### DROP INLET NOTES

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- WELDED GRATES SHALL BE STRUCTURAL STEEL CONFORMING TO THE REQUIREMENTS OF AASHTO M-183 OR OF CORROSION RESISTANT STRUCTURAL STEEL CONFORMING TO THE REQUIREMENTS OF AASHTO M-161 OR M-222 OR BE MADE OF OTHER APPROVED STEELS OF EQUAL QUALITY. MIXING GRATES OF STEEL ON THE SAME GRATE WILL NOT BE PERMITTED.
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- ALL WELDS SHALL BE A MINIMUM OF 1/4" FILLET AND SHALL CONFORM TO THE SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND TO THE A.W.S. STRUCTURAL WELDING CODE. ELECTRODES SHALL BE COMPATIBLE TO THE DIFFERENT GRADES OF STEEL THAT COMPRISE THE GRATE MEMBERS.
- CAST GRATES SHALL BE CAST STEEL CONFORMING TO THE REQUIREMENTS OF AASHTO M-103, GRADE 65-35 OR OF DUCTILE IRON CONFORMING TO THE REQUIREMENTS OF ASTM A-536, SPECIAL GRADE 60-45, OR OF GRAY IRON CONFORMING TO THE REQUIREMENTS OF AASHTO M-105, CLASS 35B OR ASTM A-48 CLASS 35B. THE SPECIFICATIONS OF GENERAL APPLICATION FOR CAST STEEL GRATES SHALL BE AASHTO M-103 SCOPE 1.2.1, GRADE N-1.
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- ALL CASTINGS SHALL BE MANUFACTURED TRUE TO PATTERN. COMPONENT PARTS SHALL FIT TOGETHER IN A SATISFACTORY MANNER.
- ALL CONCRETE TO BE 3000 P.S.I. CHAMFER ALL EXPOSED EDGES 3/4". ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
- MINIMUM CONCRETE COVER SHALL BE 1 1/2" FOR STEEL REINFORCING.
- EXPANSION MATERIAL TO BE 1/2" BITUMINOUS FIBER AND TO BE PLACED WHERE PROPOSED CONCRETE COMES IN CONTACT WITH ANY EXISTING OR PROPOSED CONCRETE OR MASONRY STRUCTURE.
- STRUCTURAL STEEL SHALL BE SHOP PAINTED IN ACCORDANCE WITH T.H.D. ITEM 446 "PAINT AND PAINTING".
- SURFACE OF ALL EXPOSED CONCRETE SHALL CONFORM IN GRADE AND GRADE TO EXISTING OR PROPOSED CURB AND WALK ADJACENT TO INLETS.
- GRATE WILL BE DEPRESSED 1" BELOW PROPOSED OR EXISTING GRADE.
- ALL REINFORCING BARS TO BE # 4 BARS AT 6" O.C. GRADE 60. BEND BARS AROUND PIPE OPENINGS.
- INLETS TO BE DESIGNATED IN PLANS BY NUMBER OF GRATES REQUIRED.
- LOCATION OF SEWER PIPES SHOWN ELSEWHERE IN PLANS.
- 2 - 1/2" DIA. X 4" LONG CONC. ANCHOR STUDS REQUIRED FOR EACH SIDE OF FRAME, WHERE RESTING ON CONCRETE, USE NELSON STUDS OR EQUAL.
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- EXCAVATION WHICH WILL EXCEED FIVE (5) FEET IN DEPTH SHALL PROVIDE FOR TRENCH SAFETY AS PER OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) GUIDELINES.



SCALE: 1" = 30'



**DRAINAGE SYSTEM "C" PLAN VIEW**

HORZ. SCALE: 1" = 30'

**DROP INLET #1-C  
DRAINAGE CALCULATIONS  
TYPE TWO**

**GRATING**

Q<sub>cap</sub> = 0.7 x AREA x (2 x 32.2 x H)<sup>1/2</sup>

Q<sub>cap</sub> = 0.7 x 3.86 x (2 x 32.2 x 0.42)<sup>1/2</sup>

Q<sub>cap</sub> = 14.00 cfs x 0.67 (CLOGGING FACTOR)

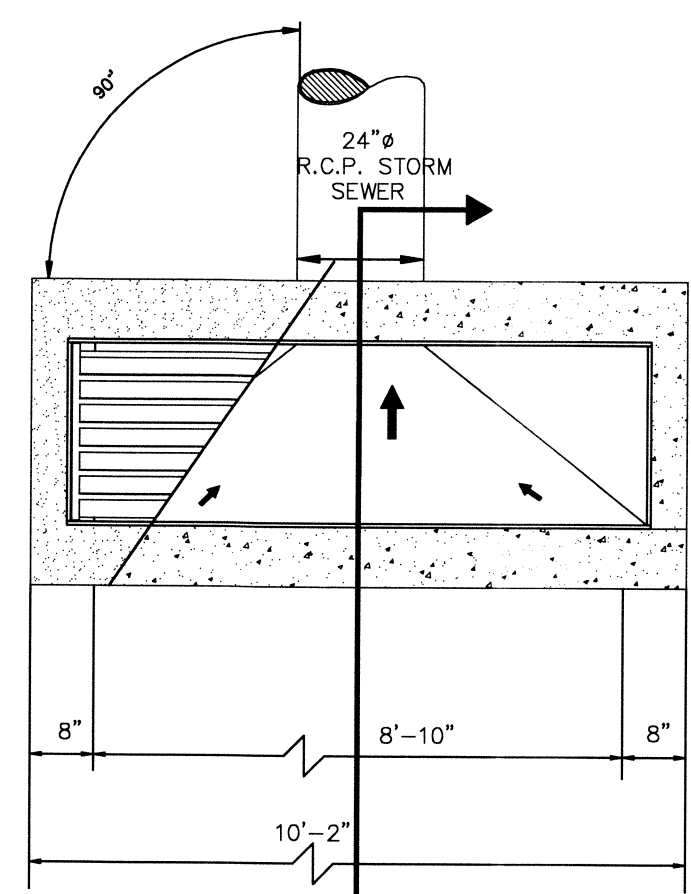
Q<sub>cap</sub> = 9.33 c.f.s.

**# OF GRATES NEEDED FOR DROP INLET**

Q<sub>cap</sub> = 9.33 c.f.s.

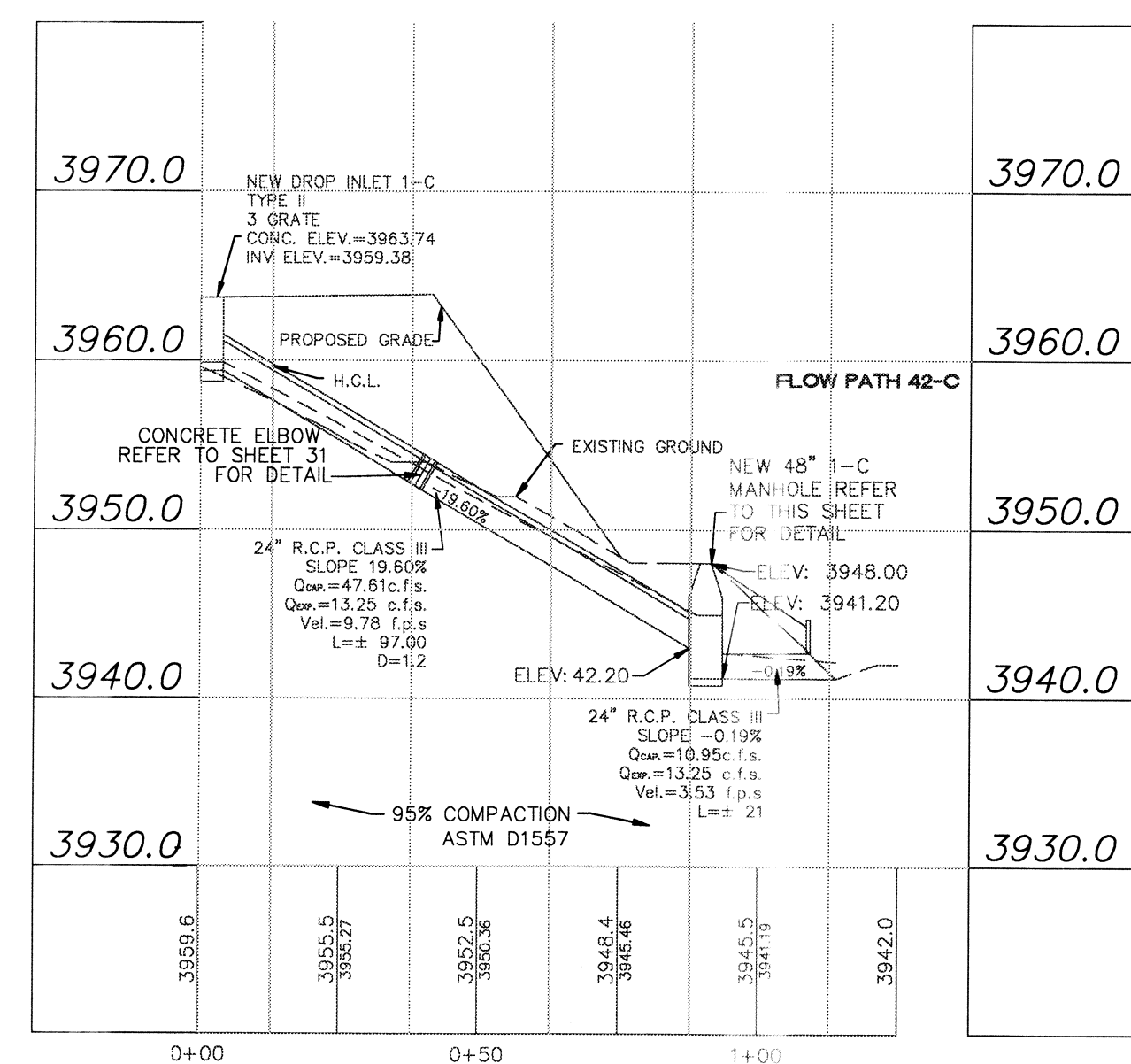
# OF GRATES = 13.25/9.33 = 1.42

USE 3 GRATES



**TYPE II  
DROP INLET #1-C - PLAN VIEW**

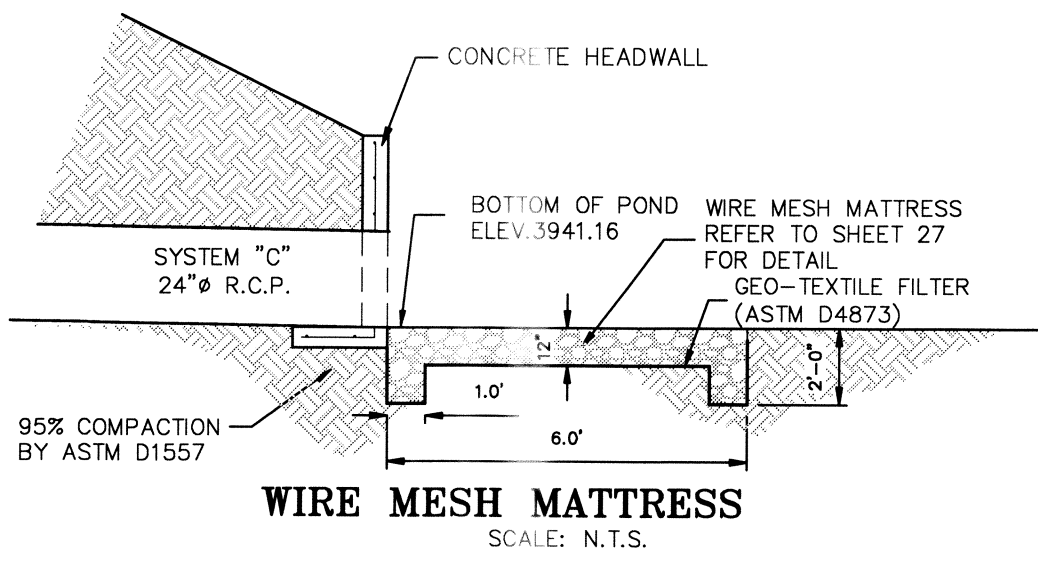
SCALE: 1" = 1'



**DRAINAGE SYSTEM "C" PROFILE**

HORZ. SCALE: 1" = 30'

VER. SCALE: 1" = 10'

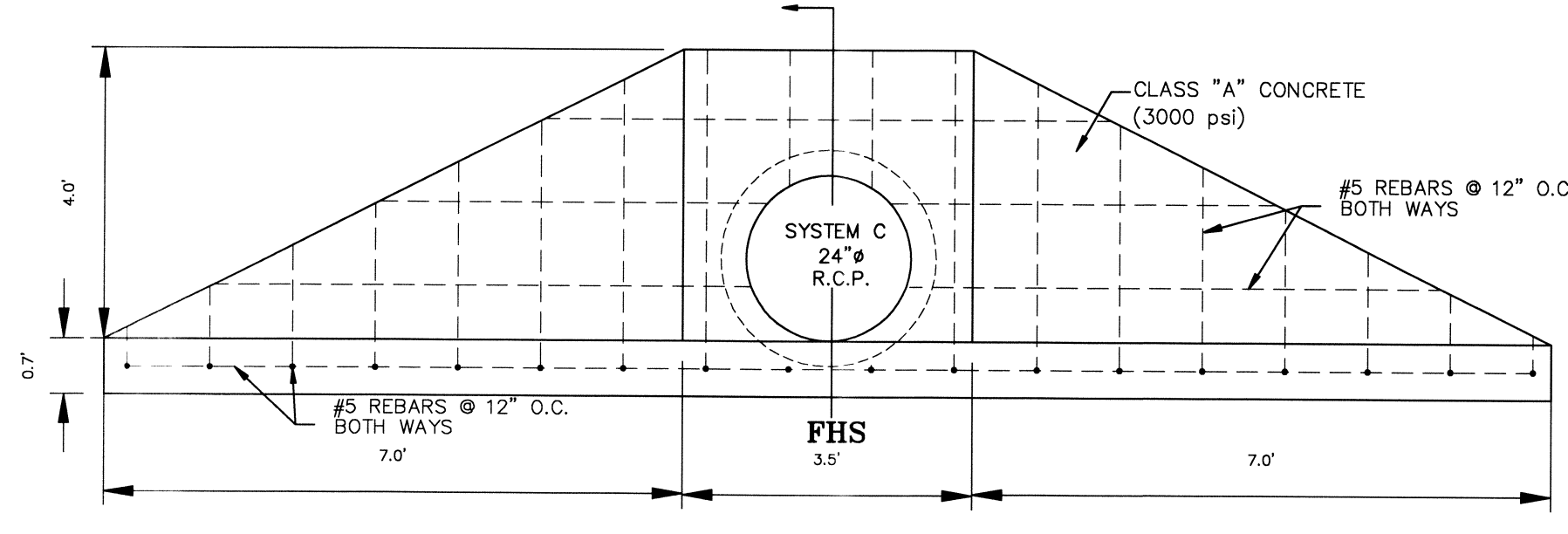


**WIRE MESH MATTRESS**

SCALE: N.T.S.

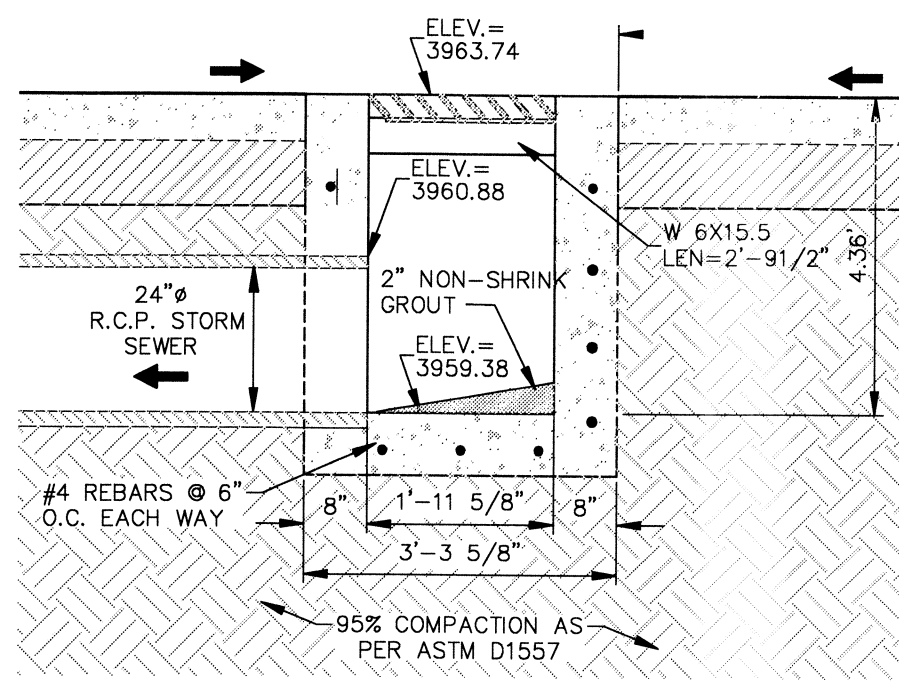
**DROP INLET TYP. II @ 15' DRAINAGE R.O.W./PED. ACCESS**

DROP INLET	REQUIRED FLOW CAPACITY @ REQ. (CFS)	AVAILABLE FLOW CAPACITY @ ANAL. (CFS)	ADDITIONAL FLOW (CFS)	FLOW BYPASS	TYPE OF INLET	NUMBER OF GRATES
1-C	13.25	27.99	0	0	II	3



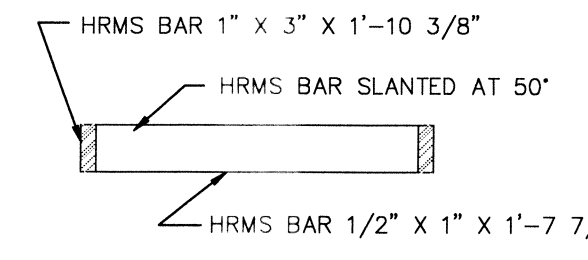
**24" 1-C OUTFLOW STRUCTURE DETAIL**

SCALE 1" = 2'



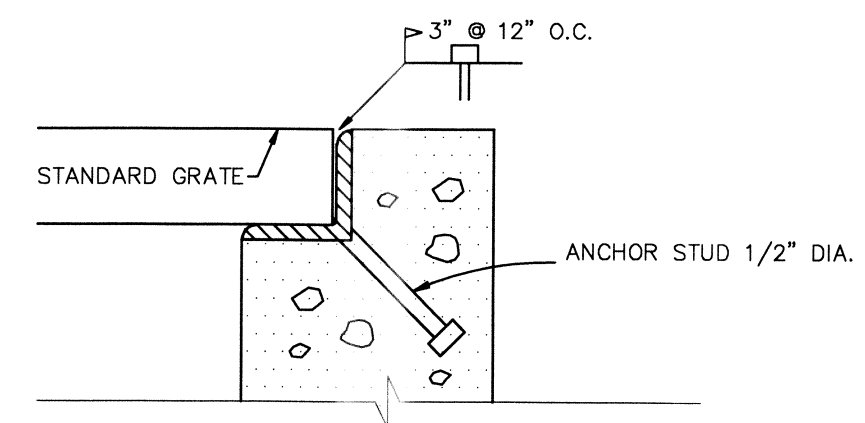
**DROP INLET #1-C  
(TYPE II) - PLAN VIEW**

(5 GRATE) SCALE 1" = 2'



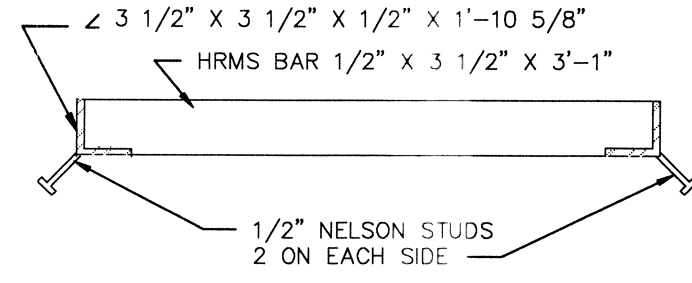
**GRATE SECTION**

SCALE: N.T.S.



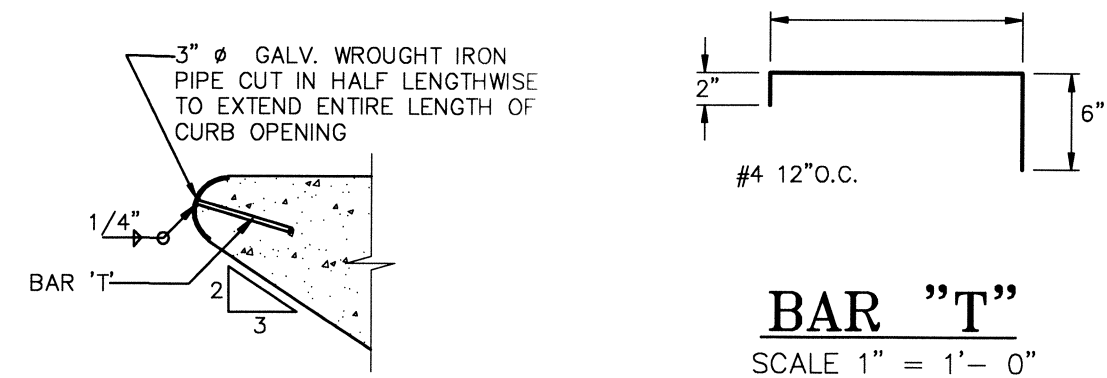
**NELSON STUD DETAIL**

SCALE: 1" = 6"



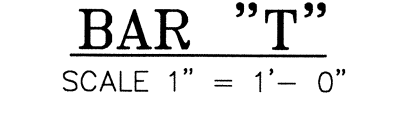
**SECTION A**

SCALE: N.T.S.



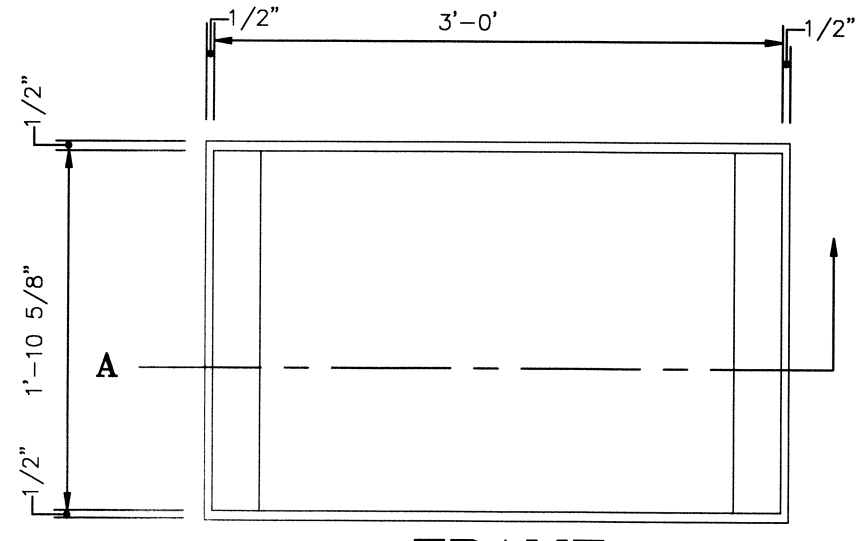
**METAL NOSE DETAIL**

SCALE 1" = 1'-0"



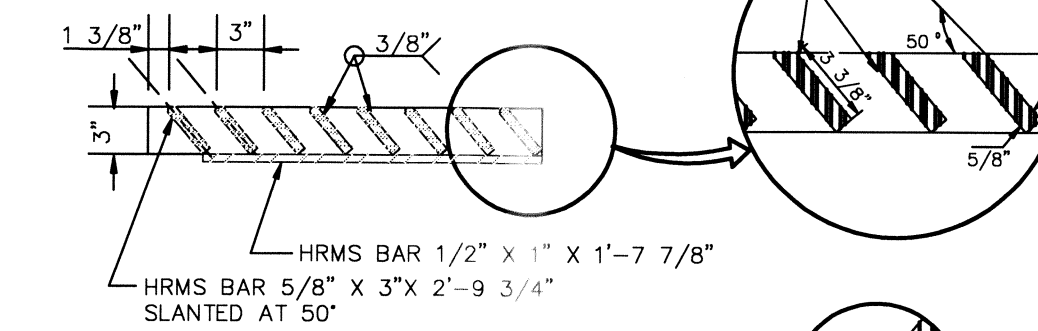
**BAR "T"**

SCALE 1" = 1'-0"



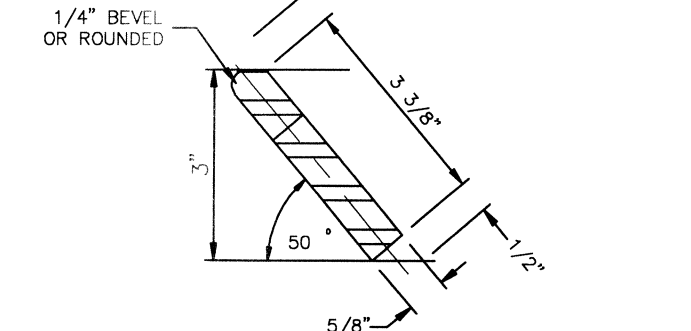
**FRAME**

SCALE: 1" = 1'



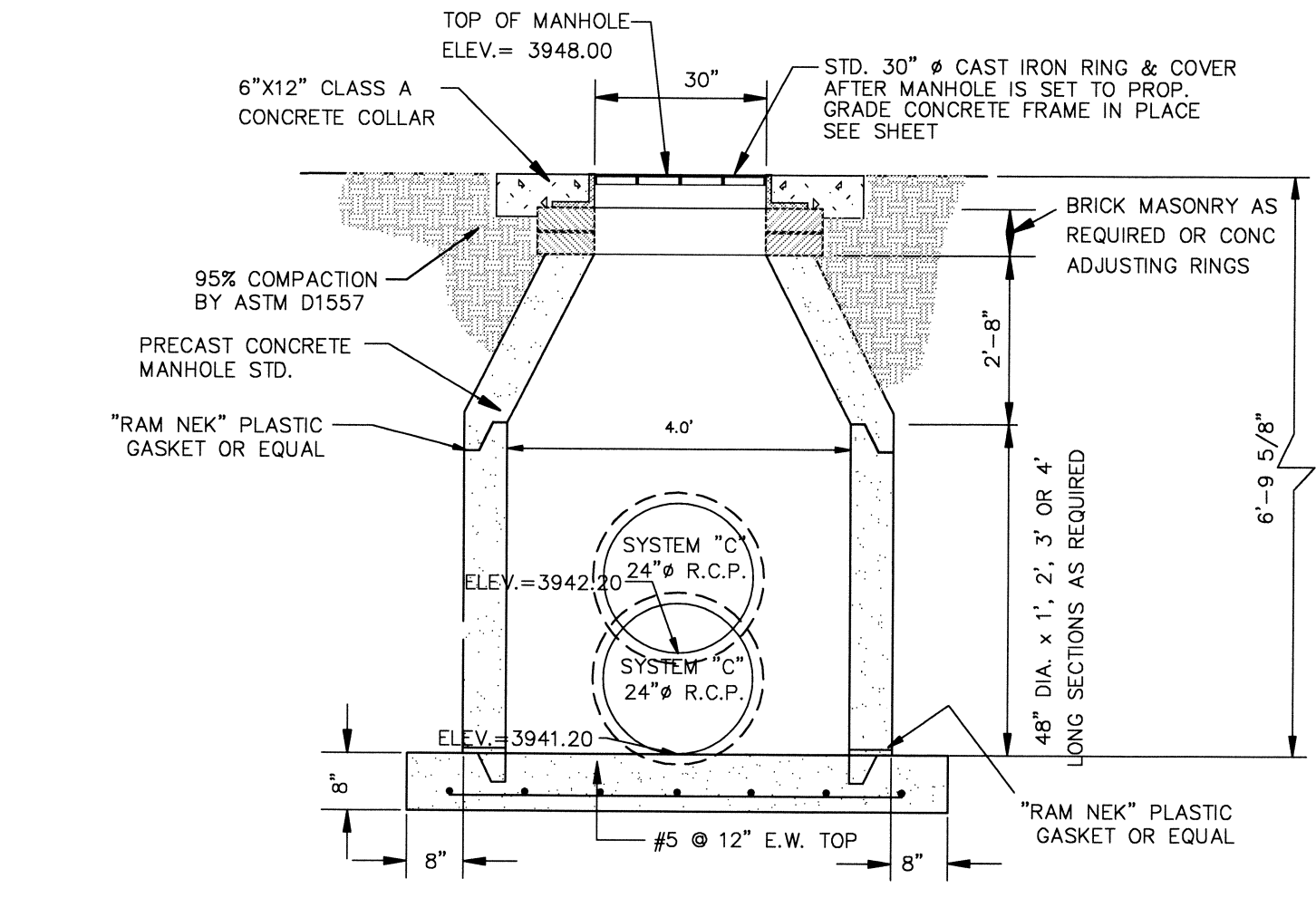
**GRATE SECTION**

SCALE: N.T.S.



**SLANTED BAR DETAIL**

SCALE: 1" = 3"



**ENERGY DISSIPATOR MANHOLE #1-C 48" DIAMETER**

SCALE: N.T.S.



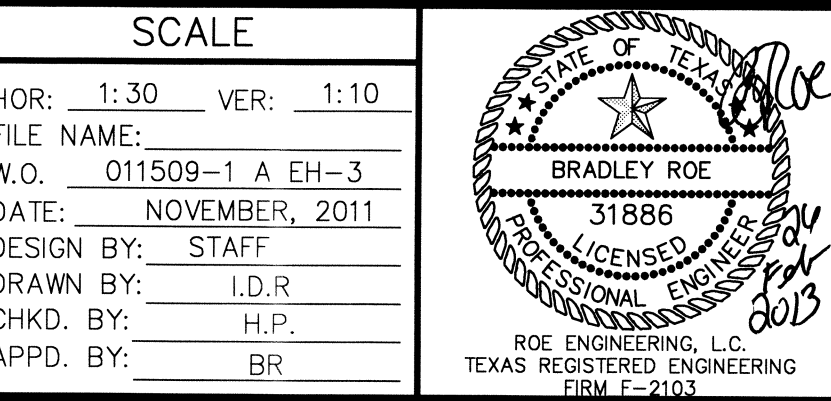
**ENGINEERING & CONSTRUCTION  
MANAGEMENT DEPARTMENT**

**REVIEWED**

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DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	N.T.S. MANHOLE 06100 1880 1880 060224	HOR: 1:30 VER: 1:10
9/20/12	CITY COMMENTS	STAFF	LOCATION AS PER NATIONAL GEODETIC SURVEY 1981; LOCATION ABOUT 1.25 MILES S.W. OF THE RD GRABER 1/2 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 83	FILE NAME: W.O. 011509-1 A EH-3
			EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOROS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	DATE: NOVEMBER, 2011
			N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	DESIGN BY: STAFF
				DRAWN BY: I.D.R.
				CHKD. BY: H.P.
				APPD. BY: BR



**STORM DRAINAGE PLAN AND PROFILE**

**ENCHANTED HILLS  
UNIT THREE**

**SYSTEM C  
PLAN AND PROFILE**

**Roe Engineering, L.C.**  
801 N. Cotton St. Suite No. 6 El Paso, Tx. 79902  
(915) 533-1418 - FAX: (915) 533-4972  
e-mail: roeeng@webell.net

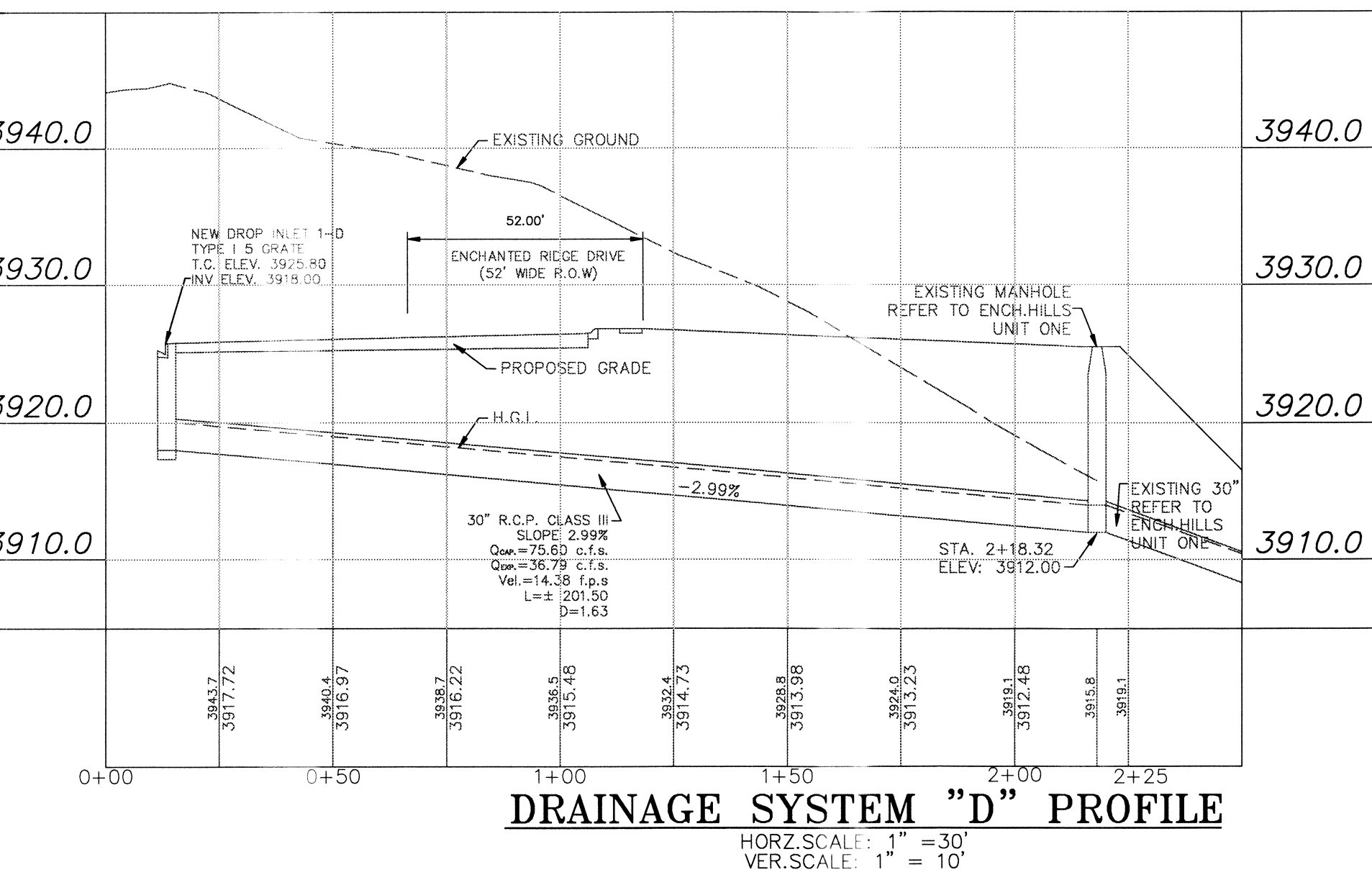
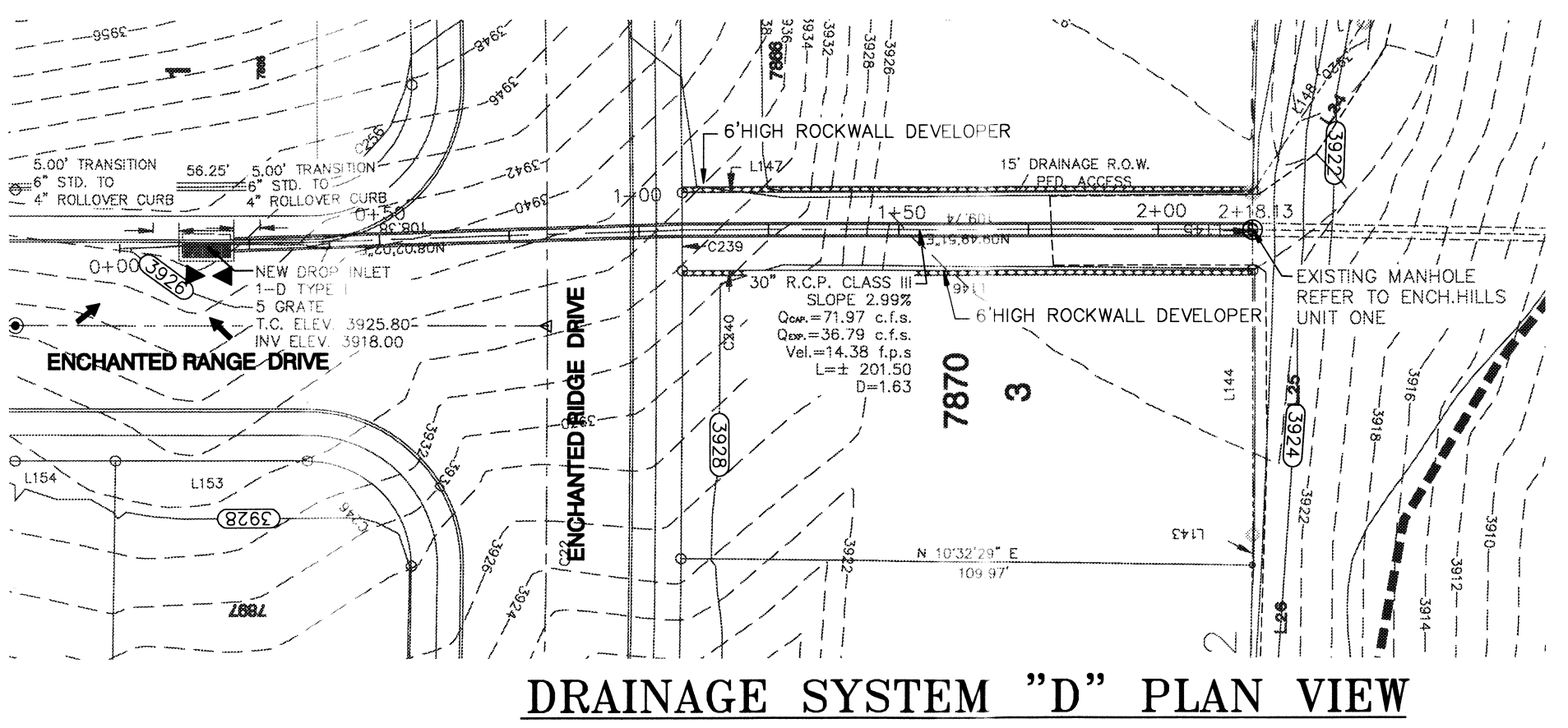
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

**SHEET 26 OF 77**

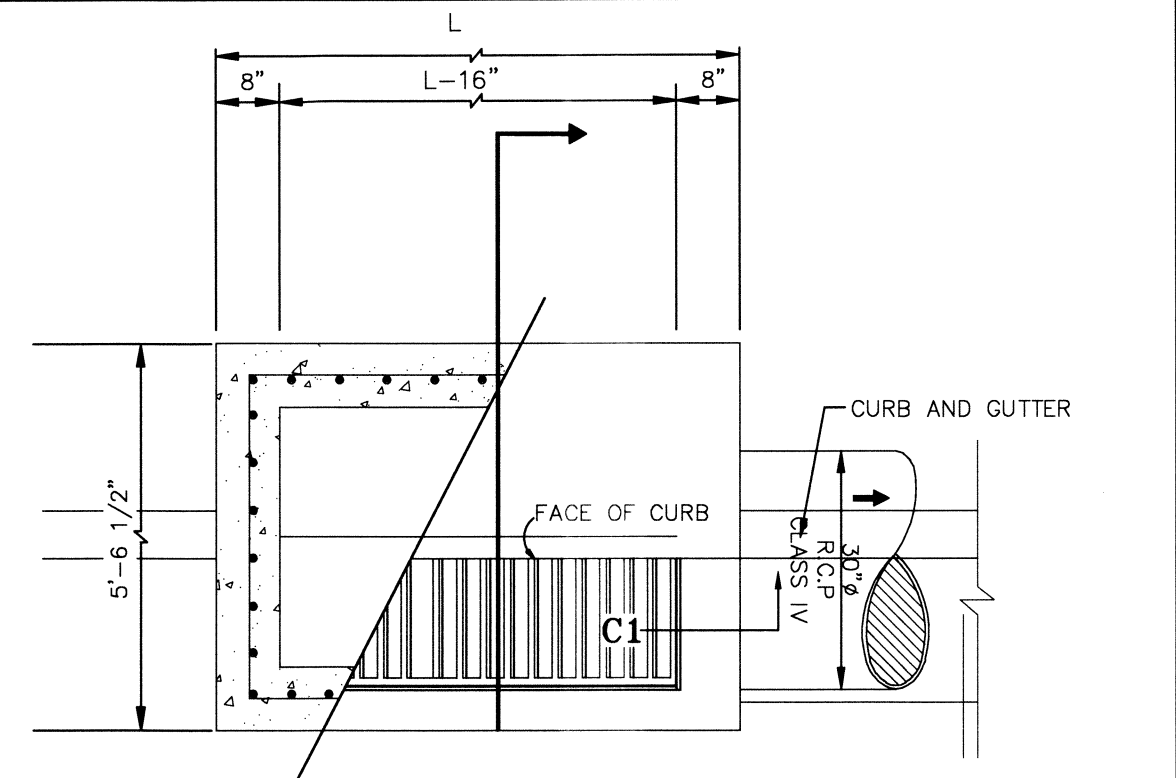
DROP INLET NOTES

- 1. WELDED STEEL OR CAST GRATES AS DETAILED ARE ALL ACCEPTABLE GRATES. MIXING OF ALTERNATE TYPES OF GRATES ON THE SAME PROJECT WILL BE PERMITTED WITH THE APPROVAL OF THE CITY ENGINEER.

DROP INLET #1-D DRAINAGE CALCULATIONS TYPE ONE. GRATING: QCAP = 0.7 x AREA x (2 x 32.2 x H)^1/2...



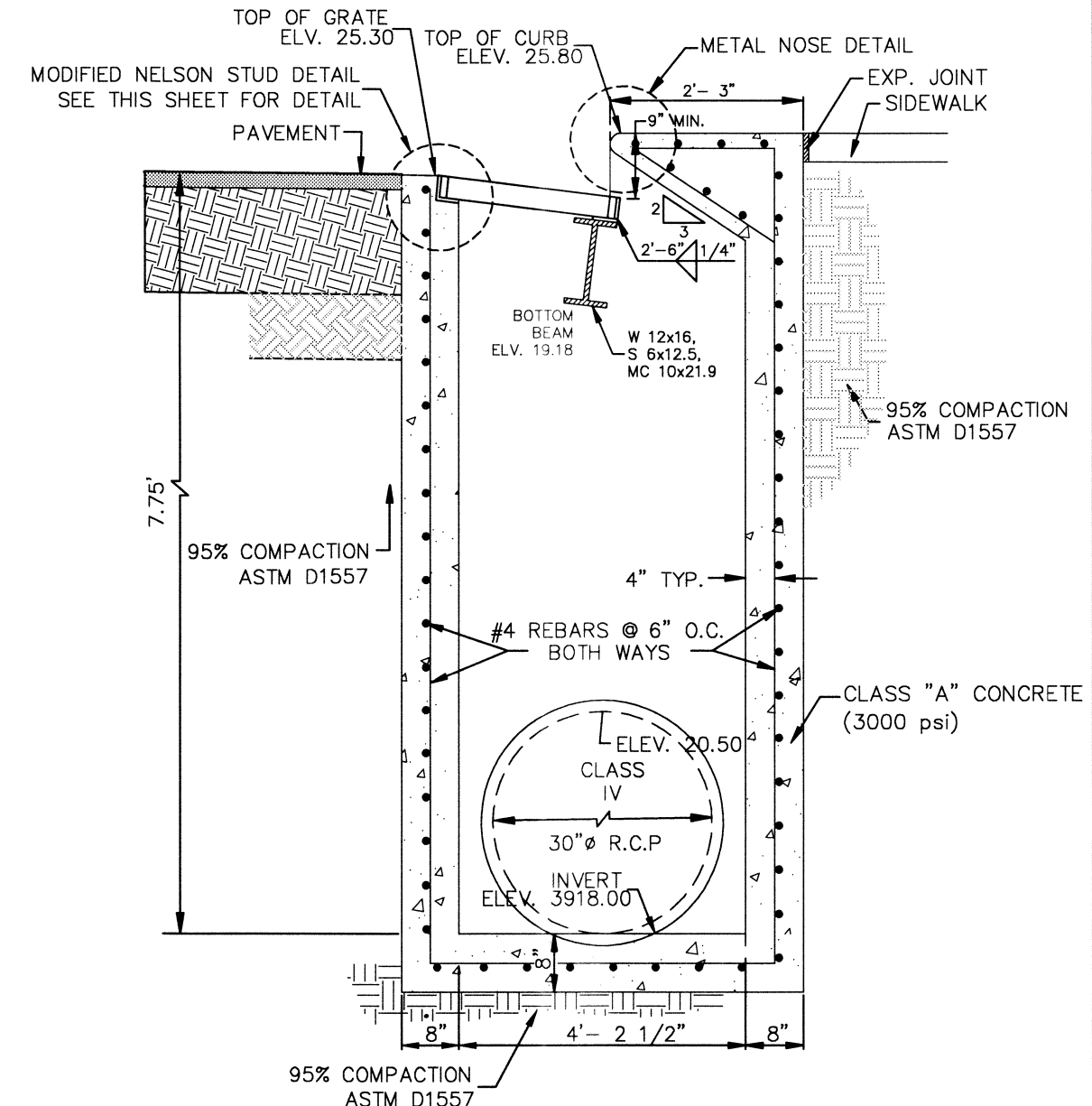
PLAN VIEW DROP INLET #1-D (TYPE 1)



SCALE N.T.S. (5 GRATE)

Table with 7 columns: DROP INLET, REQUIRED FLOW CAPACITY, AVAILABLE FLOW CAPACITY, ADDITIONAL FLOW, FLOW BYPASS, TYPE OF INLET, NUMBER OF GRATES.

Table with 4 columns: NO. OF GRATES, L', LENGTH, BEAMS.



SECTION DROP INLET #1-D (TYPE 1)

SCALE N.T.S. (5 GRATE)

64. WIRE MESH GABIONS AND MATTRESSES

- 1. SCOPE: The work shall consist of furnishing, assembling and installing rock filled wire mesh gabion baskets and mattresses.

Table with 5 columns: Lacing Wire, Winked Mesh, Spiral Binder, Mattress Height, Rock Size Inches, Dimension Inches, Dimension Inches.

NOTE: The wire sizes and PVC coating thickness shown are nominal sizes. The wire sizes include the galvanizing coating thickness.

At least 30 days prior to delivery to the site, the Contractor shall include the engineer in writing of the source from which the rock will be obtained...

- 3. MATERIALS: Gabions shall be fabricated, assembled and installed in accordance with the nominal wire sizes and dimensions found in Tables 1 and 2...

- a. Specific Gravity: In the range of 1.30 to 1.40, ASTM D 792.

The foundation on which the gabions are to be placed shall be cut or filled and graded to the lines and grades shown on the drawings.

TABLE 1 (Minimum Requirements) - GABION BASKETS - Height 12, 18, or 36 Inches, Length as Specified

After the exposure to ultraviolet light and the salt spray test as specified above, the PVC coating shall not show cracks, blisters, splits, nor noticeable change of coloring (surface chalk).

Interior diaphragms will be required where any inside dimension exceeds three (3) feet for gabion baskets thicker than 12".

TABLE 2 (Minimum Requirements) - GABION MATTRESSES - Height 6, 9, or 12 Inches, Length as Specified

Table with 5 columns: Gabion Basket or Mattress, Predominant Rock, Minimum Rock, Maximum Rock.

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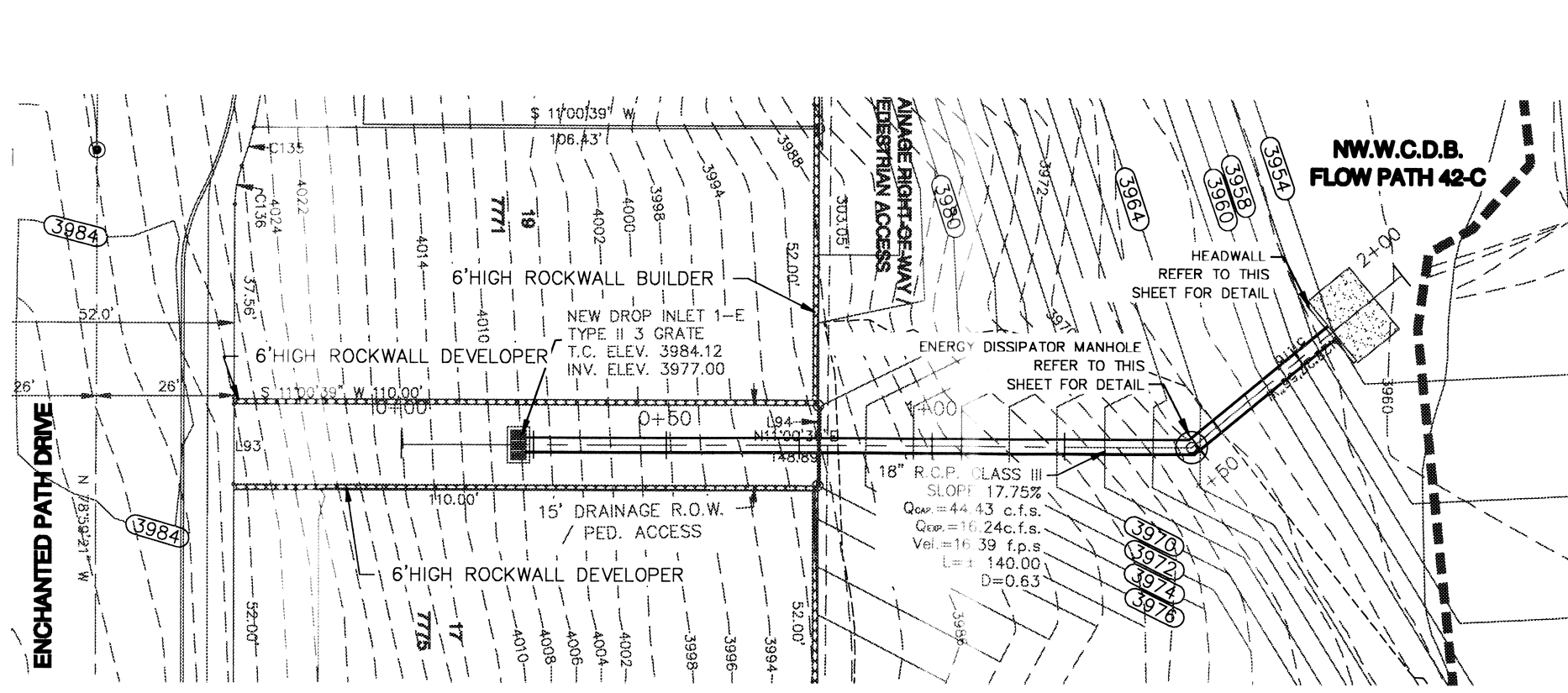
Table with 4 columns: DATE, REVISIONS, BY, PRIMARY BENCHMARK.

Table with 4 columns: SCALE, STORM DRAINAGE PLAN AND PROFILE, ENCHANTED HILLS UNIT THREE.

Professional Engineer seal for Bradley Roe, State of Texas, License No. 31856.

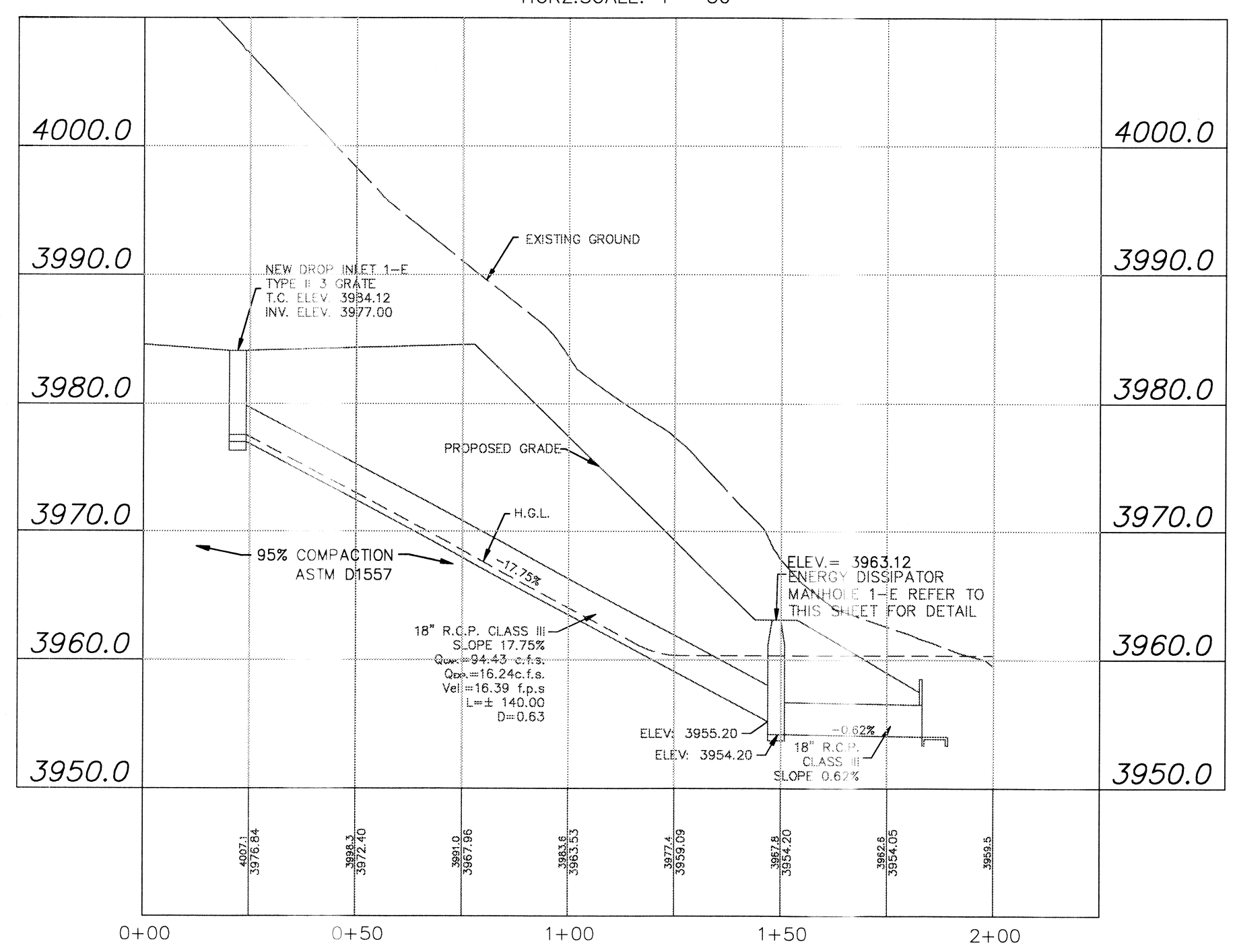
ENCHANTED HILLS UNIT THREE SYSTEM D PLAN AND PROFILE ENCHANTED RANGE DR. SHEET 27 OF 77

Roe Engineering, L.C. 601 N. Cotton St. Suite No. 6 El Paso, Tx 79902



**DRAINAGE SYSTEM "E" PLAN VIEW**

HORZ. SCALE: 1" = 30'



**DRAINAGE SYSTEM "E" PROFILE**

HORZ. SCALE: 1" = 30'  
VER. SCALE: 1" = 10'

**DRAINAGE CALCULATIONS TYPE ONE**

**GRATING**

$Q_{CAP} = 0.7 \times \text{AREA} \times (2 \times 32.2 \times H)^{1/2}$

$Q_{CAP} = 0.7 \times 3.86 \times (2 \times 32.2 \times 0.43)^{1/2}$

$Q_{CAP} = 14.00 \text{ cfs} \times 0.67 \text{ (CLOGGING FACTOR)}$

$Q_{CAP} = 9.33 \text{ c.f.s.}$

**# OF GRATES NEEDED FOR DROP INLET**

$Q_{CAP} = 9.33 \text{ c.f.s.}$

# OF GRATES =  $16.29 / 9.33 = 1.33$

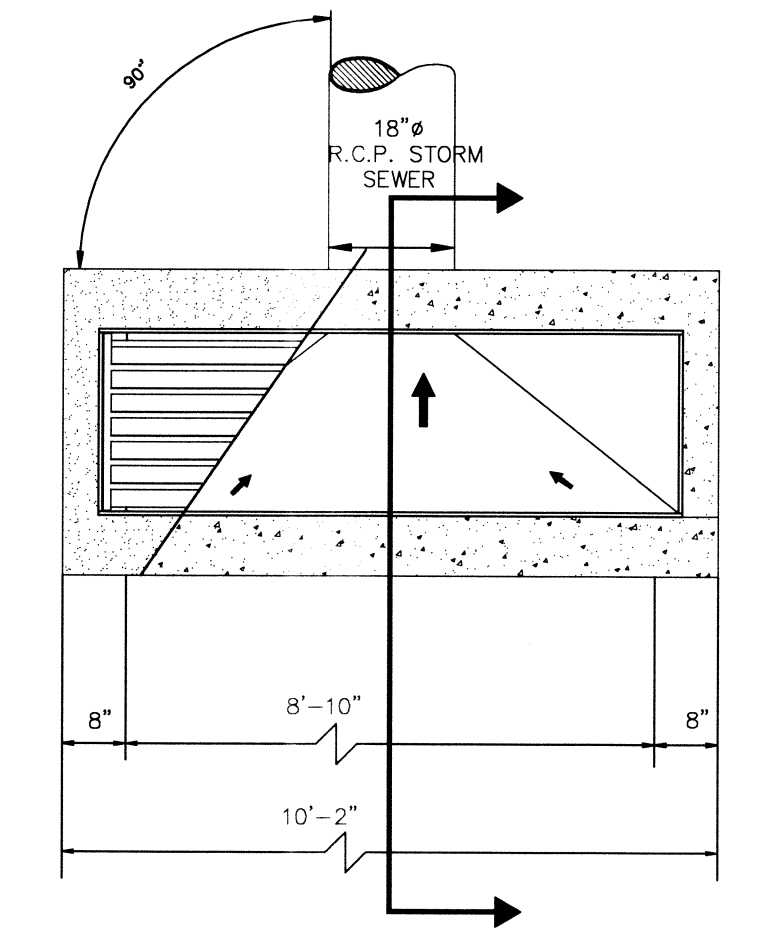
USE 3 GRATES

**DROP INLET TYP. II @ 15' DRAINAGE R.O.W./PED. ACCESS**

DROP INLET	REQUIRED FLOW CAPACITY @ REL. (CFS)	AVAILABLE FLOW CAPACITY @ ANVAL. (CFS)	ADDITIONAL FLOW (CFS)	FLOW BYPASS	TYPE OF INLET	NUMBER OF GRATES
1-E	16.29	27.99	0	0	I	3

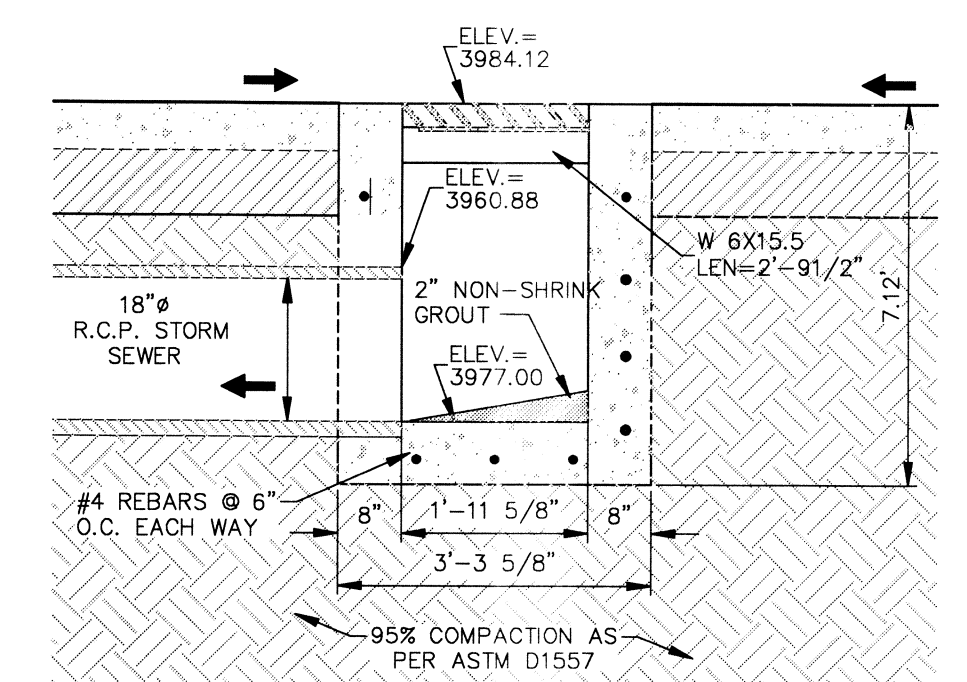
**DROP INLET NOTES**

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- ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARD SPECIFICATIONS.
- SHARP EDGES RESULTING FROM FABRICATION SHALL BE DULLED BY ANY ACCEPTABLE METHOD FOR SAFETY AND HANDLING.
- GRATES SHALL BE INSTALLED IN FRAME WITH FLOW ARROW POINTING DOWNSTREAM OR TOWARD THE LOW POINT IN A SUMP.
- WELDED GRATES SHALL BE STRUCTURAL STEEL CONFORMING TO THE REQUIREMENTS OF AASHTO M-183 OR OF CORROSION RESISTANT STRUCTURAL STEEL CONFORMING TO THE REQUIREMENTS OF AASHTO M-161 OR M-222 OR BE MADE OF OTHER APPROVED STEELS OF EQUAL QUALITY. MIXING GRATES OF STEEL ON THE SAME GRATE WILL NOT BE PERMITTED.
- GRATES MADE OF M-183 STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M-111 SPECIFICATIONS OR SHALL BE PAINTED WITH INORGANIC ZINC PAINTS, MEETING THE REQUIREMENTS OF CURRENT STANDARD SPECIFICATIONS.
- ALL WELDS SHALL BE A MINIMUM OF 1/4" FILLET AND SHALL CONFORM TO THE SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND TO THE A.W.S. STRUCTURAL WELDING CODE. ELECTRODES SHALL BE COMPATIBLE TO THE DIFFERENT GRADES OF STEEL THAT COMPRISE THE GRATE MEMBERS.
- CAST GRATES SHALL BE CAST STEEL CONFORMING TO THE REQUIREMENTS OF AASHTO M-103, GRADE 65-35 OR OF DUCTILE IRON CONFORMING TO THE REQUIREMENTS OF ASTM A-536, SPECIAL GRADE 60-45, OR OF GRAY IRON CONFORMING TO THE REQUIREMENTS OF AASHTO M-105, CLASS 35B OR ASTM A-48 CLASS 35B. THE SPECIFICATIONS OF GENERAL APPLICATION FOR CAST STEEL GRATES SHALL BE AASHTO M-103 SCOPE 1.2.1, GRADE N-1.
- FERROUS CASTINGS SHALL BE OF UNIFORM QUALITY, FREE OF BLOWHOLES, POROSITY, HARD SPOTS, SHRINKAGE DISTORTION OR OTHER DEFECTS. THEY SHALL BE SMOOTH AND WELL CLEANED BY SHOT BLASTING OR OTHER APPROVED CLEANING METHOD. AFTER CLEANING THEY SHALL BE COATED WITH ASPHALT BASE PAINT RESULTING IN A SMOOTH COATING, TOUGH AND TENACIOUS WHEN COLD, NOT TACKY NOR BRITTLE.
- ALL CASTINGS SHALL BE MANUFACTURED TRUE TO PATTERN. COMPONENT PARTS SHALL FIT TOGETHER IN A SATISFACTORY MANNER.
- ALL CONCRETE TO BE 3000 P.S.I. CHAMFER ALL EXPOSED EDGES 3/4". ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
- MINIMUM CONCRETE COVER SHALL BE 1 1/2" FOR STEEL REINFORCING.
- EXPANSION MATERIAL TO BE 1/2" BITUMINOUS FIBER AND TO BE PLACED WHERE PROPOSED CONCRETE COMES IN CONTACT WITH ANY EXISTING OR PROPOSED CONCRETE OR MASONRY STRUCTURE.
- STRUCTURAL STEEL SHALL BE SHOP PAINTED IN ACCORDANCE WITH T.H.D. ITEM 446 "PAINT AND PAINTING".
- SURFACE OF ALL EXPOSED CONCRETE SHALL CONFORM IN SLOPE AND GRADE TO EXISTING OR PROPOSED CURB AND WALK ADJACENT TO INLETS.
- GRATE WILL BE DEPRESSED 1" BELOW PROPOSED OR EXISTING GRADE.
- ALL REINFORCING BARS TO BE # 4 BARS AT 6" O.C. GRADE 60. BEND BARS AROUND PIPE OPENINGS.
- INLETS TO BE DESIGNATED IN PLANS BY NUMBER OF GRATES REQUIRED.
- LOCATION OF SEWER PIPES SHOWN ELSEWHERE IN PLANS.
- 2 - 1/2" DIA. X 4" LONG CONC. ANCHOR STUDS REQUIRED FOR EACH SIDE OF FRAME, WHERE RESTING ON CONCRETE, USE NELSON STUDS OR EQUAL.
- THE GRATES OF ALL INLETS WITHIN THE STREET PAVEMENT MUST BE CONSTRUCTED WITH THE GRATE BARS PERPENDICULAR TO THE CURB.
- EXCAVATION WHICH WILL EXCEED FIVE (5) FEET IN DEPTH SHALL PROVIDE FOR TRENCH SAFETY AS PER OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) GUIDELINES.



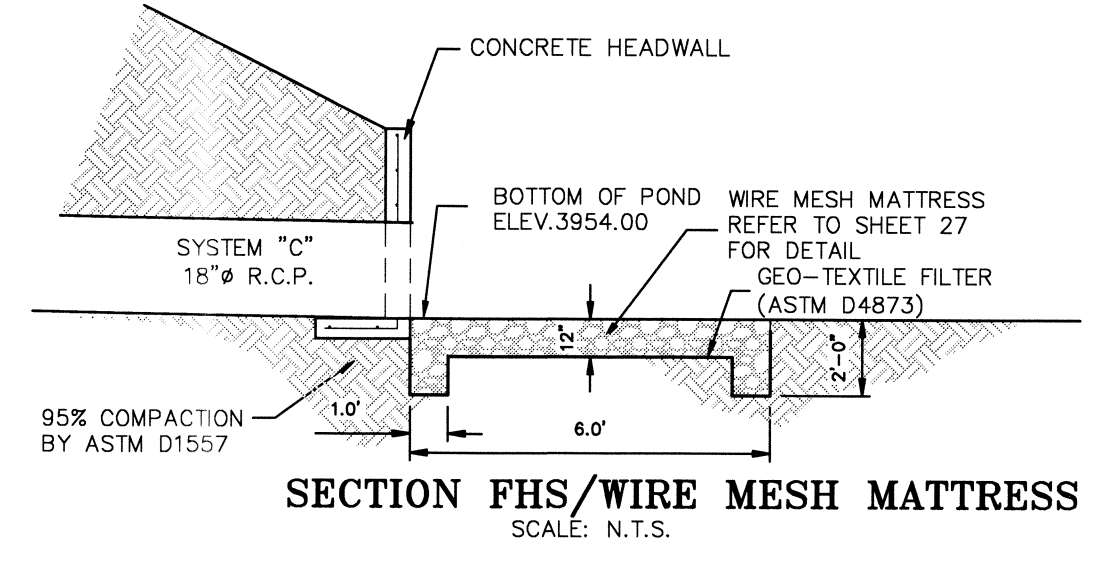
**TYPE II DROP INLET #1 -E PLAN VIEW**

SCALE: 1" = 1"



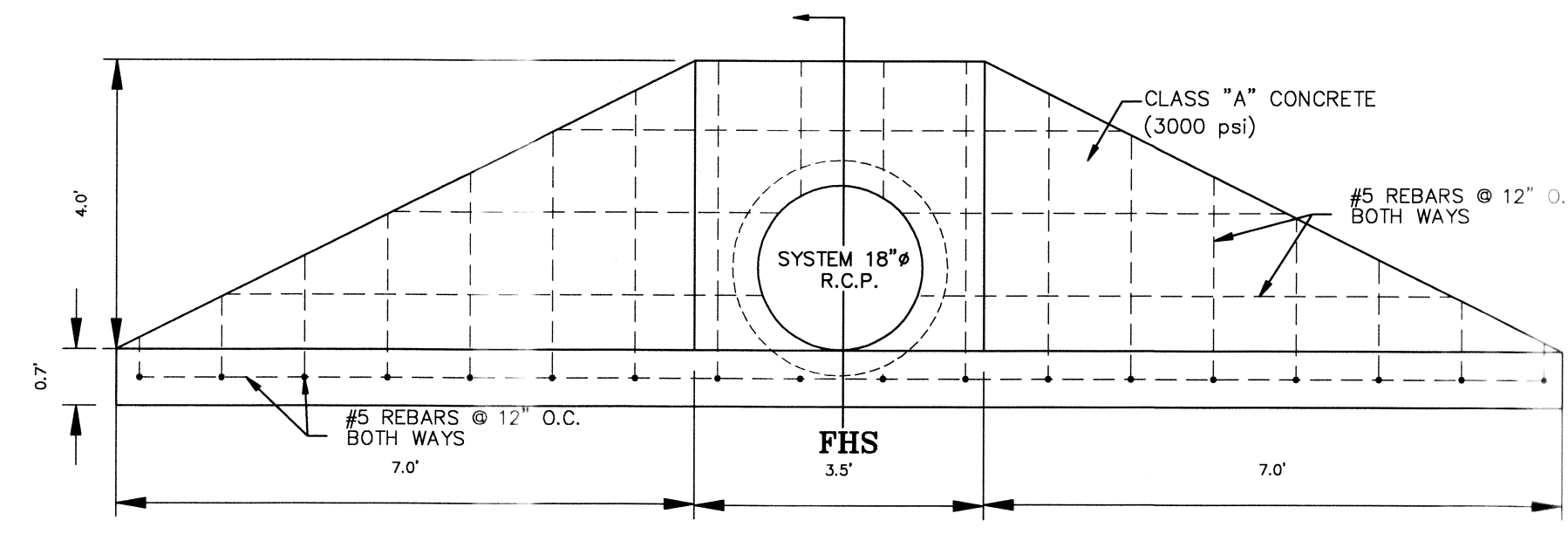
**DROP INLET #1-E (TYPE II) - PLAN VIEW**

SCALE 1" = 2'



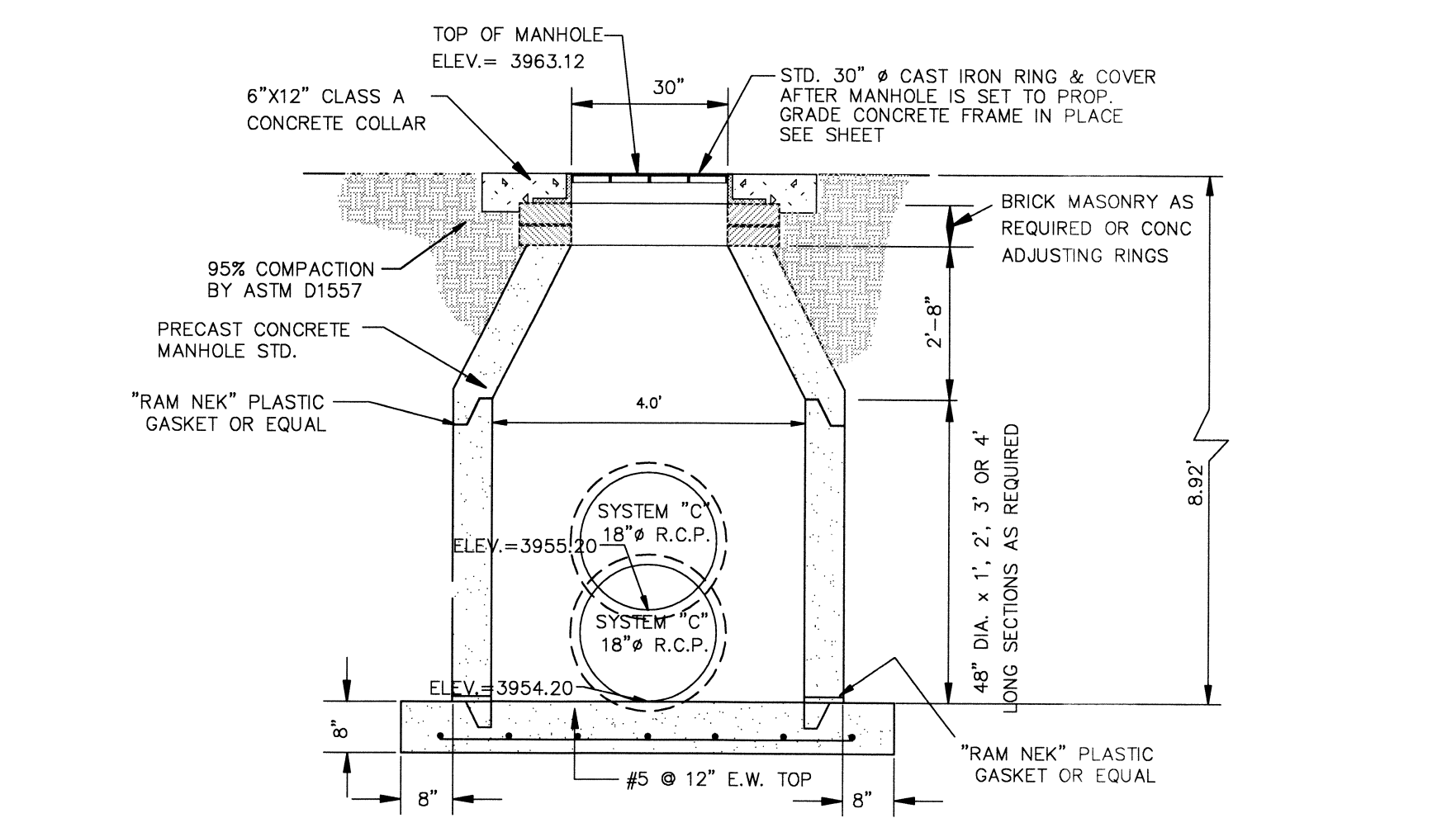
**SECTION FHS/WIRE MESH MATTRESS**

SCALE: N.T.S.



**18" OUTFLOW STRUCTURE DETAIL**

SCALE 1" = 2'



**ENERGY DISSIPATOR MANHOLE #1-E 48" DIAMETER**

SCALE: N.T.S.



**ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT**

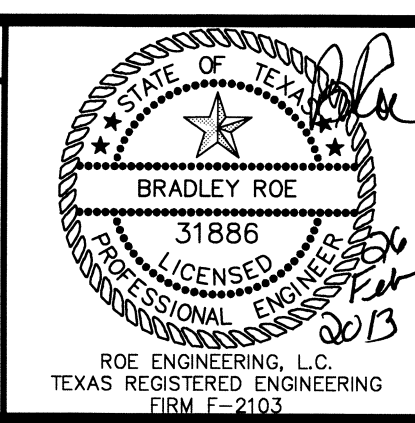
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DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	N.T.S. MONUMENT (2010) 1880' 1880' (260444)	HOR: 1:30 VER: 1:10
9/20/12	CITY COMMENTS	STAFF	LOCATION AS PER NATIONAL GEODETIC SURVEY 1983; LOCATED ABOUT 1.25 MILES EAST OF THE RIO GRANDE, 1/4 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	FILE NAME: W.O. 011509-1 A EH-3
			EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS NOCHES DRIVE IN FRONT OF LOT 12, BLOCK 2, CANTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 2, CANTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	DATE: NOVEMBER, 2011
			N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	DESIGN BY: STAFF
				DRAWN BY: I.D.R.
				CHKD. BY: H.P.
				APPD. BY: BR

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**STORM DRAINAGE PLAN AND PROFILE**

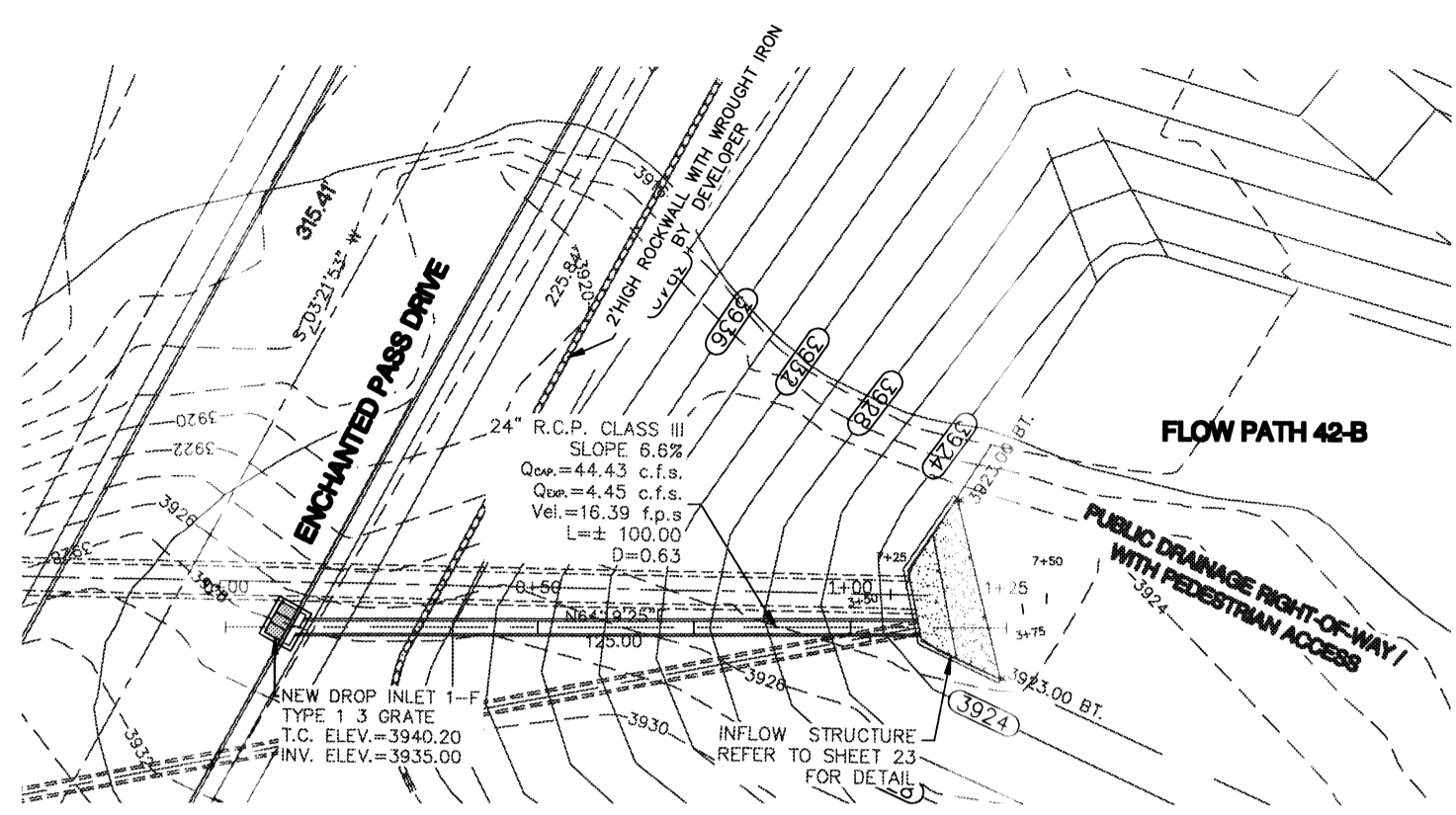
**ENCHANTED HILLS UNIT THREE**

**SYSTEM "E" PLAN AND PROFILE**

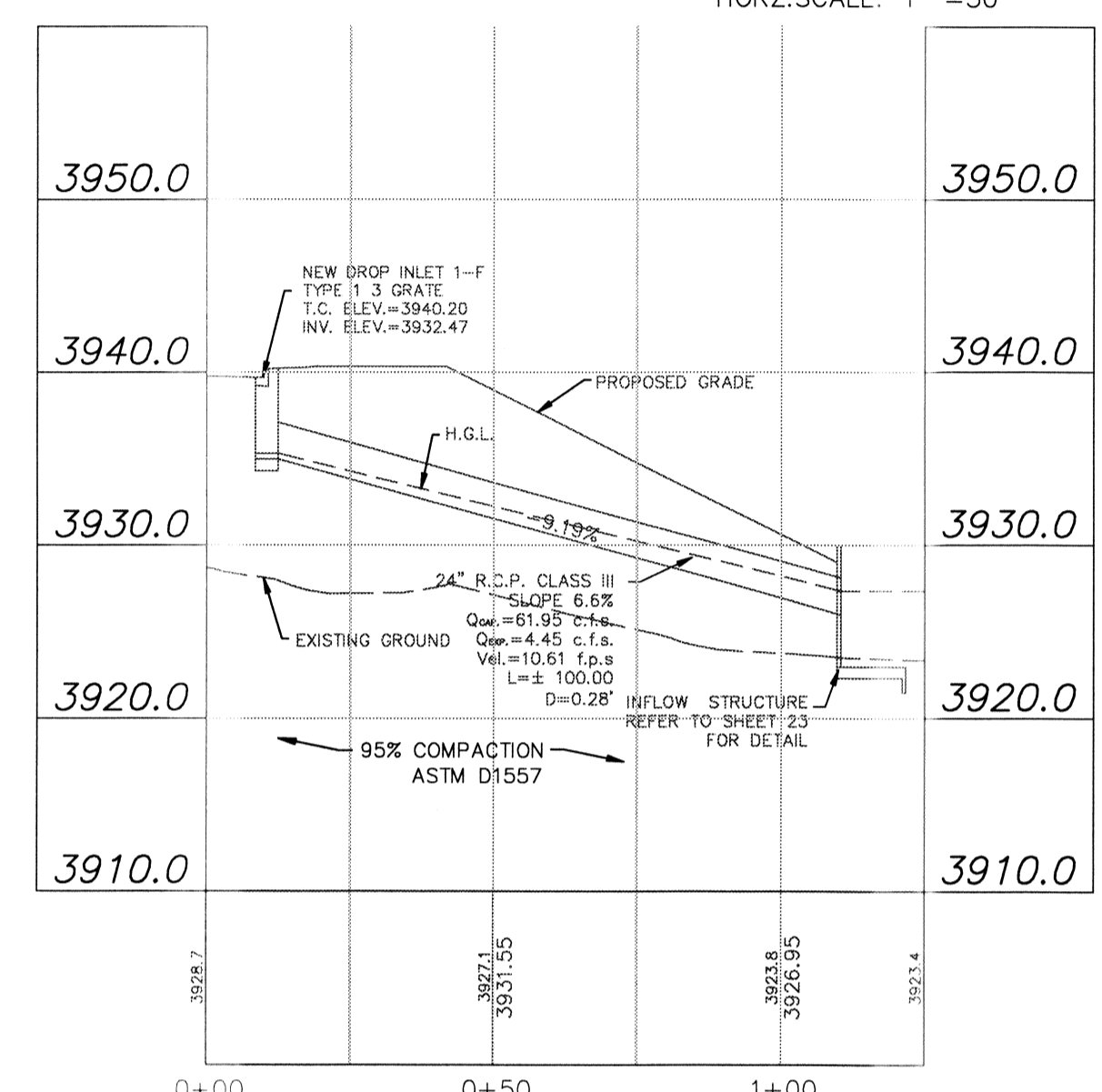
**Roe Engineering, L.C.**  
601 N. Cotton St. Suite No. 8 El Paso, Tx. 79902  
(915) 533-1418 - FAX: (915) 533-4972  
e-mail: roeeng@earthlink.net

ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

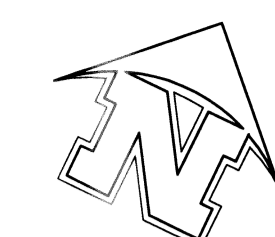
SHEET 28 OF 77



**DRAINAGE SYSTEM "F" PLAN VIEW**  
HORIZ. SCALE: 1" = 30'



**DRAINAGE SYSTEM "F" PROFILE**  
HORIZ. SCALE: 1" = 30'  
VER. SCALE: 1" = 10'



SCALE: 1" = 30'

**DROP INLET #1-F  
DRAINAGE CALCULATIONS  
TYPE ONE**

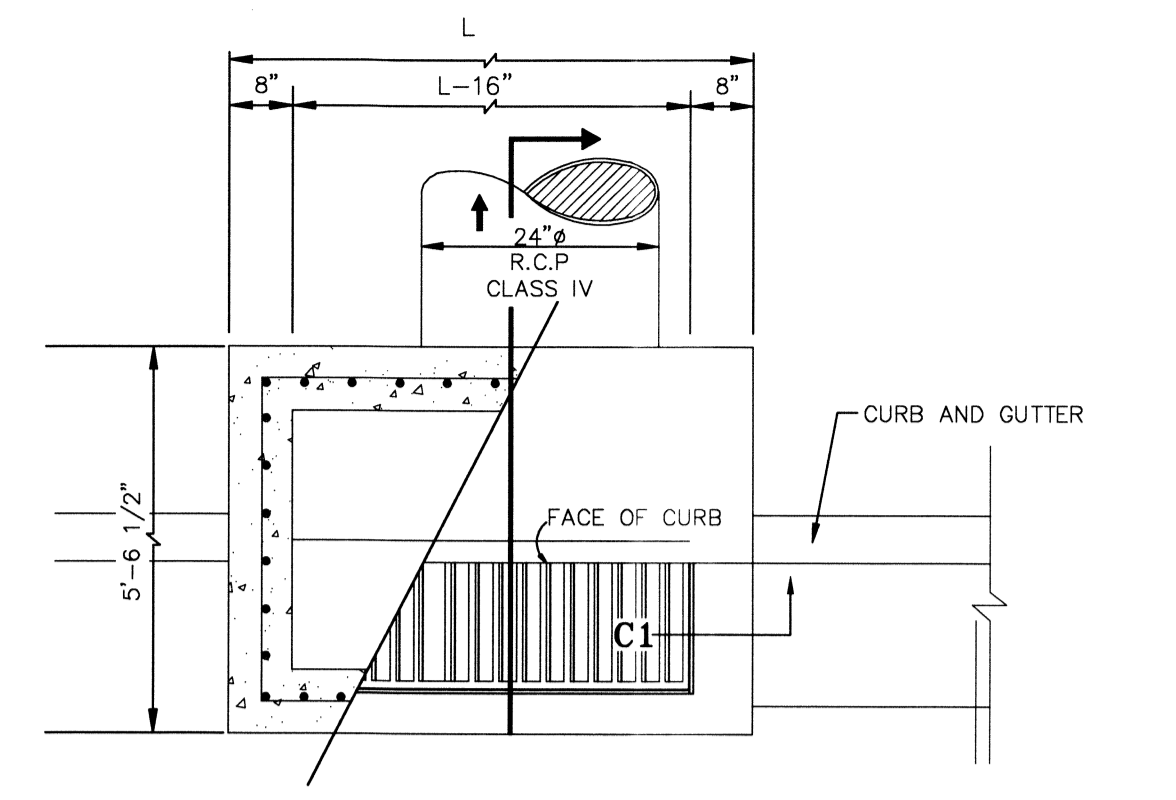
**GRATING**  
 $Q_{CAP} = 0.7 \times AREA \times (2 \times 32.2 \times H)^{1/2}$   
 $Q_{CAP} = 0.7 \times 3.86 \times (2 \times 32.2 \times 0.42)^{1/2}$   
 $Q_{CAP} = 14.00 \text{ cfs} \times 0.67 \text{ (CLOGGING FACTOR)}$   
 $Q_{CAP} = 9.33 \text{ c.f.s.}$

**WEIR - CURB OPENING**  
 $Q_{CAP} = 3.087 \times L \times H^{3/2}$   
 $Q_{CAP} = 3.087 \times 1.93 \times 0.42^{3/2}$   
 $Q_{CAP} = 1.6 \text{ cfs}$

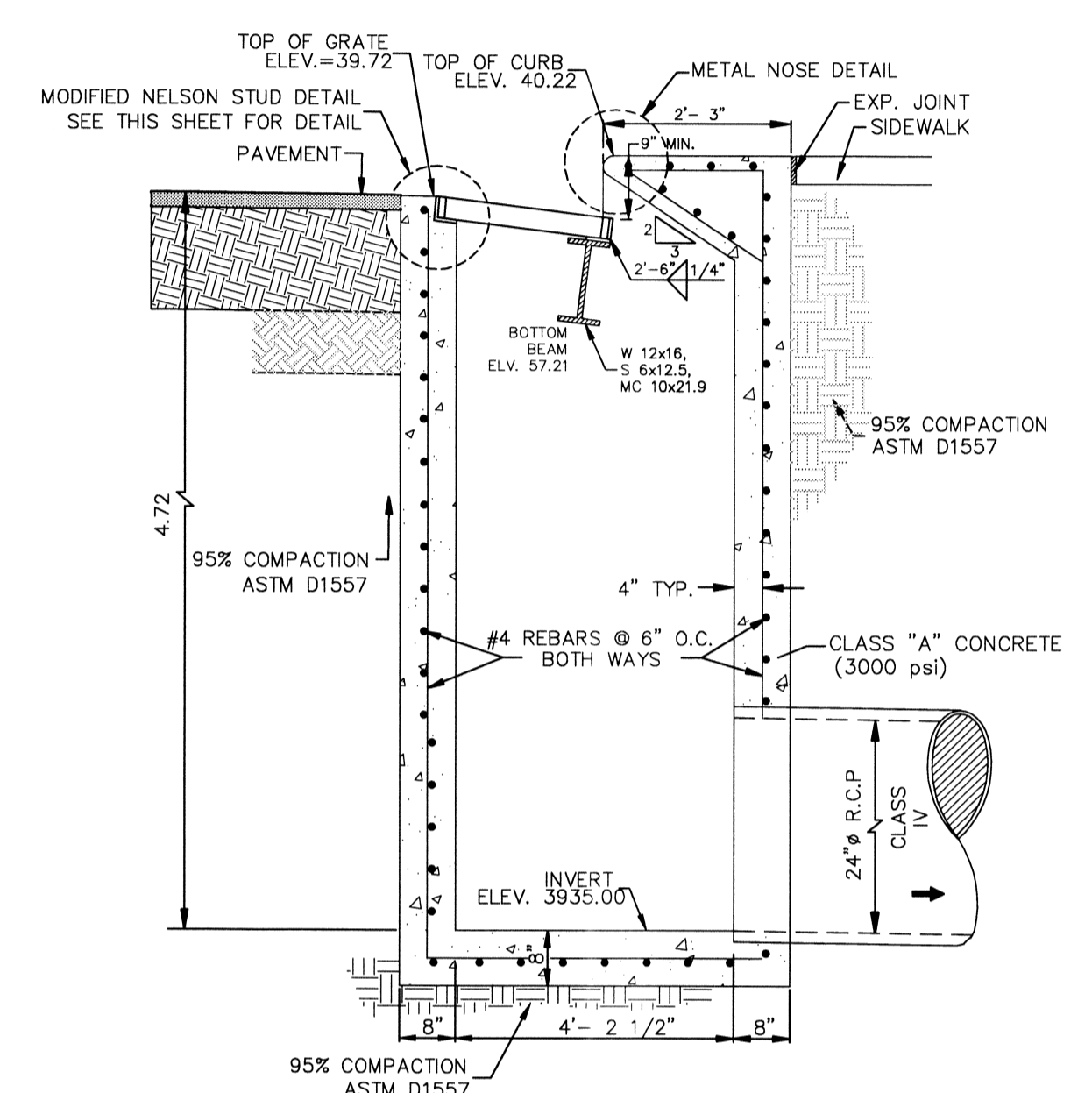
**# OF GRATES NEEDED FOR DROP INLET**  
 $Q_{CAP} = 9.33 + 1.60 = 10.93 \text{ c.f.s.}$   
 # OF GRATES = 4.45 / 10.93 = 2.01  
 USE 3 GRATES

**DROP INLET NOTES**

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- GRATES SHALL BE INSTALLED IN FRAME WITH FLOW ARROW POINTING DOWNSTREAM OR TOWARD THE LOW POINT IN A SUMP.
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- GRATES MADE OF M-183 STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M-111 SPECIFICATIONS OR SHALL BE PAINTED WITH INORGANIC ZINC PAINTS, MEETING THE REQUIREMENTS OF CURRENT STANDARD SPECIFICATIONS.
- ALL WELDS SHALL BE A MINIMUM OF 1/4" FILLET AND SHALL CONFORM TO THE SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND TO THE A.W.S. STRUCTURAL WELDING CODE. ELECTRODES SHALL BE COMPATIBLE TO THE DIFFERENT GRADES OF STEEL THAT COMPRISE THE GRATE MEMBERS.
- CAST GRATES SHALL BE CAST STEEL CONFORMING TO THE REQUIREMENTS OF AASHTO M-103, GRADE 65-35 OR OF DUCTILE IRON CONFORMING TO THE REQUIREMENTS OF ASTM A-536, SPECIAL GRADE 60-45, OR OF GRAY IRON CONFORMING TO THE REQUIREMENTS OF AASHTO M-105, CLASS 35B OR ASTM A-48 CLASS 35B. THE SPECIFICATIONS OF GENERAL APPLICATION FOR CAST STEEL GRATES SHALL BE AASHTO M-103 SCOPE 1.2.1, GRADE N-1.
- FERROUS CASTINGS SHALL BE OF UNIFORM QUALITY, FREE OF BLOWHOLES, POROSITY, HARD SPOTS, SHRINKAGE DISTORTION OR OTHER DEFECTS. THEY SHALL BE SMOOTH AND WELL CLEANED BY SHOT BLASTING OR OTHER APPROVED CLEANING METHOD. AFTER CLEANING THEY SHALL BE COATED WITH ASPHALT BASE PAINT RESULTING IN A SMOOTH COATING, TOUGH AND TENACIOUS WHEN COLD, NOT TACKY NOR BRITTLE.
- ALL CASTINGS SHALL BE MANUFACTURED TRUE TO PATTERN. COMPONENT PARTS SHALL FIT TOGETHER IN A SATISFACTORY MANNER.
- ALL CONCRETE TO BE 3000 P.S.I. CHAMFER ALL EXPOSED EDGES 3/4". ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
- MINIMUM CONCRETE COVER SHALL BE 1 1/2" FOR STEEL REINFORCING.
- EXPANSION MATERIAL TO BE 1/2" BITUMINOUS FIBER AND TO BE PLACED WHERE PROPOSED CONCRETE COMES IN CONTACT WITH ANY EXISTING OR PROPOSED CONCRETE OR MASONRY STRUCTURE.
- STRUCTURAL STEEL SHALL BE SHOP PAINTED IN ACCORDANCE WITH T.H.D. ITEM 446 "PAINT AND PAINTING".
- SURFACE OF ALL EXPOSED CONCRETE SHALL CONFORM TO SLOPE AND GRADE TO EXISTING OR PROPOSED CURB AND WALK ADJACENT TO INLETS.
- GRATE WILL BE DEPRESSED 1" BELOW PROPOSED OR EXISTING GRADE.
- ALL REINFORCING BARS TO BE # 4 BARS AT 6" O.C. GRADE 60. BEND BARS AROUND PIPE OPENINGS.
- INLETS TO BE DESIGNATED IN PLANS BY NUMBER OF GRATES REQUIRED.
- LOCATION OF SEWER PIPES SHOWN ELSEWHERE IN PLANS.
- 2 - 1/2" DIA. X 4' LONG CONC. ANCHOR STUDS REQUIRED FOR EACH SIDE OF FRAME, WHERE RESTING ON CONCRETE, USE NELSON STUDS OR EQUAL.
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**PLAN VIEW DROP INLET #1-F (TYPE 1)**  
SCALE: N.T.S. (3 GRATE)

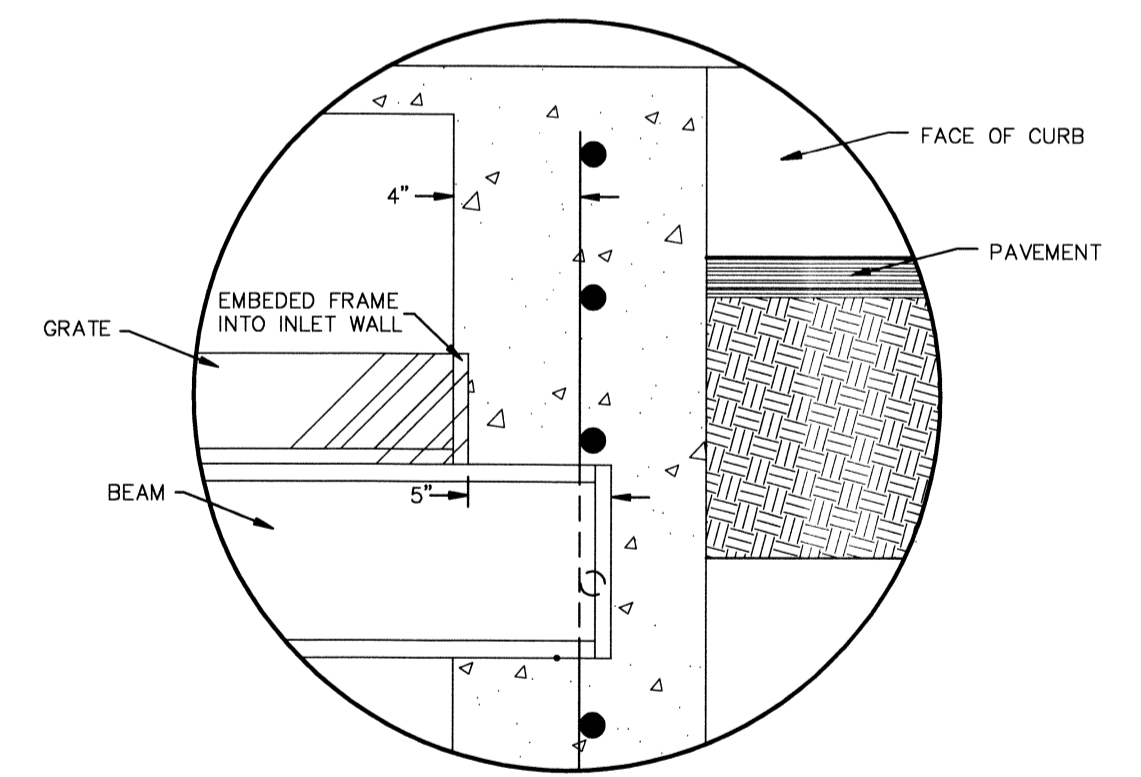


**SECTION DROP INLET #1-F (TYPE 1)**  
SCALE: N.T.S. (3 GRATE)

**DROP INLET TYP. I @ ENCHANTED PASS DR. STA. 24+86**

DROP INLET	REQUIRED FLOW CAPACITY @ BEEL (CFS)	AVAILABLE FLOW CAPACITY @ AVAILABLE (CFS)	ADDITIONAL FLOW (CFS)	FLOW BYPASS	TYPE OF INLET	NUMBER OF GRATES
1-F	4.45	61.95	27.50	0	I	3

NO. OF GRATES	L'	BEAMS	
		LENGTH	MINIMUM SIZES
3	7'-1 7/8"	6'-7 7/8"	W8X15, S7X15.3, MC7X17.6



**SECTION C1-C1 THIS SHEET**



**REVIEWED**

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DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	N.S. MONUMENT (2002) 1887 (198) (060441)	HOR: 1:30 VER: 1:10
9/20/12	CITY COMMENTS	STAFF	LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	FILE NAME: W.O. 011509-1 A EH-3
			SECONDARY BENCHMARK	DATE: NOVEMBER, 2011
			EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHES DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	DESIGN BY: STAFF
			N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	DRAWN BY: I.D.R.
				CHKD. BY: H.P.
				APPD. BY: BR

THIS SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY BRADLEY ROE, P.E. 31886 ON SEPTEMBER 20, 2012. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

STORM DRAINAGE PLAN AND PROFILE

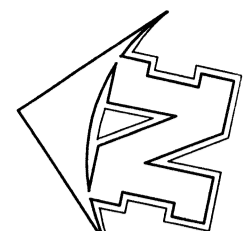
**ENCHANTED HILLS UNIT THREE**

**SYSTEM "F" PLAN AND PROFILE**

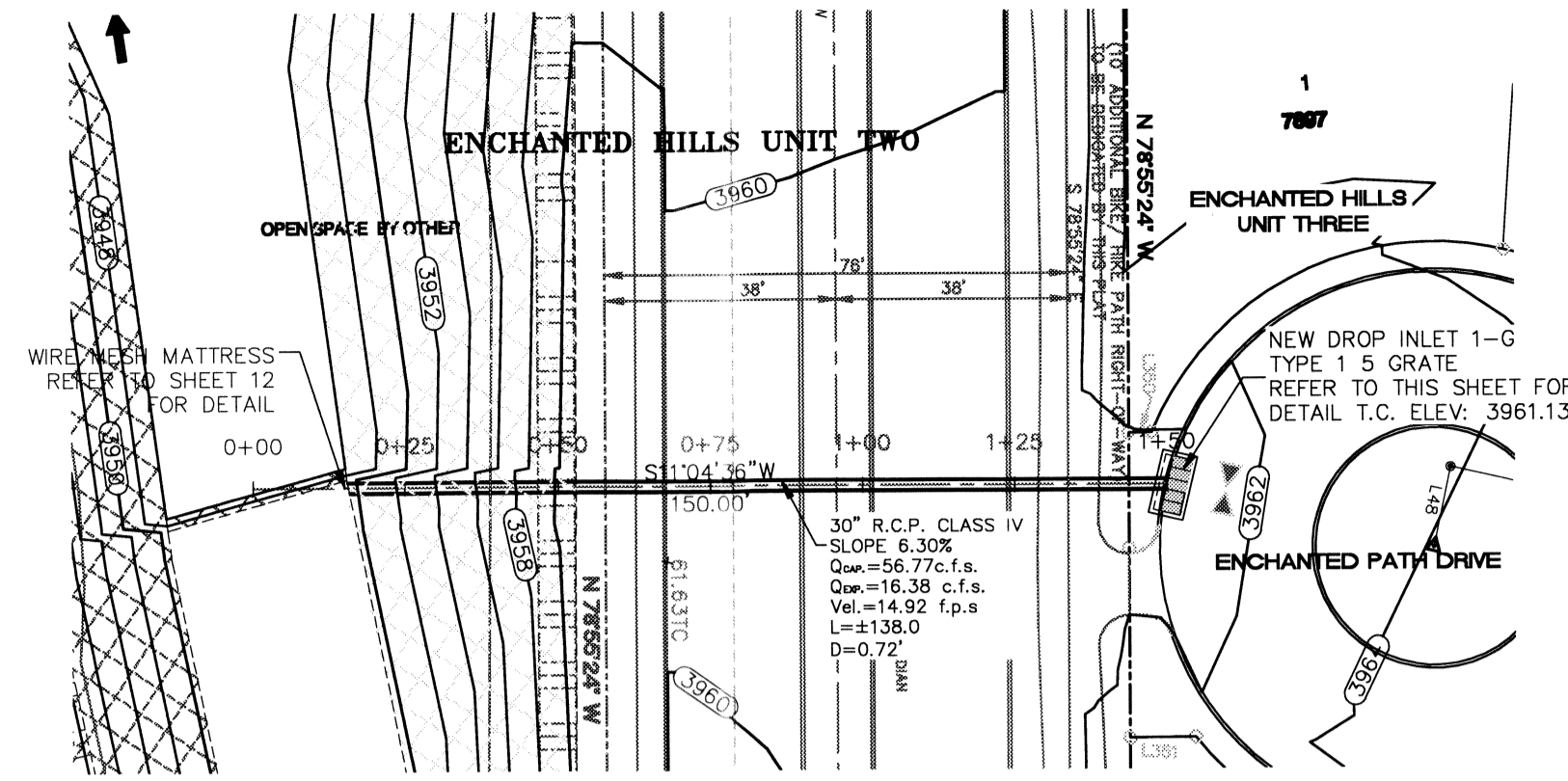
**Roe Engineering, L.C.**  
601 N. Cotton St. Suite No. 8 El Paso, Tx. 79902  
(915) 533-1418 - FAX: (915) 533-4972  
e-mail: roeeng@roewell.net

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SHEET 29 OF 77

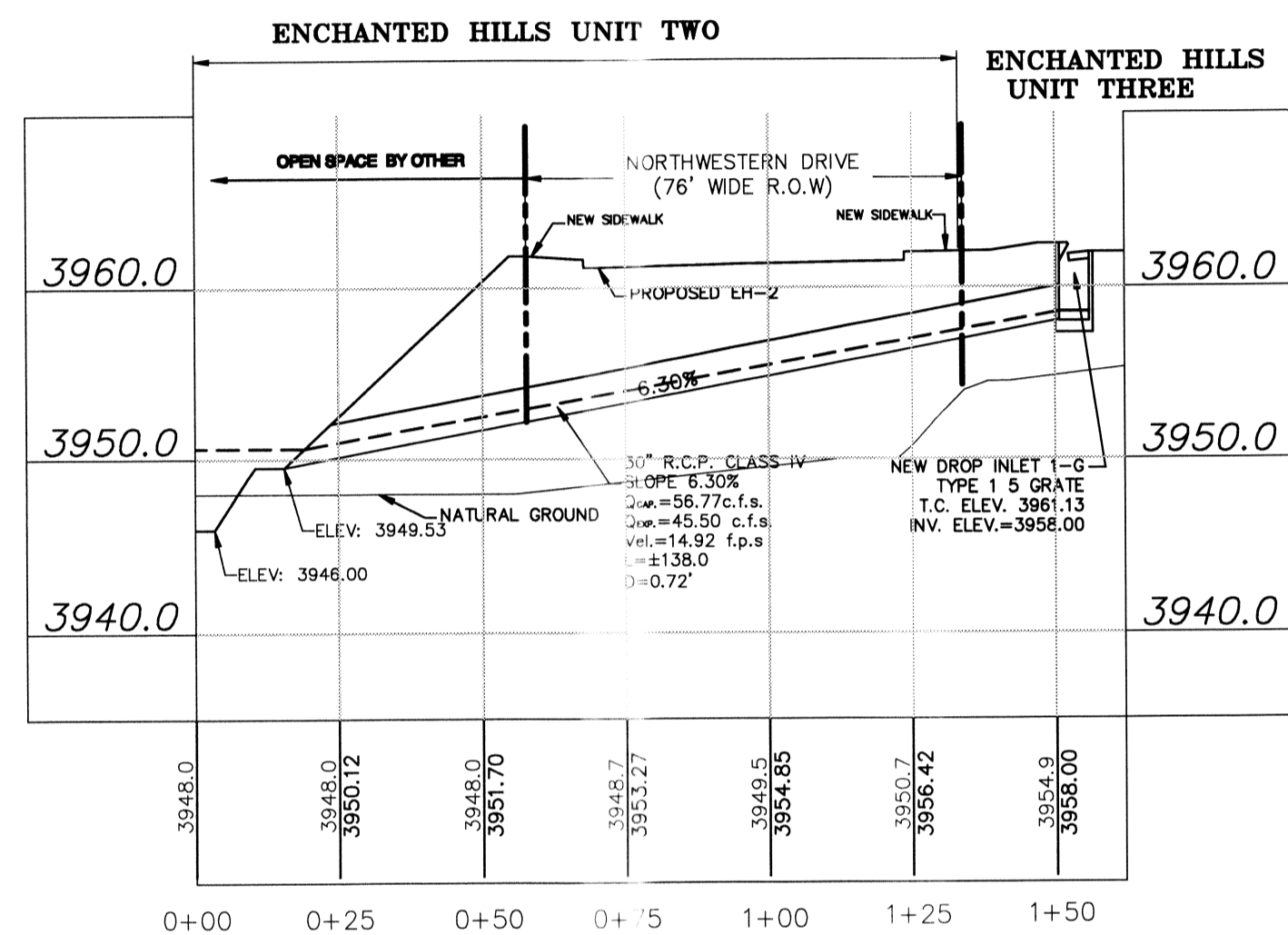


SCALE: 1" = 30'



### DRAINAGE SYSTEM "G" PLAN VIEW

HOZ. SCALE: 1" = 30'



### DRAINAGE SYSTEM "G"(EH-2 SYST" C") PROFILE

HOZ. SCALE: 1" = 30'  
VER. SCALE: 1" = 10'

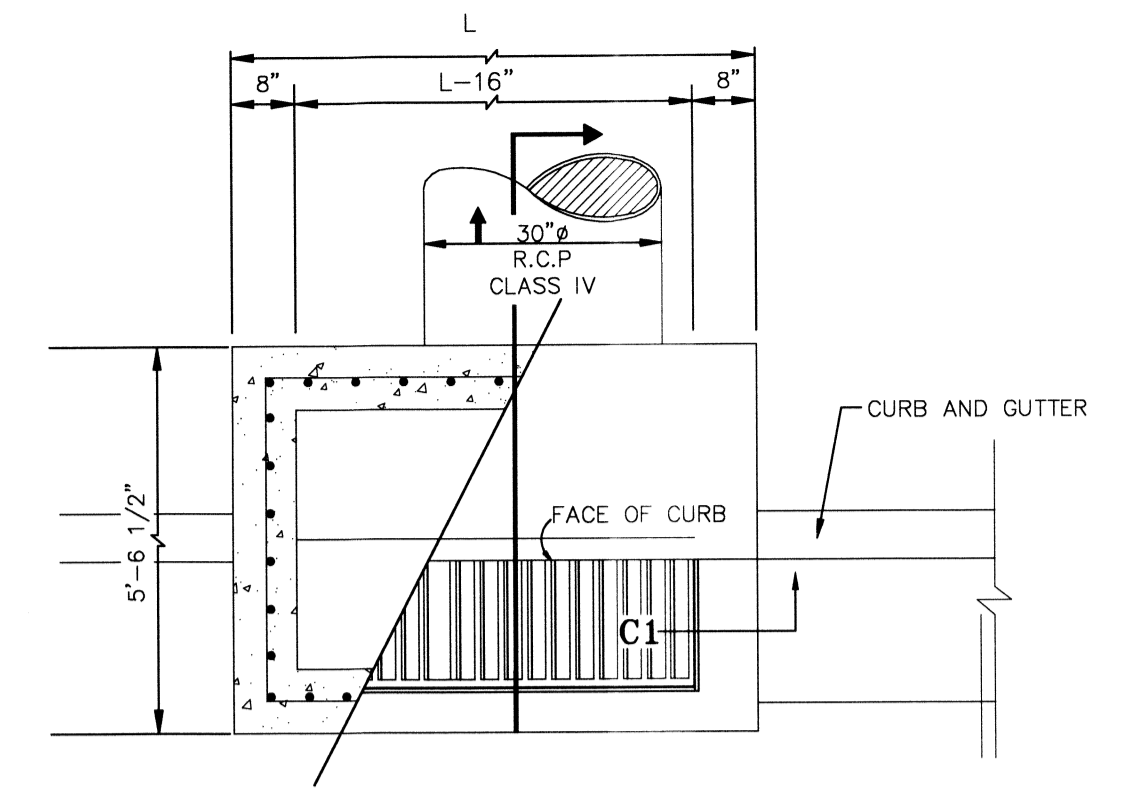
### DROP INLET NOTES

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- GRATES SHALL BE INSTALLED IN FRAME WITH FLOW ARROW POINTING DOWNSTREAM OR TOWARD THE LOW POINT IN A SUMP.
- WELDED GRATES SHALL BE STRUCTURAL STEEL CONFORMING TO THE REQUIREMENTS OF AASHTO M-183 OR OF CORROSION RESISTANT STRUCTURAL STEEL CONFORMING TO THE REQUIREMENTS OF AASHTO M-161 OR M-222 OR BE MADE OF OTHER APPROVED STEELS OF EQUAL QUALITY. MIXING GRATES OF STEEL ON THE SAME GRATE WILL NOT BE PERMITTED.
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- CAST GRATES SHALL BE CAST STEEL CONFORMING TO THE REQUIREMENTS OF AASHTO M-103, GRADE 65-35 OR OF DUCTILE IRON CONFORMING TO THE REQUIREMENTS OF ASTM A-536, SPECIAL GRADE 60-45, OR OF GRAY IRON CONFORMING TO THE REQUIREMENTS OF AASHTO M-105, CLASS 35B OR ASTM A-48 CLASS 35B. THE SPECIFICATIONS OF GENERAL APPLICATION FOR CAST STEEL GRATES SHALL BE AASHTO M-103 SCOPE 1.2.1, GRADE N-1.
- FERROUS CASTINGS SHALL BE OF UNIFORM QUALITY, FREE OF BLOWHOLES, POROSITY, HARD SPOTS, SHRINKAGE DISTORTION OR OTHER DEFECTS. THEY SHALL BE SMOOTH AND WELL CLEANED BY SHOT BLASTING OR OTHER APPROVED CLEANING METHOD. AFTER CLEANING THEY SHALL BE COATED WITH ASPHALT BASE PAINT RESULTING IN A SMOOTH COATING, TOUGH AND TENACIOUS WHEN COLD, NOT TACKY NOR BRITTLE.
- ALL CASTINGS SHALL BE MANUFACTURED TRUE TO PATTERN. COMPONENT PARTS SHALL FIT TOGETHER IN A SATISFACTORY MANNER.
- ALL CONCRETE TO BE 3000 P.S.I. CHAMFER ALL EXPOSED EDGES 3/4". ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
- MINIMUM CONCRETE COVER SHALL BE 1 1/2" FOR STEEL REINFORCING.
- EXPANSION MATERIAL TO BE 1/2" BITUMINOUS FIBER AND TO BE PLACED WHERE PROPOSED CONCRETE COMES IN CONTACT WITH ANY EXISTING OR PROPOSED CONCRETE OR MASONRY STRUCTURE.
- STRUCTURAL STEEL SHALL BE SHOP PAINTED IN ACCORDANCE WITH T.H.D. ITEM 446 "PAINT AND PAINTING".
- SURFACE OF ALL EXPOSED CONCRETE SHALL CONFORM IN SLOPE AND GRADE TO EXISTING OR PROPOSED CURB AND WALK ADJACENT TO INLETS.
- GRATE WILL BE DEEPRESSED 1" BELOW PROPOSED OR EXISTING GRADE.
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- INLETS TO BE DESIGNATED IN PLANS BY NUMBER OF GRATES REQUIRED.
- LOCATION OF SEWER PIPES SHOWN ELSEWHERE IN PLANS.
- 2 - 1/2" DIA. X 4" LONG CONC. ANCHOR STUDS REQUIRED FOR EACH SIDE OF FRAME, WHERE RESTING ON CONCRETE, USE NELSON STUDS OR EQUAL.
- THE GRATES OF ALL INLETS WITHIN THE STREET PAVEMENT MUST BE CONSTRUCTED WITH THE GRATE BARS PERPENDICULAR TO THE CURB.
- EXCAVATION WHICH WILL EXCEED FIVE (5) FEET IN DEPTH SHALL PROVIDE FOR TRENCH SAFETY AS PER OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) GUIDELINES.

DROP INLET #1-G DRAINAGE CALCULATIONS TYPE ONE	
<b>GRATING</b>	
$Q_{cap} = 0.7 \times AREA \times (2 \times 32.2 \times H)^{1/2}$	
$Q_{cap} = 0.7 \times 3.86 \times (2 \times 32.2 \times 0.42)^{1/2}$	
$Q_{cap} = 14.00$ cfs x 0.67 (CLOGGING FACTOR)	
$Q_{cap} = 9.33$ cfs	
<b>WEIR - CURB OPENING</b>	
$Q_{cap} = 3.087 \times L \times H^{3/2}$	
$Q_{cap} = 3.087 \times 1.93 \times 0.42^{3/2}$	
$Q_{cap} = 1.6$ cfs	
<b># OF GRATES NEEDED FOR DROP INLET</b>	
$Q_{exp} = 45.50$ cfs	
$Q_{cap} = 9.33 + 1.60 = 10.93$ cfs	
# OF GRATES = 45.50/10.93 = 4.16	
USE 5 GRATES	

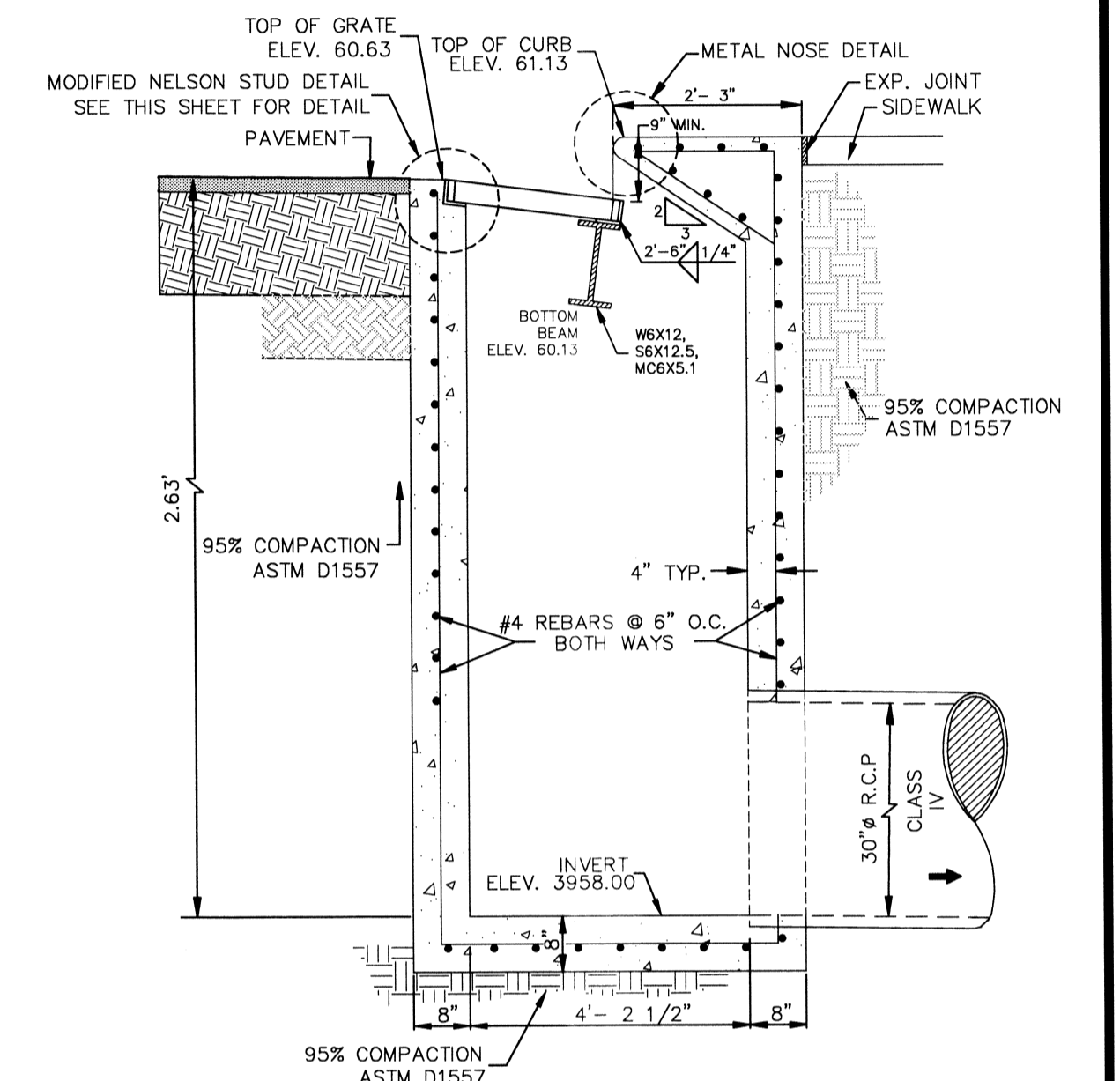
DROP INLET TYP. 1-G @ ENCHANTED PATH UNIT THREE (PLATTED) STA. 0+00						
DROP INLET	REQUIRED FLOW CAPACITY (CFS)	AVAILABLE FLOW CAPACITY (CFS)	ADDITIONAL FLOW (CFS)	FLOW BYPASS	TYPE OF INLET	NUMBER OF GRATES
1-G	45.50	54.65	0	0	1	5

NO. OF GRATES	L'	BEAMS	
		LENGTH	MINIMUM SIZES
5	10'-8"	10'-2"	W12X16, S8X21, MC10X21.9



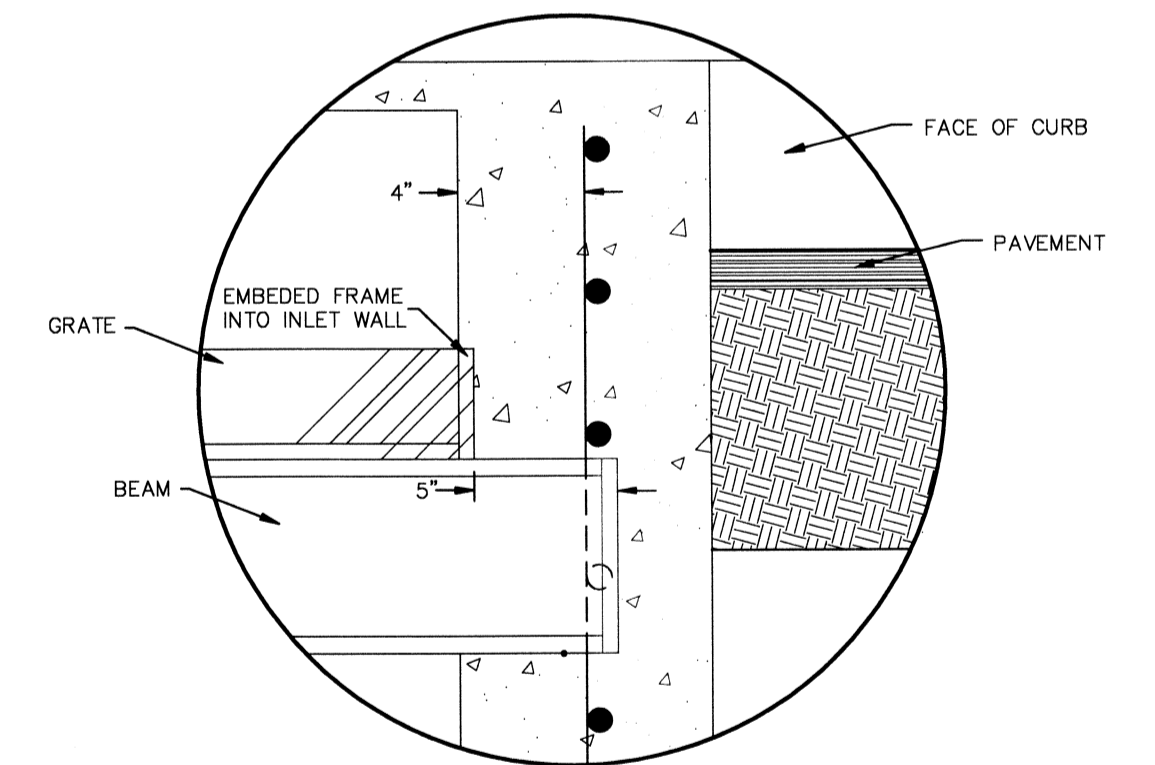
### PLAN VIEW DROP INLET #1-G (TYPE 1)

SCALE N.T.S. (5 GRATE)



### SECTION DROP INLET #1-G (TYPE 1)

SCALE N.T.S. (5 GRATE)



### SECTION C1-C1 THIS SHEET



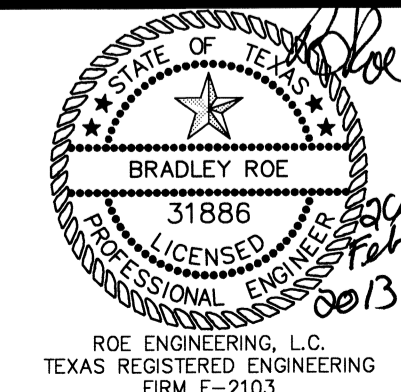
ENGINEERING & CONSTRUCTION  
MANAGEMENT DEPARTMENT

REVIEWED

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**FLOOD NOTE:**  
THE ABOVE REFERENCED PROPERTY IS WITHIN ZONE "A" AND ZONE "X" (EXPLANATION: ZONE "A" NO BASE FLOOD ELEVATIONS DETERMINED; EXPLANATION: ZONE "X" AREAS DETERMINED TO BE OUTSIDE THE 500 YEAR FLOODPLAIN) ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER THE UNINCORPORATED AREAS COMMUNITY PANEL NO. 480212 0025 B, DATED SEPTEMBER 4, 1991.

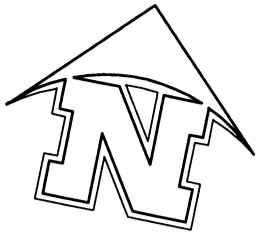
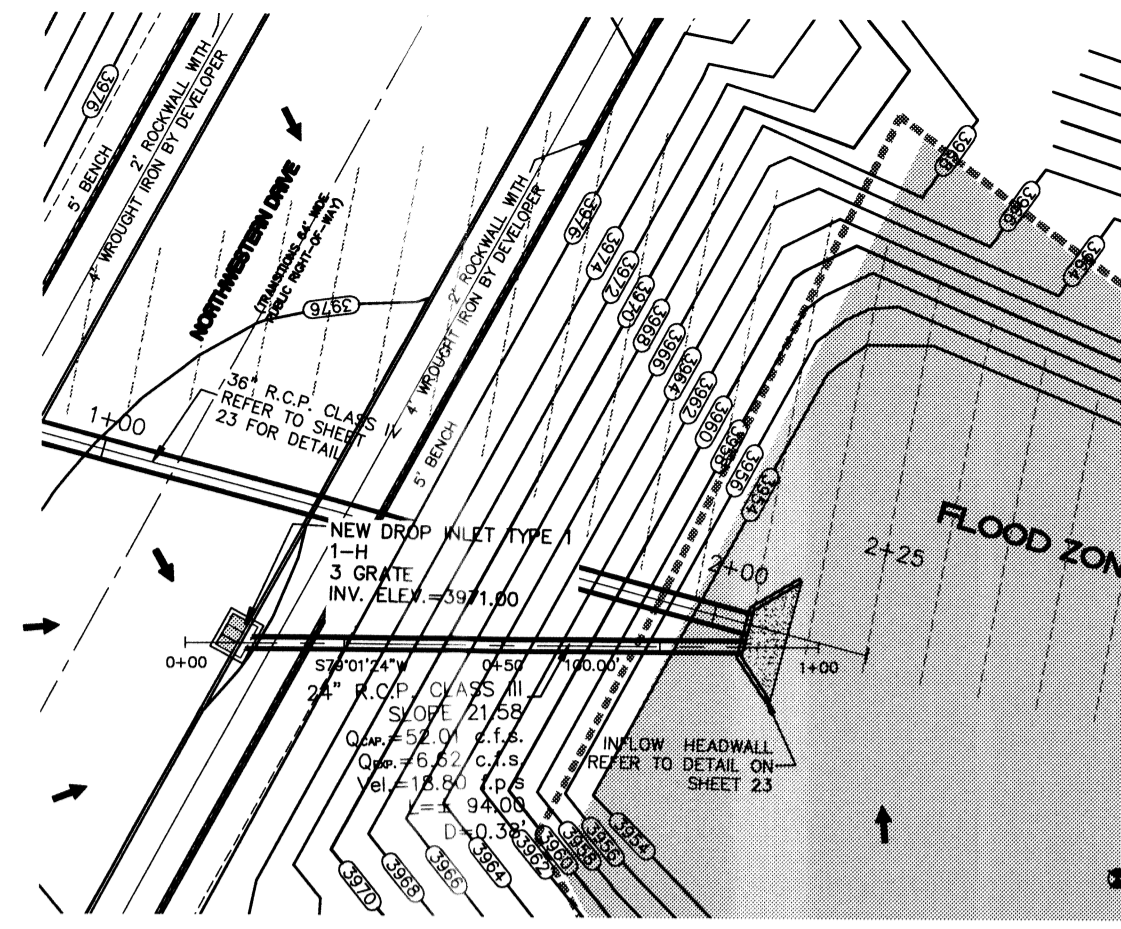
DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	N/S MONUMENT "SINO 1880" (FID: 060444) LOCATION AS PER NATIONAL GEODETIC SURVEY 1983: LOCATED ABOUT 1.25 MILES EAST OF THE RD GRADE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	HOR: 1"=30' VER: 1"=10'
9/20/12	CITY COMMENTS	STAFF		FILE NAME: W.O. 011509-1 A EH-3
			<b>SECONDARY BENCHMARK</b> EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	DATE: NOVEMBER, 2011
			N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR



### STORM DRAINAGE PLAN AND PROFILE

**ENCHANTED HILLS  
UNIT THREE**  
**SYSTEM G (EH-2 SYST" C")  
PLAN AND PROFILE**  
**ENCHANTED SPRINGS DR.  
STA 25+39.06**

**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@wbell.net  
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING  
SHEET 30 OF 77



SCALE: 1" = 30'

**DROP INLET #1-H  
DRAINAGE CALCULATIONS  
TYPE ONE**

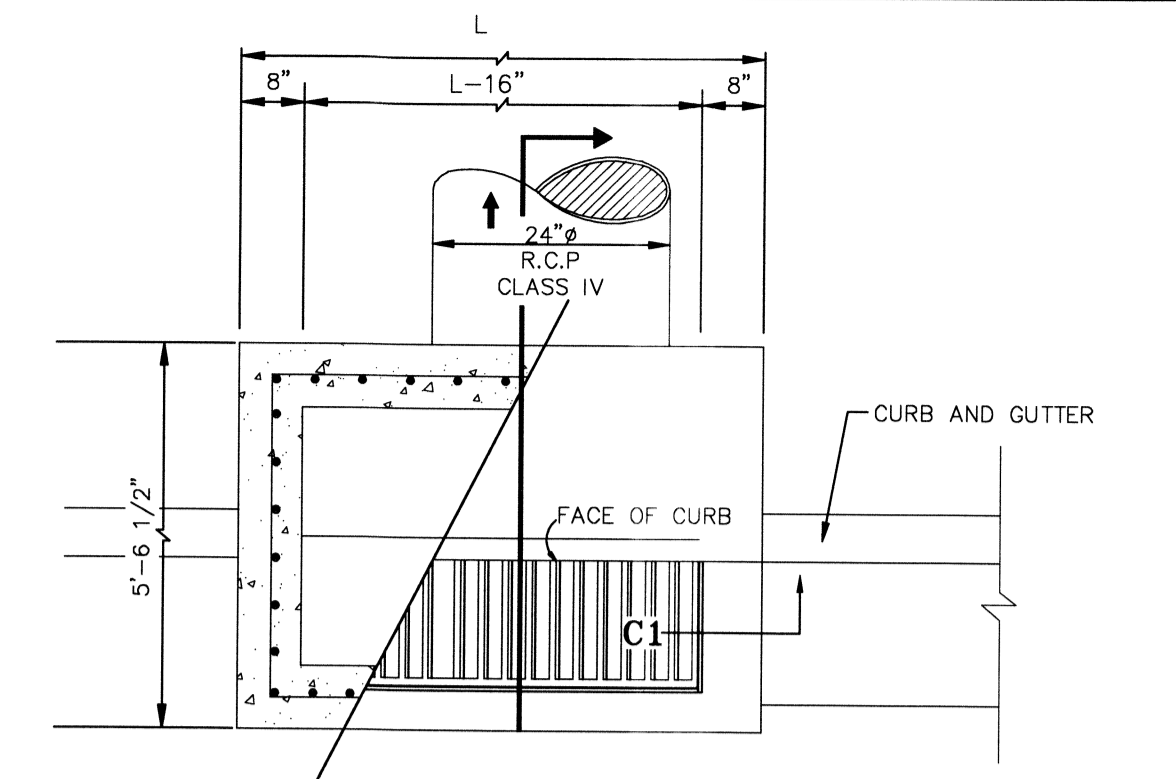
**GRATING**  
 $Q_{CAP} = 0.7 \times AREA \times (2 \times 32.2 \times H)^{1/2}$   
 $Q_{CAP} = 0.7 \times 3.86 \times (2 \times 32.2 \times 0.42)^{1/2}$   
 $Q_{CAP} = 14.00 \text{ cfs} \times 0.67 \text{ (CLOGGING FACTOR)}$   
 $Q_{CAP} = 9.33 \text{ c.f.s.}$

**WEIR - CURB OPENING**  
 $Q_{CAP} = 3.087 \times L \times H^{3/2}$   
 $Q_{CAP} = 3.087 \times 1.93 \times 0.42^{3/2}$   
 $Q_{CAP} = 1.6 \text{ cfs}$

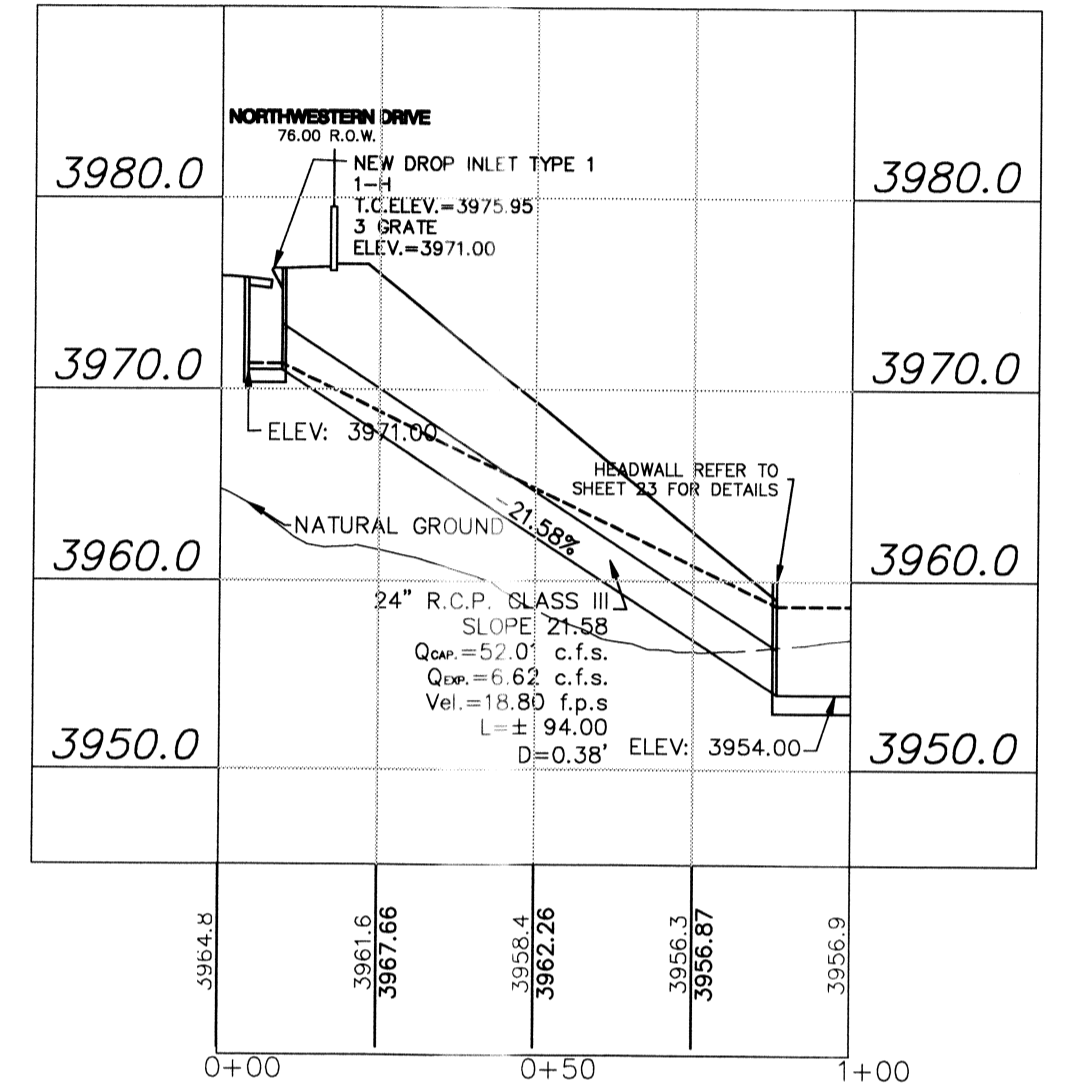
**# OF GRATES NEEDED FOR DROP INLET #1-H**  
 $Q_{CAP} = 9.33 + 1.60 = 10.93 \text{ c.f.s.}$   
 # OF GRATES =  $6.20 / 10.93 = 0.56$   
 USE 3 GRATES

**LEGEND**

- ▲ PROPOSED DRAINAGE HIGH-POINT
- ▼ PROPOSED DRAINAGE LOW-POINT
- DENOTES EXISTING CITY MONUMENT
- DENOTES EXISTING SANITARY SEWER MANHOLE
- ○ ○ ○ PROPOSED RETAINING WALL
- FF=4037.68 PROPOSED FINISHED GRADE ELEVATION
- FF=4038.35 PROPOSED FINISHED FLOOR ELEVATION
- ▨ EXISTING FLOOD AREA
- △ PROPOSED CITY MONUMENT
- PROPOSED DRAINAGE FLOWS
- EXISTING DRAINAGE FLOWS
- DENOTES EXISTING SANITARY SEWER LINE
- 35.32 TC PROPOSED TOP OF CURB ELEVATION
- 4040--- EXISTING COUNTOURS
- 6030--- PROPOSED COUNTOURS
- ▭ PROPOSED FLOOD AREA



**PLAN VIEW DROP INLET #1-H (TYPE 1)**  
SCALE N.T.S. (3 GRATE)

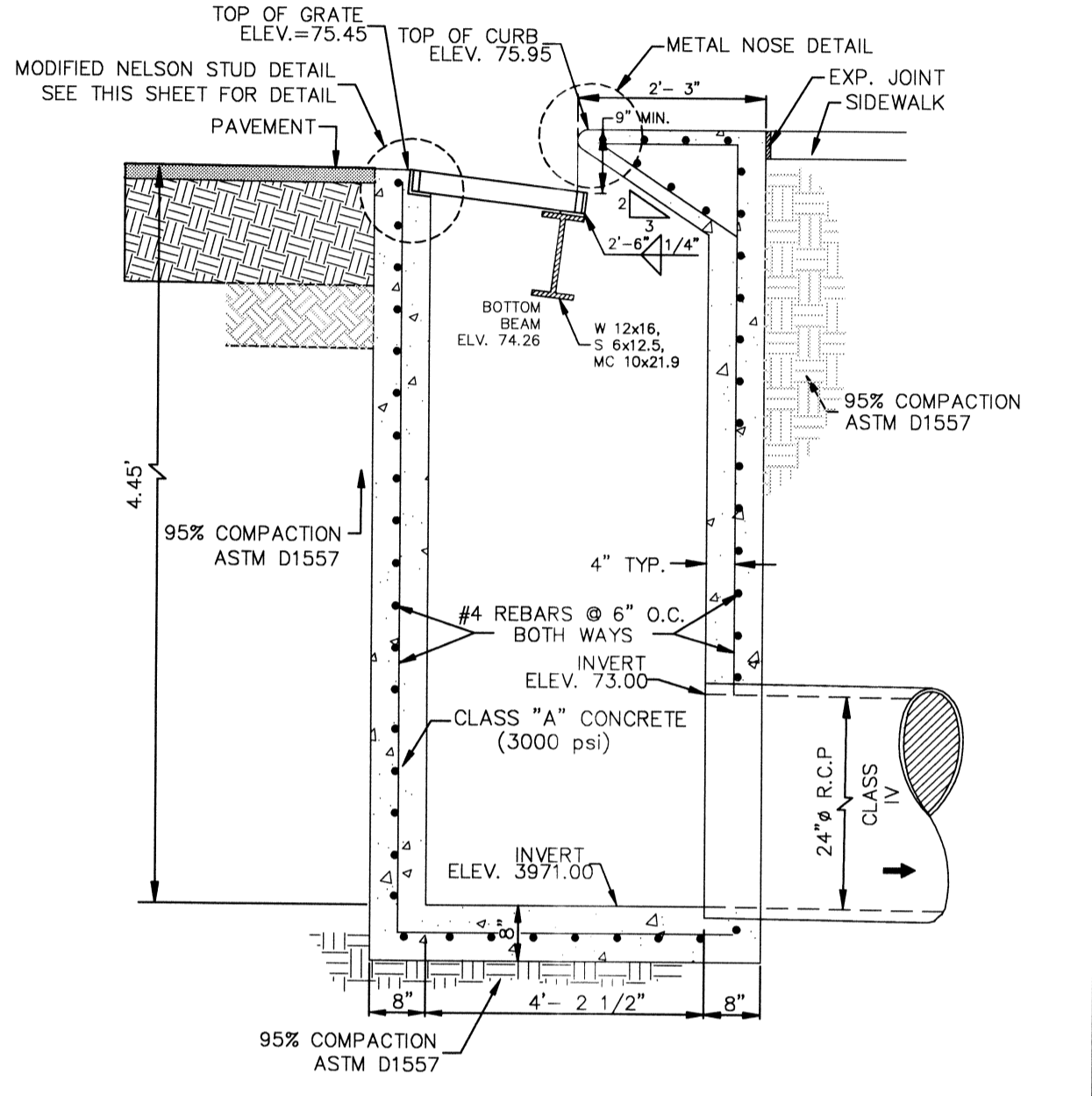


**DRAINAGE SYSTEM "H" PROFILE**  
HORZ. SCALE: 1"=30'  
VER. SCALE: 1"=10'

**DROP INLET TYP. 1 @ NORTHWESTERN DR. 18+38.12**

DROP INLET	REQUIRED FLOW CAPACITY Q (CFS)	AVAILABLE FLOW CAPACITY Q AVAIL. (CFS)	ADDITIONAL FLOW (CFS)	FLOW BYPASS	TYPE OF INLET	NUMBER OF GRATES
1-H	6.20	32.79	0	0	1	3

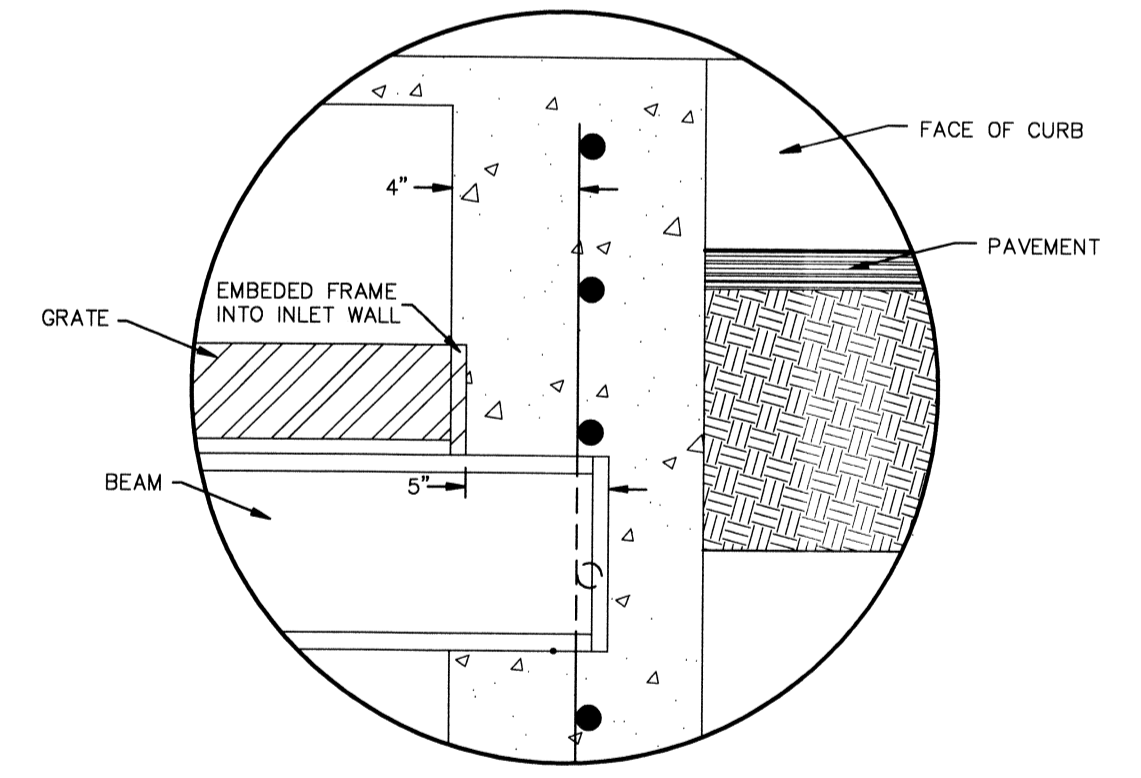
NO. OF GRATES	L'	BEAMS	
		LENGTH	MINIMUM SIZES
3	7'-1 7/8"	6'-7 7/8"	WBX15, S7X15.3, MC7X17.6



**SECTION DROP INLET #1-H (TYPE 1)**  
SCALE N.T.S. (3 GRATE)

**DROP INLET NOTES**

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**SECTION C1-C1 THIS SHEET**

**Rinker**  
Concrete Pipe Division

**Reinforced Concrete - Two and Three Piece Elbow Fabrication Details**

**Detail C**

Notes:  
 1. Produced to meet ASTM Specifications.  
 2. Contact a Concrete Pipe Division representative for details not listed on this sheet.

Rinker 603

**ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT**

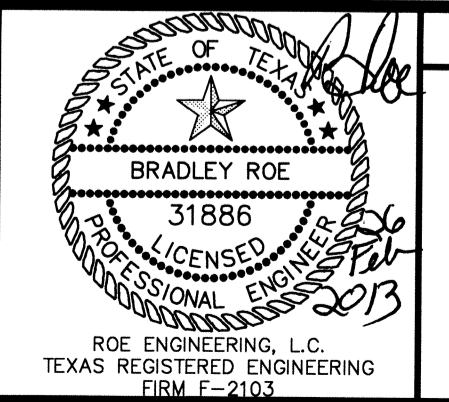
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DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF		HOR: 1"=30' VER: 1"=10'
9/20/12	CITY COMMENTS	STAFF	525 MONUMENT (CRNO 1889) (RIS 180444) LOCATION AS PER NATIONAL SURVEY 1981 LOCATION ABOUT 1.25 MILES EAST OF THE 800 GRADE, 1 MILE NORTH-NORTHWEST OF LOOP 376 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	FILE NAME: W.O. 011509-1 A EH-3 DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: L.D.R. CHKD. BY: H.P. APPD. BY: BR
			SECONDARY BENCHMARK EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHES DRIVE IN FRONT OF LOT 12, BLOCK 2, CANFIELD HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANFIELD HEIGHTS UNIT ONE ELEVATION: 3857.21 N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	



**STORM DRAINAGE PLAN AND PROFILE**

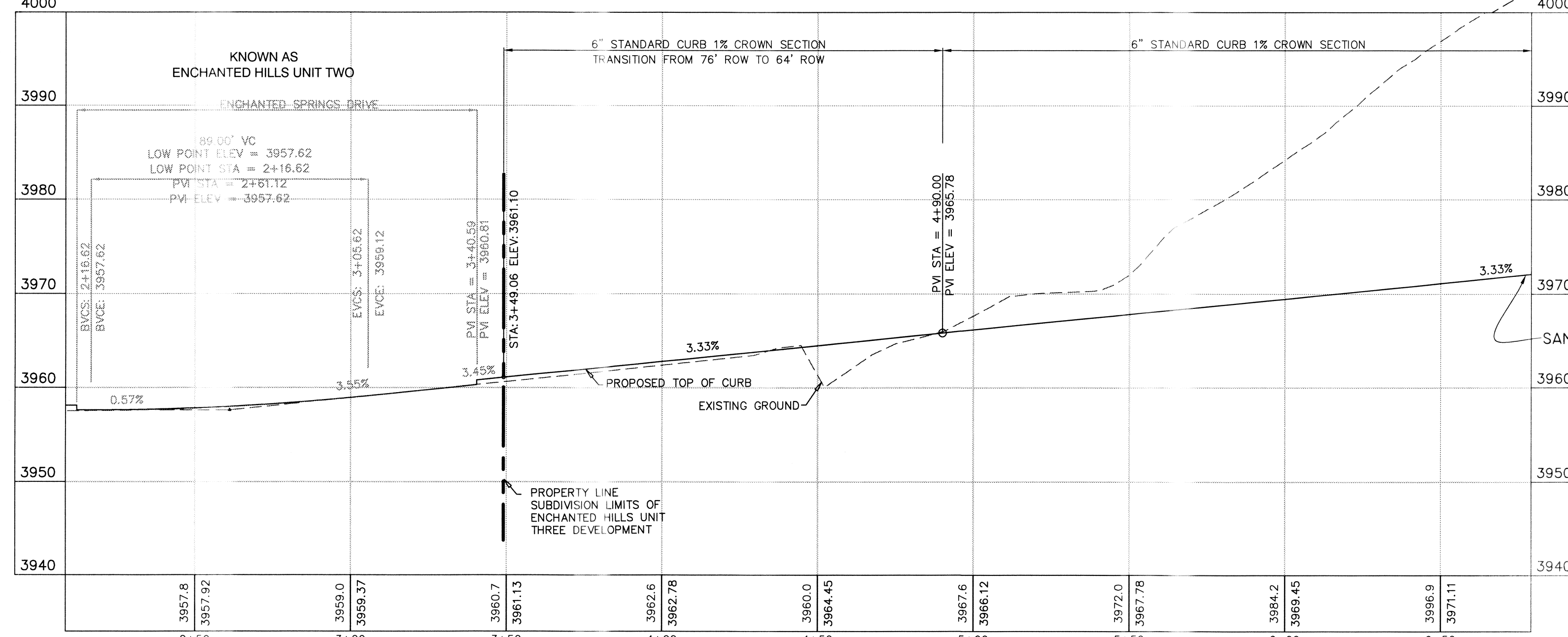
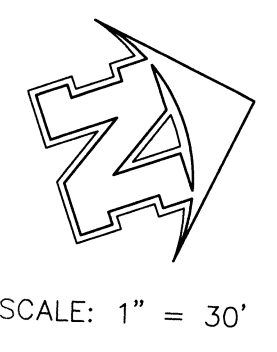
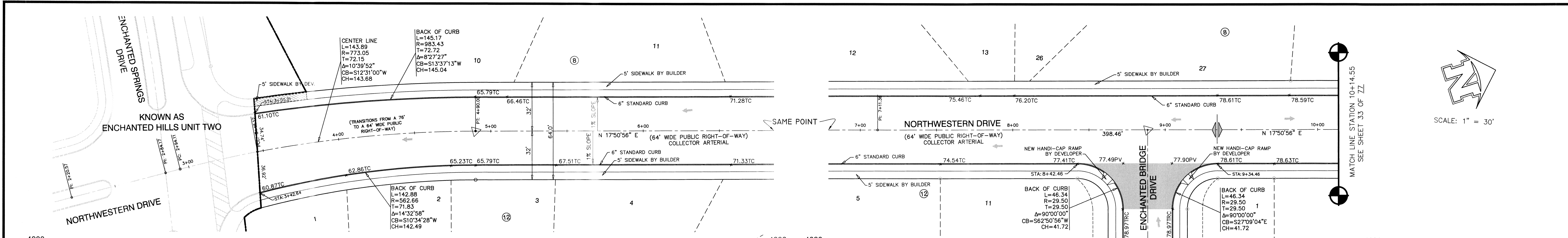
**ENCHANTED HILLS UNIT THREE**

**SYSTEM "H" PLAN AND PROFILE**

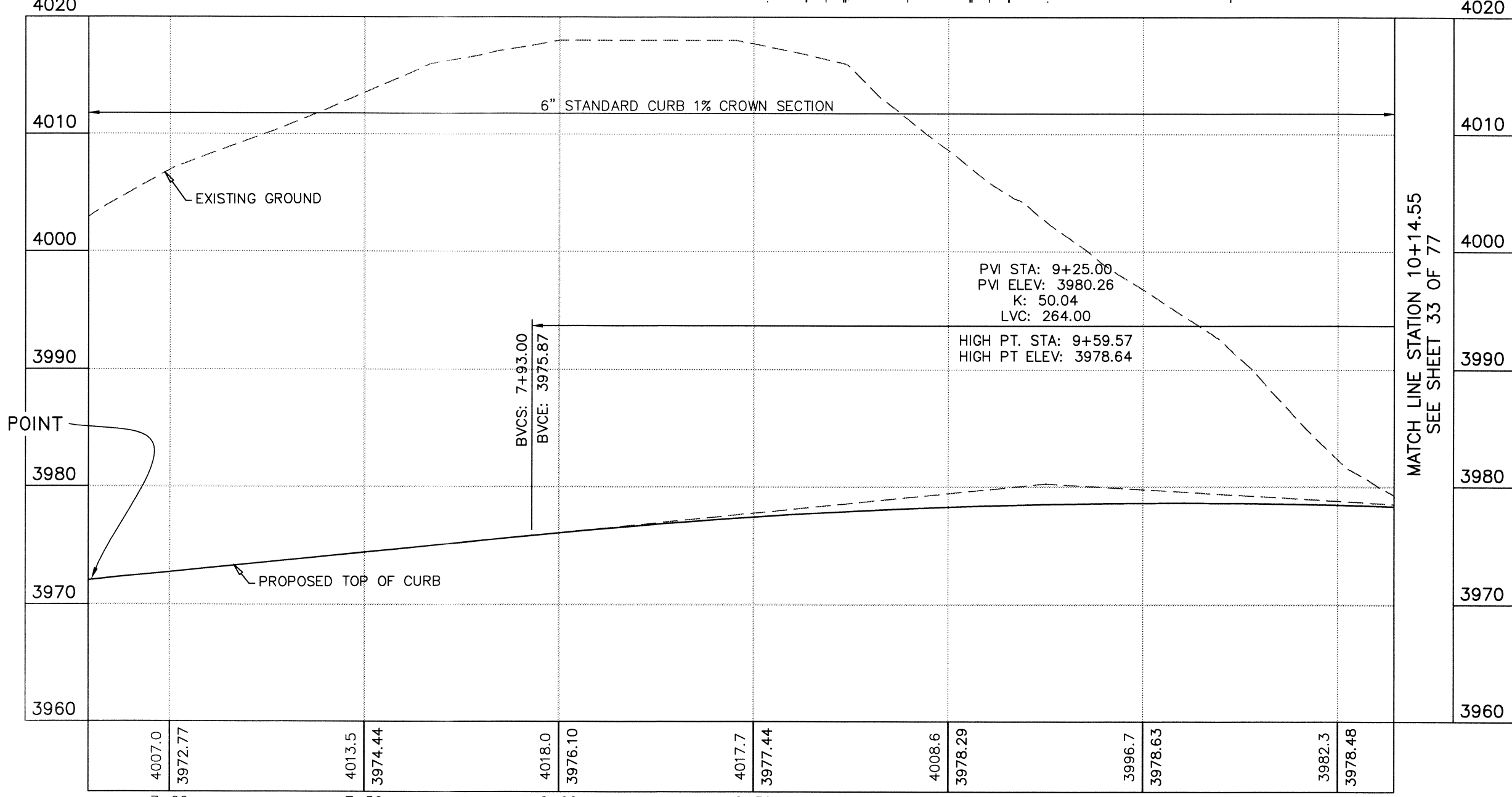
**Roe Engineering, L.C.**  
 601 N. Cotton St. Suite No. 6 El Paso, Tx. 79902  
 (915) 533-1418 - FAX: (915) 533-4972  
 e-mail: roeeng@rbwell.net

ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

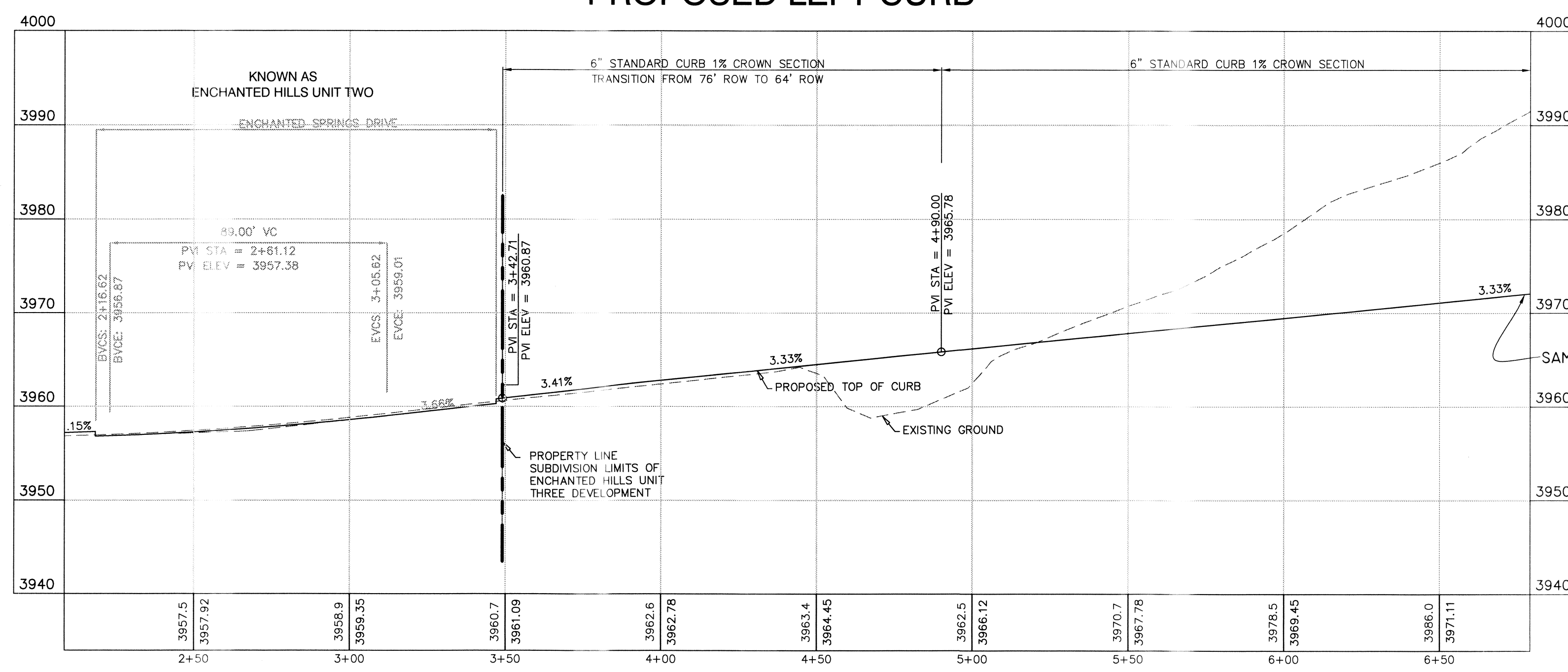
**SHEET 31 OF 77**



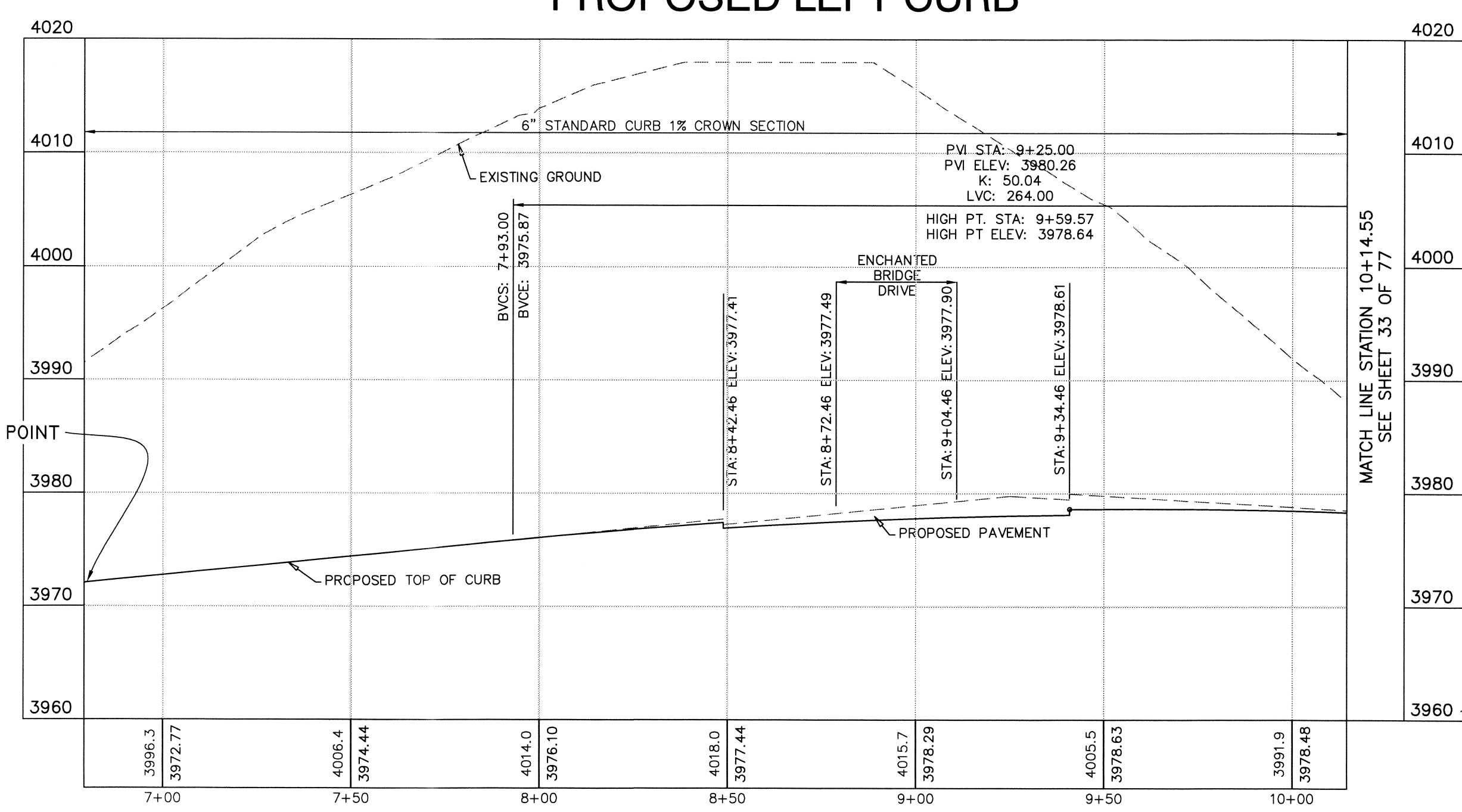
**PROPOSED LEFT CURB**



**PROPOSED LEFT CURB**



**PROPOSED RIGHT CURB**



**PROPOSED RIGHT CURB**

**NOTE:**  
 1. ALL HANDICAP RAMPS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS 8 SHEET 88 OF ZZ.  
 2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS 8 SHEET 89 OF ZZ.

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**FLOOD NOTE:**  
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THIS SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY BRADLEY ROE, P.E., 31886 ON SEPTEMBER 2012 ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

LEGEND	
× 44.51 TRC	PROPOSED TOP OF 4" ROLLOVER CURB
× 44.27 FG	PROPOSED FINISHED GRADE ELEVATION
× 45.00 PV	PROPOSED TOP OF PAVEMENT
× 44.51 TC	PROPOSED TOP OF 6" CURB
←	PROPOSED DRAINAGE FLOW
---	PROPOSED STREET CENTERLINE
---	SUBDIVISION BOUNDARY LINE
▲	PROPOSED CITY MONUMENT
---	EXISTING GRADE
---	PROPOSED GRADE

DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	ROE MONUMENT CORNER 1986 (100' 00" 00444)	HOR: 1" = 30' VER: 1" = 10'
9/20/12	CITY COMMENTS	STAFF	LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED ABOUT 1.25 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 376 (FRANKMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.13 NAVD 88	W.O. 011509-1 A EH-3
			EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MICHES DRIVE IN FRONT OF LOT 12, BLOCK 2, CANTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	DATE: NOVEMBER, 2011
			N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	DESIGN BY: STAFF

**PLAN AND PROFILE**

**ENCHANTED HILLS UNIT THREE**

NORTHWESTERN DRIVE  
STATION 3+46.12 TO 10+14.55

ROE ENGINEERING, L.C.  
TEXAS REGISTERED ENGINEERING FIRM F-2103

**REVIEWED**

hnp  
Roe Engineering, L.C.  
601 N. Cotton St. Suite No. 8 El Paso, Tx. 79902  
(915) 533-1418 - FAX: (915) 533-4972  
e-mail: roeeng@hnp.net

ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

SHEET 32 OF 77



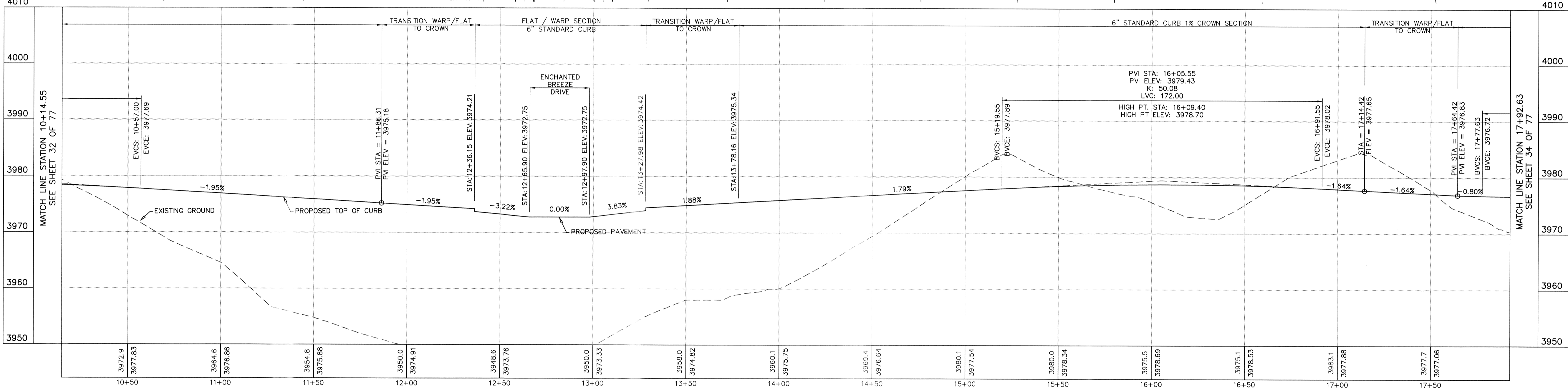
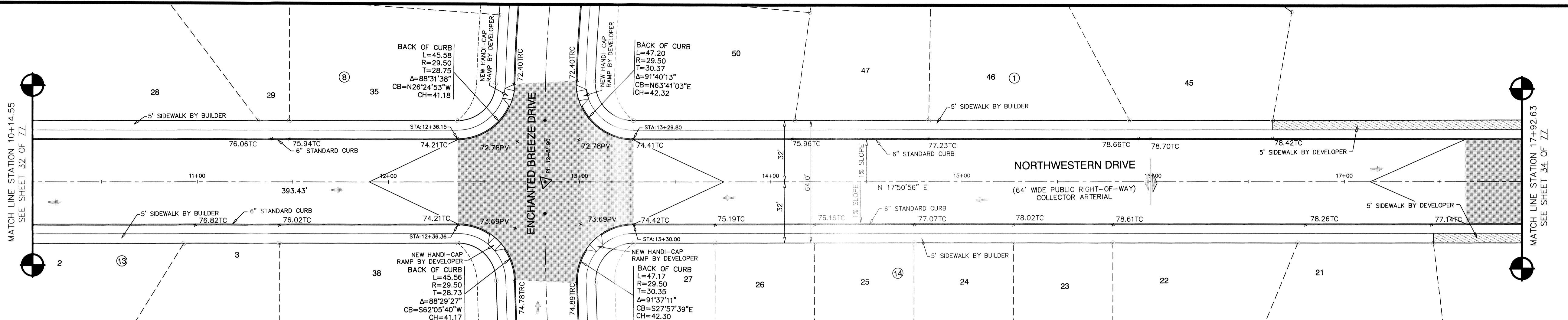


SCALE: 1" = 30'

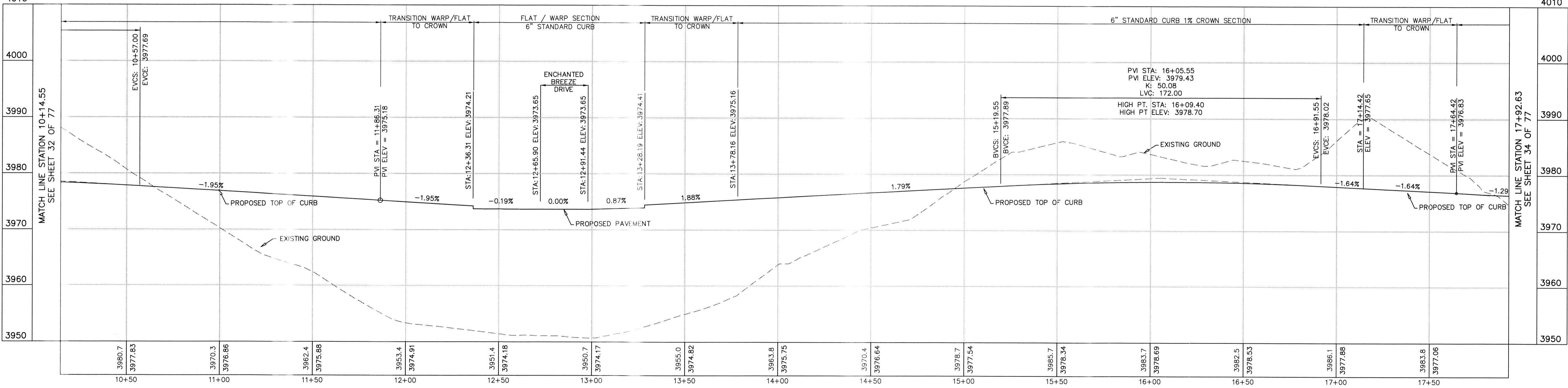
**NOTE:**

1. ALL HANDICAP RAMPS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 32 OF 77.
2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 34 OF 77.

SIDEWALK BY DEVELOPER  
 SIDEWALK BY BUILDER



### PROPOSED LEFT CURB



### PROPOSED RIGHT CURB

**FLOOD NOTE:**  
 THE ABOVE REFERENCED SUBDIVISION IS WITHIN ZONES "A" and "1" (EXPLANATION ZONE "A", AREAS OF 100-YEAR FLOOD; BASE FLOOD ELEVATIONS AND FLOOD HAZARDS NOT DETERMINED, (WHICH DOES NOT INCLUDE ANY RESIDENTIAL LOTS) (EXPLANATION ZONE "1", AREA OF MINIMAL FLOODING) ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER AREA COMMUNITY PANEL NO. 48214-0011 C, DATED FEBRUARY 5, 1996.

**LEGEND**

- × 44.51 TRC PROPOSED TOP OF 4" ROLLOVER CURB
- × 44.27 FG PROPOSED FINISHED GRADE ELEVATION
- × 45.00 PV PROPOSED TOP OF PAVEMENT
- × 44.51 TC PROPOSED TOP OF 6" CURB
- PROPOSED DRAINAGE FLOW
- PROPOSED STREET CENTERLINE
- - - SUBDIVISION BOUNDARY LINE
- PROPOSED CITY MONUMENT

DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	THIS MONUMENT (2000 1289 100 600444) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981, LOCATED ABOUT 1.35 MILES EAST OF THE 80+000+00 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10, ELEVATION 3946.11 NAVD 88	HOR: 1" = 30' VER: 1" = 10' FILE NAME: W.O. 011509-1 A EH-3 DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR
9/20/12	CITY COMMENTS	STAFF		
			<b>SECONDARY BENCHMARK</b> EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOJOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE, ELEVATION: 3857.21 N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	

THIS SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY BRADLEY ROE, P.E. 31856 ON SEPTEMBER 20, 2011 ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

**PLAN AND PROFILE**

**ENCHANTED HILLS UNIT THREE**

NORTHWESTERN DRIVE  
STATION 10+14.55 TO 17+92.63

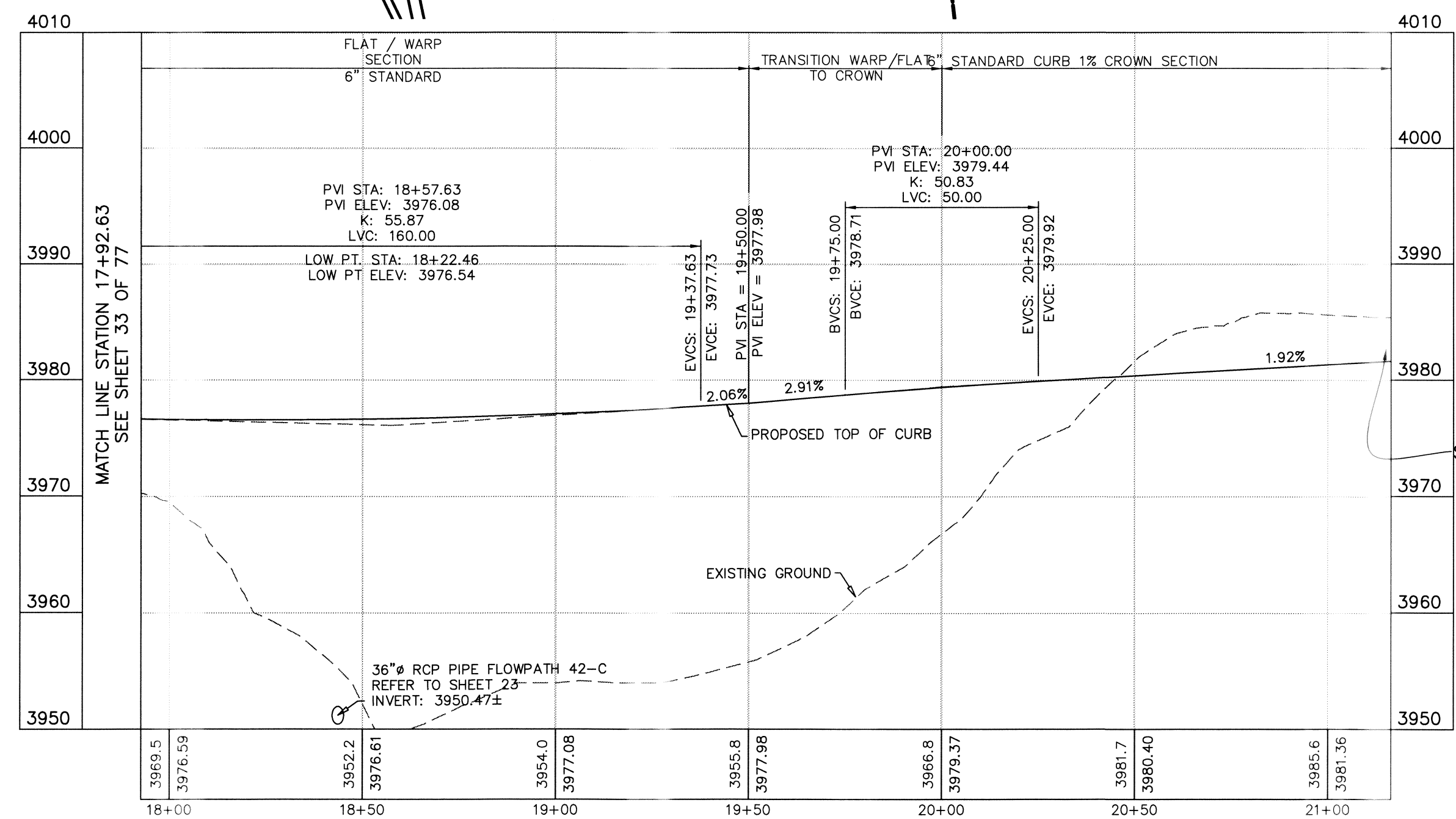
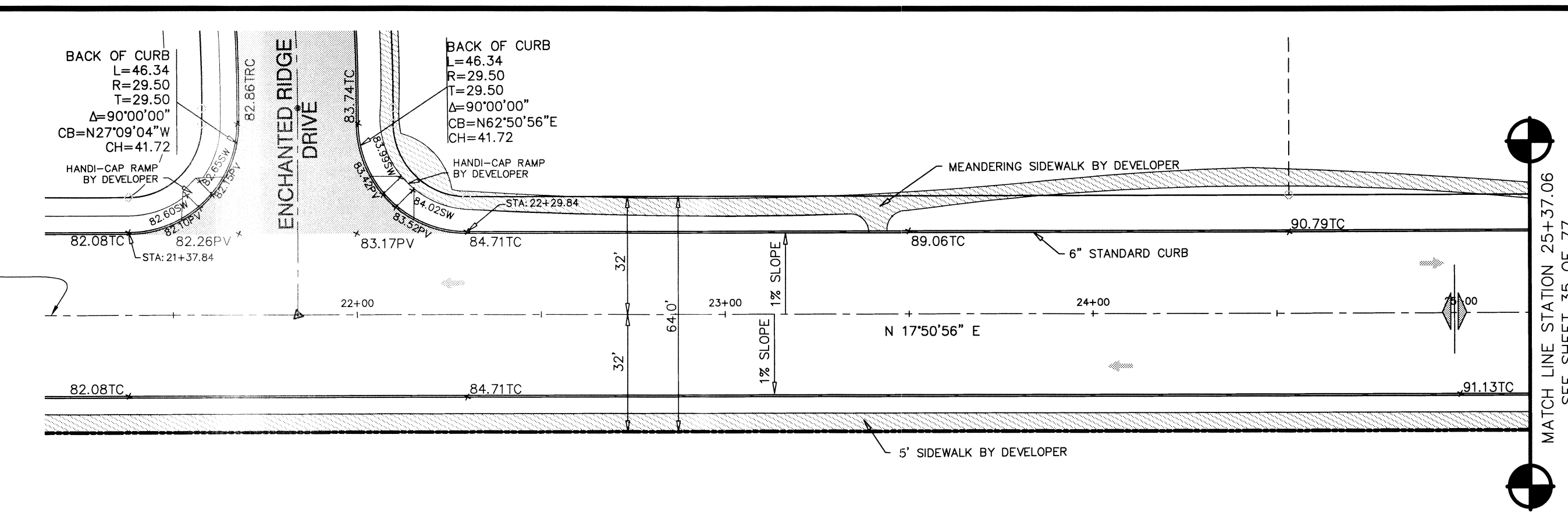
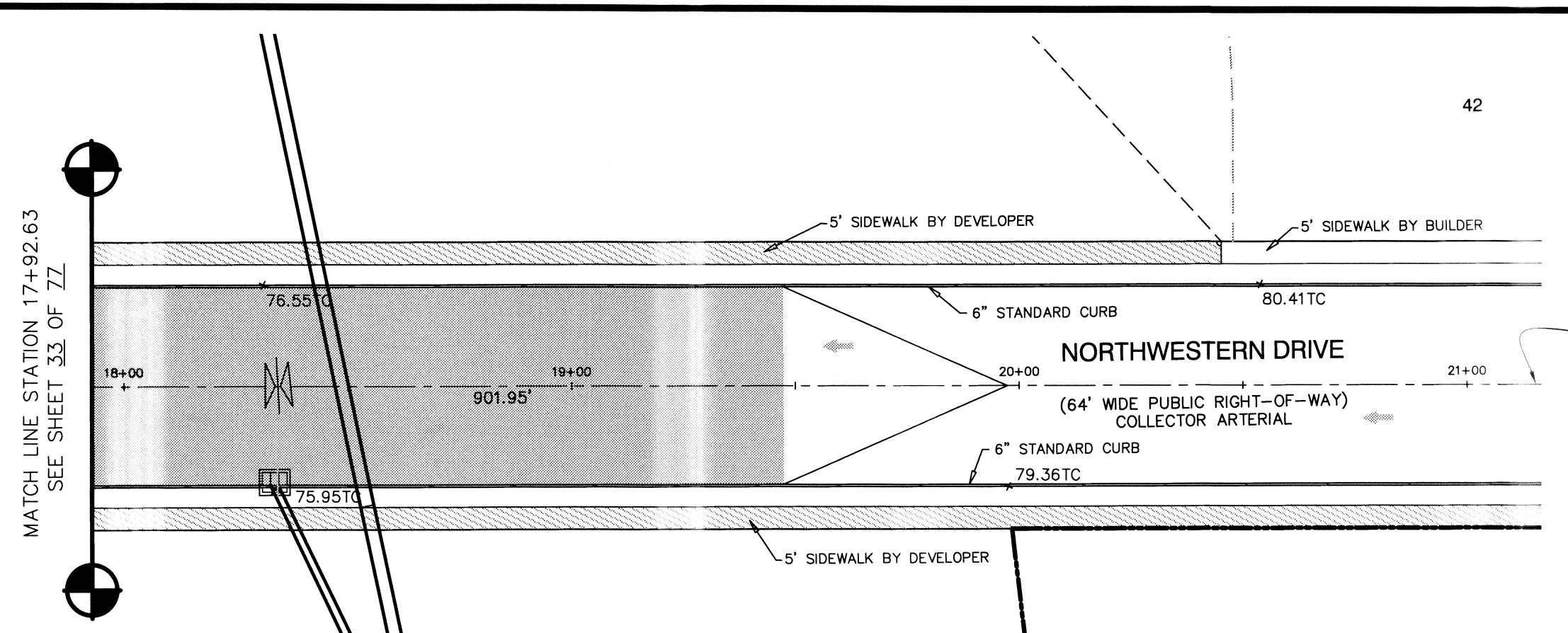
**ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT**

**REVIEWED**

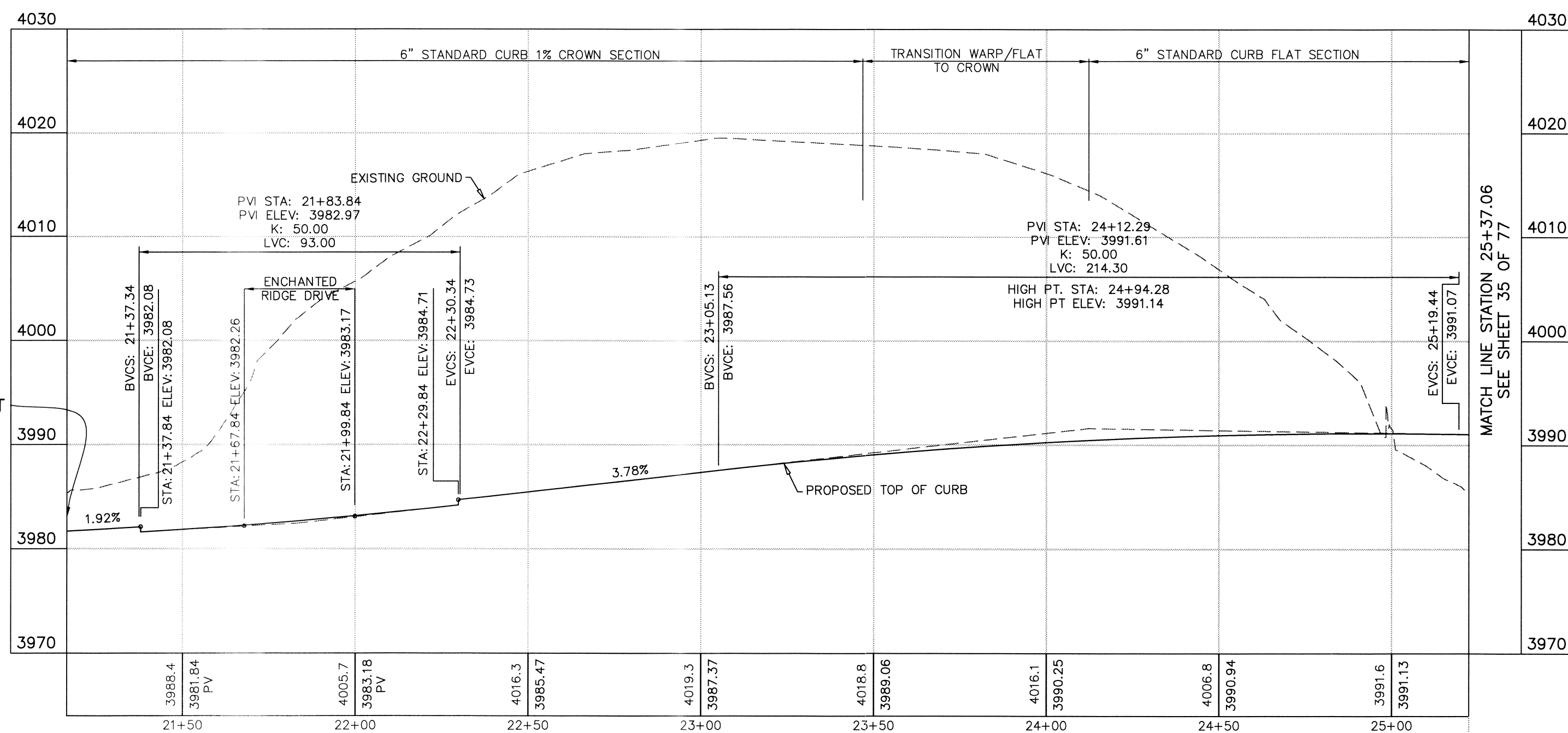
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 601 N. Cotton St. Suite No.6 El Paso, Tx. 79902  
 (915) 633-1418 - FAX (915) 533-4972  
 e-mail: roeeng@brp.net

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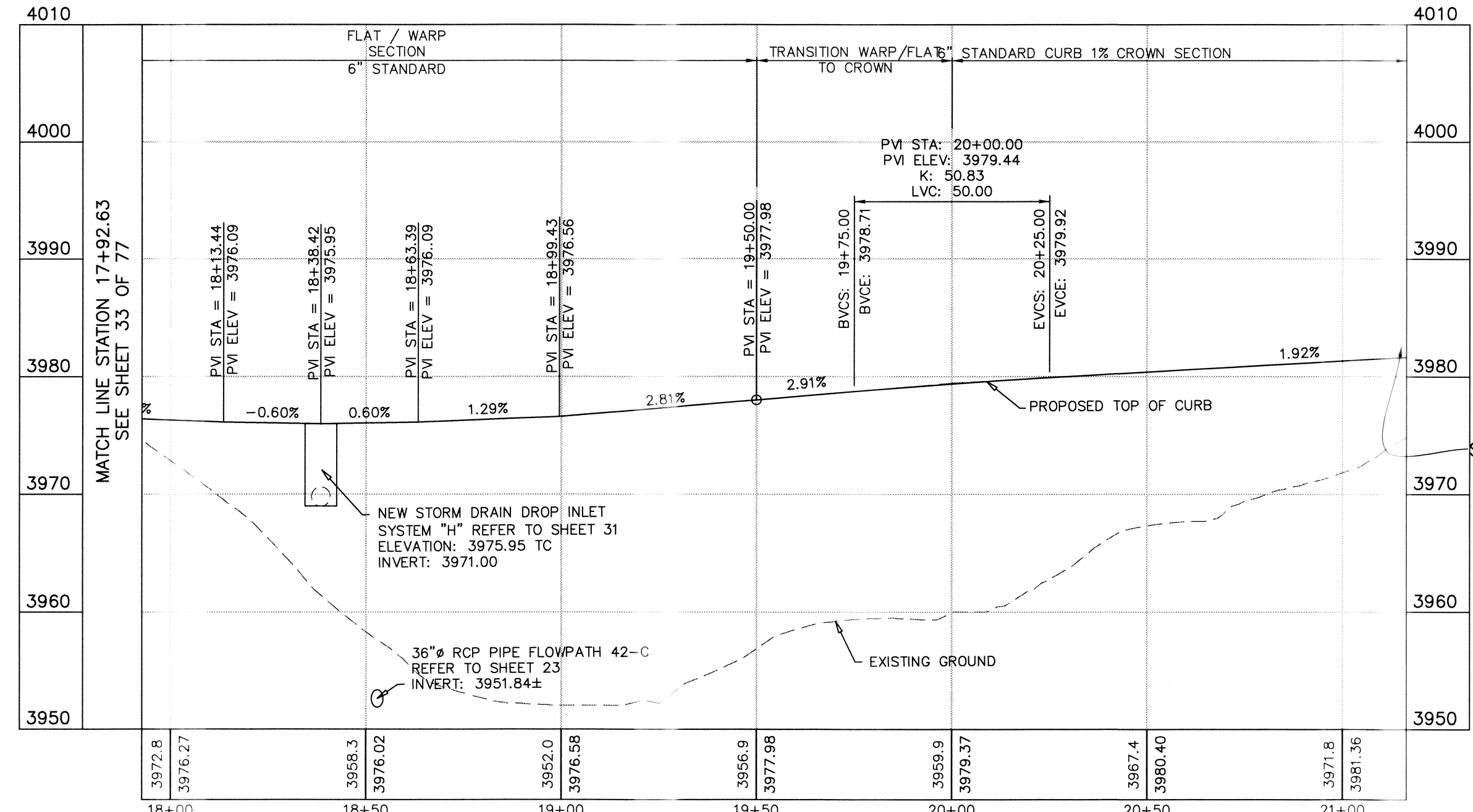
SHEET **33** OF **77**



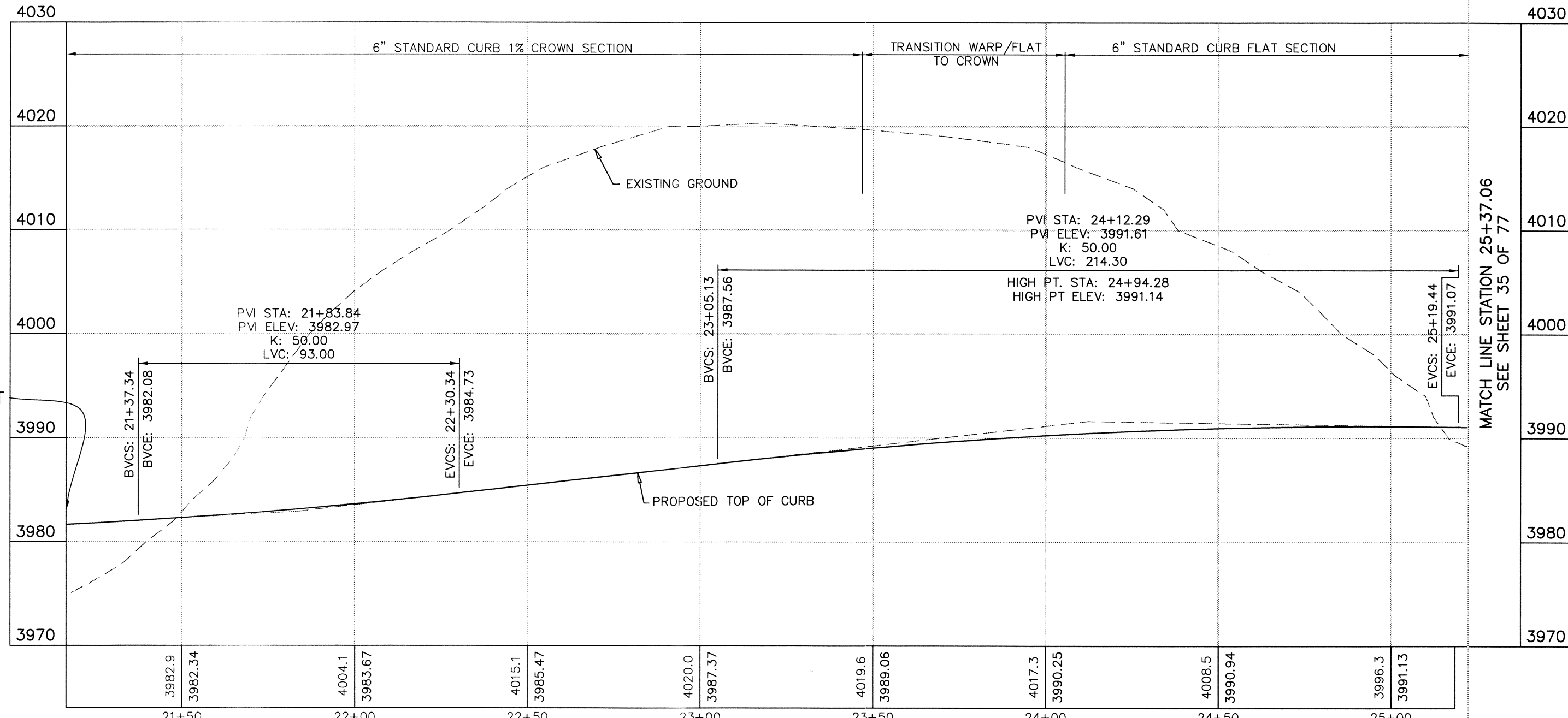
PROPOSED LEFT CURB



PROPOSED LEFT CURB



PROPOSED RIGHT CURB



PROPOSED RIGHT CURB

NOTE:  
 1. ALL HANDICAP RAMPS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 88 OF ZZ.  
 2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 89 OF ZZ.

SIDEWALK BY DEVELOPER  
 SIDEWALK BY BUILDER

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**LEGEND**

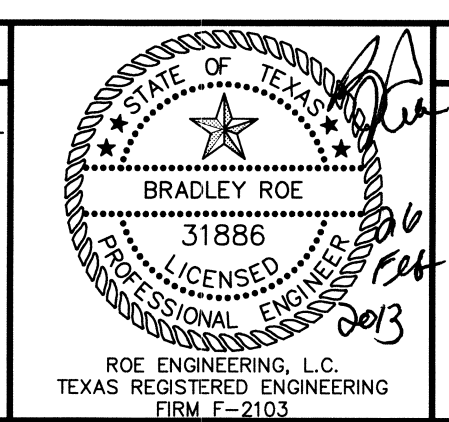
× 44.51 TRC	PROPOSED TOP OF 4" ROLLOVER CURB
× 44.27 FG	PROPOSED FINISHED GRADE ELEVATION
× 45.00 PV	PROPOSED TOP OF PAVEMENT
× 44.51 TC	PROPOSED TOP OF 6" CURB
→	PROPOSED DRAINAGE FLOW
---	PROPOSED STREET CENTERLINE
---	SUBDIVISION BOUNDARY LINE
▲	PROPOSED CITY MONUMENT

DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	NBS MONUMENT (GNS 1880 1082 080444) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED ABOUT 1.33 MILES EAST OF THE OLD BRIDGE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.31 NAVD 88	HOR: 1" = 30' VER: 1" = 10'
9/20/12	CITY COMMENTS	STAFF	EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANTILLO HEIGHTS UNIT TWO AND LOT 14, BLOCK 2, CANTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	W.O. 011509-1 A EH-3 DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR

**PLAN AND PROFILE**

**ENCHANTED HILLS UNIT THREE**

NORTHWESTERN DRIVE  
STATION 17+92.63 TO 25+37.06

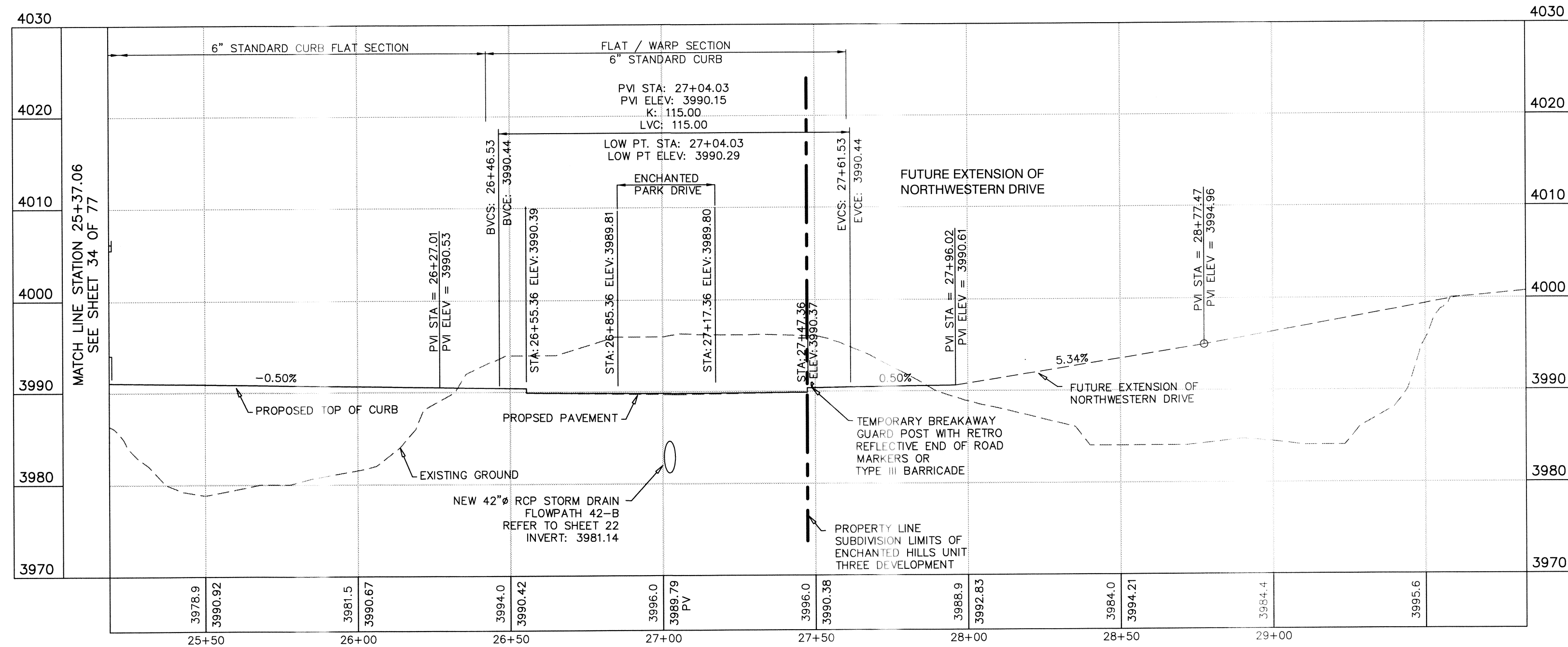
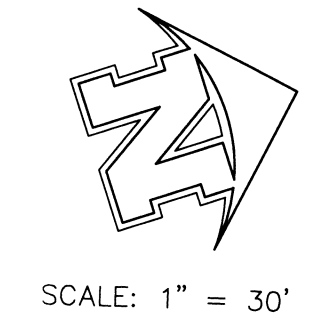
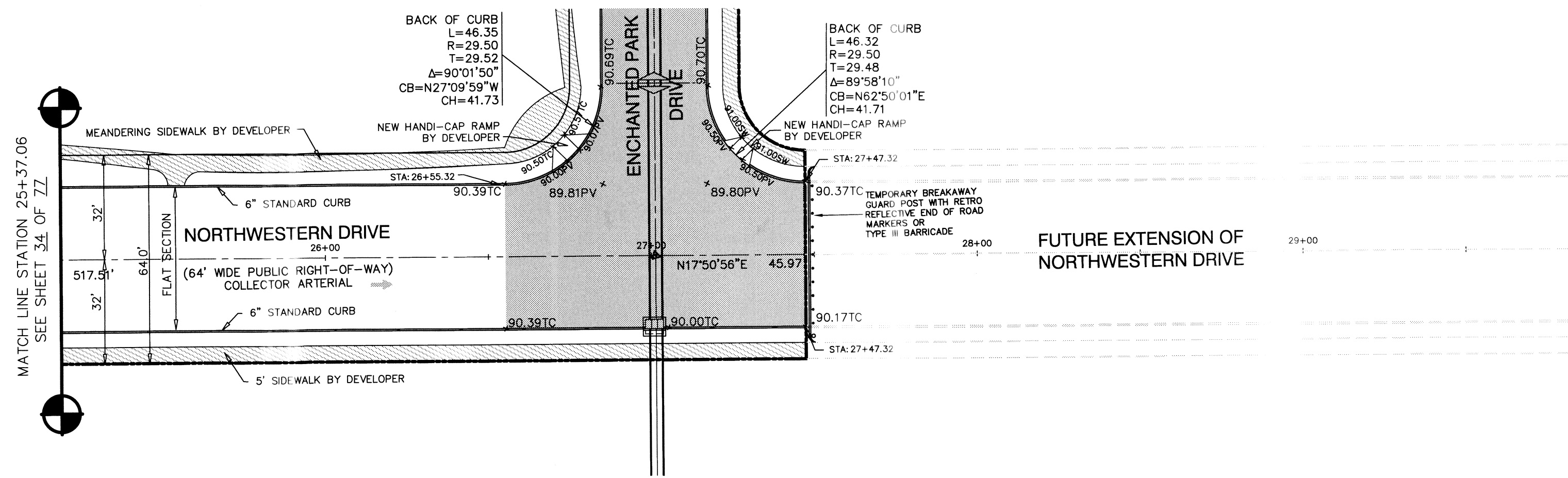


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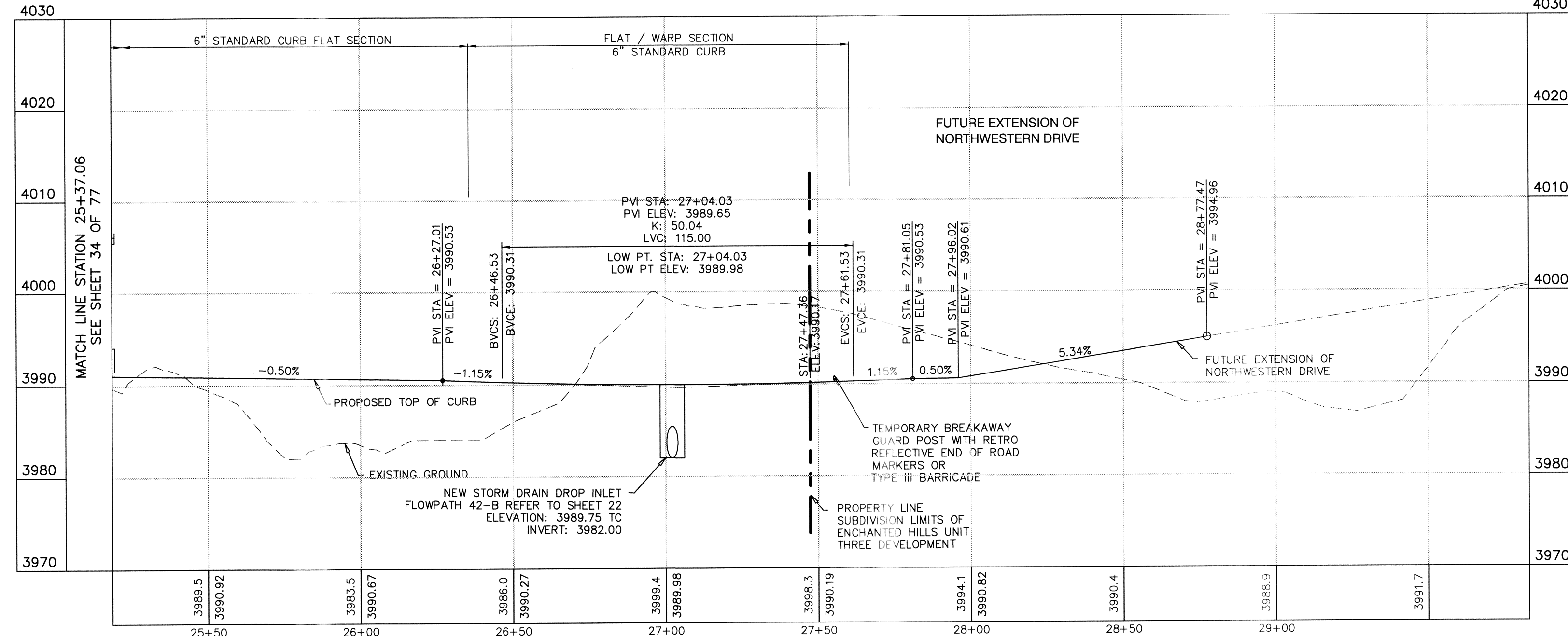
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 801 N. Cotton St. Suite No. 6 El Paso, Tx. 79902  
 (915) 533-1418 - FAX: (915) 533-4972  
 e-mail: roeeng@earthlink.net

ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

SHEET 34 OF 77



PROPOSED LEFT CURB



PROPOSED RIGHT CURB

**NOTE:**  
 1. ALL HANDICAP RAMPS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 82 OF 77.  
 2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 82 OF 77.



ENGINEERING & CONSTRUCTION  
 MANAGEMENT DEPARTMENT

REVIEWED

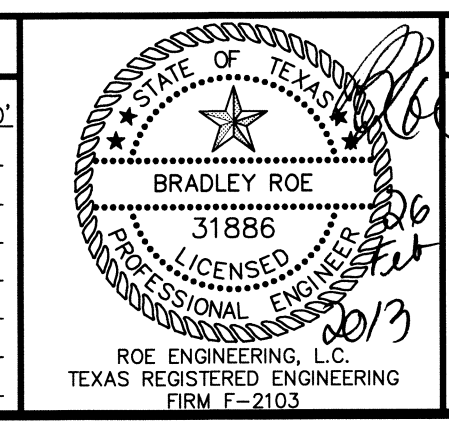
**FLOOD NOTE:**  
 THE ABOVE REFERENCED SUBDIVISION IS WITHIN ZONES "A" and "C" (EXPLANATION ZONE "A": AREAS OF 100-YEAR FLOOD; BASE FLOOD ELEVATIONS AND FLOOD HAZARDS NOT DETERMINED, WHICH DOES NOT INCLUDE ANY RESIDENTIAL LOTS) (EXPLANATION ZONE "C": AREA OF MINIMAL FLOODING) ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER AREA COMMUNITY PANEL NO. 480214 001 C, DATED FEBRUARY 5, 1986.

**LEGEND**

- × 44.51 TRC PROPOSED TOP OF 4" ROLLOVER CURB
- × 44.27 FG PROPOSED FINISHED GRADE ELEVATION
- × 45.00 PV PROPOSED TOP OF PAVEMENT
- × 44.51 TC PROPOSED TOP OF 6" CURB
- PROPOSED DRAINAGE FLOW
- PROPOSED STREET CENTERLINE
- SUBDIVISION BOUNDARY LINE
- PROPOSED CITY MONUMENT

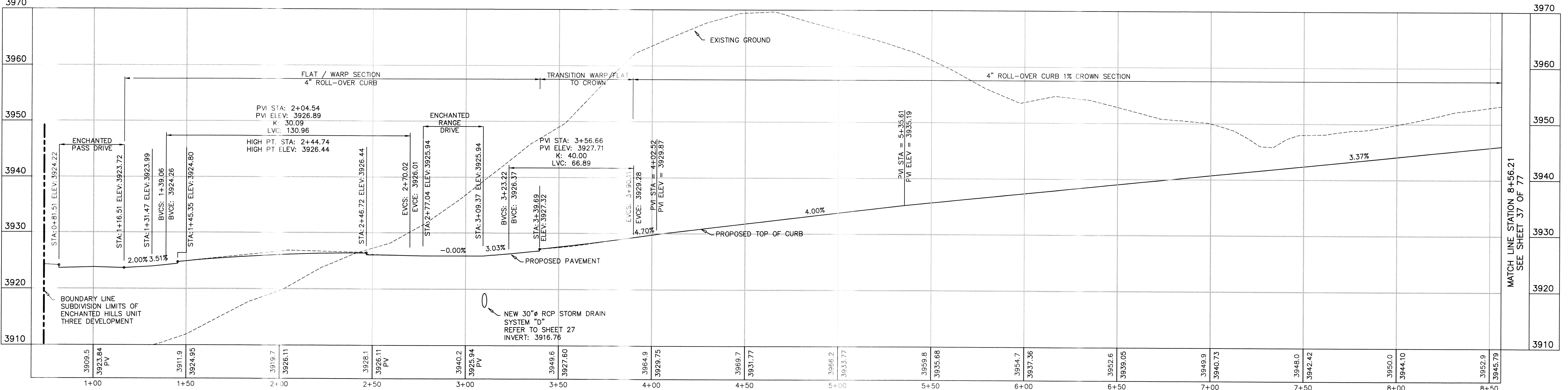
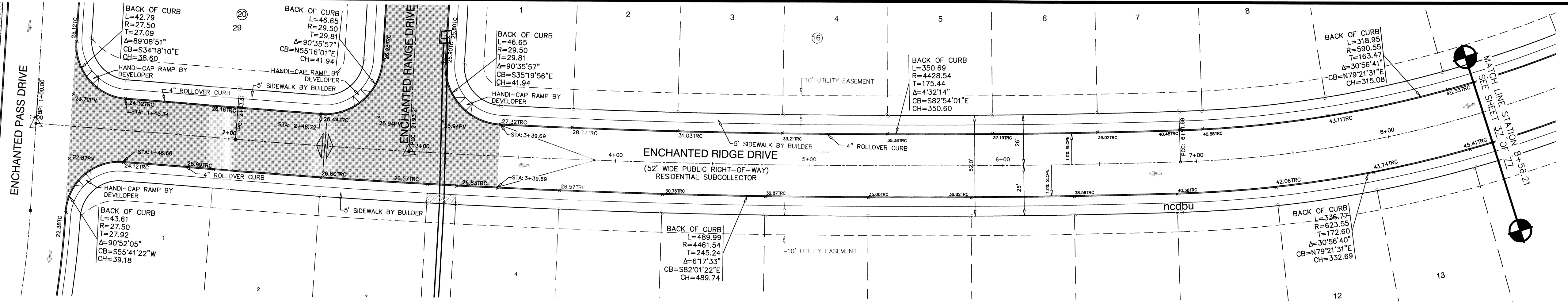
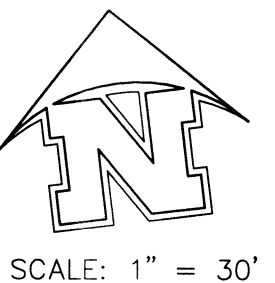
DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	NOS MONUMENT CHINA 1850 (PS 82044)	HOR: 1" = 30' VER: 1" = 10'
9/20/12	CITY COMMENTS	STAFF	LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED ABOUT 125 FEET EAST OF THE RD GRADE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	W.O. 011509-1 A EH-3 DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR
			<b>SECONDARY BENCHMARK</b> EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MICHOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 1, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21 N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	

DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	NOS MONUMENT CHINA 1850 (PS 82044)	HOR: 1" = 30' VER: 1" = 10'
9/20/12	CITY COMMENTS	STAFF	LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED ABOUT 125 FEET EAST OF THE RD GRADE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	W.O. 011509-1 A EH-3 DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR
			<b>SECONDARY BENCHMARK</b> EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MICHOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 1, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21 N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	



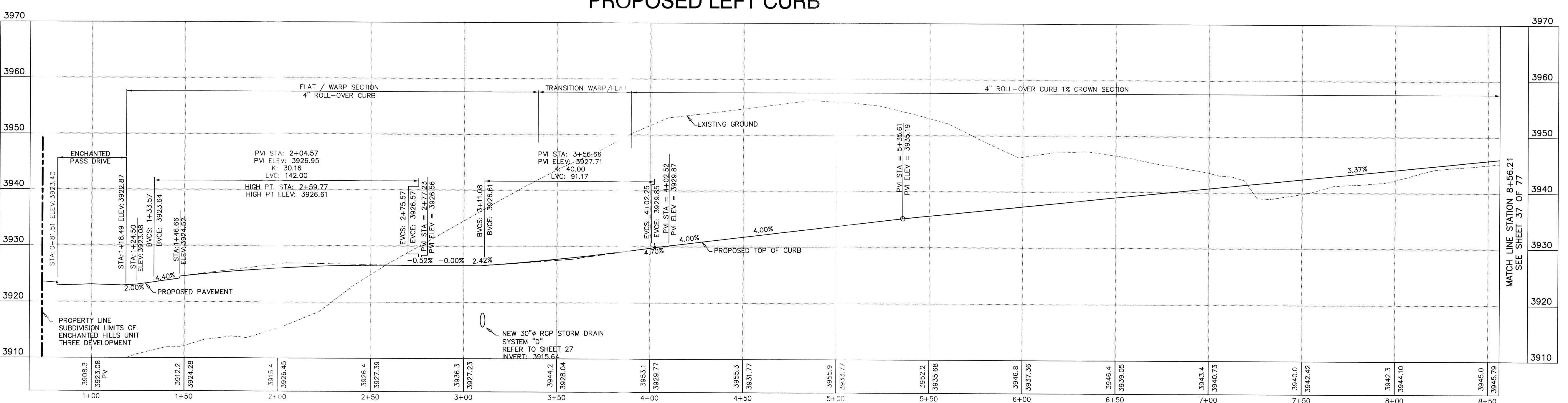
PLAN AND PROFILE  
**ENCHANTED HILLS  
 UNIT THREE**  
 NORTHWESTERN DRIVE  
 STATION TO 25+37.06 27+47.36

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 e-mail: roeeng@bnp.net  
 ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING  
 SHEET 35 OF 77



**NOTE:**  
 1. ALL HANDICAP RAMPS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 68 OF 77.  
 2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 69 OF 77.

SIDEWALK BY DEVELOPER  
 SIDEWALK BY BUILDER



**FLOOD NOTE:**  
 THE ABOVE REFERENCED SUBDIVISION IS WITHIN ZONES "A" AND "C" (EXPLANATION ZONE "A": AREAS OF 100-YEAR FLOOD; BASE FLOOD ELEVATIONS AND FLOOD HAZARDS NOT DETERMINED. (WHICH DOES NOT INCLUDE ANY RESIDENTIAL LOTS) (EXPLANATION ZONE "C": AREA OF MINIMAL FLOODING) ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER AREA COMMUNITY PANEL NO. 480214-0011 C, DATED FEBRUARY 5, 1996.

**LEGEND**

- × 44.51 TRC PROPOSED TOP OF 4" ROLL-OVER CURB
- × 44.27 FG PROPOSED FINISHED GRADE ELEVATION
- × 45.00 PV PROPOSED TOP OF PAVEMENT
- × 44.51 TC PROPOSED TOP OF 6" CURB
- PROPOSED DRAINAGE FLOW
- PROPOSED STREET CENTERLINE
- - - SUBDIVISION BOUNDARY LINE
- ▲ PROPOSED CITY MONUMENT

DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	N/S MONUMENT "GRIND 1580" TRC (200444) LOCATION AS PER NATIONAL GEODETIC SURVEY 1983; LOCATED ABOUT 1.25 MILES EAST OF THE RD GRANGE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	HOR: 1" = 30' VER: 1" = 10'
9/20/12	CITY COMMENTS	STAFF	EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHIS DRIVE IN FRONT OF LOT 12, BLOCK 7, CANTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANTILLO HEIGHTS UNIT ONE. ELEVATION 3957.21	DATE: NOVEMBER, 2011
			N.A.V.D. DATUM -10.16 = CITY OF EL PASO DATUM	DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR

**PLAN AND PROFILE**

**ENCHANTED HILLS UNIT THREE**

ENCHANTED RIDGE DRIVE  
STATION 1+00.00 TO 8+56.21

**BRADLEY ROE**  
 LICENSED PROFESSIONAL ENGINEER  
 STATE OF TEXAS  
 31886  
 2013

ROE ENGINEERING, L.C.  
 TEXAS REGISTERED ENGINEERING FIRM F-2103

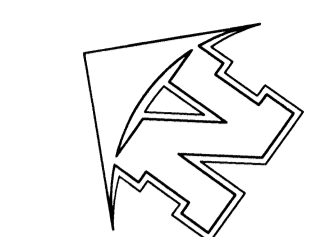
**ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT**

**REVIEWED**

**brnp** Roe Engineering, L.C.  
 801 N. Cotton St. Suite No.8 El Paso, Tx, 79902  
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 e-mail: roeeng@brnp.net

ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

SHEET **36** OF **77**

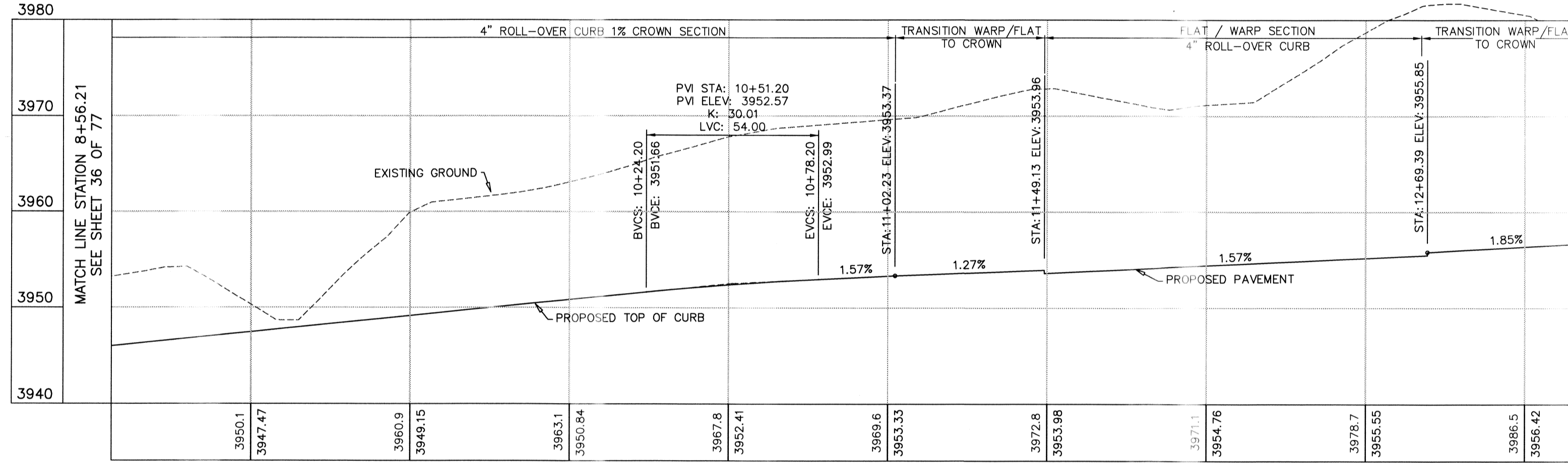
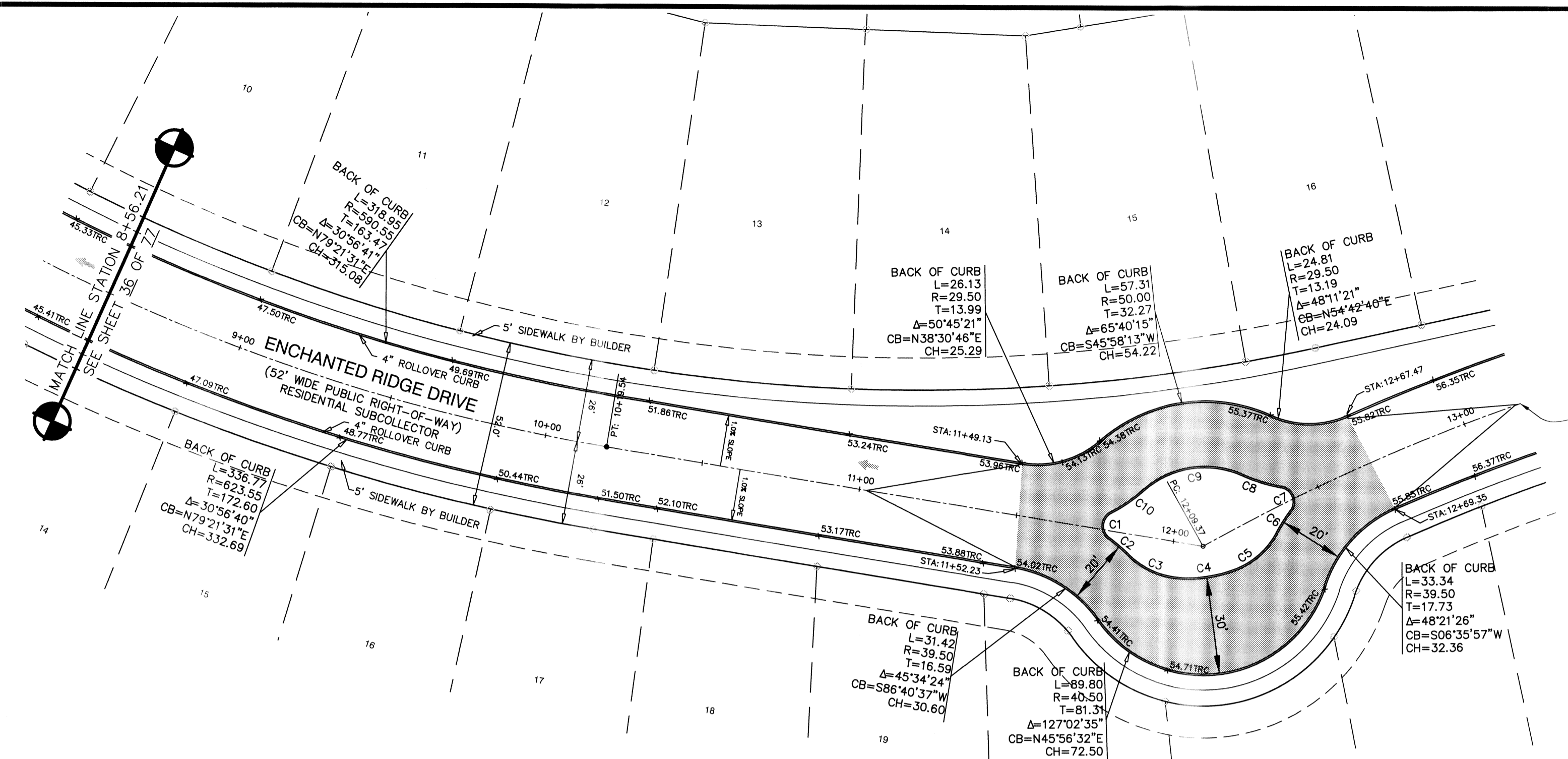


SCALE: 1" = 30'

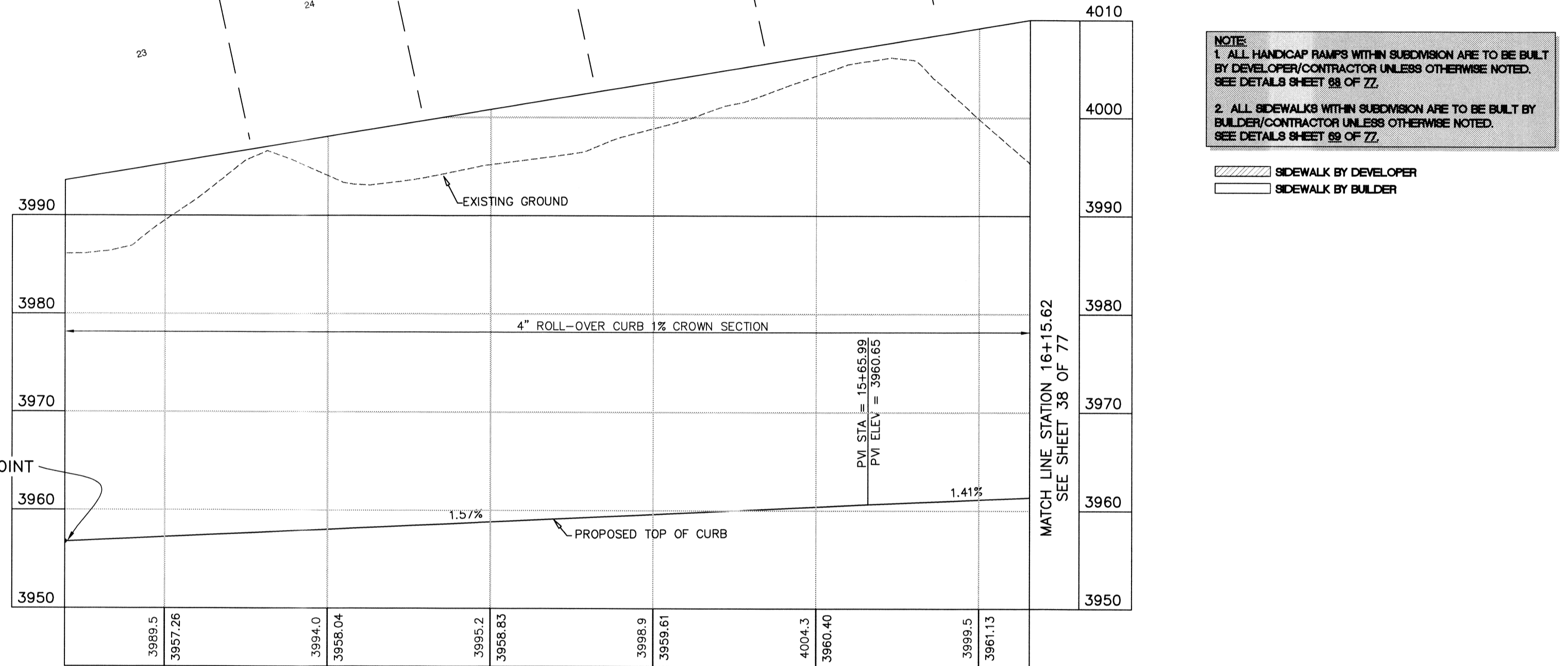
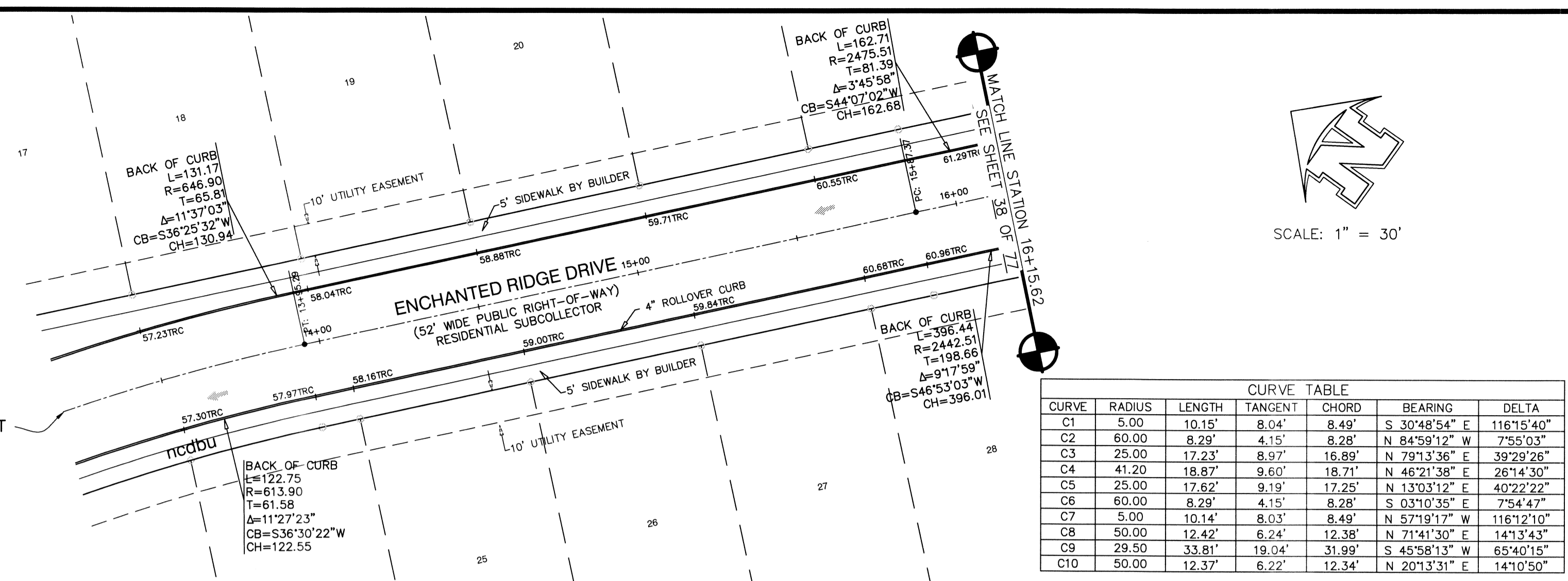
CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	5.00	10.15'	8.04'	8.49'	S 30°48'54" E	116°15'40"
C2	60.00	8.29'	4.15'	8.28'	N 84°59'12" W	7°55'03"
C3	25.00	17.23'	8.97'	16.89'	N 79°13'36" E	39°29'28"
C4	41.20	16.87'	9.60'	18.71'	N 48°21'38" E	28°14'30"
C5	25.00	17.62'	9.19'	17.25'	N 13°03'12" E	40°22'22"
C6	60.00	8.29'	4.15'	8.28'	S 03°10'35" W	7°54'47"
C7	5.00	10.14'	8.03'	8.49'	S 07°19'17" W	116°12'10"
C8	50.00	12.42'	6.24'	12.38'	N 71°41'30" E	141°3'43"
C9	29.50	33.81'	19.04'	31.99'	S 45°58'13" W	65°40'15"
C10	50.00	12.37'	6.22'	12.34'	N 20°13'31" E	141°05'07"

NOTE:  
 1. ALL HANDICAP RAMPS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 88 OF 77.  
 2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 88 OF 77.

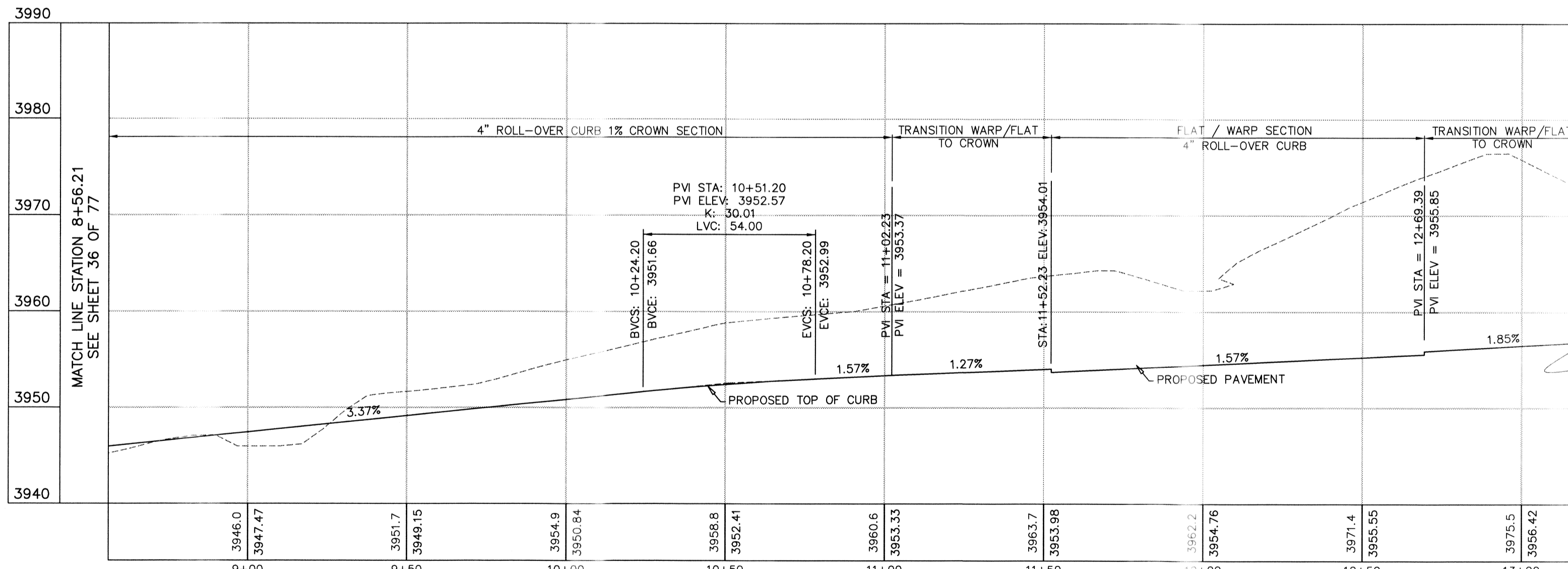
SIDEWALK BY DEVELOPER  
 SIDEWALK BY BUILDER



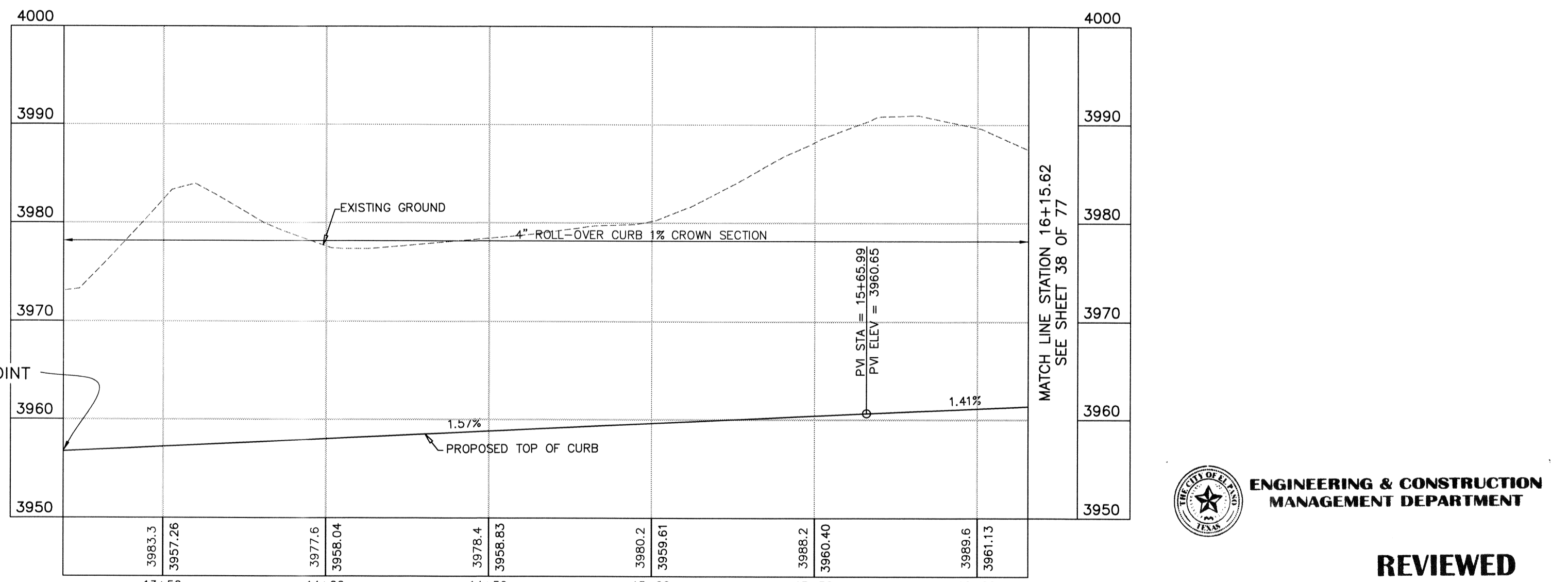
PROPOSED LEFT CURB



PROPOSED LEFT CURB



PROPOSED RIGHT CURB



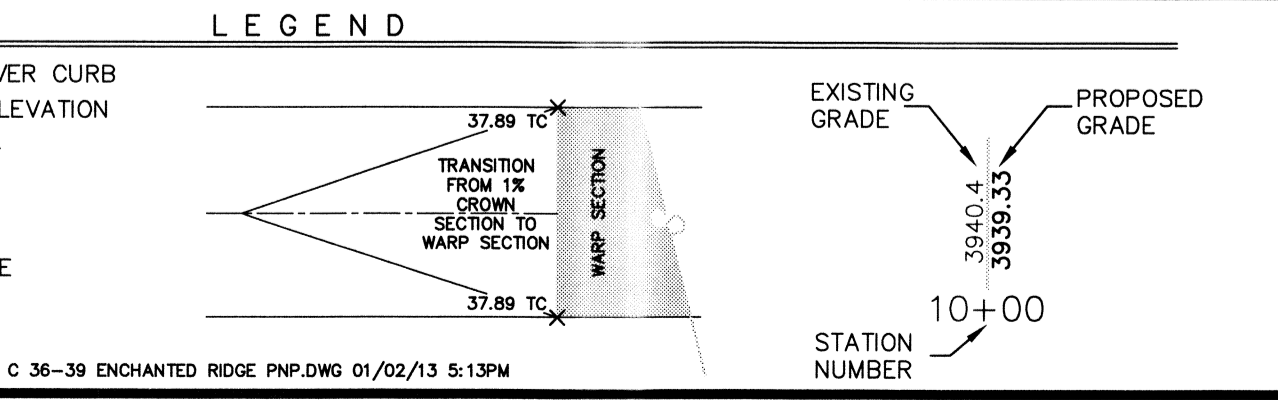
PROPOSED RIGHT CURB

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**FLOOD NOTE:**  
 THE ABOVE REFERENCED SUBDIVISION IS WITHIN ZONES "A" and "C" (EXPLANATION ZONE "A": AREAS OF 100-YEAR FLOOD; BASE FLOOD ELEVATIONS AND FLOOD HAZARDS NOT DETERMINED. (WHICH DOES NOT INCLUDE ANY RESIDENTIAL LOTS) (EXPLANATION ZONE "C": AREA OF MINIMAL FLOODING) ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER AREA COMMUNITY PANEL NO. 480214 0011 C, DATED FEBRUARY 5, 1998.

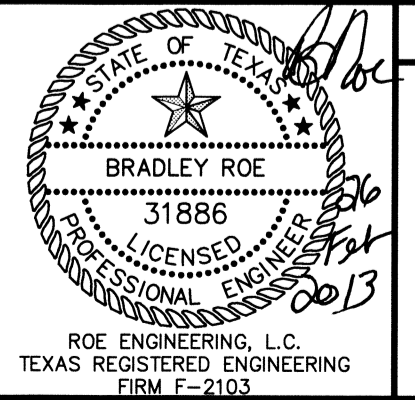
**LEGEND**

- × 44.51 TRC PROPOSED TOP OF 4" ROLLOVER CURB
- × 44.27 FG PROPOSED FINISHED GRADE ELEVATION
- × 45.00 PV PROPOSED TOP OF PAVEMENT
- × 44.51 TC PROPOSED TOP OF 6" CURB
- PROPOSED DRAINAGE FLOW
- PROPOSED STREET CENTERLINE
- SUBDIVISION BOUNDARY LINE
- PROPOSED CITY MONUMENT



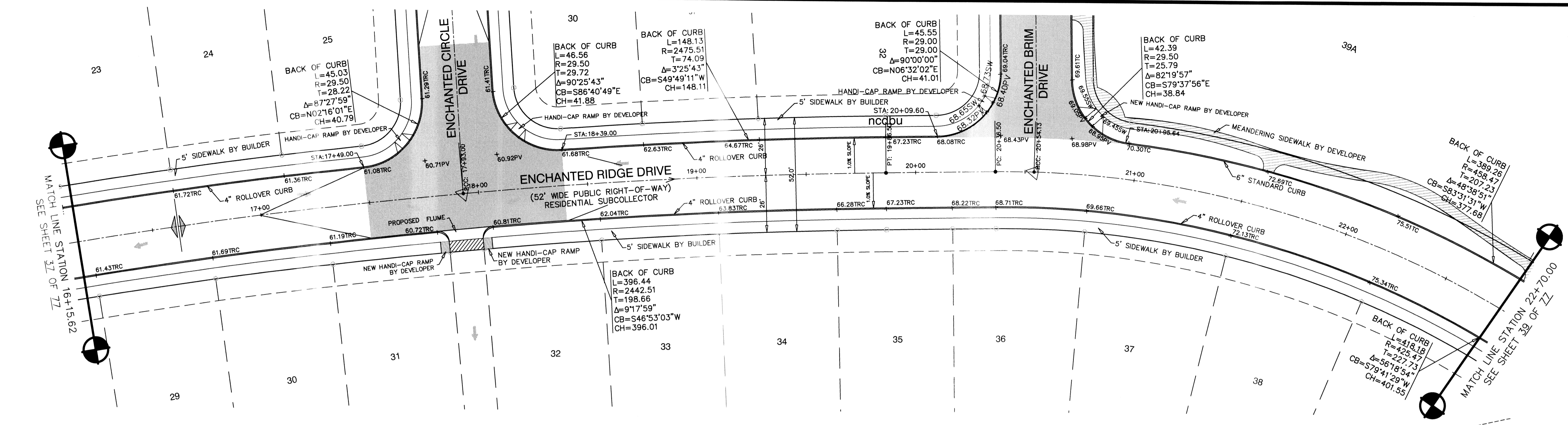
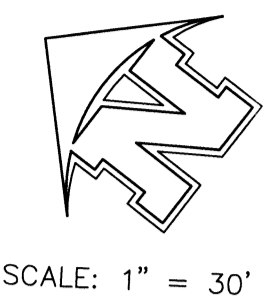
DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	N 24°24'41" E ELEVATION 3946.11 NAVD 88	HOR: 1" = 30' VER: 1" = 10'
9/20/12	CITY COMMENTS	STAFF	EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MACHOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUELLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUELLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR

**SCALE**  
 HOR: 1" = 30' VER: 1" = 10'  
 FILE NAME: W.O. 011509-1 A EH-3  
 DATE: NOVEMBER, 2011  
 DESIGN BY: STAFF  
 DRAWN BY: I.D.R.  
 CHKD. BY: H.P.  
 APPD. BY: BR

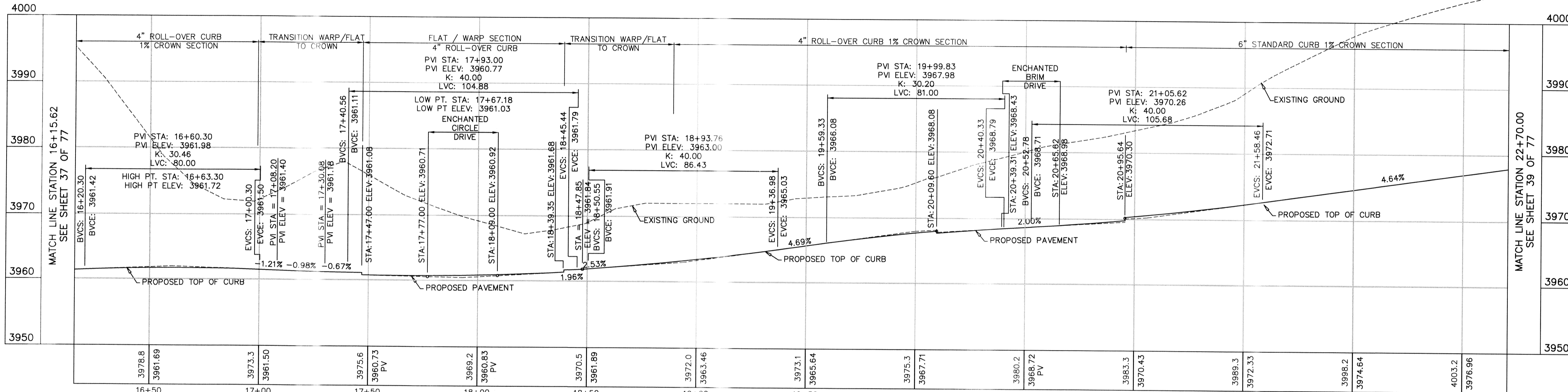


**PLAN AND PROFILE**  
**ENCHANTED HILLS UNIT THREE**  
 ENCHANTED RIDGE DRIVE  
 STATION 8+56.21 TO 16+15.62

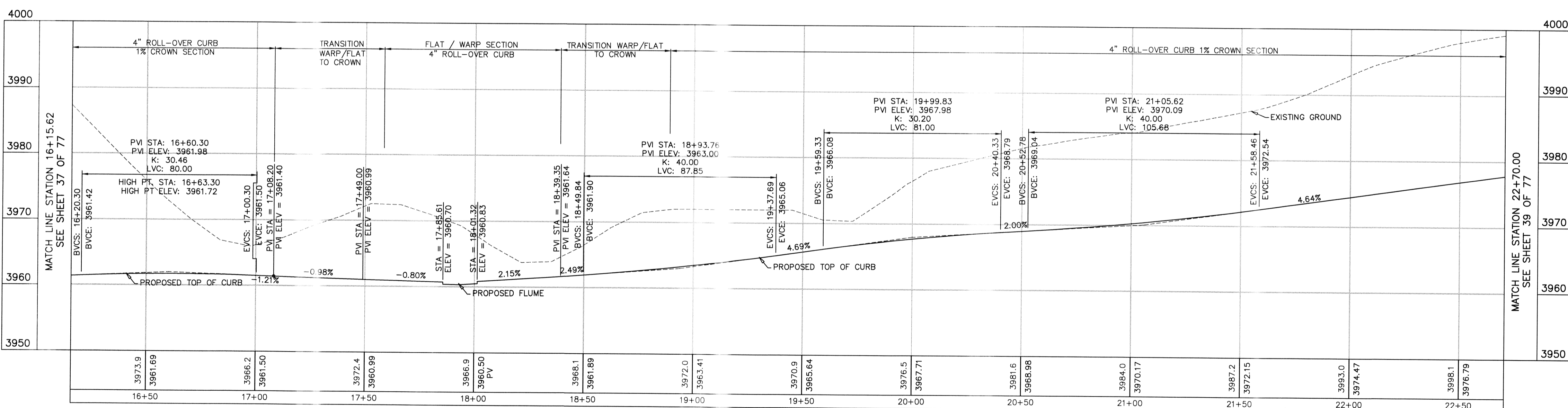
**ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT**  
**REVIEWED**  
 Roe Engineering, L.L.C.  
 601 N. Cotton St. Suite No. 8 El Paso, Tx. 79902  
 (915) 533-1418 - FAX (915) 533-4972  
 e-mail: roeeng@roewell.net  
 ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING  
 SHEET 37 OF 77



NOTE:  
 1. ALL HANDCAP RAMPS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 88 OF 77.  
 2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 89 OF 77.



PROPOSED LEFT CURB



PROPOSED RIGHT CURB



REVIEWED

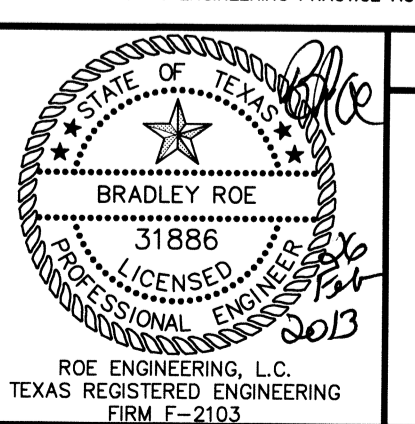
FLOOD NOTE:  
 THE ABOVE REFERENCED SUBDIVISION IS WITHIN ZONES "A" AND "C" (EXPLANATION ZONE "A": AREAS OF 100-YEAR FLOOD; BASE FLOOD ELEVATIONS AND FLOOD HAZARDS NOT DETERMINED; ZONE DOES NOT INCLUDE ANY RESIDENTIAL LOTS) (EXPLANATION ZONE "C": AREA OF MINIMAL FLOODING) ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS AS PER AREA COMMUNITY PANEL NO. 480214 001 C, DATED FEBRUARY 5, 1998.

LEGEND

- × 44.51 TRC PROPOSED TOP OF 4" ROLLOVER CURB
- × 44.27 FG PROPOSED FINISHED GRADE ELEVATION
- × 45.00 PV PROPOSED TOP OF PAVEMENT
- × 44.51 TC PROPOSED TOP OF 6" CURB
- PROPOSED DRAINAGE FLOW
- PROPOSED STREET CENTERLINE
- - - SUBDIVISION BOUNDARY LINE
- △ PROPOSED CITY MONUMENT

THIS SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY BRADLEY ROE, P.E. 31886 ON SEPTEMBER 20, 2012. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	NWS WALKWAY CORNER 1989 (IRIS: 182444)	HOR: 1" = 30' VER: 1" = 10'
9/20/12	CITY COMMENTS	STAFF	LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED ABOUT 1.25 MILES EAST OF THE 900 GRANGE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10, ELEVATION 3946.11 NAVD 88	FILE NAME: W.O. 011509-1 A CH-3
			EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MICHES DRIVE IN FRONT OF LOT 12, BLOCK 2, CARUTELLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CARUTELLO HEIGHTS UNIT ONE, ELEVATION: 3857.21	DATE: NOVEMBER, 2011
			N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	DESIGN BY: STAFF
				DRAWN BY: I.D.R.
				CHKD. BY: H.P.
				APPD. BY: BR



PLAN AND PROFILE

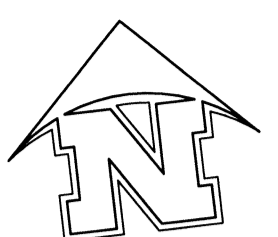
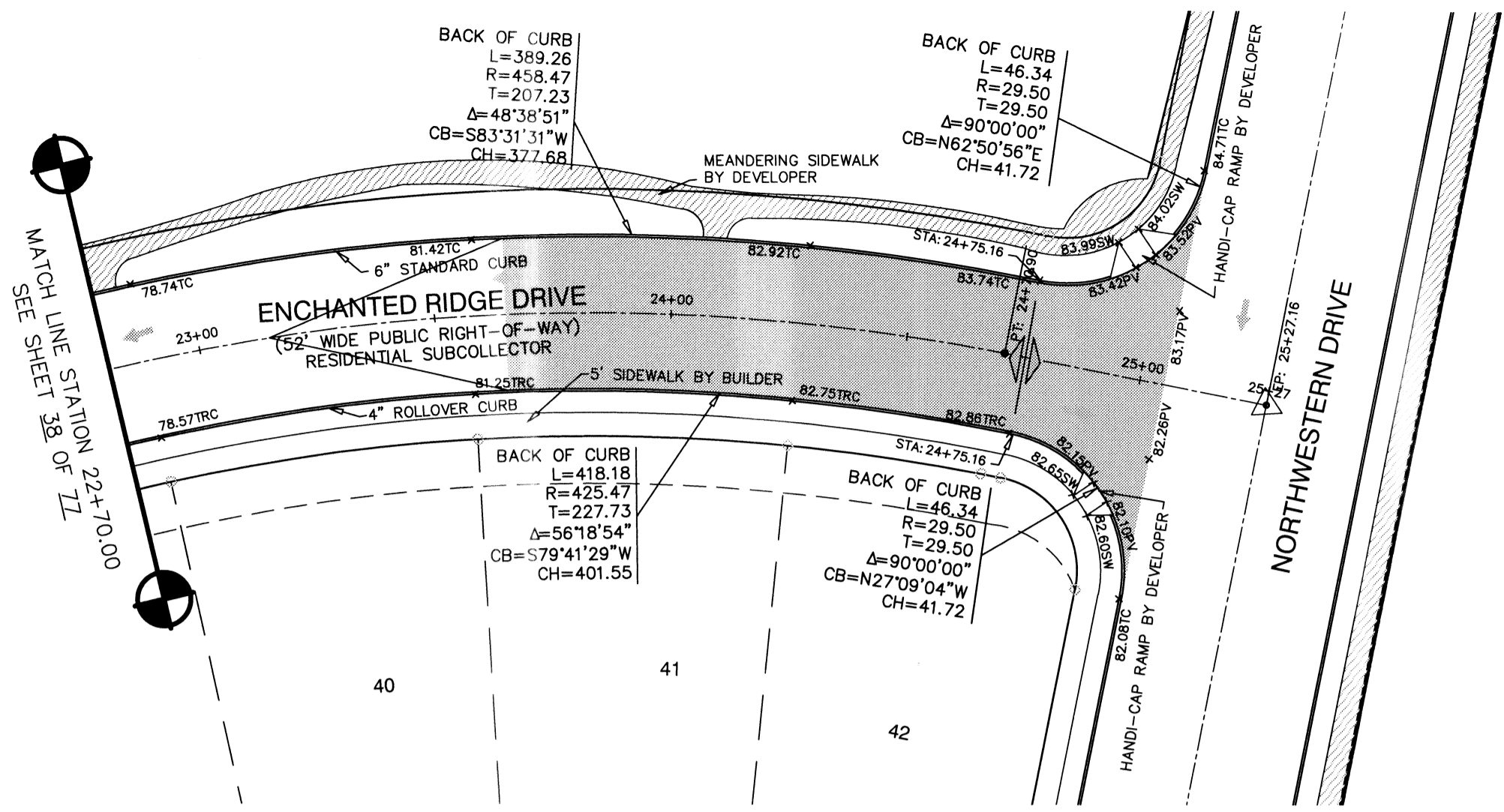
**ENCHANTED HILLS UNIT THREE**

ENCHANTED RIDGE DRIVE  
 STATION 16+15.62 TO 22+70.00

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 801 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

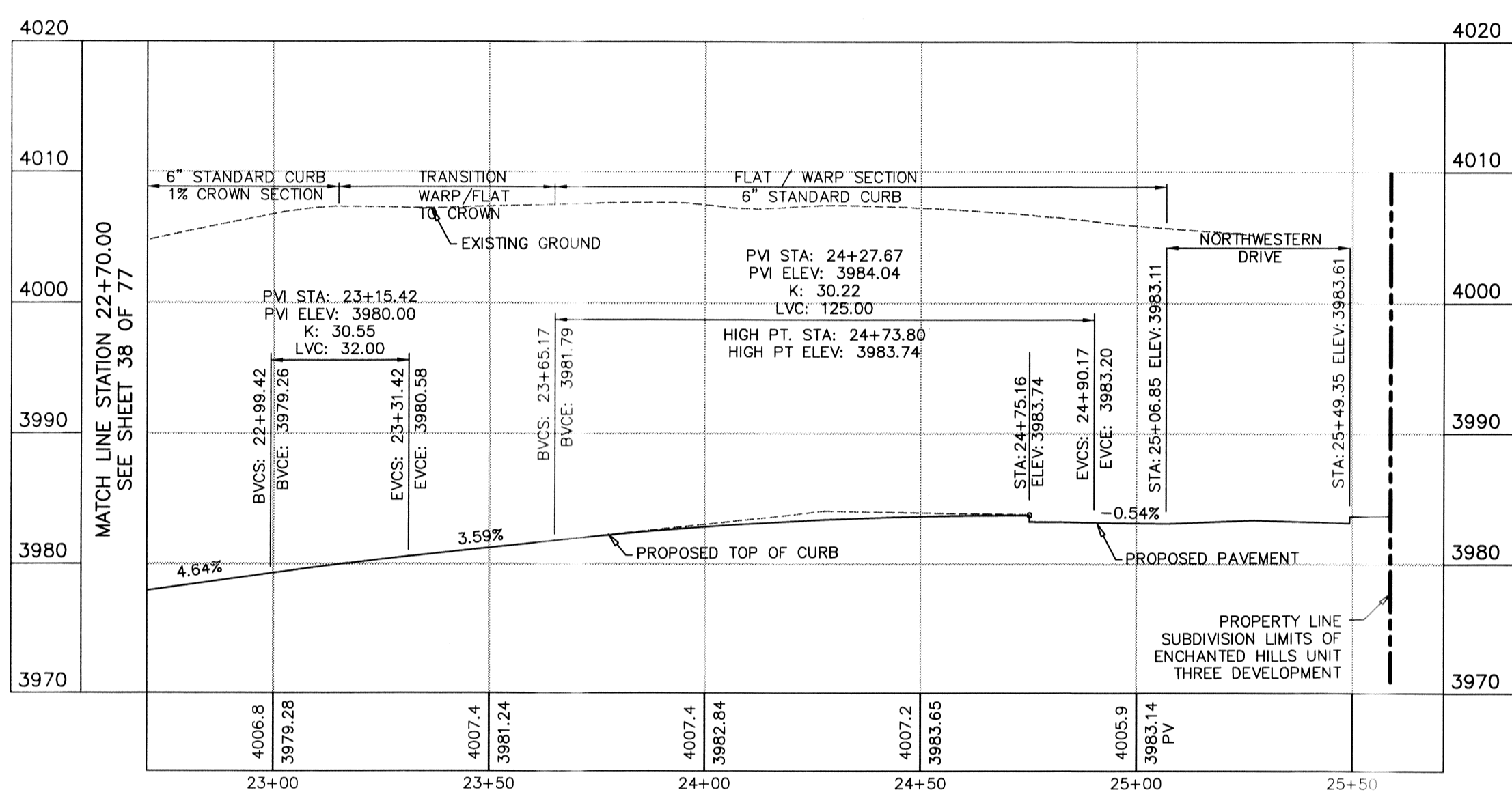
SHEET 38 OF 77



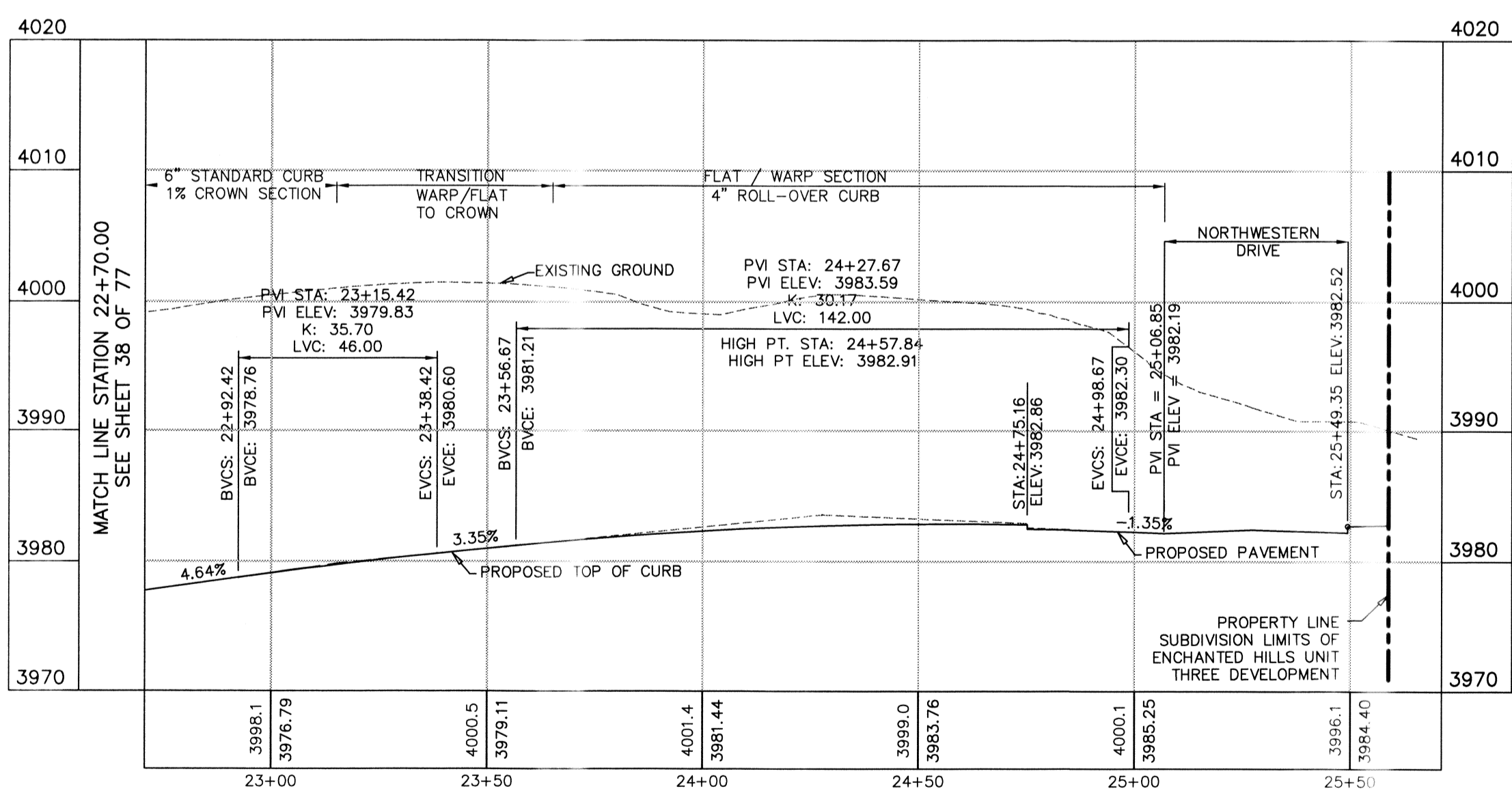
SCALE: 1" = 30'

**NOTE:**  
 1. ALL HANDICAP RAMPS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 88 OF 77.  
 2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 89 OF 77.

SIDEWALK BY DEVELOPER  
 SIDEWALK BY BUILDER



PROPOSED LEFT CURB



PROPOSED RIGHT CURB

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**FLOOD NOTE:**  
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THIS SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY BRADLEY ROE, P.E. 31886 ON SEPTEMBER 20, 2012 ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

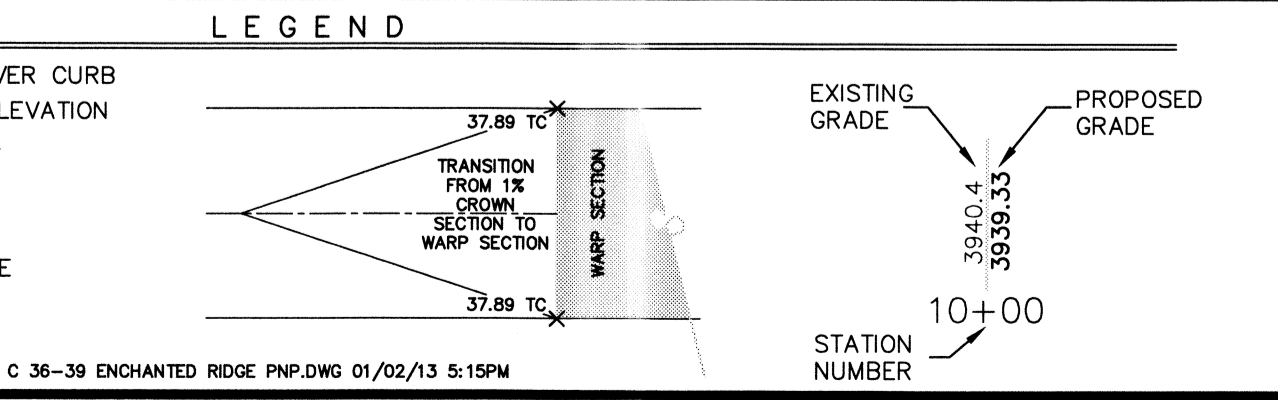


ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT

REVIEWED

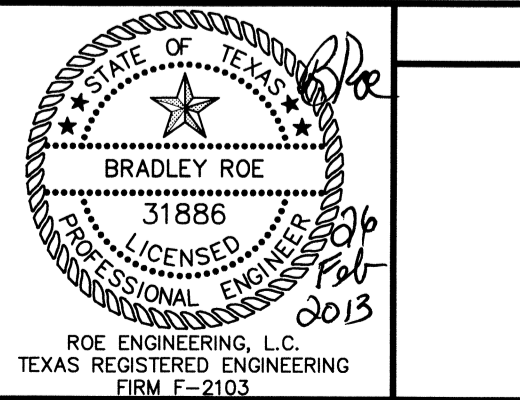
**LEGEND**

× 44.51 TRC	PROPOSED TOP OF 4" ROLLOVER CURB
× 44.27 FG	PROPOSED FINISHED GRADE ELEVATION
× 45.00 PV	PROPOSED TOP OF PAVEMENT
× 44.51 TC	PROPOSED TOP OF 6" CURB
→	PROPOSED DRAINAGE FLOW
---	PROPOSED STREET CENTERLINE
---	SUBDIVISION BOUNDARY LINE
▲	PROPOSED CITY MONUMENT



DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	ROE MONUMENT (GRID 1985) (P.C. 020443)	HOR: 1" = 30' VER: 1" = 10'
9/20/12	CITY COMMENTS	STAFF	LOCATION AS PER NATIONAL GEODETIC SURVEY 1981; LOCATED ABOUT 1.25 MILES EAST OF THE RD GRADGE, 1/4 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	FILE NAME: W.O. 011509-1 A EH-3
			EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHES DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	DATE: NOVEMBER, 2011
			N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	DESIGN BY: STAFF
				DRAWN BY: I.D.R.
				CHKD. BY: H.P.
				APPD. BY: BR

DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	ROE MONUMENT (GRID 1985) (P.C. 020443)	HOR: 1" = 30' VER: 1" = 10'
9/20/12	CITY COMMENTS	STAFF	LOCATION AS PER NATIONAL GEODETIC SURVEY 1981; LOCATED ABOUT 1.25 MILES EAST OF THE RD GRADGE, 1/4 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	FILE NAME: W.O. 011509-1 A EH-3
			EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHES DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	DATE: NOVEMBER, 2011
			N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	DESIGN BY: STAFF
				DRAWN BY: I.D.R.
				CHKD. BY: H.P.
				APPD. BY: BR



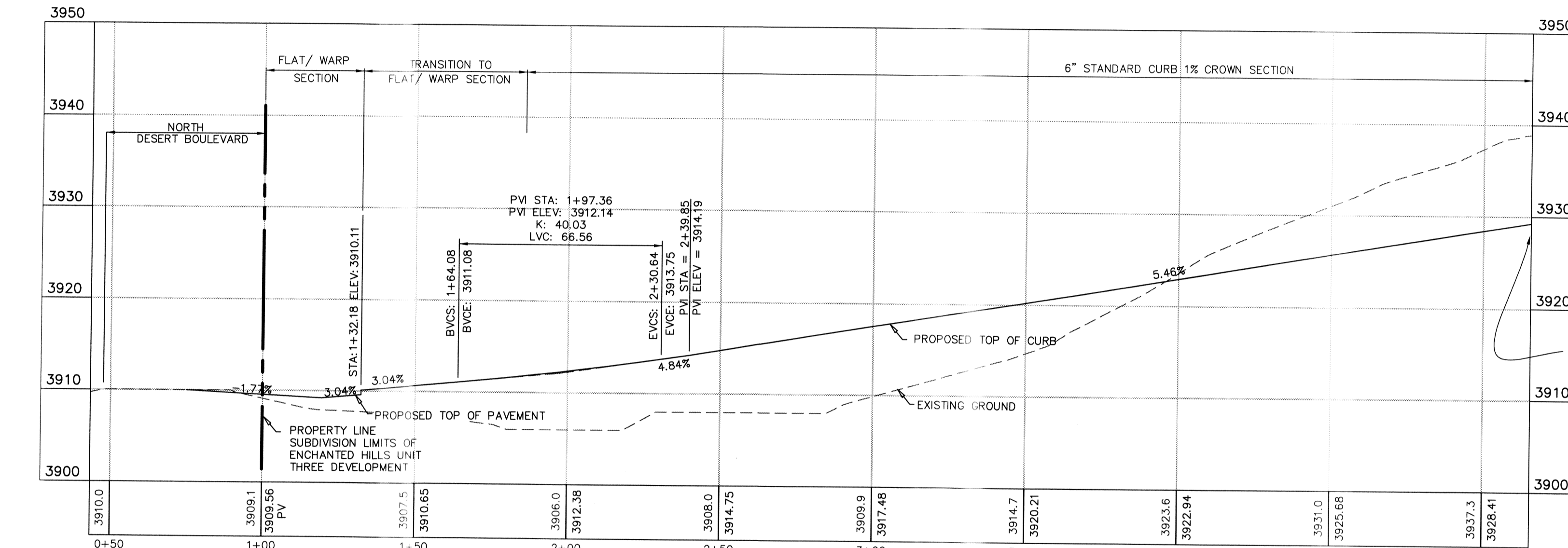
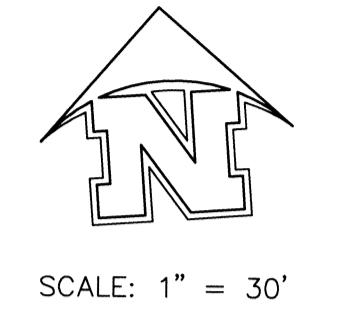
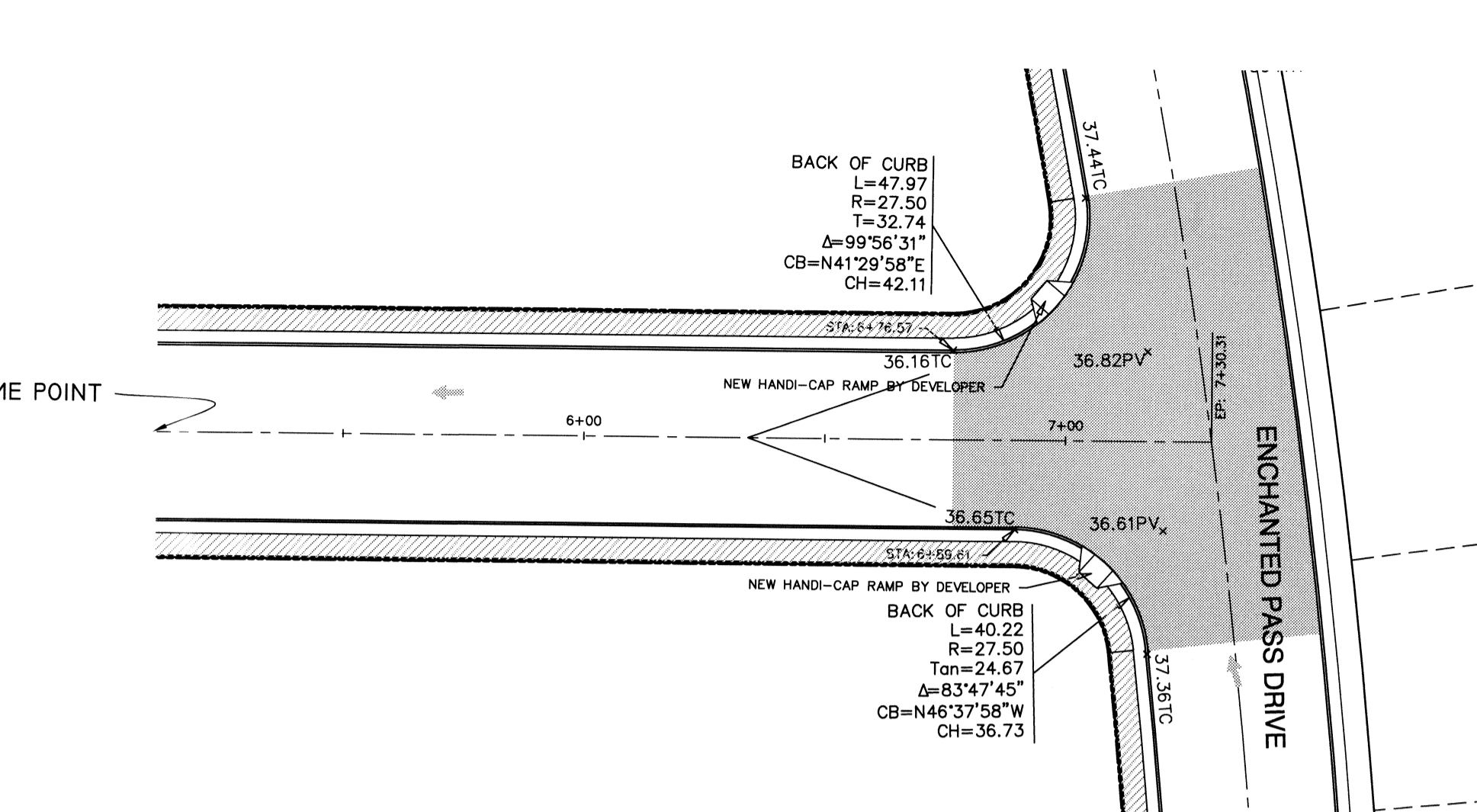
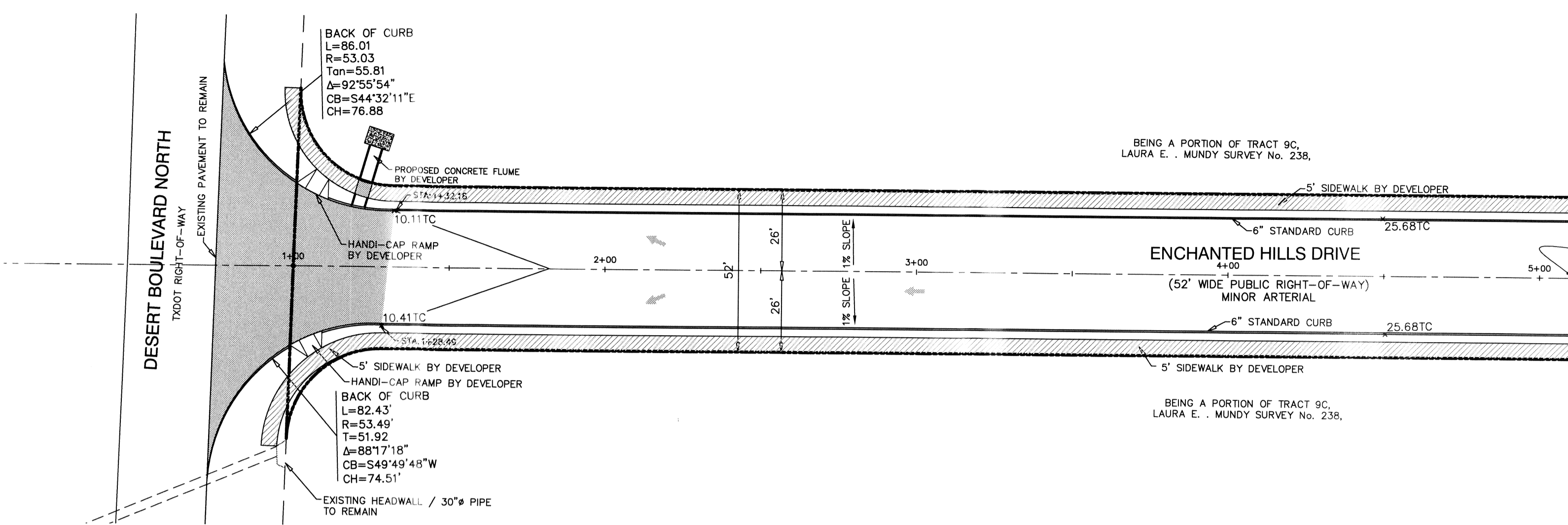
PLAN AND PROFILE

**ENCHANTED HILLS UNIT THREE**

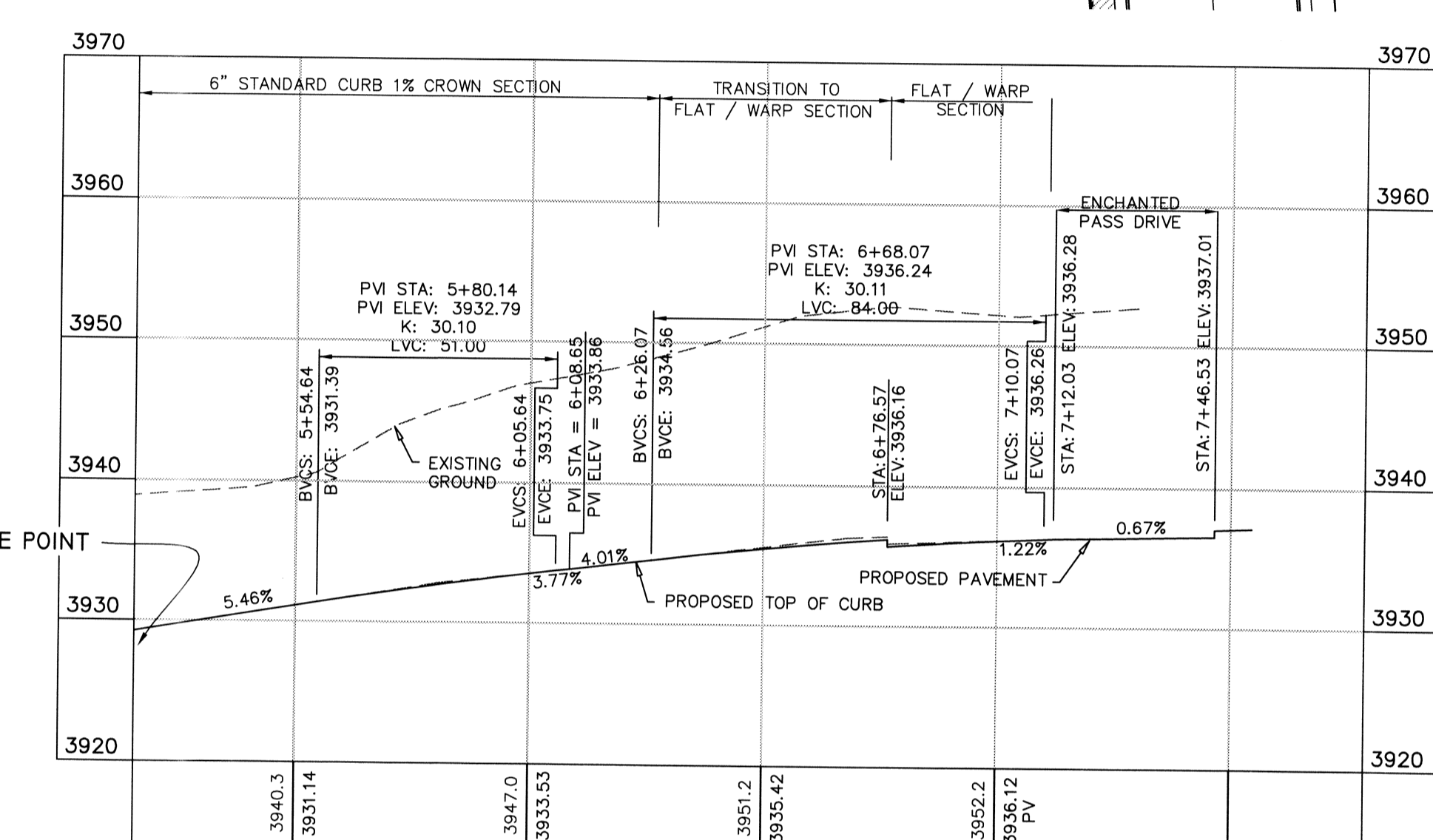
ENCHANTED RIDGE DRIVE  
 STATION 22+70.00 TO 25+27.16

hnp Roe Engineering, L.C.  
 601 N. Cotton St. Suite No. 8 El Paso, Tx. 79902  
 (915) 533-1418 - FAX: (915) 533-4972  
 e-mail: roeeng@browell.net  
 ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

SHEET 39 OF 77

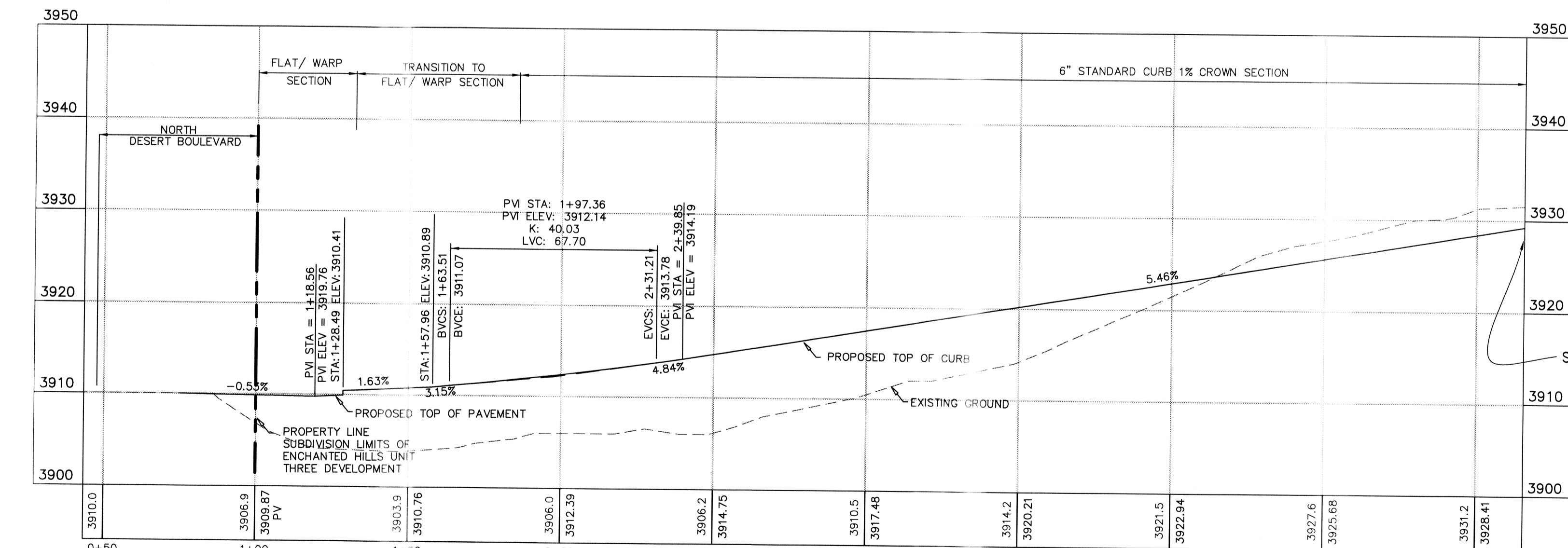


PROPOSED LEFT CURB

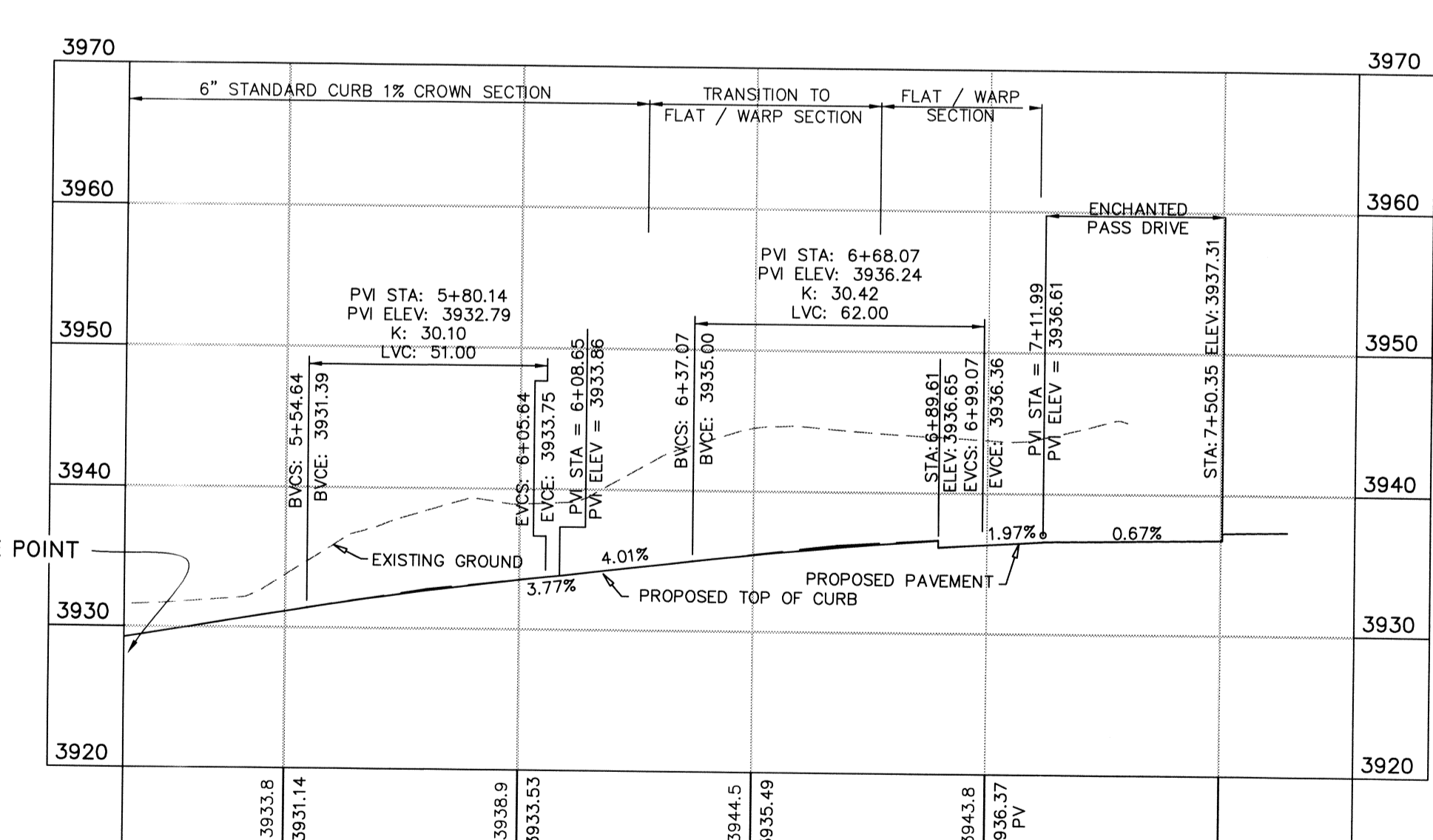


PROPOSED LEFT CURB

- NOTE:
1. ALL HANDICAP RAMPS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 08 OF 77.
  2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 08 OF 77.



PROPOSED RIGHT CURB



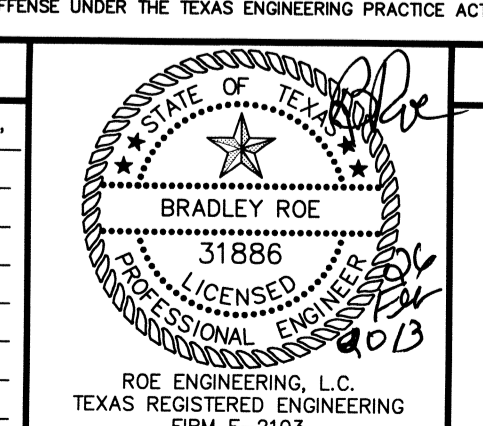
PROPOSED RIGHT CURB

**FLOOD NOTE:**  
 THE ABOVE REFERENCED SUBDIVISION IS WITHIN ZONES "A" and "C" (EXPLANATION ZONE "A": AREAS OF 100-YEAR FLOOD; BASE FLOOD ELEVATIONS; AND FLOOD HAZARDS NOT DETERMINED. (WHICH DOES NOT INCLUDE ANY RESIDENTIAL LOTS); MINIMAL FLOODING) ACCORDING TO THE (EXPLANATION ZONE "C": AREA OF FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER AREA COMMUNITY PANEL NO. 460214-2011-C, DATED FEBRUARY 5, 1986.

**LEGEND**

- × 44.51 TRC PROPOSED TOP OF 4" ROLLER FLOW CURB
- × 44.27 FG PROPOSED FINISHED GRADE ELEVATION
- × 45.00 PV PROPOSED TOP OF PAVEMENT
- × 44.51 TC PROPOSED TOP OF 6" CURB
- PROPOSED DRAINAGE FLOW
- PROPOSED STREET CENTERLINE
- - - - SUBDIVISION BOUNDARY LINE
- ▲ PROPOSED CITY MONUMENT

DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	NIS MONUMENT "CHRD 1980" (PIS: 060244)	HOR: 1" = 30' VER: 1" = 10'
9/20/12	CITY COMMENTS	STAFF	LOCATED AS PER NATIONAL GEODETIC SURVEY 1981, LOCATED ABOUT 1.25 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 370 (TRANSMISSION ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	FILE NAME: 011509-1 A EH-3
			SECONDARY BENCHMARK	DATE: NOVEMBER, 2011
			EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHES DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	DESIGN BY: STAFF
			N.A.V.D.88 DATUM -10.18 = CITY OF EL PASO DATUM	DRAWN BY: I.D.R
				CHKD. BY: H.P.
				APPD. BY: BR



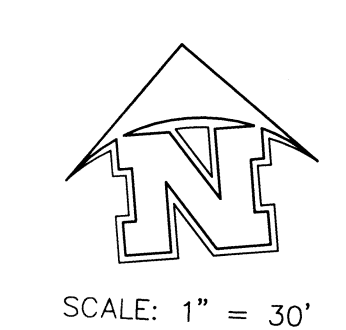
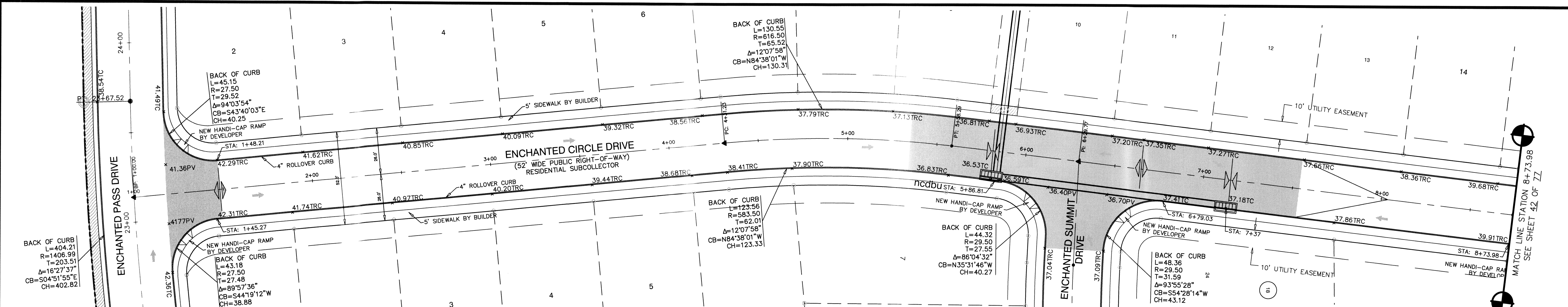
PLAN AND PROFILE  
**ENCHANTED HILLS UNIT THREE**  
 ENCHANTED HILLS DRIVE  
 STATION 1+00.00 TO 7+30.31

ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT

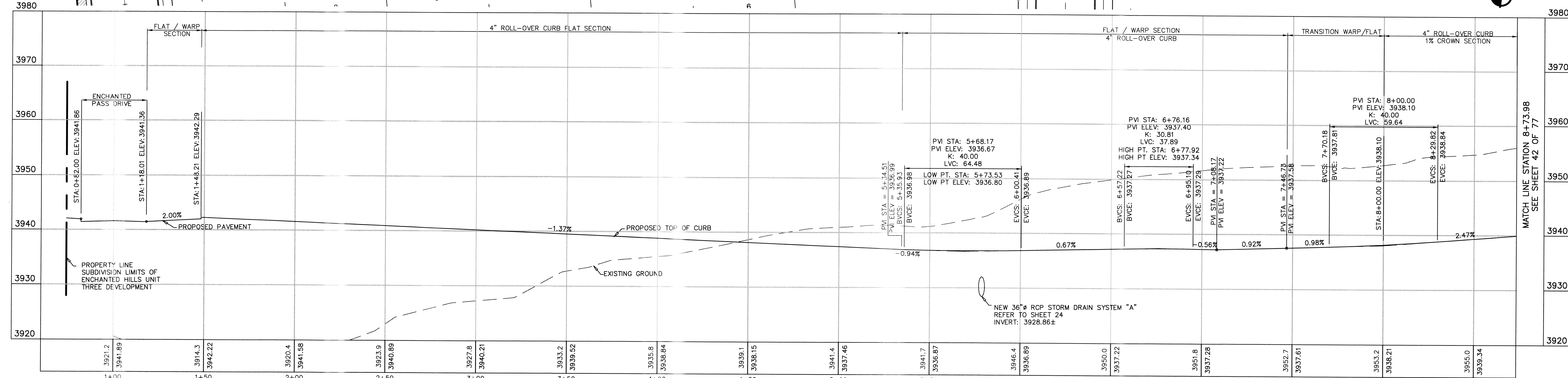
REVIEWED

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 601 N. Cotton St. Suite No. 6 El Paso, Tx. 79902  
 (915) 533-1418 - FAX: (915) 533-4972  
 e-mail: roeeng@proe.net  
 ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING  
 SHEET 40 OF 77

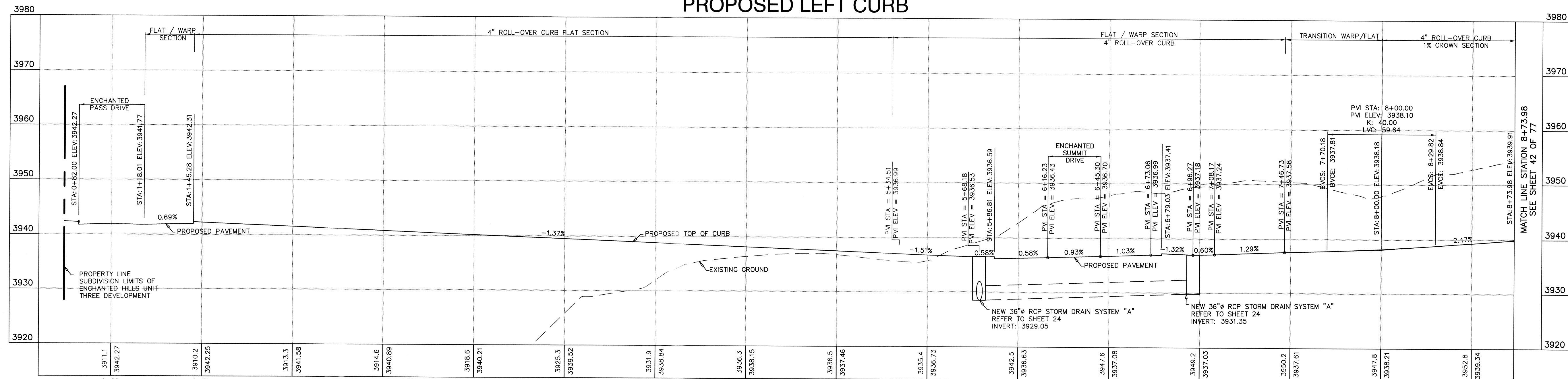




**NOTE:**  
 1. ALL HANDICAP RAMPS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 99 OF 77.  
 2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 99 OF 77.



**PROPOSED LEFT CURB**

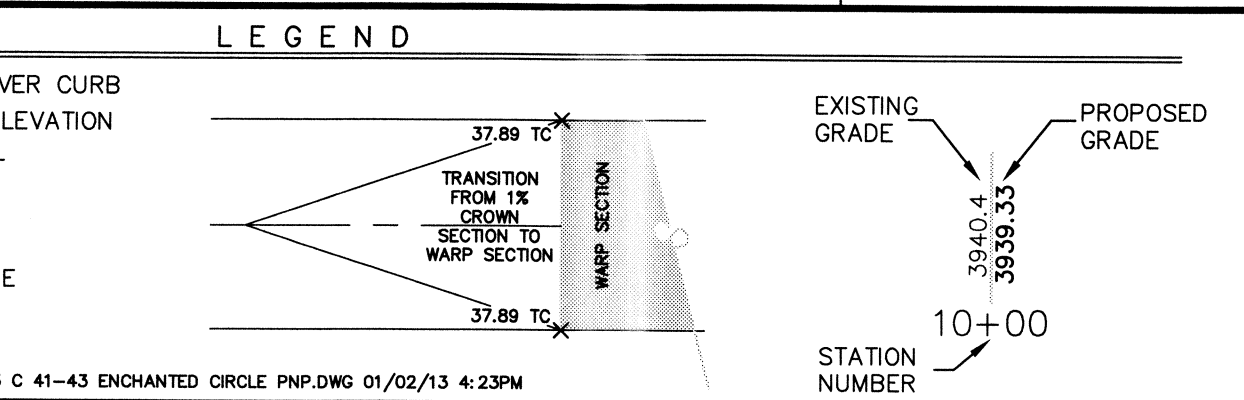


**PROPOSED RIGHT CURB**

**FLOOD NOTE:**  
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 PER AREA COMMUNITY PANEL NO. 480214 DOTT C, DATED FEBRUARY 5, 1986.

**LEGEND**

- × 44.51 TRC PROPOSED TOP OF 4" ROLLOVER CURB
- × 44.27 FG PROPOSED FINISHED GRADE ELEVATION
- × 45.00 PV PROPOSED TOP OF PAVEMENT
- × 44.51 TC PROPOSED TOP OF 6" CURB
- PROPOSED DRAINAGE FLOW
- PROPOSED STREET CENTERLINE
- - - SUBDIVISION BOUNDARY LINE
- ▲ PROPOSED CITY MONUMENT

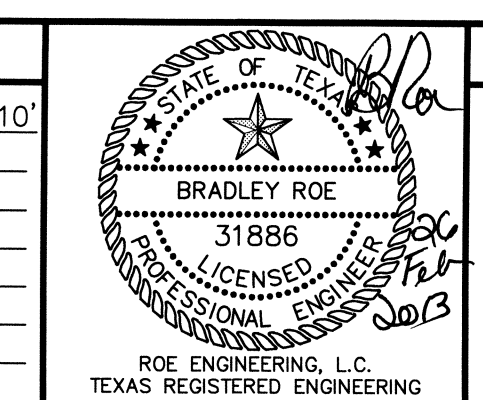


DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	N/S MONUMENT (GNSD 1880) (PDC 080424)	HOR: 1" = 30' VER: 1" = 10'
9/20/12	CITY COMMENTS	STAFF	LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED ABOUT 1.25 MILES EAST OF THE MID GRADE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10, AND ON ELEVATION 3946.11 NAVD 88	FILE NAME: W.O. 011509-1 A EH-3
			EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHES DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE ELEVATION: 3857.21	DATE: NOVEMBER, 2011
			N.A.V.D. 88 DATUM -10.16 = CITY OF EL PASO DATUM	DESIGN BY: STAFF
				DRAWN BY: I.D.R.
				CHKD. BY: H.P.
				APPD. BY: BR

**PLAN AND PROFILE**

**ENCHANTED HILLS UNIT THREE**

ENCHANTED CIRCLE DRIVE  
 STATION TO 1+00.00 TO 8+73.98

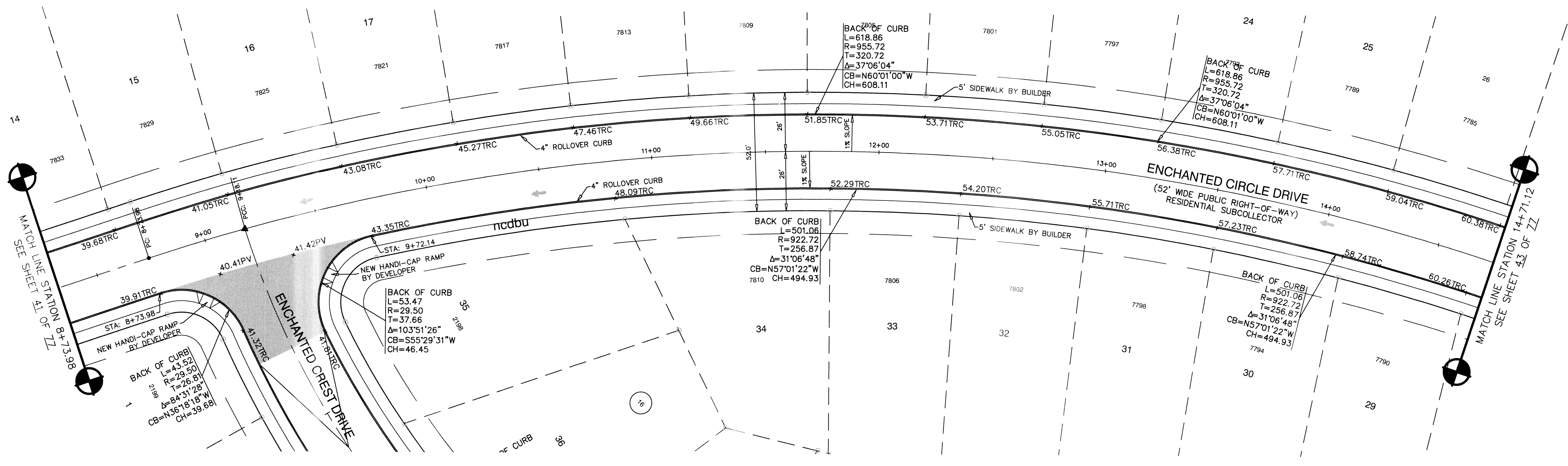


**ENGINEERING & CONSTRUCTION MANAGEMENT & DESIGN**

**REVIEWED**

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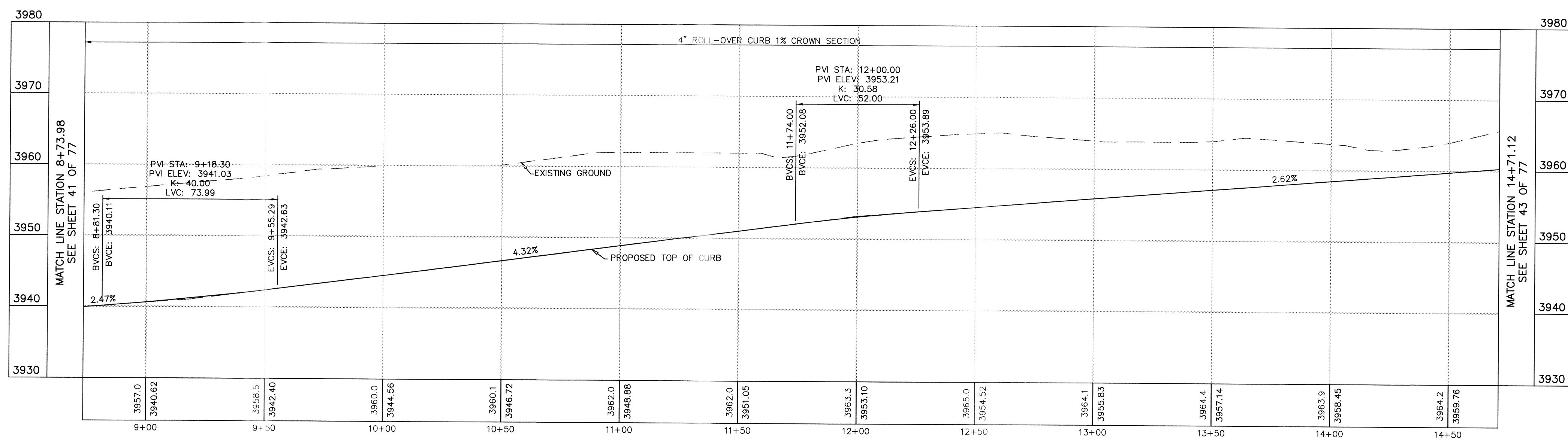
SHEET 41 OF 77



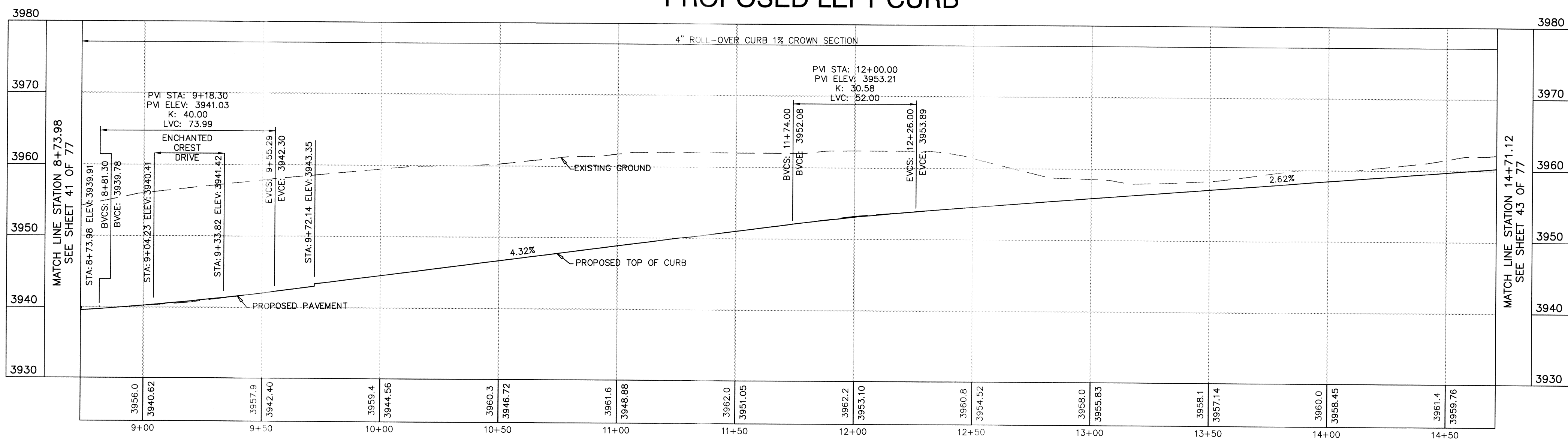
SCALE: 1" = 30'

NOTE:  
 1. ALL HANDICAP RAMP WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 88 OF 77.  
 2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 89 OF 77.

SIDEWALK BY DEVELOPER  
 SIDEWALK BY BUILDER



PROPOSED LEFT CURB



PROPOSED RIGHT CURB

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**FLOOD NOTE:**  
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DATE	REVISIONS	BY
9/4/12	CITY COMMENTS	STAFF
9/20/12	CITY COMMENTS	STAFF

DATE	REVISIONS	BY
9/4/12	CITY COMMENTS	STAFF
9/20/12	CITY COMMENTS	STAFF

**PRIMARY BENCHMARK**  
 THIS MONUMENT (CROSS 1889 TRS 180444) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981 LOCATED ABOUT 1.25 MILES EAST OF THE ROE GRANGE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88  
**SECONDARY BENCHMARK**  
 EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOJOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANTILLO HEIGHTS UNIT ONE AND LOT 15, BLOCK 7, CANTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21  
 N.A.V.D.88 DATUM -10.18 = CITY OF EL PASO DATUM

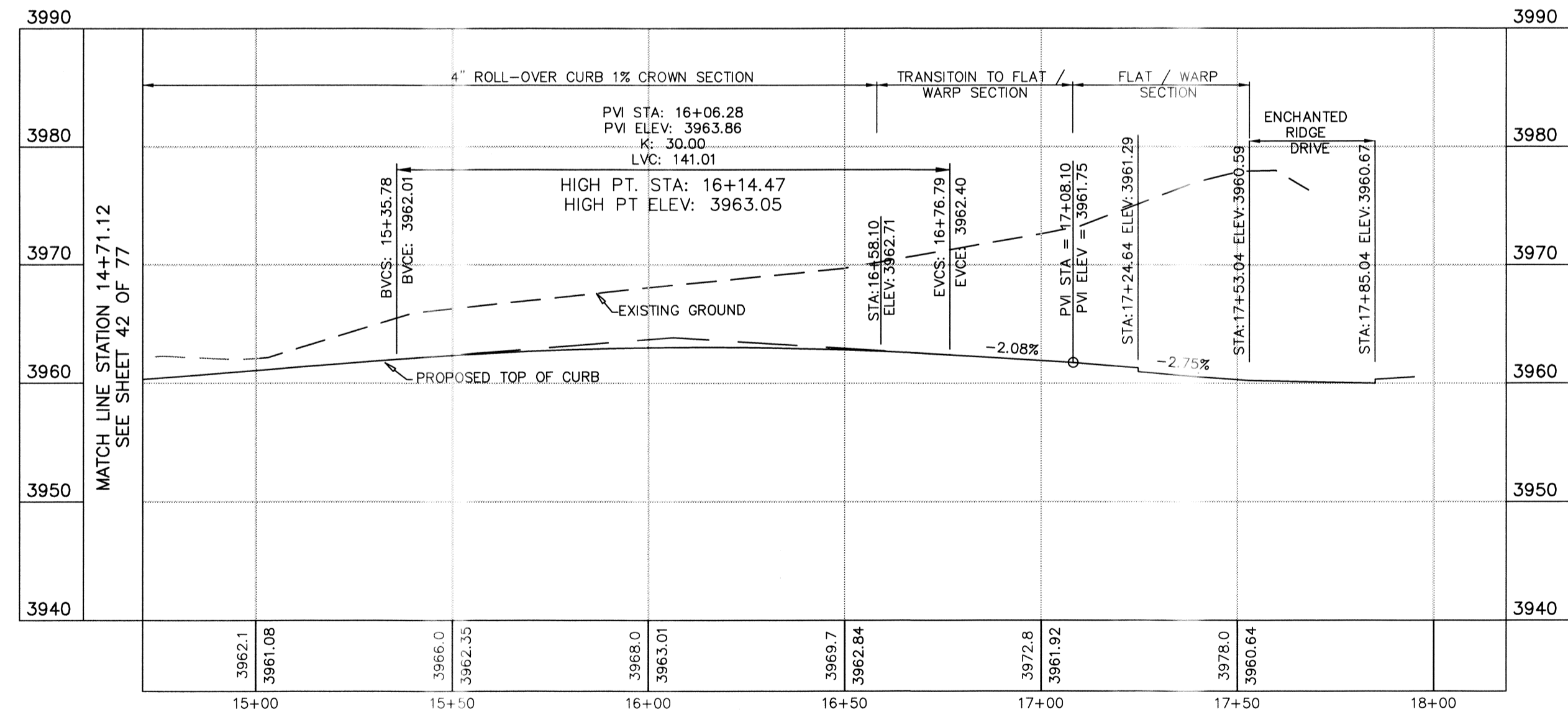
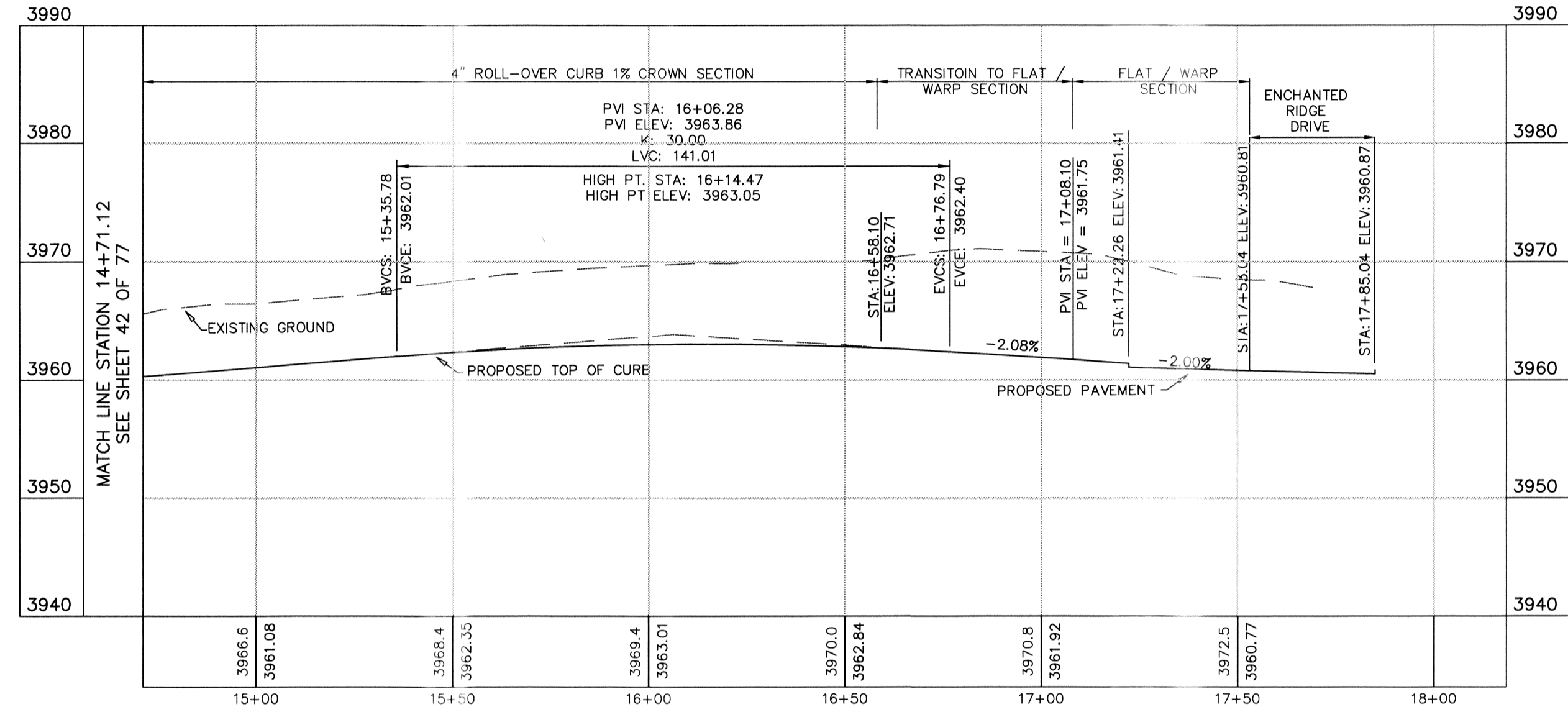
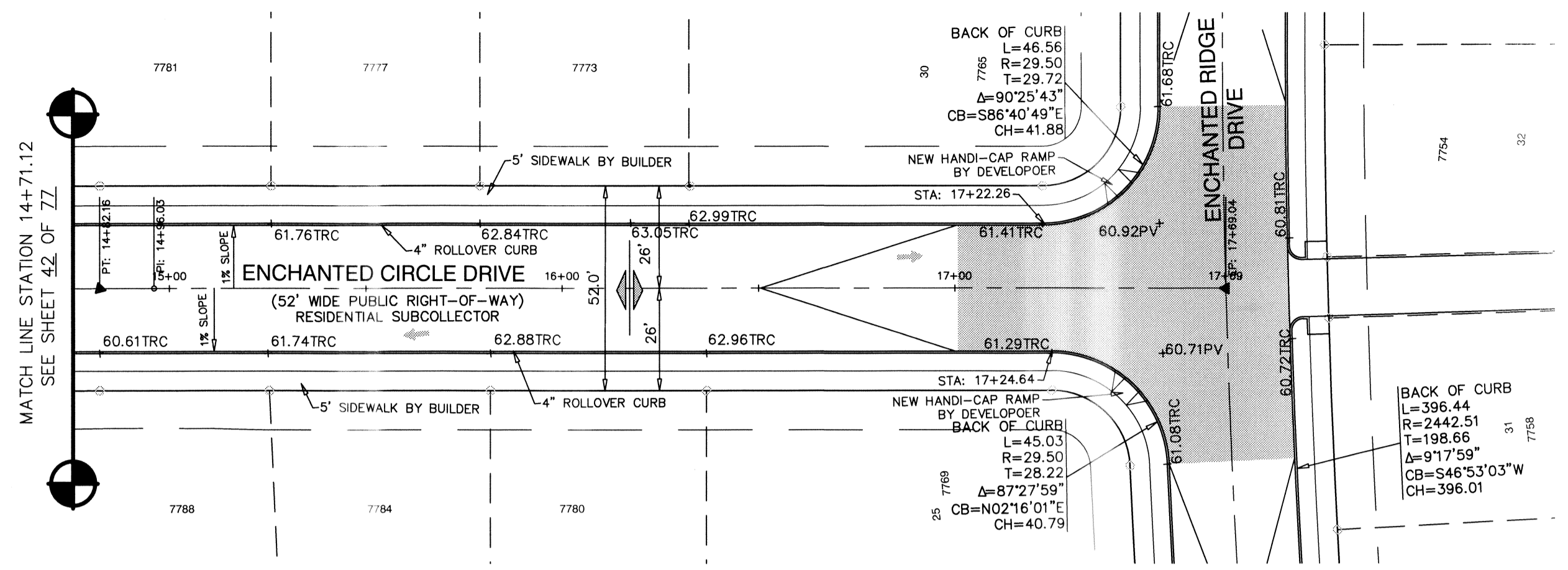
SCALE  
 HOR: 1" = 30' VER: 1" = 10'  
 FILE NAME:  
 W.O. 011509-1 A EH-3  
 DATE: NOVEMBER, 2011  
 DESIGN BY: STAFF  
 DRAWN BY: I.D.R.  
 CHKD. BY: H.P.  
 APPD. BY: BR

**PLAN AND PROFILE**  
**ENCHANTED HILLS UNIT THREE**  
 ENCHANTED CIRCLE DRIVE  
 STATION TO 8+73.98 TO 14+71.12

**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@roebell.net  
 ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING  
 SHEET 42 OF 77



REVIEWED



**NOTE:**  
1. ALL HANDICAP RAMPS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 88 OF 77.  
2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 89 OF 77.

▨ SIDEWALK BY DEVELOPER  
▨ SIDEWALK BY BUILDER

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**REVIEWED**

**LEGEND**

- x 44.51 TRC PROPOSED TOP OF 4" ROLLOVER CURB
- x 44.27 FG PROPOSED FINISHED GRADE ELEVATION
- x 45.00 PV PROPOSED TOP OF PAVEMENT
- x 44.51 TC PROPOSED TOP OF 6" CURB
- PROPOSED DRAINAGE FLOW
- PROPOSED STREET CENTERLINE
- SUBDIVISION BOUNDARY LINE
- PROPOSED CITY MONUMENT

EXISTING GRADE  
PROPOSED GRADE

STATION NUMBER

DATE	REVISIONS	BY
9/4/12	CITY COMMENTS	STAFF
9/20/12	CITY COMMENTS	STAFF

PRIMARY BENCHMARK	SCALE
THIS MONUMENT (2000) (2000) (100' (30.48M)) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED ABOUT 1.55 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	HOR: 1" = 30' VER: 1" = 10'
SECONDARY BENCHMARK	
EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF ENCHANTED DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 15, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21 N.A.V.D. 88 DATUM -10.16 = CITY OF EL PASO DATUM	FILE NAME: W.O. 011509-1 A EH-3 DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR

**PLAN AND PROFILE**

**ENCHANTED HILLS UNIT THREE**

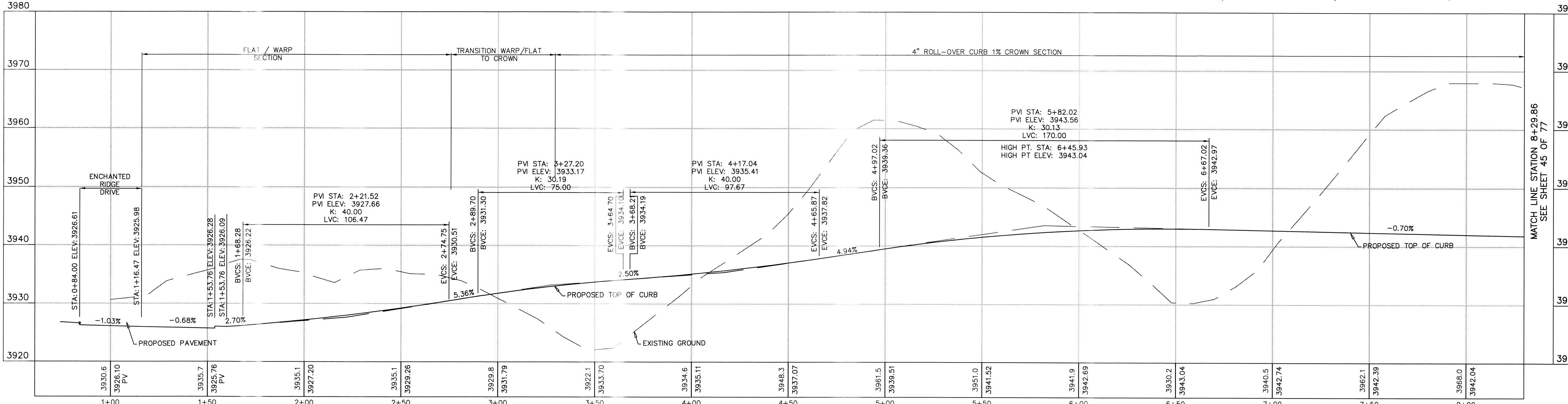
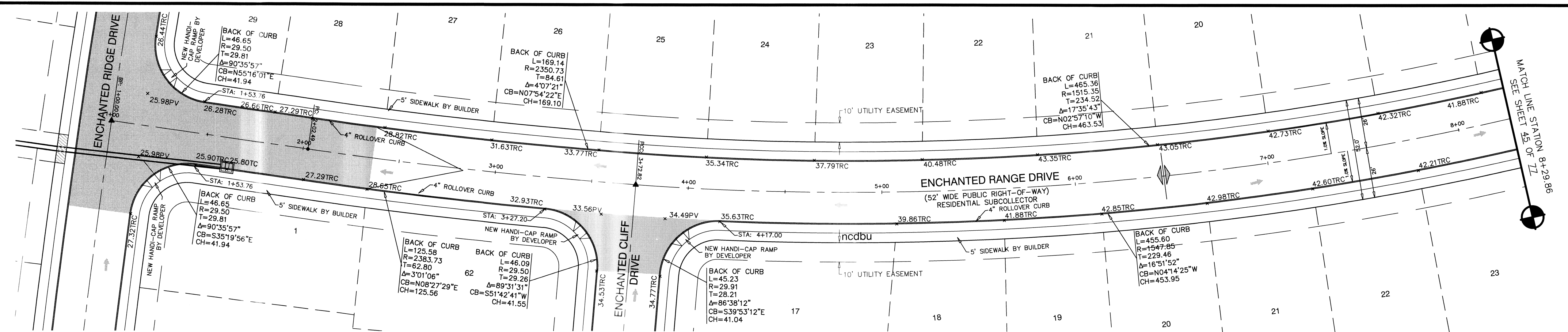
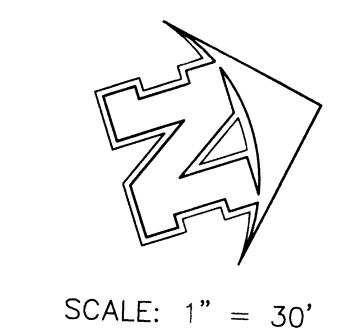
ENCHANTED CIRCLE DRIVE  
STATION 14+71.12 TO 17+69.04

**Roe Engineering, L.C.**

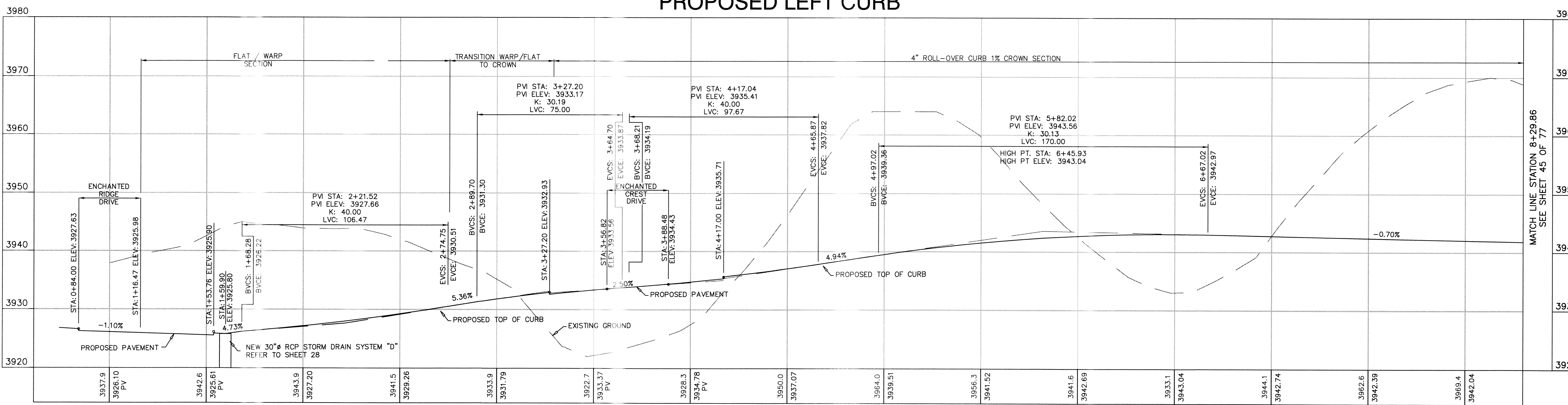
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(915) 533-1418 - FAX (915) 533-4972  
e-mail: roeeng@swbell.net

ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

SHEET 43 OF 77



**PROPOSED LEFT CURB**



**PROPOSED RIGHT CURB**

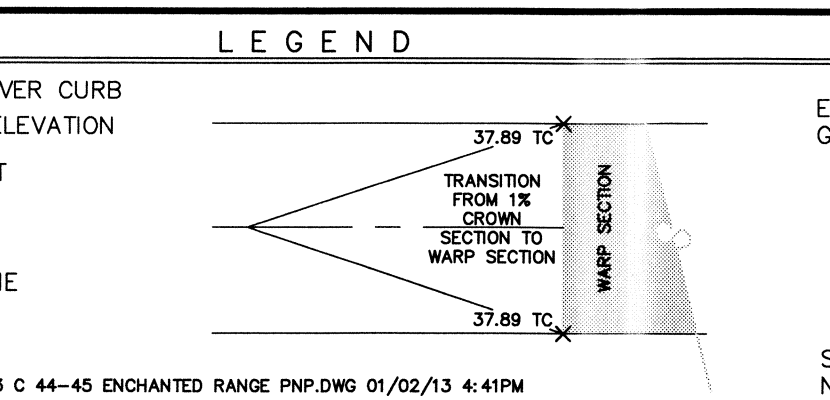
**NOTE:**  
 1. ALL HANDICAP RAMPS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 68 OF 77.  
 2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 69 OF 77.

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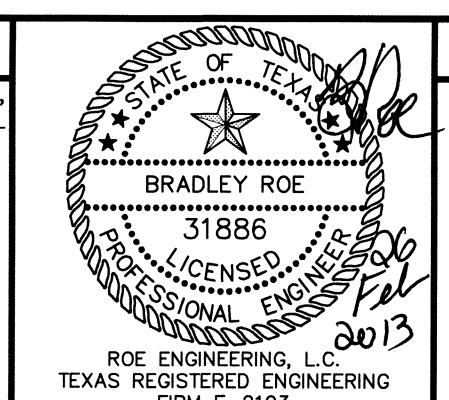
**LEGEND**

× 44.51 TRC	PROPOSED TOP OF 4" ROLLOVER CURB
× 44.27 FG	PROPOSED FINISHED GRADE ELEVATION
× 45.00 PV	PROPOSED TOP OF PAVEMENT
× 44.51 TC	PROPOSED TOP OF 6" CURB
→	PROPOSED DRAINAGE FLOW
—	PROPOSED STREET CENTERLINE
---	SUBDIVISION BOUNDARY LINE
▲	PROPOSED CITY MONUMENT



DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	N/S MONUMENT (2010 1989) (PER: CE0144)	HOR: 1" = 30' VER: 1" = 10'
9/20/12	CITY COMMENTS	STAFF	LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED ABOUT 1.55 MILES EAST OF THE RD GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10, ELEVATION 3946.11 NAVD 88	FILE NAME: W.O. 011509-1 A EH-3
			EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHOS DRIVE IN FRONT OF LOT 12, BLOCK 7, CANUTILLO HEIGHTS UNIT TWO AND LOT 16, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE, ELEVATION: 3887.21	DATE: NOVEMBER, 2011
			N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	DESIGN BY: STAFF

PLAN AND PROFILE
<b>ENCHANTED HILLS UNIT THREE</b>
ENCHANTED RANGE DRIVE STATION 1+00.00 TO 8+29.86



**ENCHANTED HILLS UNIT THREE**

ENCHANTED RANGE DRIVE  
 STATION 1+00.00 TO 8+29.86

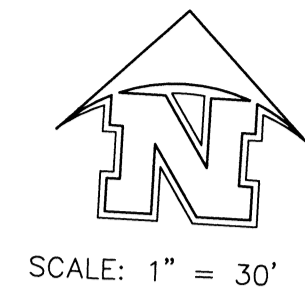
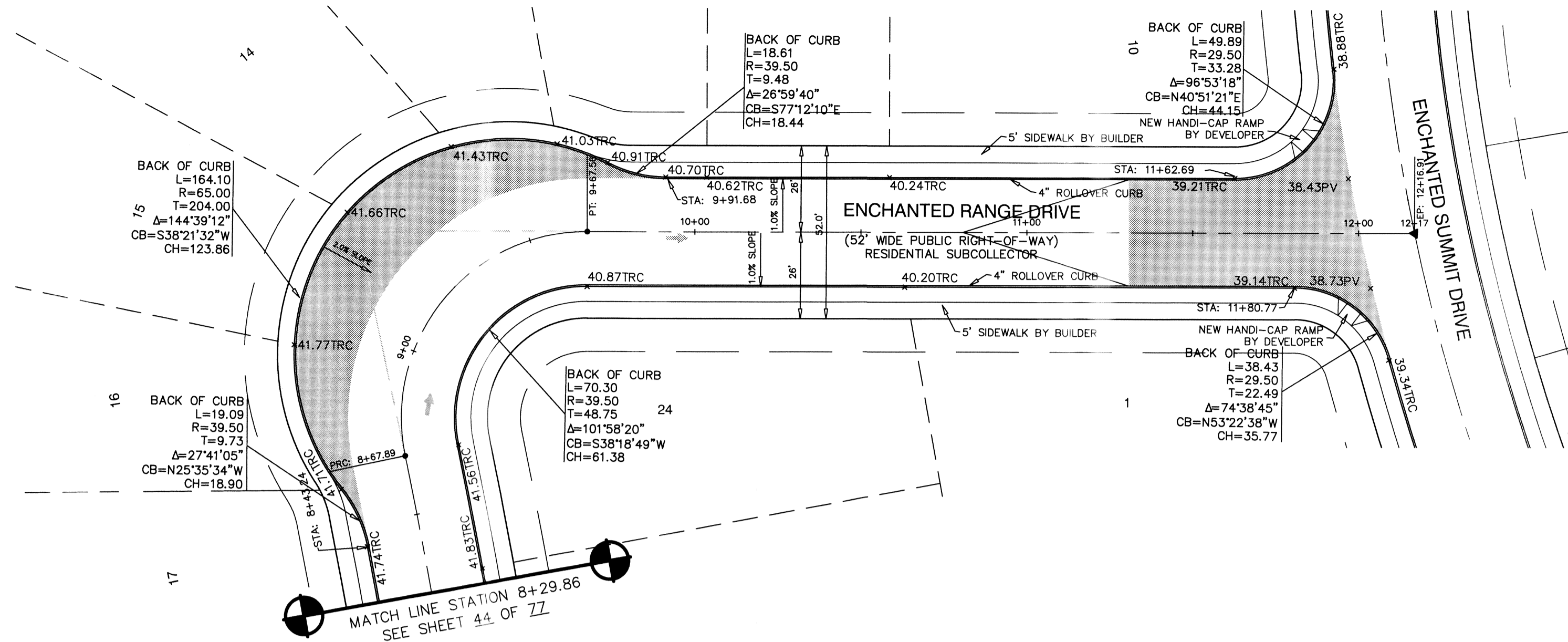
**ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT**

**REVIEWED**

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 601 N. Cotton St. Suite No. 6 El Paso, Tx. 79902  
 (915) 539-1418 - FAX (915) 539-4972  
 e-mail: roeeng@web.net

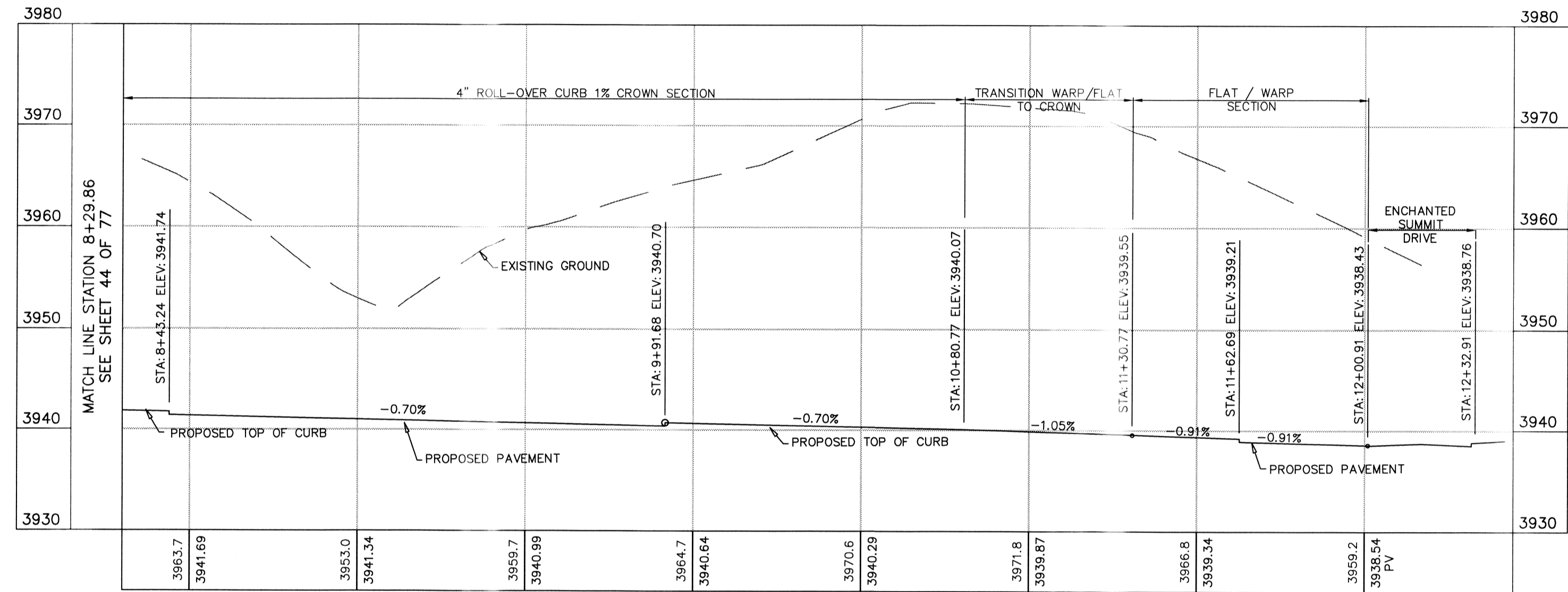
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

SHEET **44** OF **77**

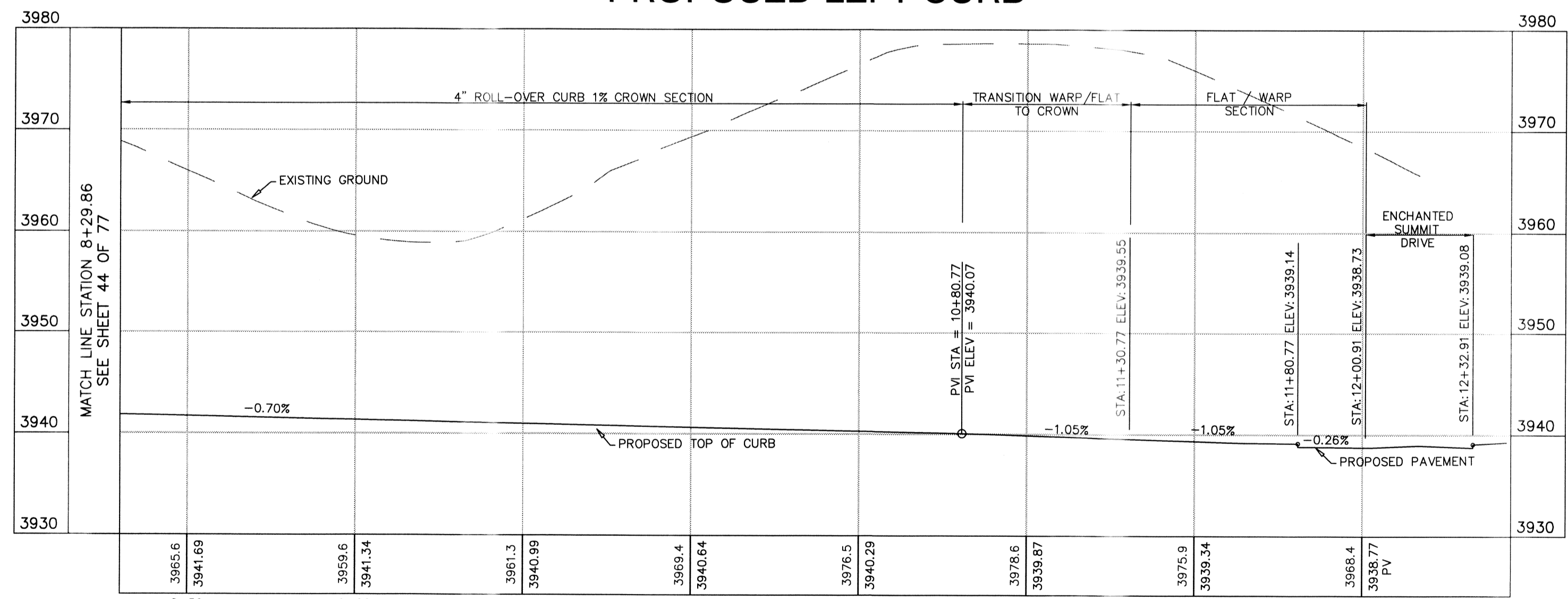


**NOTE:**  
 1. ALL HANDICAP RAMPS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 02 OF ZZ.  
 2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 02 OF ZZ.

SIDEWALK BY DEVELOPER  
 SIDEWALK BY BUILDER



PROPOSED LEFT CURB



PROPOSED RIGHT CURB



ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT

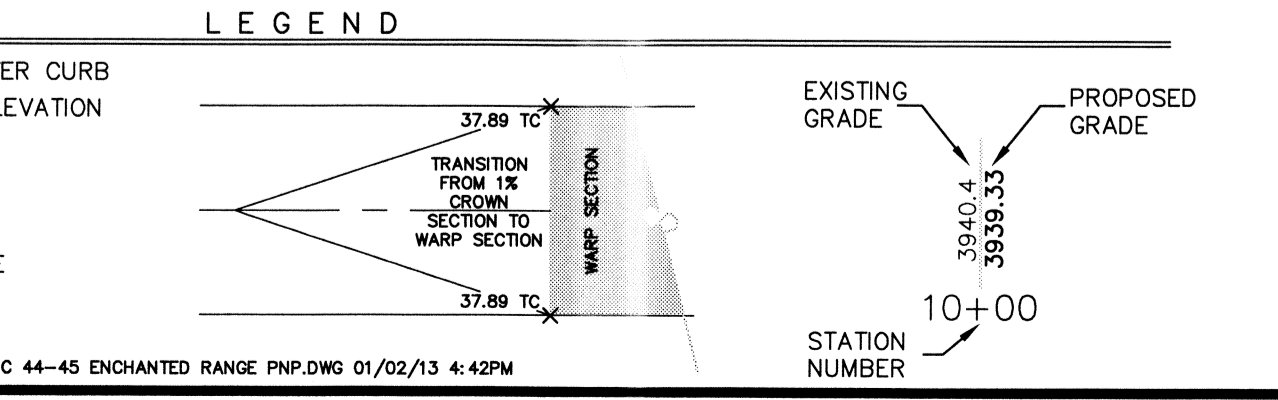
REVIEWED

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- × 44.51 TRC PROPOSED TOP OF 4" ROLLOVER CURB
- × 44.27 FG PROPOSED FINISHED GRADE ELEVATION
- × 45.00 PV PROPOSED TOP OF PAVEMENT
- × 44.51 TC PROPOSED TOP OF 6" CURB
- PROPOSED DRAINAGE FLOW
- PROPOSED STREET CENTERLINE
- SUBDIVISION BOUNDARY LINE
- ▲ PROPOSED CITY MONUMENT

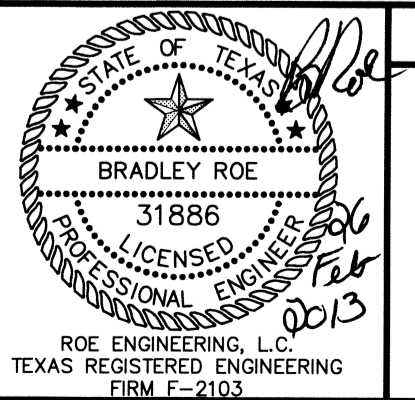


DATE	REVISIONS	BY
9/4/12	CITY COMMENTS	STAFF
9/20/12	CITY COMMENTS	STAFF

**PRIMARY BENCHMARK**  
 NGS MONUMENT CORNO 1889 (REV. 12/24/11)  
 LOCATION AS PER NATIONAL GEODETIC SURVEY 1981:  
 LOCATED ABOUT 1.25 MILES EAST OF THE RIB GRANGE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10.  
 ELEVATION: 3946.11 NAVD 83

**SECONDARY BENCHMARK**  
 EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MICHES DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE.  
 ELEVATION: 3957.21  
 N.A.V.D. DATUM -10.18 = CITY OF EL PASO DATUM

**SCALE**  
 HOR: 1" = 30' VER: 1" = 10'  
 FILE NAME:  
 W.O. 011509-1 A EH-3  
 DATE: NOVEMBER, 2011  
 DESIGN BY: STAFF  
 DRAWN BY: I.D.R.  
 CHKD. BY: H.P.  
 APPD. BY: BR



PLAN AND PROFILE

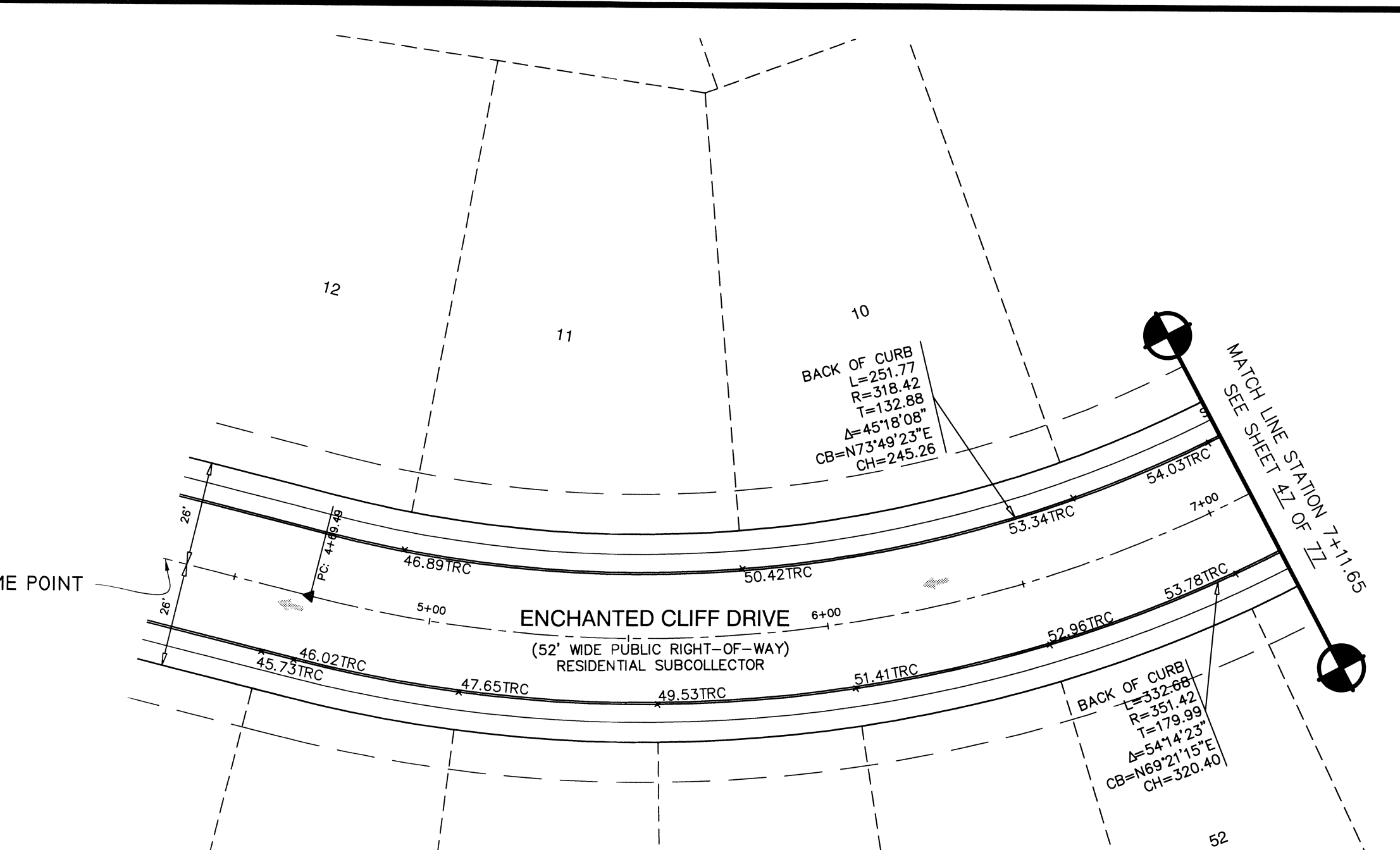
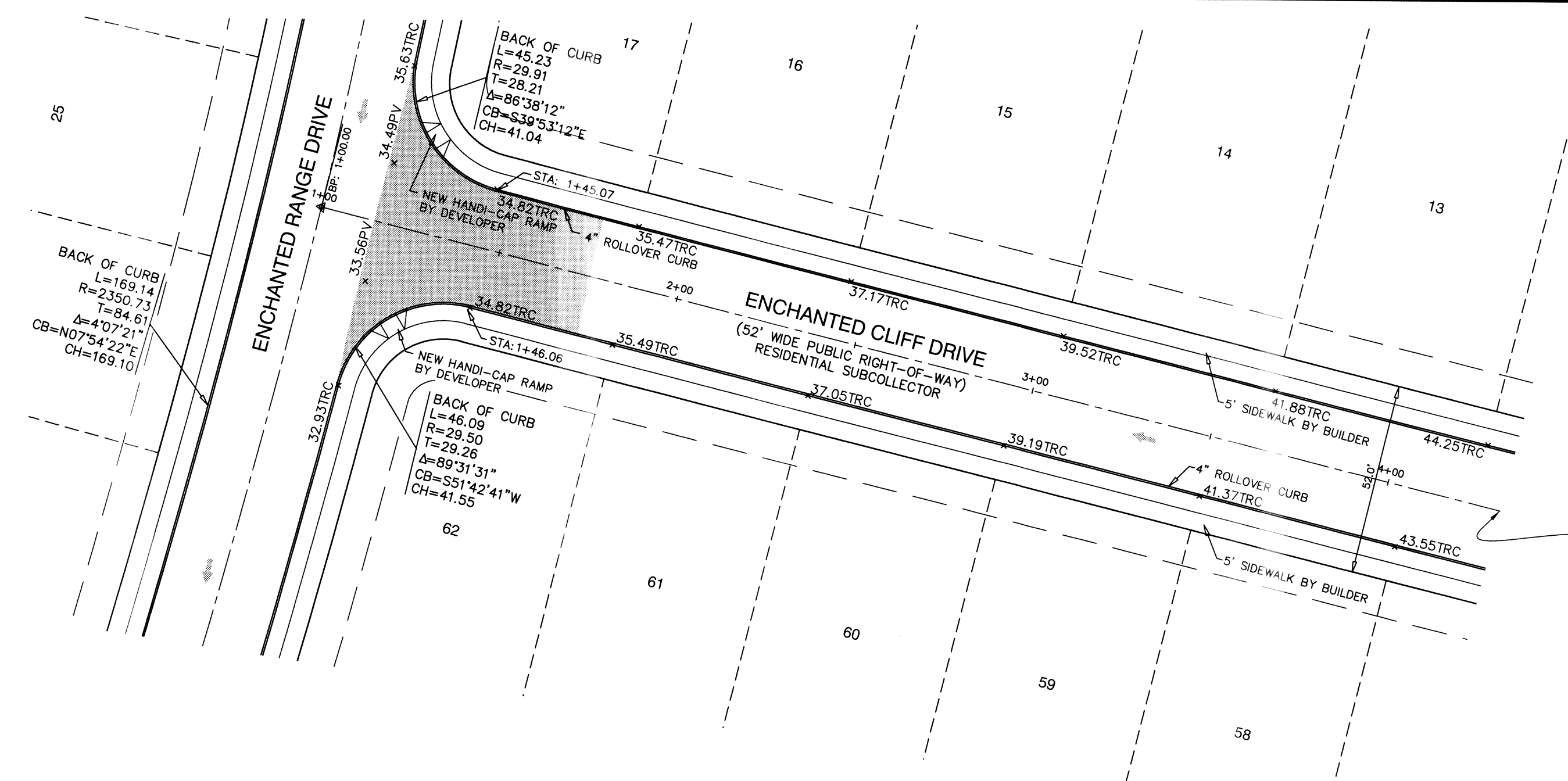
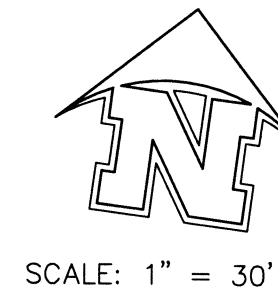
**ENCHANTED HILLS UNIT THREE**

ENCHANTED RANGE DRIVE  
 STATION 8+29.86 TO 12+16.91

RoE Engineering, L.C.  
 801 N. Cotton St. Suite No. 6 El Paso, Tx. 79902  
 (915) 533-1418 - FAX: (915) 533-4972  
 e-mail: roeeng@roebel.net

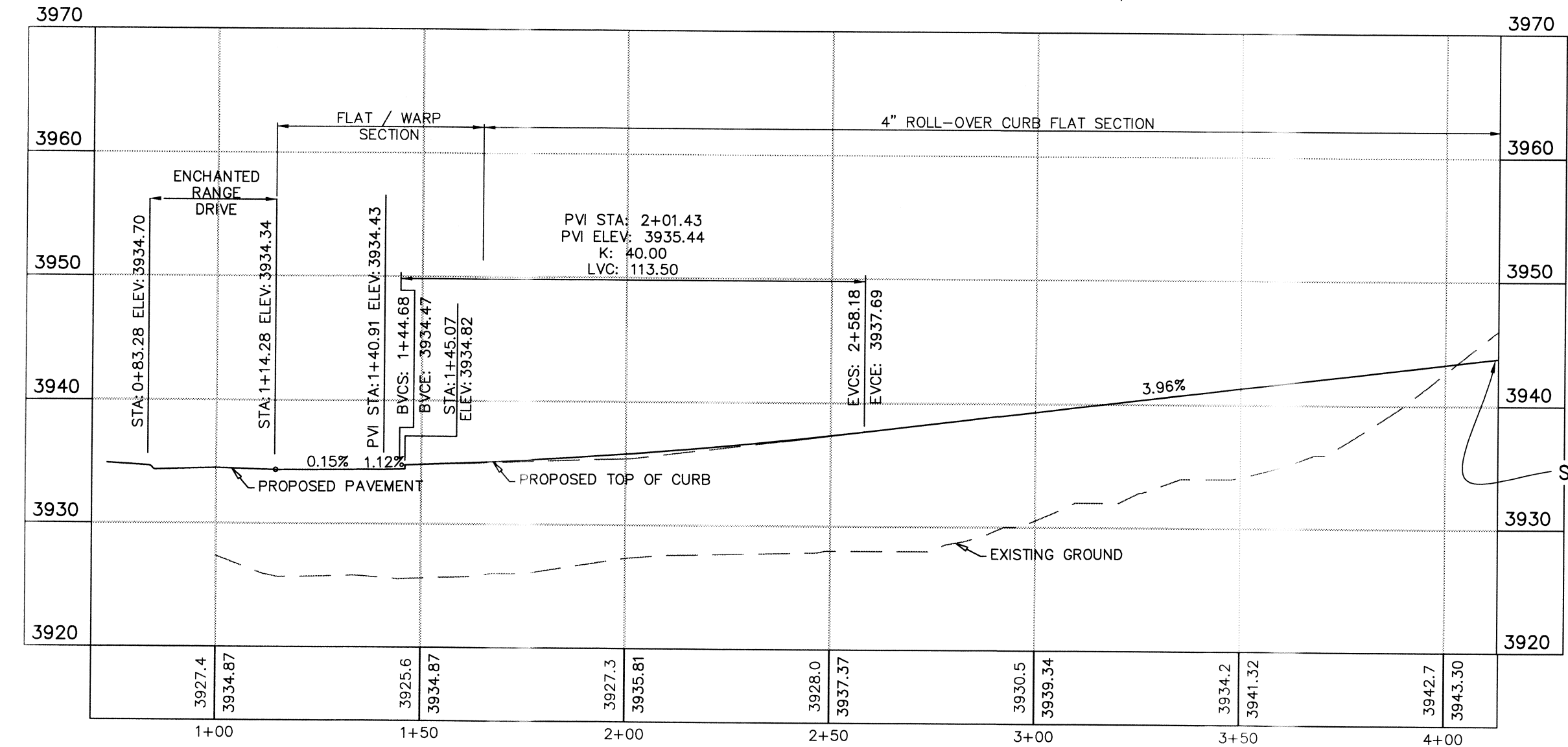
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

SHEET 45 OF 77

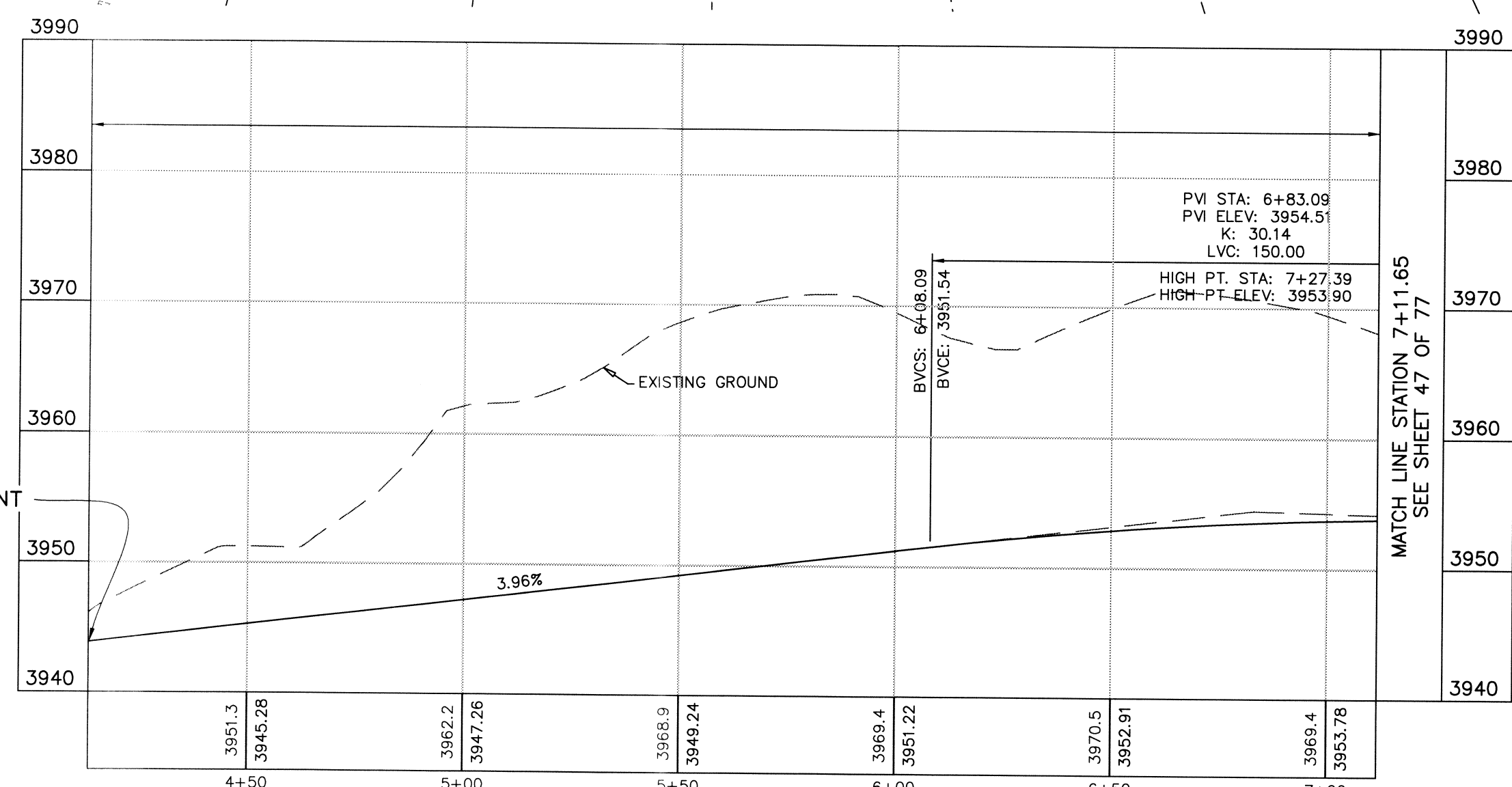


NOTE:  
 1. ALL HANDICAP RAMPS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 88 OF Z.Z.  
 2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 89 OF Z.Z.

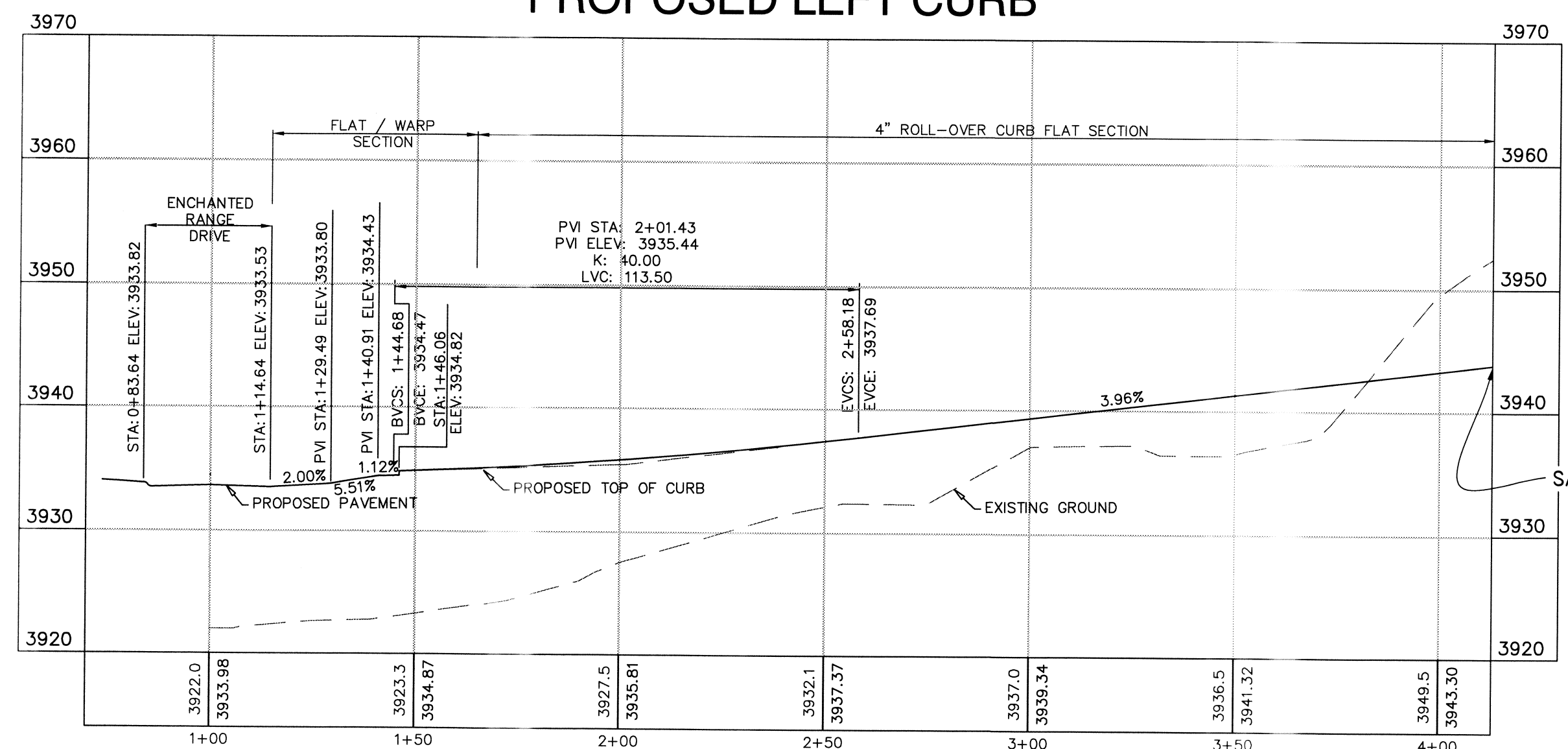
SIDEWALK BY DEVELOPER  
 SIDEWALK BY BUILDER



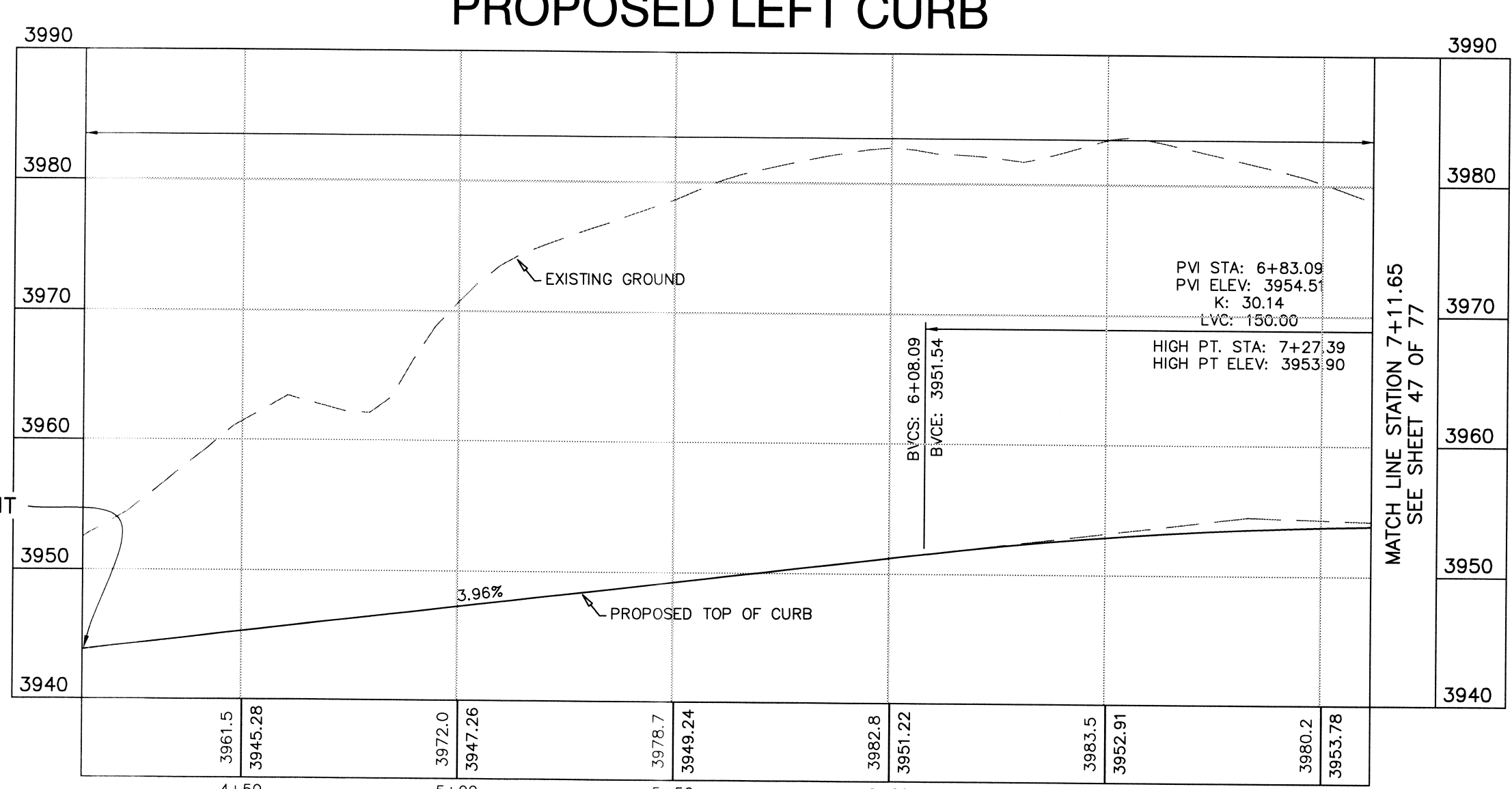
PROPOSED LEFT CURB



PROPOSED LEFT CURB



PROPOSED RIGHT CURB



PROPOSED RIGHT CURB

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LEGEND	
× 44.51 TRC	PROPOSED TOP OF 4" ROLLOVER CURB
× 44.27 FG	PROPOSED FINISHED GRADE ELEVATION
× 45.00 PV	PROPOSED TOP OF PAVEMENT
× 44.51 TC	PROPOSED TOP OF 6" CURB
→	PROPOSED DRAINAGE FLOW
---	PROPOSED STREET CENTERLINE
---	SUBDIVISION BOUNDARY LINE
▲	PROPOSED CITY MONUMENT
---	EXISTING GRADE
---	PROPOSED GRADE
---	TRANSITION FROM 1% CROWN TO WARP SECTION
---	WARP SECTION
---	STATION NUMBER

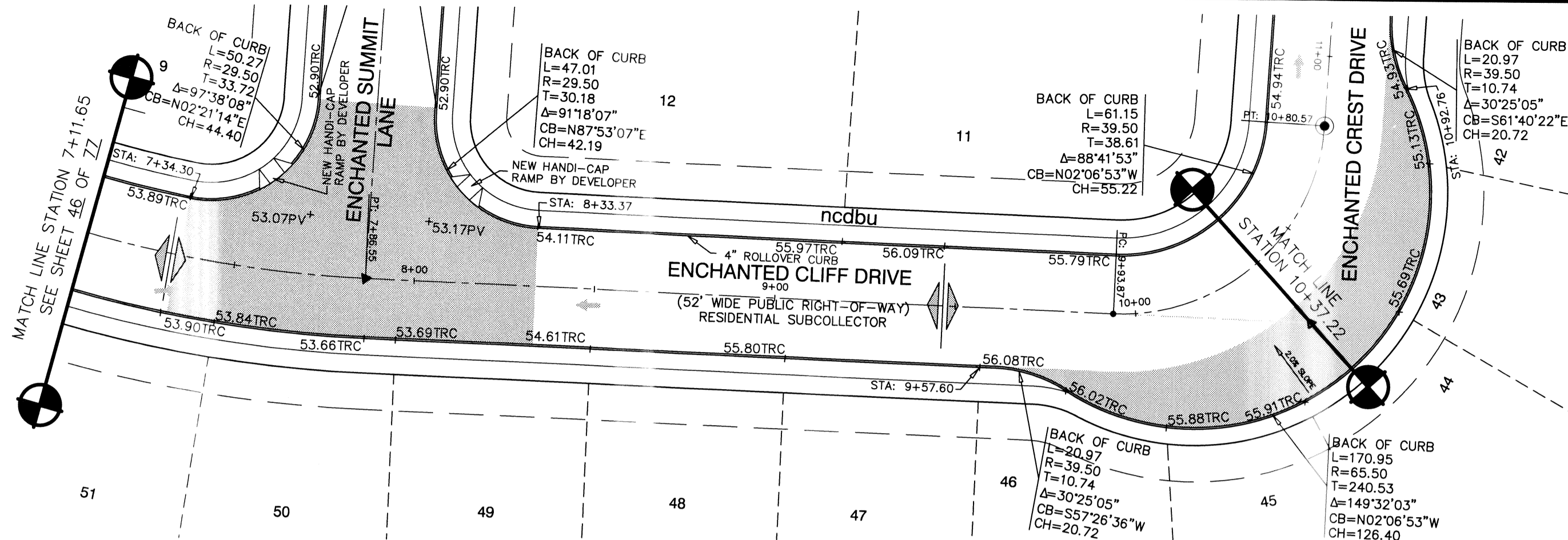
DATE	REVISIONS	BY
9/4/12	CITY COMMENTS	STAFF
9/20/12	CITY COMMENTS	STAFF

PRIMARY BENCHMARK	SCALE
1052 WILMINGTON CORNER 1981 (TRIP: 662444) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED ABOUT 1.25 MILES EAST OF THE BIG GRANGE 1 MILE NORTH-NORTHWEST OF LOOP 375 (FRANKMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION: 3946.11 NAVD 88	HOR: 1" = 30' VER: 1" = 10'
SECONDARY BENCHMARK	FILE NAME: 011509-1 A EH-3 DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR
EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOJOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21 N.A.V.D.88 DATUM -10.18 = CITY OF EL PASO DATUM	ROE ENGINEERING, L.C. TEXAS REGISTERED ENGINEERING FIRM F-2103

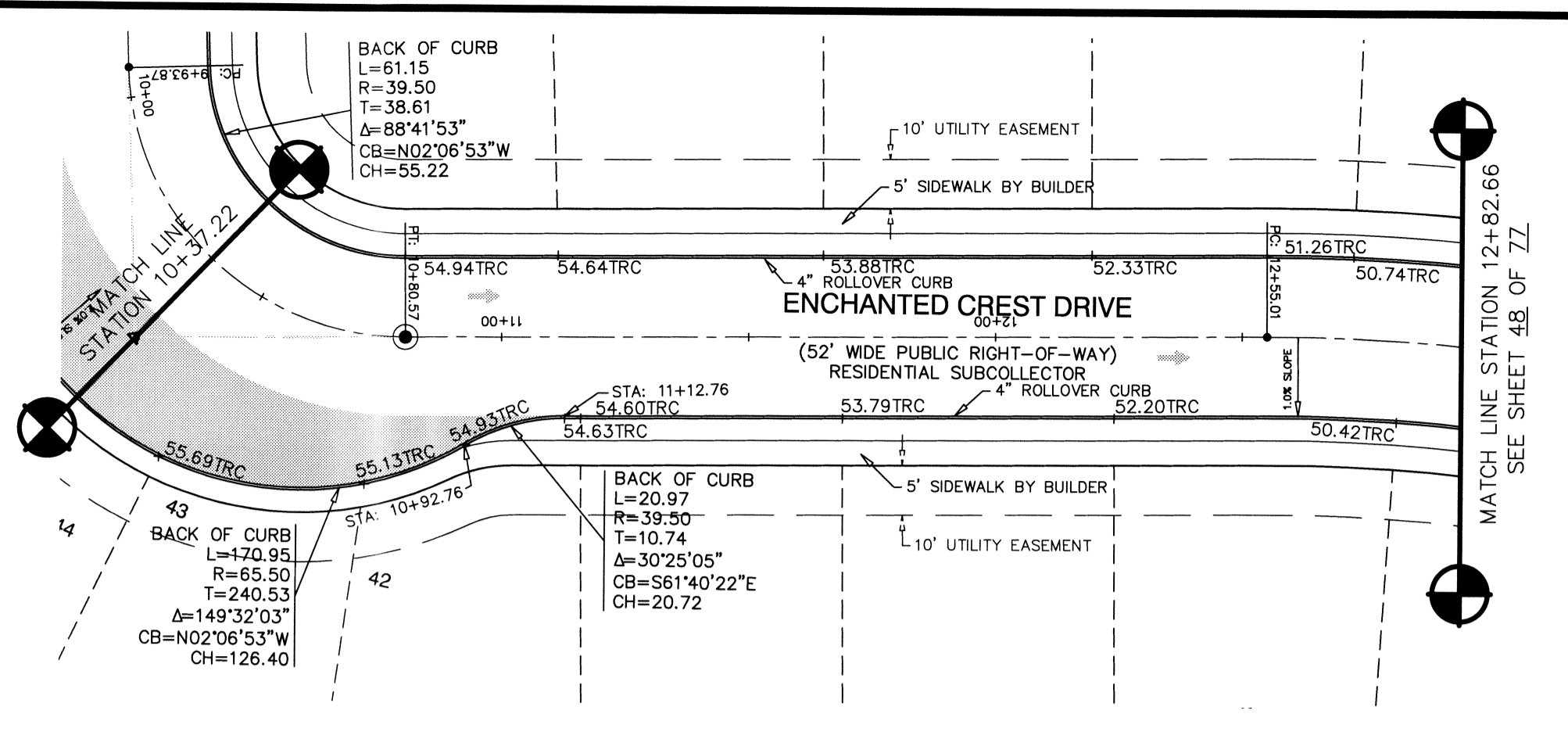
PLAN AND PROFILE  
**ENCHANTED HILLS UNIT THREE**  
 ENCHANTED CLIFF DRIVE  
 STATION 1+00.00 TO 7+11.65

**ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT**  
**REVIEWED**

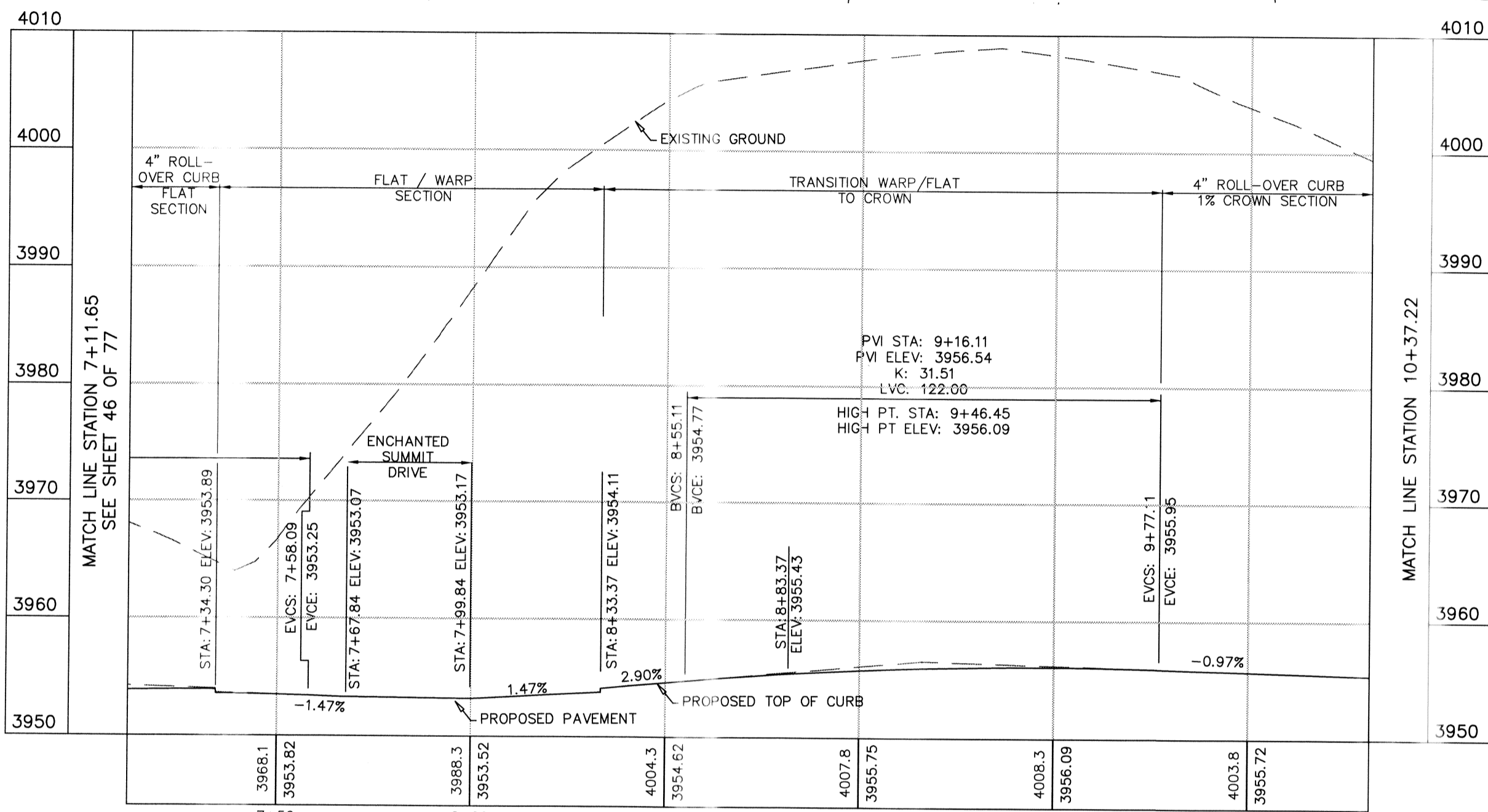
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 e-mail: roeeng@rbwell.net  
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 SHEET 46 OF 77



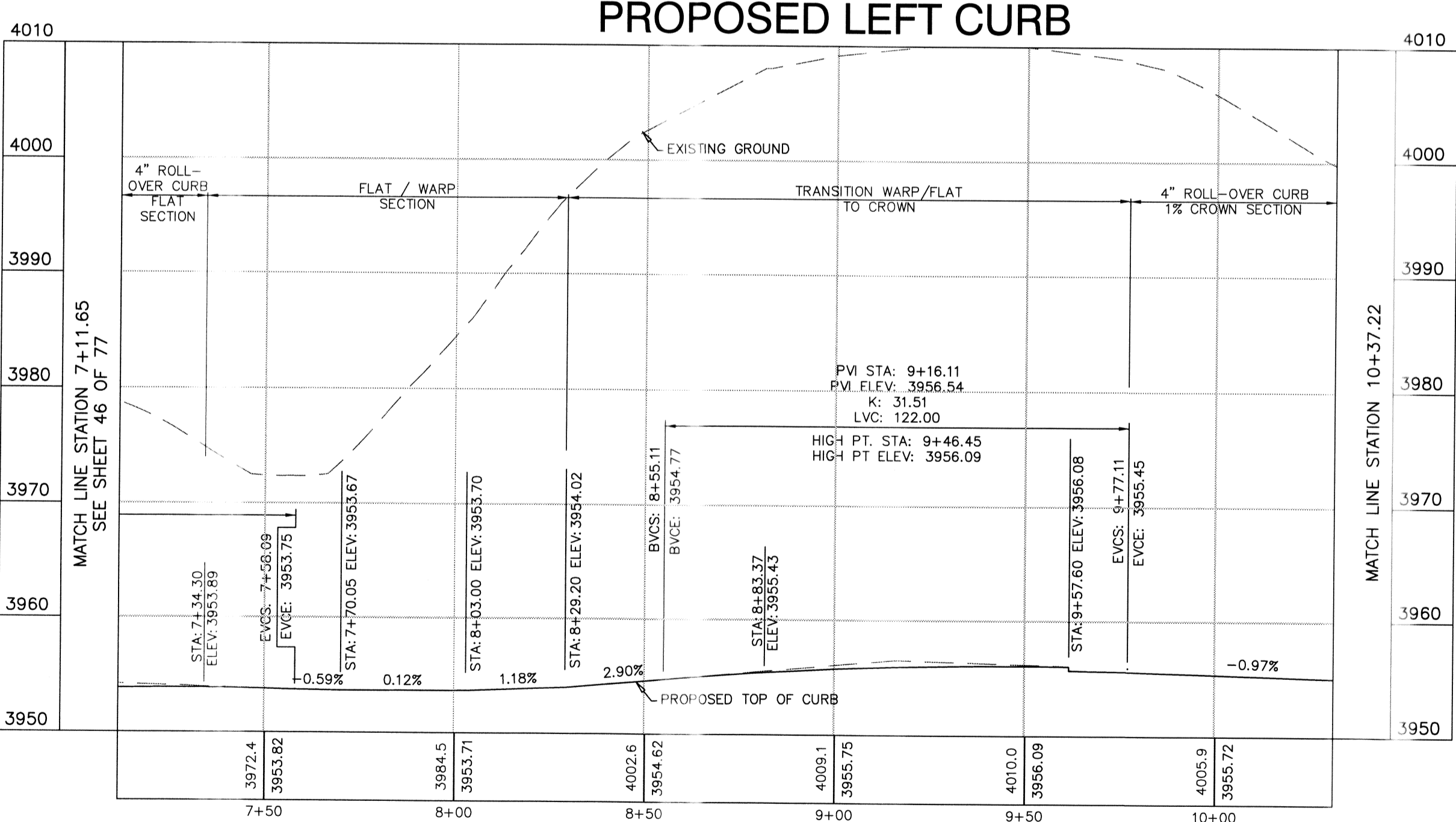
SCALE: 1" = 30'



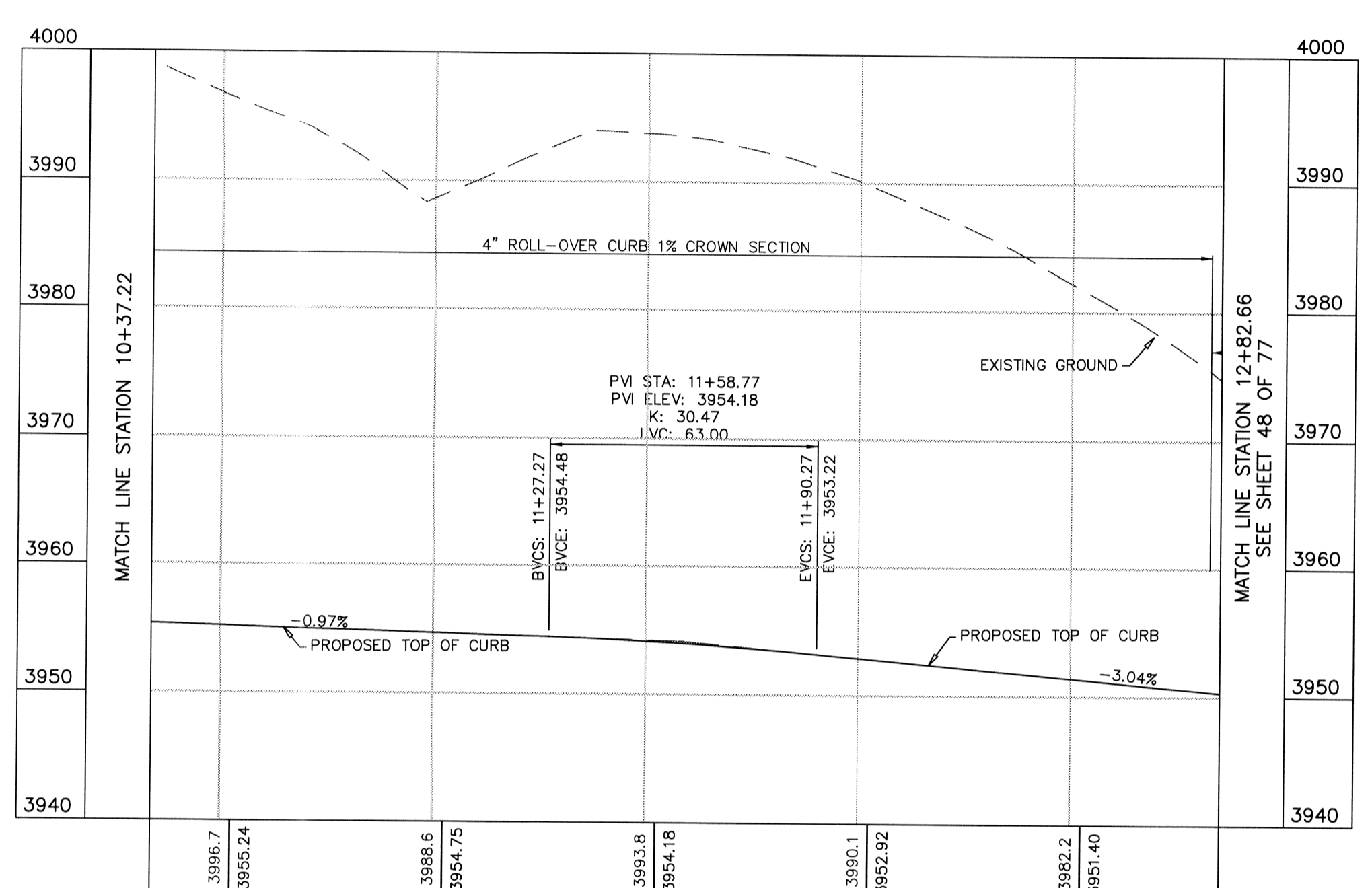
SCALE: 1" = 30'



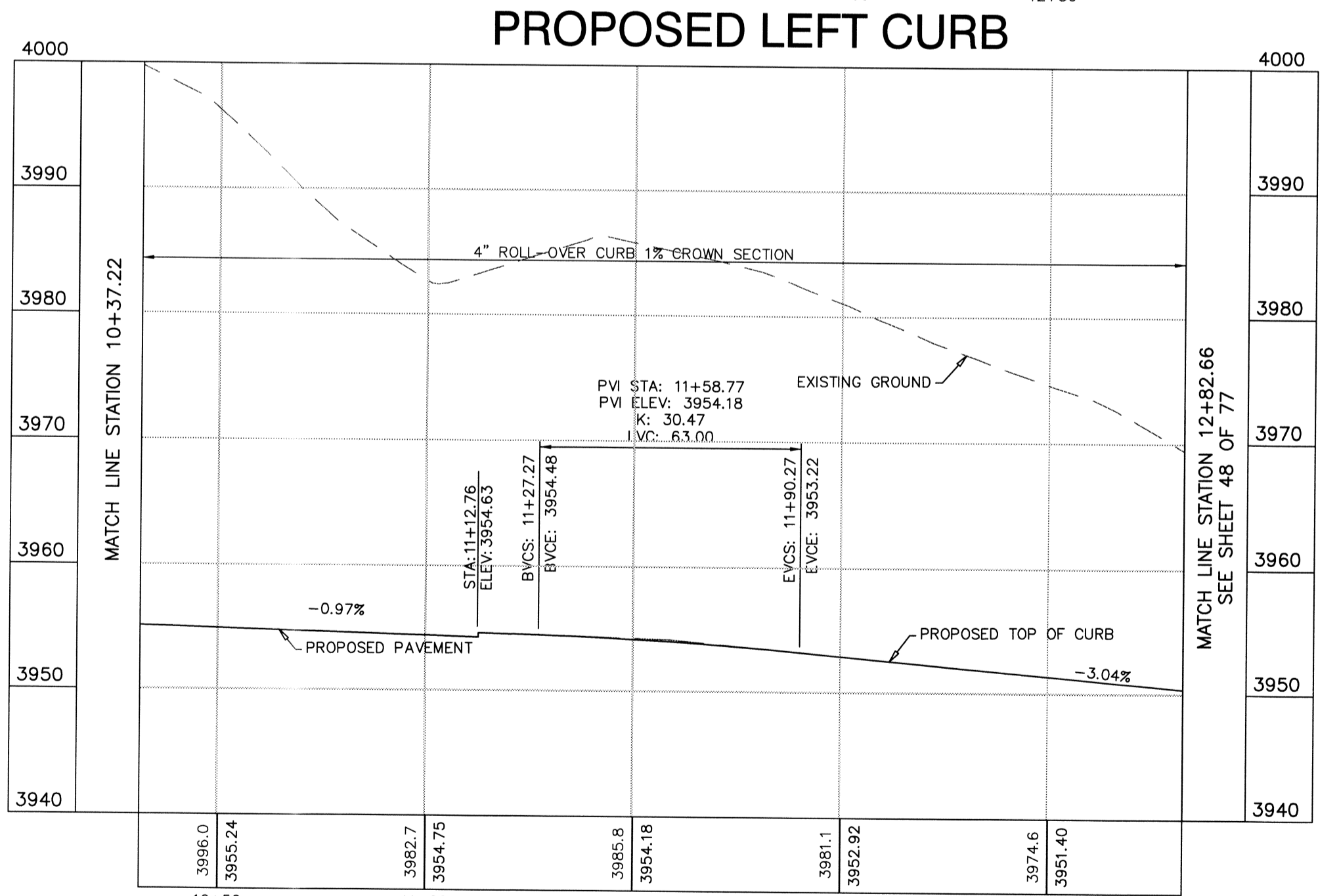
PROPOSED LEFT CURB



PROPOSED RIGHT CURB



PROPOSED LEFT CURB



PROPOSED RIGHT CURB

NOTE:  
1. ALL HANDICAP RAMPS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 68 OF 77.  
2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 69 OF 77.

--- SIDEWALK BY DEVELOPER  
--- SIDEWALK BY BUILDER

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LEGEND	DATE	REVISIONS	BY
× 44.51 TRC	9/4/12	CITY COMMENTS	STAFF
× 44.27 FG	9/20/12	CITY COMMENTS	STAFF
× 45.00 PV			
× 44.51 TC			
---			
---			
---			
---			

DATE	REVISIONS	BY
9/4/12	CITY COMMENTS	STAFF
9/20/12	CITY COMMENTS	STAFF

PRIMARY BENCHMARK	SCALE
1888 NASS MONUMENT "CIRCO 1888" THIS MONUMENT IS PER NATIONAL GEODETIC SURVEY 1983. LOCATED ABOUT 1.25 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 83.	HOR: 1" = 30' VER: 1" = 10'
SECONDARY BENCHMARK	
EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MICHES DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	
N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	

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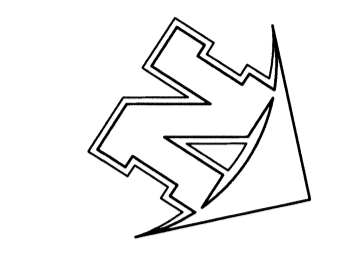
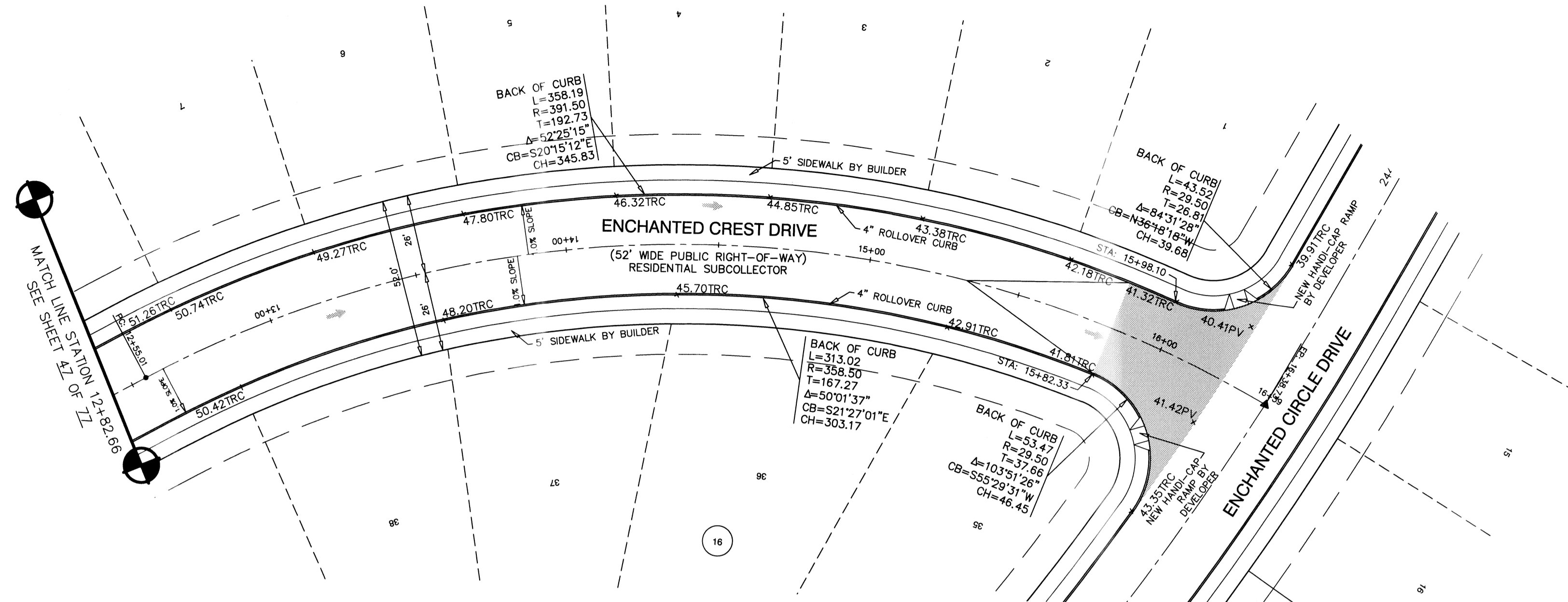
ROE ENGINEERING, L.C.  
TEXAS REGISTERED ENGINEERING FIRM # 2103

**PLAN AND PROFILE**  
**ENCHANTED HILLS UNIT THREE**  
ENCHANTED CLIFF DRIVE  
STATION TO 7+11.65 TO 10+37.22  
ENCHANTED CREST DRIVE  
STATION 10+37.22 TO 12+82.66

**REVIEWED**

**ENCHANTED HILLS UNIT THREE**  
Roe Engineering, L.C.  
801 N. Cotton St. Suite No. 6 El Paso, Tx. 79902  
(915) 633-1418 - FAX: (915) 633-4972  
e-mail: roeeng@earthlink.net

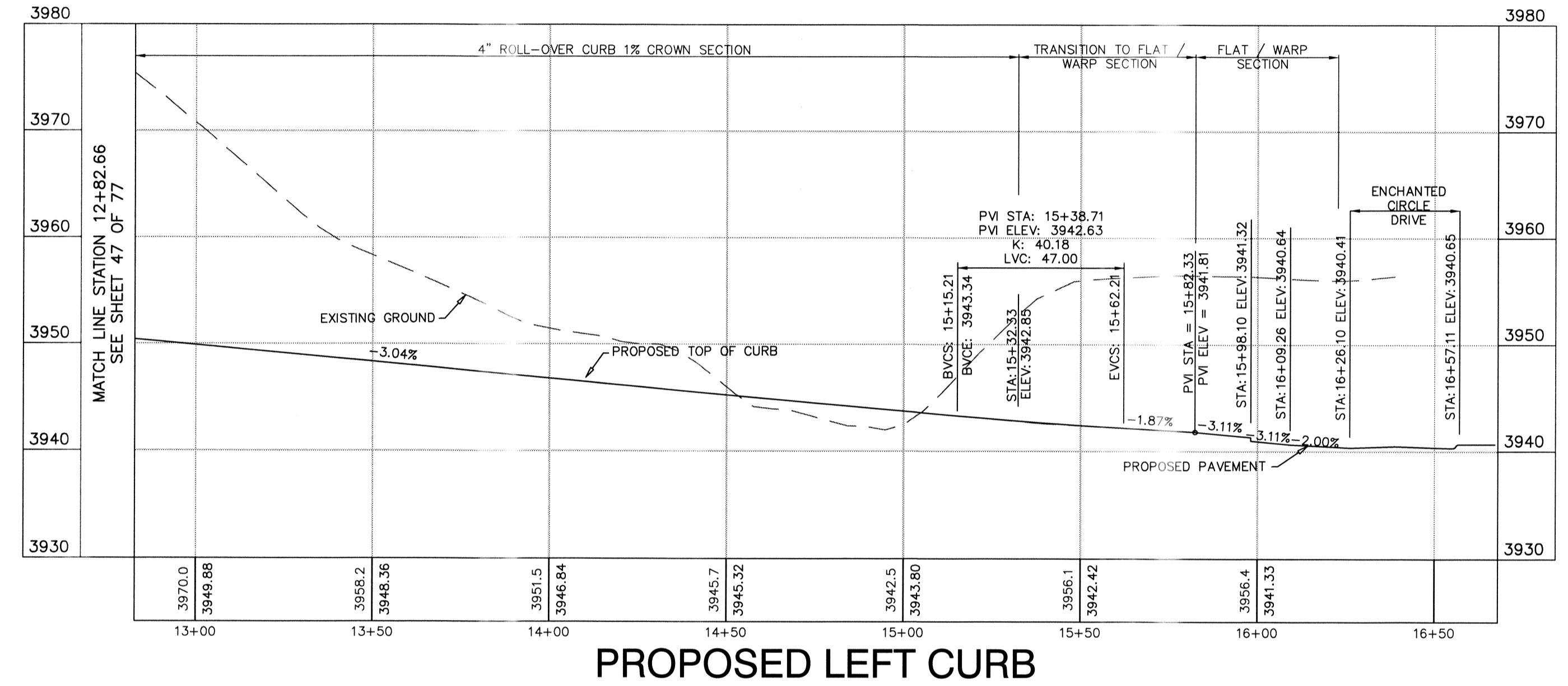
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING  
SHEET 47 OF 77



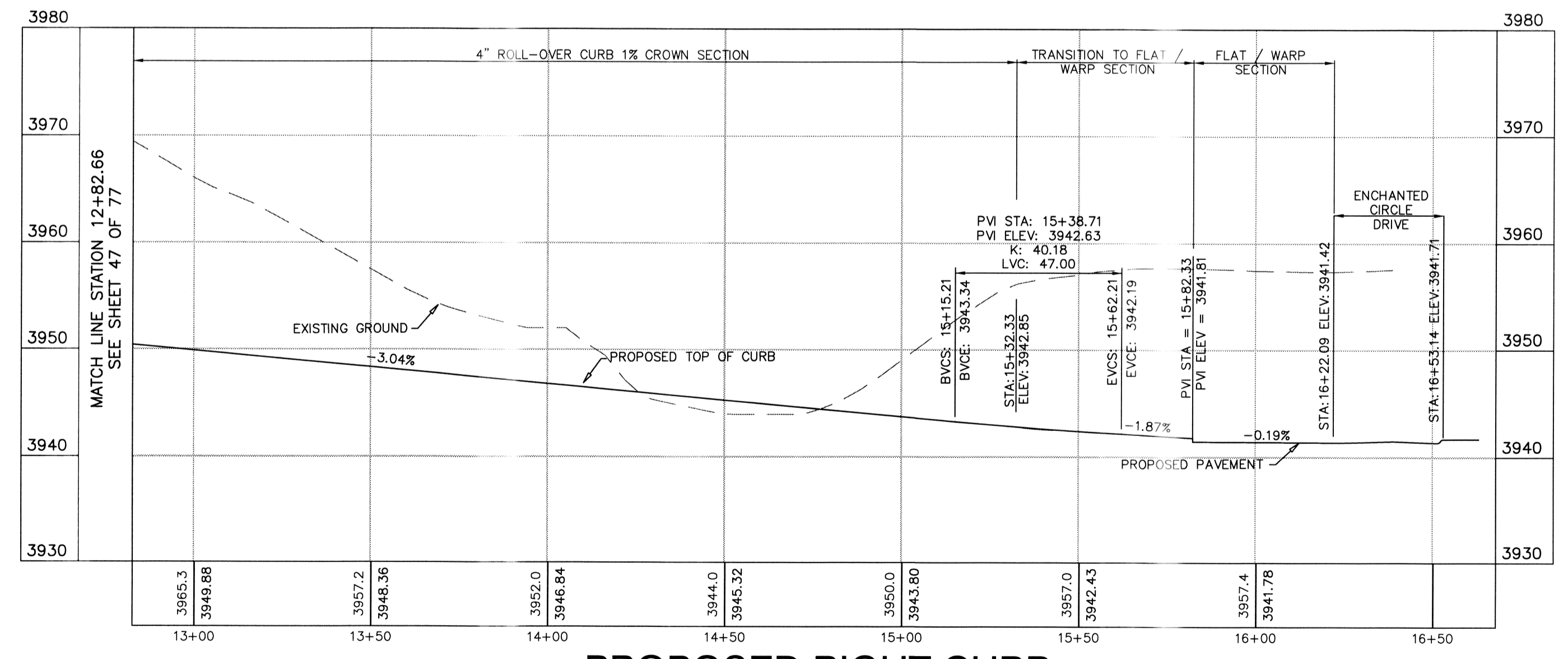
SCALE: 1" = 30'

**NOTE**  
 1. ALL HANDICAP RAMPS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 68 OF 77.  
 2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 69 OF 77.

SIDEWALK BY DEVELOPER  
 SIDEWALK BY BUILDER



PROPOSED LEFT CURB



PROPOSED RIGHT CURB



**ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT**

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**LEGEND**

- x 44.51 TRC PROPOSED TOP OF 4" ROLLOVER CURB
- x 44.27 FG PROPOSED FINISHED GRADE ELEVATION
- x 45.00 PV PROPOSED TOP OF PAVEMENT
- x 44.51 TC PROPOSED TOP OF 6" CURB
- PROPOSED DRAINAGE FLOW
- PROPOSED STREET CENTERLINE
- SUBDIVISION BOUNDARY LINE
- PROPOSED CITY MONUMENT

DATE	REVISIONS	BY
9/4/12	CITY COMMENTS	STAFF
9/20/12	CITY COMMENTS	STAFF

PRIMARY BENCHMARK	SCALE
N/S MONUMENT "CHINO 1980" (P.B. 020444) LOCATION AS PER NATIONAL GEODETIC SURVEY 1983: LOCATED ABOUT 1.25 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANS-MOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	HOR: 1" = 30' VER: 1" = 10'
SECONDARY BENCHMARK	FILE NAME: W.O. 011509-1 A EH-3 DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR
EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHOS DRIVE IN FRONT OF LOT 12, BLOCK 7, CANTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANTILLO HEIGHTS UNIT ONE ELEVATION: 3857.51 N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	

**PLAN AND PROFILE**

**ENCHANTED HILLS UNIT THREE**

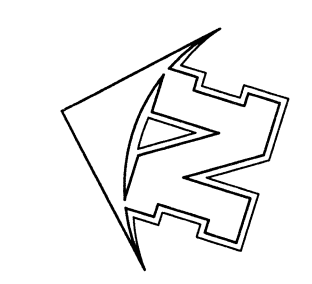
ENCHANTED CREST DRIVE  
STATION 12+82.66 TO 16+38.73

**bnpRoe Engineering, L.C.**  
 601 N. Cotton St. Suite No. 6 El Paso, Tx. 79902  
 (915) 533-1418 - FAX (915) 533-4972  
 e-mail: roeeng@bnel.net

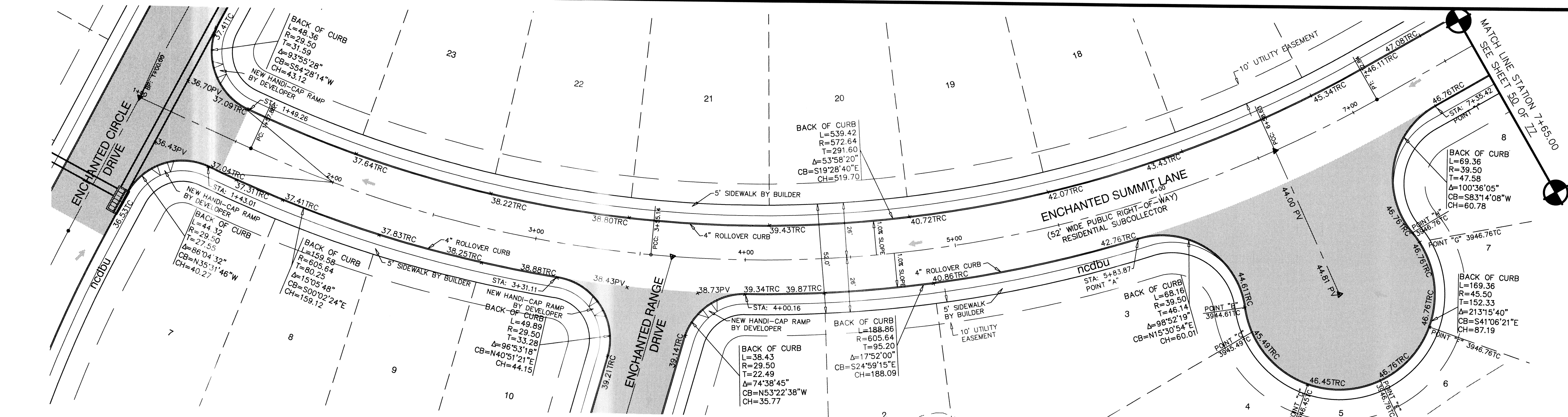
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

SHEET 48 OF 77



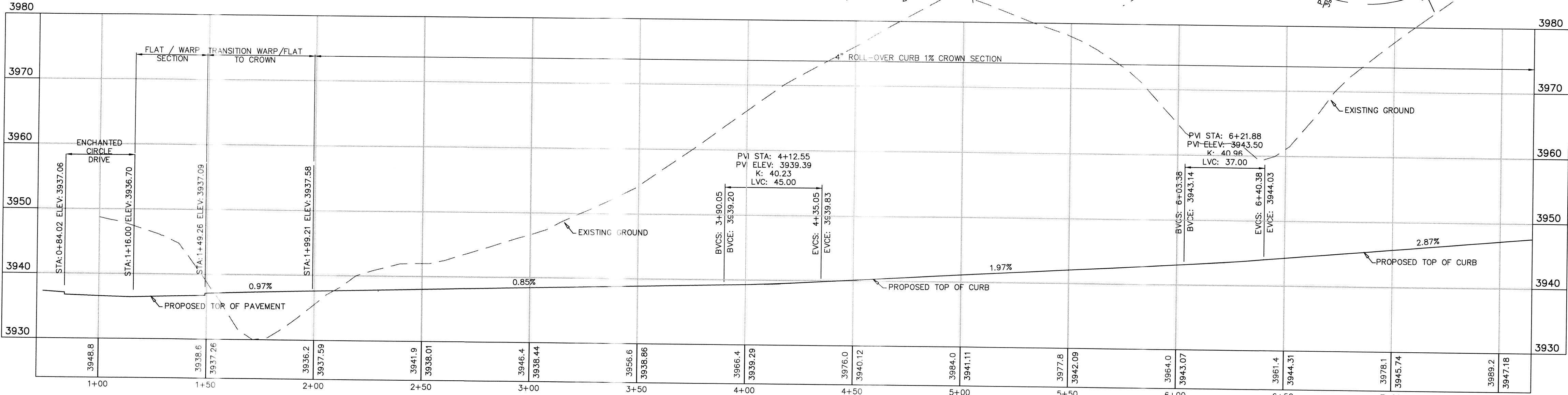


SCALE: 1" = 30'

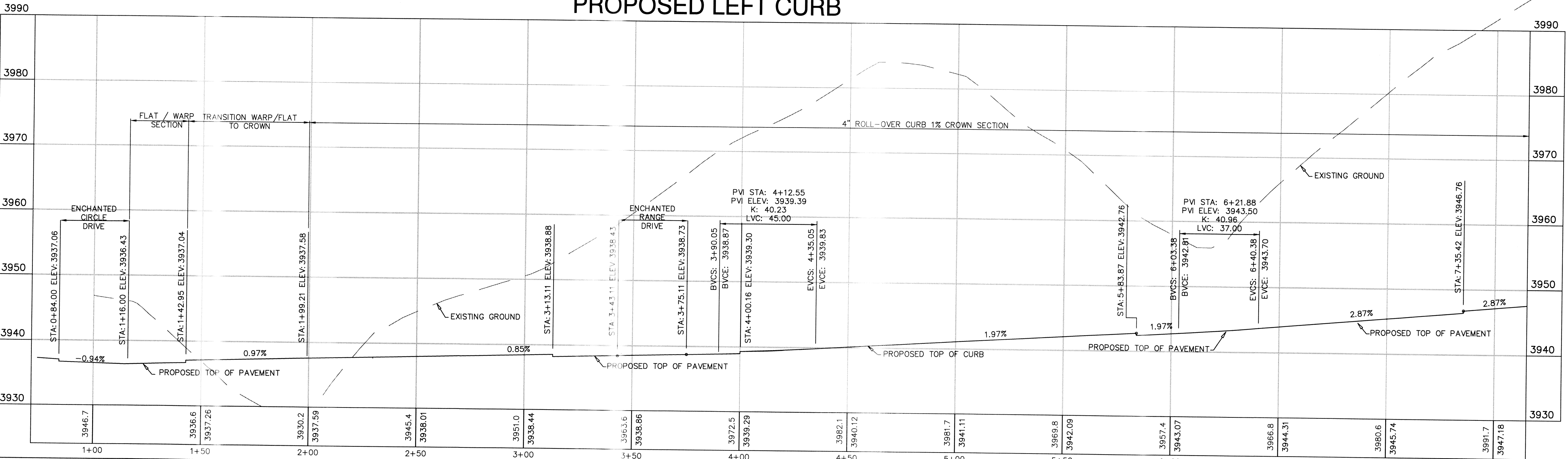


NOTE:  
 1. ALL HANDICAP RAMPS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 08 OF 22.  
 2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 09 OF 22.

▨ SIDEWALK BY DEVELOPER  
 ▨ SIDEWALK BY BUILDER



PROPOSED LEFT CURB



PROPOSED RIGHT CURB

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**LEGEND**

- × 44.51 TRC PROPOSED TOP OF 4" ROLLOVER CURB
- × 44.27 FG PROPOSED FINISHED GRADE ELEVATION
- × 45.00 PV PROPOSED TOP OF PAVEMENT
- × 44.51 TC PROPOSED TOP OF 6" CURB
- PROPOSED DRAINAGE FLOW
- PROPOSED STREET CENTERLINE
- SUBDIVISION BOUNDARY LINE
- ▲ PROPOSED CITY MONUMENT

DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	NIS MONUMENT (CIRNO 1880 (PDS 460444) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981; LOCATION ABOUT 1.25 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 83	HOR: 1" = 30' VER: 1" = 10'
9/20/12	CITY COMMENTS	STAFF	SECONDARY BENCHMARK EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHIS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	DATE: NOVEMBER, 2011 DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR

PLAN AND PROFILE

**ENCHANTED HILLS UNIT THREE**

ENCHANTED SUMMIT DRIVE  
STATION 1+00.00 TO 7+65.00

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TEXAS REGISTERED ENGINEERING FIRM F-2103

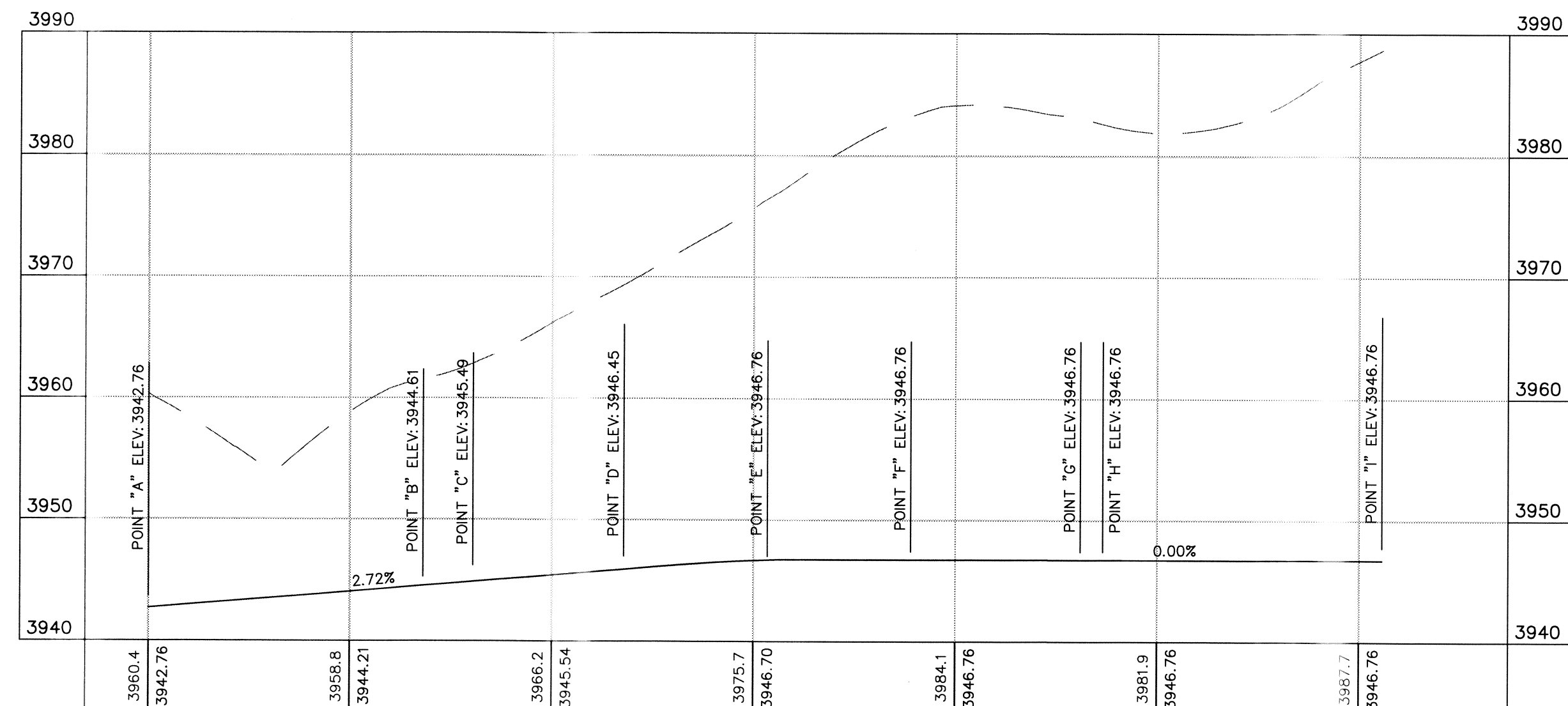
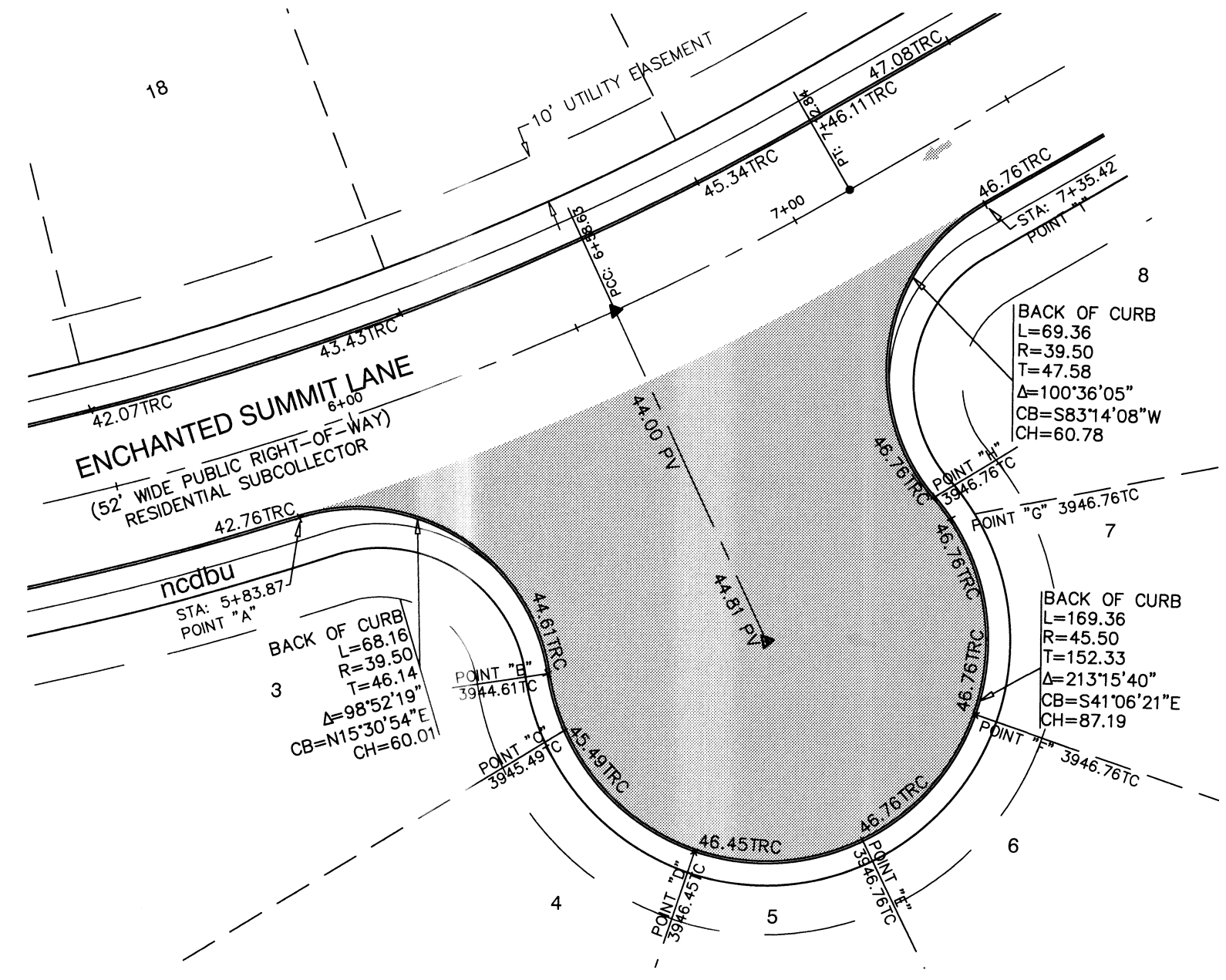
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**REVIEWED**

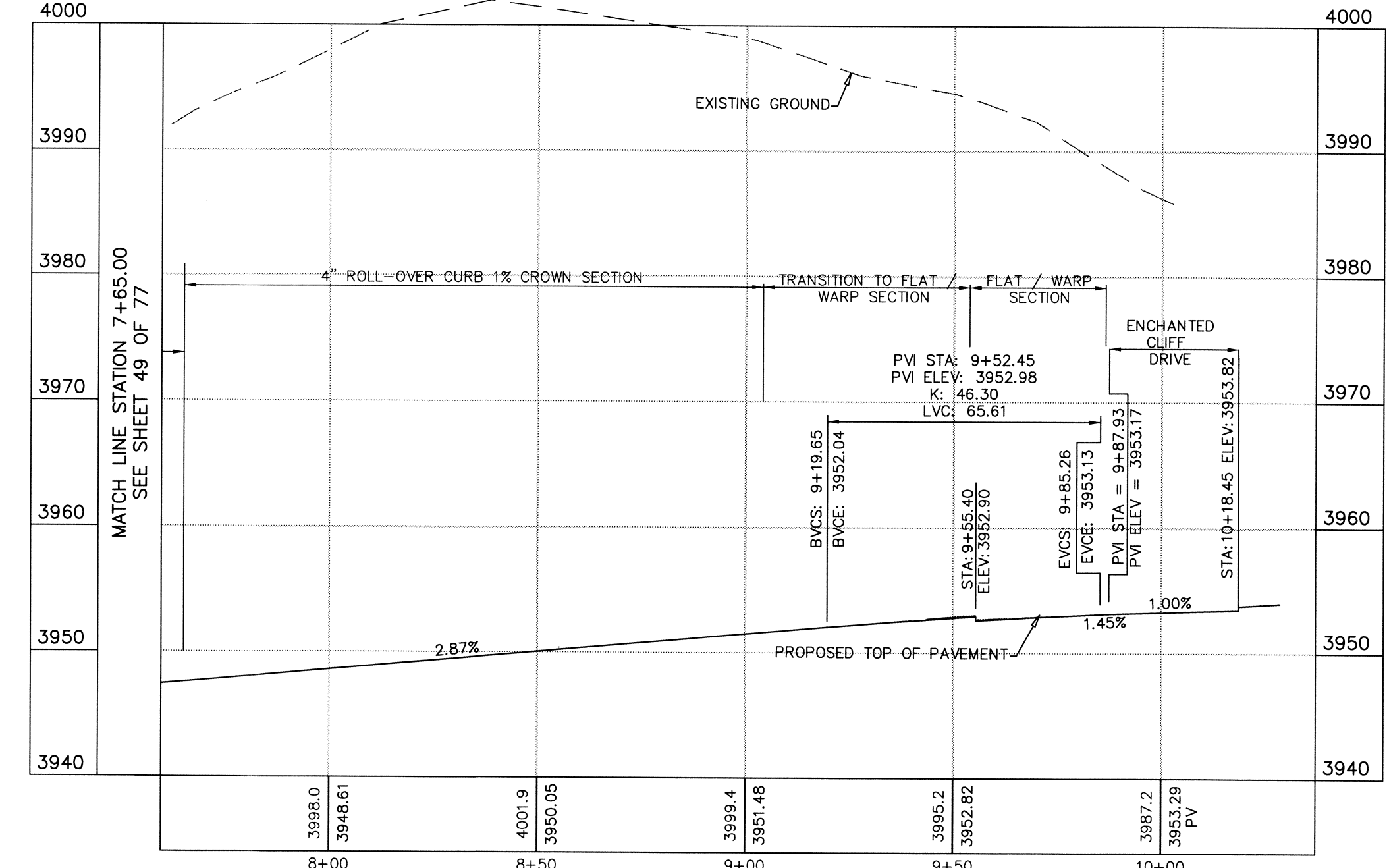
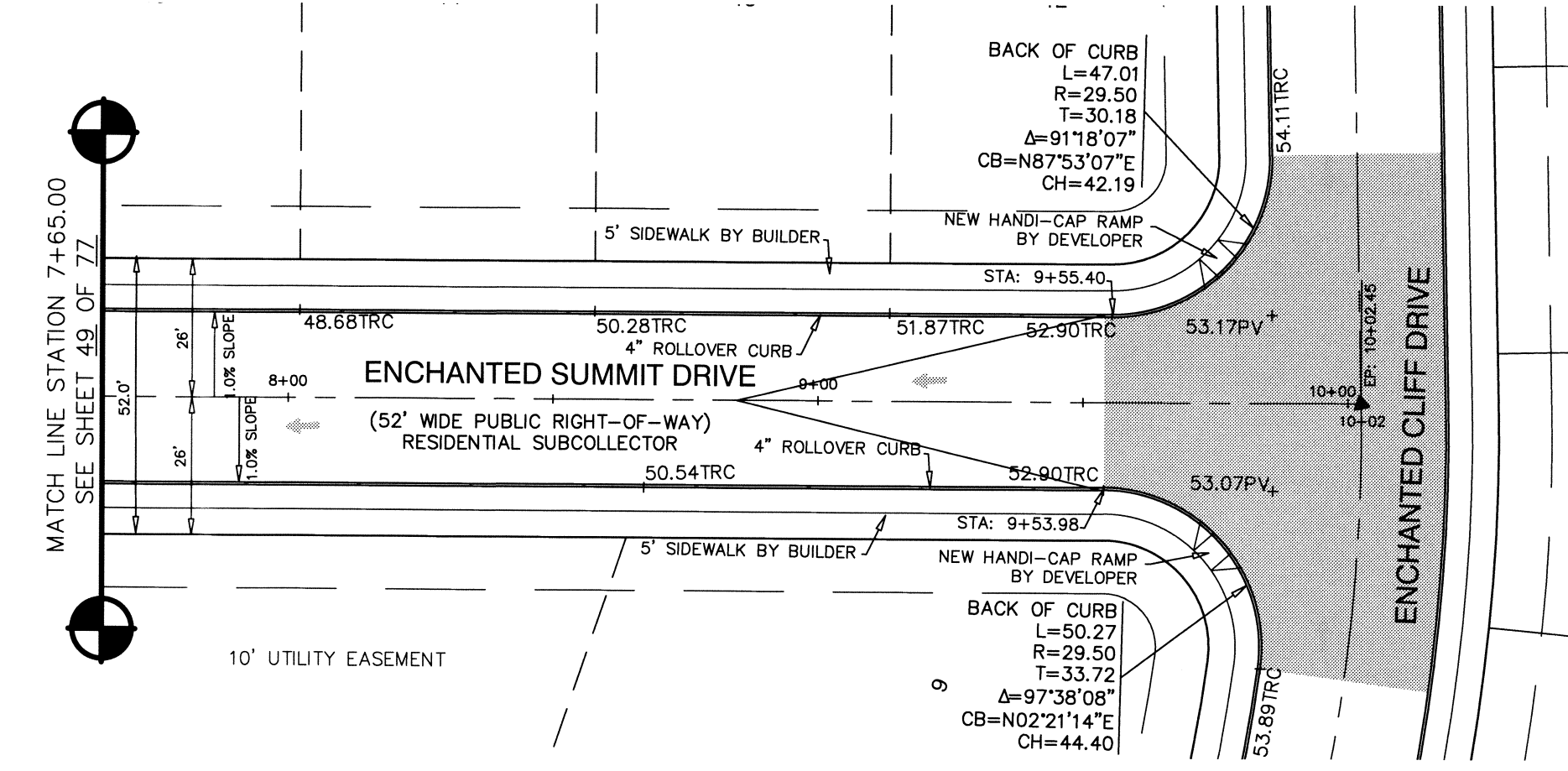
RoE Engineering, L.C.  
601 N. Cotton St. Suite No. 8 El Paso, TX, 79902  
(915) 833-1418 - FAX: (915) 833-4972  
e-mail: roeeng@rbell.net

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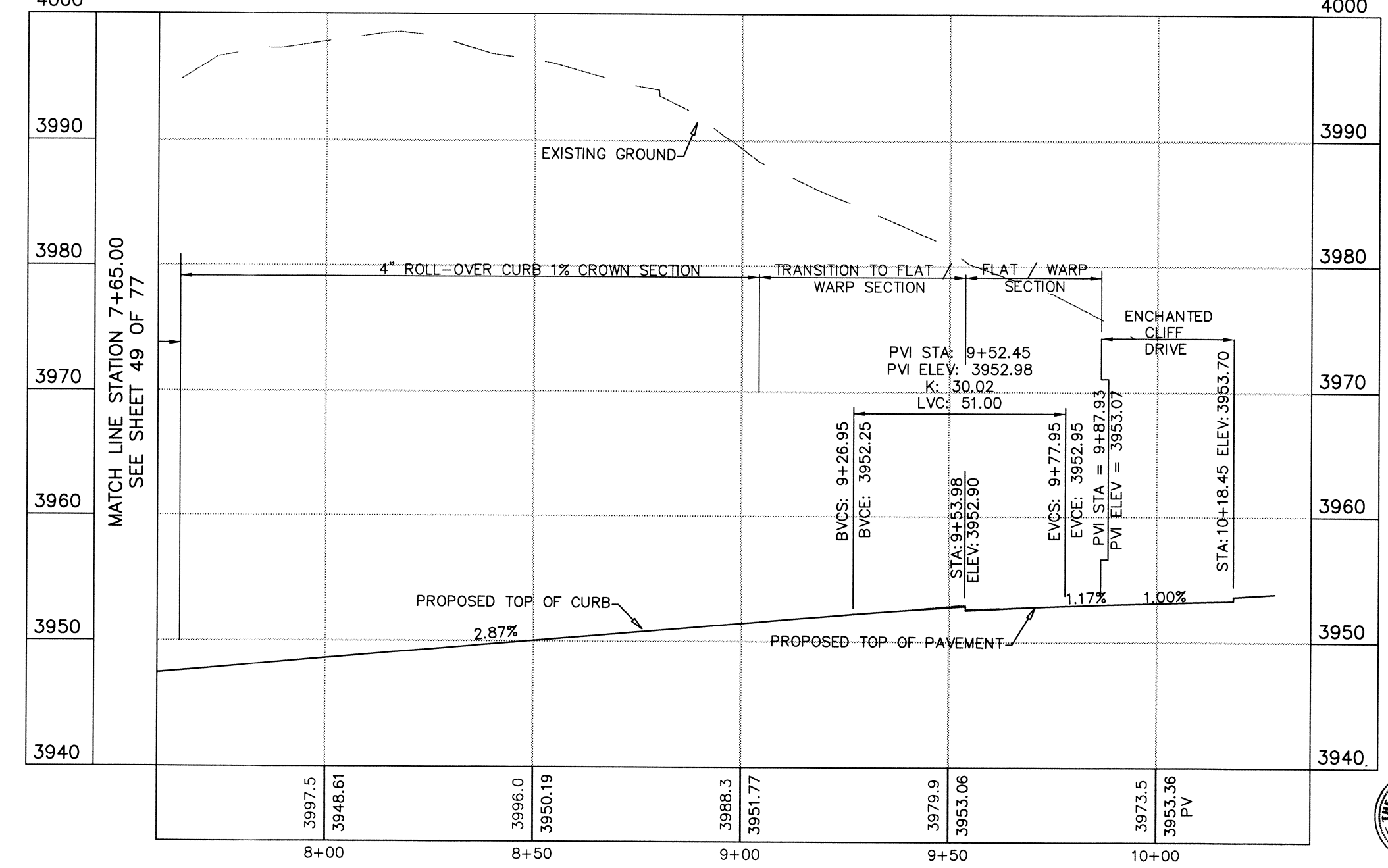
SHEET 49 OF 77



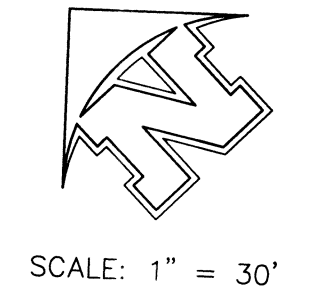
PROPOSED RIGHT CURB @ CUL-DE-SAC



PROPOSED LEFT CURB



PROPOSED RIGHT CURB



NOTE:  
 1. ALL HANDICAP RAMPS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 98 OF 77.  
 2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 98 OF 77.

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DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	NCS MONUMENT (GRID 1881 1881) (66444)	HOR: 1" = 30' VER: 1" = 10'
9/20/12	CITY COMMENTS	STAFF	LOCATION AS PER NATIONAL GEODETIC SURVEY 1983; LOCATED ABOUT 1.25 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 83	FILE NAME: W.O. 011509-1 A EH-3
			SECONDARY BENCHMARK	DATE: NOVEMBER, 2011
			EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	DESIGN BY: STAFF
			N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	DRAWN BY: I.D.R.
				CHKD. BY: H.P.
				APPD. BY: BR

**LEGEND**

- 44.51 TRC PROPOSED TOP OF 4" ROLLOVER CURB
- 44.27 FG PROPOSED FINISHED GRADE ELEVATION
- 45.00 PV PROPOSED TOP OF PAVEMENT
- 44.51 TC PROPOSED TOP OF 6" CURB
- PROPOSED DRAINAGE FLOW
- PROPOSED STREET CENTERLINE
- SUBDIVISION LINARY LINE
- PROPOSED CITY MONUMENT

**PLAN AND PROFILE**

**ENCHANTED HILLS UNIT THREE**

ENCHANTED SUMMIT DRIVE  
STATION 7+65.00 TO 10+02.45

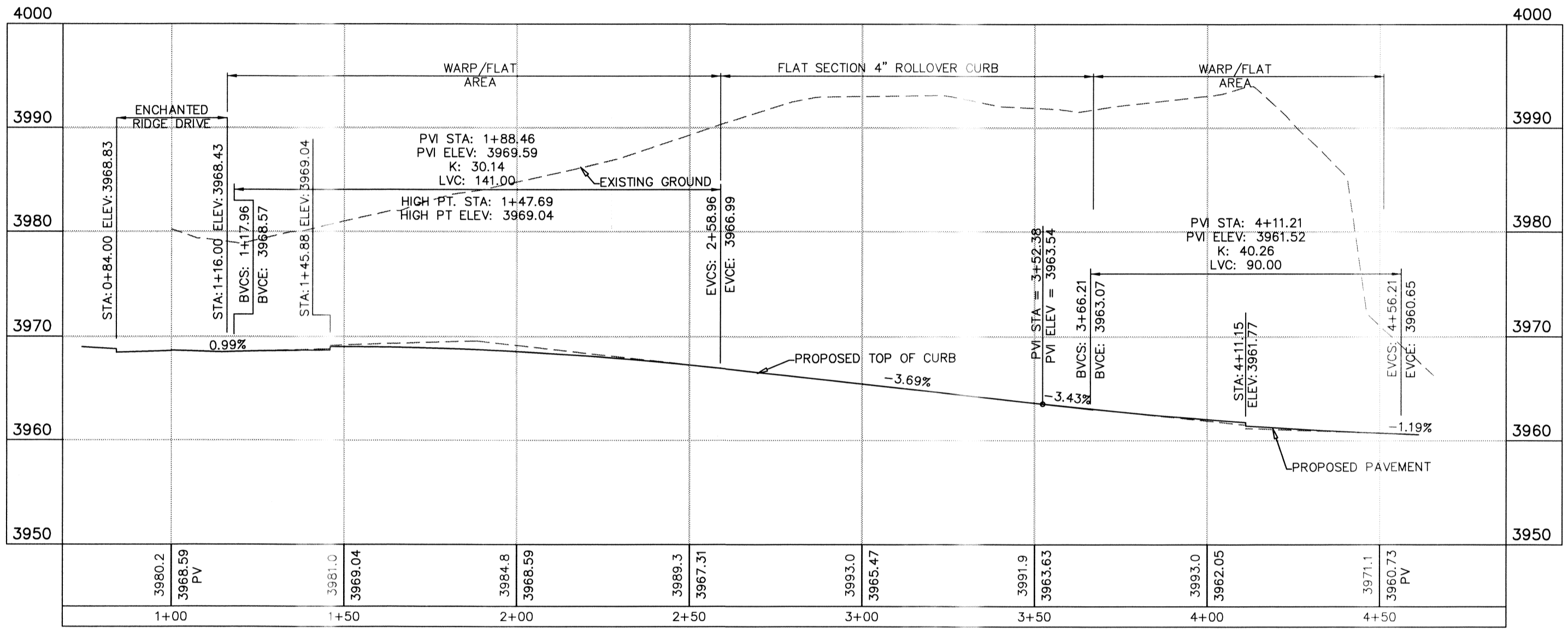
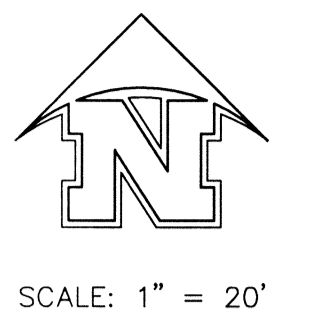
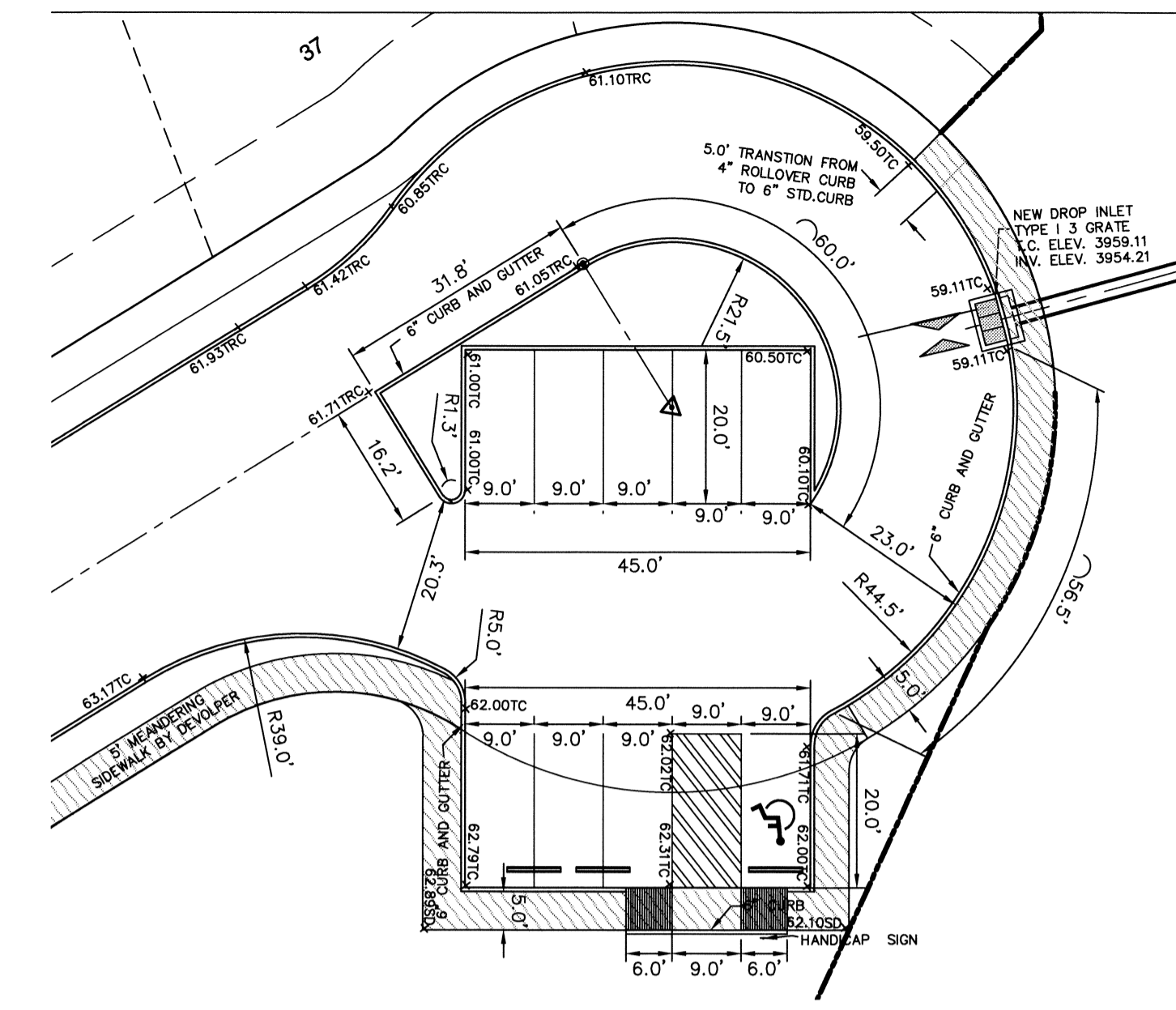
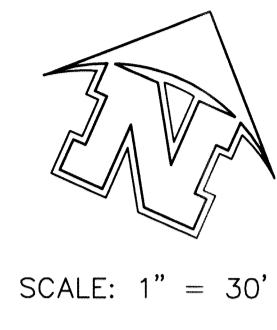
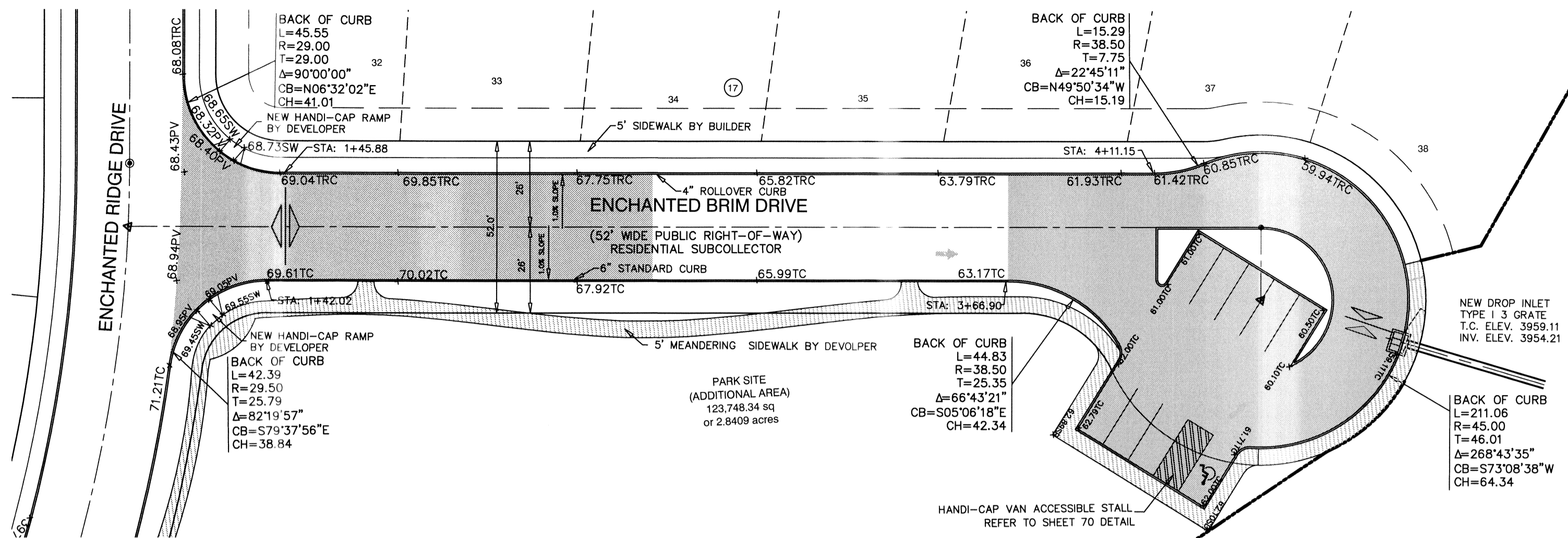
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 801 N. Cotton St. Suite No. 6 El Paso, Tx. 79902  
 (915) 538-1418 - FAX: (915) 533-4972  
 e-mail: roeeng@rowell.net  
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SHEET 50 OF 77

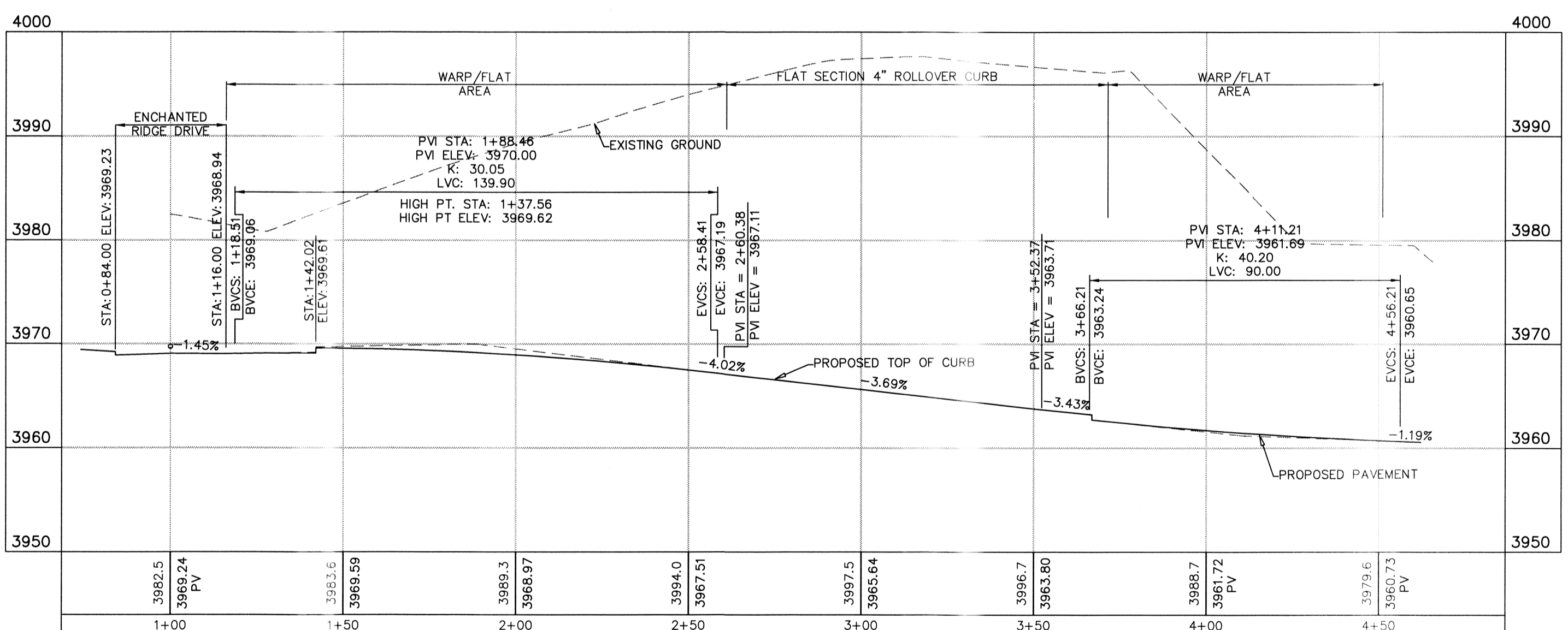
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 LICENSED PROFESSIONAL ENGINEER  
 NO. 31886  
 TEXAS REGISTERED ENGINEERING FIRM L-2103

REVIEWED



PROPOSED LEFT CURB



PROPOSED RIGHT CURB

NOTE:  
 1. ALL HANDICAP RAMPS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 68 OF 77.  
 2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 69 OF 77.

SIDEWALK BY DEVELOPER  
 SIDEWALK BY BUILDER

DIMENSION CONTROL PLAN  
 SCALE 1"=20'

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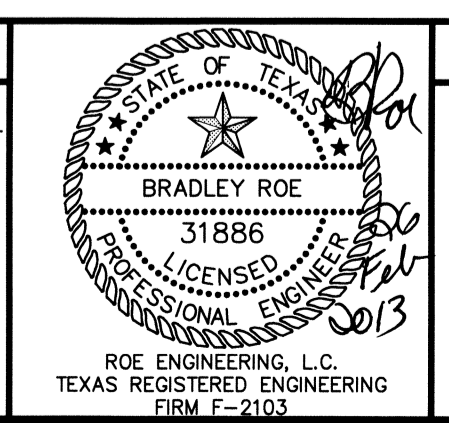
ENGINEERING & CONSTRUCTION  
 MANAGEMENT DEPARTMENT

REVIEWED

LEGEND	
× 44.51 TRC	PROPOSED TOP OF 4" ROLLOVER CURB
× 44.27 FG	PROPOSED FINISHED GRADE ELEVATION
× 45.00 PV	PROPOSED TOP OF PAVEMENT
× 44.51 TC	PROPOSED TOP OF 6" CURB
→	PROPOSED DRAINAGE FLOW
---	PROPOSED STREET CENTERLINE
---	SUBDIVISION BOUNDARY LINE
---	PROPOSED CITY MONUMENT

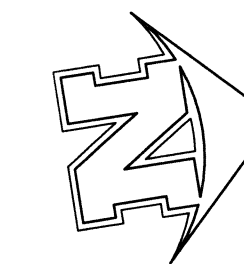
DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	N/S MONUMENT (ROUND 1880' 1880' 680244)	HOR: 1" = 30' VER: 1" = 10'
9/20/12	CITY COMMENTS	STAFF	LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED ABOUT 1.35 MILES EAST OF THE RO RIDGE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	FILE NAME: W.O. 011509-1 A EH-3
			EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOSES DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 13, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE ELEVATION: 3857.21	DATE: NOVEMBER, 2011
			N.A.V.D. 88 DATUM -10.16 = CITY OF EL PASO DATUM	DESIGN BY: STAFF
				DRAWN BY: I.D.R
				CHKD. BY: H.P.
				APPD. BY: BR

PLAN AND PROFILE	
<b>ENCHANTED HILLS UNIT THREE</b>	
ENCHANTED BRIM DRIVE STATION 1+00.00 TO 4+65.61	

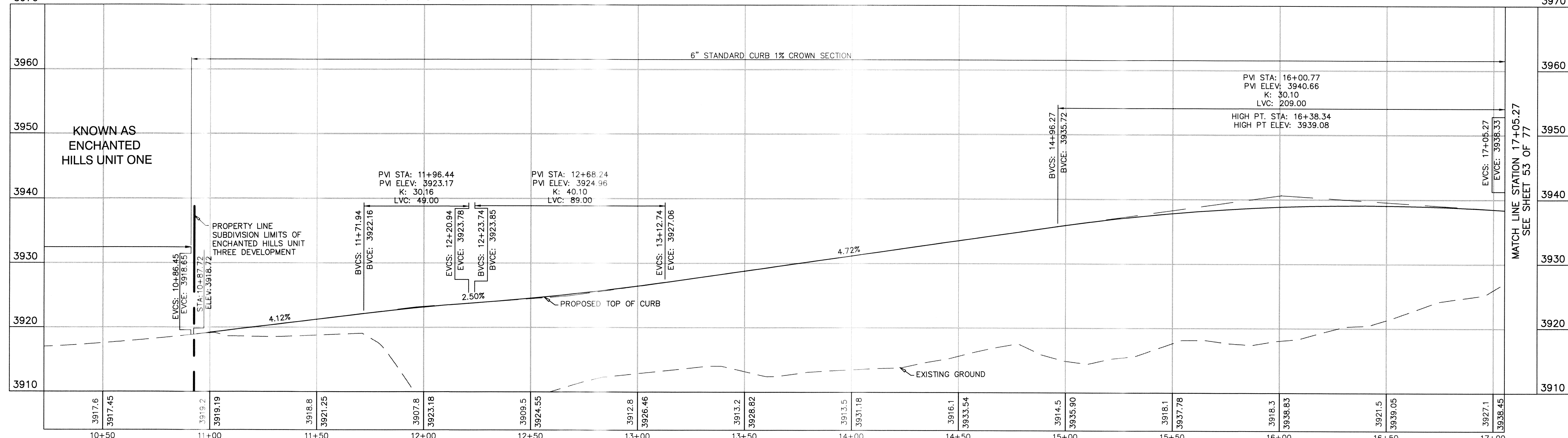
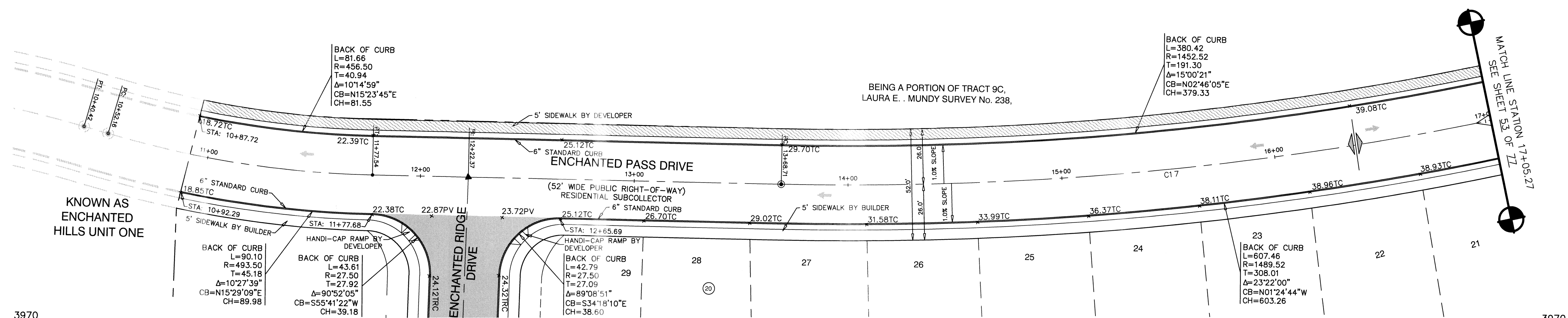


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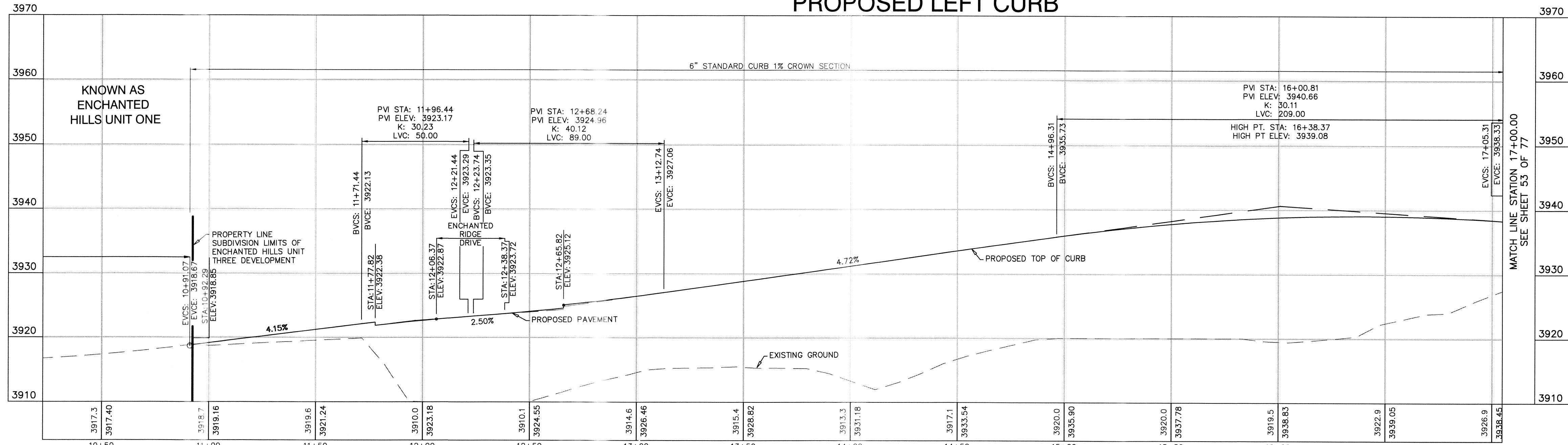
hnpRoe Engineering, L.C.  
 801 N. Cotton St. Suite No. 6 El Paso, Tx. 79902  
 (915) 533-1418 - FAX (915) 533-4972  
 e-mail: roeeng@hnpRoe.com  
 ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING  
 SHEET 51 OF 77



SCALE: 1" = 30'



PROPOSED LEFT CURB



PROPOSED RIGHT CURB

NOTE:  
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2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAIL SHEET 69 OF 77.

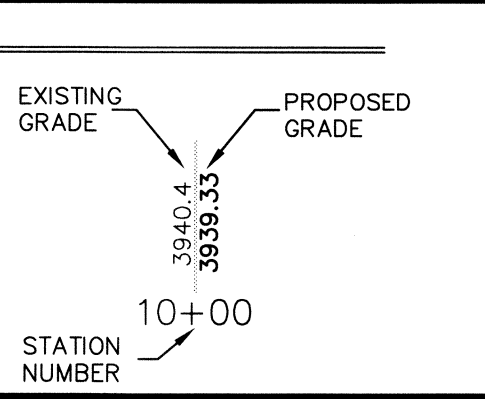
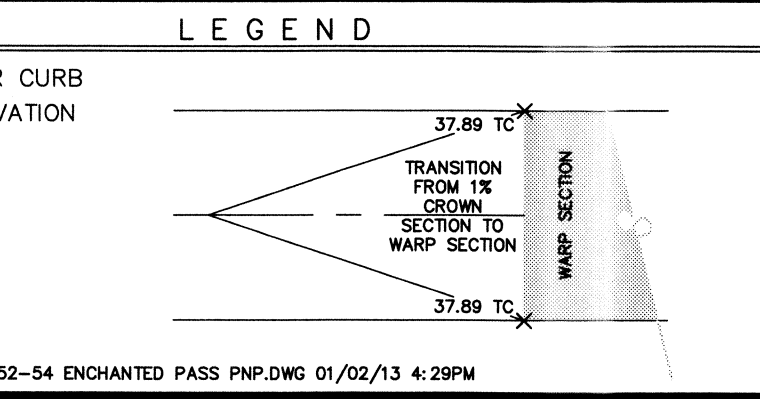


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LEGEND

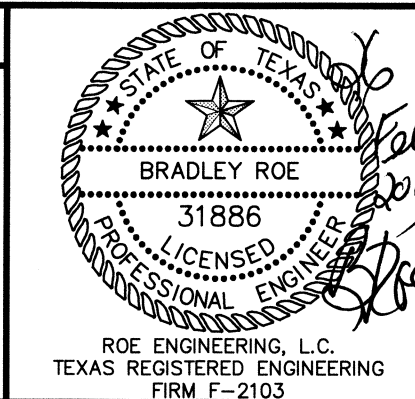
× 44.51 TRC	PROPOSED TOP OF 4" ROLLOVER CURB
× 44.27 FG	PROPOSED FINISHED GRADE ELEVATION
× 45.00 PV	PROPOSED TOP OF PAVEMENT
× 44.51 TC	PROPOSED TOP OF 6" CURB
←	PROPOSED DRAINAGE FLOW
---	PROPOSED STREET CENTERLINE
- - -	SUBDIVISION BOUNDARY LINE
○	PROPOSED CITY MONUMENT



DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF		
9/20/12	CITY COMMENTS	STAFF		

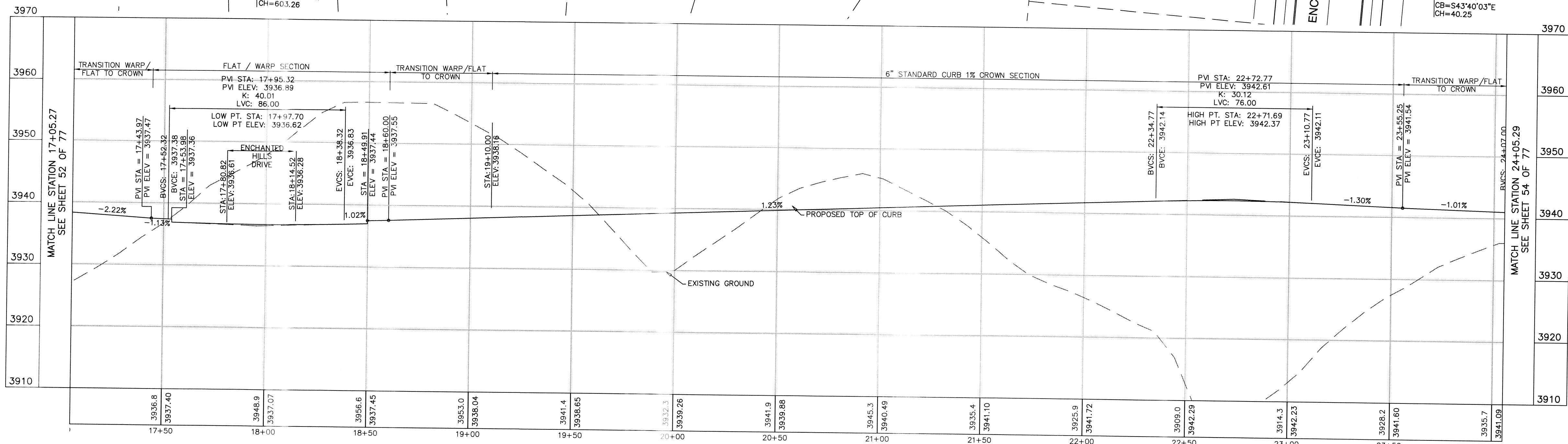
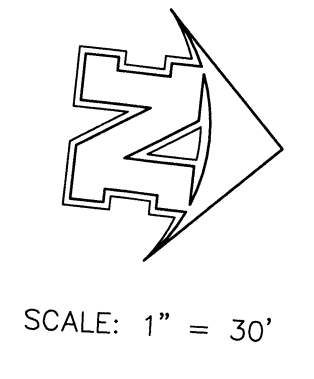
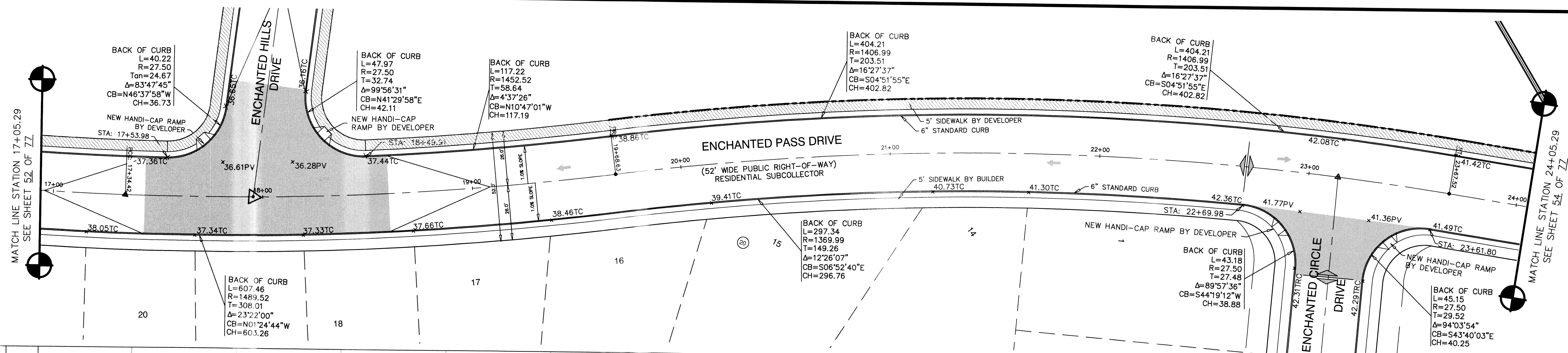
SECONDARY BENCHMARK  
EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUELO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUELO HEIGHTS UNIT ONE. ELEVATION: 3857.21  
N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM

HOR: \_\_\_\_\_ VER: \_\_\_\_\_  
FILE NAME: \_\_\_\_\_  
W.O. 011509-1 A EH-3  
DATE: NOVEMBER, 2011  
DESIGN BY: STAFF  
DRAWN BY: I.D.R.  
CHKD. BY: H.P.  
APPD. BY: BR

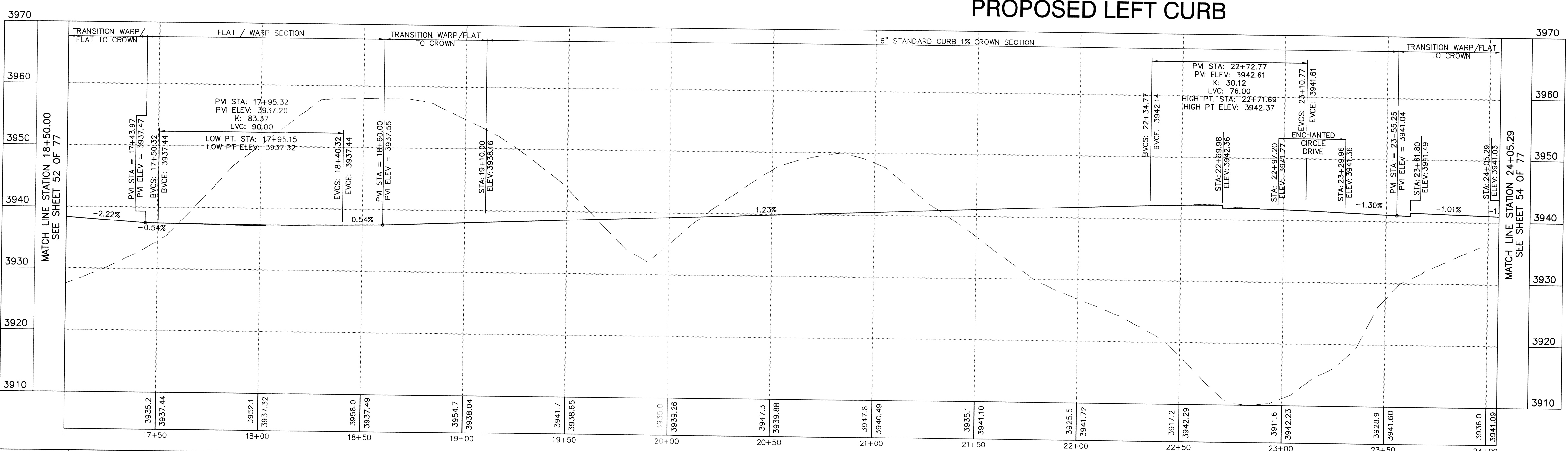


PLAN AND PROFILE  
**ENCHANTED HILLS UNIT THREE**  
ENCHANTED PASS DRIVE  
STATION 10+92.29 TO 17+05.27

**REVIEWED**  
Roe Engineering, L.C.  
601 N. Cotton St. Suite No. 8 El Paso, Tx. 79902  
(915) 533-1418 - FAX: (915) 533-4972  
e-mail: roeeng@swbell.net  
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING  
SHEET 52 OF 77



NOTE:  
 1. ALL HANDICAP RAMP WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 52 OF 77.  
 2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 54 OF 77.

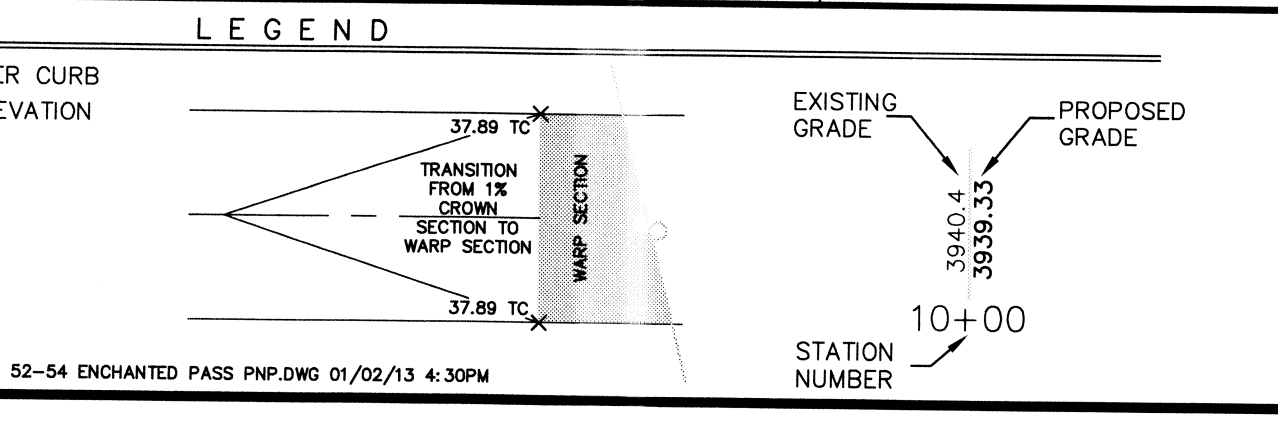


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**FLOOD NOTE:**  
 THE ABOVE REFERENCED SUBDIVISION IS WITHIN ZONES "A" and "C" (EXPLANATION ZONE "A": AREAS OF 100-YEAR FLOOD; BASE FLOOD ELEVATIONS AND FLOOD HAZARDS NOT DETERMINED, WHICH DOES NOT INCLUDE ANY RESIDENTIAL LOTS) (EXPLANATION ZONE "C": AREA OF MINIMAL FLOODING) ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS AS PER AREA COMMUNITY PANEL NO. 480214.0011 C, DATED FEBRUARY 5, 1998.

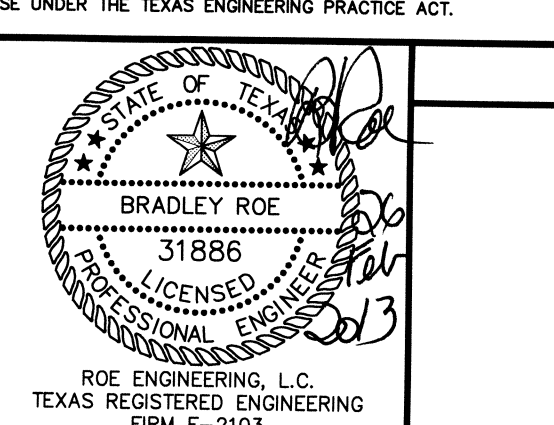
**LEGEND**

- × 44.51 TRC PROPOSED TOP OF 4" ROLLOVER CURB
- × 44.27 FG PROPOSED FINISHED GRADE ELEVATION
- × 45.00 PV PROPOSED TOP OF PAVEMENT
- × 44.51 TC PROPOSED TOP OF 6" CURB
- PROPOSED DRAINAGE FLOW
- PROPOSED STREET CENTERLINE
- SUBDIVISION BOUNDARY LINE
- PROPOSED CITY MONUMENT



DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	31886	
9/20/12	CITY COMMENTS	STAFF		

**SECONDARY BENCHMARK**  
 EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANFIELD HEIGHTS UNIT TWO AND LOT 11, BLOCK 1, CANFIELD HEIGHTS UNIT ONE. ELEVATION: 3857.21  
 N.A.V.D.88 DATUM -10.18 = CITY OF EL PASO DATUM

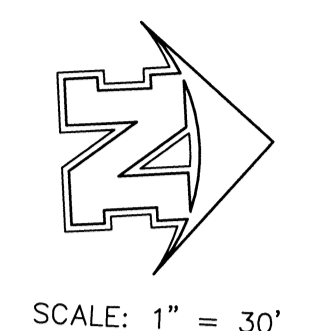
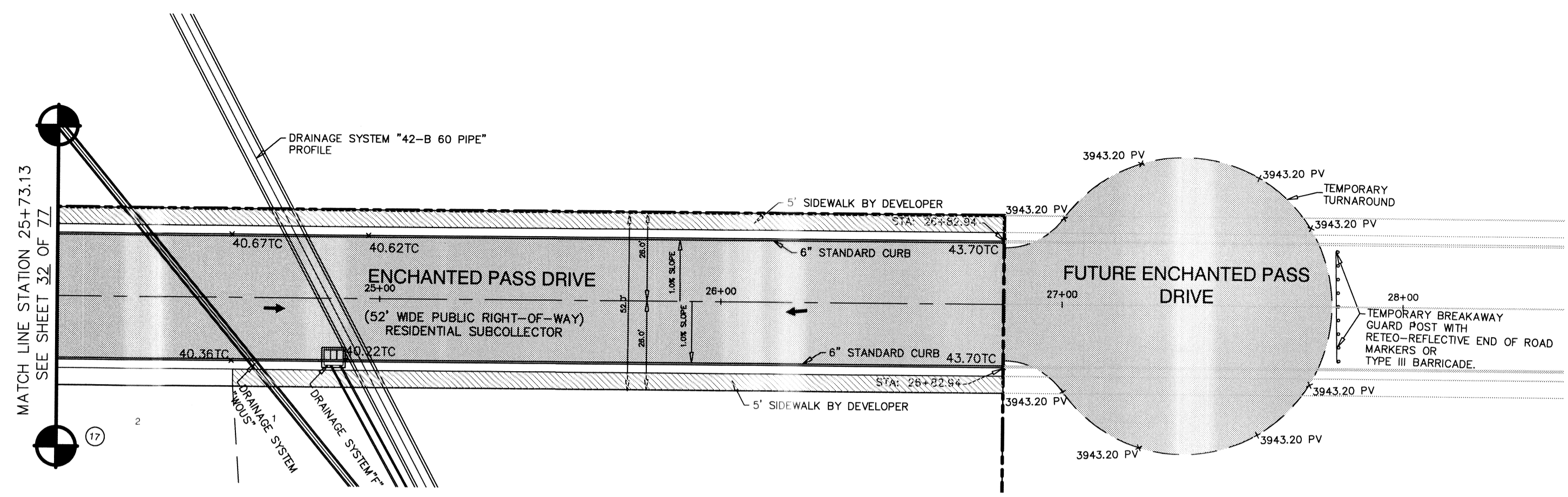


**PLAN AND PROFILE**  
**ENCHANTED HILLS UNIT THREE**  
 ENCHANTED PASS DRIVE  
 STATION 18+50.00 TO 25+73.13

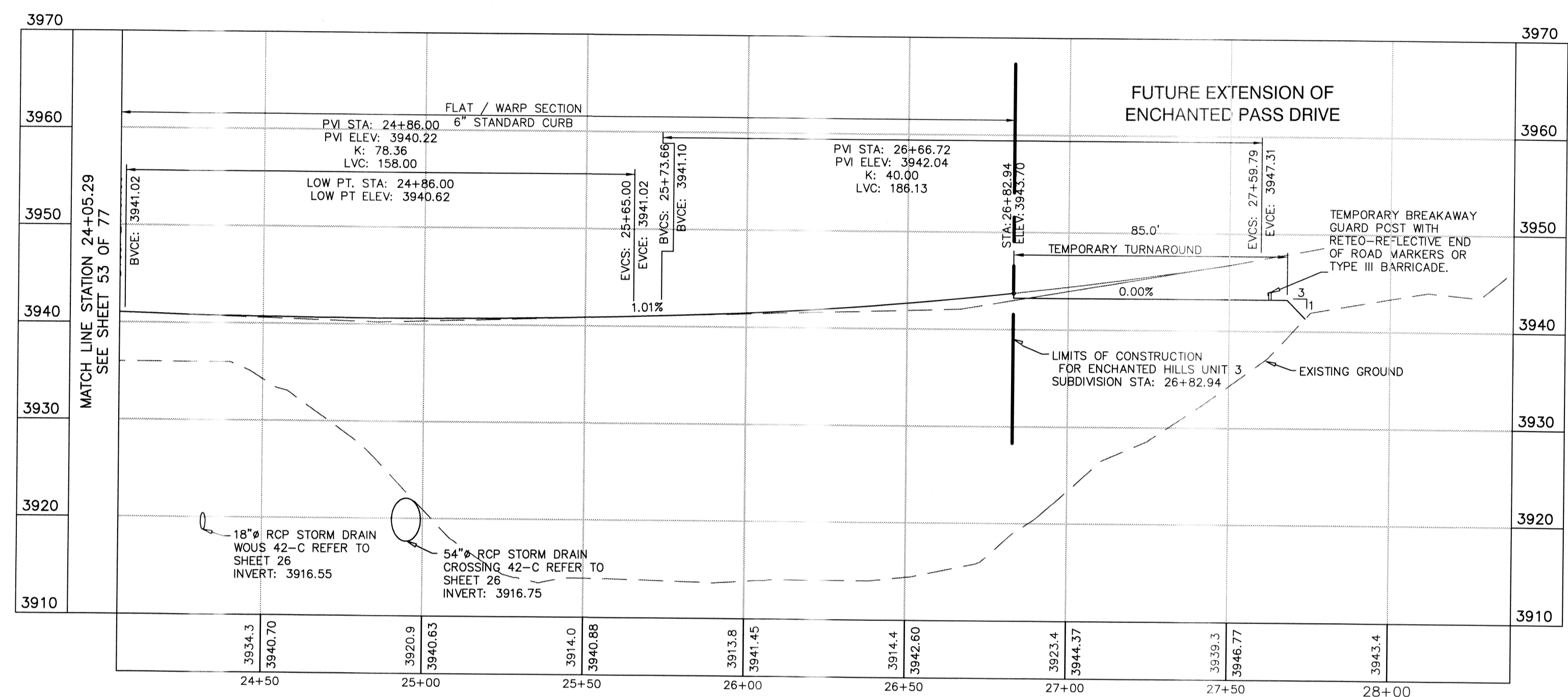


**REVIEWED**

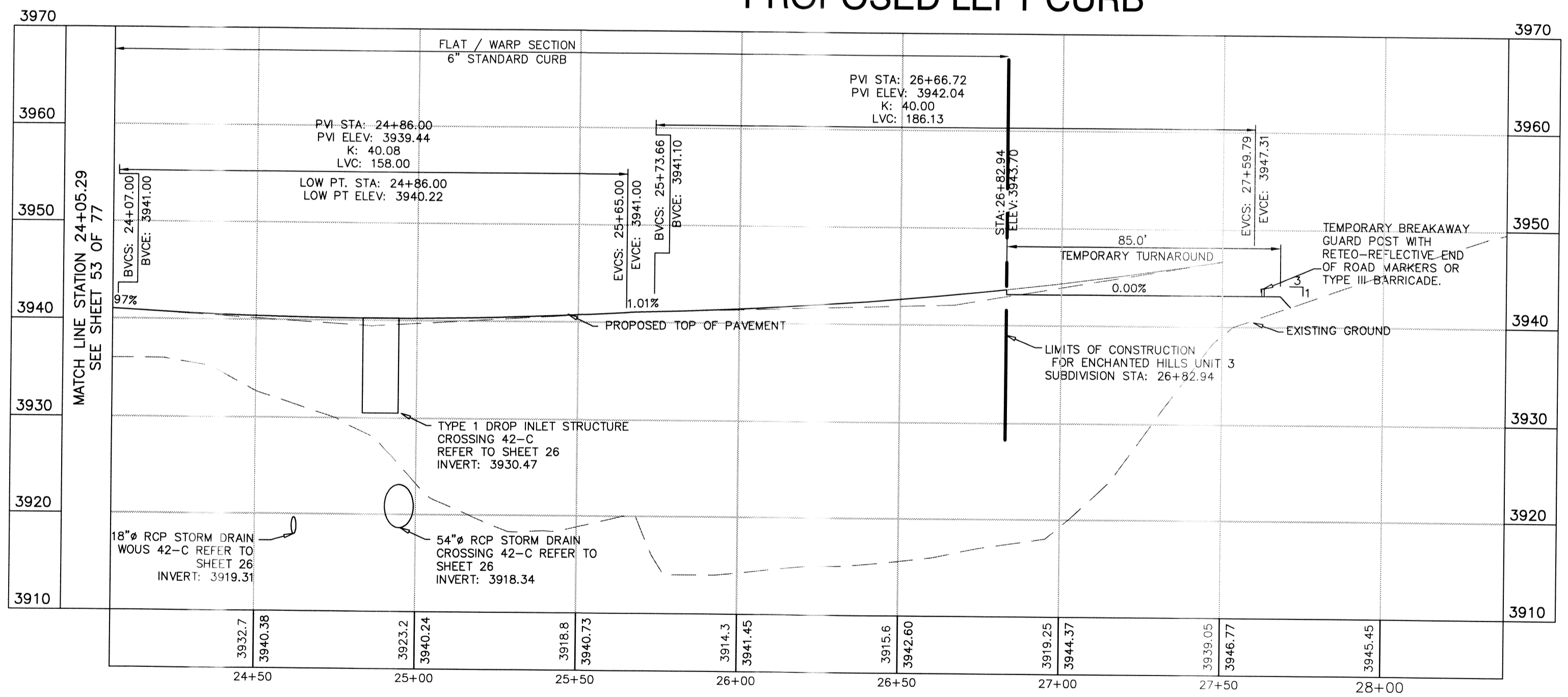
**brp** Roe Engineering, L.C.  
 601 N. Cotton St. Suite No.6 El Paso, TX, 79902  
 (915) 533-1418 - FAX: (915) 533-4972  
 e-mail: roeeng@brp.net  
 ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING  
 SHEET 53 OF 77



SCALE: 1" = 30'



PROPOSED LEFT CURB



PROPOSED RIGHT CURB

**NOTE:**  
 1. ALL HANDICAP RAMPS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 08 OF 22.  
 2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 09 OF 22.

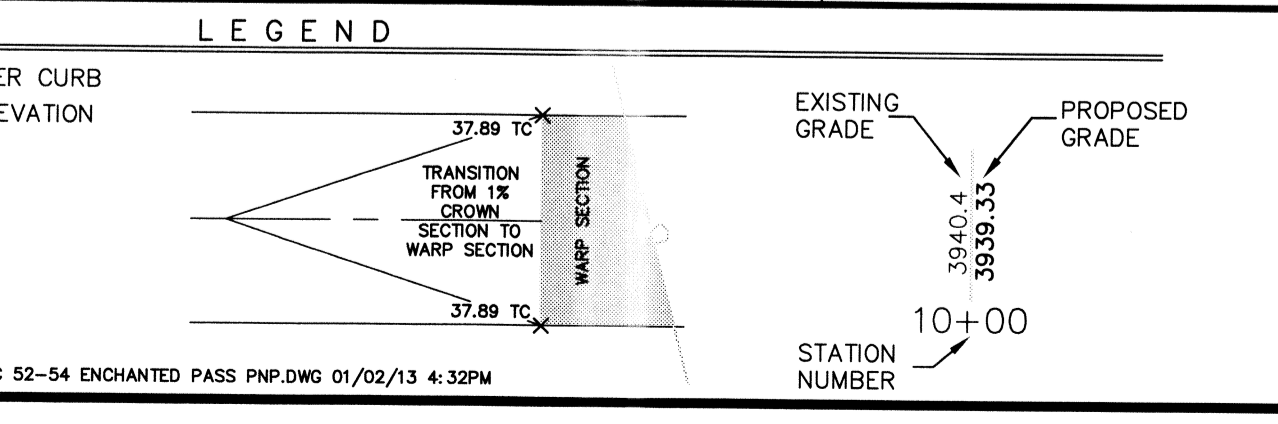


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**FLOOD NOTE:**  
 THE ABOVE REFERENCED SUBDIVISION IS WITHIN ZONES "A" and "C" (EXPLANATION ZONE "A": AREAS OF 100-YEAR FLOOD; BASE FLOOD ELEVATIONS AND FLOOD HAZARDS NOT DETERMINED. (WHICH DOES NOT INCLUDE ANY RESIDENTIAL LOTS) (EXPLANATION ZONE "C": AREA OF MINIMAL FLOODING), ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER AREA COMMUNITY PANEL NO. 480214 001 C, DATED FEBRUARY 5, 1986.

**LEGEND**

- × 44.51 TRC PROPOSED TOP OF 4" ROLLOVER CURB
- × 44.27 FG PROPOSED FINISHED GRADE ELEVATION
- × 45.00 PV PROPOSED TOP OF PAVEMENT
- × 44.51 TC PROPOSED TOP OF 6" CURB
- PROPOSED DRAINAGE FLOW
- PROPOSED STREET CENTERLINE
- SUBDIVISION BOUNDARY LINE
- △ PROPOSED CITY MONUMENT



DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	MISS MONUMENT CHINA 1880 (TMS 260444) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981; LOCATED ABOUT 1.25 MILES EAST OF THE RED GRASS (1.1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3945.11 NAVD 88	HOR: _____ VER: _____ FILE NAME: _____ W.O. 011509-1 A EH-3 DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: T.D.R. CHKD. BY: H.P. APPD. BY: BR
9/20/12	CITY COMMENTS	STAFF		
			<b>SECONDARY BENCHMARK</b> EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHIS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21 N.A.V.D.88 DATUM -10.18 = CITY OF EL PASO DATUM	

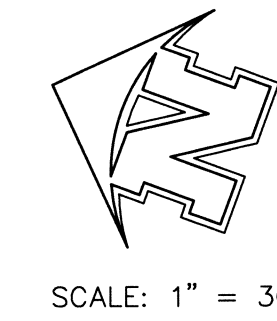
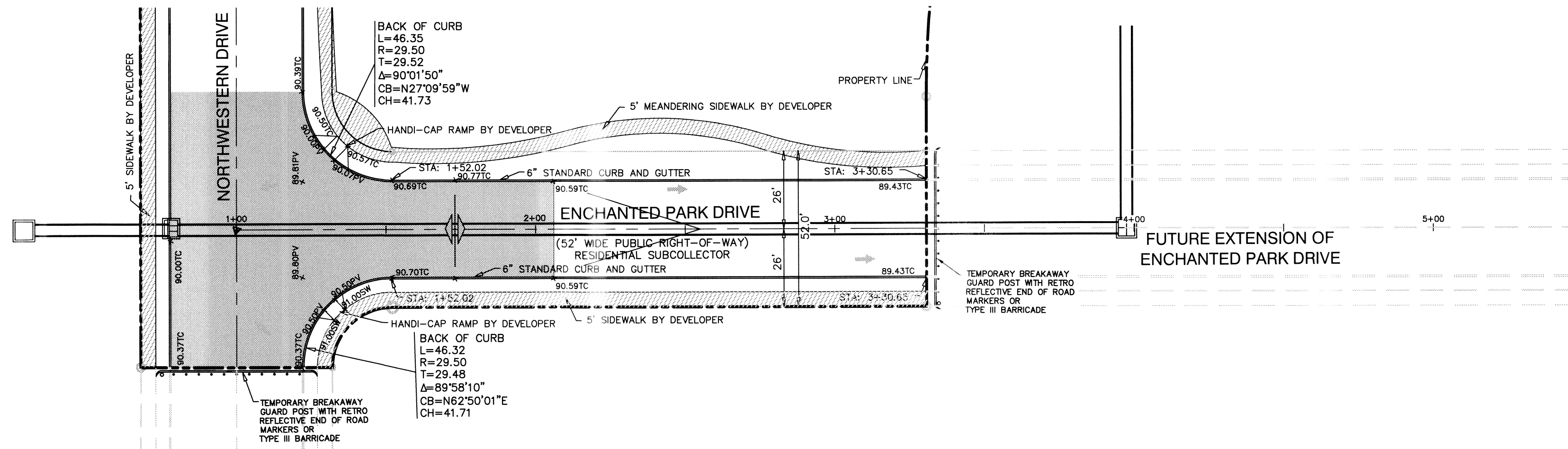
THIS SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY BRADLEY ROE, P.E. 31886 ON SEPTEMBER, 2012 ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

**PLAN AND PROFILE**  
**ENCHANTED HILLS UNIT THREE**  
 ENCHANTED PASS DRIVE  
 STATION 24+05.29 TO 26+82.94

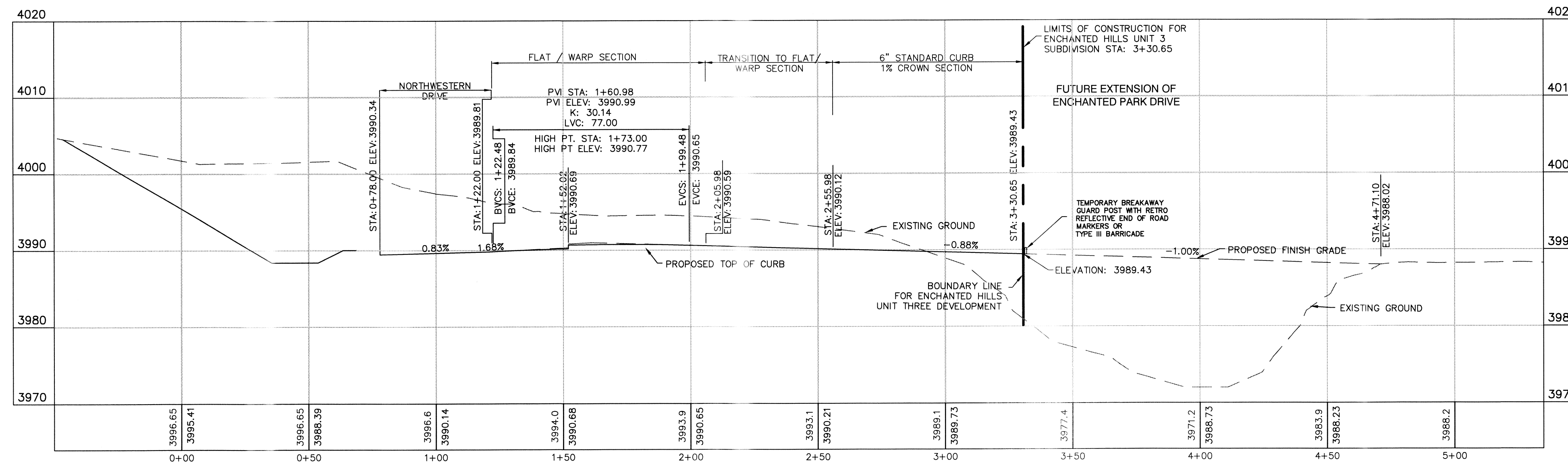


REVIEWED

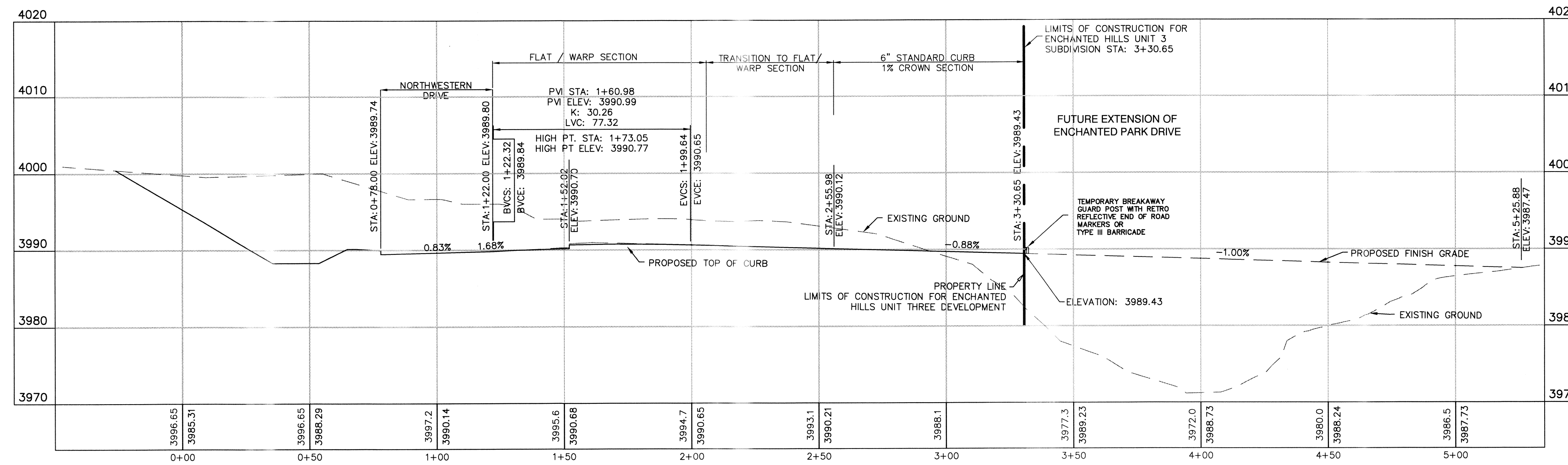
**brn** Roe Engineering, L.C.  
 601 N. Cotton St. Suite No. 6 El Paso, TX, 79902  
 (915) 633-1418 - FAX: (915) 633-4972  
 e-mail: roeeng@vnet.net  
 ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING  
 SHEET 54 OF 77



SCALE: 1" = 30'



**NOTE:**  
 1. ALL HANDICAP RAMPS WITH SUBVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAIL B SHEET 82 OF 77.  
 2. ALL SIDEWALKS WITH SUBVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAIL B SHEET 82 OF 77.



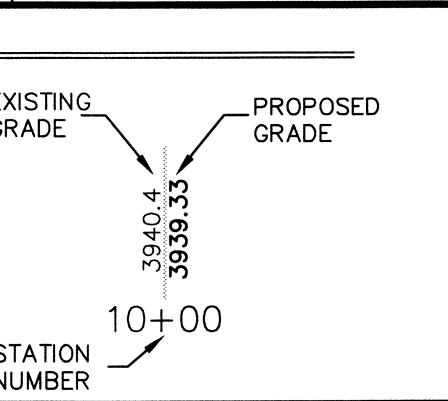
**ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT**

**REVIEWED**

**FLOOD NOTE:**  
 THE ABOVE REFERENCED SUBDIVISION IS WITHIN ZONES "A" AND "C" (EXPLANATION ZONE "A": AREAS OF 100-YEAR FLOOD; BASE FLOOD ELEVATIONS AND FLOOD HAZARDS NOT DETERMINED, WHICH DOES NOT INCLUDE ANY RESIDENTIAL LOTS) (EXPLANATION ZONE "C": AREA OF MINIMAL FLOODING) ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER AREA COMMUNITY PANEL NO. 480214 0011 C, DATED FEBRUARY 5, 1986.

**LEGEND**

- 44.51 TRC PROPOSED TOP OF 4" ROLLOVER CURB
- 44.27 FG PROPOSED FINISHED GRADE ELEVATION
- 45.00 PV PROPOSED TOP OF PAVEMENT
- 44.51 TC PROPOSED TOP OF 6" CURB
- PROPOSED DRAINAGE FLOW
- PROPOSED STREET CENTERLINE
- SUBDIVISION BOUNDARY LINE
- PROPOSED CITY MONUMENT



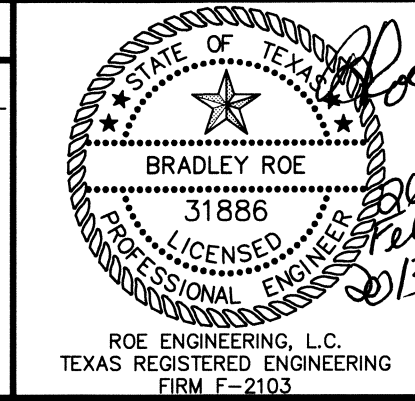
DATE	REVISIONS	BY
9/4/12	CITY COMMENTS	STAFF
9/20/12	CITY COMMENTS	STAFF

**PRIMARY BENCHMARK**  
 THIS MONUMENT (TOWN 1288° 100' 320474) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED ABOUT 1.55 MILES EAST OF THE RED GRADER, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3945.11 NAVD 88

**SECONDARY BENCHMARK**  
 EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21

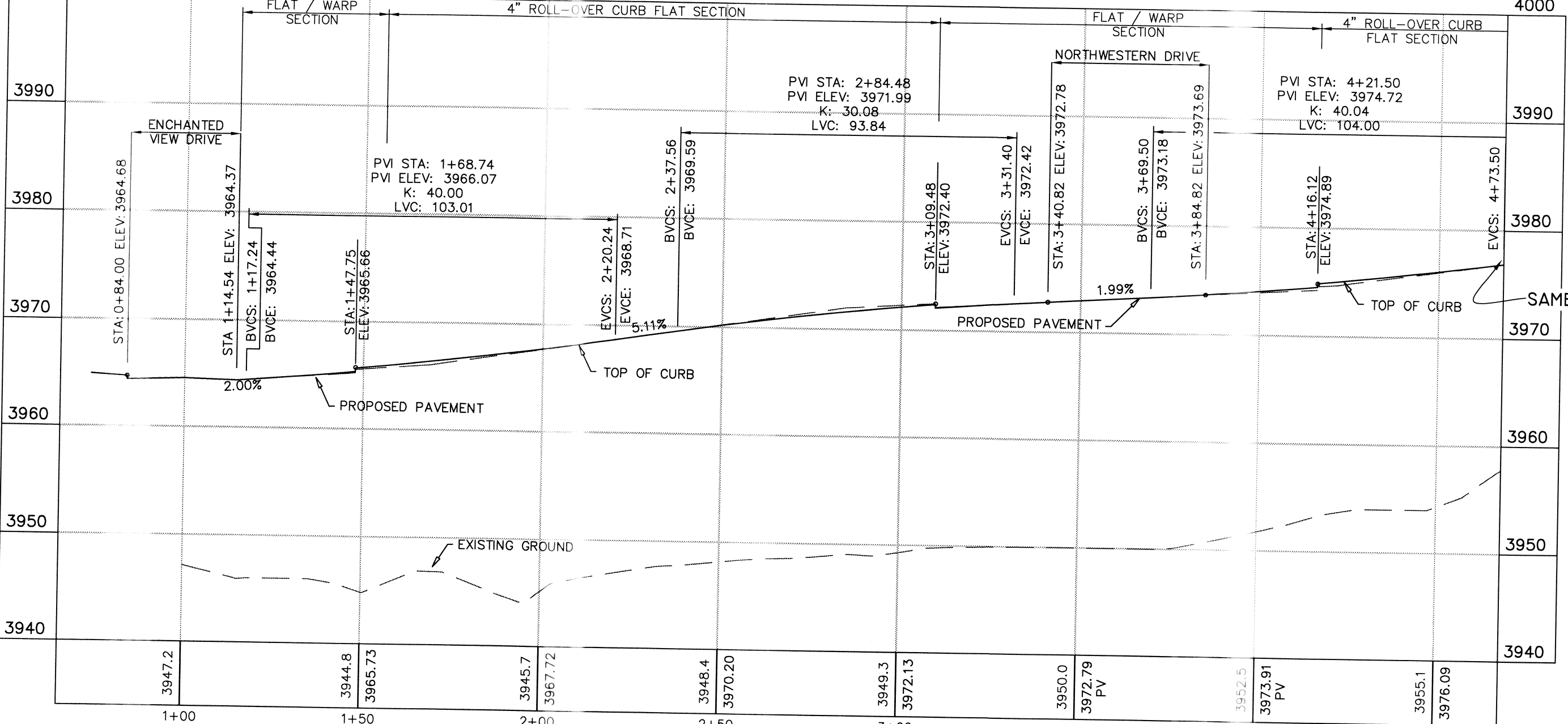
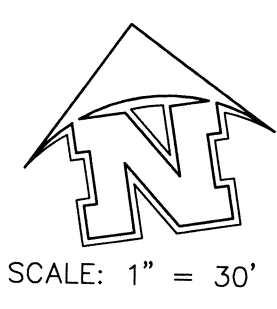
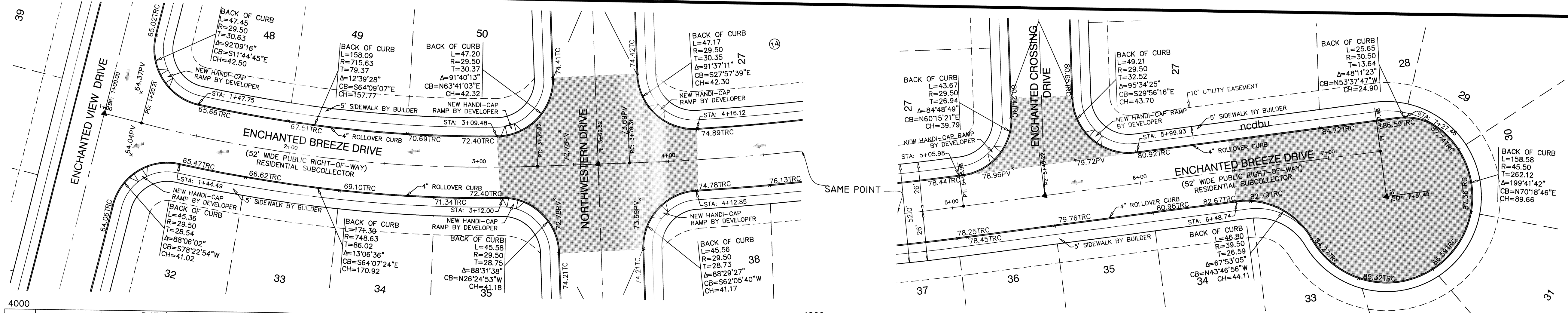
N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM

**SCALE**  
 HOR: \_\_\_\_\_ VER: \_\_\_\_\_  
 FILE NAME: \_\_\_\_\_  
 W.O. 011509-1 A EH-3  
 DATE: NOVEMBER, 2011  
 DESIGN BY: STAFF  
 DRAWN BY: I.D.R.  
 CHKD. BY: H.P.  
 APPD. BY: BR

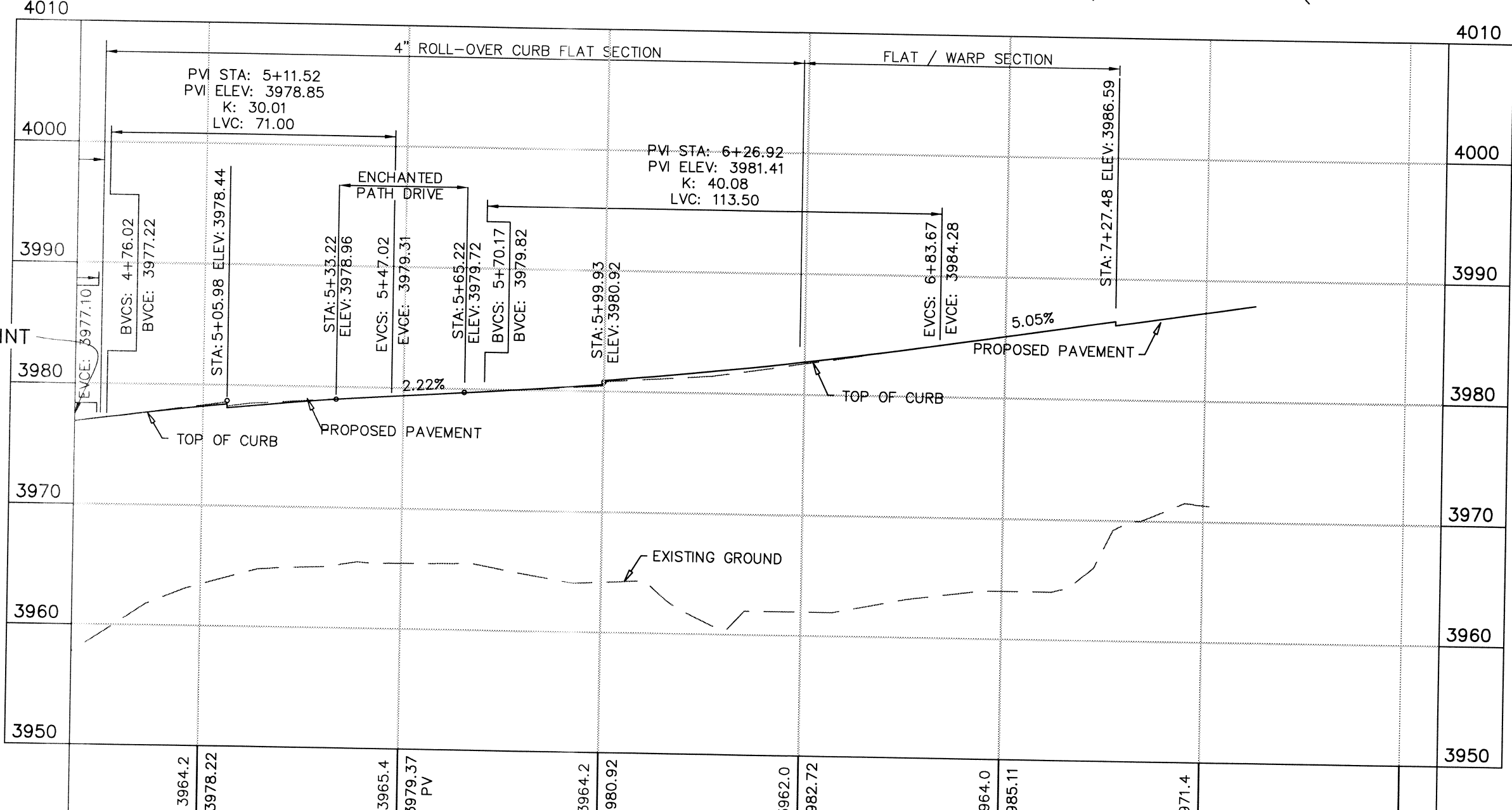


**PLAN AND PROFILE**  
**ENCHANTED HILLS UNIT THREE**  
 ENCHANTED PARK DRIVE  
 STATION 1+00.00 TO 3+30.65

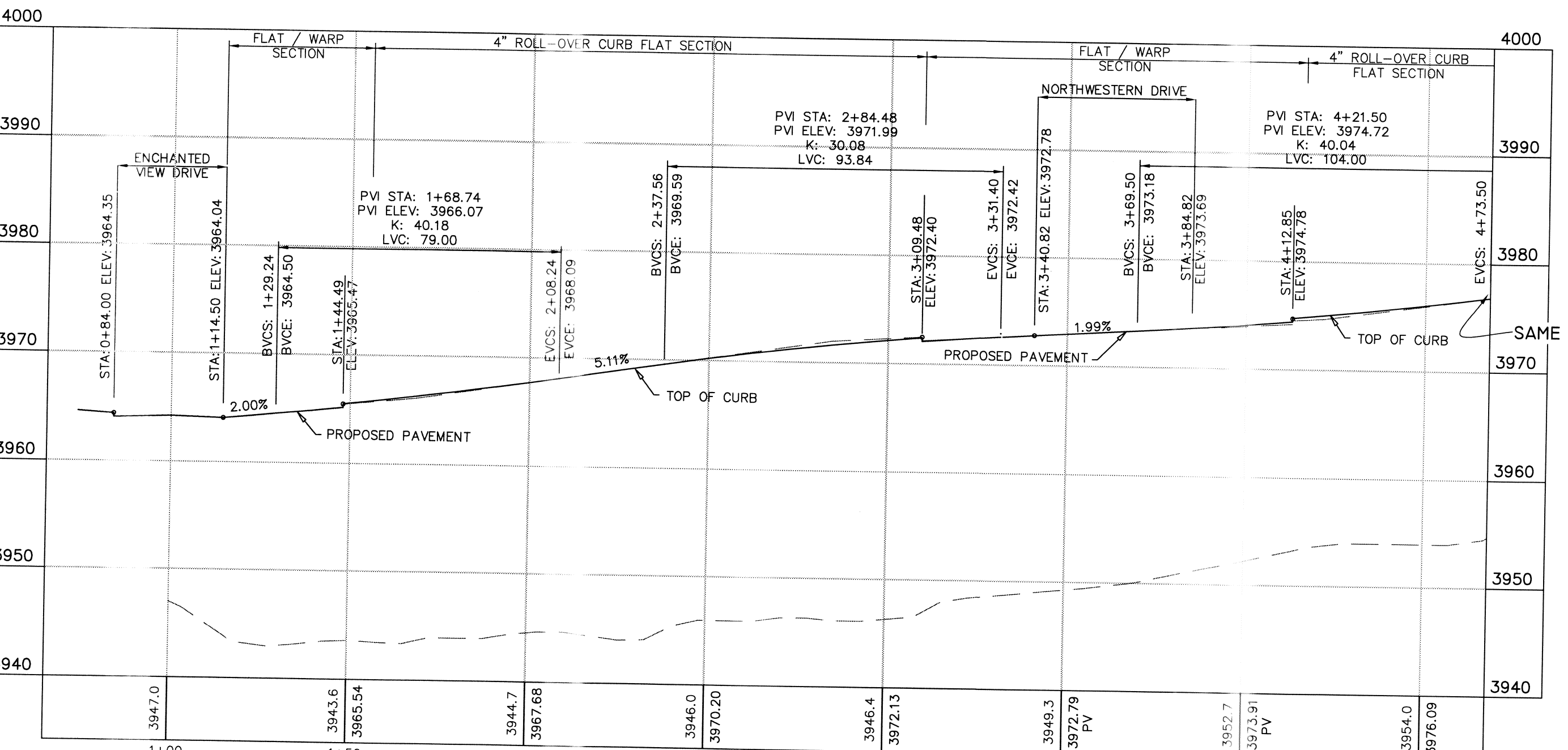
**Roe Engineering, L.C.**  
 601 N. Cotton St. Suite No. 6 El Paso, Tx. 79902  
 (915) 533-1418 - FAX (915) 533-4972  
 e-mail: roeeng@bellsouth.net  
 ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING  
 SHEET 55 OF 77



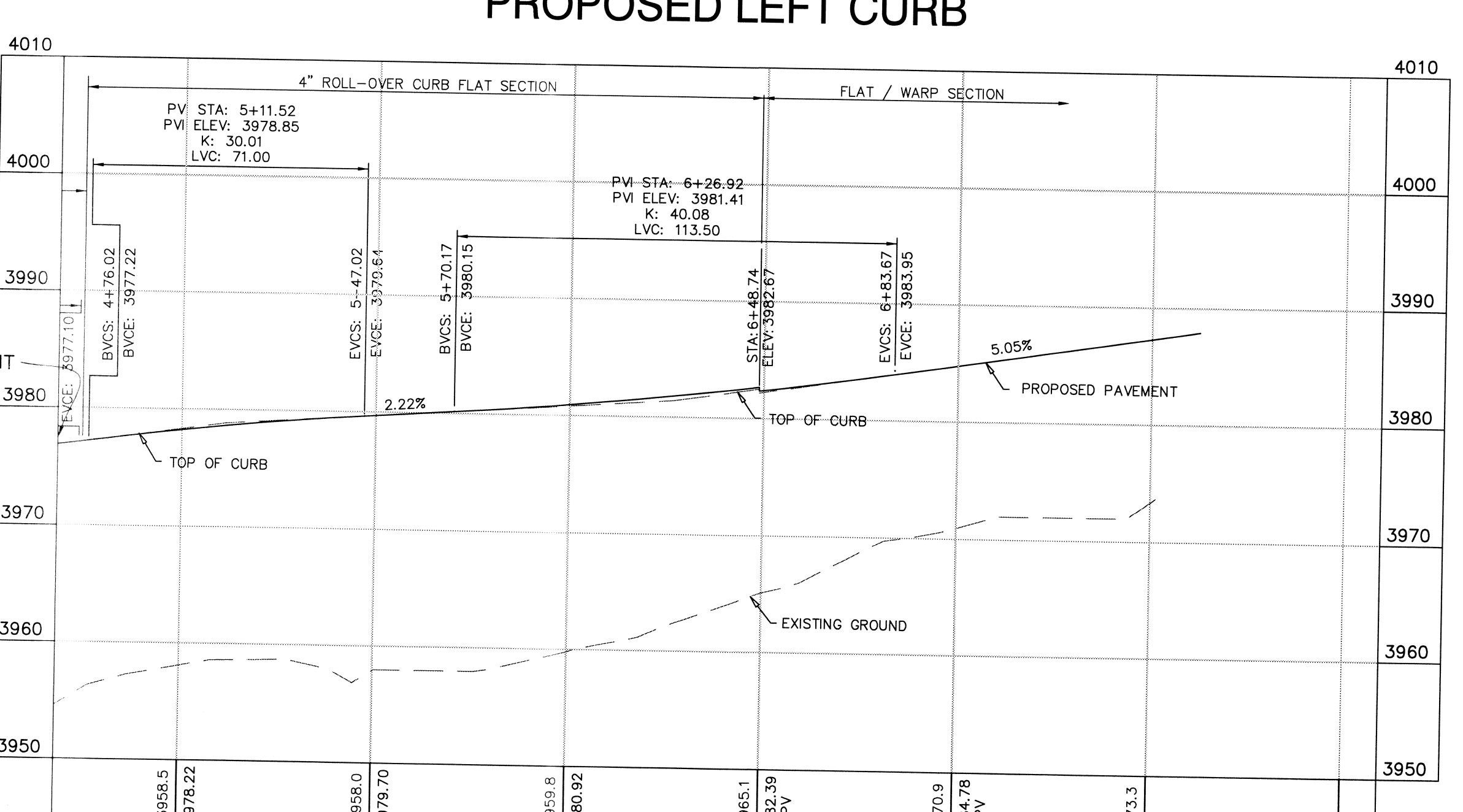
PROPOSED LEFT CURB



PROPOSED LEFT CURB



PROPOSED RIGHT CURB



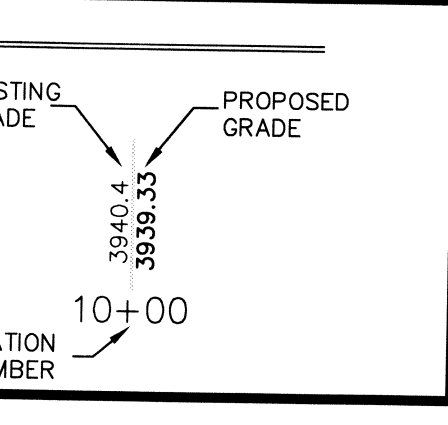
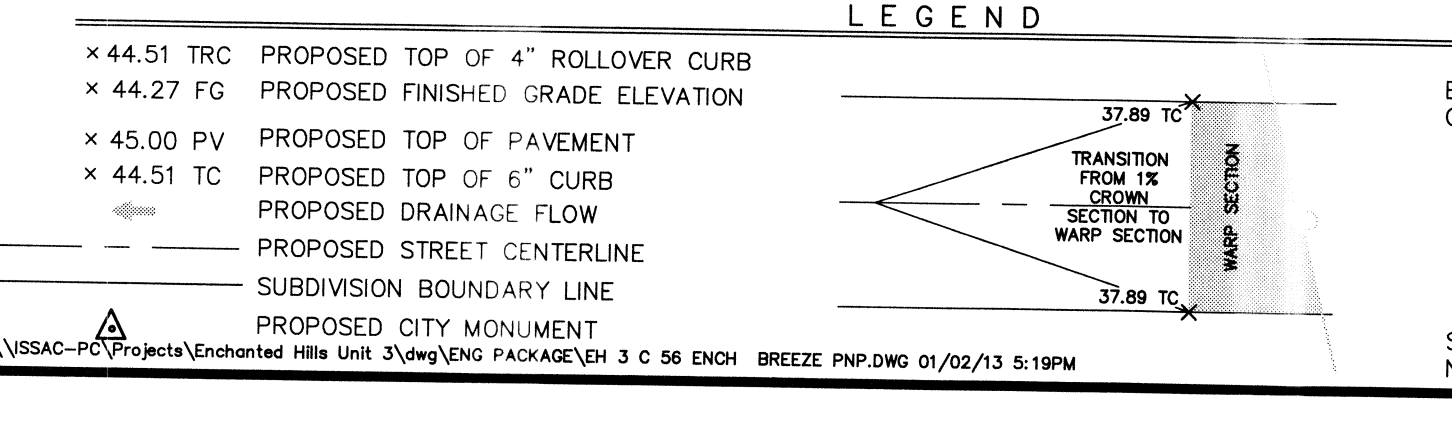
PROPOSED RIGHT CURB

NOTE:  
1. ALL HANDICAP RAMPS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 88 OF 77.  
2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 89 OF 77.



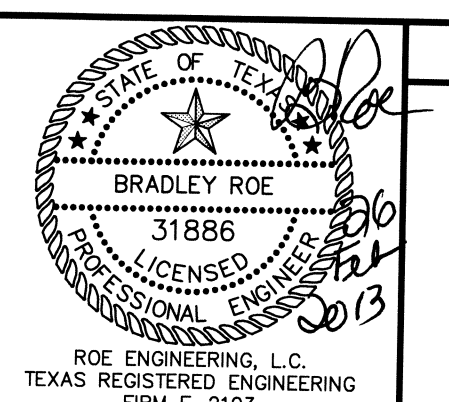
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FLOOD NOTE:  
THE ABOVE REFERENCED SUBDIVISION IS WITHIN ZONES "A" and "C" (EXPLANATION: ZONE "A" AREAS OF 100-YEAR FLOOD; BASE FLOOD ELEVATIONS AND FLOOD HAZARDS NOT DETERMINED, WHICH DOES NOT INCLUDE ANY RESIDENTIAL LOTS) (EXPLANATION: ZONE "C" AREAS OF MINIMAL FLOODING) ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER AREA COMMUNITY PANEL NO. 480214 0011 C, DATED FEBRUARY 5, 1986.



DATE	REVISIONS	BY
9/4/12	CITY COMMENTS	STAFF
9/20/12	CITY COMMENTS	STAFF

PRIMARY BENCHMARK	SCALE
N/S MONUMENT CORNER 1889 THE BERRY LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED ABOUT 1.25 MILES EAST OF THE OLD GRANDDIE 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMONTAIN ROAD) AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3966.11 NAVD 88	HOR: 1" = 30' VER: 1" = 10'
SECONDARY BENCHMARK	W.O. 011509-1 A EH-3
EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	DATE: NOVEMBER, 2011
N.A.V.D. 88 DATUM - 10.18 - CITY OF EL PASO DATUM	DESIGN BY: STAFF
	DRAWN BY: I.D.R.
	CHKD. BY: H.P.
	APPD. BY: BR



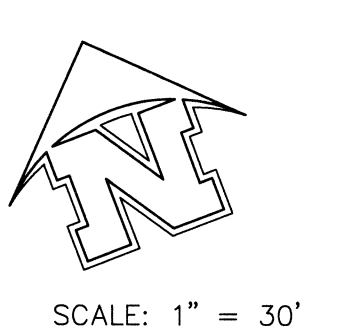
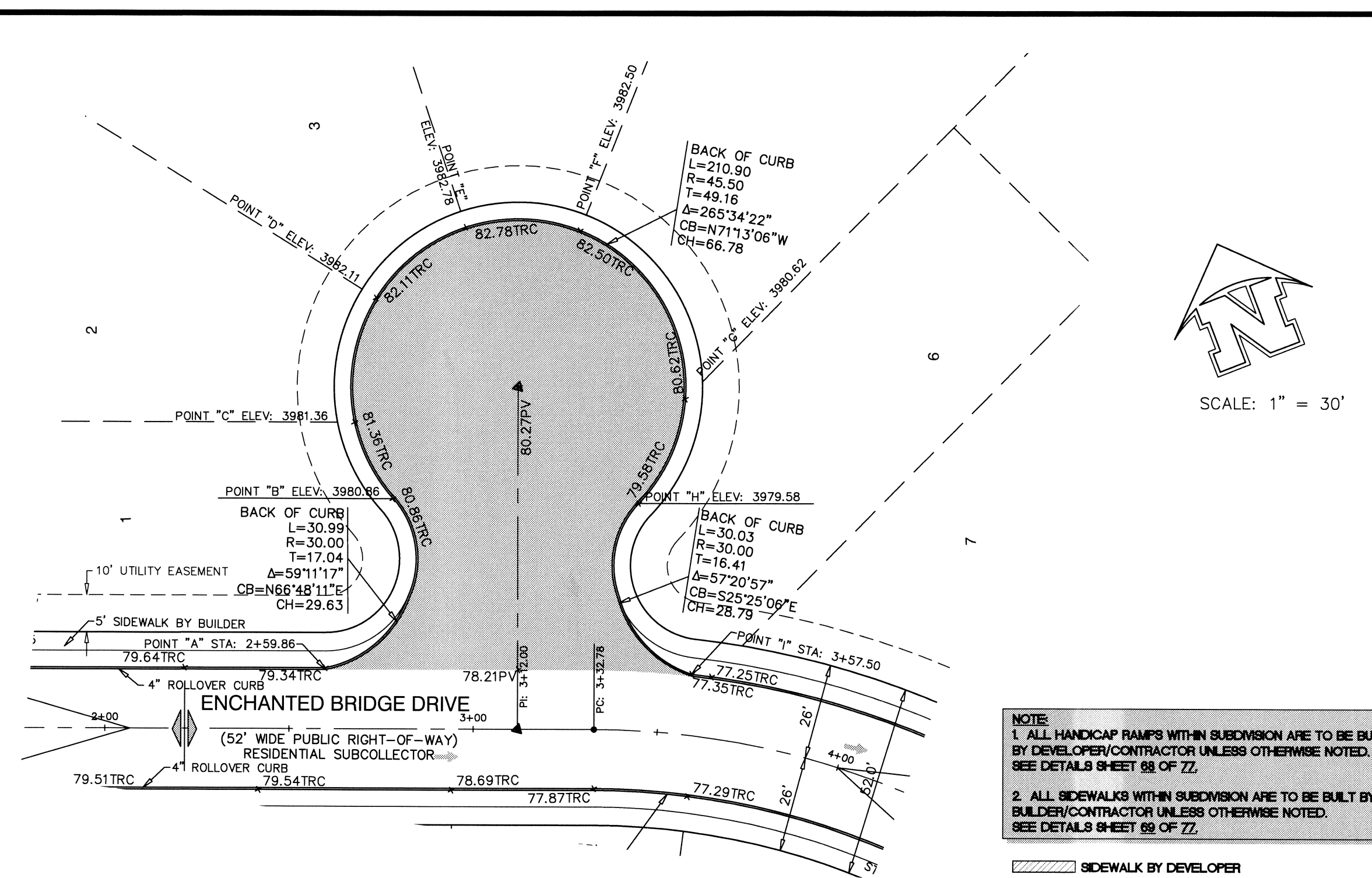
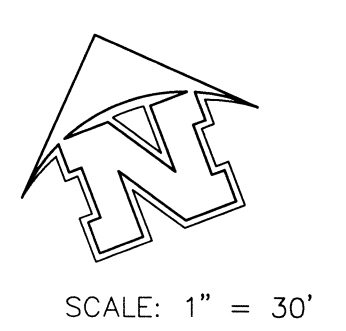
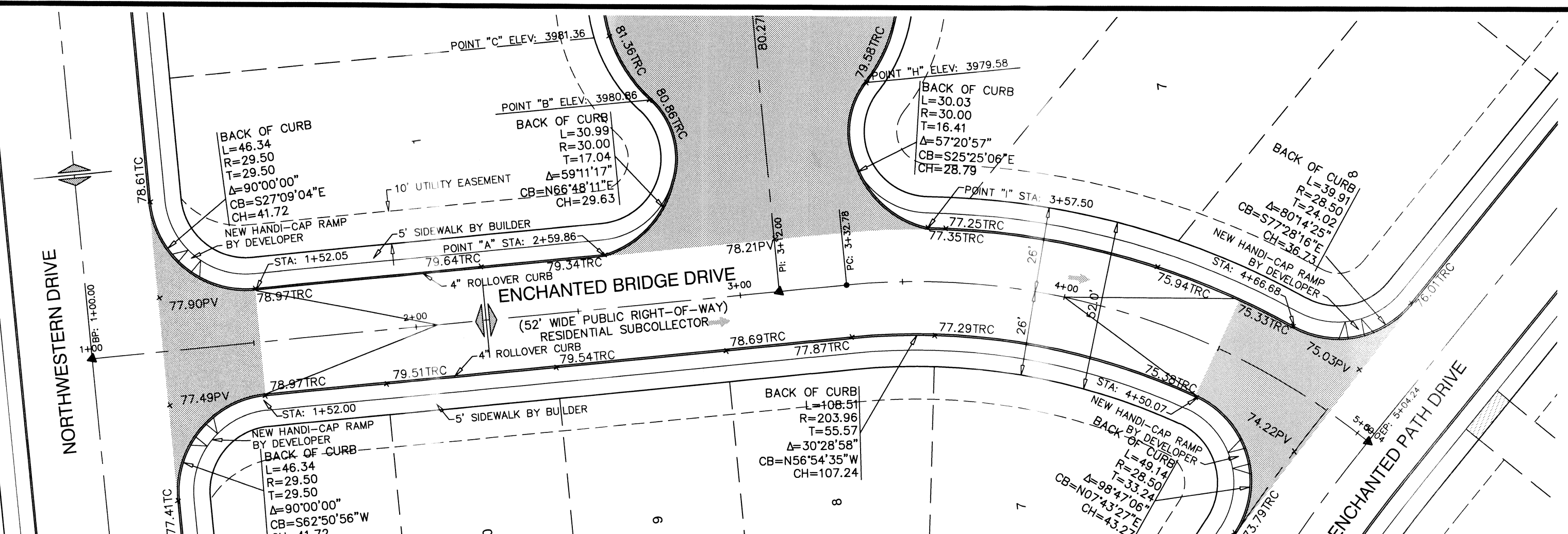
PLAN AND PROFILE  
**ENCHANTED HILLS UNIT THREE**  
ENCHANTED BREEZE DRIVE  
STATION 1+00.00 7+51.48

ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT

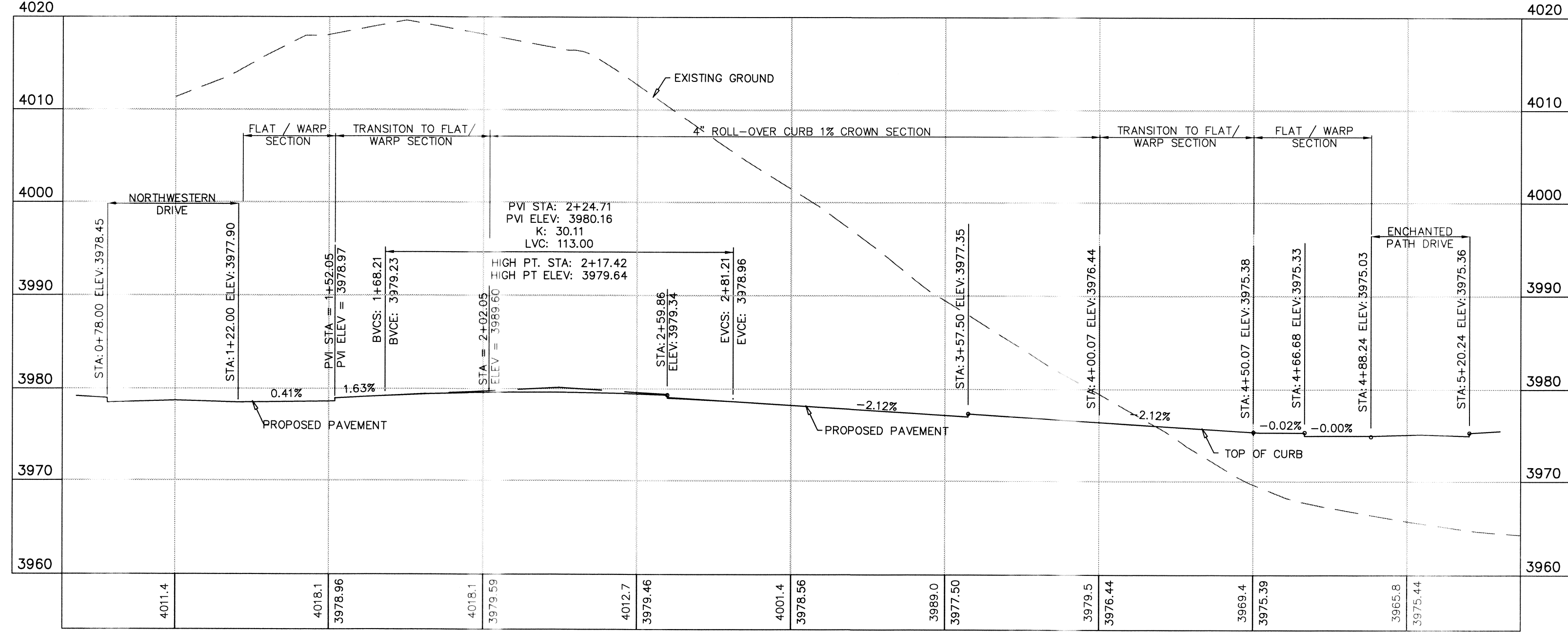
REVIEWED

RoE Engineering, L.C.  
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(915) 533-1418 - FAX: (915) 533-4972  
e-mail: roeeng@bellsouth.net  
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING  
SHEET 56 OF 77

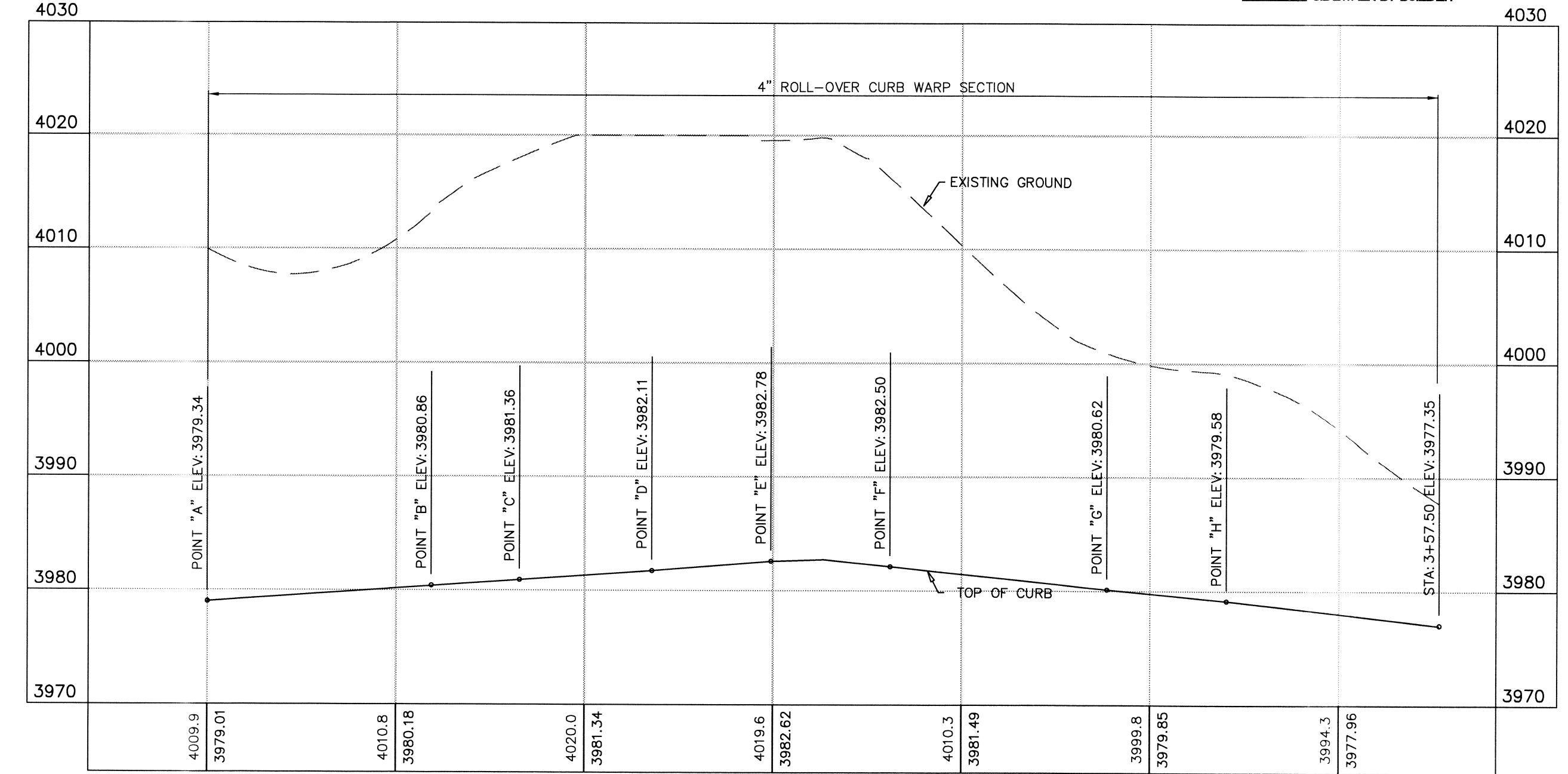




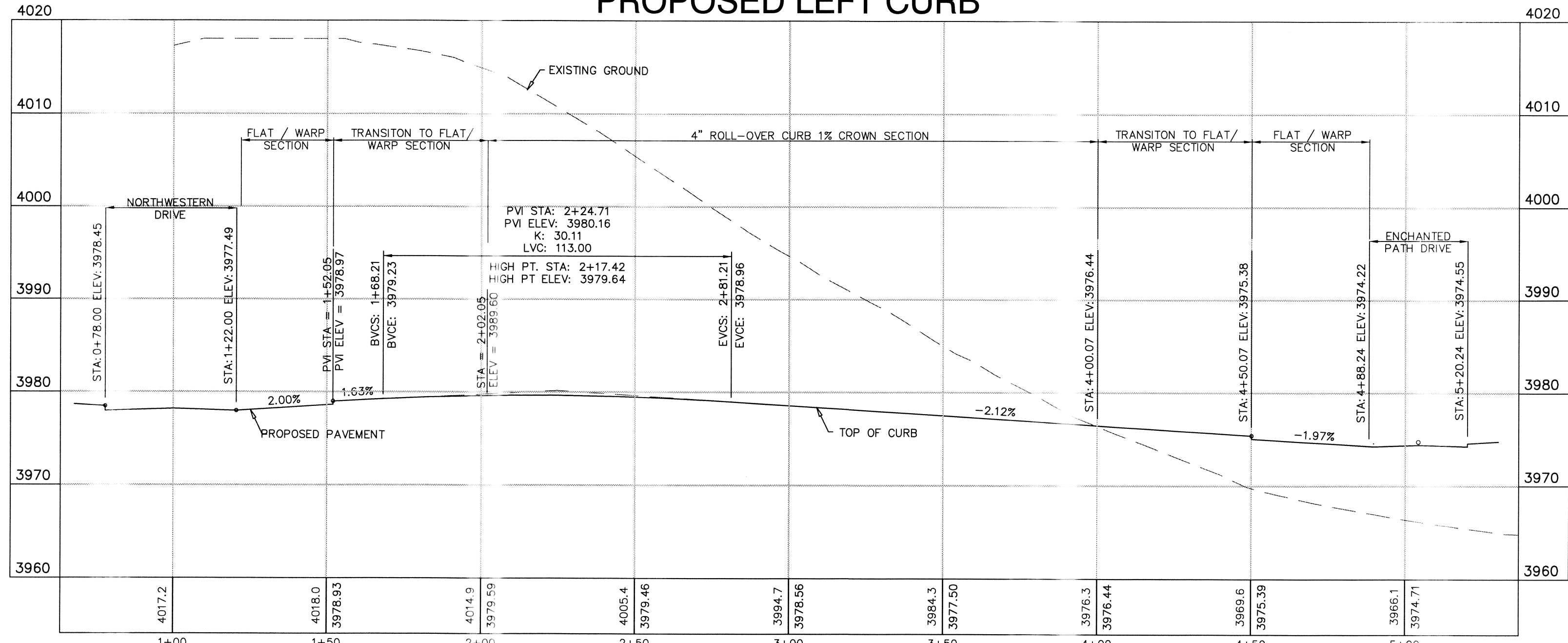
**NOTE:**  
 1. ALL HANDICAP RAMPS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 68 OF 77.  
 2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 69 OF 77.



**PROPOSED LEFT CURB**



**PROPOSED LEFT CURB @ CUL-DE-SAC**



**PROPOSED RIGHT CURB**

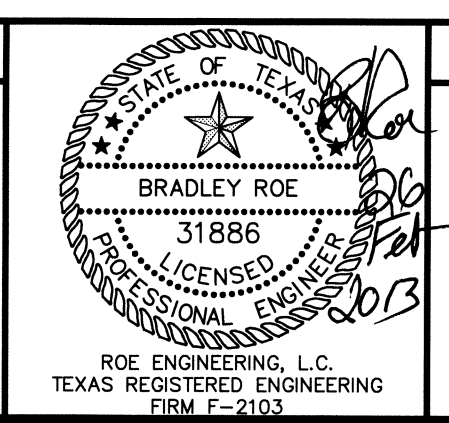
**FLOOD NOTE:**  
 THE ABOVE REFERENCED SUBDIVISION IS WITHIN ZONES "A" and "C" (EXPLANATION ZONE "A": AREAS OF 100-YEAR FLOOD; BASE FLOOD ELEVATIONS AND FLOOD HAZARDS NOT DETERMINED. (WHICH DOES NOT INCLUDE ANY RESIDENTIAL LOTS) (EXPLANATION ZONE "C": AREA OF MINIMAL FLOODING) ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER AREA COMMUNITY PANEL NO. 485214-0011, DATED FEBRUARY 5, 1998.

**LEGEND**

- × 44.51 TRC PROPOSED TOP OF 4" ROLLOVER CURB
- × 44.27 FG PROPOSED FINISHED GRADE ELEVATION
- × 45.00 PV PROPOSED TOP OF PAVEMENT
- × 44.51 TC PROPOSED TOP OF 6" CURB
- PROPOSED DRAINAGE FLOW
- PROPOSED STREET CENTERLINE
- - - SUBDIVISION BOUNDARY LINE
- ▲ PROPOSED CITY MONUMENT

**EXISTING GRADE** (dashed line)  
**PROPOSED GRADE** (solid line)  
 STATION NUMBER (10+00)

DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	NCS MONUMENT (GRIND 1880) (TRC 650424)	HOR: 1" = 30' VER: 1" = 10'
9/20/12	CITY COMMENTS	STAFF	LOCATION AS PER NATIONAL GEODETIC SURVEY 1981; LOCATED ABOUT 1.25 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	FILE NAME: W.O. 011509-1 A EH-3
			EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MICHES DRIVE IN FRONT OF LOT 12, BLOCK 2, CANTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANTILLO HEIGHTS UNIT ONE. ELEVATION: 3887.21	DATE: NOVEMBER, 2011
			N.A.V.D. 88 DATUM -10.16 = CITY OF EL PASO DATUM	DESIGN BY: STAFF
				DRAWN BY: I.D.R.
				CHKD. BY: H.P.
				APPD. BY: BR



**PLAN AND PROFILE**

**ENCHANTED HILLS UNIT THREE**

ENCHANTED BRIDGE DRIVE  
 STATION 1+00.00 5+04.24

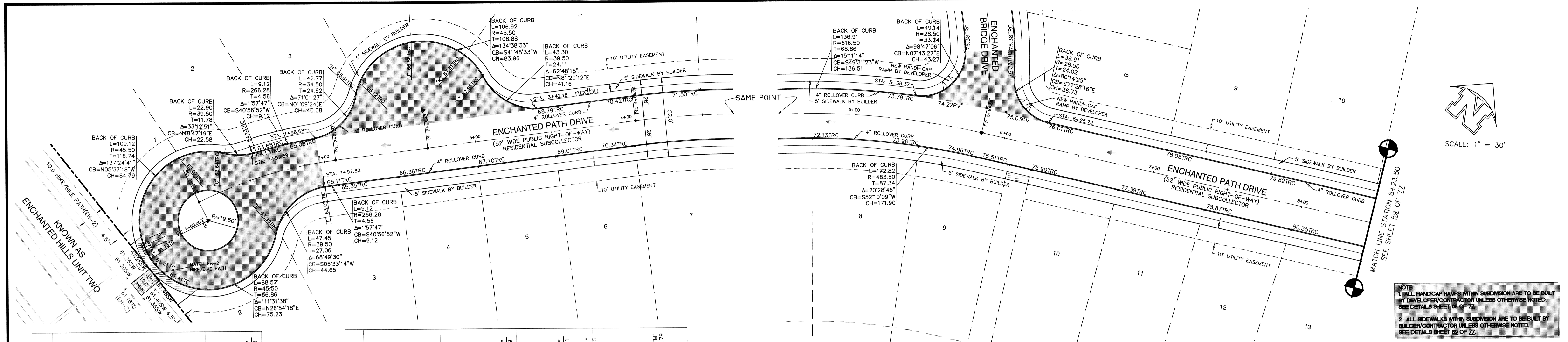
**ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT**

**REVIEWED**

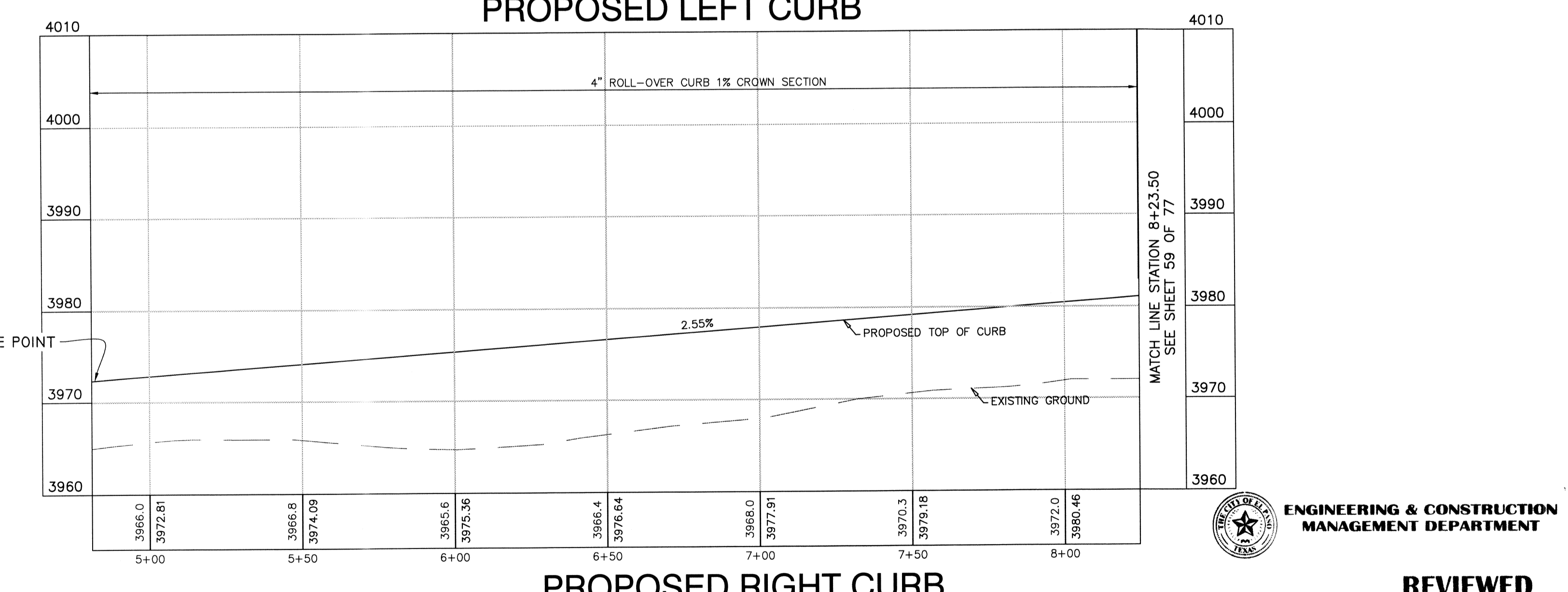
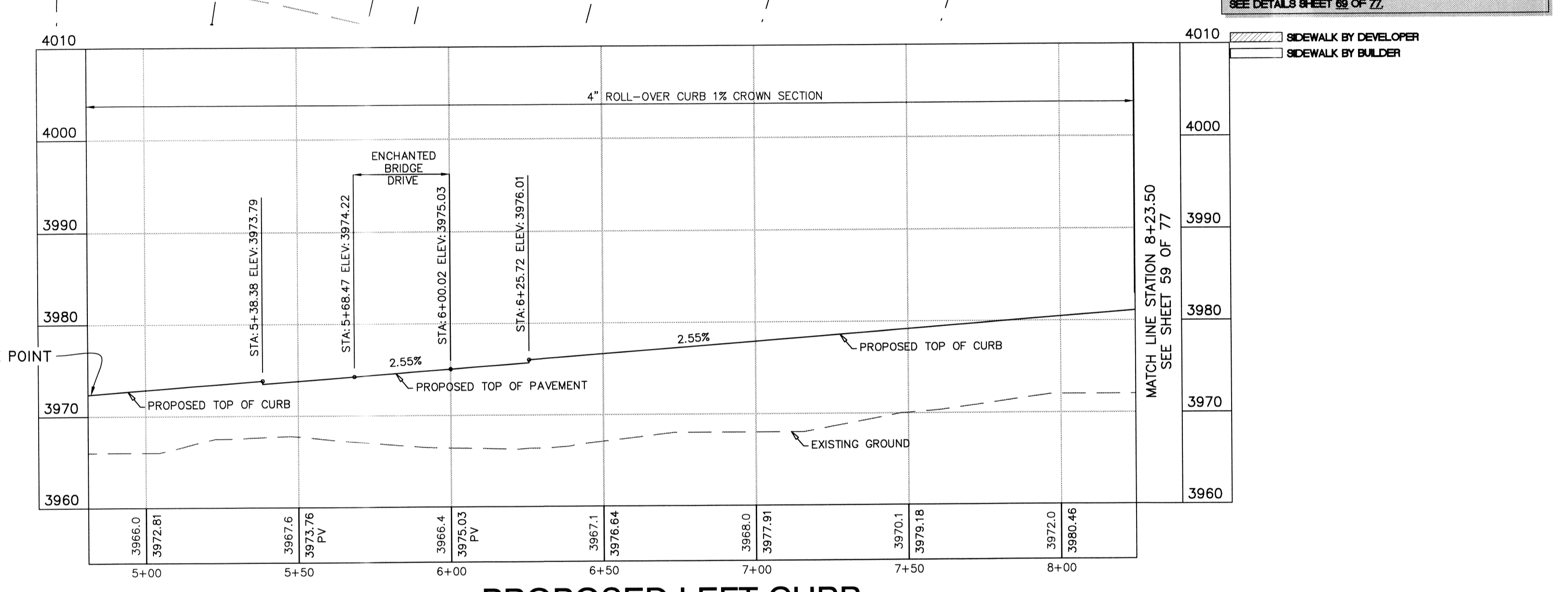
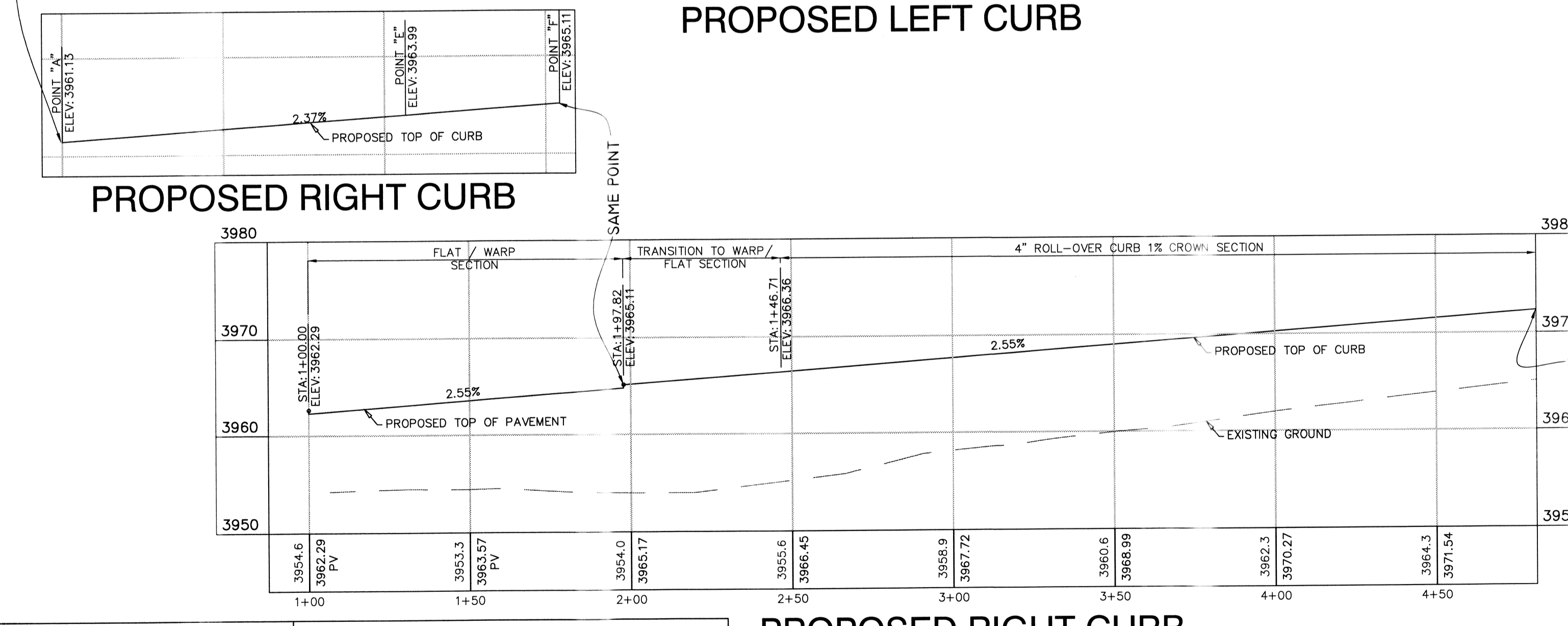
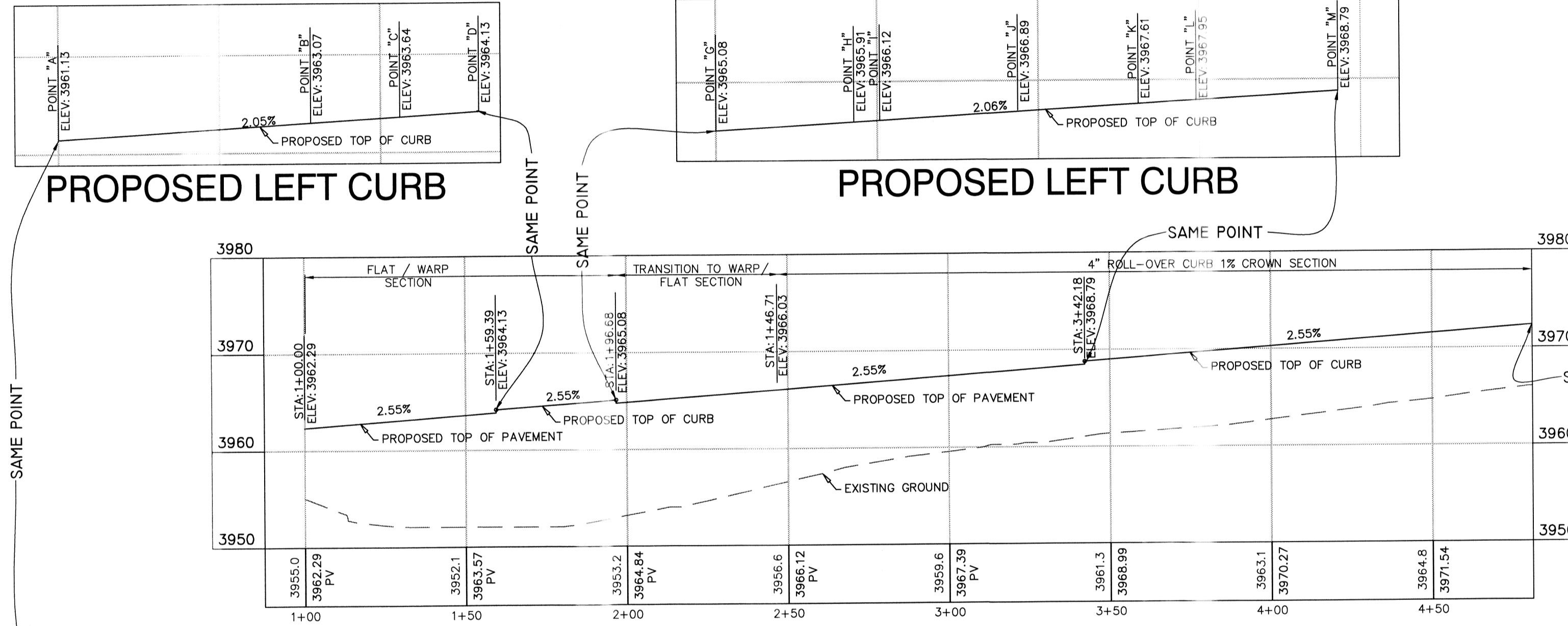
**RoE Engineering, L.C.**  
 801 N. Cotton St. Suite No. 8 El Paso, Tx, 79902  
 (915) 533-1418 - FAX: (915) 533-4972  
 e-mail: roeing@roewell.net

ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

SHEET **57** OF **77**



NOTE:  
 1. ALL HANDICAP RAMPS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 58 OF ZZ.  
 2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 59 OF ZZ.



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**FLOOD NOTE:**  
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THIS SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY BRADLEY ROE, P.E. 31886 ON SEPTEMBER 20, 2012. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

**LEGEND**

- × 44.51 TRC PROPOSED TOP OF 4" ROLLOVER CURB
- × 44.27 FG PROPOSED FINISHED GRADE ELEVATION
- × 45.00 PV PROPOSED TOP OF PAVEMENT
- × 44.51 TC PROPOSED TOP OF 6" CURB
- PROPOSED DRAINAGE FLOW
- PROPOSED STREET CENTERLINE
- SUBDIVISION BOUNDARY LINE
- PROPOSED CITY MONUMENT

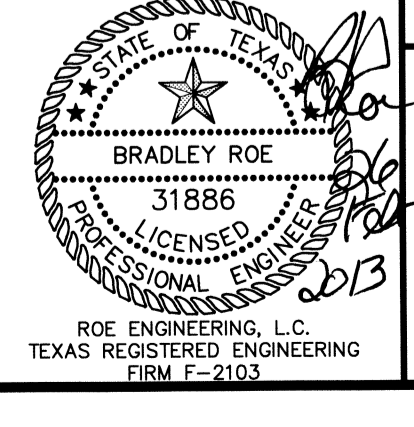
EXISTING GRADE  
 PROPOSED GRADE

TRANSITION FROM 1% CROWN SECTION TO WARP SECTION

STATION NUMBER

DATE	REVISIONS	BY
9/4/12	CITY COMMENTS	STAFF
9/20/12	CITY COMMENTS	STAFF

PRIMARY BENCHMARK	SCALE
NIS MONUMENT (2010 1980) (PRT: CE0444) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED ABOUT 1.50 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	HOR: 1" = 30' VER: 1" = 10'
SECONDARY BENCHMARK	
EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHOS DRIVE IN FRONT OF LOT 11, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	
N.A.V.D. 88 DATUM -10.18 - CITY OF EL PASO DATUM	

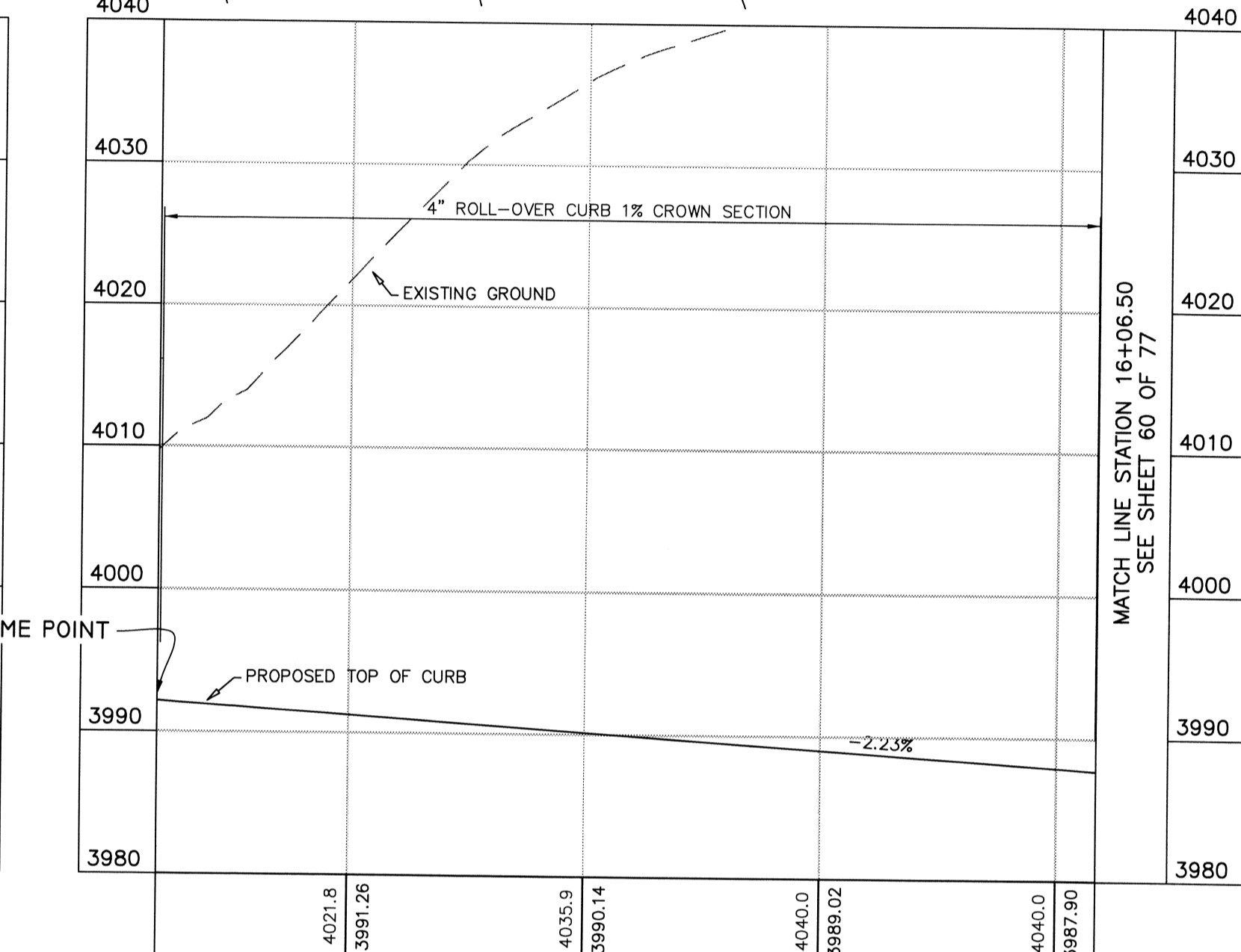
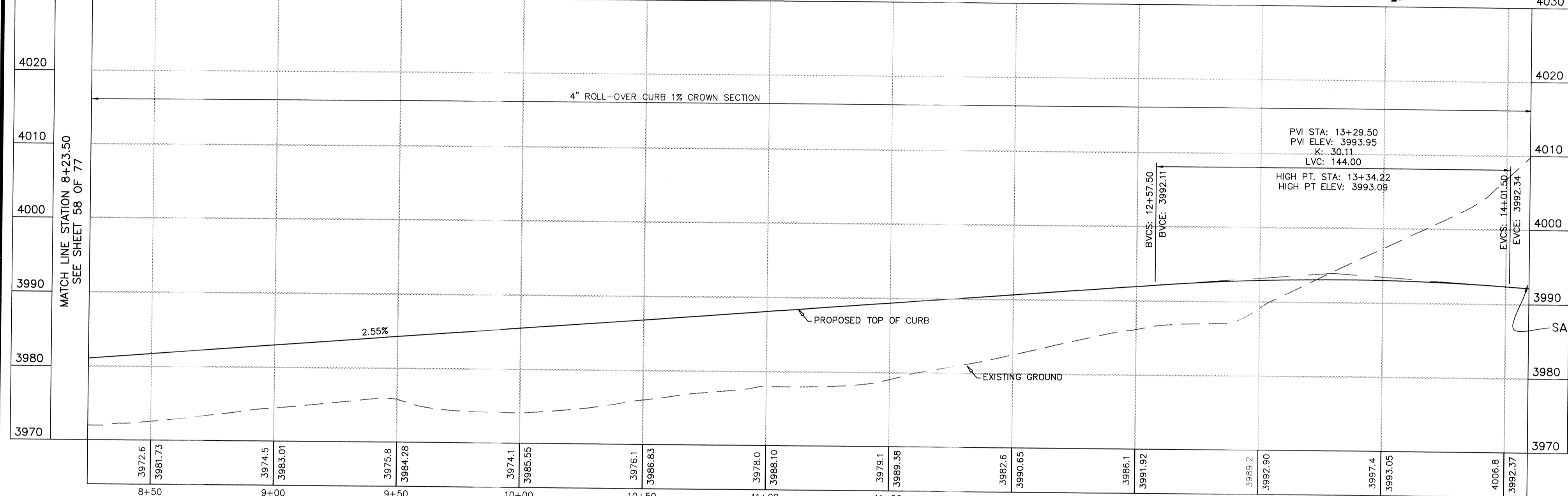
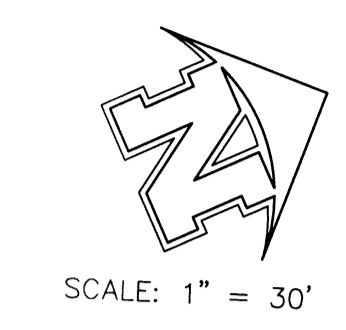
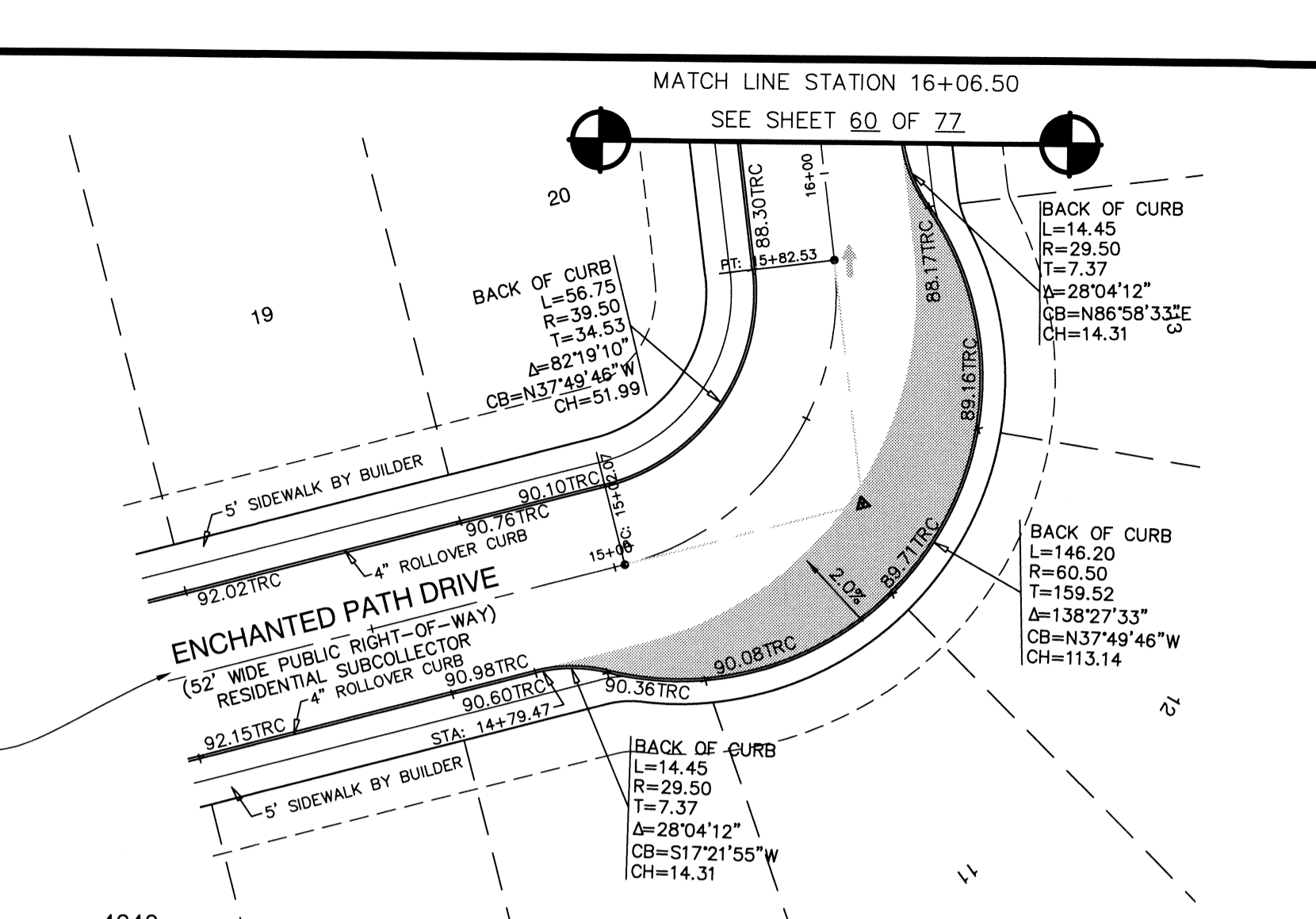
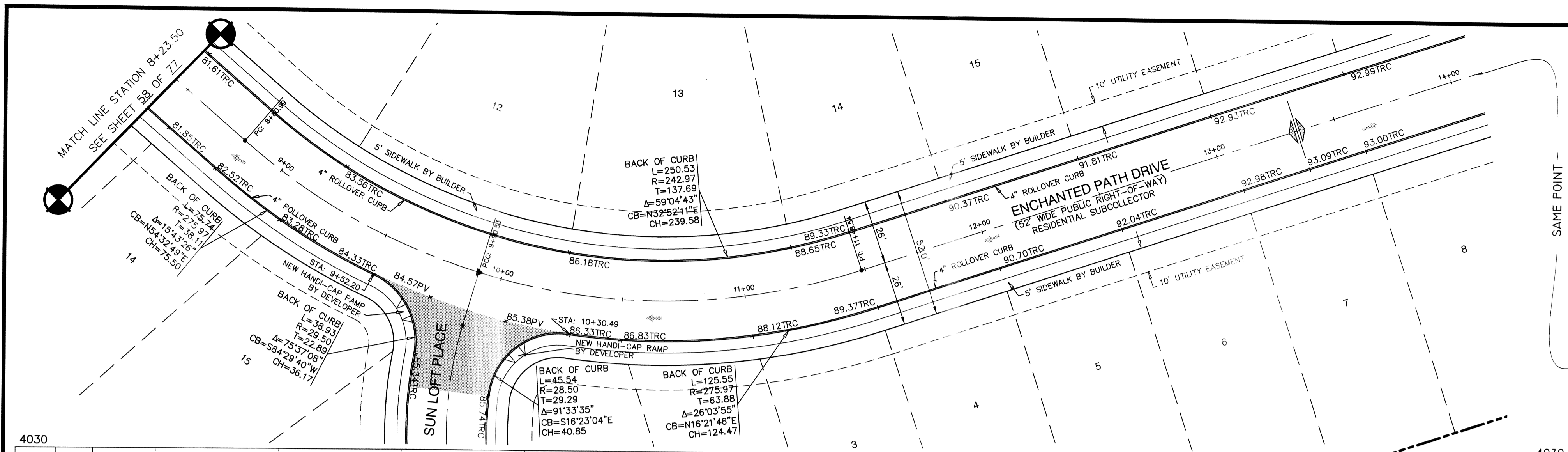


**PLAN AND PROFILE**  
**ENCHANTED HILLS UNIT THREE**  
 ENCHANTED PATH DRIVE  
 STATION 1+00.00 TO 8+23.50

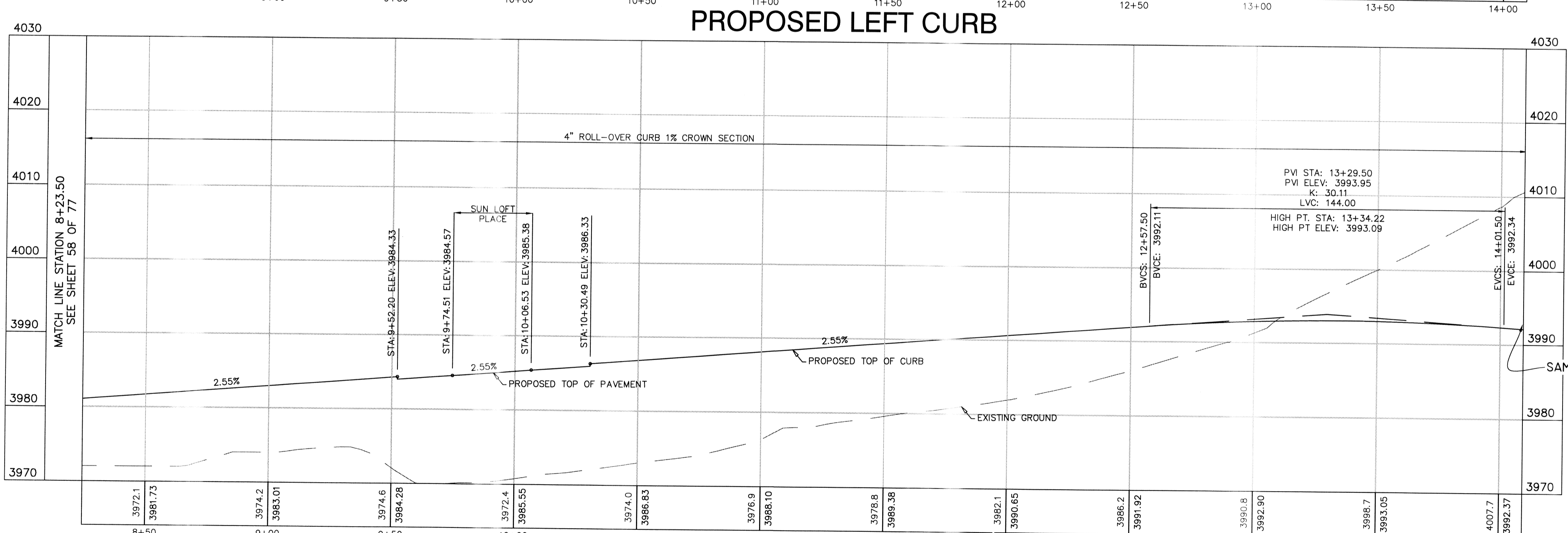
**ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT**  
**REVIEWED**

**hnpRoe Engineering, L.C.**  
 601 N. Cotton St. Suite No. 6 El Paso, Tx. 79902  
 (915) 533-1418 - FAX: (915) 533-4972  
 e-mail: roeeng@hnpbell.net

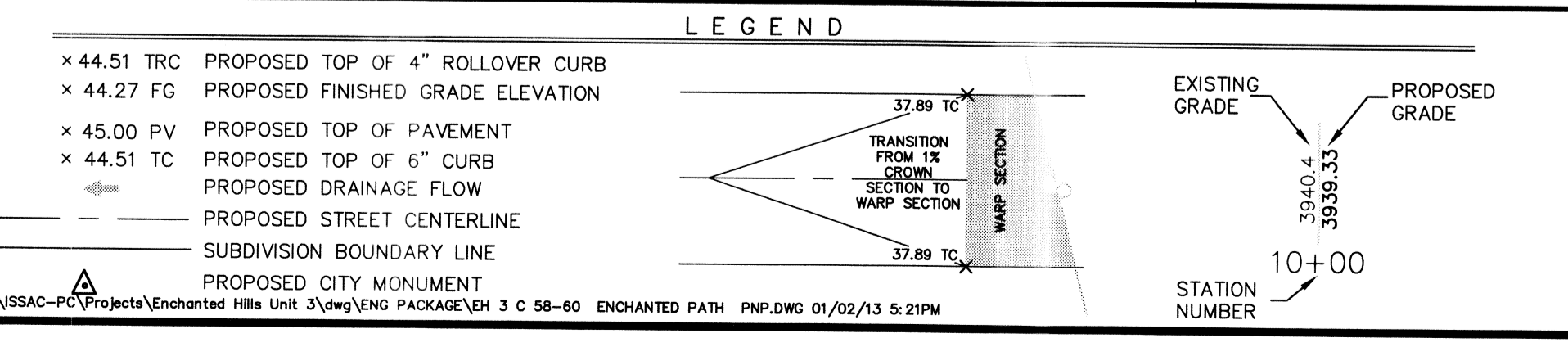
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING  
 SHEET 58 OF 77



**NOTE:**  
 1. ALL HANDICAP RAMPS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 68 OF 77.  
 2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 69 OF 77.



**FLOOD NOTE:**  
 THE ABOVE REFERENCED SUBDIVISION IS WITHIN ZONES "A" and "C" (EXPLANATION ZONE "A": AREAS OF 100-YEAR FLOOD; BASE FLOOD ELEVATIONS AND FLOOD HAZARDS NOT DETERMINED. (WHICH DOES NOT INCLUDE ANY RESIDENTIAL LOTS) (EXPLANATION ZONE "C": AREA OF MINIMAL FLOODING). ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP AS PER AREA COMMUNITY PANEL NO. 480214 001 C, DATED FEBRUARY 5, 1986.



DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	WIS DOCUMENT CHNO 1889 (TRIP 02044)	HOR: 1" = 30'; VER: 1" = 10'
9/20/12	CITY COMMENTS	STAFF	LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED ABOUT 1/25 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3848.11 NAVD 83	FILE NAME: W.O. 011509-1 A EH-3
			EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MORIS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANFIELD HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANFIELD HEIGHTS UNIT ONE. ELEVATION: 3857.21	DATE: NOVEMBER, 2011
			N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	DESIGN BY: STAFF
				DRAWN BY: T.D.R
				CHKD. BY: H.P.
				APPD. BY: BR

THIS SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY BRADLEY ROE, P.E. 31886 ON SEPTEMBER 2012 ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

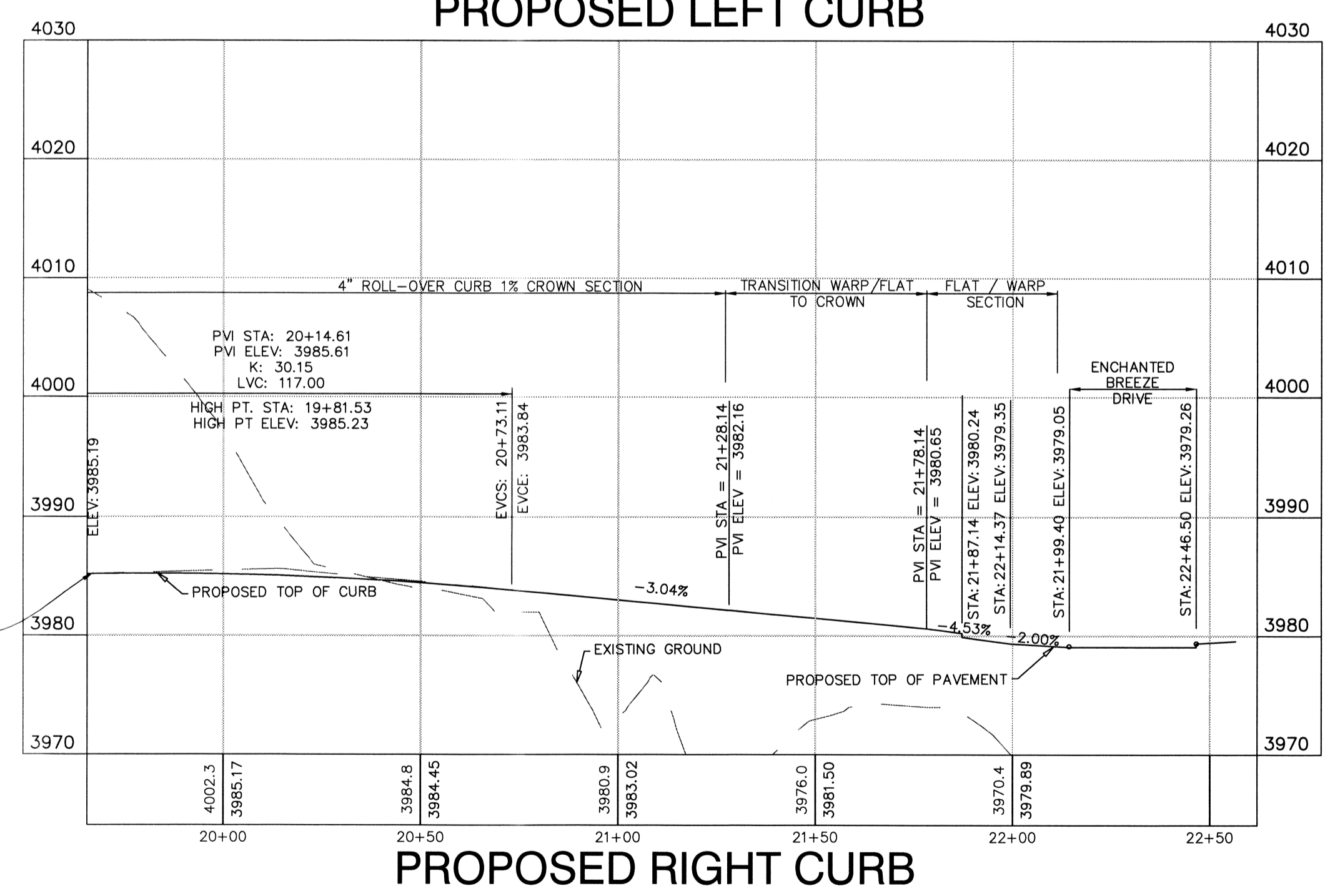
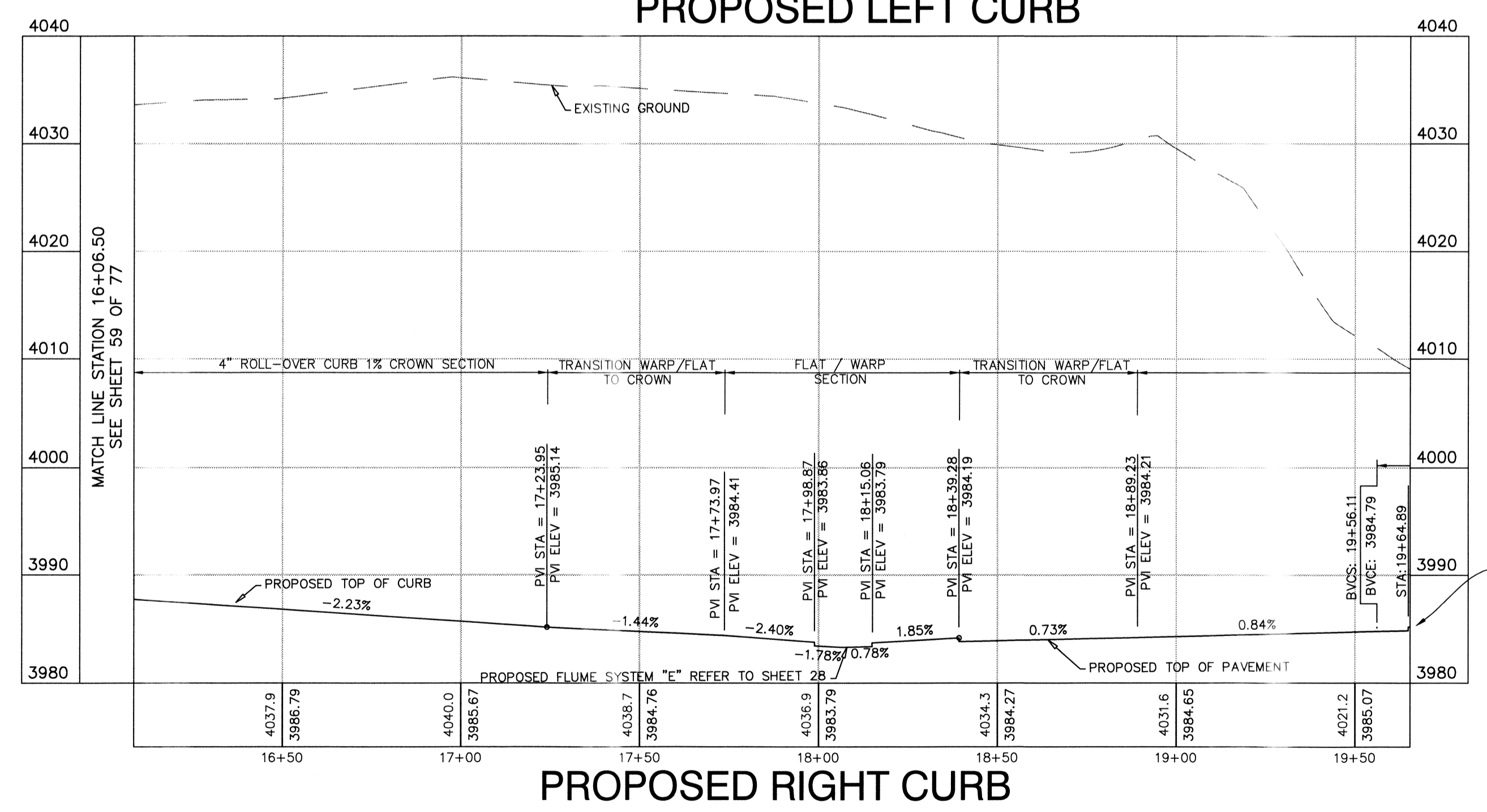
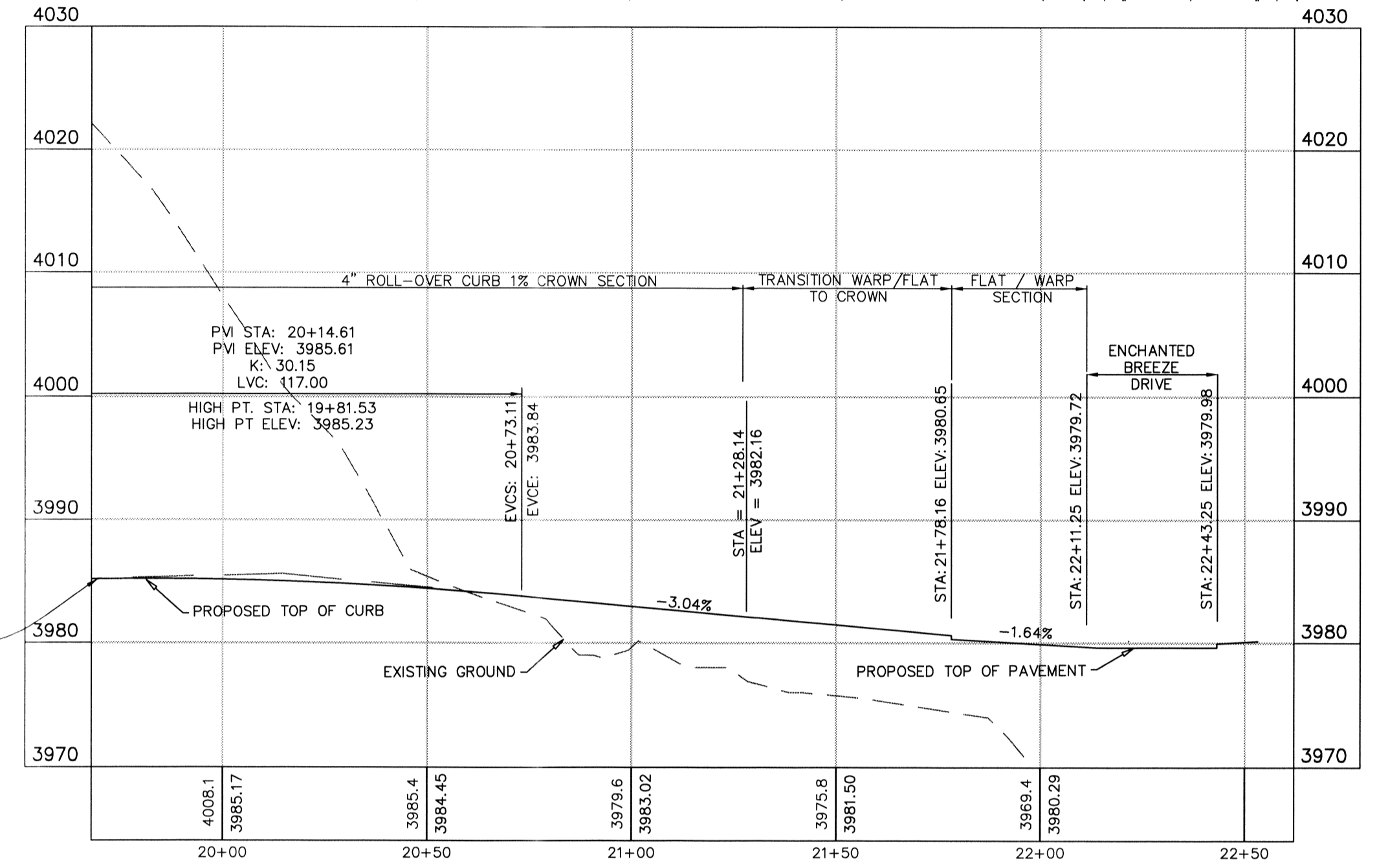
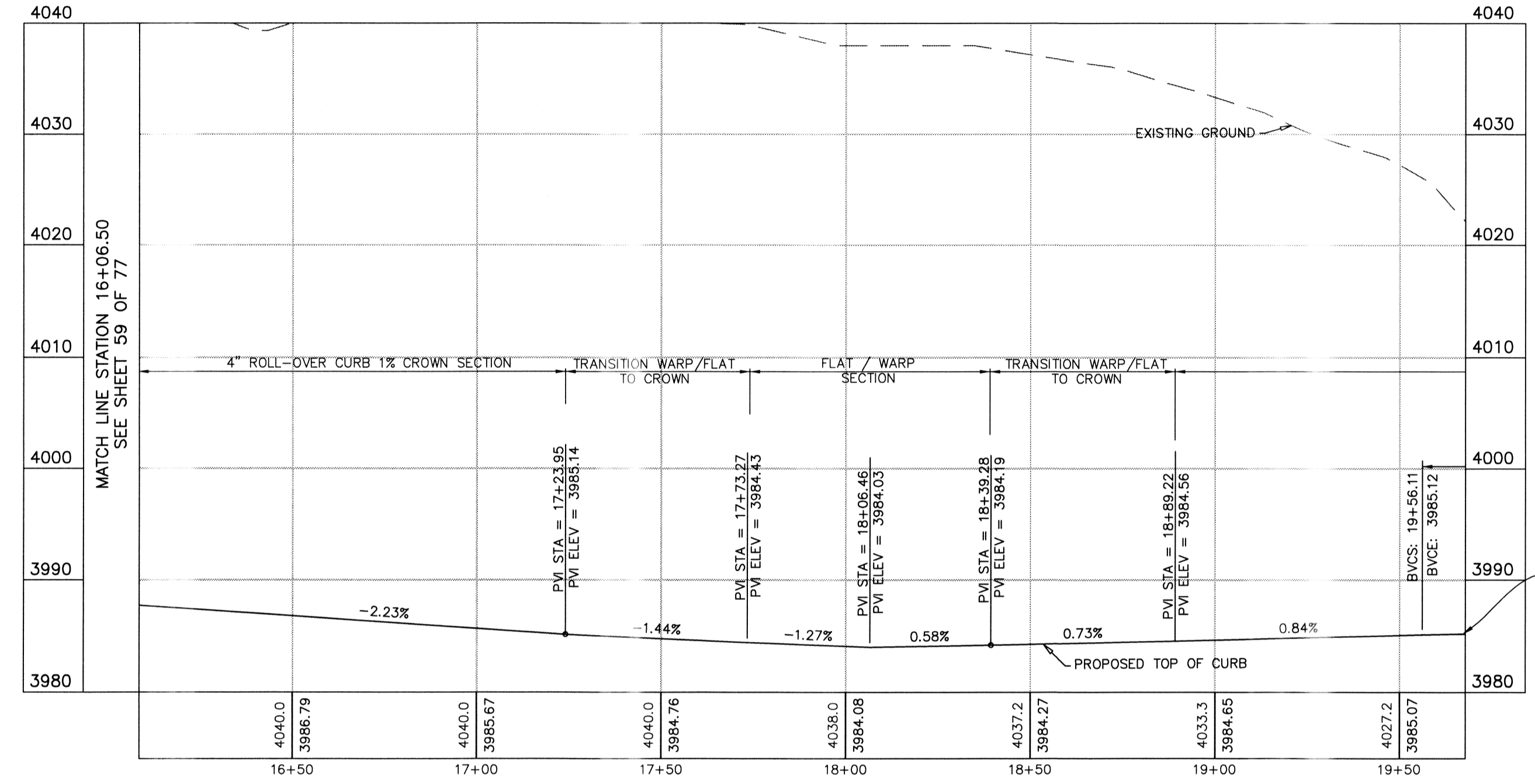
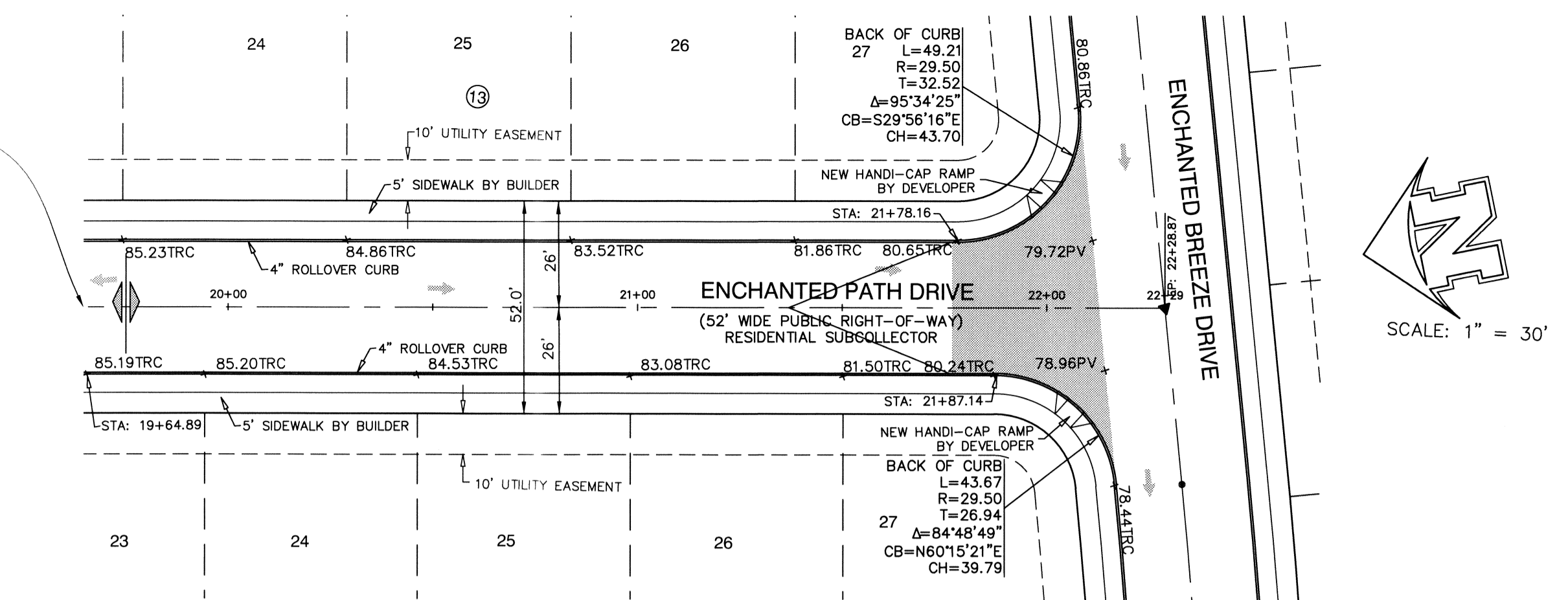
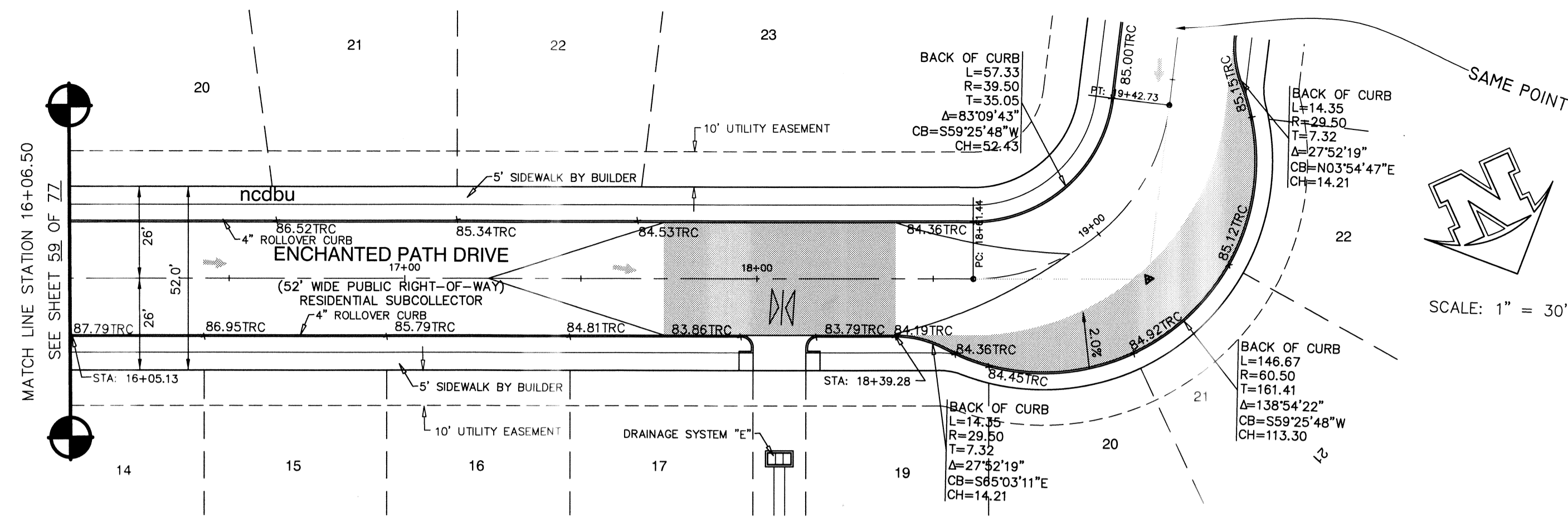
BRADLEY ROE  
 31886  
 PROFESSIONAL ENGINEER  
 TEXAS REGISTERED ENGINEERING FIRM F-2103

**PLAN AND PROFILE**  
**ENCHANTED HILLS UNIT THREE**  
 ENCHANTED PATH DRIVE  
 STATION 8+23.50 TO 16+06.50

ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT

REVIEWED

**brn**Proe Engineering, L.C.  
 601 N. Cotton St. Suite No. 6 El Paso, Tx. 79902  
 (915) 553-1418 - FAX: (915) 553-4972  
 e-mail: roeeng@brnel.net  
 ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING



NOTE:  
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 2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS 8 SHEET 88 OF 77.

SIDEWALK BY DEVELOPER  
 SIDEWALK BY BUILDER

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LEGEND	
× 44.51 TRC	PROPOSED TOP OF 4" ROLLOVER CURB
× 44.27 FG	PROPOSED FINISHED GRADE ELEVATION
× 45.00 PV	PROPOSED TOP OF PAVEMENT
× 44.51 TC	PROPOSED TOP OF 6" CURB
→	PROPOSED DRAINAGE FLOW
—	PROPOSED STREET CENTERLINE
---	PROPOSED DRAINAGE SECTION TO WARP SECTION
---	PROPOSED STREET CENTERLINE
---	SUBDIVISION BOUNDARY LINE
---	PROPOSED CITY MONUMENT

DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	NAS MONUMENT (GND 1985) (TRC 062244) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED ABOUT 1.25 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 86	HOR: 1" = 30' VER: 1" = 10'
9/20/12	CITY COMMENTS	STAFF	SECONDARY BENCHMARK EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHES DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 15, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE ELEVATION: 3857.21 N.A.V.D. DATUM -10.18 = CITY OF EL PASO DATUM	DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR

PLAN AND PROFILE

**ENCHANTED HILLS UNIT THREE**

ENCHANTED PATH DRIVE  
STATION 16+06.50 TO 22+28.87

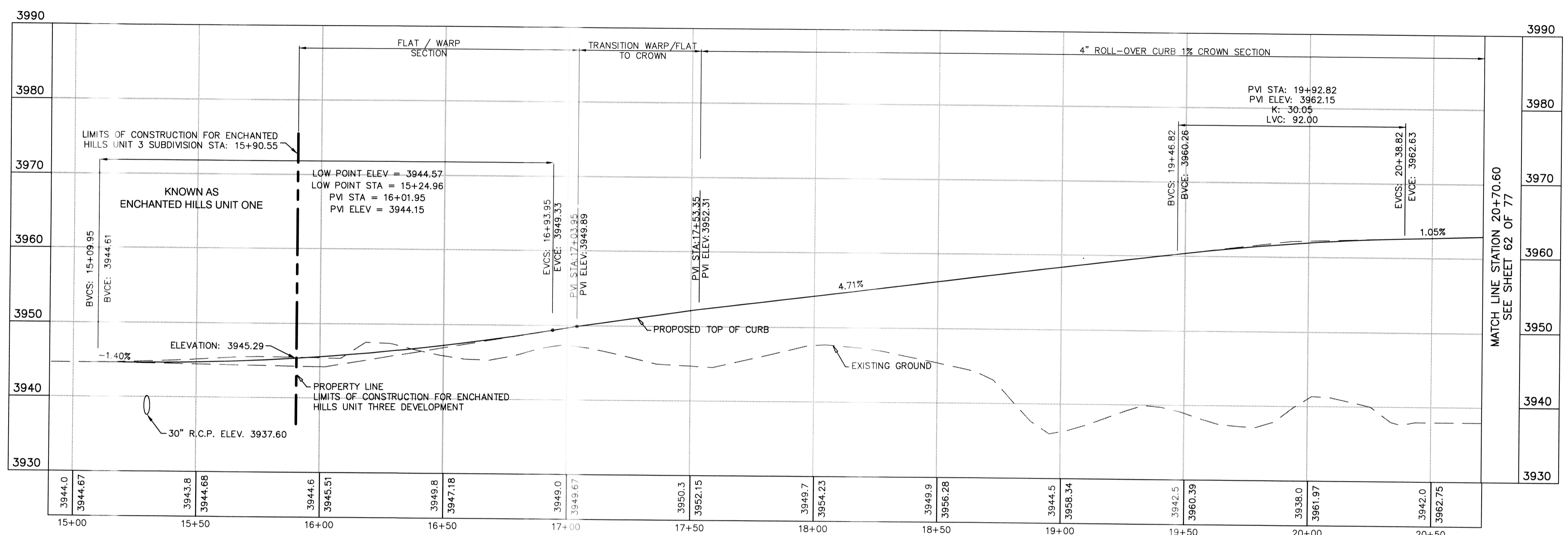
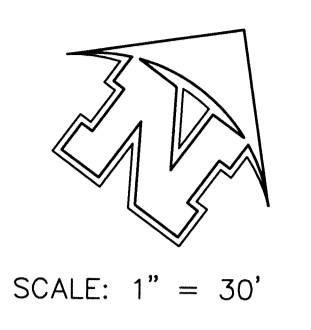
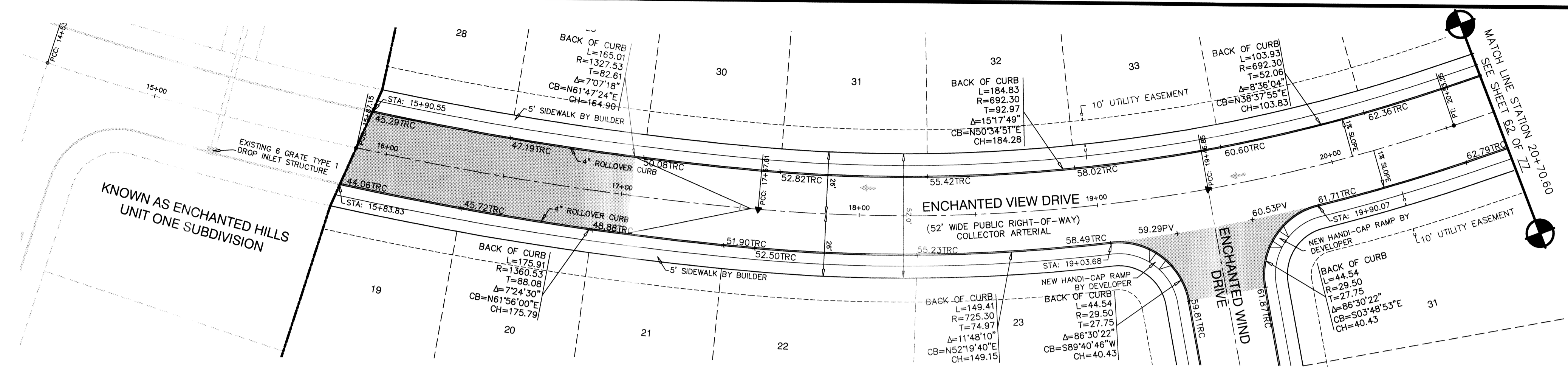
ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT

**REVIEWED**

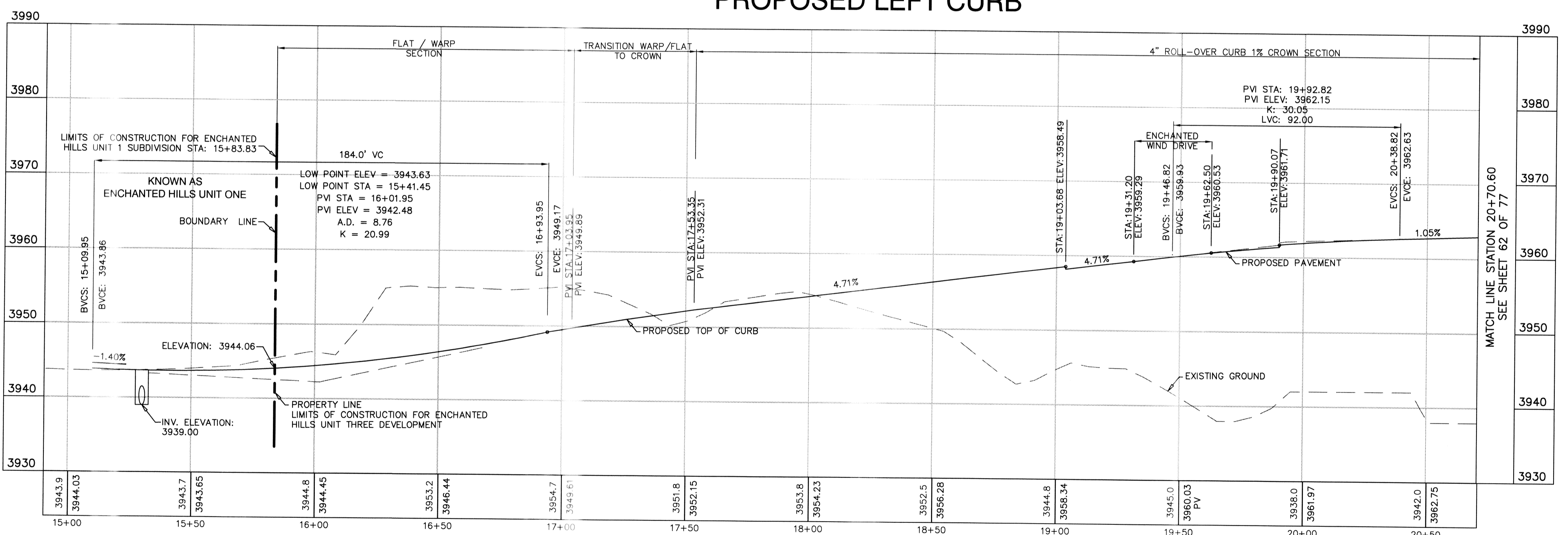
Roe Engineering, L.C.  
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(915) 533-1419 - FAX: (915) 533-4972  
e-mail: roeeng@roewell.net

ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

SHEET 60 OF 77



PROPOSED LEFT CURB



PROPOSED RIGHT CURB

NOTE:  
 1. ALL HANDICAP RAMPS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 08 OF 22.  
 2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 08 OF 22.



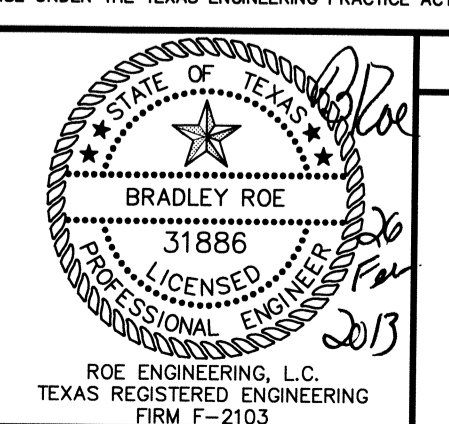
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LEGEND	
× 44.51 TRC	PROPOSED TOP OF 4" ROLLOVER CURB
× 44.27 FG	PROPOSED FINISHED GRADE ELEVATION
× 45.00 PV	PROPOSED TOP OF PAVEMENT
× 44.51 TC	PROPOSED TOP OF 6" CURB
—	PROPOSED DRAINAGE FLOW
—	PROPOSED STREET CENTERLINE
—	SUBDIVISION BOUNDARY LINE
▲	PROPOSED CITY MONUMENT

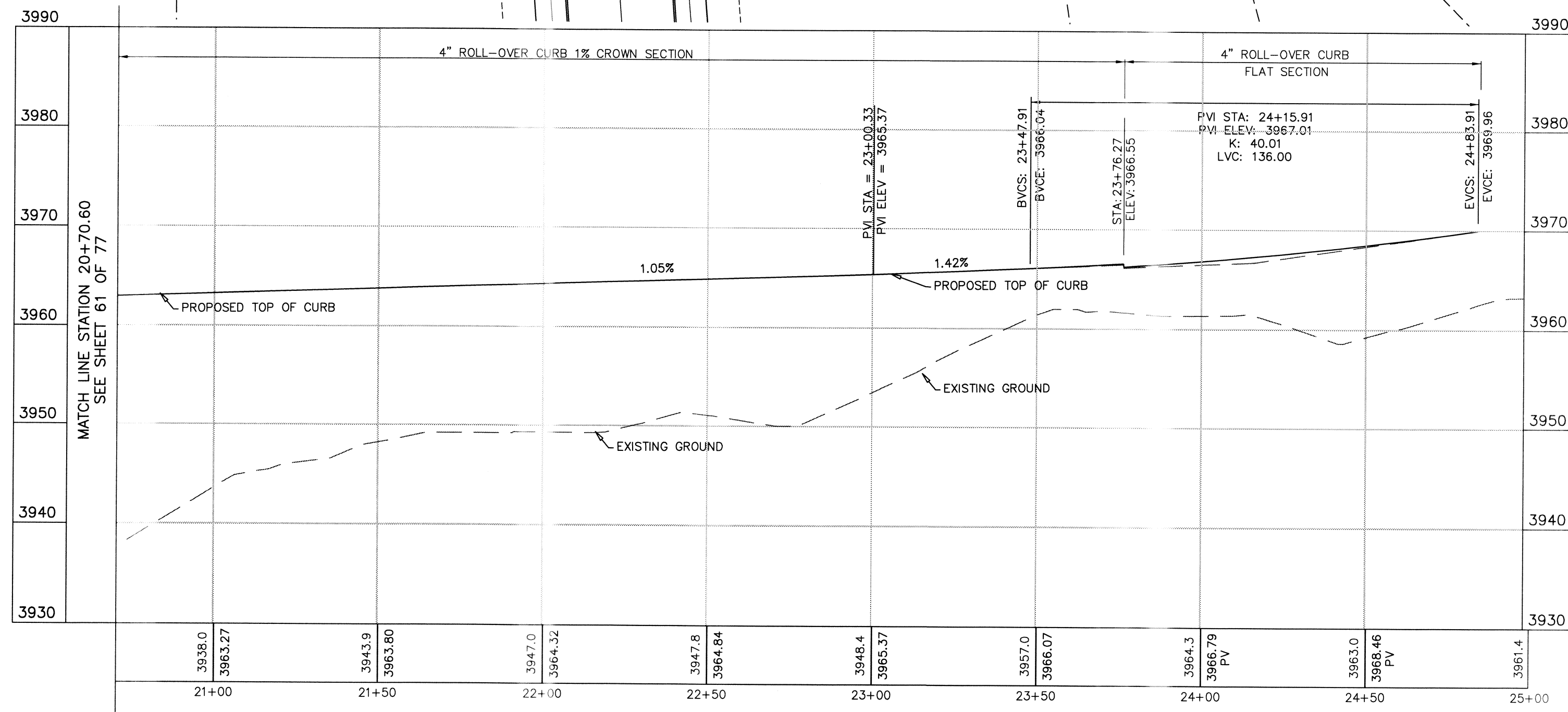
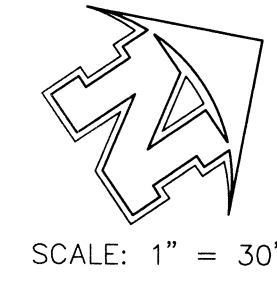
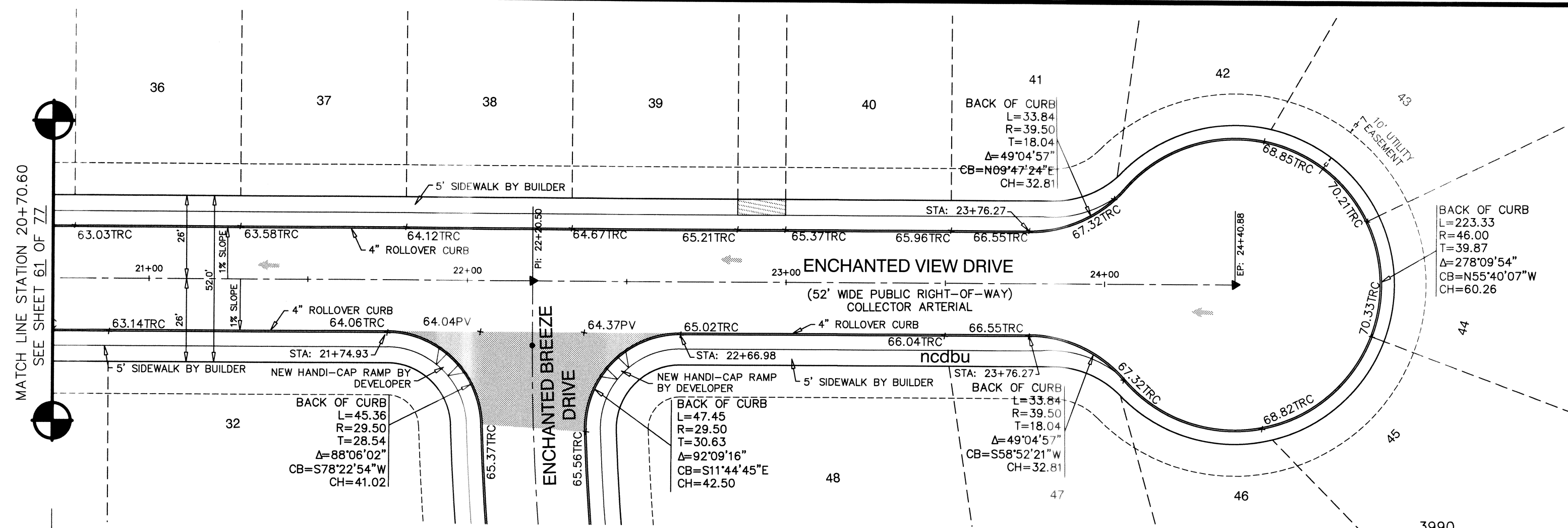
DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	N.S. MONUMENT "CHNO 1988" (1816 00044)	HOR: 1" = 30' VER: 1" = 10'
9/20/12	CITY COMMENTS	STAFF	LOCATION: AS PER NATIONAL GEODETIC SURVEY 1981; LOCATED ABOUT 1.25 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION: 3946.11 NAVD 83	FILE NAME: _____
			EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	W.O. 011509-1 A EH-3
			N.A.V.D.88 DATUM -1018 = CITY OF EL PASO DATUM	DATE: NOVEMBER, 2011

DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	N.S. MONUMENT "CHNO 1988" (1816 00044)	HOR: 1" = 30' VER: 1" = 10'
9/20/12	CITY COMMENTS	STAFF	LOCATION: AS PER NATIONAL GEODETIC SURVEY 1981; LOCATED ABOUT 1.25 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION: 3946.11 NAVD 83	FILE NAME: _____
			EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	W.O. 011509-1 A EH-3
			N.A.V.D.88 DATUM -1018 = CITY OF EL PASO DATUM	DATE: NOVEMBER, 2011

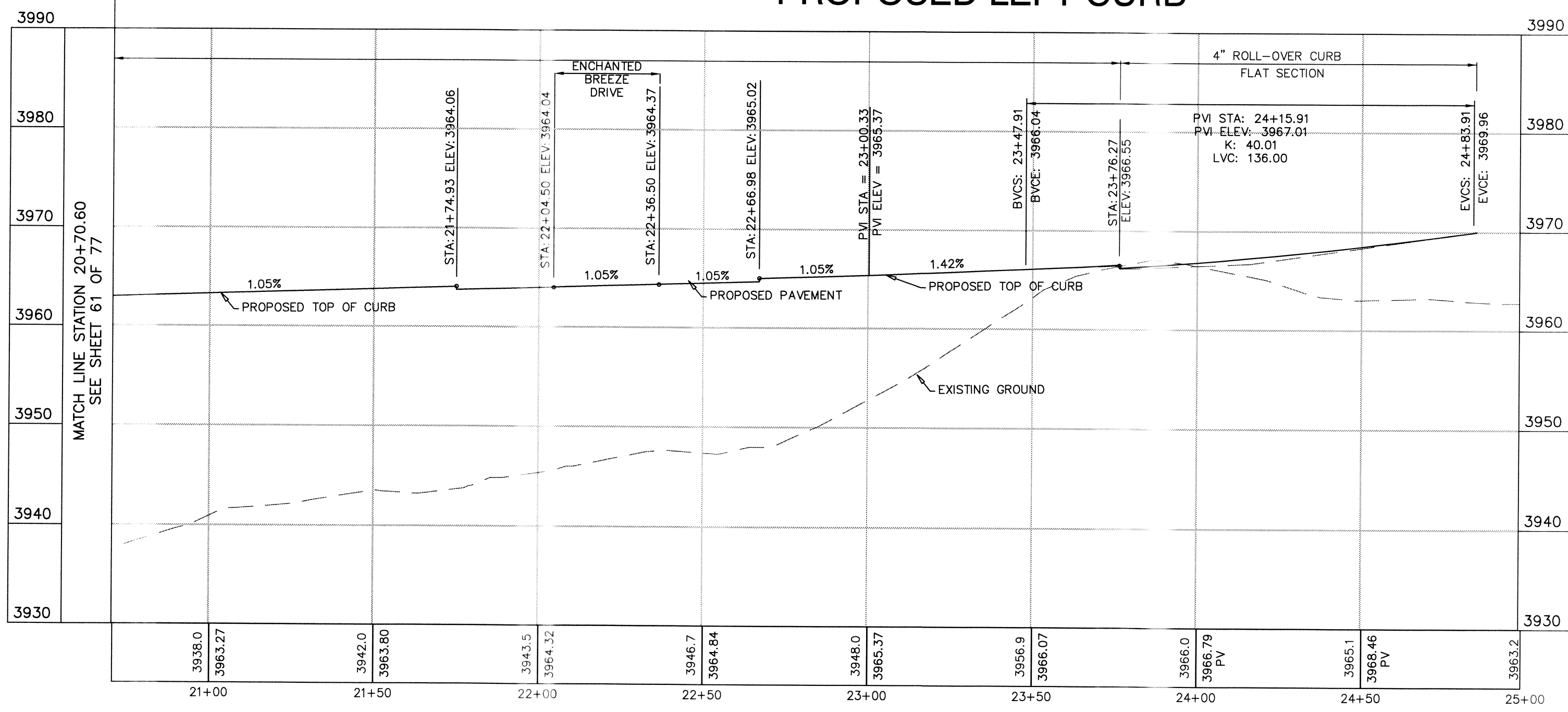


PLAN AND PROFILE  
**ENCHANTED HILLS UNIT THREE**  
 ENCHANTED VIEW DRIVE  
 STATION 15+87.50 TO 20+70.60

**ENGINEERING & CONSTRUCTION MANAGEMENT & DEPARTMENT**  
**REVIEWED**  
 Roe Engineering, L.C.  
 601 N. Cotton St. Suite No. 6 El Paso, Tx. 79902  
 (915) 533-1416 - FAX: (915) 633-4972  
 e-mail: roeeng@vsnell.net  
 ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING  
 SHEET 61 OF 77



**PROPOSED LEFT CURB**



**PROPOSED RIGHT CURB**

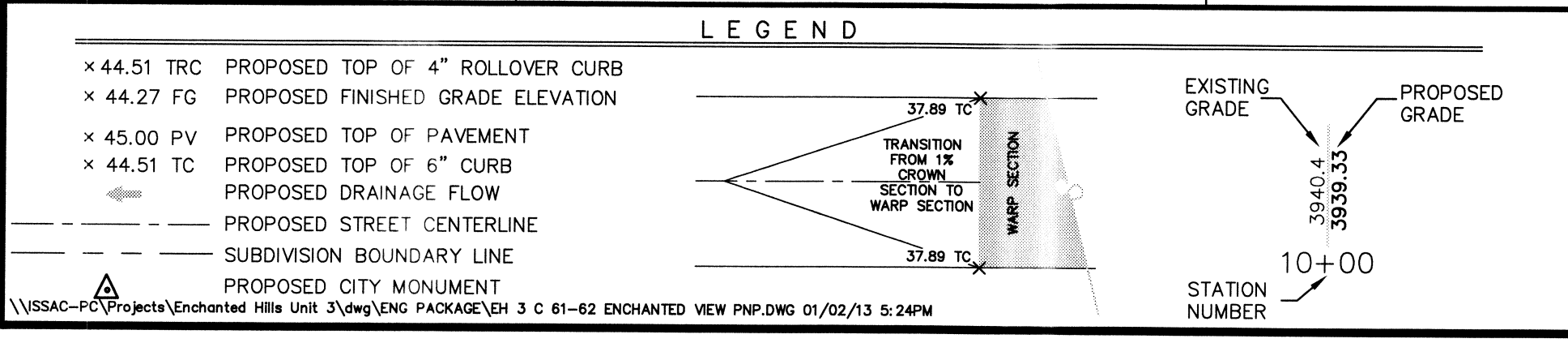
**NOTE:**  
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 2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 69 OF 77.

SIDEWALK BY DEVELOPER  
 SIDEWALK BY BUILDER

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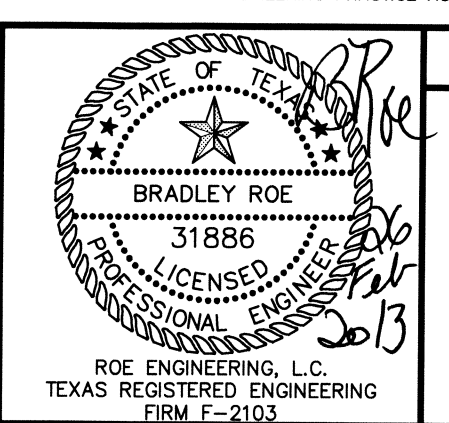
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DATE	REVISIONS	BY
9/4/12	CITY COMMENTS	STAFF
9/20/12	CITY COMMENTS	STAFF

PRIMARY BENCHMARK	SCALE
N/S MONUMENT (GRID 1850 1850 1850 1850) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981; LOCATED ABOUT 1.25 MILES EAST OF THE 100 GRANGE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	HOR: 1"=30' VER: 1"=10' FILE NAME: W.O. 011509-1 A EH-3 DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR
SECONDARY BENCHMARK	
EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHES DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE ELEVATION: 3897.21	

PLAN AND PROFILE
<b>ENCHANTED HILLS UNIT THREE</b>
ENCHANTED VIEW DRIVE STATION 20+70.60 TO 24+40.88



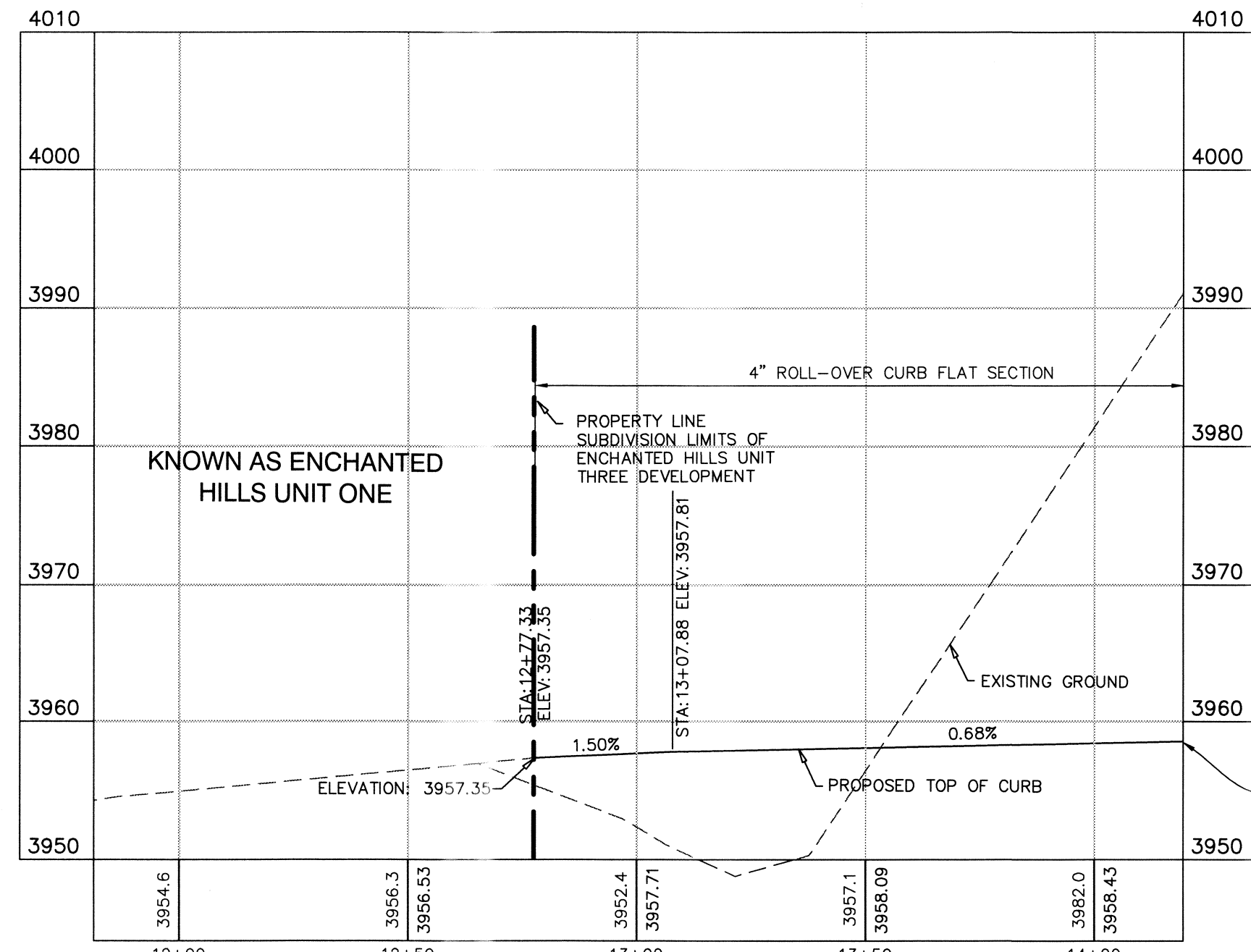
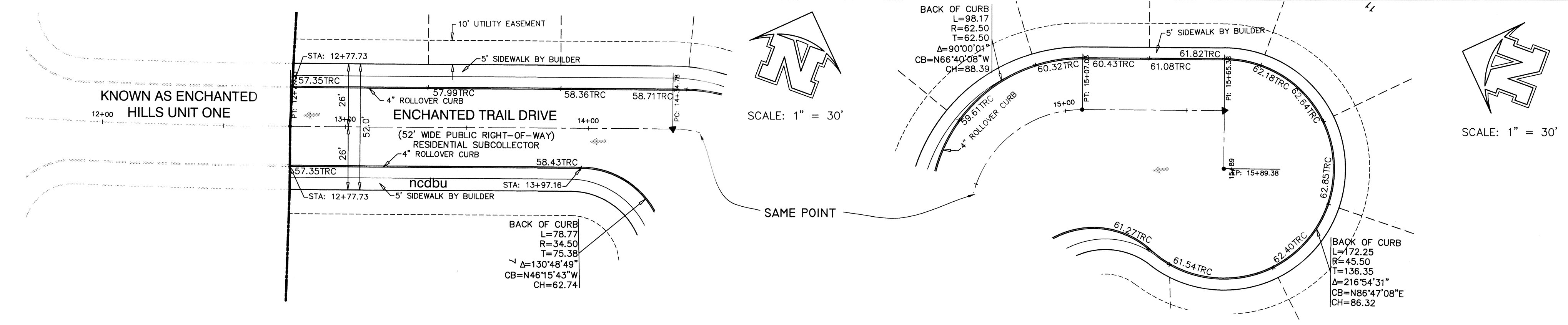
**ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT**

**REVIEWED**

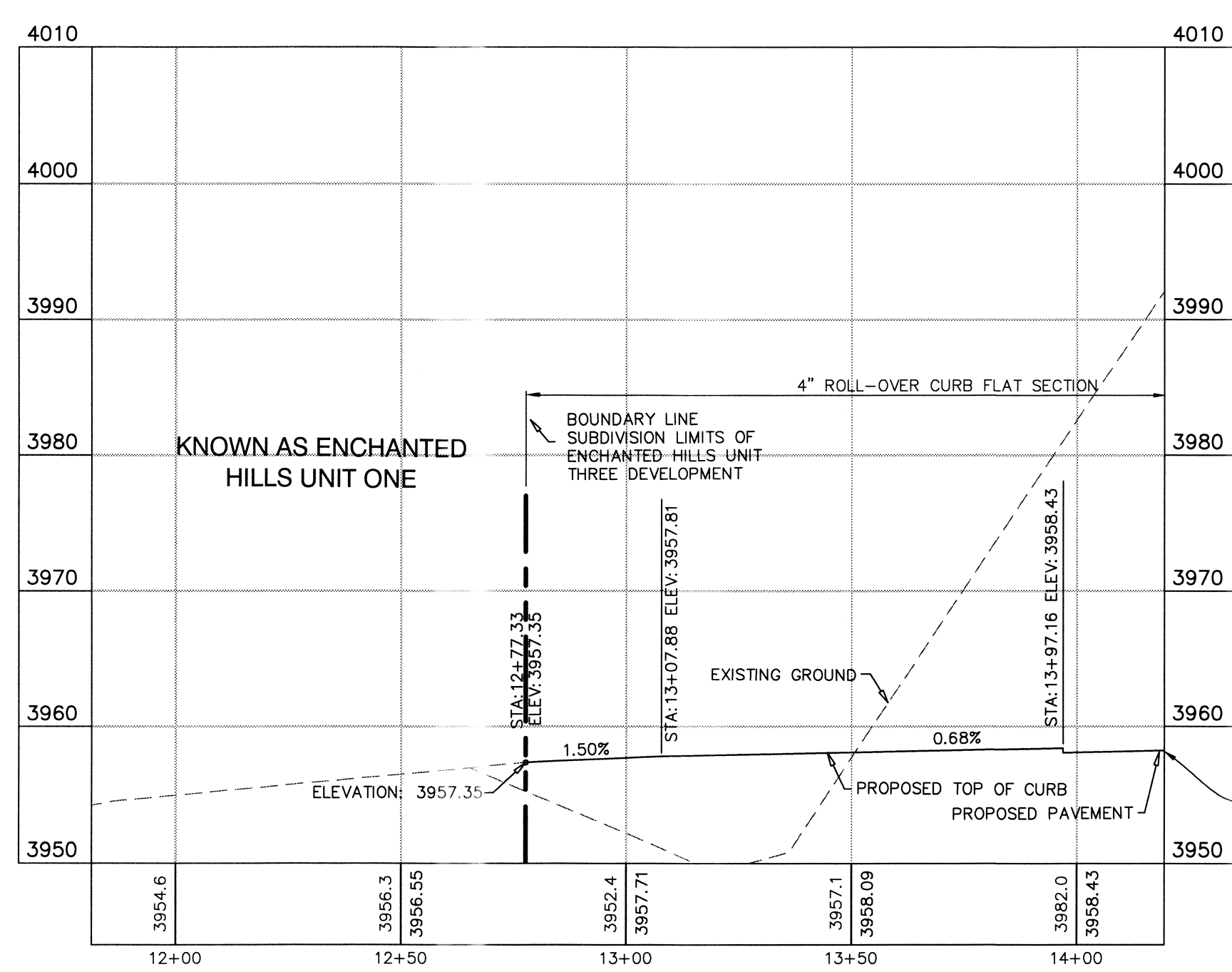
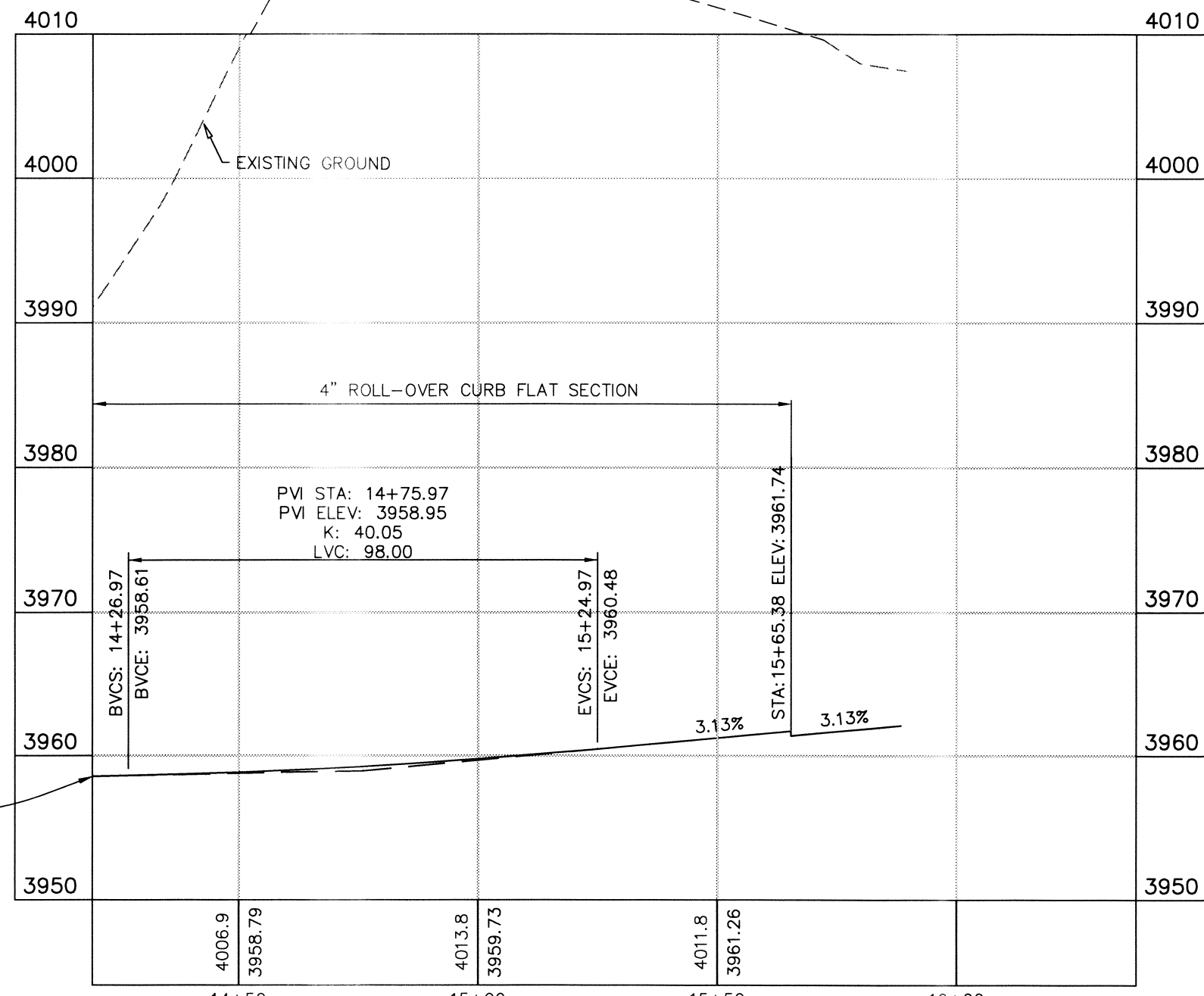
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 601 N. Cotton St. Suite No. 6 El Paso, Tx. 79902  
 (915) 533-1418 - FAX: (915) 533-4972  
 e-mail: roeeng@swbell.net

ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

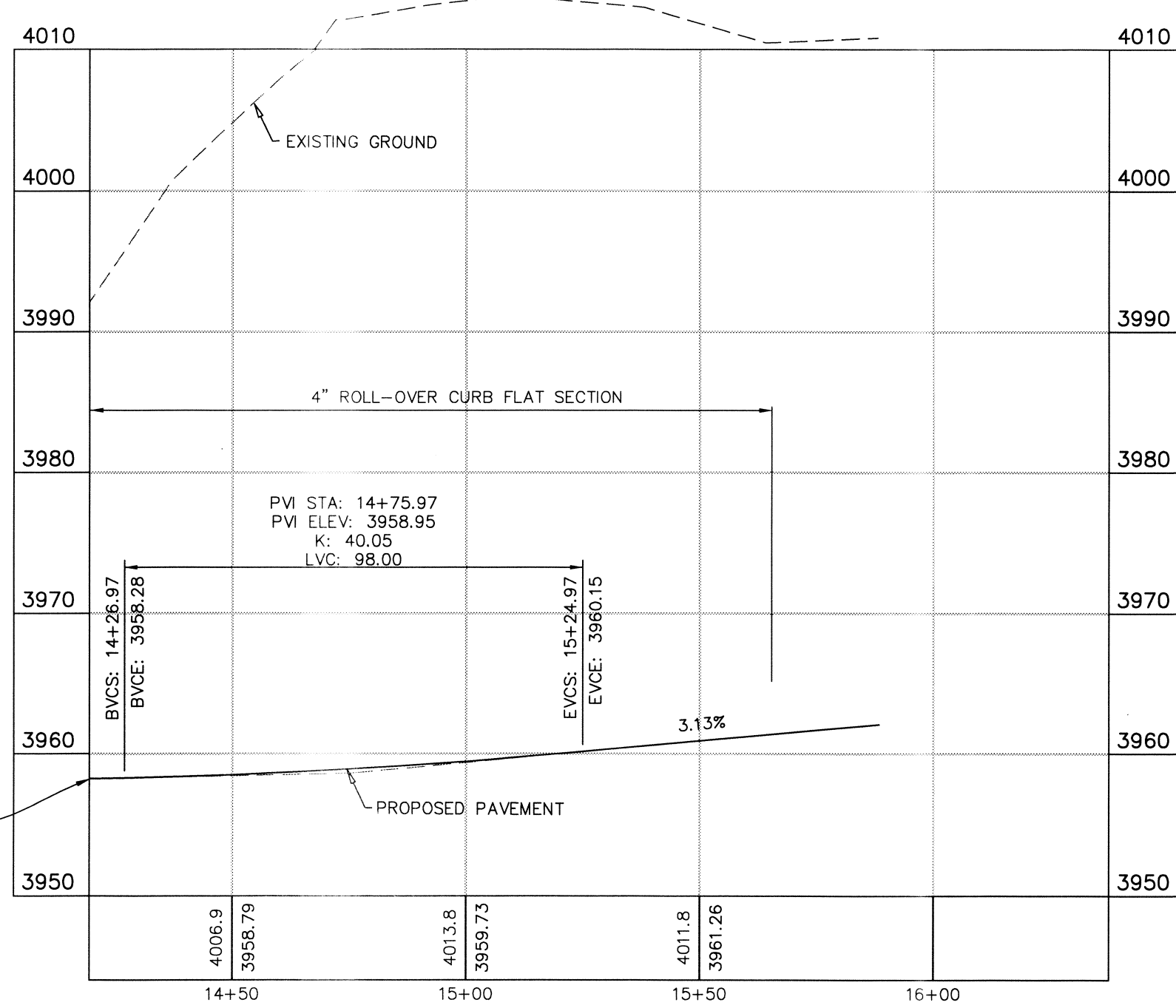
SHEET 62 OF 77



PROPOSED LEFT CURB



PROPOSED RIGHT CURB



NOTE:  
 1. ALL HANDICAP RAMPS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 68 OF 77.  
 2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 69 OF 77.



ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT

REVIEWED

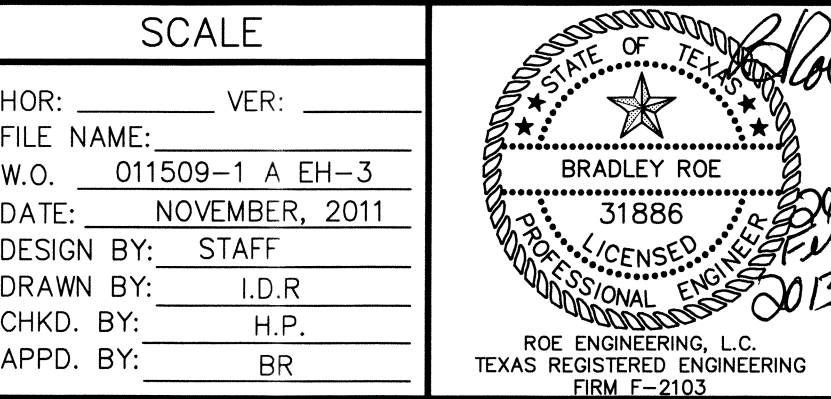
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LEGEND	
× 44.51 TRC	PROPOSED TOP OF 4" ROLLOVER CURB
× 44.27 FG	PROPOSED FINISHED GRADE ELEVATION
× 45.00 PV	PROPOSED TOP OF PAVEMENT
× 44.51 TC	PROPOSED TOP OF 6" CURB
→	PROPOSED DRAINAGE FLOW
---	PROPOSED STREET CENTERLINE
---	SUBDIVISION BOUNDARY LINE
▲	PROPOSED CITY MONUMENT

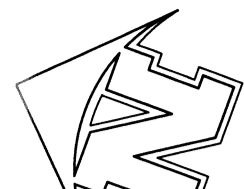
DATE	REVISIONS	BY
9/4/12	CITY COMMENTS	STAFF
9/20/12	CITY COMMENTS	STAFF

PRIMARY BENCHMARK	SCALE
N/S MONUMENT "GRAND 1880" (TRC 30244)	HOR: _____ VER: _____
LOCATION: AS PER NATIONAL GEODETIC SURVEY 1981; LOCATED ABOUT 1.25 MILES EAST OF THE RD GRADLE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.51 NAVD 88	FILE NAME: _____
SECONDARY BENCHMARK	W.O. 011509-1 A EH-3
EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MICHES DRIVE IN FRONT OF LOT 12, BLOCK 2, CANTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 2, CANTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	DATE: NOVEMBER, 2011
N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	DESIGN BY: STAFF
	DRAWN BY: I.D.R
	CHKD. BY: H.P.
	APPD. BY: BR



PLAN AND PROFILE  
**ENCHANTED HILLS UNIT THREE**  
 ENCHANTED TRAIL DRIVE  
 STATION 12+77.73 TO 15+89.38

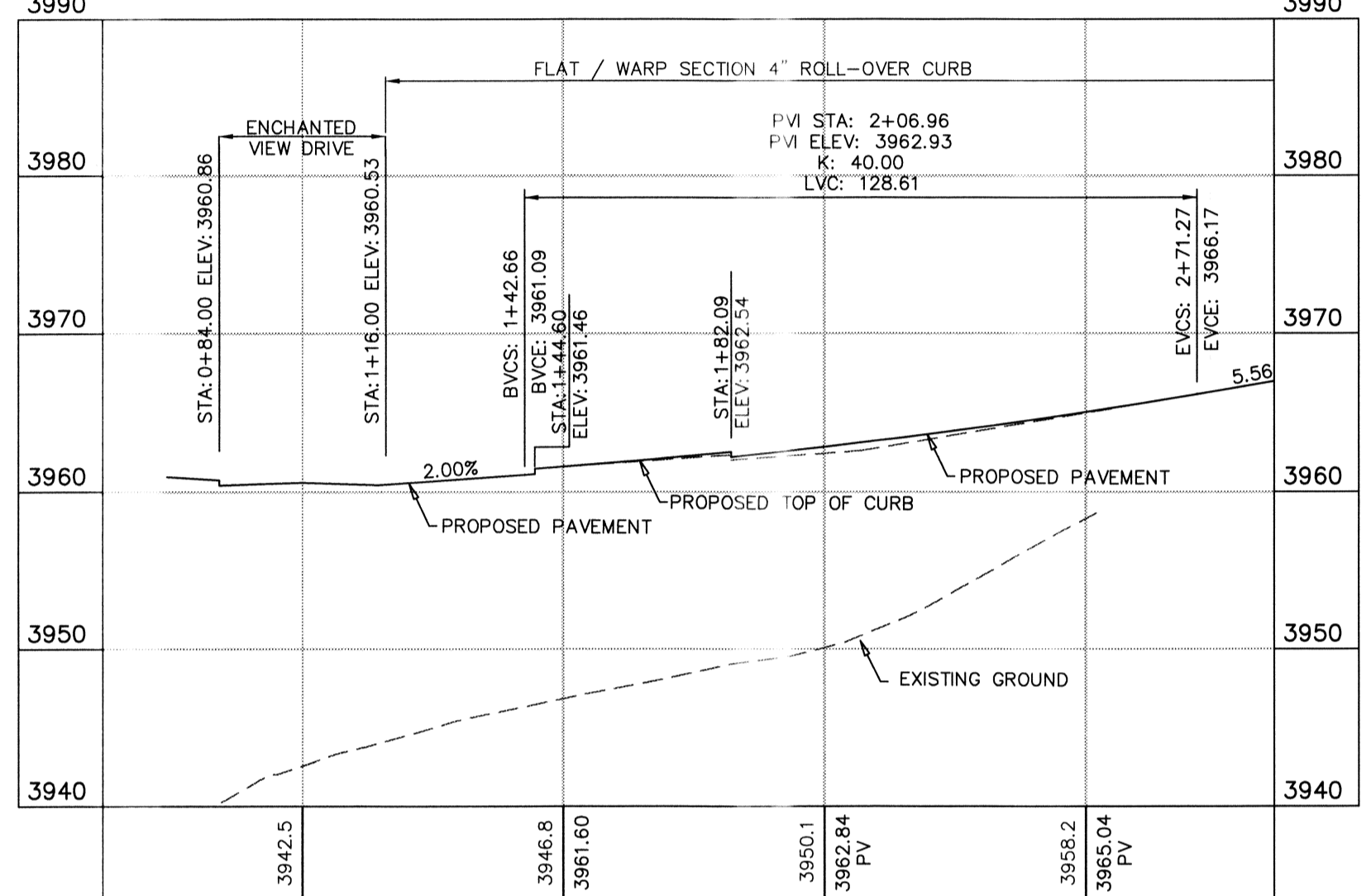
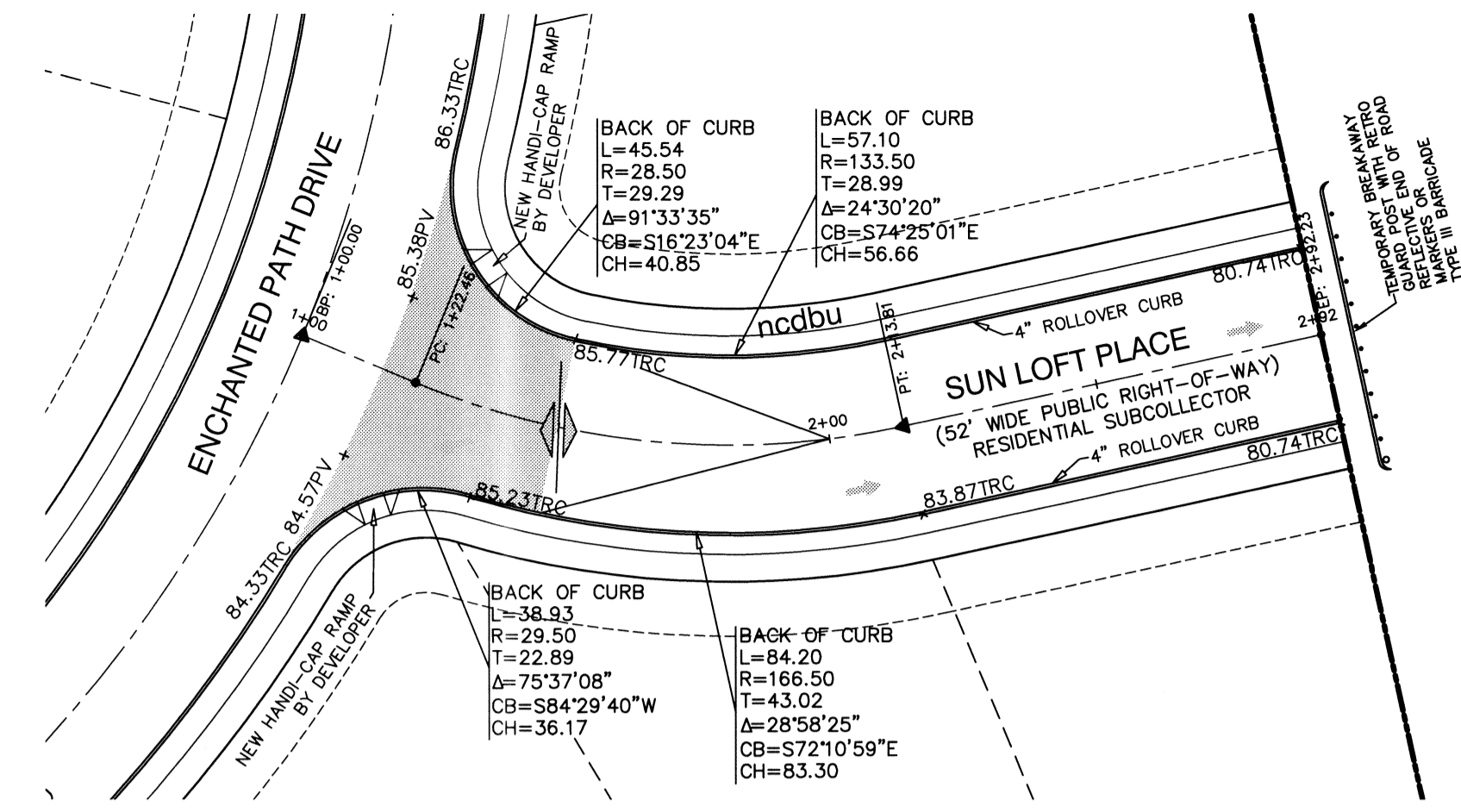
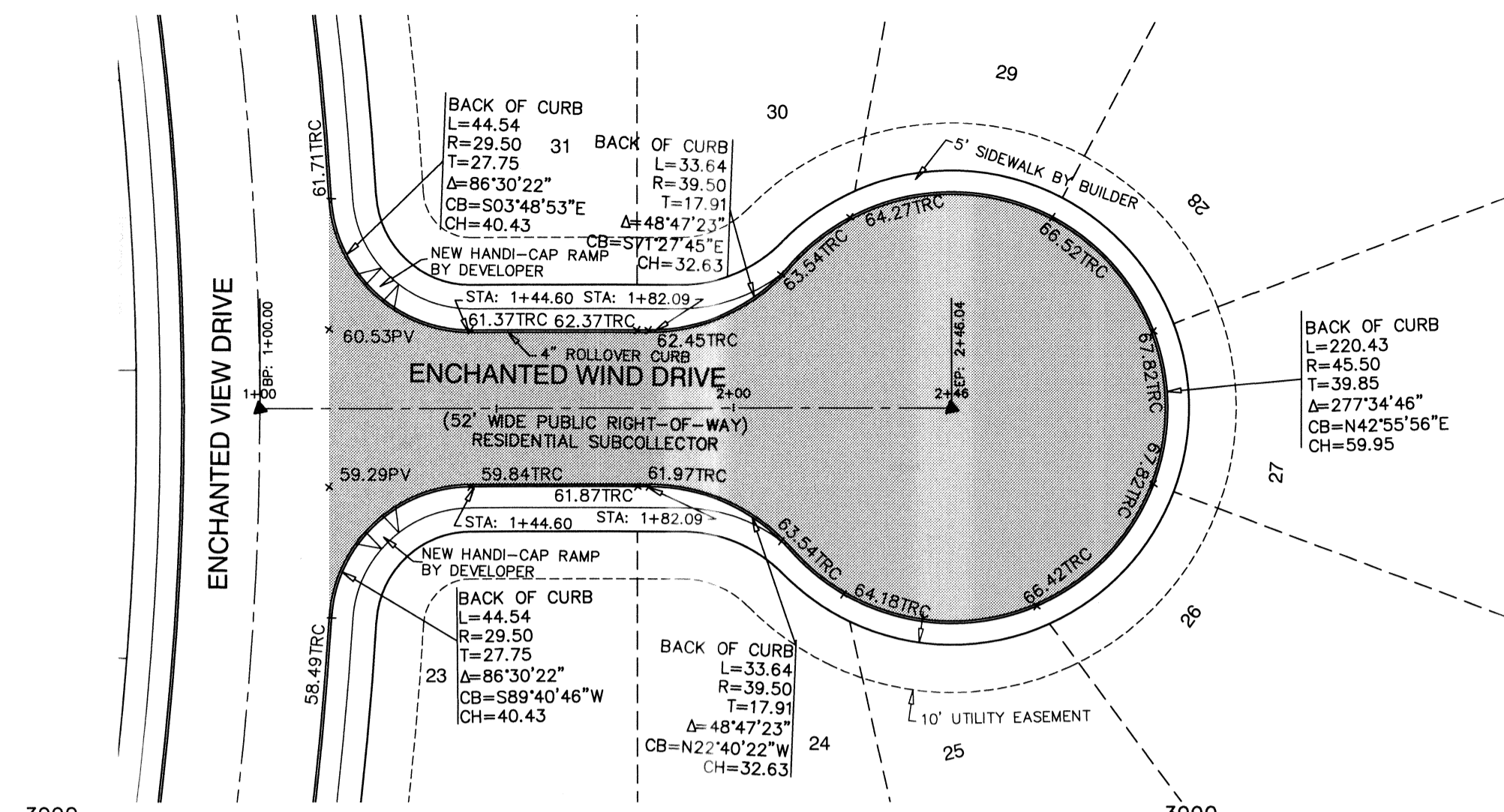
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 SHEET 63 OF 77



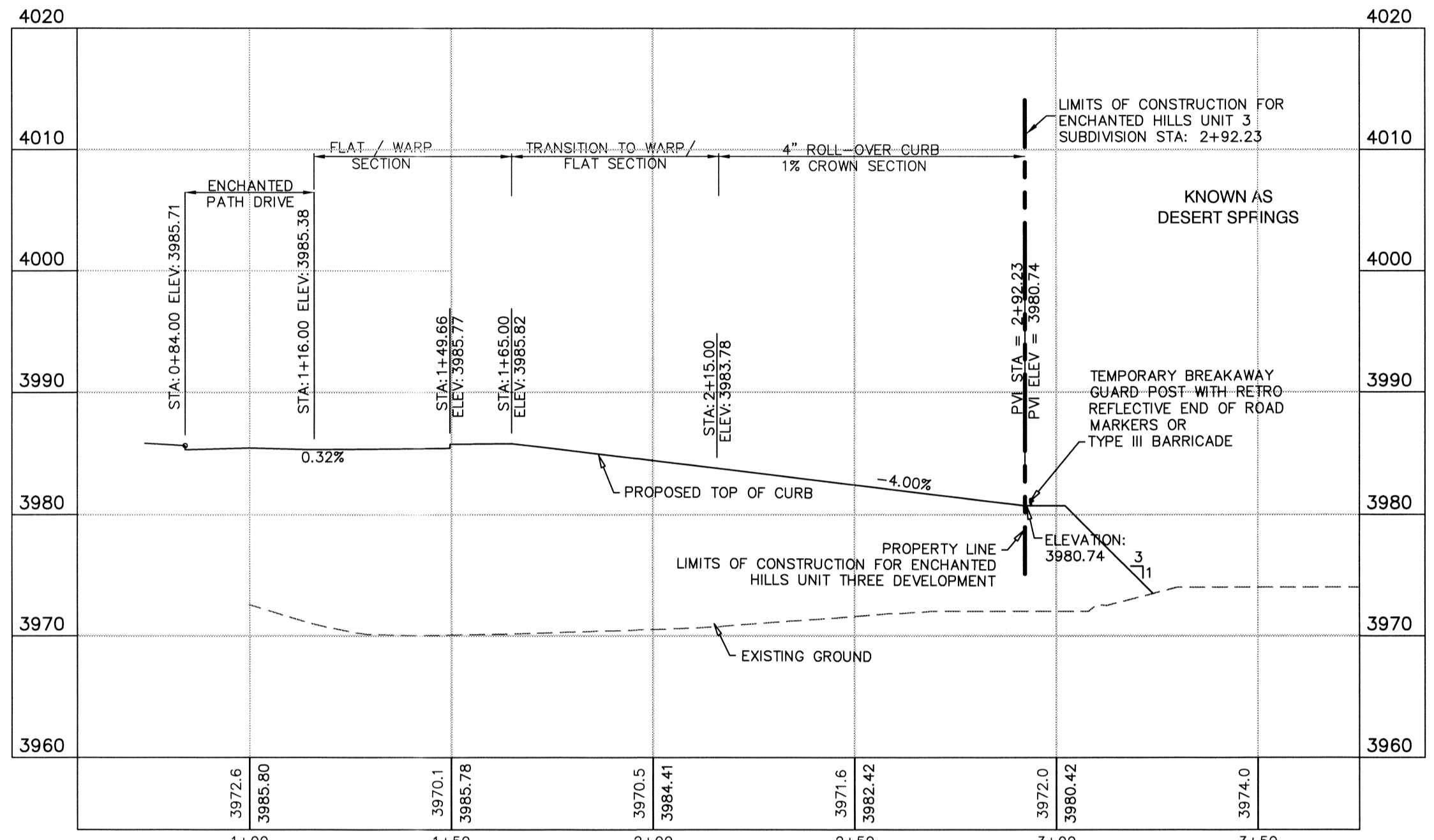
SCALE: 1" = 30'



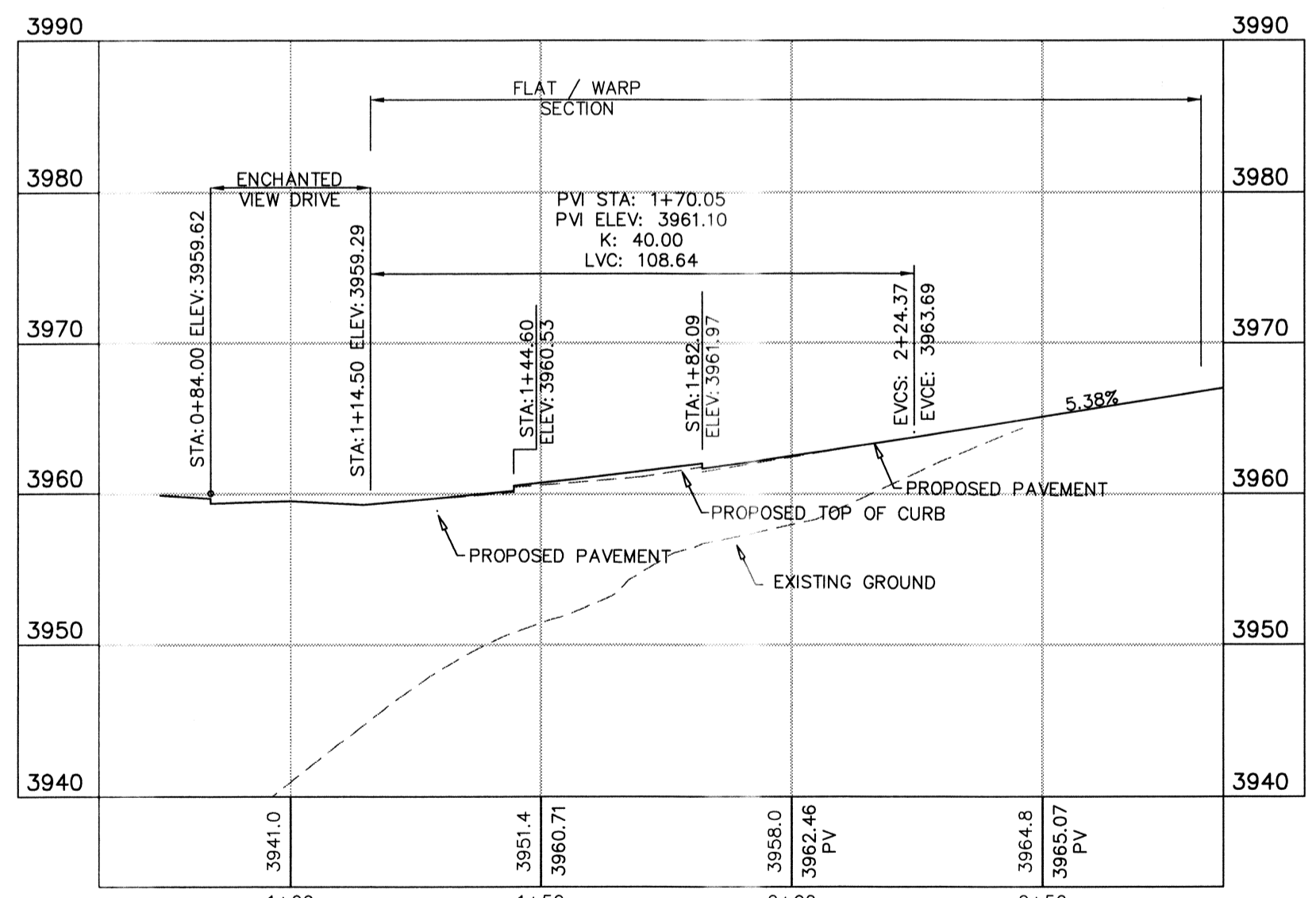
SCALE: 1" = 30'



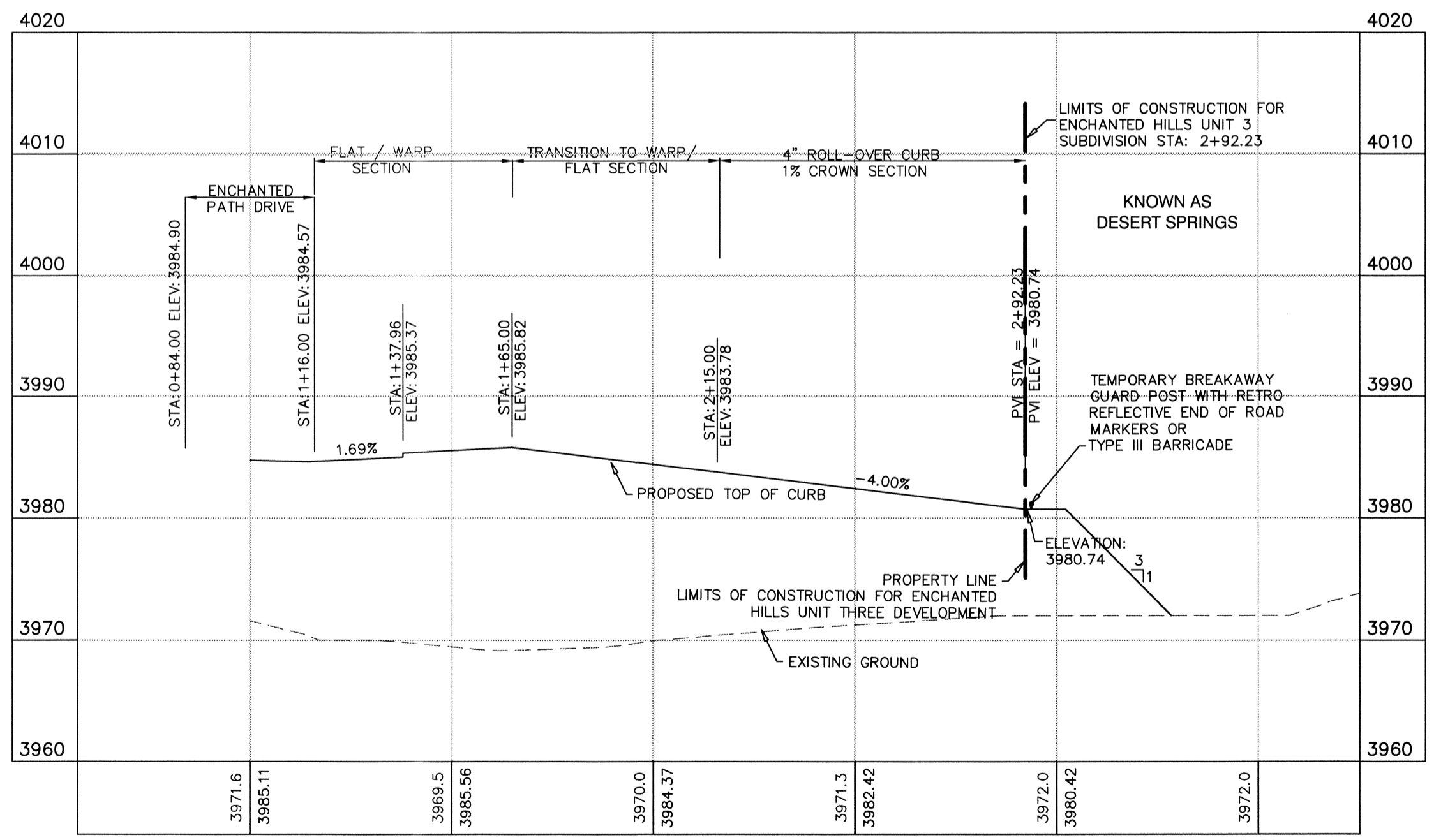
PROPOSED LEFT CURB



PROPOSED LEFT CURB



PROPOSED RIGHT CURB



PROPOSED RIGHT CURB

NOTE:  
1. ALL HANDICAP RAMPS WITHIN SUBDIVISION ARE TO BE BUILT BY DEVELOPER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 88 OF 77.  
2. ALL SIDEWALKS WITHIN SUBDIVISION ARE TO BE BUILT BY BUILDER/CONTRACTOR UNLESS OTHERWISE NOTED. SEE DETAILS SHEET 88 OF 77.

--- SIDEWALK BY DEVELOPER  
--- SIDEWALK BY BUILDER



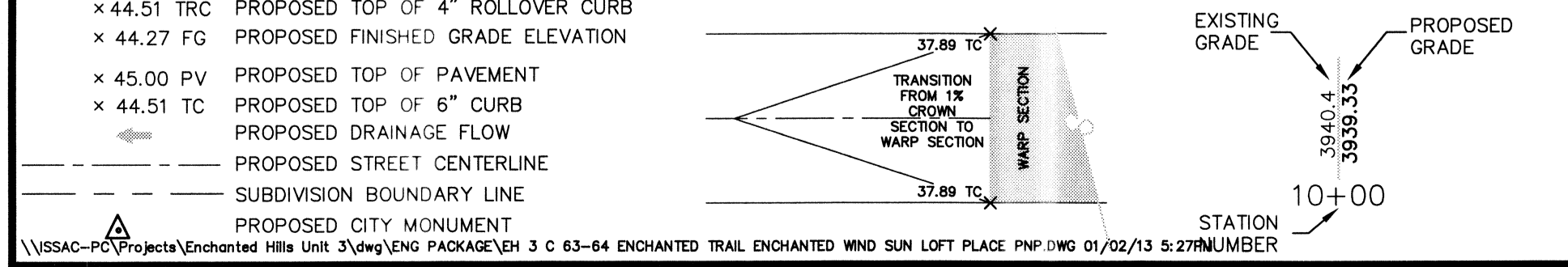
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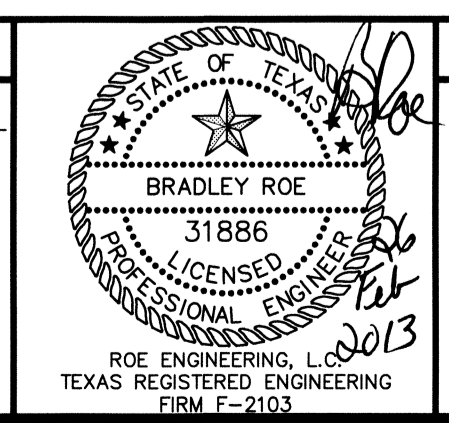
LEGEND



DATE	REVISIONS	BY
9/4/12	CITY COMMENTS	STAFF
9/20/12	CITY COMMENTS	STAFF

PRIMARY BENCHMARK
NBS MONUMENT "SUN 1989" (P.O. 620444) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981; LOCATED ABOUT 1.25 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88
SECONDARY BENCHMARK
EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21

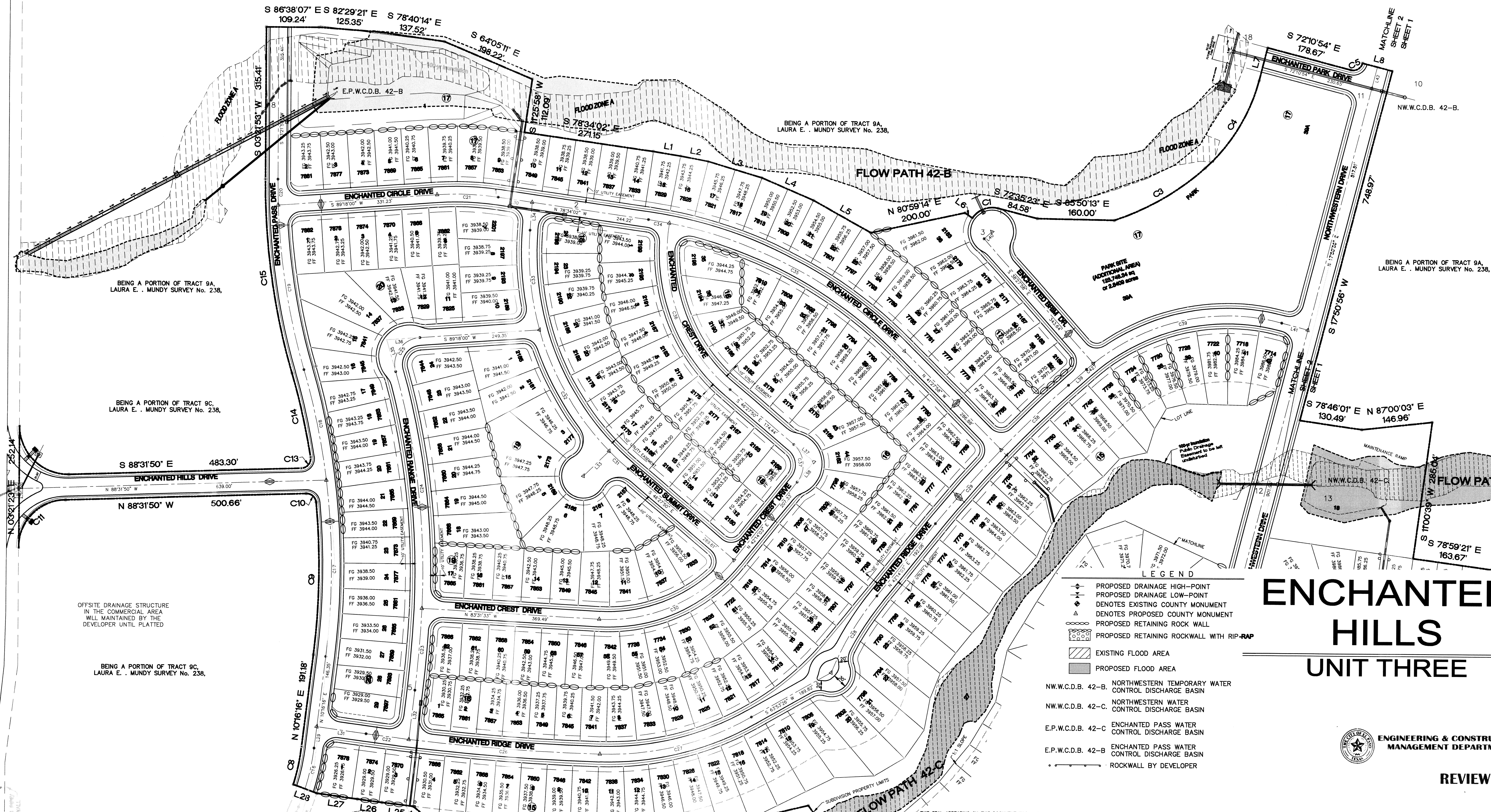
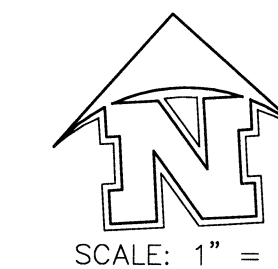
SCALE
HOR: _____ VER: _____
FILE NAME: _____
W.O. 011509-1 A EH-3
DATE: NOVEMBER, 2011
DESIGN BY: STAFF
DRAWN BY: I.D.R
CHKD. BY: H.P.
APPD. BY: BR



PLAN AND PROFILE  
**ENCHANTED HILLS UNIT THREE**  
ENCHANTED WIND DRIVE  
STATION 1+00.00 TO 2+46.04  
SUN LOFT PLACE  
STATION 1+00.00 TO 3+00.00

**bhr** Roe Engineering, L.C.  
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e-mail: roeeng@bhel.net  
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING  
SHEET 64 OF 77





# ENCHANTED HILLS UNIT THREE

- LEGEND**
- ◆ PROPOSED DRAINAGE HIGH-POINT
  - ◇ PROPOSED DRAINAGE LOW-POINT
  - DENOTES EXISTING COUNTY MONUMENT
  - △ DENOTES PROPOSED COUNTY MONUMENT
  - ▭ PROPOSED RETAINING ROCK WALL
  - ▨ PROPOSED RETAINING ROCKWALL WITH RIP-RAP
  - ▩ EXISTING FLOOD AREA
  - ▧ PROPOSED FLOOD AREA
- N.W.C.D.B. 42-B NORTHWESTERN TEMPORARY WATER CONTROL DISCHARGE BASIN  
 N.W.C.D.B. 42-C NORTHWESTERN WATER CONTROL DISCHARGE BASIN  
 E.P.W.C.D.B. 42-C ENCHANTED PASS WATER CONTROL DISCHARGE BASIN  
 E.P.W.C.D.B. 42-B ENCHANTED PASS WATER CONTROL DISCHARGE BASIN  
 ROCKWALL BY DEVELOPER

ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT

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**ENCHANTED HILLS UNIT THREE**  
**PROPOSED ROCKWALL**

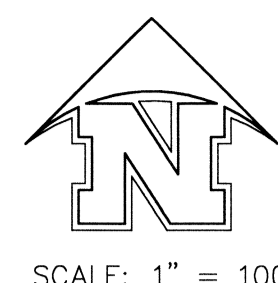
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SHEET 65 OF 77

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DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	N.T.S. MONUMENT (6100 1850 1850 000000)	HOR: _____ VER: _____
9/20/12	CITY COMMENTS	STAFF	LOCATION AS PER NATIONAL GEODETIC SURVEY 1981; LOCATED ABOUT 1.25 MILES EAST OF THE RIO GRANDE, 1/4 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	FILE NAME: _____
			EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE A LONG THE CENTERLINE OF LOS MOJOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE. ELEVATION 3857.21	DATE: NOVEMBER, 2011
			N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	DESIGN BY: STAFF
				DRAWN BY: L.D.R.
				CHKD. BY: H.P.
				APPD. BY: BR

# ENCHANTED HILLS UNIT THREE



- LEGEND**
- ◆ PROPOSED DRAINAGE HIGH-POINT
  - ▼ PROPOSED DRAINAGE LOW-POINT
  - ⊙ DENOTES EXISTING COUNTY MONUMENT
  - ▲ DENOTES PROPOSED COUNTY MONUMENT
  - ⊘ PROPOSED RETAINING ROCK WALL
  - ⊘ WITH RIP-RAP PROPOSED RETAINING ROCK WALL WITH RIP-RAP
  - ▨ EXISTING FLOOD AREA
  - ▩ PROPOSED FLOOD AREA
- NW.W.C.D.B. 42-B NORTHWESTERN TEMPORARY WATER CONTROL DISCHARGE BASIN  
 NW.W.C.D.B. 42-C NORTHWESTERN WATER CONTROL DISCHARGE BASIN  
 E.P.W.C.D.B. 42-C ENCHANTED PASS WATER CONTROL DISCHARGE BASIN  
 E.P.W.C.D.B. 42-B ENCHANTED PASS WATER CONTROL DISCHARGE BASIN  
 ——— ROCKWALL BY DEVELOPER



BEING A PORTION OF TRACT B, LAURA E. MUNDY SURVEY No. 238,

OFFSITE DRAINAGE STRUCTURE IN THE COMMERCIAL AREA WILL MAINTAINED BY THE DEVELOPER UNTIL PLATTED

BEING A PORTION OF TRACT B, LAURA E. MUNDY SURVEY No. 238,

ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT

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DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	N8S MONUMENT (2009 1289) (P18 020444) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED ABOUT 1.25 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	HOR: _____ VER: _____ FILE NAME: _____ W.O. 011509-1 A EH-3 DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR
9/20/12	CITY COMMENTS	STAFF		
			SECONDARY BENCHMARK	
			EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MICHOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 2, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	
			N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	

**ENCHANTED HILLS UNIT THREE**

**PROPOSED ROCKWALL**

ROE ENGINEERING, L.C.  
 TEXAS REGISTERED ENGINEERING FIRM E-2103

**ENCHANTED HILLS UNIT THREE**

**PROPOSED ROCKWALL**

Roe Engineering, L.C.  
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 (915) 633-1418 - FAX: (915) 633-4972  
 e-mail: roeseng@bnel.net

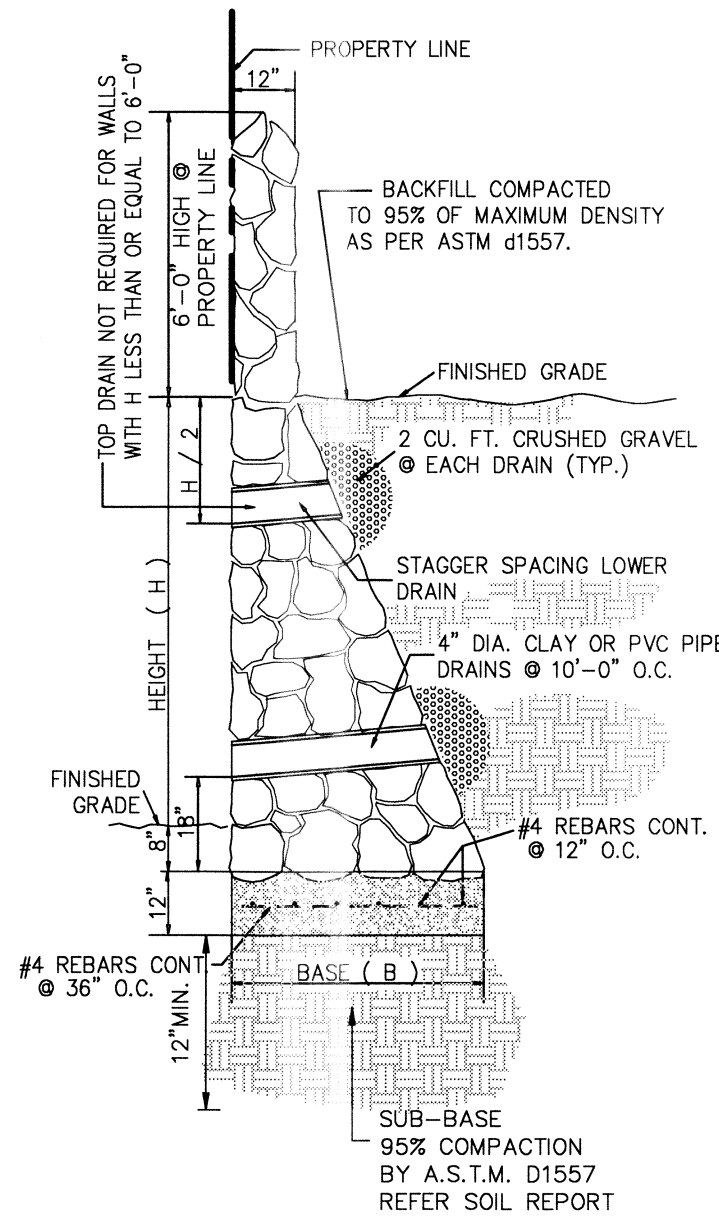
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

SHEET 66 OF 77

# ENCHANTED HILLS UNIT THREE

## GENERAL ROCKWALL NOTES

- NATURAL STONE SHALL BE SOUND AND FREE FROM LOOSE OR FRIABLE INCLUSIONS AND SHALL MEET REQUIRED STRENGTH AND DURABILITY FOR PROPOSED USE.
- MORTAR SHALL BE ASTM-C-270 TYPE S PROPORTION BY VOLUME:  
PORTLAND CEMENT 1 PART  
LIME 1/4 PART  
SAND 3-1/2 PARTS
- CONCRETE F'C=3000 PSI @ 28 DAYS.
- REINFORCING STEEL ASTM A615 GRADE 40, F<sub>y</sub>+40,000 PSI.
- ALLOWABLE SOIL BEARING PRESSURE - MINIMUM.
- WALL FOOTING SHALL BEAR ON COMPACTED OR FIRM UNDISTURBED GROUND.
- CHANGES IN WALL DIRECTION, WALL HEIGHT OR FOOTING ELEVATION WILL REQUIRE ADDITIONAL DESIGN.
- BACKFILL MATERIAL SHALL CONSIST OF WELL-DRAINED, COARSE DRAINED SOILS OR FINE SILTY SANDS WITH NO CLAY CONTENT. BACKFILL MATERIAL SHALL EXERT A HORIZONTAL FORCE OF AN EQUIVALENT FLUID PRESSURE NOT TO EXCEED 30#/F+3.
- SURCHARGE WILL REQUIRE ADDITIONAL DESIGN. YES NO. IF SURCHARGED, DETAILS MUST BE SUBMITTED FOR REVIEW AND APPROVAL TO BUILDING INSPECTION DEPARTMENT AT THE TIME BUILDING CONSTRUCTION PLANS ARE SUBMITTED.
- RETAINING WALL (S) WILL BE REQUIRED WHERE THE GRADE DIFFERENCE BETWEEN THE FINISHED GRADE OF ANY LOT WITHIN THIS SUBDIVISION AND/OR ADJOINING PROPERTY IS TWO (2) FEET OR GREATER.
- SUBGRADE UNDER ALL RETAINING STRUCTURE SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557.
- 24" SUBGRADE MATERIAL SHALL BE COMPACTED UNDER RETAINING STRUCTURE.



**ROCKWALL DETAIL (OPTION A)**  
SCALE: 1" = 3'

HEIGHT ( H )	BASE ( B )	REINFORCING
3' - 0"	2' - 0"	4 #4 REBARS @ 12" O.C.
4' - 0"	2' - 9"	5 #4 REBARS @ 12" O.C.
5' - 0"	3' - 0"	5 #4 REBARS @ 12" O.C.
6' - 0"	3' - 9"	6 #4 REBARS @ 12" O.C.
7' - 0"	4' - 3"	8 #4 REBARS @ 12" O.C.
8' - 0"	5' - 0"	8 #4 REBARS @ 12" O.C.
9' - 0"	5' - 10"	10 #4 REBARS @ 12" O.C.

## ROCKWALL CALCULATIONS

CONSIDERING A 3'-0" HIGH RETAINING ROCKWALL

SOIL TEST RESULTS:  
f<sub>c</sub> = 3000 psi  
f<sub>y</sub> = 40,000 psi  
WEIGHT OF CONC. = 150 pcf  
WEIGHT OF SOIL = 120 pcf  
SOIL BEARING CAPACITY = 2500 psf

SOIL FACTORS:  
SOIL PRESSURE = 510  
SOIL MOMENT = 377  
y RESULTANT = 1.33'  
K<sub>a</sub> = 0.29

REACTIONS:  
WEIGHT/UNIT LENGTH OF WALL = 893  
RESISTING MOMENT = 781  
DISTANCE FOR EQUILIBRANT (x) = 0.45'

SAFETY FACTORS:  
OVERTURNING FACTOR = 2.07 [ $> 1.5$ ]  
SLIDING FACTOR = 2.37 [ $> 1.5$ ]

SOIL PRESSURE:  
ECCENTRICITY = 0.42' [ $< 0.29'$ ]  
SOIL PRESSURE AT TOE = 1249 [ $< 2500$ ]  
SOIL PRESSURE AT HEEL = -229 [ $> 0$ ]

## ROCKWALL CALCULATIONS

CONSIDERING A 4'-0" HIGH RETAINING ROCKWALL

SOIL TEST RESULTS:  
f<sub>c</sub> = 3000 psi  
f<sub>y</sub> = 40,000 psi  
WEIGHT OF CONC. = 150 pcf  
WEIGHT OF SOIL = 120 pcf  
SOIL BEARING CAPACITY = 2500 psf

SOIL FACTORS:  
SOIL PRESSURE = 630  
SOIL MOMENT = 737  
y RESULTANT = 1.67'  
K<sub>a</sub> = 0.29

REACTIONS:  
WEIGHT/UNIT LENGTH OF WALL = 1733  
RESISTING MOMENT = 2382  
DISTANCE FOR EQUILIBRANT (x) = 0.95'

SAFETY FACTORS:  
OVERTURNING FACTOR = 3.23 [ $> 1.5$ ]  
SLIDING FACTOR = 2.94 [ $> 1.5$ ]

SOIL PRESSURE:  
ECCENTRICITY = 0.43' [ $< 0.46'$ ]  
SOIL PRESSURE AT TOE = 1215 [ $< 2500$ ]  
SOIL PRESSURE AT HEEL = -45 [ $> 0$ ]

## ROCKWALL CALCULATIONS

CONSIDERING A 5'-0" HIGH RETAINING ROCKWALL

SOIL TEST RESULTS:  
f<sub>c</sub> = 3000 psi  
f<sub>y</sub> = 40,000 psi  
WEIGHT OF CONC. = 150 pcf  
WEIGHT OF SOIL = 120 pcf  
SOIL BEARING CAPACITY = 2500 psf

SOIL FACTORS:  
SOIL PRESSURE = 750  
SOIL MOMENT = 1274  
y RESULTANT = 2.00'  
K<sub>a</sub> = 0.29

REACTIONS:  
WEIGHT/UNIT LENGTH OF WALL = 2250  
RESISTING MOMENT = 3375  
DISTANCE FOR EQUILIBRANT (x) = 0.93'

SAFETY FACTORS:  
OVERTURNING FACTOR = 2.65 [ $> 1.5$ ]  
SLIDING FACTOR = 2.65 [ $> 1.5$ ]

SOIL PRESSURE:  
ECCENTRICITY = 0.57' [ $< 0.50'$ ]  
SOIL PRESSURE AT TOE = 1599 [ $< 2500$ ]  
SOIL PRESSURE AT HEEL = 0.99 [ $> 0$ ]

## ROCKWALL CALCULATIONS

CONSIDERING A 6'-0" HIGH RETAINING ROCKWALL

SOIL TEST RESULTS:  
f<sub>c</sub> = 3000 psi  
f<sub>y</sub> = 40,000 psi  
WEIGHT OF CONC. = 150 pcf  
WEIGHT OF SOIL = 120 pcf  
SOIL BEARING CAPACITY = 2500 psf

SOIL FACTORS:  
SOIL PRESSURE = 870  
SOIL MOMENT = 2022  
y RESULTANT = 2.33'  
K<sub>a</sub> = 0.29

REACTIONS:  
WEIGHT/UNIT LENGTH OF WALL = 3263  
RESISTING MOMENT = 6117  
DISTANCE FOR EQUILIBRANT (x) = 1.26'

SAFETY FACTORS:  
OVERTURNING FACTOR = 3.02 [ $> 1.5$ ]  
SLIDING FACTOR = 2.82 [ $> 1.5$ ]

SOIL PRESSURE:  
ECCENTRICITY = 0.62' [ $< 0.63'$ ]  
SOIL PRESSURE AT TOE = 1733 [ $< 2500$ ]  
SOIL PRESSURE AT HEEL = -7 [ $> 0$ ]

## ROCKWALL CALCULATIONS

CONSIDERING A 7'-0" HIGH RETAINING ROCKWALL

SOIL TEST RESULTS:  
f<sub>c</sub> = 3000 psi  
f<sub>y</sub> = 40,000 psi  
WEIGHT OF CONC. = 150 pcf  
WEIGHT OF SOIL = 120 pcf  
SOIL BEARING CAPACITY = 2500 psf

SOIL FACTORS:  
SOIL PRESSURE = 990  
SOIL MOMENT = 3019  
y RESULTANT = 2.67'  
K<sub>a</sub> = 0.29

REACTIONS:  
WEIGHT/UNIT LENGTH OF WALL = 4208  
RESISTING MOMENT = 8941  
DISTANCE FOR EQUILIBRANT (x) = 1.41

SAFETY FACTORS:  
OVERTURNING FACTOR = 2.96 [ $> 1.5$ ]  
SLIDING FACTOR = 2.79 [ $> 1.5$ ]

SOIL PRESSURE:  
ECCENTRICITY = 0.72' [ $< 0.71'$ ]  
SOIL PRESSURE AT TOE = 1993 [ $< 2500$ ]  
SOIL PRESSURE AT HEEL = -13 [ $> 0$ ]

## ROCKWALL CALCULATIONS

CONSIDERING A 8'-0" HIGH RETAINING ROCKWALL

SOIL TEST RESULTS:  
f<sub>c</sub> = 3000 psi  
f<sub>y</sub> = 40,000 psi  
WEIGHT OF CONC. = 150 pcf  
WEIGHT OF SOIL = 120 pcf  
SOIL BEARING CAPACITY = 2500 psf

SOIL FACTORS:  
SOIL PRESSURE = 1110  
SOIL MOMENT = 4298  
y RESULTANT = 3.00'  
K<sub>a</sub> = 0.29

REACTIONS:  
WEIGHT/UNIT LENGTH OF WALL = 4995  
RESISTING MOMENT = 11239  
DISTANCE FOR EQUILIBRANT (x) = 1.39

SAFETY FACTORS:  
OVERTURNING FACTOR = 2.61 [ $> 1.5$ ]  
SLIDING FACTOR = 2.61 [ $> 1.5$ ]

SOIL PRESSURE:  
ECCENTRICITY = 0.86' [ $< 0.75'$ ]  
SOIL PRESSURE AT TOE = 2384 [ $< 2500$ ]  
SOIL PRESSURE AT HEEL = -164 [ $> 0$ ]

## ROCKWALL CALCULATIONS

CONSIDERING A 9'-0" HIGH RETAINING ROCKWALL

SOIL TEST RESULTS:  
f<sub>c</sub> = 3000 psi  
f<sub>y</sub> = 40,000 psi  
WEIGHT OF CONC. = 150 pcf  
WEIGHT OF SOIL = 120 pcf  
SOIL BEARING CAPACITY = 2500 psf

SOIL FACTORS:  
SOIL PRESSURE = 1230  
SOIL MOMENT = 5896  
y RESULTANT = 3.33'  
K<sub>a</sub> = 0.29

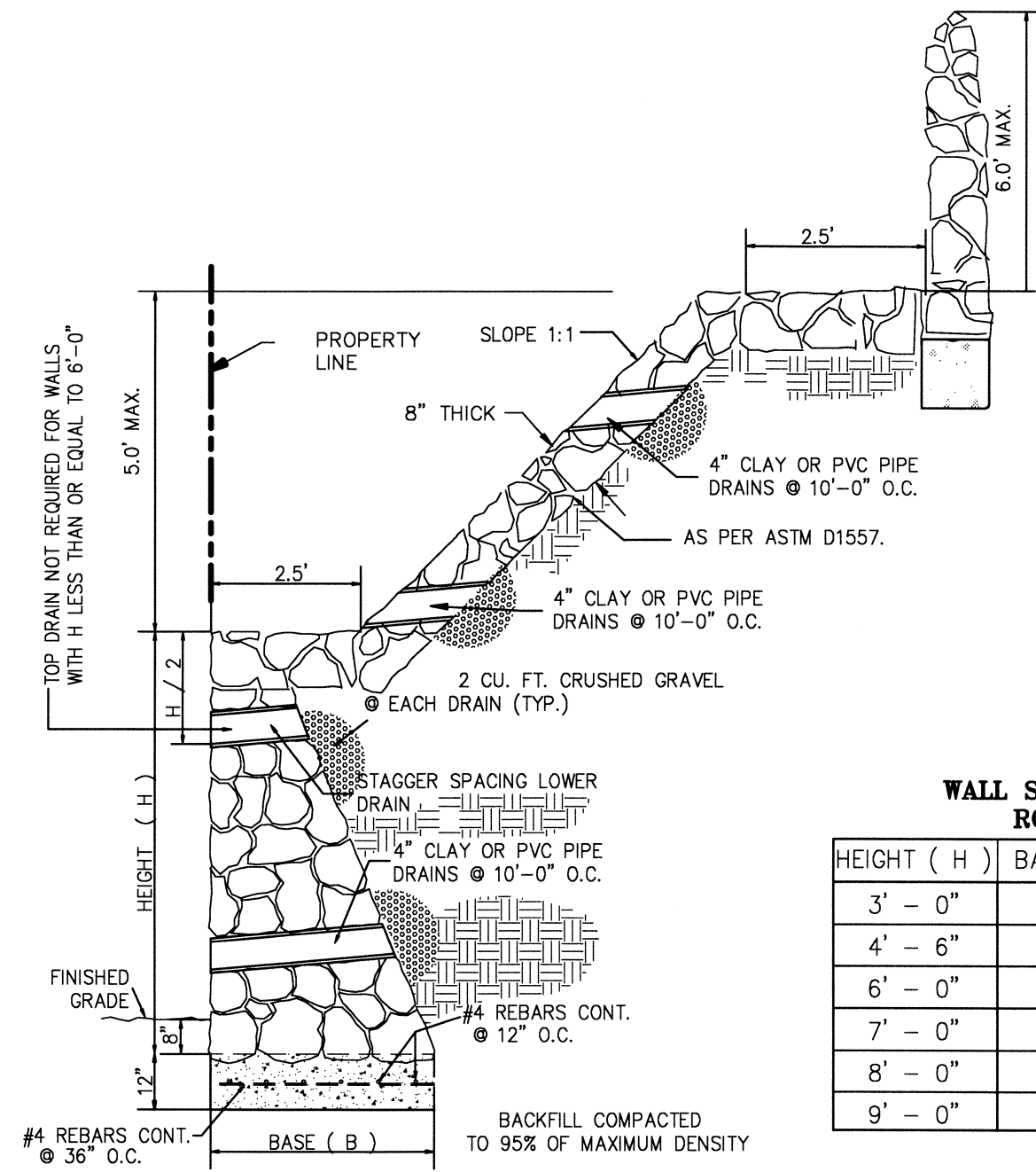
REACTIONS:  
WEIGHT/UNIT LENGTH OF WALL = 7380  
RESISTING MOMENT = 22140  
DISTANCE FOR EQUILIBRANT (x) = 2.20

SAFETY FACTORS:  
OVERTURNING FACTOR = 3.76 [ $> 1.5$ ]  
SLIDING FACTOR = 3.33 [ $> 1.5$ ]

SOIL PRESSURE:  
ECCENTRICITY = 0.80' [ $< 1.00'$ ]  
SOIL PRESSURE AT TOE = 2213 [ $< 2500$ ]  
SOIL PRESSURE AT HEEL = -247 [ $> 0$ ]

## NOTES

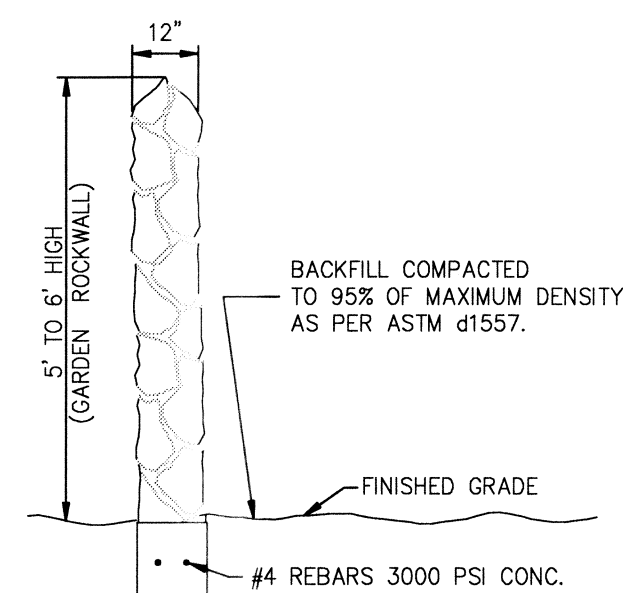
- ROCK RIP-RAP SHALL BE PLACED ON EMBANKMENTS OR WHERE REQUIRED BY THE CITY ENGINEER FOR EROSION PROTECTION, EXCEPT FOR POND AREAS.
- ROCK RIP-RAP SHALL BE A MINIMUM OF 8" MORTARED ROCK.
- STONE FOR ROCK RIP-RAP SHALL BE AS NEARLY UNIFORM IN SECTION AS IS PRACTICABLE. STONE SHALL BE QUARRIED; FRACTURED RIVERROCK SHALL NOT BE PERMITTED.
- MORTAR FOR ROCK RIP-RAP SHALL BE TYPE S, 1800 P.S.I. AR PER ASTM C270.
- FOR SLOPE GREATER THAN 1:1 OR VERTICAL HEIGHT OF MORE THAN SIX(6) FEET, THE RIP-RAP SHALL BE DESIGNED BY PROFESSIONAL ENGINEER.
- PROVIDE ONE(1) INCH EXPANSION JOINT AT EVERY FIFTY(50) FEET.
- PROVIDE DUMMY JOINT AT TEN(10) FEET O.C.
- NON-MORTARED ROCK RIP-RAP SHALL BE ALLOWED WHERE APPROVED BY CITY ENGINEER.



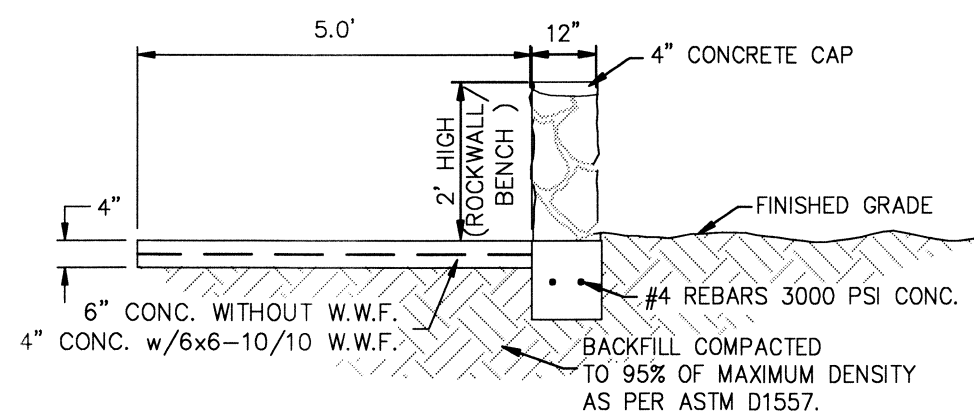
**RETAINING ROCKWALL WITH 1:1 RIP-RAP OPTION B**  
SCALE: NTS

## WALL SCHEDULE FOR ROCKWALL AND ROCKWALL WITH RIP-RAP

HEIGHT ( H )	BASE ( B )	REINFORCING
3' - 0"	2' - 2"	4 #4 REBARS @ 12" O.C.
4' - 6"	3' - 0"	5 #4 REBARS @ 12" O.C.
6' - 0"	4' - 0"	6 #4 REBARS @ 12" O.C.
7' - 0"	4' - 6"	8 #4 REBARS @ 12" O.C.
8' - 0"	5' - 0"	8 #4 REBARS @ 12" O.C.
9' - 0"	6' - 3"	8 #4 REBARS @ 12" O.C.



**ROCKWALL DETAIL**  
SCALE: 1" = 3'

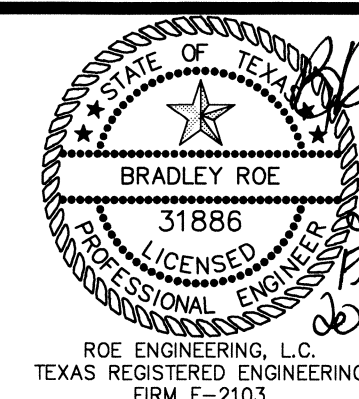


**ROCKWALL/BENCH DETAIL**  
SCALE: 1" = 3'

ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT

REVIEWED

THIS SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY BRADLEY ROE, P.E. 31886 ON SEPTEMBER 2022. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.



**ENCHANTED HILLS UNIT THREE**

**ROCKWALL DETAILS**

**Roe Engineering, L.C.**

601 N. Cotton St. Suite No. 8 El Paso, TX, 79902  
(915) 533-1418 - FAX: (915) 533-4972  
e-mail: roeeng@roewall.net

ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

SHEET 67 OF 77

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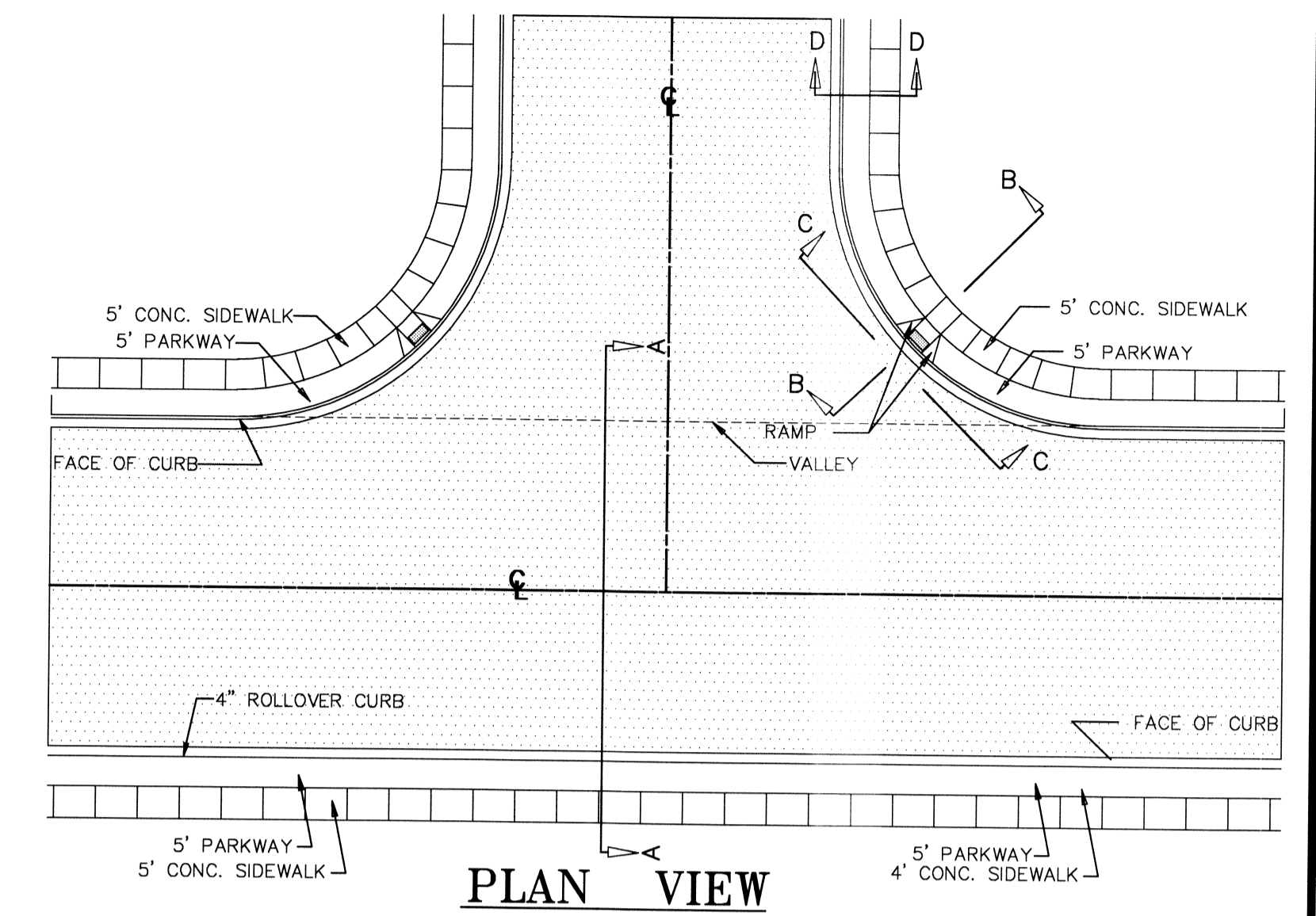
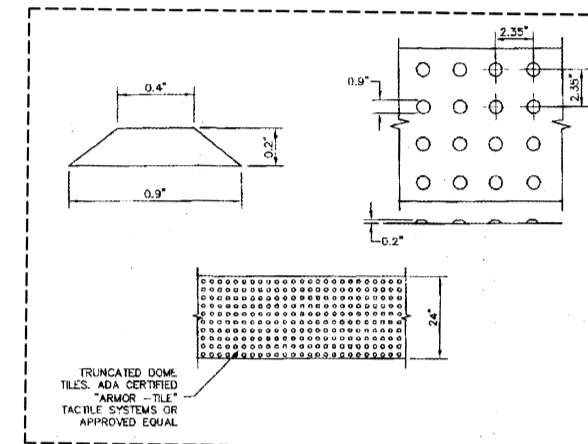
**FLOOD NOTE:**  
THE ABOVE REFERENCED PROPERTY IS WITHIN ZONE "A" AND ZONE "X" (EXPLANATION: ZONE "A" NO BASE FLOOD ELEVATIONS DETERMINED; EXPLANATION: ZONE "X" AREAS DETERMINED TO BE OUTSIDE THE 500 YEAR FLOODPLAIN.) ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER THE UNINCORPORATED AREAS COMMUNITY PLAN NO. 480212 0025 B, DATED SEPTEMBER 4, 1991.

DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	NO MONUMENT FOUND 1989 (PK 02044)	HOR: _____ VER: _____
9/20/12	CITY COMMENTS	STAFF	LOCATION AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED ABOUT 1.25 MILES EAST OF THE NO ORANGE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	FILE NAME: _____ W.O. 011509-1 A EH-3
			EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTOLE HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTOLE HEIGHTS UNIT ONE. ELEVATION: 3897.21	DATE: NOVEMBER, 2011
			N.A.V.D.88 DATUM -10.18 = CITY OF EL PASO DATUM	DESIGN BY: STAFF
				DRAWN BY: I.D.R.
				CHKD. BY: H.P.
				APPD. BY: BR

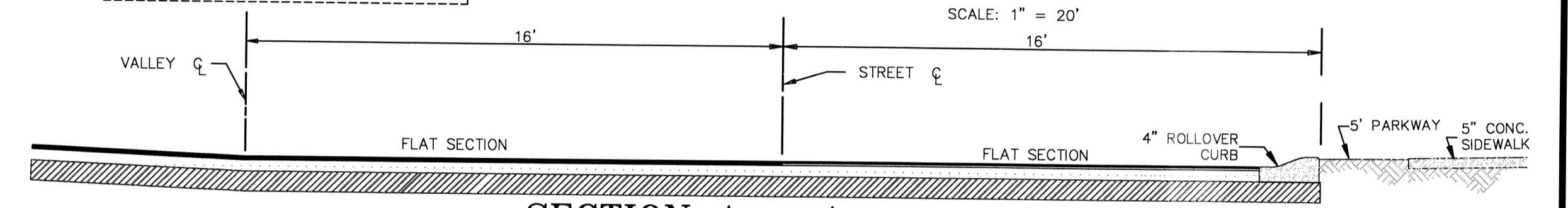
# City of El Paso Dome Size and Spacing

CITY OF EL PASO  
DOME SIZE AND SPACING

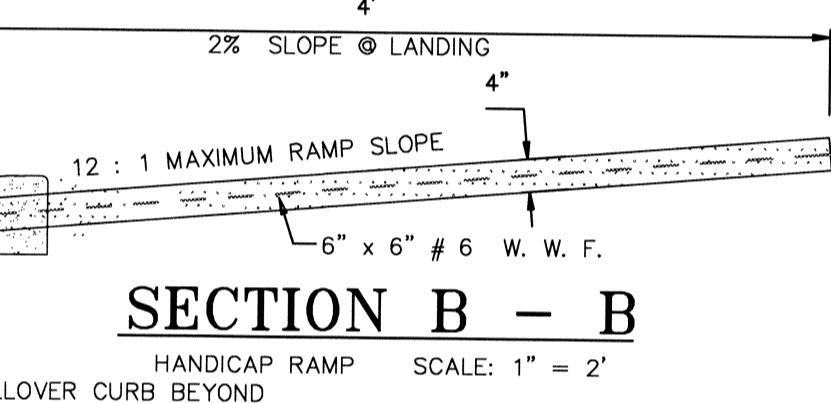
1. DOME SIZE AND SPACING: TRUNCATED DOMES SHALL HAVE A DIAMETER OF NOMINAL 0.9 INCHES (23 MM) AT THE BOTTOM, A DIAMETER OF 0.4 INCH (10 MM) AT THE TOP, A HEIGHT OF NOMINAL 0.2 INCHES (5MM), AND CENTER TO CENTER SPACING OF NOMINAL 2.35 INCHES (60 MM) MEASURED ALONG ONE SIDE OF A SQUARE ARRANGEMENT.
2. DOME ALIGNMENT: DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES. DETECTABLE WARNING SURFACES SHALL EXTEND 24 INCHES (610 MM) MINIMUM IN THE DIRECTION OF TRAVEL AND THE FULL WIDTH OF THE CURB RAMP, LANDING OR BLENDED TRANSITION.
3. CONTRAST: THERE SHALL BE A MINIMUM OF 70 PERCENT CONTRAST IN LIGHT REFLECTANCE BETWEEN THE DETECTABLE WARNING AND AN ADJOINING SURFACE, OR THE DETECTABLE WARNING SHALL BE "RED BRICK" COLOR, UNLESS OTHERWISE DIRECTED BY THE OWNER. THE MATERIAL USED TO PROVIDE VISUAL CONTRAST SHALL BE AN INTEGRAL PART OF THE DETECTABLE WARNING SURFACE. CONTRAST SHALL BE PROVIDED BY PLACING AND MIXING TINT IN THE PLASTIC CONCRETE USED FOR THE DETECTABLE WARNING SURFACE. NO PAINTING OF THE SURFACE SHALL BE PERMITTED.



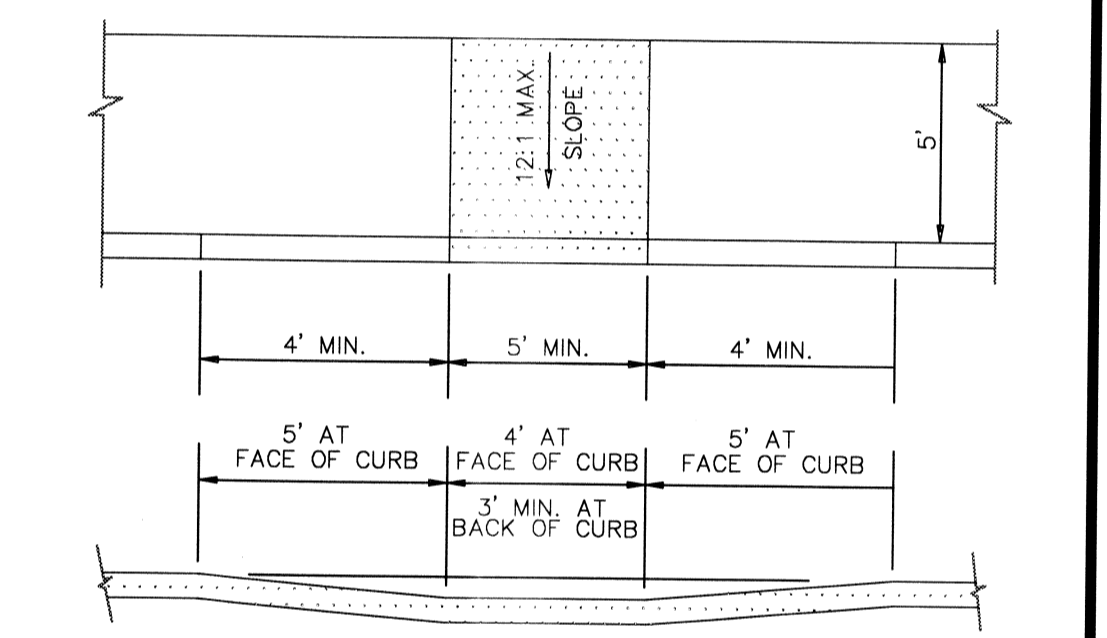
PLAN VIEW  
SCALE: 1" = 20'



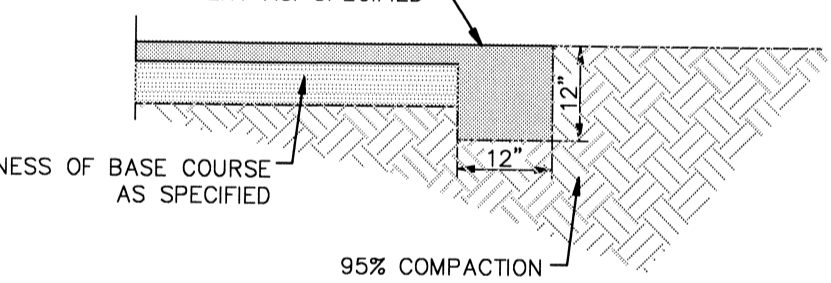
SECTION A - A  
VALLEY DETAIL SCALE: 1" = 4'



SECTION B - B  
HANDICAP RAMP SCALE: 1" = 2'

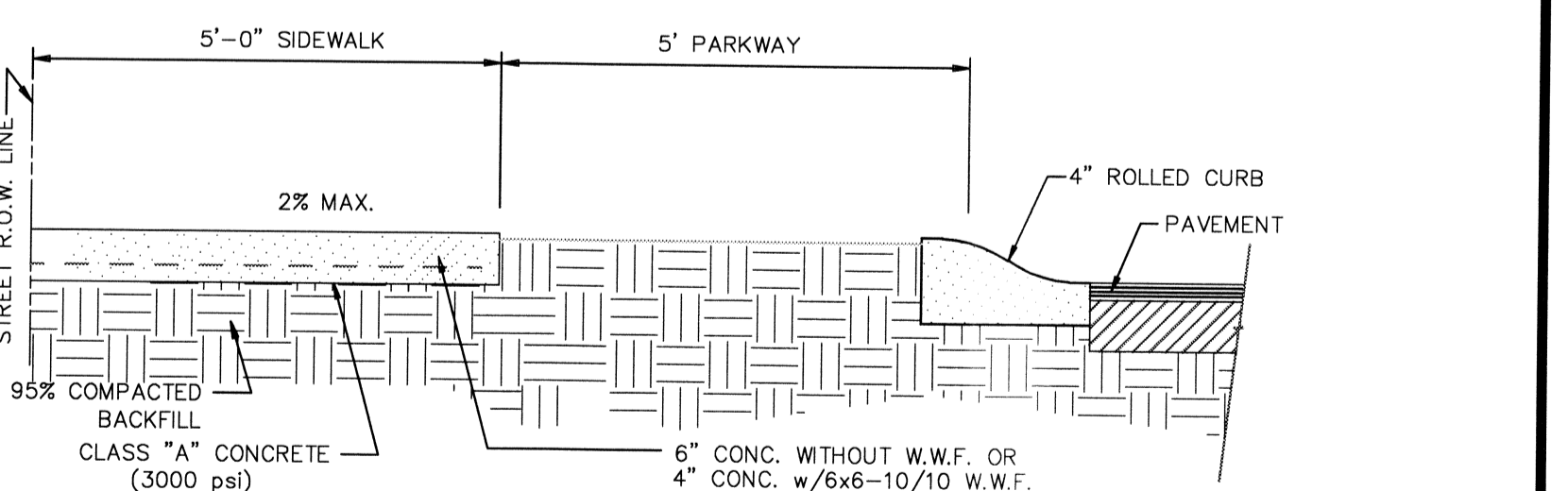


SECTION C - C  
SCALE: 1" = 2'



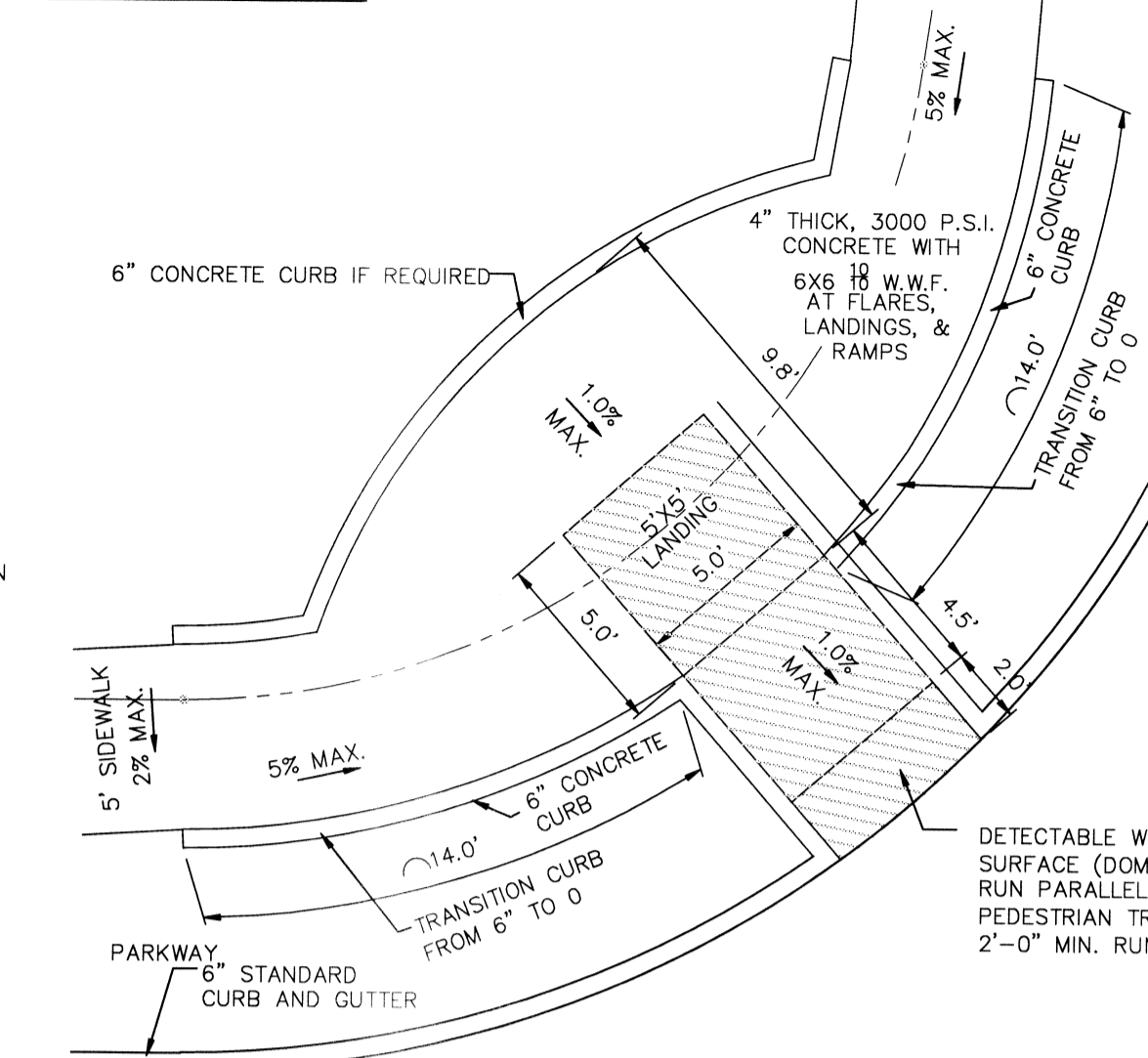
PAVEMENT TERMINUS  
SCALE 1" = 2'

- 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 MATERIAL OR EQUAL.
  4. EXPANSION JOINTS REQUIRED AT 50' O.C. WHEN FORMING FOR HEADERS.
  5. EXPANSION JOINTS REQUIRED FOR SIDEWALK AT 20' O.C.



SECTION D - D  
SCALE: 1" = 2'

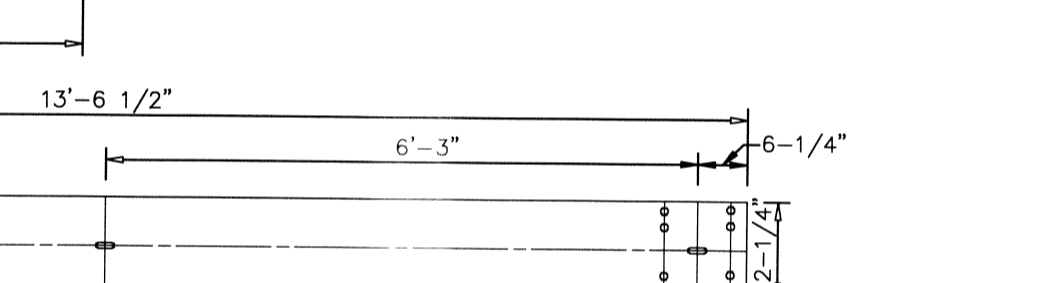
## PARK SITE



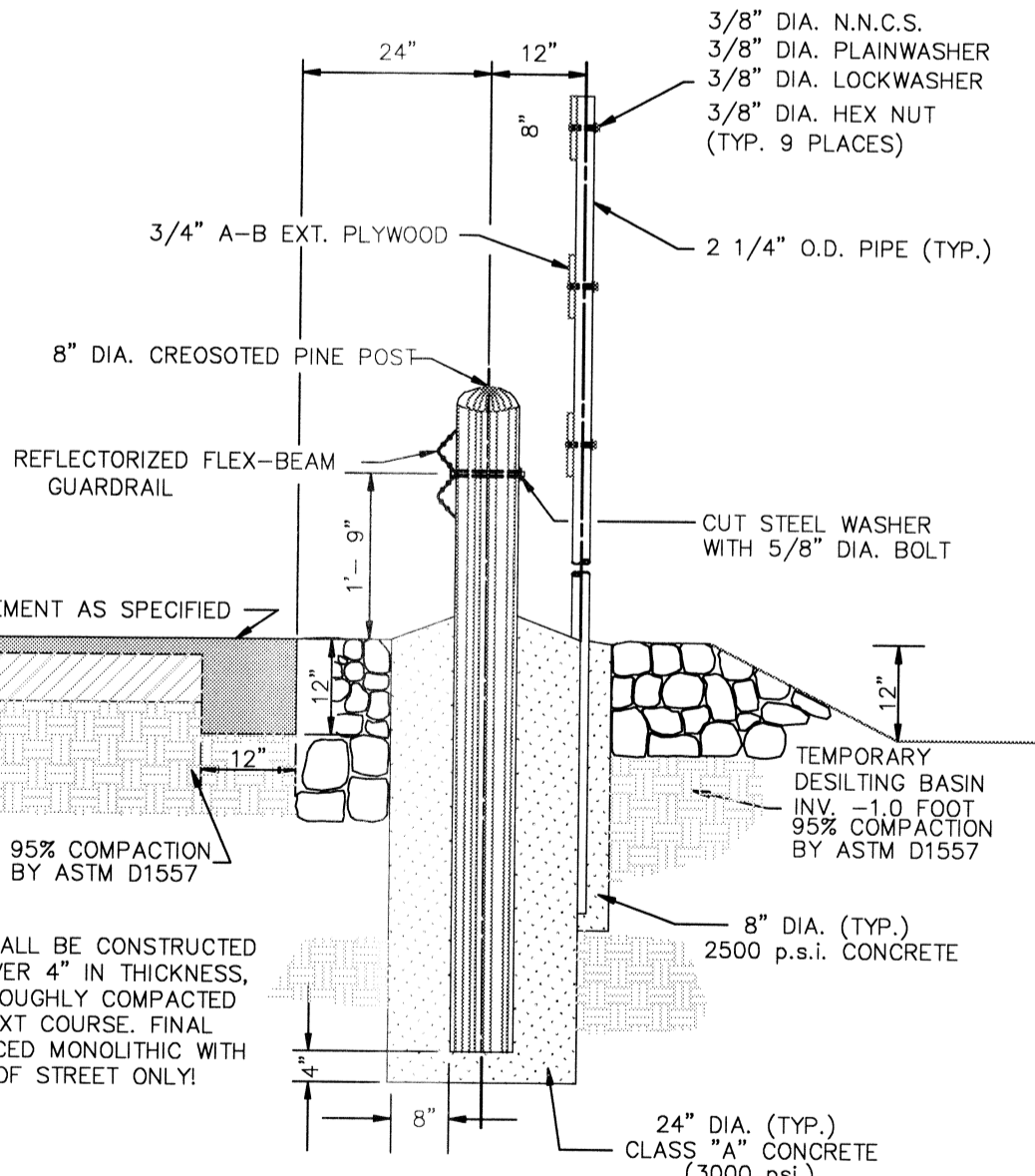
## PARK SITE HANDICAP RAMPS

### Pedestrian Facilities General Notes

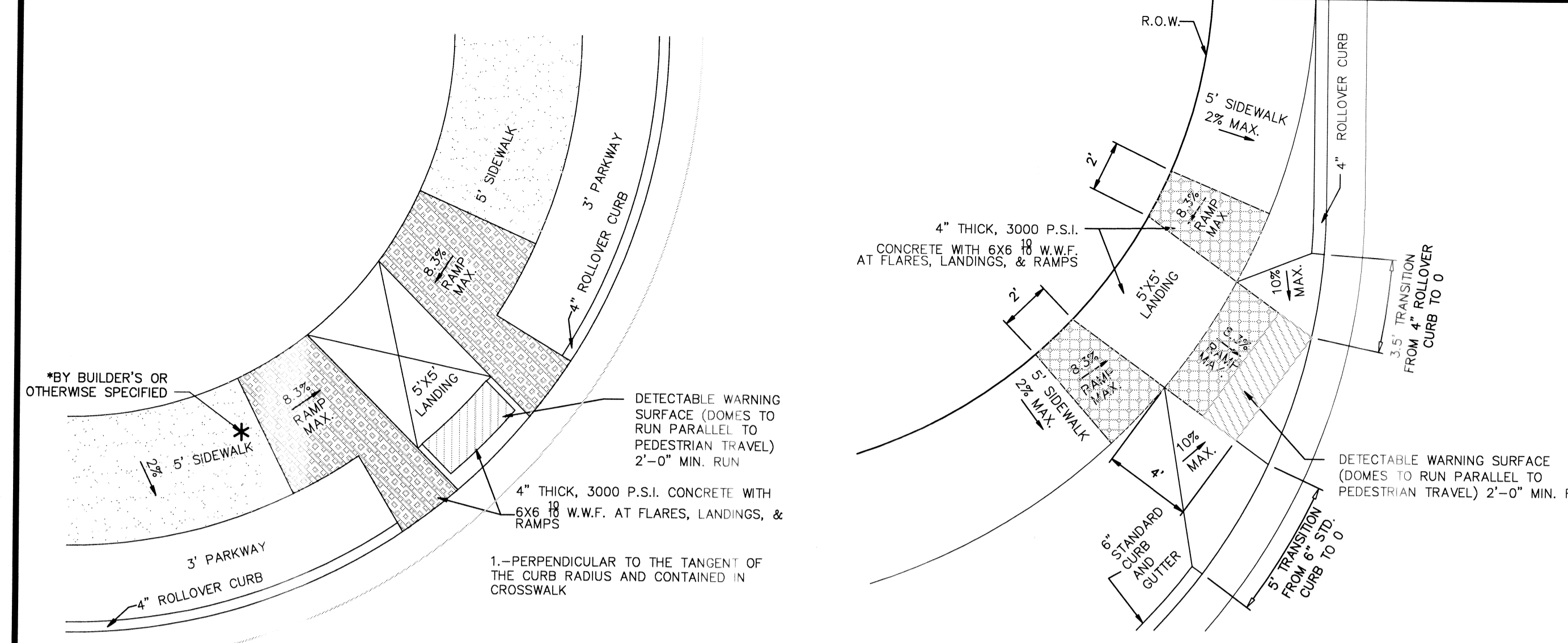
1. All slopes are maximum allowable. The least possible slope that will still drain properly should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
2. Landings shall be 5' x 5' minimum with a maximum 2% slope in any direction.
3. Maneuvering space at the bottom of curb ramps shall be a minimum of 4' x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
4. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
5. Curb ramps with returned curbs may be used only where pedestrians would not normally walk across the ramp, either because the adjacent surface is planting or other non-walking surface or because the side approach is substantially obstructed. Otherwise, provide flared sides.
6. Additional information on curb ramp location, design, light reflective value and texture may be found in the current edition of the Texas Accessibility Standards (TAS) and 16 TAC, 68.102.
7. Separate curb ramp and landings from adjacent sidewalk and any other elements with premod with bituminous exp. joint or board joint of 3/4" unless otherwise directed by the Engineer.
8. Provide a smooth transition where the curb ramps connect to the street.
9. Flare slope shall not exceed 10% measured along curb line.



SCALE: 1" = 2'



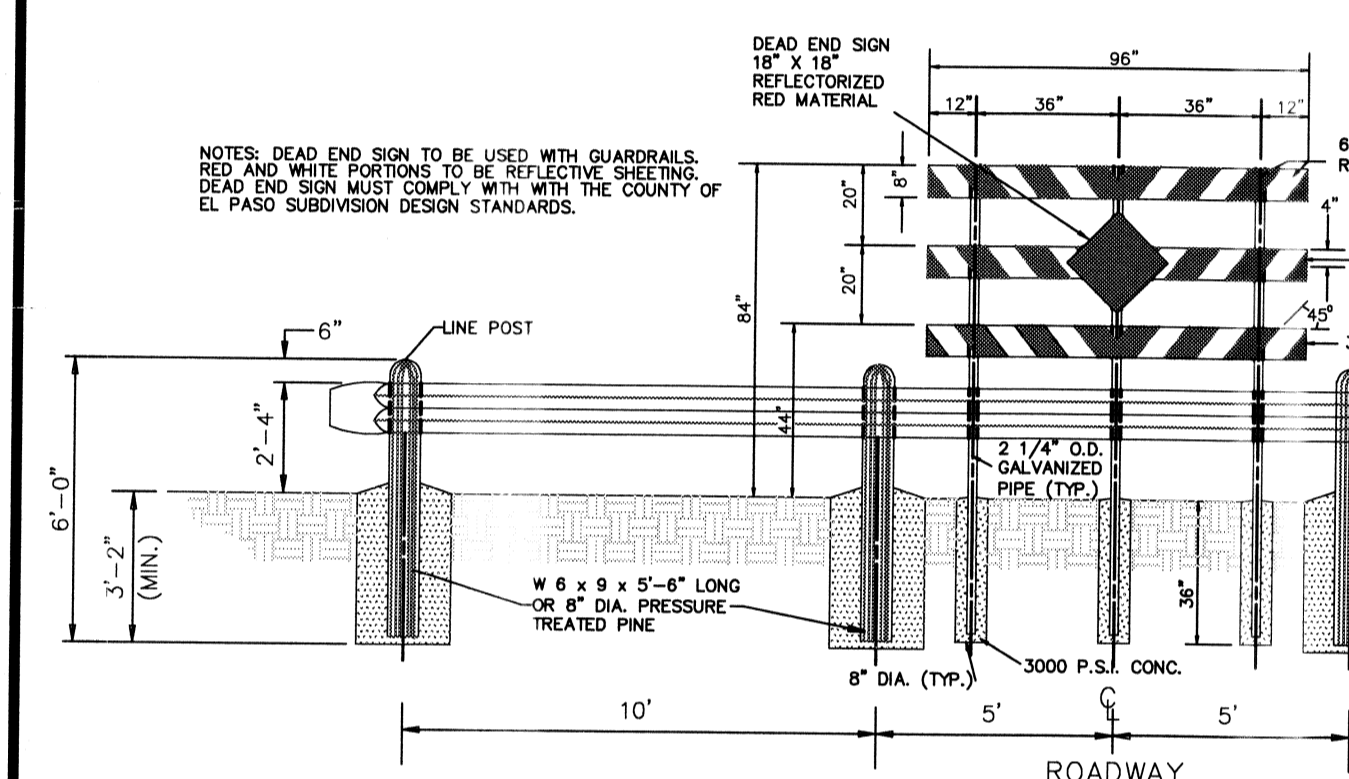
TERMINUS OF STREET  
SCALE: 1" = 2'



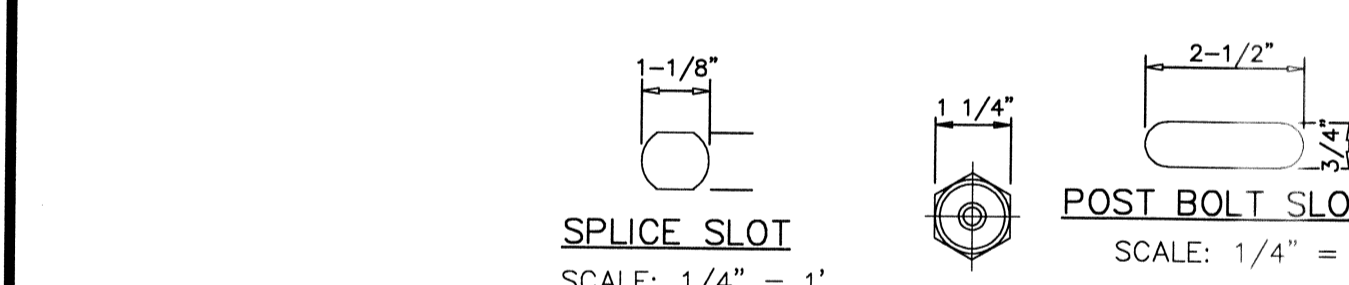
## DIAGONAL COMBINATION CURB RAMP

### GENERAL NOTES:

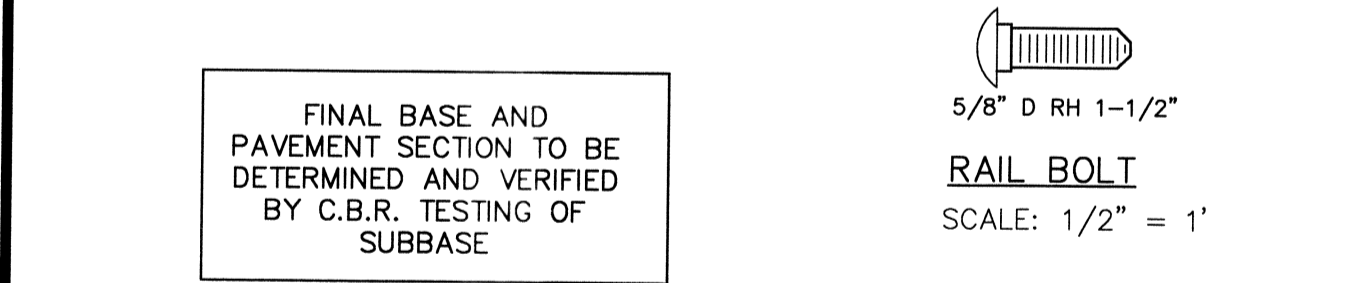
1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN THE DRAWINGS AND SITE CONDITIONS BEFORE COMMENCING WORK.
2. ANY DISCREPANCIES FOUND AMONG THE DIFFERENT DISCIPLINE DRAWINGS SHALL BE REPORTED TO ENGINEER FOR PROPER ADJUSTMENT PRIOR TO PROCEEDING WITH WORK.
3. DETAILS ON THIS DRAWING ARE TYPICAL AND APPLY TO SIMILAR PROJECT CONDITIONS REGARDLESS OF WHETHER OR NOT THEY ARE SPECIFICALLY REFERENCED.



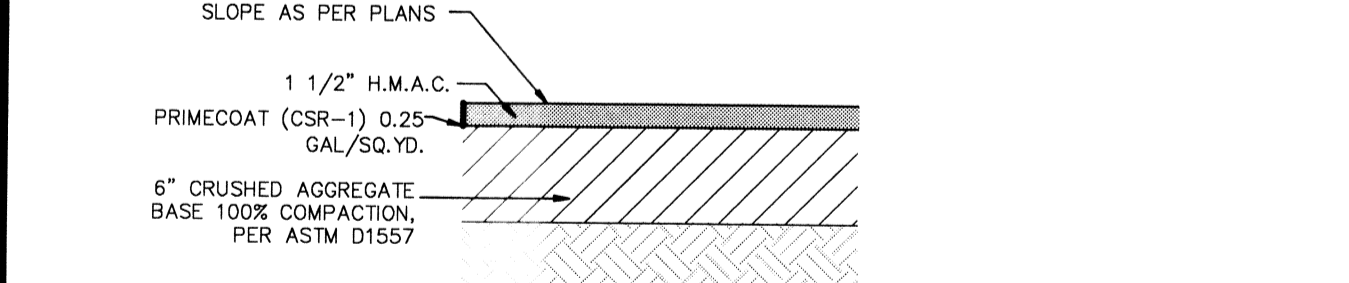
GUARD RAIL DETAIL  
SCALE: 1" = 1'



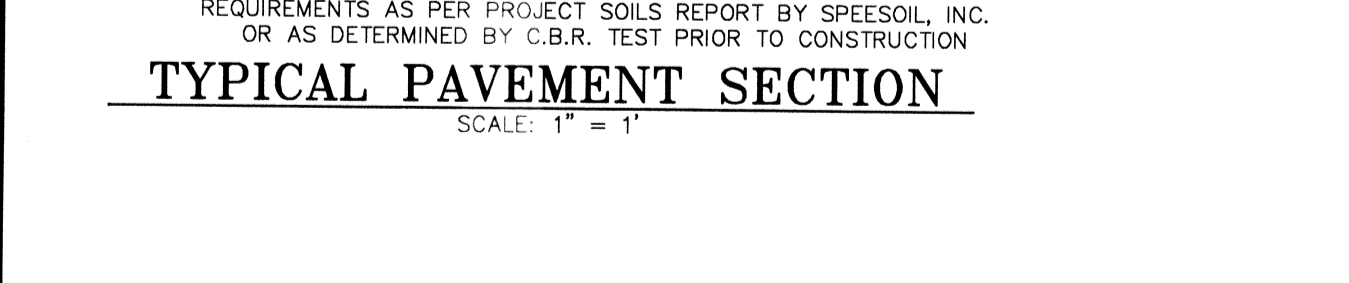
SPLICE SLOT  
SCALE: 1/4" = 1'



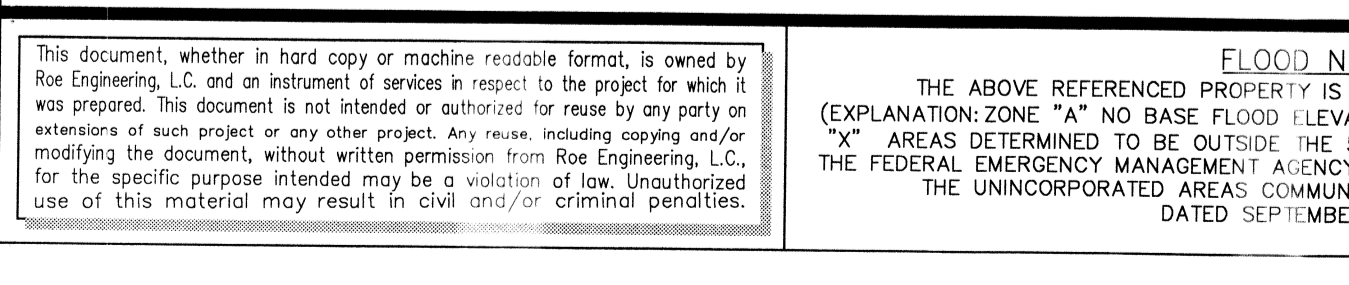
POST BOLT SLOT  
SCALE: 1/4" = 1'



HEX NUT  
SCALE: 1/4" = 1'



RAIL BOLT  
SCALE: 1/2" = 1'

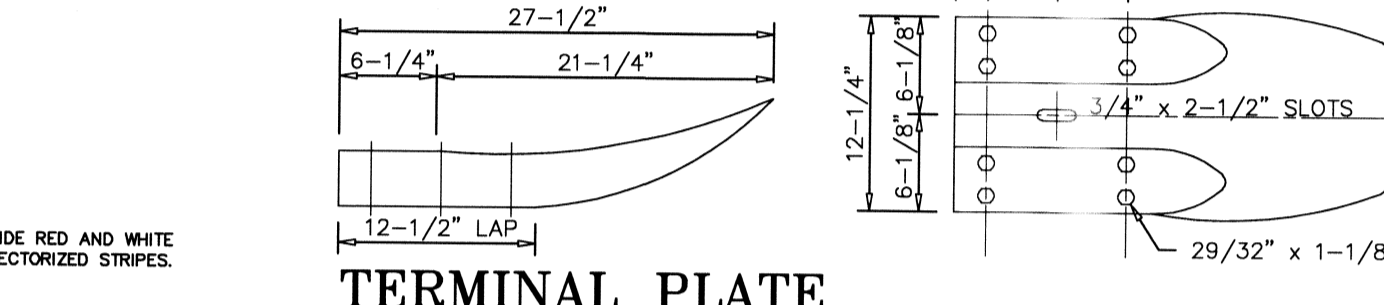


TYPICAL PAVEMENT SECTION  
SCALE: 1" = 1'

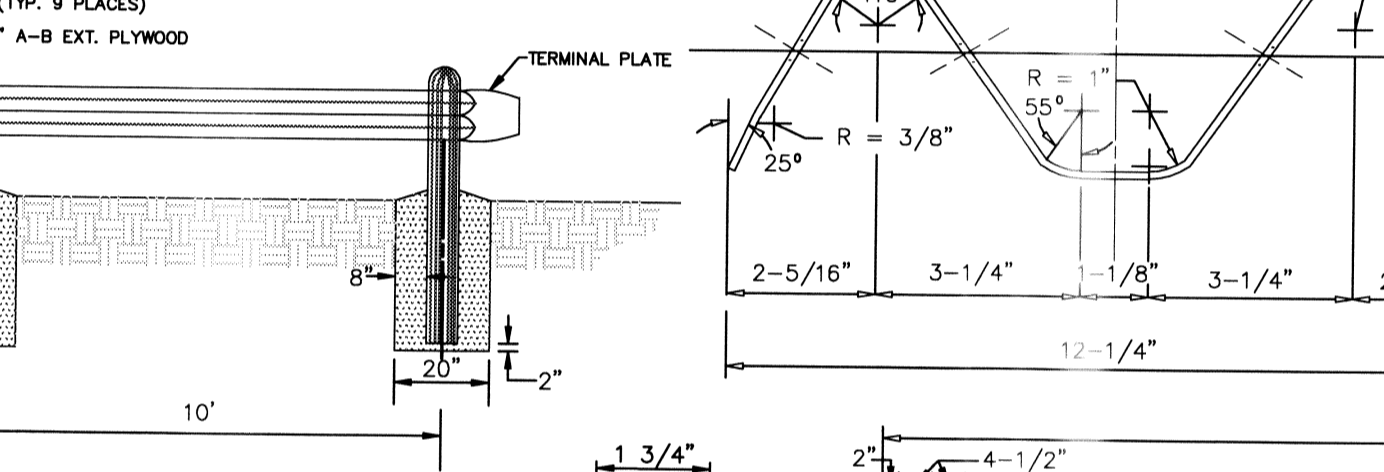
## HANDICAP RAMPS



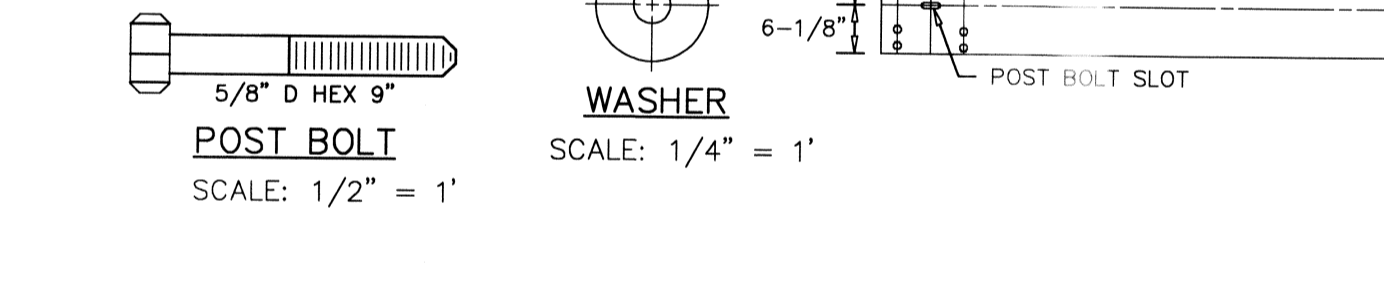
TERMINAL PLATE  
SCALE: 1" = 1'



WASHER  
SCALE: 1/4" = 1'



POST BOLT SLOT  
SCALE: 1/2" = 1'



JUNCTURE OF NEW FLEXIBLE AND EXISTING FLEXIBLE PAVEMENT  
SCALE: 1/2" = 1'

**FLOOD NOTE:**  
THE ABOVE REFERENCED PROPERTY IS WITHIN ZONE "A" AND ZONE "X" (EXPLANATION: ZONE "A" NO BASE FLOOD ELEVATIONS DETERMINED; EXPLANATION: ZONE "X" AREAS DETERMINED TO BE OUTSIDE THE 500 YEAR FLOODPLAIN) ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER THE UNINCORPORATED AREAS COMMUNITY PANEL NO. 480212.0025 B. DATED SEPTEMBER 4, 1991.

DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	EXISTING MONUMENT CHINA 1888 FROM LOG44444	HOR: AS SHOWN VER: AS SHOWN
9/20/12	CITY COMMENTS	STAFF	LOCATED AS PER NATIONAL GEODETIC SURVEY 1981: LOCATION ABOUT 1/25 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 83	FILE NAME: 18
			EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOJOS DRIVE IN CURVE OF LOT 12, BLOCK 2, CANTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	W.O. 011509-1 A EH-3
			N.A.V.D.88 DATUM -10.18 = CITY OF EL PASO DATUM	DATE: NOVEMBER, 2011

THIS SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY BRADLEY ROE, P.E. 31886 ON SEPTEMBER 20, 2012 ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

ROE ENGINEERING, L.C.  
TEXAS REGISTERED ENGINEERING FIRM E-2103

**ENCHANTED HILLS  
UNIT THREE**

**TYPICAL DETAILS**

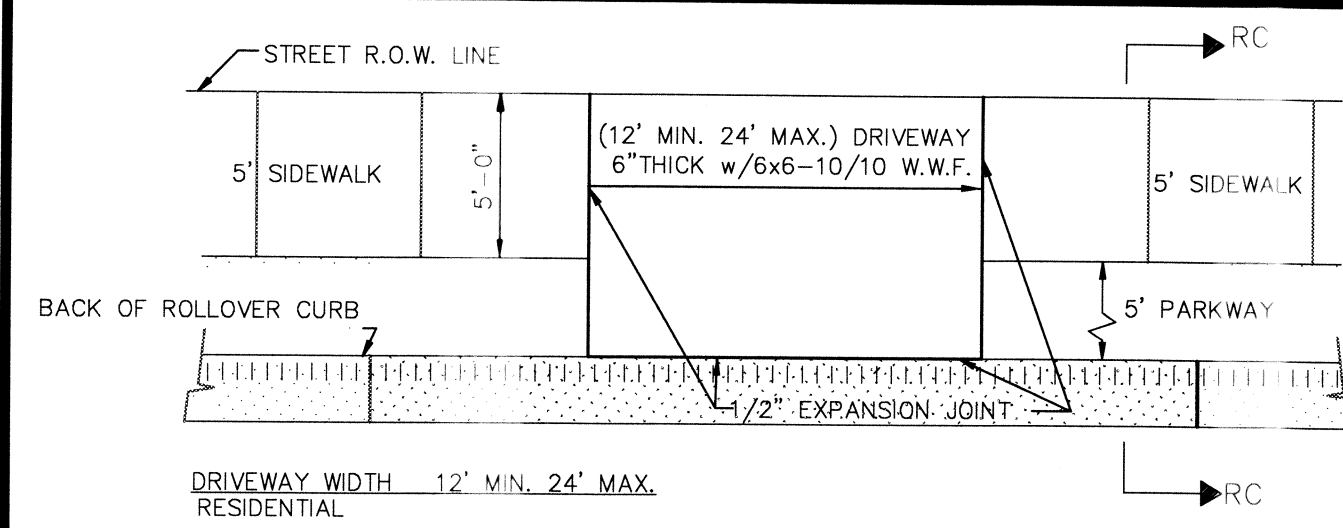
**ENGINEERING & CONSTRUCTION  
MANAGEMENT DEPARTMENT**

**REVIEWED**

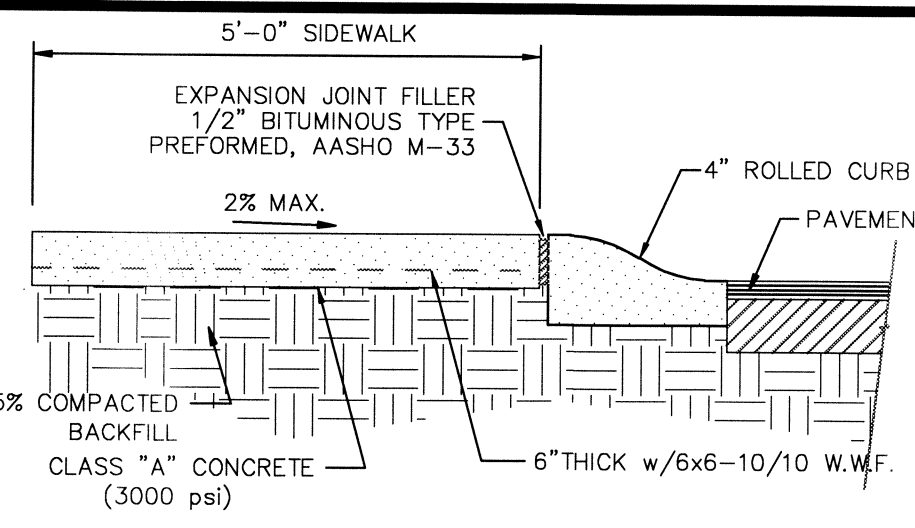
**RoE Engineering, L.C.**  
801 N. Cotton St. Suite No. 6 El Paso, Tx, 79902  
(915) 533-1418 - FAX: (915) 533-4972  
e-mail: roeeng@rbell.net

ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

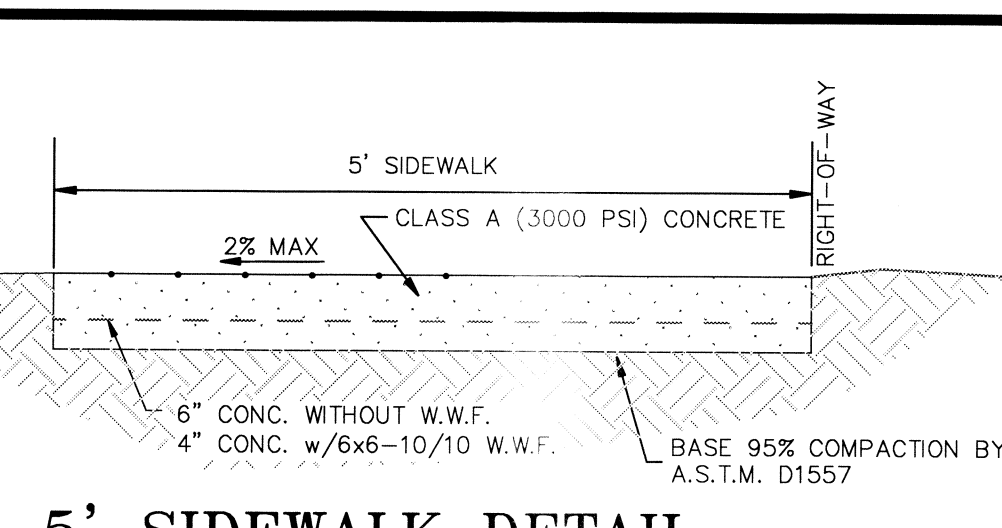
SHEET 68 OF 77



**PLAN VIEW/ROLL-OVER TYPE CURB**  
SCALE: 1" = 6"



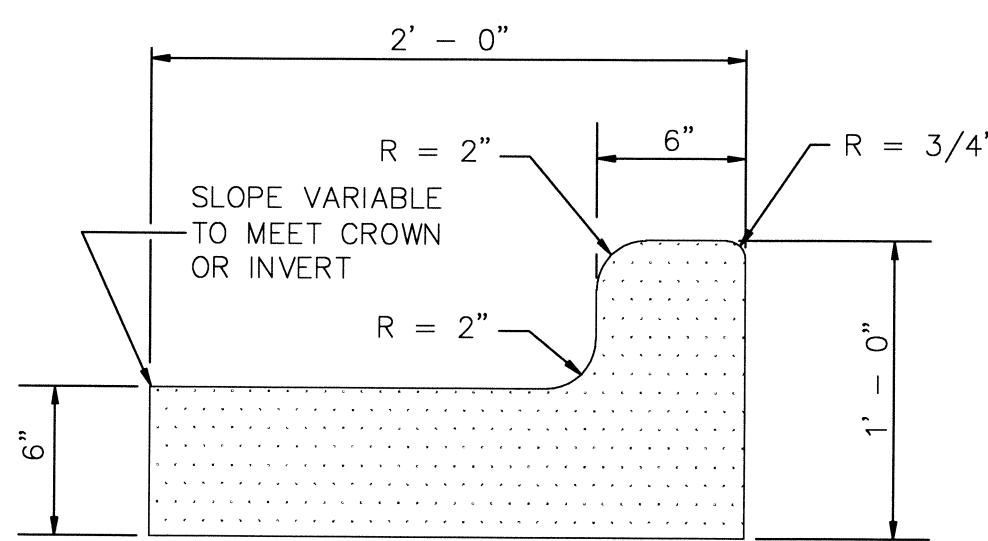
**SIDEWALK @ CUL-DE-SAC**  
SCALE: 1" = 2"



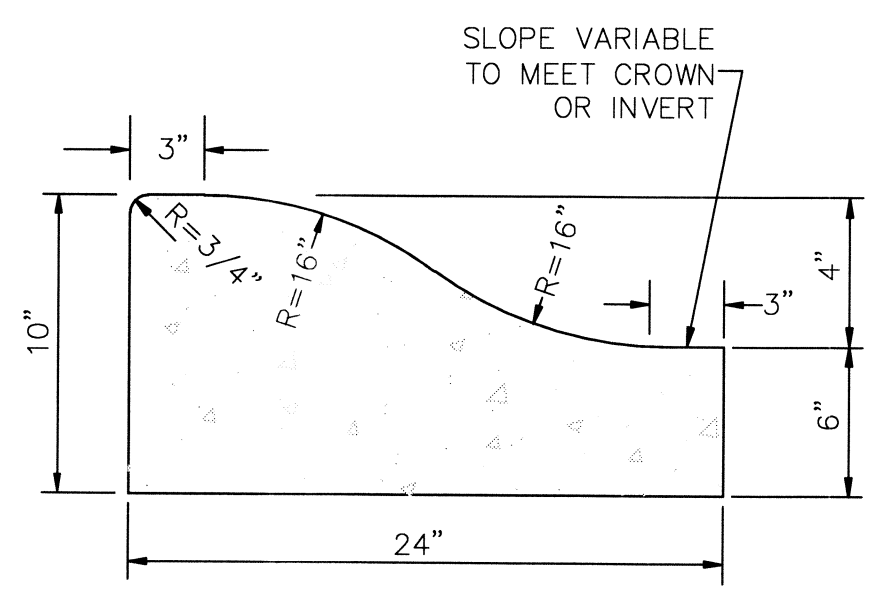
**5' SIDEWALK DETAIL**  
SCALE: 1" = 1"

**NOTES FOR CURB AND GUTTER:**

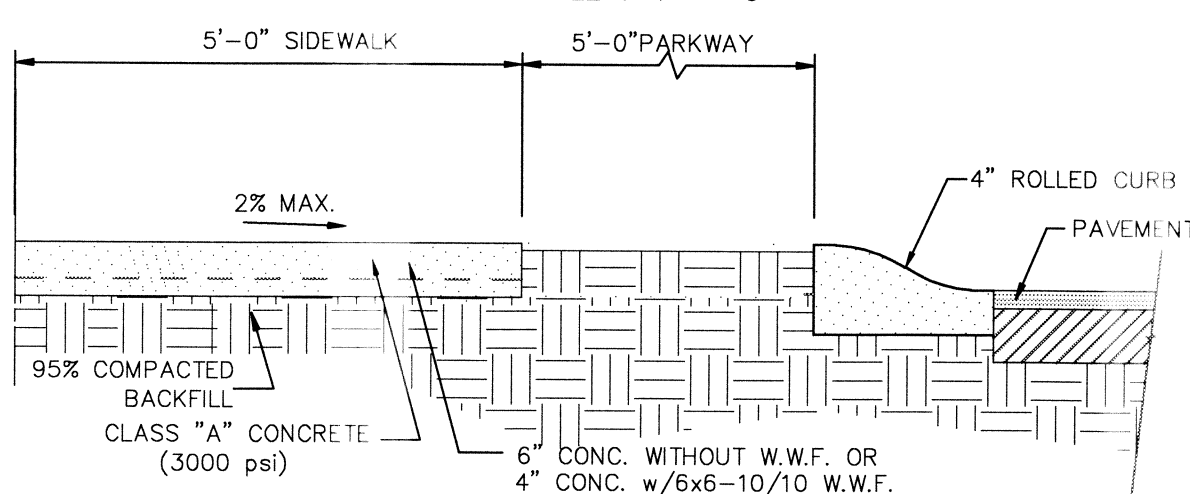
1. EXPANSION JOINTS WILL BE REQUIRED AT THE END OF CURB RETURNS, AT 50' O.C. & POINT OF TANGENCY WITH STRAIGHT RUNS OF CURB AT EVERY INTERSECTION
2. CONTRACTION JOINTS (1/2" INCH MIN. SCORED JOINTS) MUST BE INSTALLED EVERY 10 FEET IN CURB OR CURB AND GUTTER.
3. ALL EXPANSION JOINTS WILL BE PERFORMED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



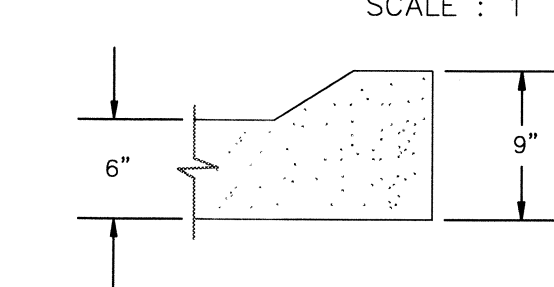
**STANDARD CURB AND GUTTER DETAIL**  
SCALE: 1 1/2" = 1"



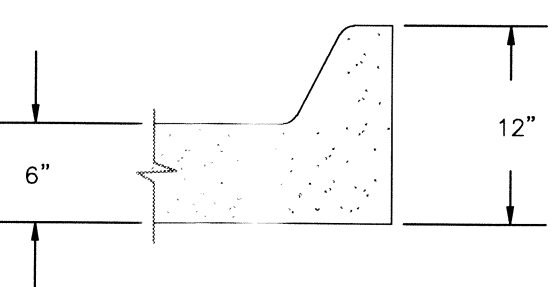
**ROLL-OVER CURB**  
SCALE: 1 1/2" = 1"



**SECTION RC-RC**  
SCALE: 1" = 2"

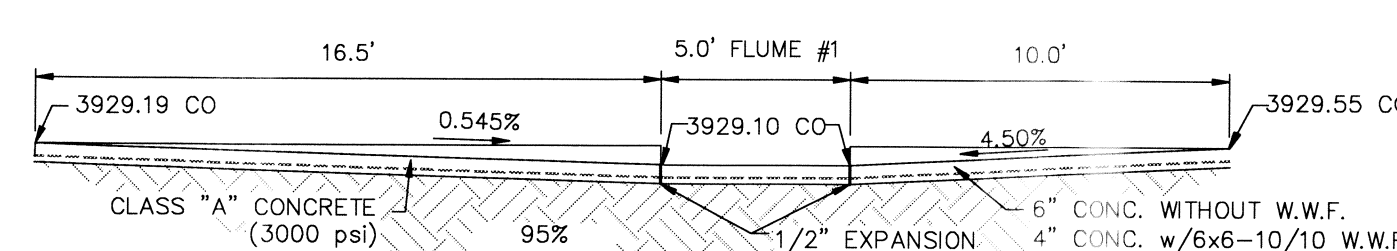


**SECTION DWC-DWC**  
SCALE: 1" = 1"

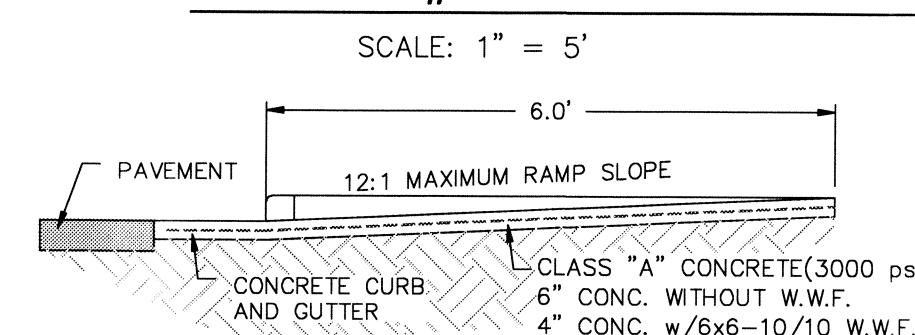


**SECTION DWD-DWD**  
SCALE: 1" = 1"

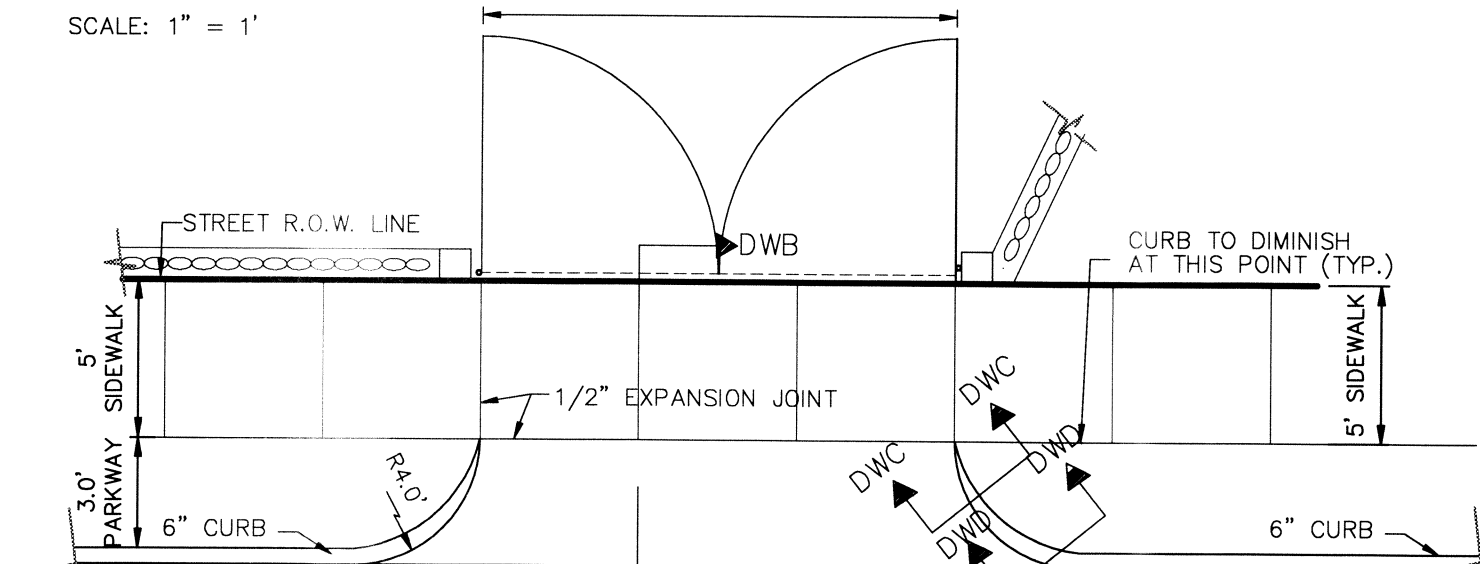
**TYPICAL CONCRETE DRIVEWAY**



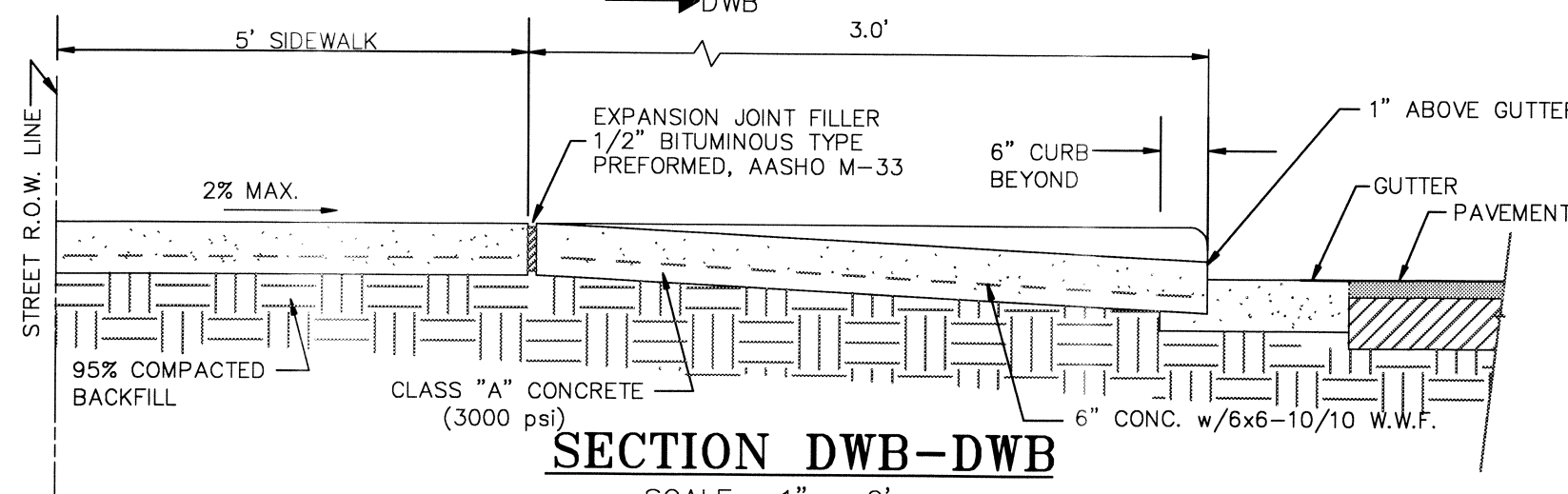
**FLUME # 1 HANDICAP RAMP**  
SCALE: 1" = 5'



**TYPICAL HANDICAP RAMP**  
SCALE: 1" = 2"

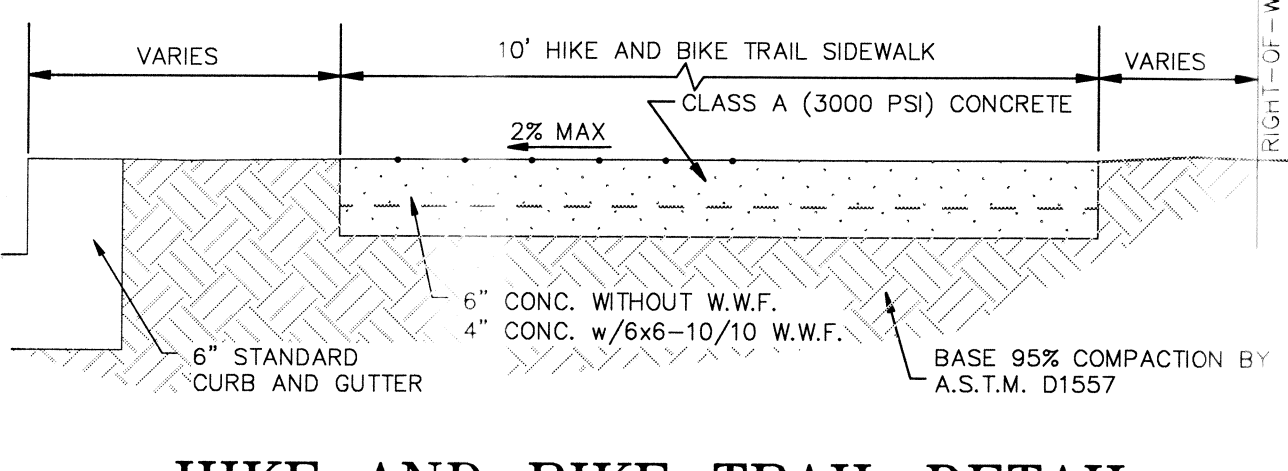
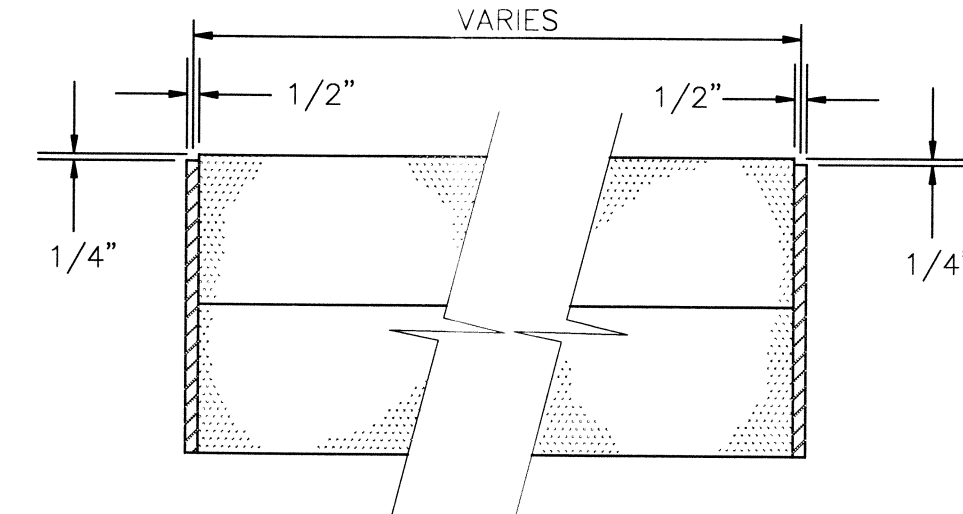
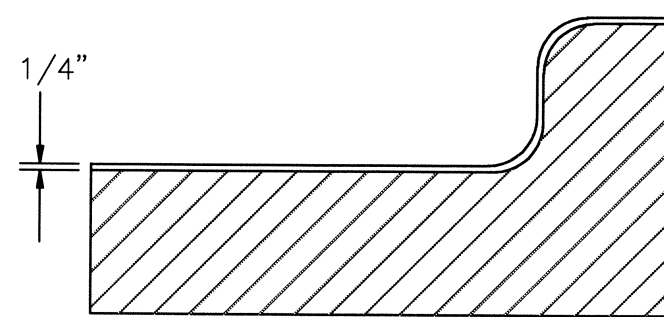


**E.P.W.C.D.B. DRIVEWAY PLAN VIEW**  
SCALE: 1" = 6"



**SECTION DWB-DWB**  
SCALE: 1" = 2"

**CURB AND GUTTER EXPANSION JOINT DETAIL**



**HIKE AND BIKE TRAIL DETAIL**  
SCALE: 1" = 1"

**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.

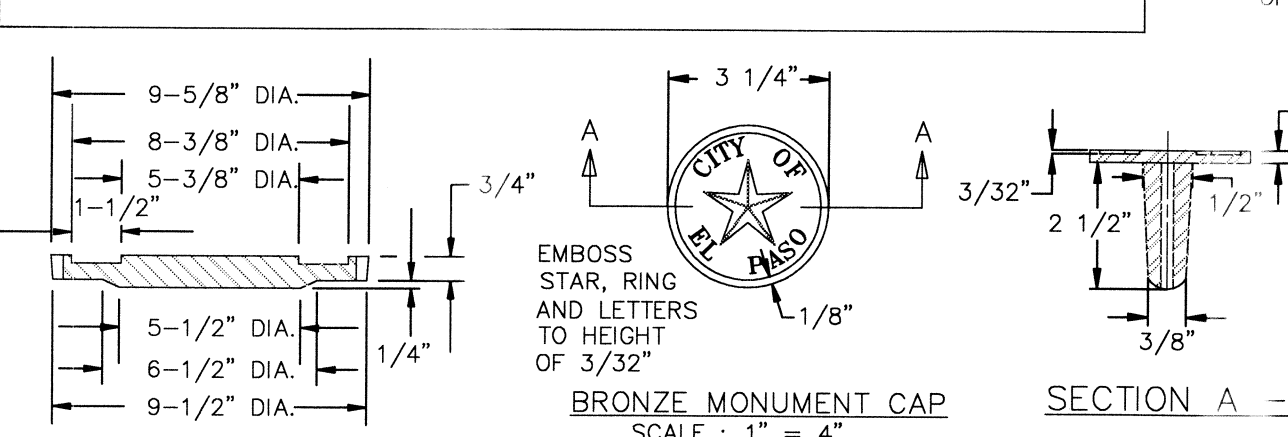
**ANY MONUMENT MUST BE WITHIN THE LINE OF SIGHT OF ANY OTHER MONUMENT (2000 FEET MAXIMUM DISTANCE BETWEEN MONUMENTS). THE SIZE, TOPOGRAPHY AND LAYOUT OF THE SUBDIVISION SHALL GOVERN THE NUMBER OF MONUMENTS REQUIRED.**

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

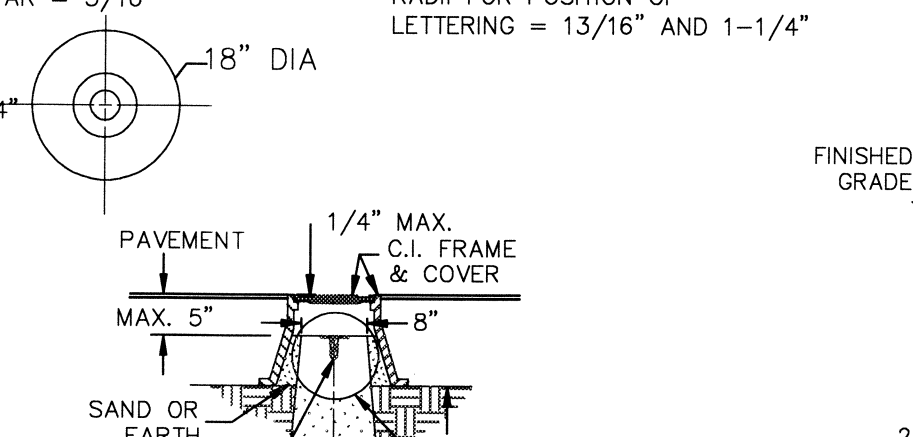
**AT LEAST ONE (1) MONUMENT SHALL BE PLACED ON EACH HORIZONTAL CURVE. TWO SHALL BE PLACED IF THE POINT OF INTERSECTION (P.I.) OF THE TANGENTS LEADING INTO THE CURVE FALLS OUTSIDE OF CITY RIGHT-OF-WAY. MONUMENTS SHALL BE INSTALLED SO THAT ALL FRONT PROPERTY CORNERS OF ALL LOTS IN THE SUBDIVISION ARE WITHIN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

**OUTSIDE RADIUS OF STAR = 3/4"**  
**INSIDE RADIUS OF STAR = 5/16"**

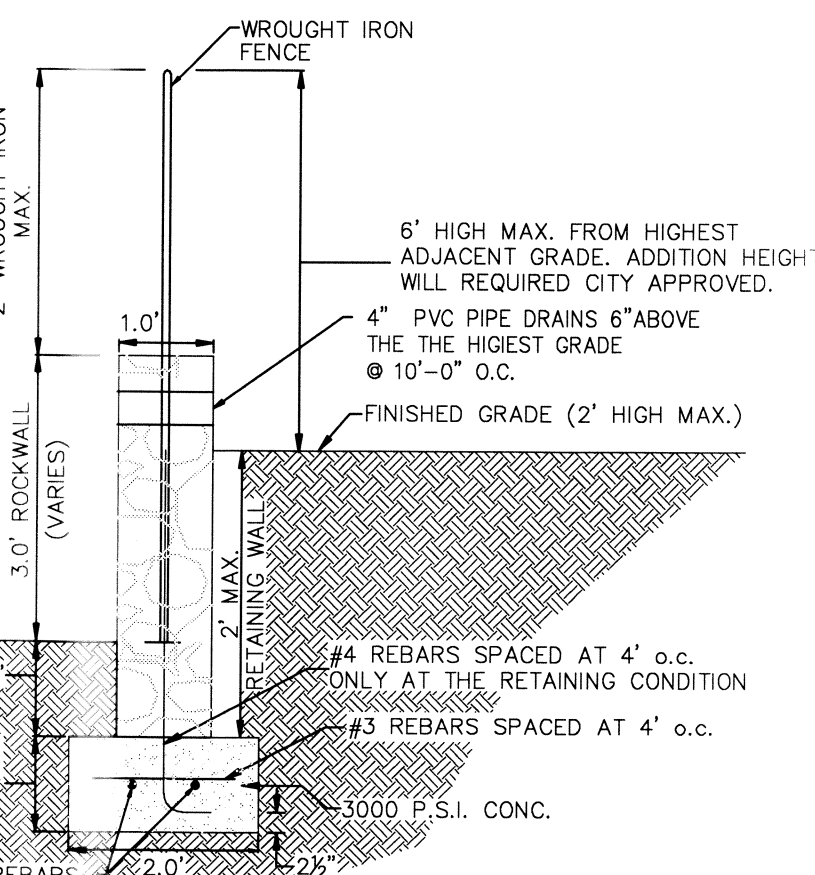
**HEIGHT OF LETTERS = 7/16"**  
**WIDTH OF LETTER BODY = 3/16"**  
**RADI FOR POSITION OF LETTERING = 13/16" AND 1-1/4"**



**BRONZE MONUMENT CAP**  
SCALE: 1" = 4"

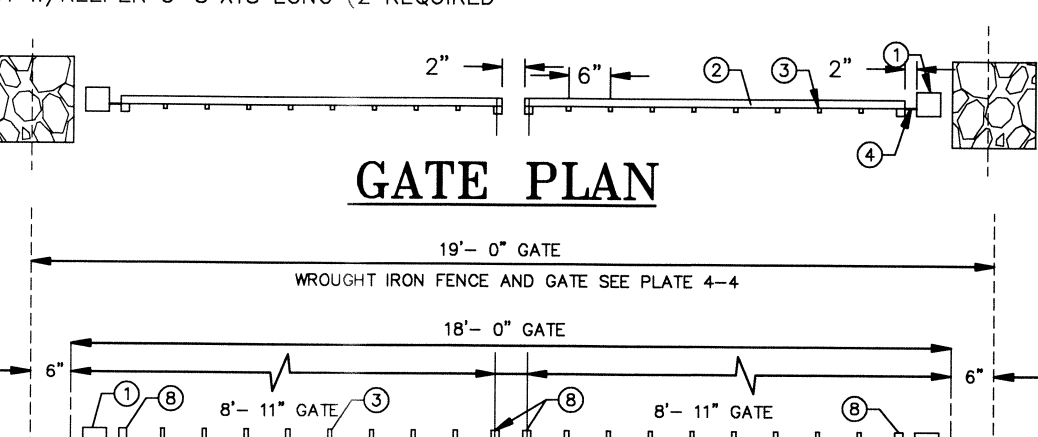


**SECTION A-A**  
SCALE: 1" = 2"

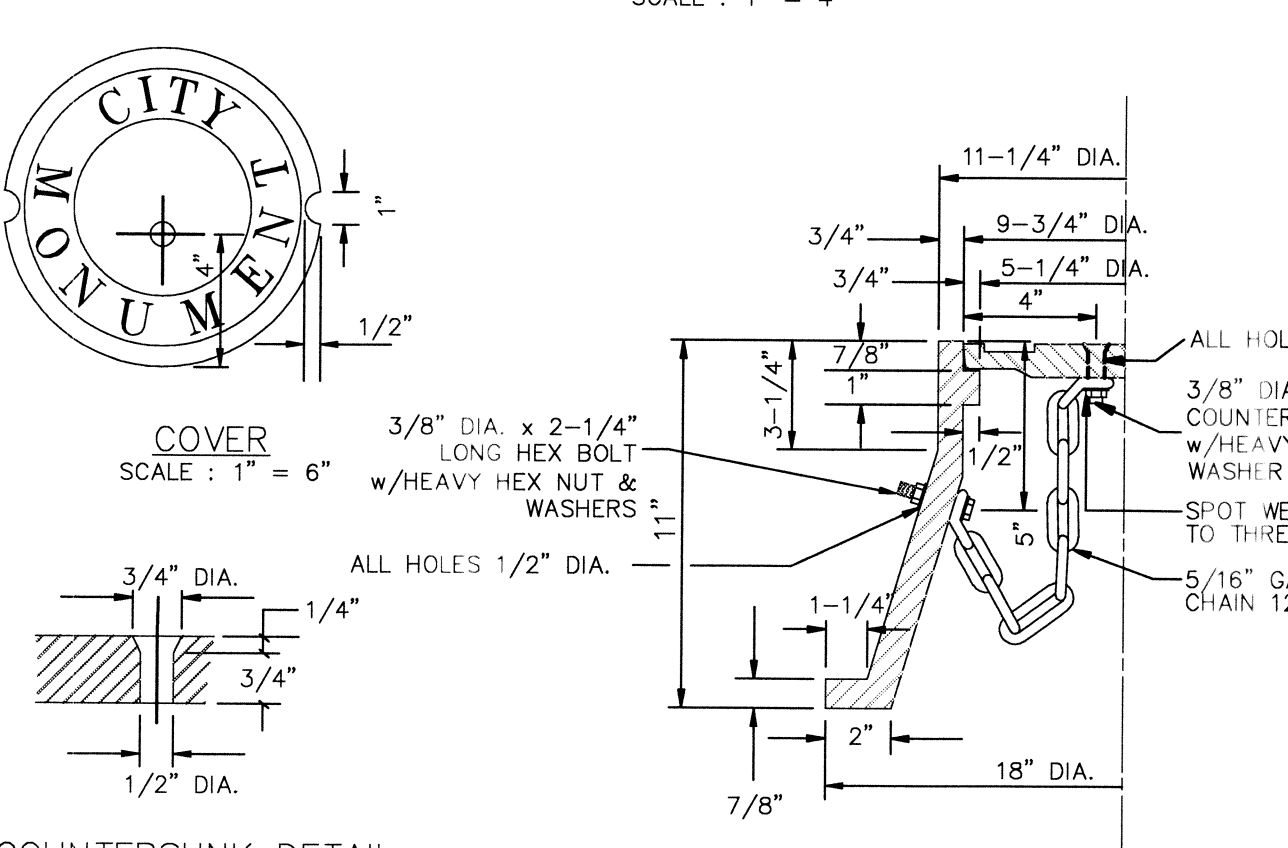


**ROCKWALL**  
SCALE: 1" = 2"

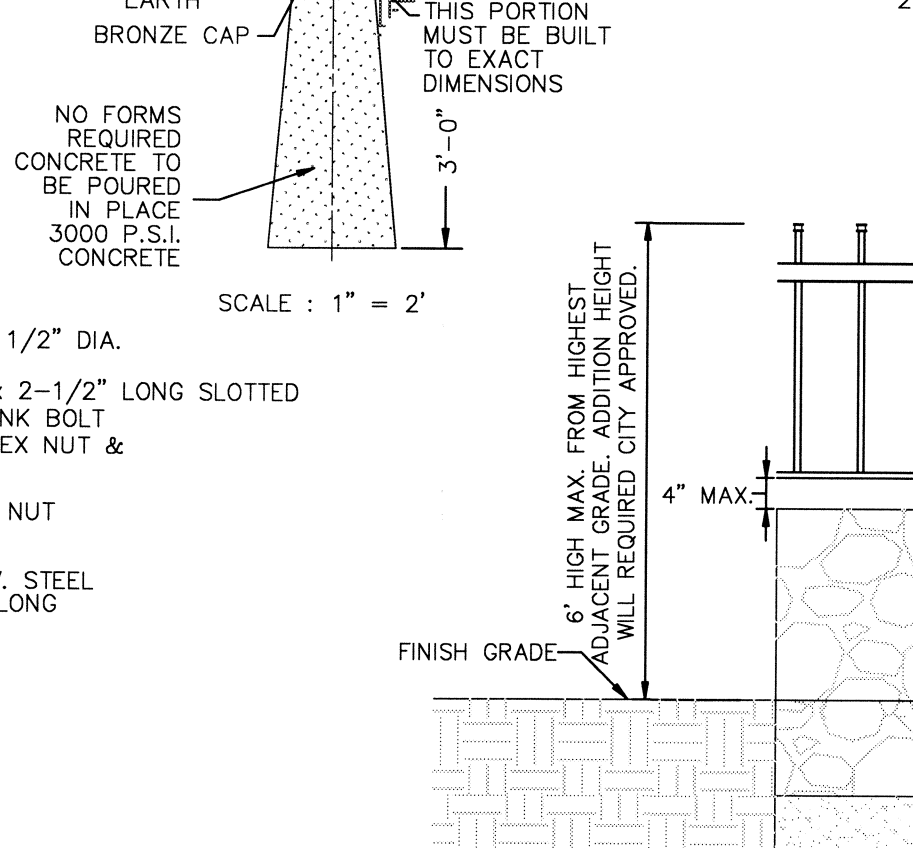
- WROUGHT IRON FENCE KEY NOTES:**
1. 3"x3"x 3/16" SQUARE STEEL TUBING
  2. 2"x1"x 1/4" RECTANGULAR STEEL TUBING
  3. 1 1/2"x1/2"x 1/4" 16GA. RECTANGULAR STEEL TUBING
  4. 2" X1" X 10 GA. RECTANGULAR STEEL TUBING
  5. FLAT TOP METAL CAP
  6. BOLT HOOK AND STRAP HINGE
  7. 1X3' DEEP 3000 PSI CONCRETE POST FOOTING
  8. DOUBLE GATE HEAVY DUTY INDUSTRIAL LATCH W/PAD LOCK
  9. 5" X5" X 3/8" SQUARE STEEL SLEEVE W/7"x7"x3/8" STEEL BASE PLATE
  10. CANE BLOT LAUNCH W/KEEPER 5-8"x18 LONG (2 REQUIRED)



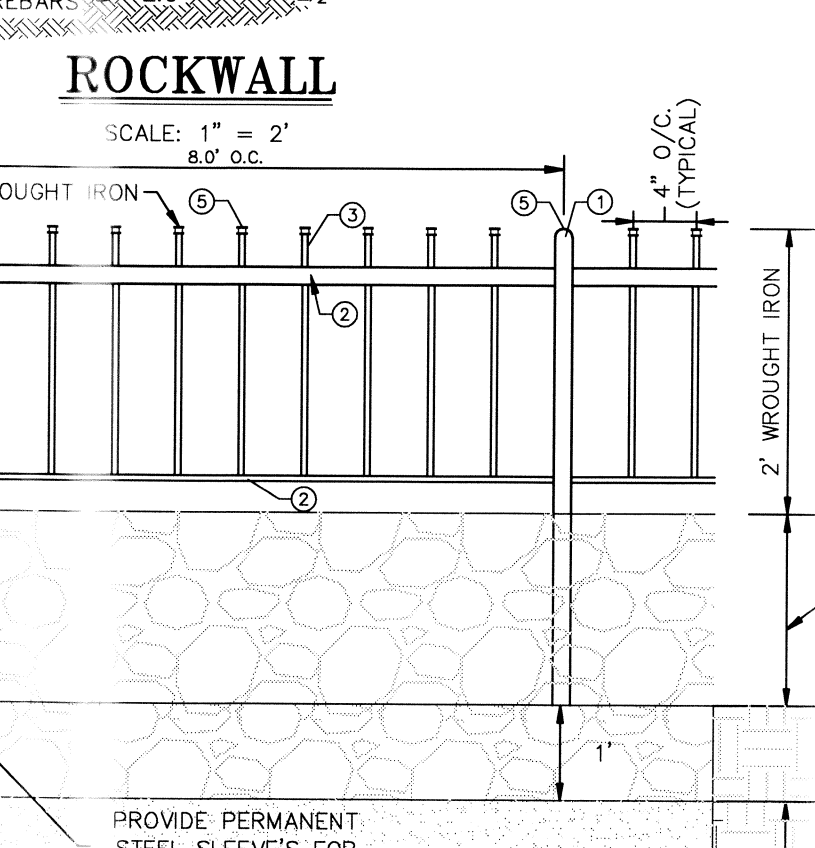
**GATE PLAN**  
SCALE: 1" = 2"



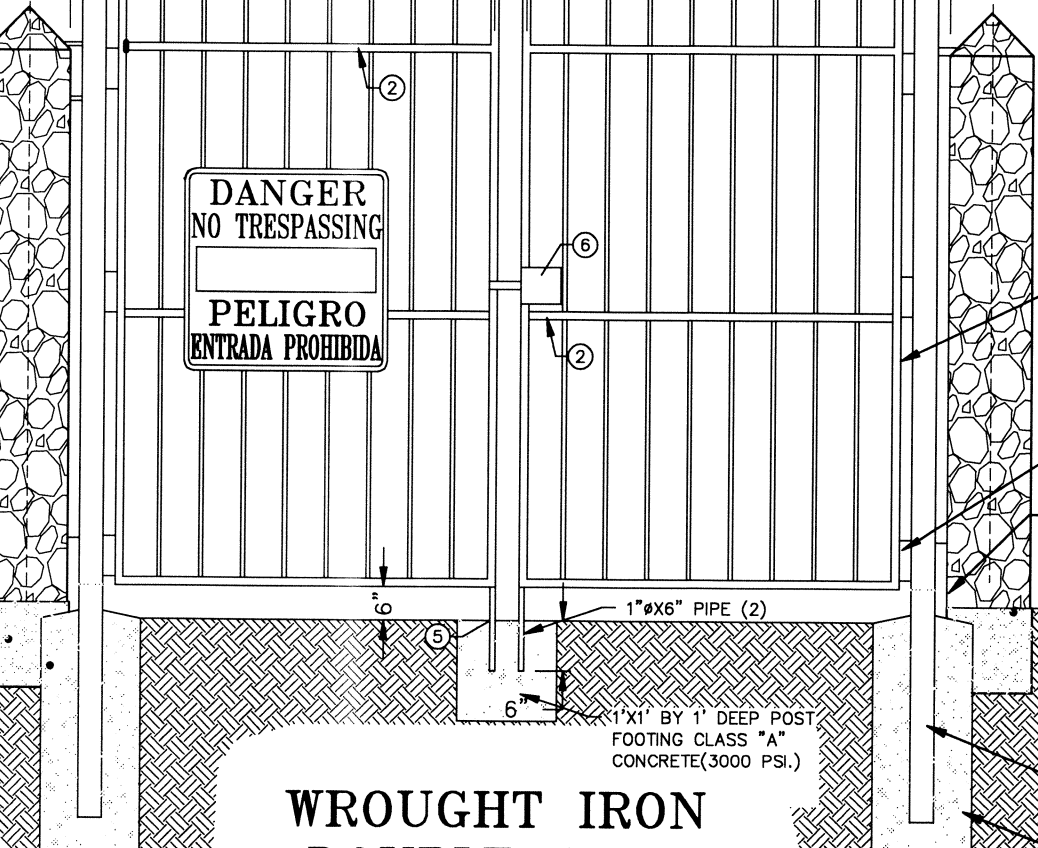
**COUNTERSUNK DETAIL**  
SCALE: 1" = 3"



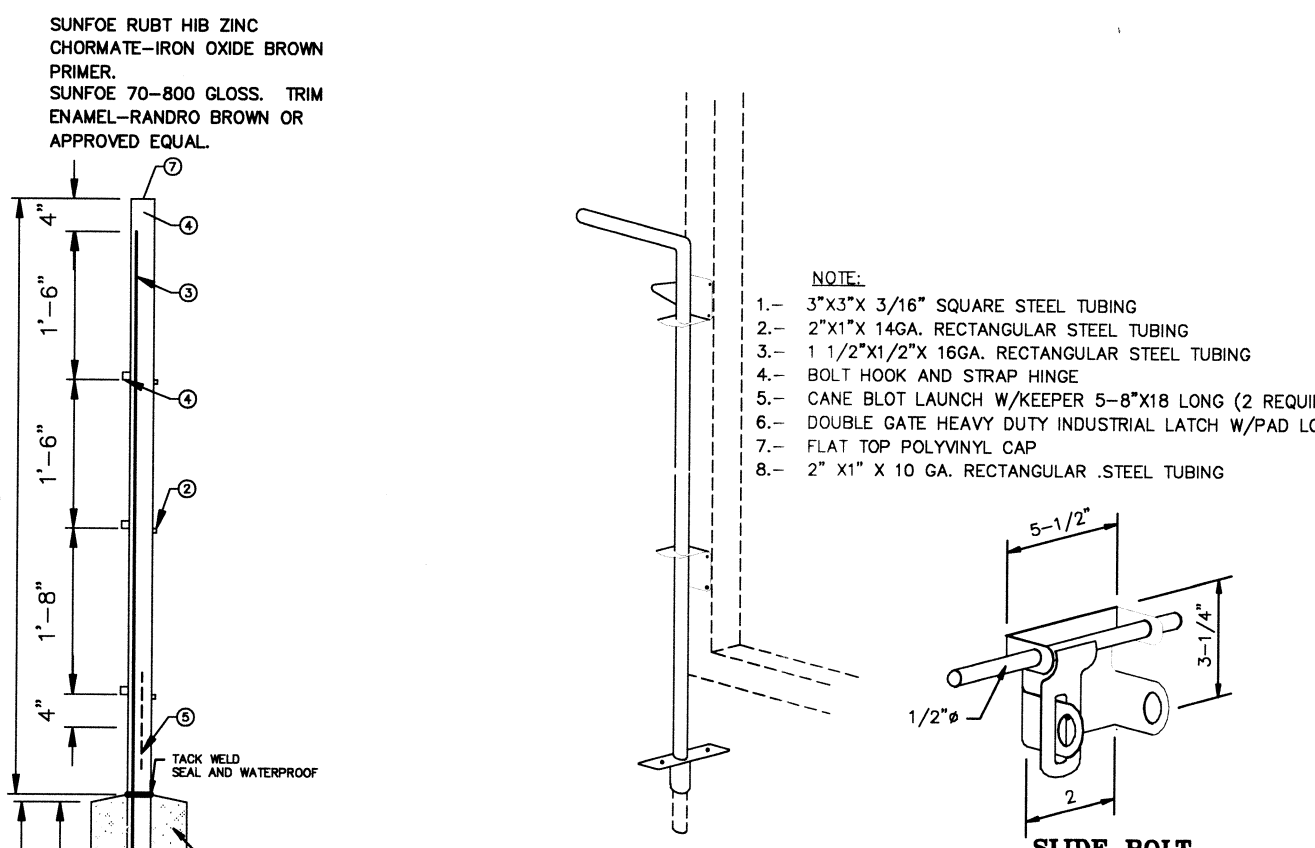
**FRAME SECTION**  
SCALE: 1" = 6"



**ROCKWALL W/ WROUGHT IRON FENCE**  
SCALE: 1" = 2"



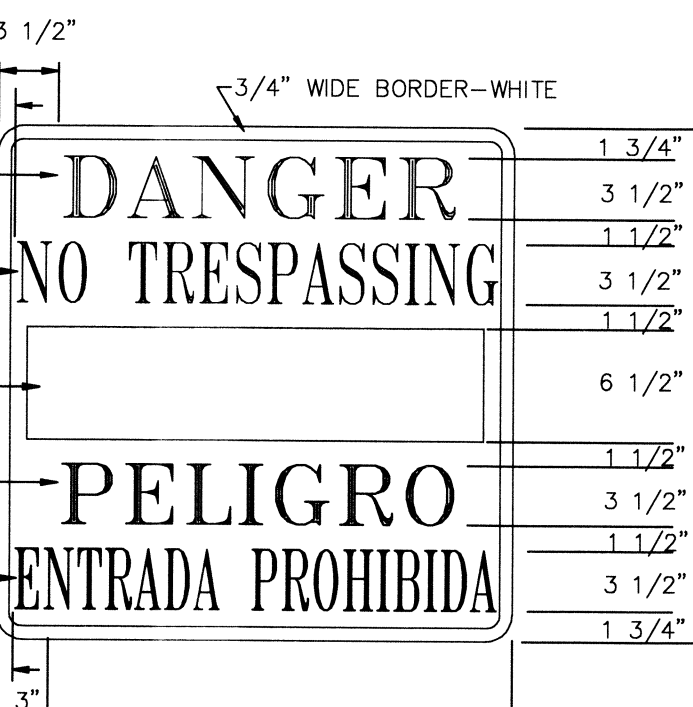
**WROUGHT IRON DOUBLE GATE AT DRAINAGE RIGHT-OF-WAY**  
SCALE: 1" = 2"



**GATE SECTION**  
SCALE: 1" = 2"

**NO TRESPASSING WARNING SIGN**

SCALE: 1" = 1"



**NO TRESPASSING WARNING SIGN**

3/4" WIDE LETTERS WHITE ON BLACK BACKGROUND: 1 3/4"  
5/8" WIDE LETTERS WHITE ON BLACK BACKGROUND: 1 1/2"  
BLACK LETTERS ON WHITE BACKGROUND: 6 1/2"  
3/4" WIDE LETTERS WHITE ON BLACK BACKGROUND: 1 1/2"  
5/8" WIDE LETTERS WHITE ON BLACK BACKGROUND: 1 1/2"  
3/4" WIDE LETTERS WHITE ON BLACK BACKGROUND: 1 3/4"

**ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT**

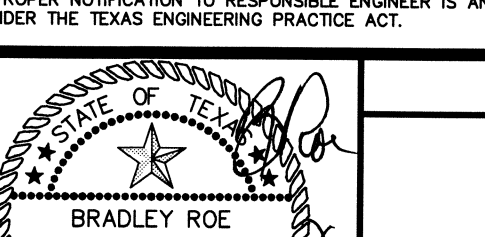
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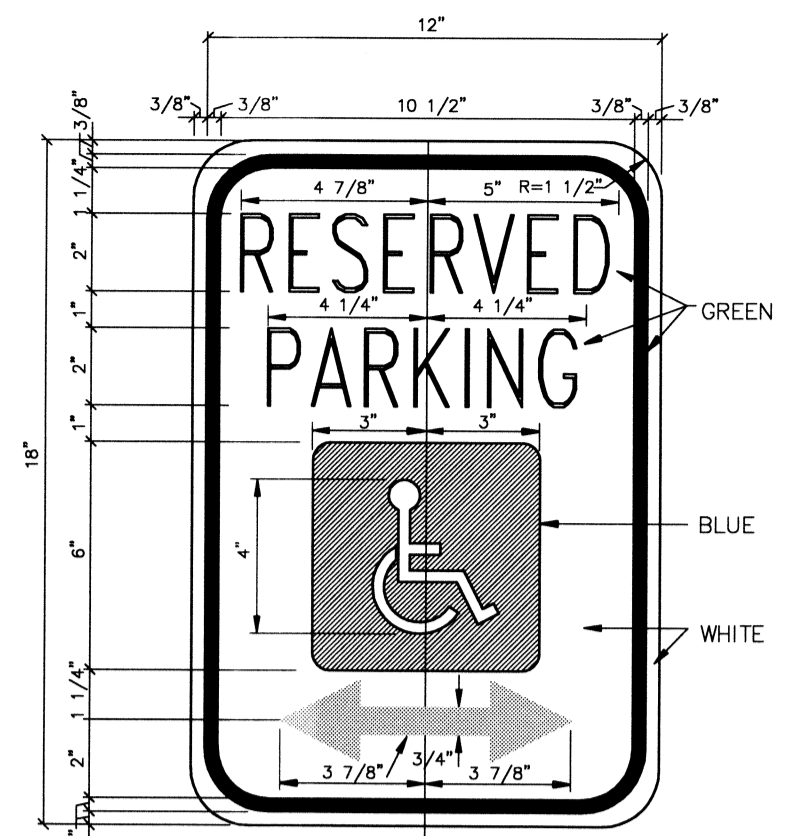
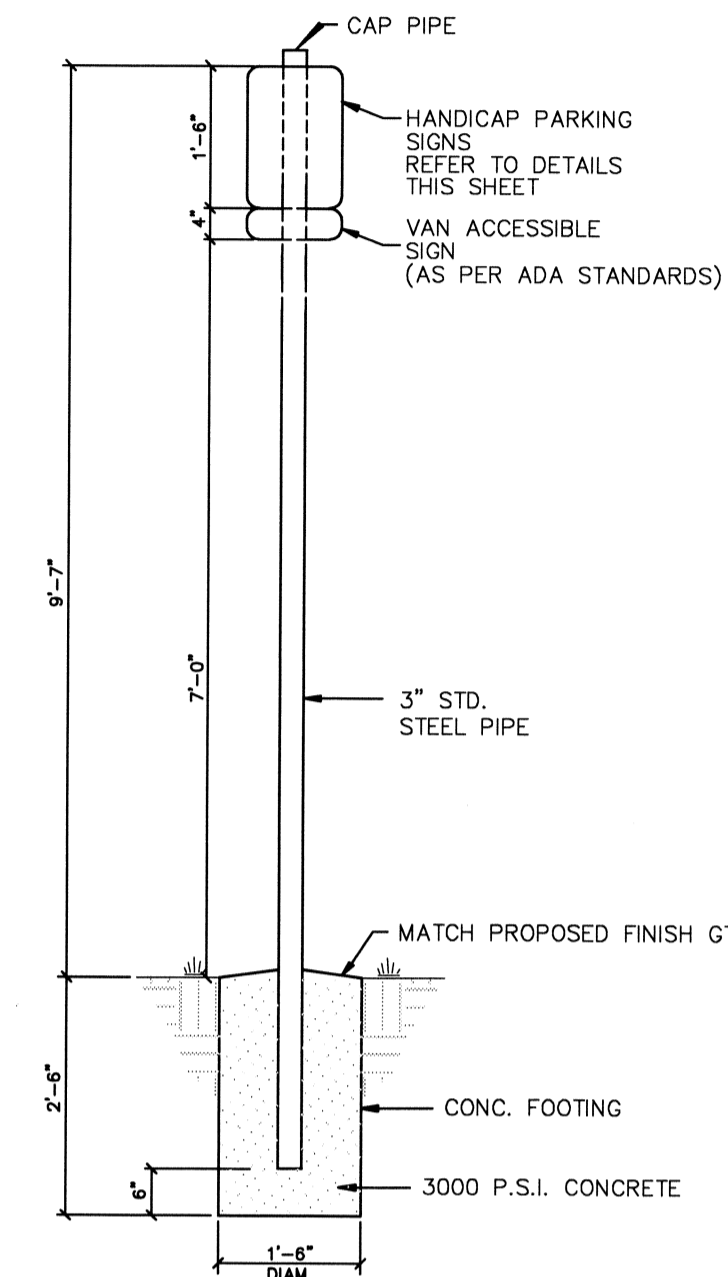
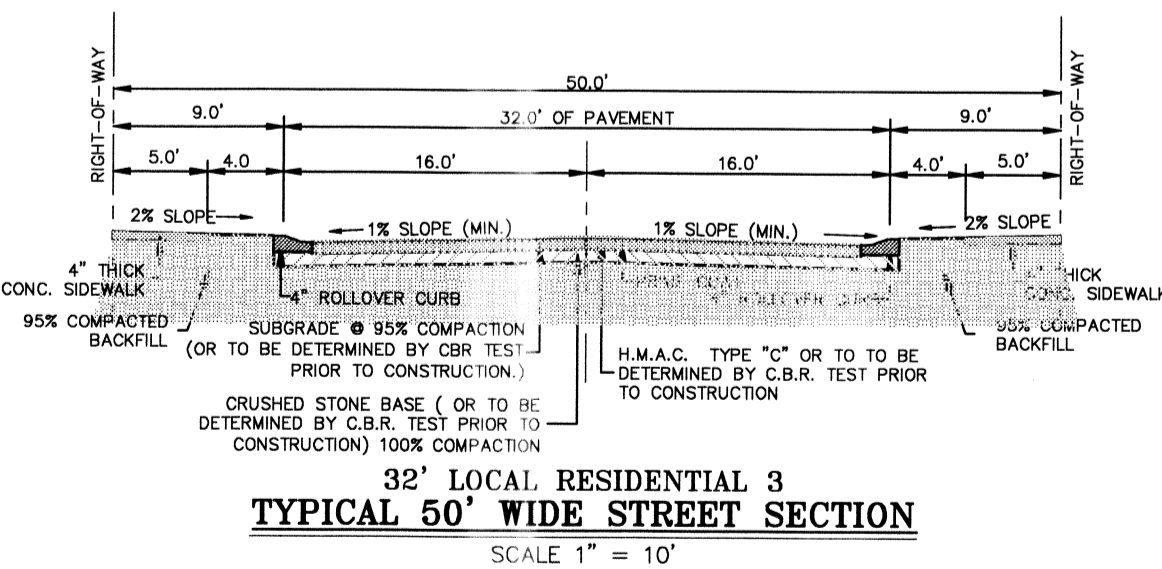
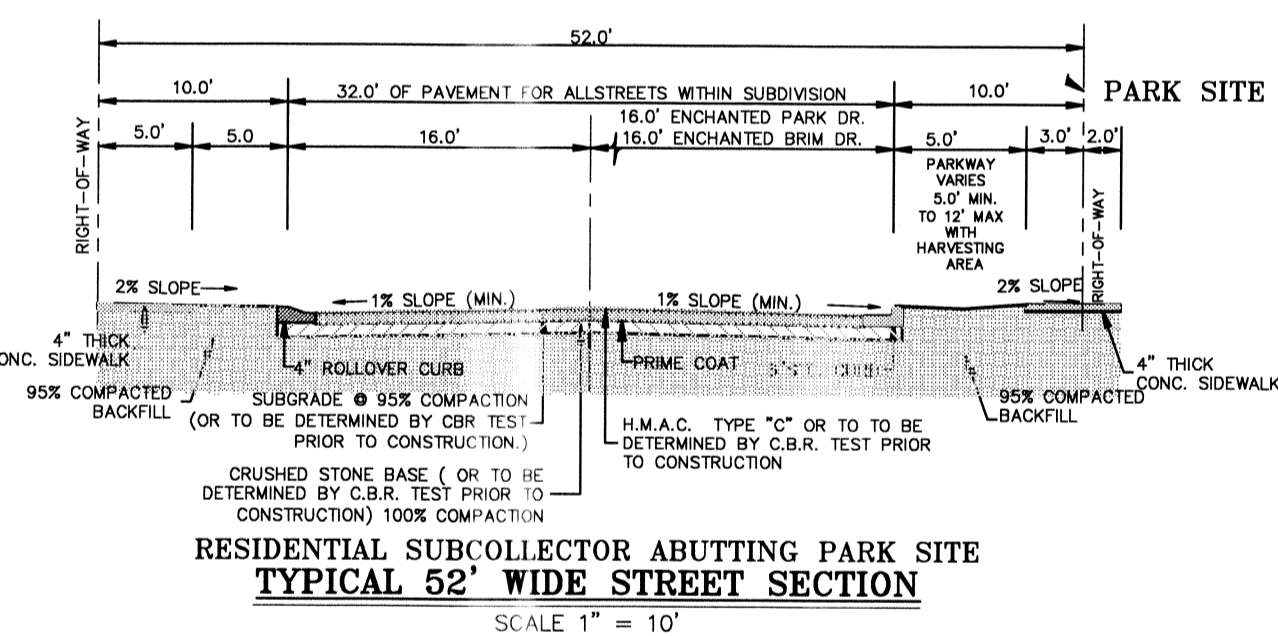
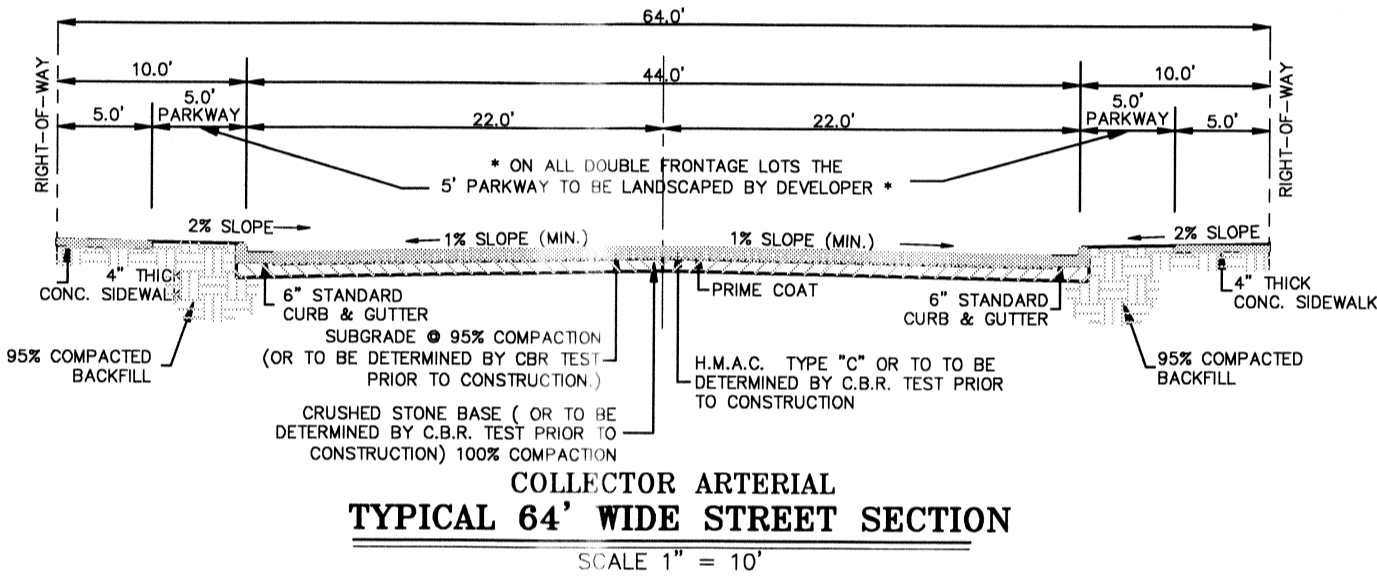
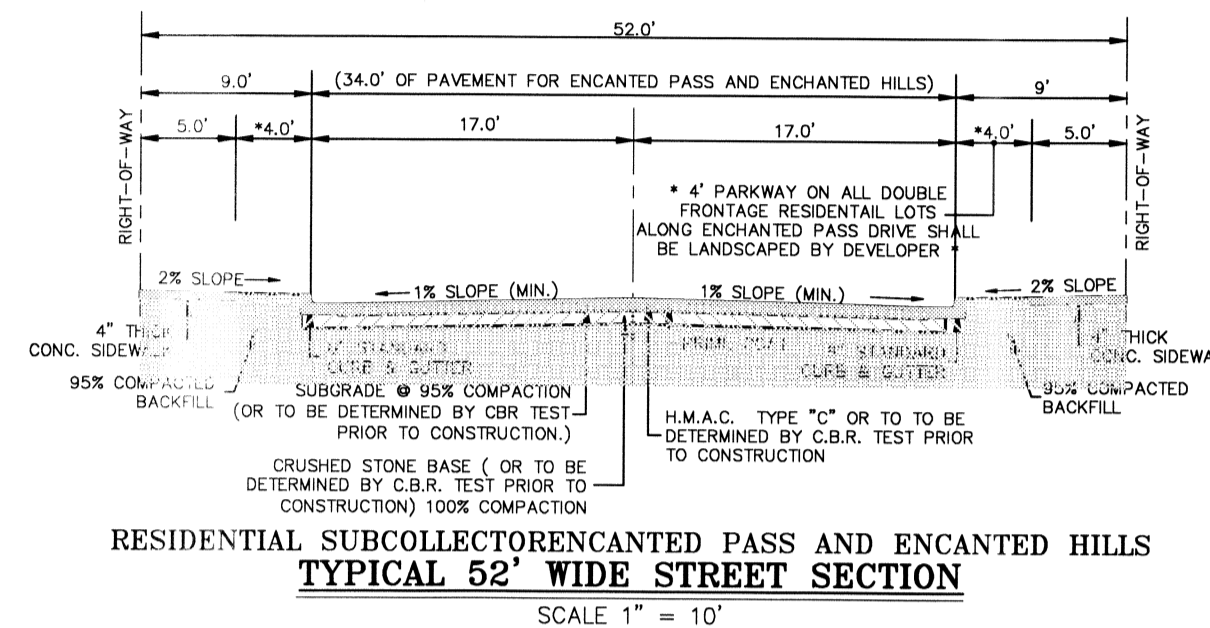
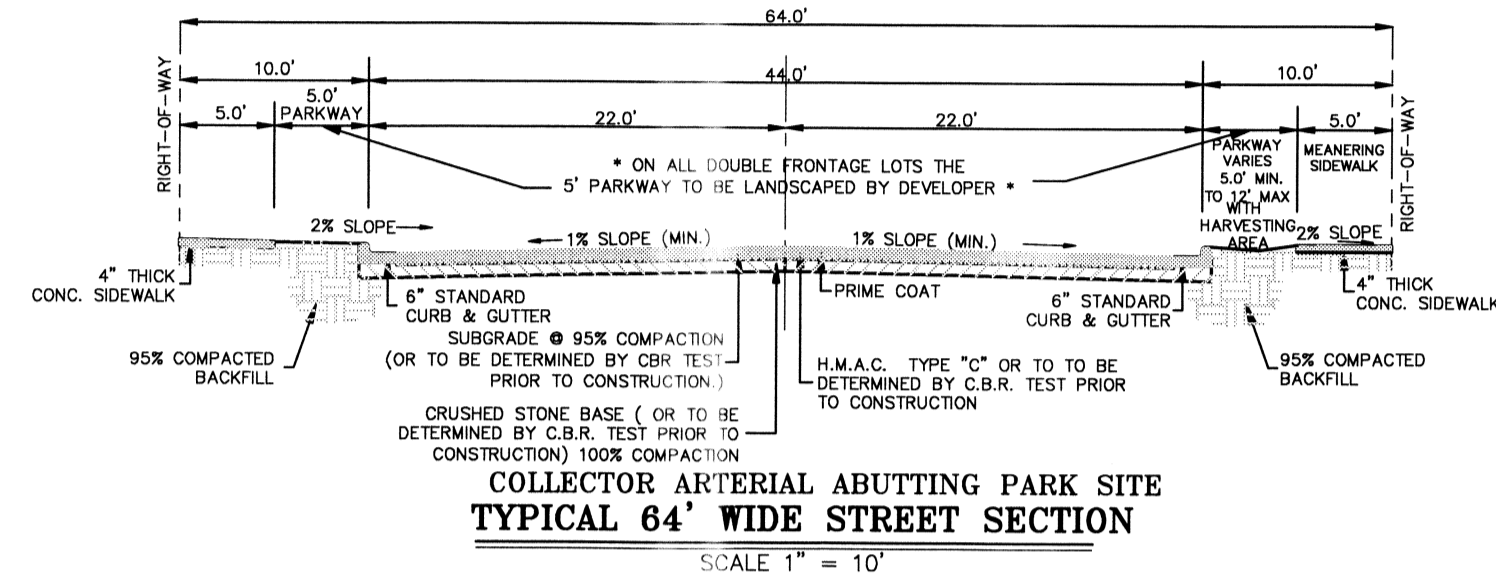
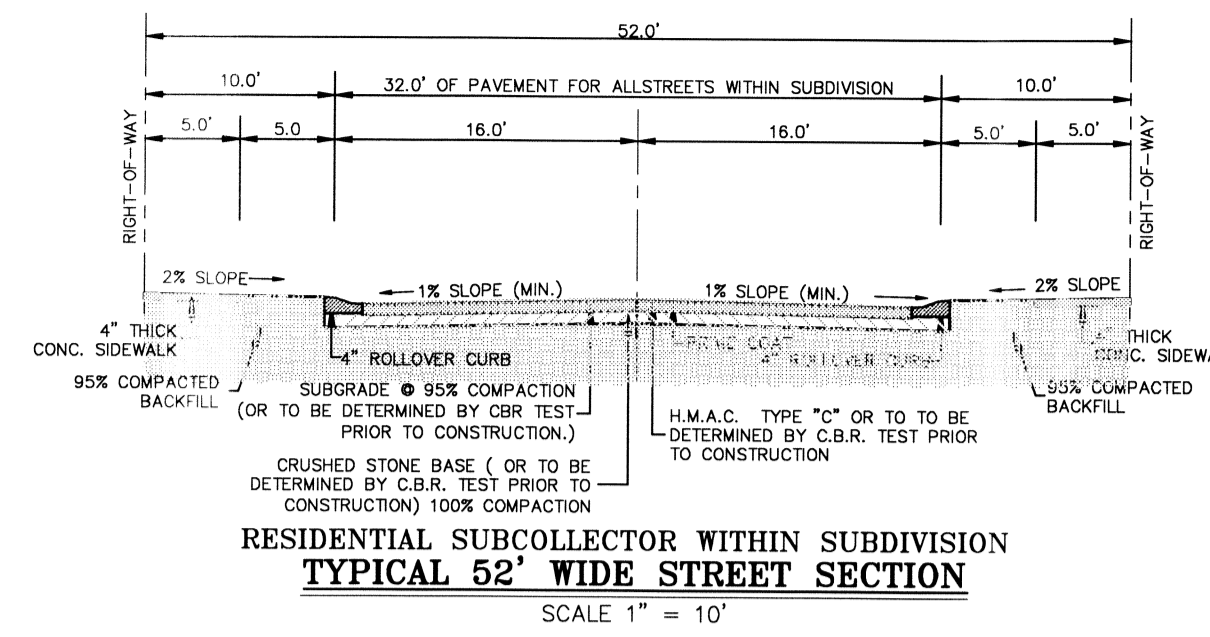
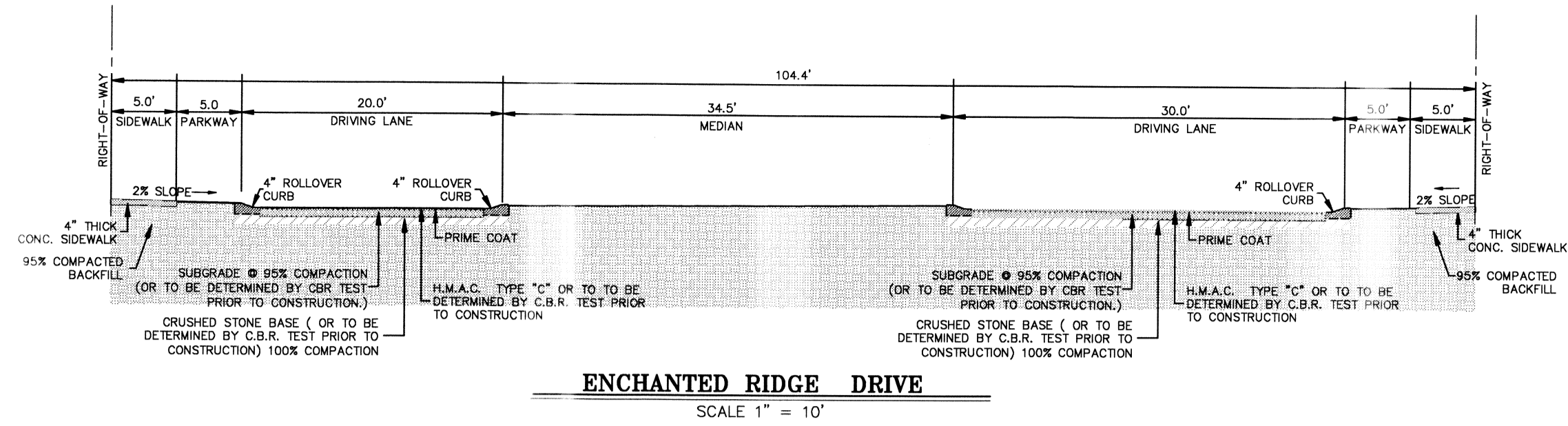
DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	LOCATION AS PER NATIONAL GEODETIC SURVEY 1987	HOR: AS SHOWN VER: AS SHOWN
9/20/12	CITY COMMENTS	STAFF	LOCATED ABOUT 1.25 MILES EAST OF THE OLD GRANITE MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 83	FILE NAME: CH2_TYPD1.dwg W.O. 011509-1 A CH-3
			EXTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR

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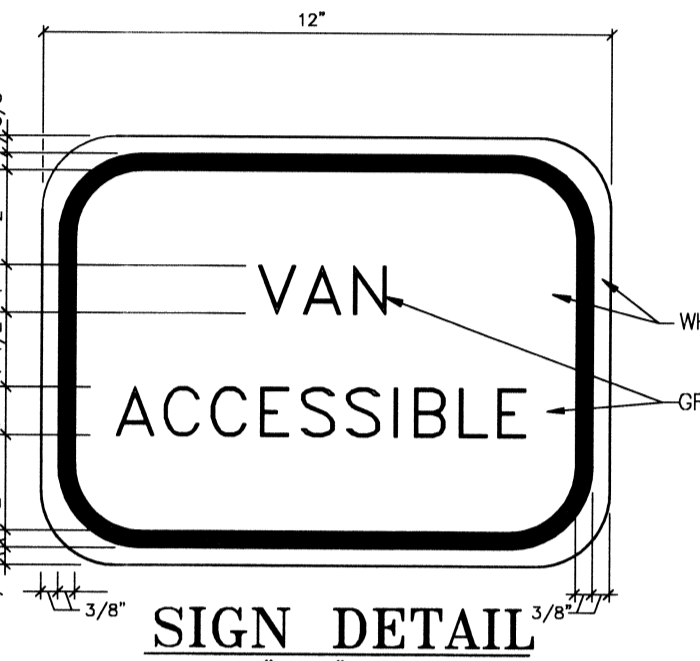
**TYPICAL DETAILS**  
**ENCHANTED HILLS UNIT THREE**

**Roe Engineering, L.C.**  
801 N. Cotton St. Suite No. 6 El Paso, Tx. 79902  
(915) 539-1418 - FAX: (915) 539-4972  
e-mail: roeeng@webell.net



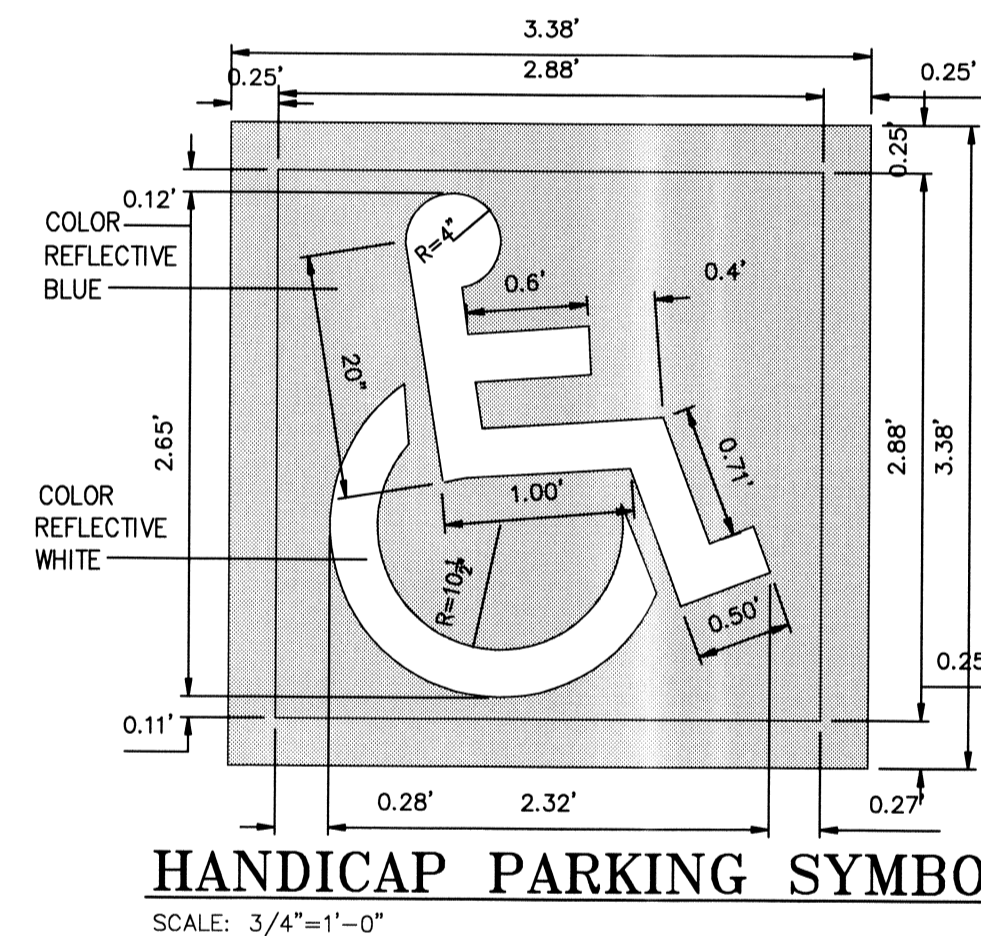
**HANDICAP SIGN**

SCALE: 1" = 5"



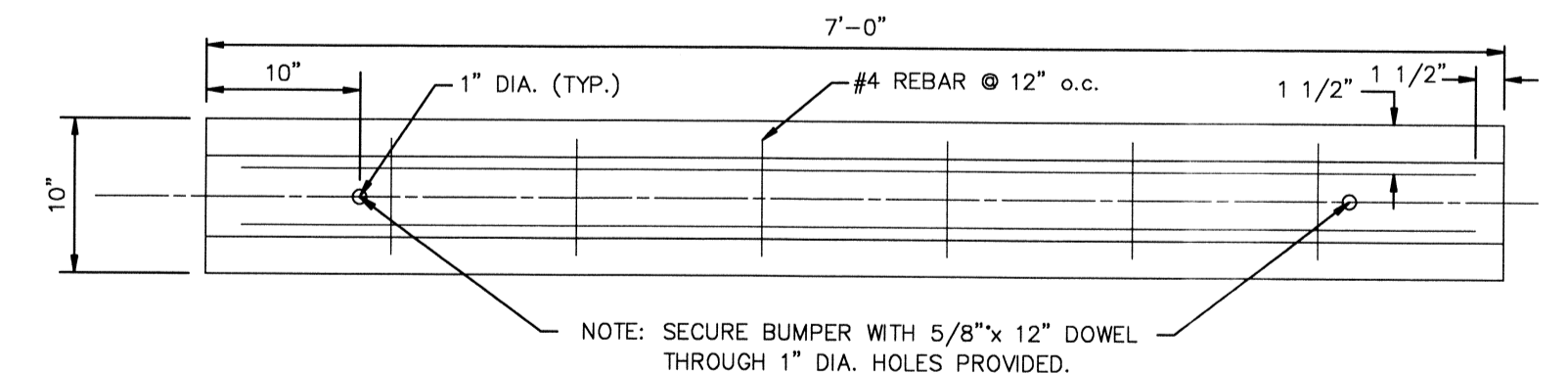
**SIGN DETAIL**

SCALE: 1" = 4"



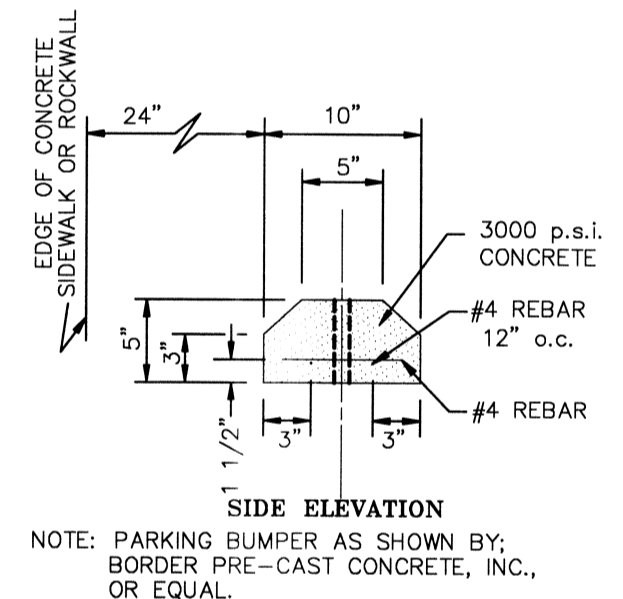
**HANDICAP PARKING SYMBOL**

SCALE: 3/4" = 1'-0"



**CONCRETE PARKING BUMPER**

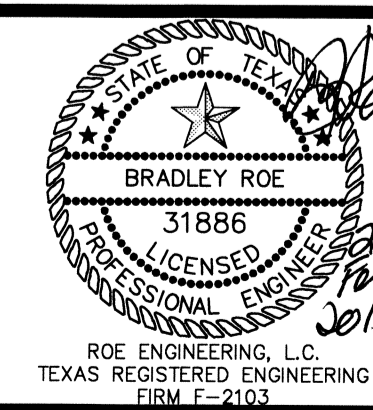
SCALE: 1" = 1'



**SIDE ELEVATION**

NOTE: PARKING BUMPER AS SHOWN BY BORDER PRE-CAST CONCRETE, INC., OR EQUAL.

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**ENCHANTED HILLS UNIT THREE**

**TYPICAL DETAILS**



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(915) 533-1418 - FAX: (915) 533-4972  
e-mail: roeeng@roewall.com

ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING

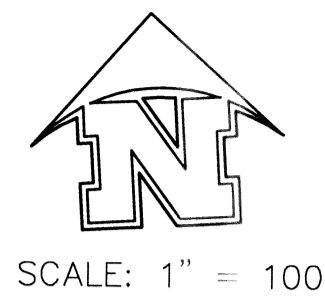
SHEET 70 OF 77

DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	NWS MONUMENT "GRIND 1850" (1850: 020444)	HOR: AS SHOWN, VER: AS SHOWN
9/20/12	CITY COMMENTS	STAFF	LOCATION AS PER NATIONAL GEODETIC SURVEY 1981 LOCATED ABOUT 1.25 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	FILE NAME: 18 W.O. 011509-1 A EH-3 DATE: NOVEMBER, 2011
			EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MICHES DRIVE IN FRONT OF LOT 12, BLOCK 2, DANIELLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, DANIELLO HEIGHTS UNIT ONE ELEVATION: 3857.21	DESIGN BY: STAFF DRAWN BY: L.D.R. CHKD. BY: H.P. APPD. BY: BR
			N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	

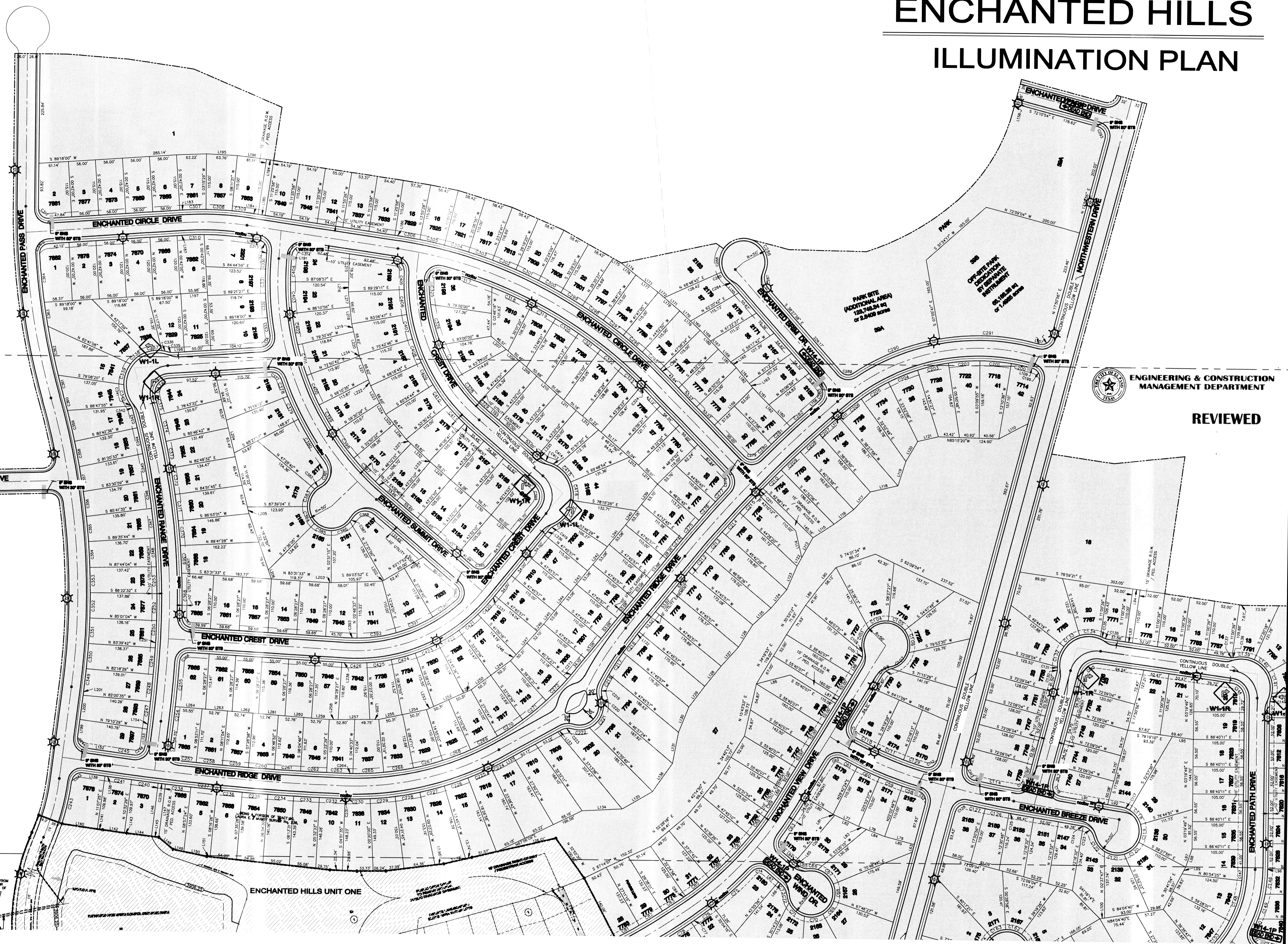
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# ENCHANTED HILLS ILLUMINATION PLAN



SCALE: 1" = 100'



ENGINEERING & CONSTRUCTION  
MANAGEMENT DEPARTMENT

REVIEWED

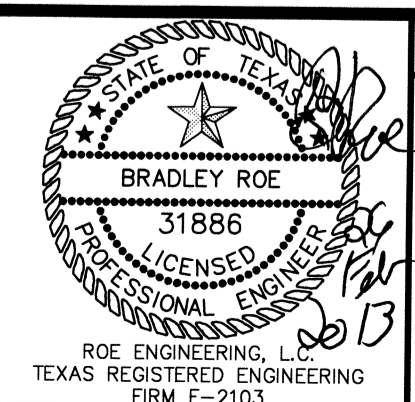
ENCHANTED HILLS UNIT ONE

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DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	1555 UNIVERSITY DRIVE 1980 (TPO) MOUNTAIN VIEW, TEXAS LOCATION AS PER NATIONAL GEODETIC SURVEY 1983: LOCATED ABOUT 1.25 MILES EAST OF THE RED GRANITE 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3945.11 NAVD 88	HOR: 60 VER: 60
9/20/12	CITY COMMENTS	STAFF	SECONDARY BENCHMARK EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MODOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 1, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	W.O. 011509-1 A EH-3 DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD BY: H.P. APPD BY: BR

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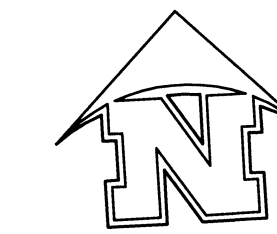


ILLUMINATION PLAN  
**ENCHANTED HILLS  
UNIT THREE**  
ILLUMINATION PLAN

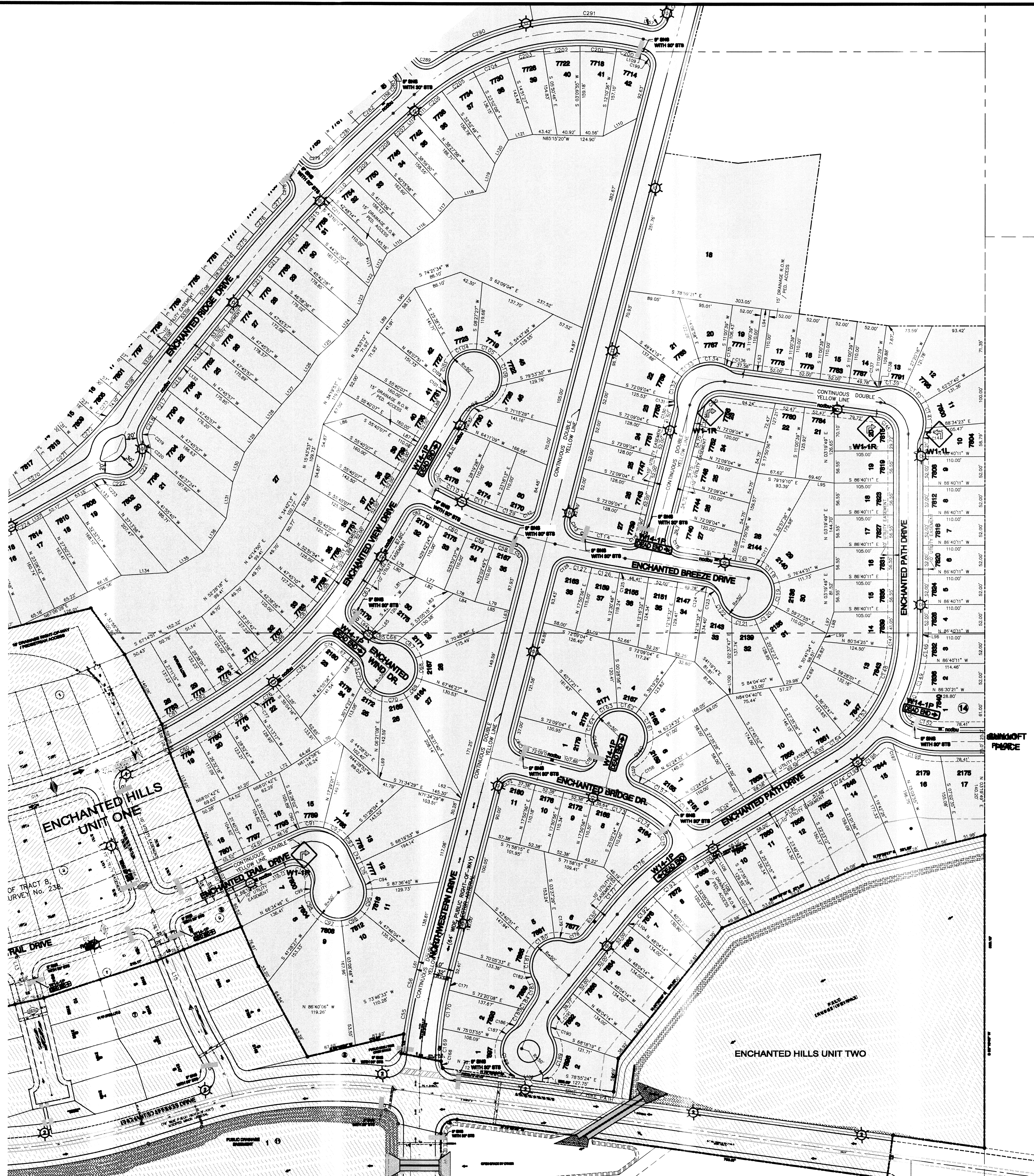
**brn** Roe Engineering, L.C.  
601 N. Cotton St. Suite No. 6 El Paso, Tx. 79902  
(915) 533-1418 FAX: (915) 533-4972  
e-mail: roeeng@rbell.net  
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SHEET 71 OF 77

# ENCHANTED HILLS

## ILLUMINATION PLAN



SCALE: 1" = 100'



- ★ DENOTES LOCATION OF PROPOSED LIGHT POLE  
58 POLES TOTAL
- DENOTES LOCATION OF NDCBU (4' X 6'-16 SITES TOTAL)
- DENOTES LOCATION OF PROPOSED 9" SNS  
WITH 30" STS (22 SITES TOTAL)



ENGINEERING & CONSTRUCTION  
MANAGEMENT DEPARTMENT

REVIEWED

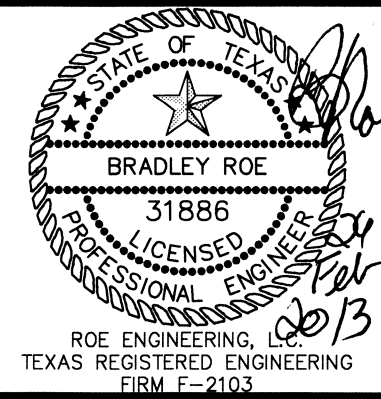
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"X" AREAS DETERMINED TO BE OUTSIDE THE 500 YEAR FLOODPLAIN.) ACCORDING TO  
THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER  
THE UNINCORPORATED AREAS COMMUNITY PANEL NO. 480212 0025 B.  
DATED SEPTEMBER 4, 1991.

DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	USC MONUMENT (GRID 1985) (P.C. 660242) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981; LOCATED ABOUT 1.25 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	HOR: 60 VER: 60 FILE NAME: 19 W.O. 011509-1 A EH-3 DATE: NOVEMBER, 2011
9/20/12	CITY COMMENTS	STAFF	SECONDARY BENCHMARK EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21 N.A.V.D. DATUM -10.18 = CITY OF EL PASO DATUM	DESIGN BY: STAFF DRAWN BY: L.D.R. CHKD. BY: H.P. APPD. BY: BR

ILLUMINATION PLAN
<b>ENCHANTED HILLS UNIT THREE</b>
ILLUMINATION PLAN



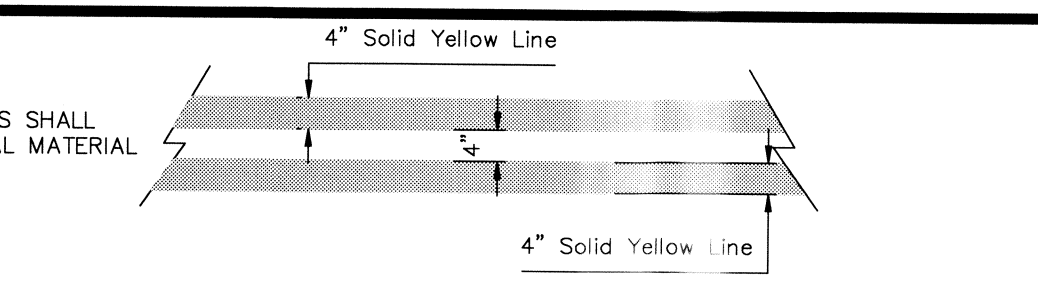
ILLUMINATION PLAN  
**ENCHANTED HILLS  
UNIT THREE**  
ILLUMINATION PLAN

**RoE Engineering, L.C.**  
601 N. Cotton St. Suite No. 6 El Paso, Tx. 79902  
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e-mail: roeeng@roehill.net  
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING  
SHEET 72 OF 77

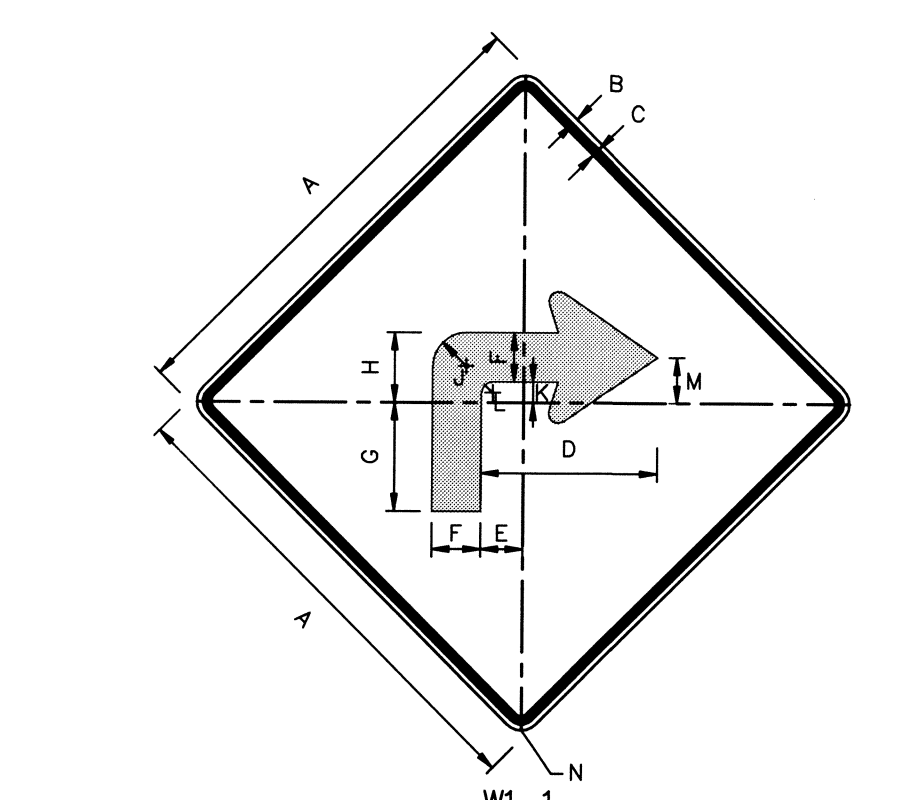


- Specifications for Reflectorized Street Name Signs
- Color of Sign:** The finished sign must have a reflectorized green background. The green must conform with the Bureau of Public Roads Highway Green. The legend must be reflectorized silver white (green reverse screened background with silver copy).
  - 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.
  - Letter Spacing:** The control for the spacing values in traffic layout is the distance recognized as aesthetic spacing between two straight letters (HN). A spacing control of two times the width of the stroke of the letter series to be used must be the aesthetic control (100%). Two and one-half times (2-1/2) this control must be used as the aesthetic word space between elements in the primary legend.
  - Layout:** The maximum number of letters to be accommodated on a given length street name face must be determined by widest letter series possible for that legend and the spacing control (100%) for the series used must be expanded or condensed up to 25% in 5% increments.
  - The spacing control (100%) for the series used must be expanded or condensed up to 25% in 5% increments for the end margin with minimum of 1".
  - The word space must be expanded up to 25% in 5% increments but not condensed.
  - Space between primary and block number area must be 1/2 the aesthetic work space used in the primary legend.
  - Suffix Letter size for all lengths must be 2" Capitals, "C" series except that series "A" or "H" where suffix abbreviations exceeds two letters, may be used.
  - 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.
  - Suffix letter size for all lengths must be 2-1/2" capitals, C series, except that series A and B where suffix abbreviation exceeds two letters, may be used.
  - 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.
  - 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 of one piece or panel of reflective sheeting.
  - Type of sheeting:** High intensity reflective sheeting must be used in the fabrication of the street name sign faces.

GENERAL NOTES:  
ALL PAVEMENT MARKING MATERIALS SHALL MEET THE REQUIRED DEPARTMENTAL MATERIAL SPECIFICATIONS



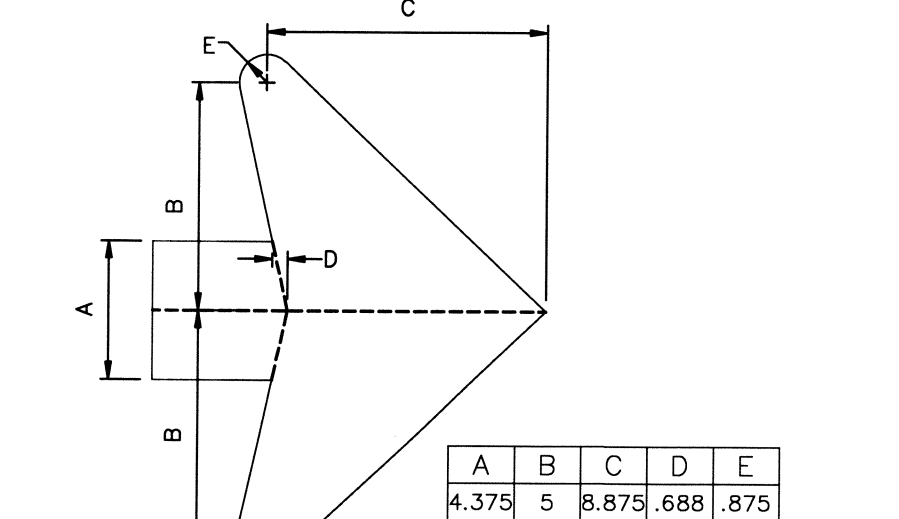
CONTINUOUS DOUBLE YELLOW LINE  
SCALE: NOT TO SCALE



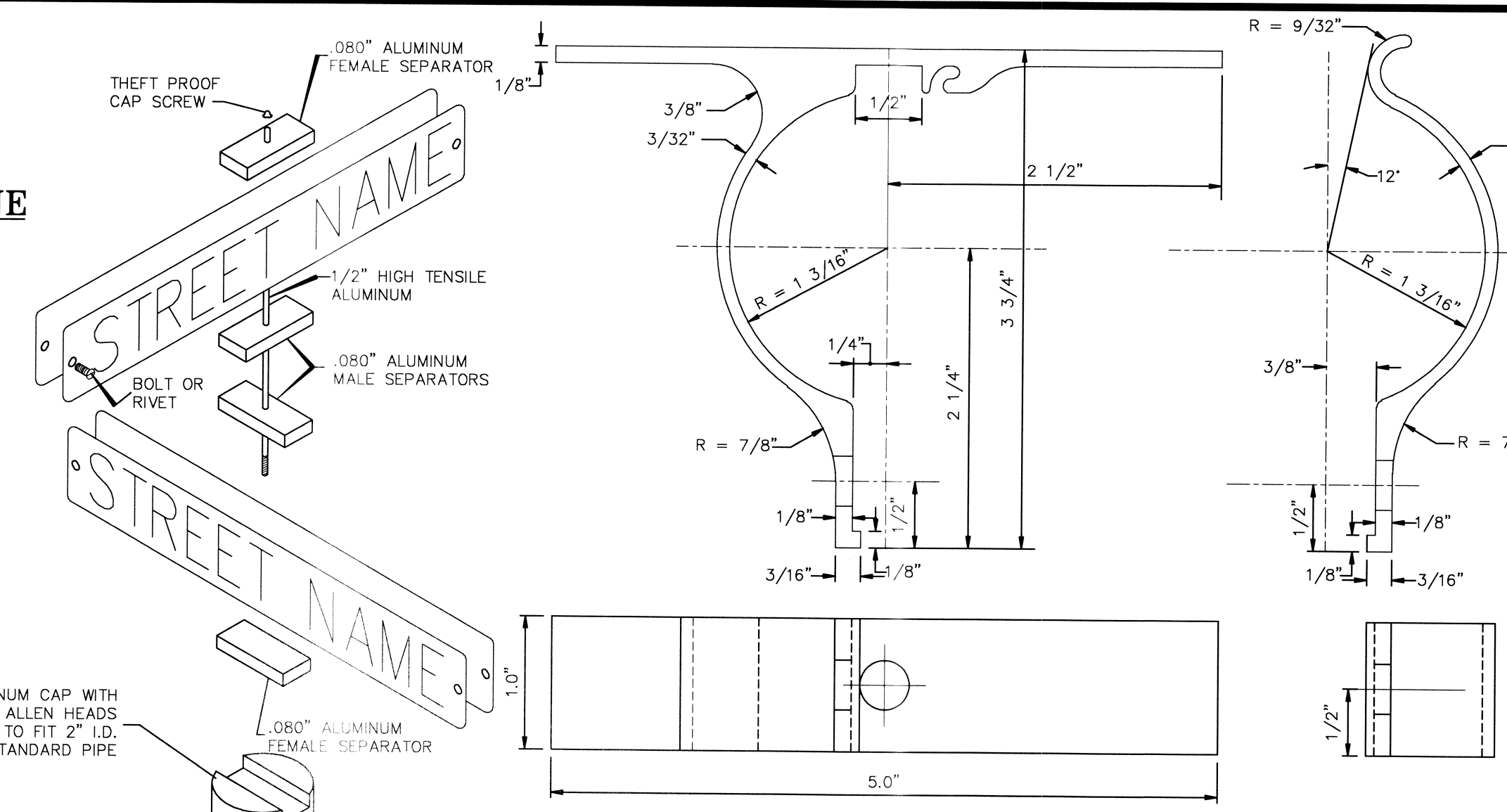
A	B	C	D	E	F	G	H	J	K	L	M	N
30	.5	.75	12	3.75	4.375	6.88	6.25	3	1.875	1	4.06	3.875

COLORS LEGEND - BLACK  
BACKGROUND - YELLOW (RETROREFLECTIVE)

W1-1R(L) SIGN DETAIL  
SCALE: NOT TO SCALE



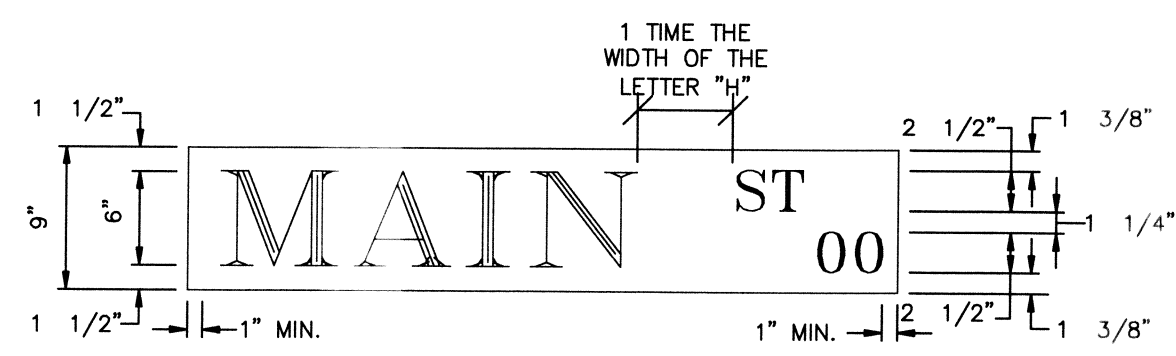
STANDARD ARROW DETAIL  
SCALE: NOT TO SCALE



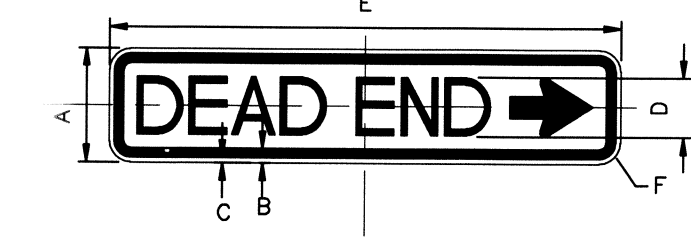
- NOTES:
- FILL HOLES 3/8" PUNCH
  - FILLETS AND ROUNDS 1/16" = R
  - FURNISH THE FOLLOWING HARDWARE FOR EACH BRACKET:  
1 - 5/16" X 3/4" BOLTS  
1 - 5/16" X 1 1/4" BOLT  
2 - 5/16" NUTS & LOCK WASHERS  
2 - 5/16" X FLAT WASHERS
  - THE BRACKET IS TO BE MADE FROM HIGH STRENGTH ALUMINUM ALLOY. THE BRACKET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

ALUMINUM SIGN CLAMP BRACKET FOR TRAFFIC CONTROL SIGNS  
SCALE: 1" = 1"

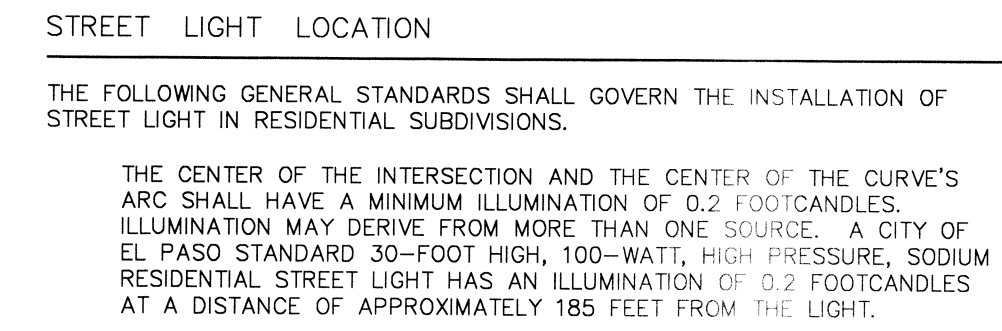
SIGN CLASS	SIGN LENGTH	PRIMARY LETTERS SIZE & SERIES	SUFFIX & BLOCK NUMBER SIZE AND SERIES
9" ARTERIAL STREETS	36" 42" 48"	6" B,C,D, SERIES 6" B,C,D, SERIES 6" A,B,C,D, SERIES	3" C SERIES 3" C SERIES 3" C SERIES



LAYOUT FOR 9" STREET NAME SIGN  
SCALE: 1" = 1"

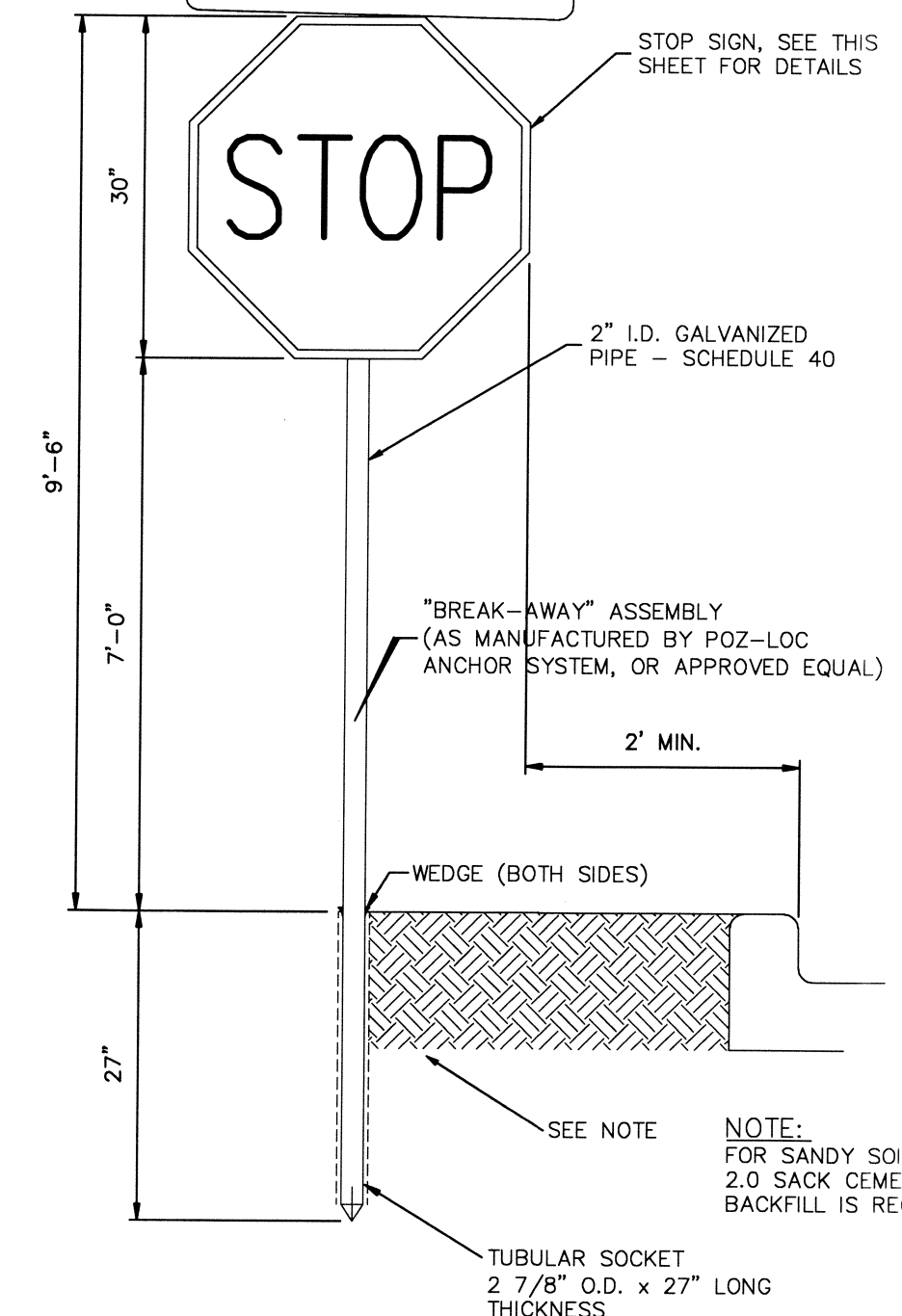


W14-1P  
SCALE: NOT TO SCALE

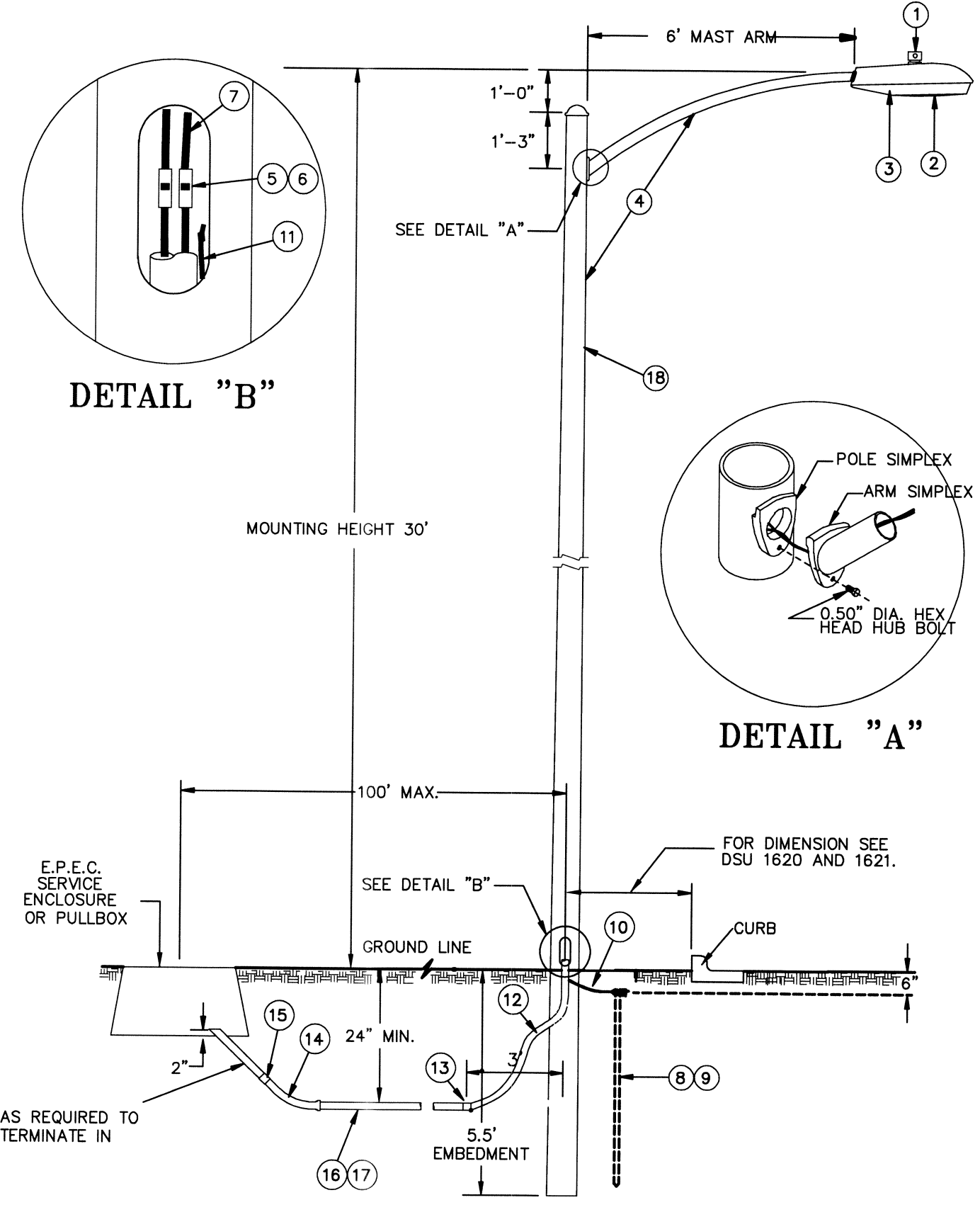


STOP SIGN DETAIL  
SCALE: 1" = 1"

- Specifications for Aluminum Sign Blanks
- These specifications describe details and minimum requirements for Aluminum Sign Blanks, to which reflective sheeting will be applied.
- All materials shall be new and unweathered and shall be of domestic origin, milled, rolled and finished in domestic mills.
  - 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.
  - 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.
  - All sign blanks will be treated as follows:
    - Degreasing**
      - Vapor Degreasing - By total immersion of sign blank in a saturated vapor of trichloroethylene or perchloroethylene. Trademark printing shall be removed with lacquer thinner before degreasing.
      - 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.
    - Etching**
      - Acid Etch - Etch well in 6 - 8 % phosphoric solution at 100 degrees Fahrenheit of proprietary acid etching solution. Rinse thoroughly with running water.
      - 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.
    - 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 POST INSTALLATION  
NOT TO SCALE

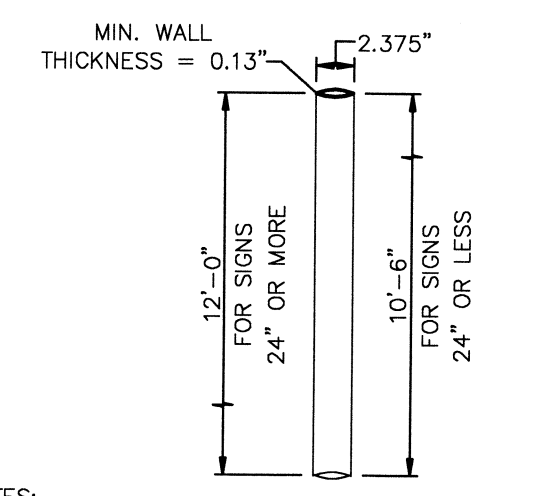


STEEL POLE STREET LIGHT

ITEM No.	DIRECT EMBEDDED SL STANDARD	STOCK / DSU No.	QTY.	C/U CODE	MACRO CODE
1	PHOTO CELL, 240 V - SEE NOTE 1	21-225	1		
2	HPS LAMP, 100W	21-085	1	LCOBRAHD	
3	LUMINAIRE, 100W H.P.S	21-335	1		
4	D.E. STANDARD, 34' 6" WITH 6' MAST ARM	09-310	1	L34STLUG	
5	FUSE 10A	21-240	2	LFUSE10A	
6	FUSEHOLDER - 30A	21-247	2	LFUSEHLD	
7	COPPER CABLE, #12, 19 SOLID, 600V, BLUE	13-702	70'	LC#12CU	
8	5/8" X 10' CU BONDED GROUND ROD	08-626	1	LRGNDROD	LSTLDEUG
9	5/8" GROUND ROD CLAMP	07-461	1		
10	#4 BARE COPPER-CLAD	12-106	6'	L4ACW	
11	TRANSFORMER GROUND CLAMP	04-100	1	LRGNDCON	
12	1" PVC FLEX CONDUIT FITTING	21-214	1	FLXFTI1	
13	1" PVC FLEX CONDUIT	21-527	6'	LPVCFLX1	
14	1" PVC 45 DEGREE ELBOW	17-298	1	L4L451	
15	1" PVC COUPLING	17-296	1	LCPLG1	
16	1" PVC CONDUIT	17-299	AS REQ	LPVC1	
17	COPPER CABLE, #12, 19 SOLID, 600V, BLUE	13-702	AS REQ	LC#12CU	
18	POLE, 35 FT.-CLASS IV	009-035	AS REQ	L34STLUG	

- NOTES:
- MOUNT SO THAT PHOTO CELL IS FACING NORTH.
  - INSTALLATION MUST COMPLY WITH LOCAL CODE REQUIREMENTS.
  - FOR ANY CLARIFICATION, EXCEPTIONS OR QUESTIONS REGARDING THIS STANDARD, CALL THE EL PASO ELECTRIC COMPANY DISTRIBUTION DESIGN DEPARTMENT.
  - ON STREET WHERE SIDEWALK IS ADJACENT TO CURB, STREET LIGHT POLE SHALL BE INSTALLED IN THE SIDEWALK NEXT TO PROPERTY LINE. 36 INCHES REQUIRED FROM BACK OF CURVE TO COMPLY WITH AMERICAN DISABILITY'S ACT AND LOCAL CODES.
  - A GROUND ROD MUST BE USED.
  - LOCK WASHER MUST BE INCLUDED ON ALL ANCHOR BOLTS.
  - FOR ANY CLARIFICATION, EXCEPTIONS OR QUESTIONS REGARDING THIS STANDARD, CALL THE EL PASO ELECTRIC COMPANY DISTRIBUTION DESIGN DEPARTMENT.
  - CONCRETE FOUNDATION DIMENSIONS ARE AS FOLLOWS:  
DIAMETER: (X)  
DEPTH: (Y)  
NORMAL SOIL: 24" x 72"  
ROCKY SOIL: 24" x 60"
  - CONCRETE FOR FOUNDATION SHALL BE 3000 PSI. 3/4" ROCK AGGREGATE AND HAVE 5" SLUMP.
  - 4 - ANCHOR BOLTS WITH 4" HOOKS, THREAD END GALVANIZED 1" DIA. X 36" LONG, EACH BOLT FURNISHED WITH 2 HEX NUTS AND 2 FLAT WASHERS ARE SUPPLIED WITH THE STEEL POLE.
  - ON STREET WHERE SIDEWALK IS ADJACENT TO CURB, STREET LIGHT POLE SHALL BE INSTALLED IN THE SIDEWALK NEXT TO PROPERTY LINE. 36 INCHES REQUIRED FROM BACK OF CURB TO COMPLY WITH AMERICAN DISABILITY'S ACT AND LOCAL CODES.

EXHIBIT "B"



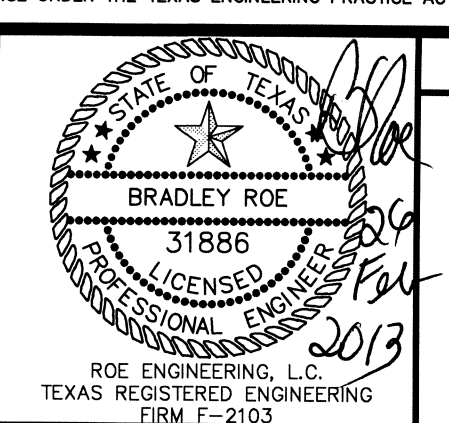
- NOTES:
- WELD ALONG ITS LENGTH TO FORM VIRTUALLY SEAMLESS.
  - POST SHALL BE HOT DIPPED ZINC GALVANIZED UNIFORMLY ON THE OUTSIDE WITH NOMINAL ZINC WEIGHT OF 1.0 OUNCE PER SQUARE FOOT.
  - THE ZINC COATING IS TO BE OVER-COATED WITH A CHROMITE CONVERSION AND ACRYLIC COATING TO PROVIDE RESISTANCE TO RUSTING AND CORROSION.
  - THE INSIDE OF THE POST SHALL BE COATED WITH AN ORGANIC MATERIAL FOR PROTECTION AGAINST RUST.
  - BOTH ENDS ARE TO BE SQUARELY CUT WITHOUT FLARE.
  - POST SHALL BE FREE OF WARPS, CORROSION, OR OTHER DEFECTS.
  - RING WELDS OR SPLICES WILL NOT BE ACCEPTABLE.
  - BENDING STRENGTH AS SPECIFIED BY AASHTO FOR SCHEDULE 40.
  - POST SHALL BE BUNDLED WITH METAL STRAPS AND SHALL NOT EXCEED 37 POST PER BUNDLE.

SIGN POSTS SPECIFICATIONS  
SCALE: 1" = 1"

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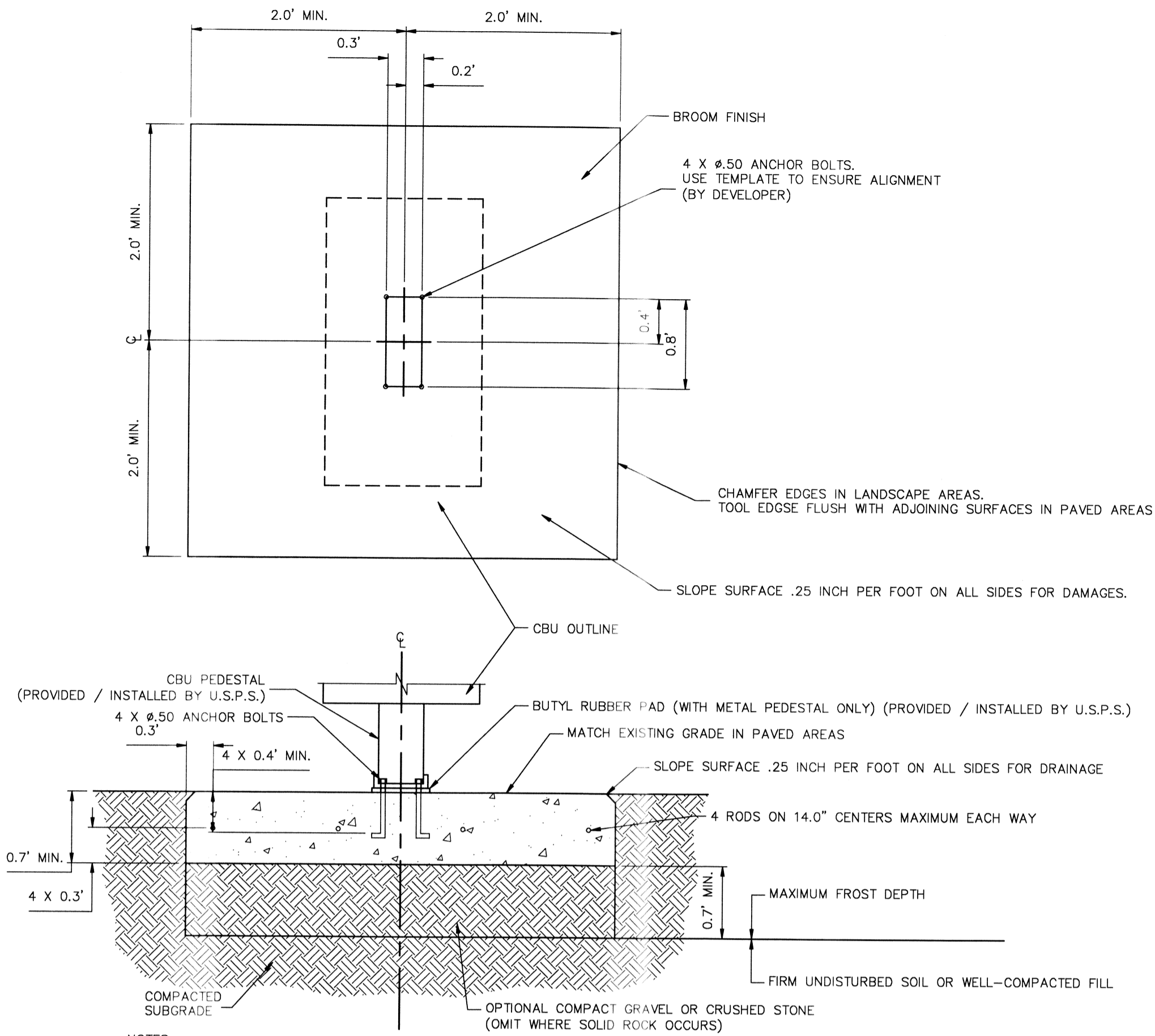
FLOOD NOTE:  
THE ABOVE REFERENCED PROPERTY IS WITHIN ZONE "A" AND ZONE "X" (EXPLANATION: ZONE "A" NO BASE FLOOD ELEVATIONS DETERMINED; EXPLANATION: ZONE "X" AREAS DETERMINED TO BE OUTSIDE THE 500 YEAR FLOODPLAIN) ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER THE UNINCORPORATED AREAS COMMUNITY PANEL NO. 480212 0025 B. DATED SEPTEMBER 4, 1991.

DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	N/S DOCUMENT "CENSO 1980" (TRIP LOGS)	HOR:0 VER:60
9/20/12	CITY COMMENTS	STAFF	LOCATED AS PER NATIONAL GEODETIC SURVEY 1981: LOCATED ABOUT 1.25 MILES EAST OF THE RIO GRANDE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3846.11 NAVD 88	FILE NAME: 21
			EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTRELINE OF LOS MOJOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 2, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	DATE: NOVEMBER, 2011
			N.A.V.D.88 DATUM -10.18 = CITY OF EL PASO DATUM	DESIGN BY: STAFF
				DRAWN BY: T.D.R.
				CHKD. BY: H.P.
				APPD. BY: BR



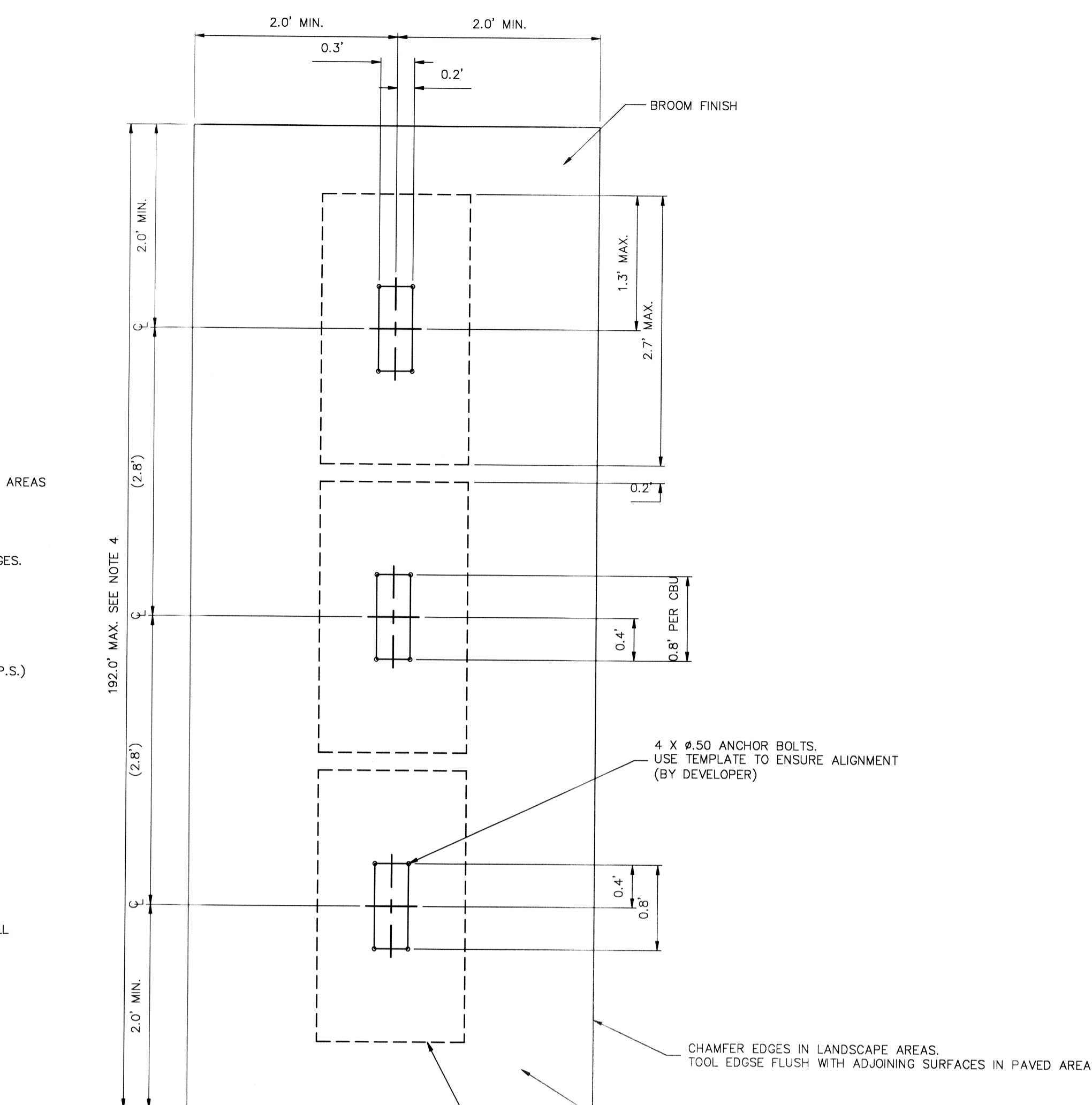
TRAFFIC SIGNAGE DETAILS  
**ENCHANTED HILLS UNIT THREE**  
TRAFFIC SIGNAGE DETAILS

Roe Engineering, L.C.  
801 N. Cotton St. Suite No. 6 El Paso, TX. 79902  
(915) 533-1418 - FAX: (915) 533-4972  
e-mail: roeeng@rbwll.net  
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING  
SHEET 73 OF 77



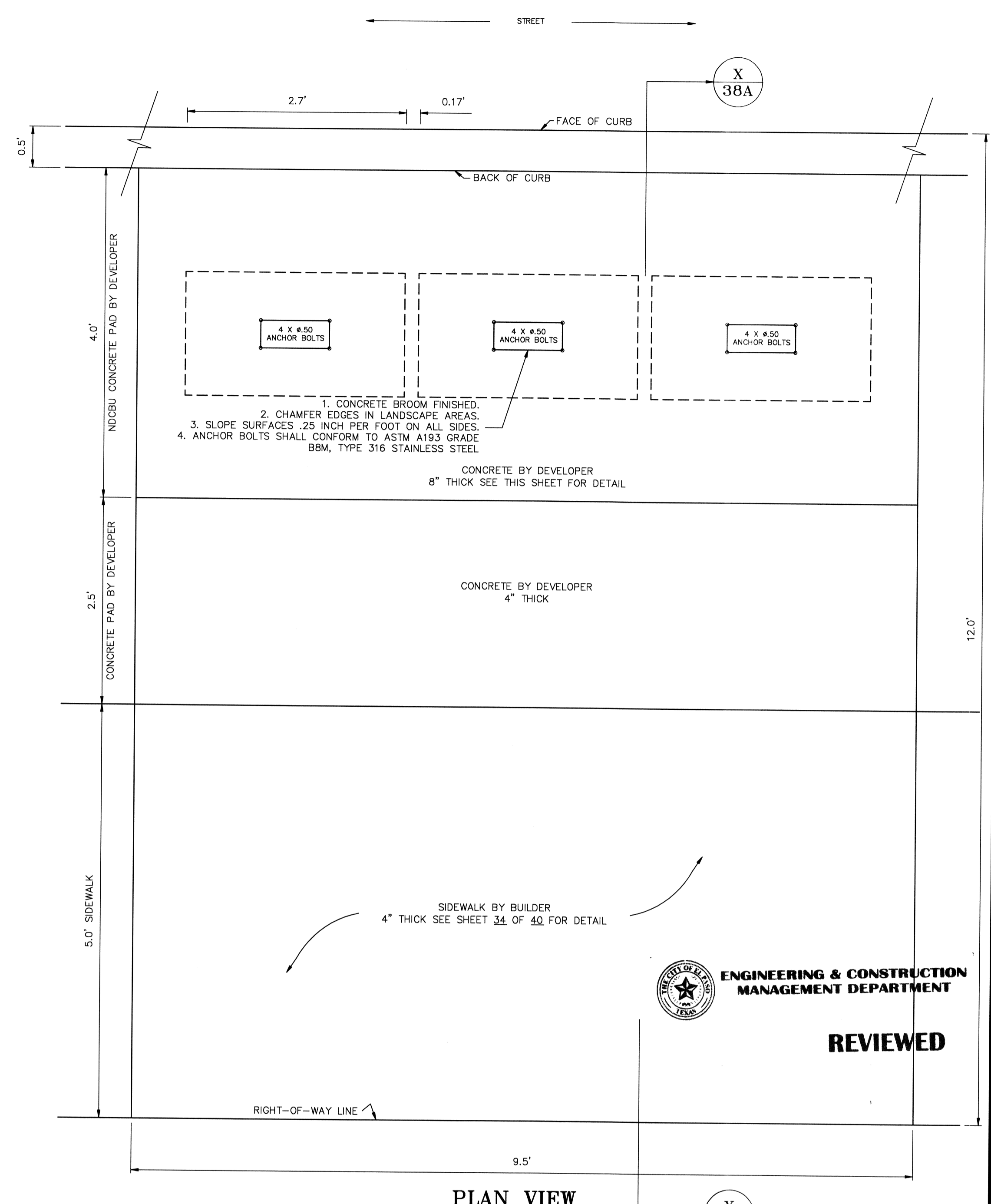
- NOTES:
1. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3000 SI @ 28 DAYS, CONTAIN 4% MIN - 6% MAX AIR ENTRAINMENT AND BE PLACED WITH A 3.50 - 4.50 SLUMP IN ACCORDANCE WITH ACI 301. (BY DEVELOPER)
  2. REINFORCING STEEL RODS SHALL CONFORM TO ASTM A615 GRADE 60. (BY DEVELOPER)
  3. ANCHOR BOLTS SHALL CONFORM TO ASTM A 193, GRADE B8M TYPE 316 STAINLESS STEEL. (BY DEVELOPER)

**U.S.P.S. APPROVED SPECIFICATIONS - CONCRETE PAD (SINGLE UNIT)**

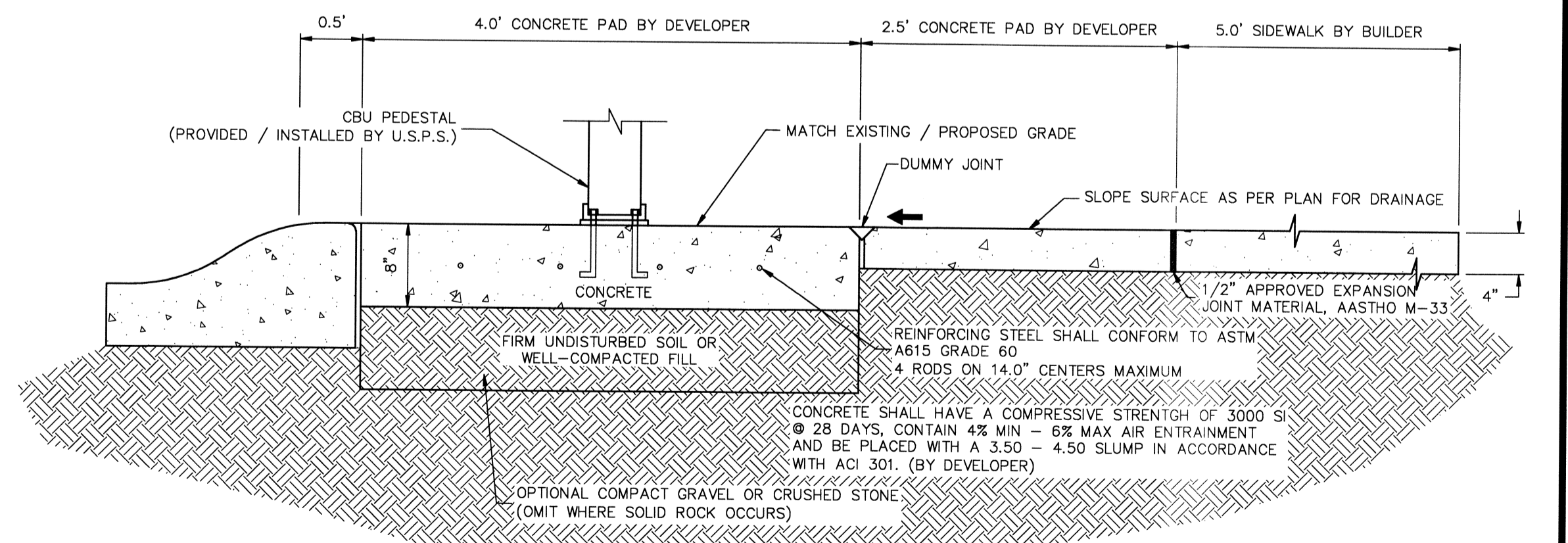


- NOTES:
1. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3000 SI @ 28 DAYS, CONTAIN 4% MIN - 6% MAX AIR ENTRAINMENT AND BE PLACED WITH A 3.50 - 4.50 SLUMP IN ACCORDANCE WITH ACI 301. (BY DEVELOPER)
  2. REINFORCING STEEL RODS SHALL CONFORM TO ASTM A615 GRADE 60. (BY DEVELOPER)
  3. ANCHOR BOLTS SHALL CONFORM TO ASTM A 193, GRADE B8M TYPE 316 STAINLESS STEEL. (BY DEVELOPER)

**U.S.P.S. APPROVED SPECIFICATIONS - CONCRETE PAD (MULTIPLE UNIT)**



**PLAN VIEW**



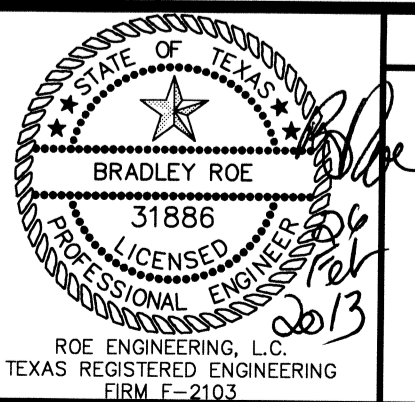
**CROSS SECTION X-X**



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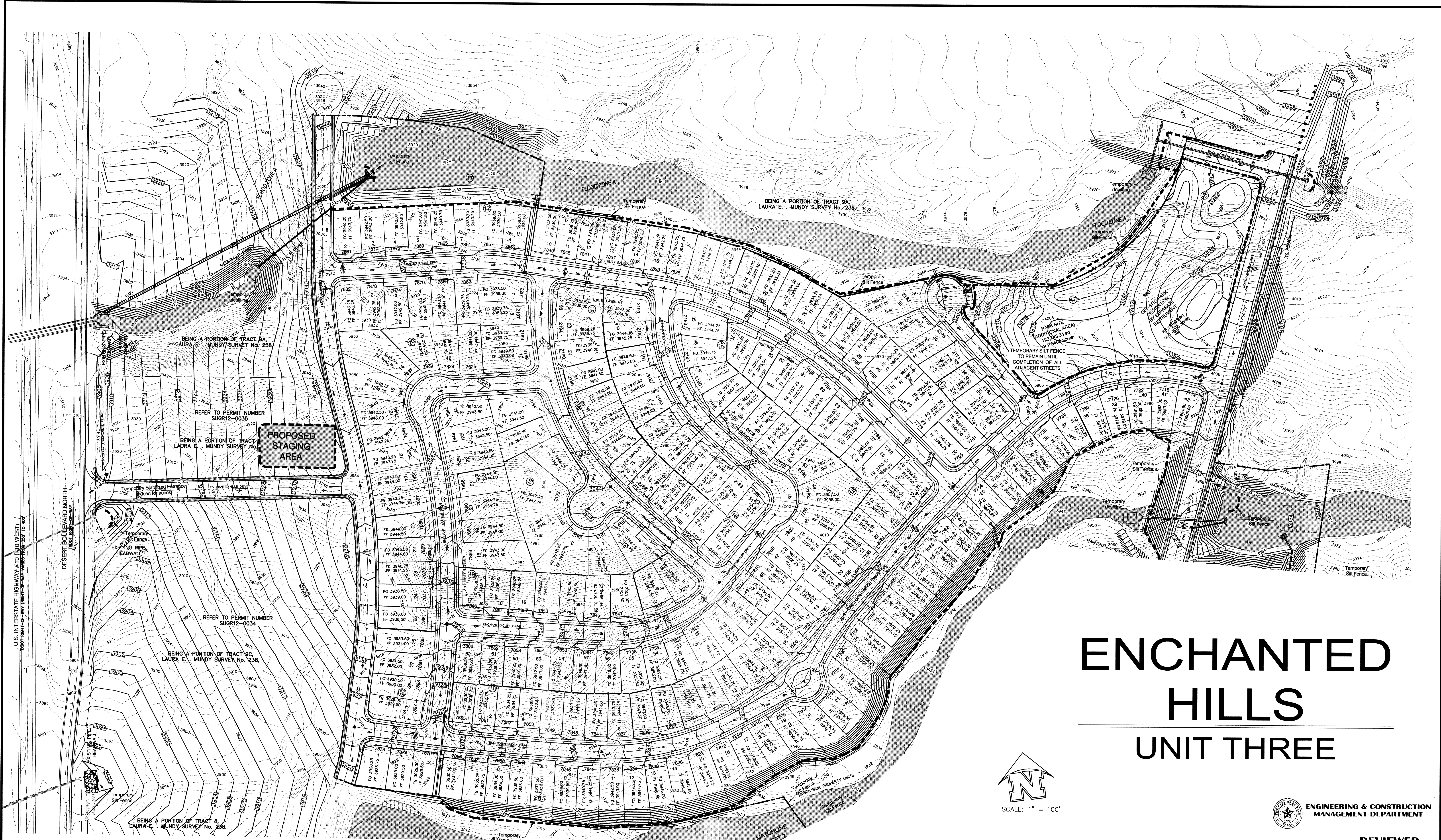
**FLOOD NOTE:**  
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DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	NO. 31886 (GSDN 1989) (200' 100000)	HORIZONTAL VER-60N/A
9/20/12	CITY COMMENTS	STAFF	LOCATION AS PER NATIONAL GEODETIC SURVEY 1981; LOCATED ABOUT 1/2 MILE EAST OF THE 800 GRADE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3946.11 NAVD 88	FILE NAME: CH21JLL.DWG
			EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHIS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANUTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 2, CANUTILLO HEIGHTS UNIT ONE. ELEVATION: 3857.21	W.O. 011509-1 A EH-3
			N.A.V.D. DATUM -1018 = CITY OF EL PASO DATUM	DATE: NOVEMBER, 2011

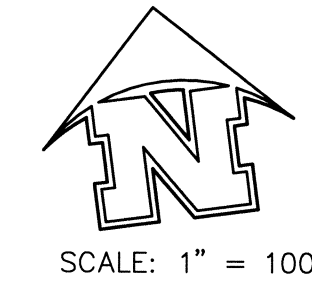


U.S.P.S. DETAILS  
**ENCHANTED HILLS UNIT THREE**  
**U.S.P.S. POSTAL BOX DETAILS**

**RoE Engineering, L.C.**  
 601 N. Cotton St. Suite No. 8 El Paso, Tx. 79902  
 (915) 533-1418 - FAX: (915) 533-4972  
 e-mail: roeeng@swbell.net  
 ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING  
 SHEET 74 OF 77



# ENCHANTED HILLS UNIT THREE



SCALE: 1" = 100'



ENGINEERING & CONSTRUCTION  
MANAGEMENT DEPARTMENT

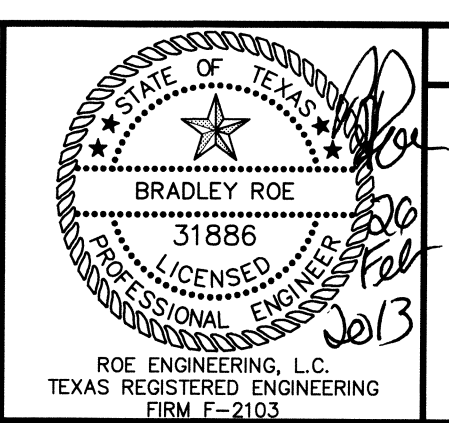
REVIEWED

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DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	N/S WASHINGTON (GRID) 1981 (1984) (1984) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981 LOCATED ABOUT 1.25 MILES EAST OF THE RD GRANGE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANSMOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10, ELEVATION 3946.11 NAVD 83	HOR: 1"=100' VER: 1"=100' FILE NAME: EH_3_SW3P_PLAN W.O. 011509-1 A EH-3
9/20/12	CITY COMMENTS	STAFF	EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOCHOS DRIVE IN FRONT OF LOT 12, BLOCK 7, CANTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANTILLO HEIGHTS UNIT ONE ELEVATION: 3957.21	DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR
			N.A.V.D. DATUM -10.16 = CITY OF EL PASO DATUM	



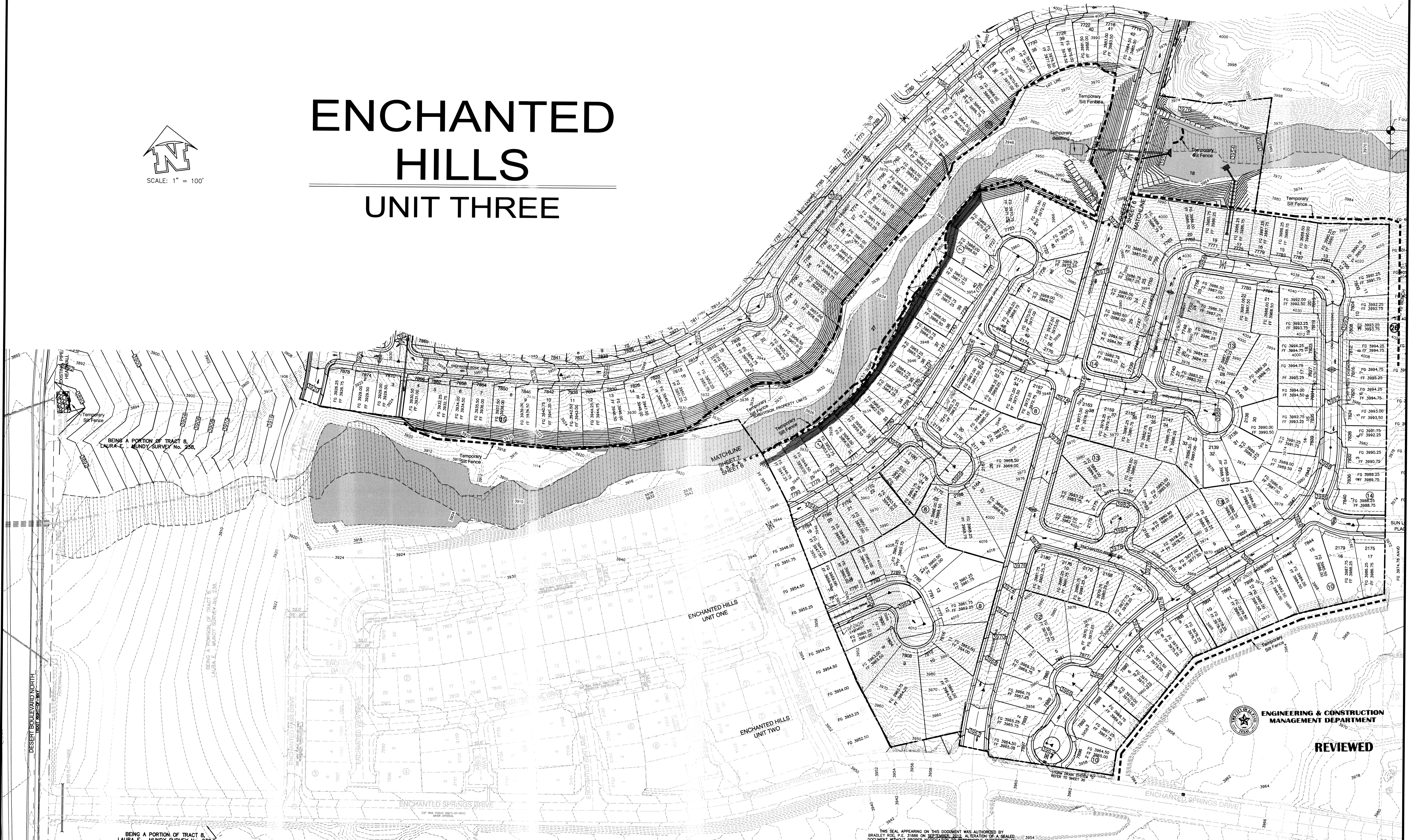
EROSION AND DUST CONTROL PLAN  
**ENCHANTED HILLS  
UNIT THREE**  
EROSION AND DUST CONTROL PLAN

Roe Engineering, L.C.  
601 N. Cotton St. Suite No. 6 El Paso, TX, 79902  
(915) 533-1418 - FAX: (915) 533-4972  
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ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING  
SHEET 75 OF 77



SCALE: 1" = 100'

# ENCHANTED HILLS UNIT THREE



BEING A PORTION OF TRACT 8,  
LAURA E. MUNDY SURVEY No. 236.

BEING A PORTION OF TRACT 6,  
LAURA E. MUNDY SURVEY No. 236.

ENGINEERING & CONSTRUCTION  
MANAGEMENT DEPARTMENT

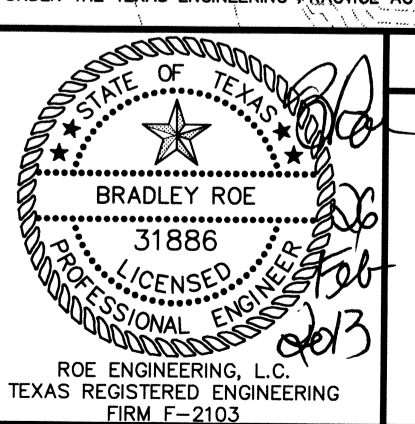
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"X" - AREAS DETERMINED TO BE OUTSIDE THE 500 YEAR FLOODPLAIN, ACCORDING TO  
THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER  
THE UNINCORPORATED AREAS COMMUNITY PANEL NO. 480212 0025 B,  
DATED SEPTEMBER 4, 1991.

DATE	REVISIONS	BY	PRIMARY BENCHMARK	SCALE
9/4/12	CITY COMMENTS	STAFF	NBS MONUMENT (TMD 1887) (TMS 1887) (TMS 1887) LOCATION AS PER NATIONAL GEODETIC SURVEY 1981 LOCATED ABOUT 1/2 MILES EAST OF THE 100 GRANGE, 1 MILE NORTH-NORTHWEST OF LOOP 375 (TRANS MOUNTAIN ROAD), AND ON THE EAST SIDE OF INTERSTATE 10. ELEVATION 3846.11 NAVD 88	HOR: 1" = 100' VER: FILE NAME: EH_3_GD_PLAN W.O. 011509-1 A EH-3
9/20/12	CITY COMMENTS	STAFF	SECONDARY BENCHMARK EXISTING CITY MONUMENT LOCATED AT THE POINT OF CURVATURE ALONG THE CENTERLINE OF LOS MOJOS DRIVE IN FRONT OF LOT 12, BLOCK 2, CANTILLO HEIGHTS UNIT TWO AND LOT 11, BLOCK 7, CANTILLO HEIGHTS UNIT ONE ELEVATION: 3857.21 N.A.V.D. 88 DATUM -10.18 = CITY OF EL PASO DATUM	DATE: NOVEMBER, 2011 DESIGN BY: STAFF DRAWN BY: I.D.R. CHKD. BY: H.P. APPD. BY: BR



EROSION AND DUST CONTROL PLAN  
**ENCHANTED HILLS  
UNIT THREE**  
EROSION AND DUST CONTROL PLAN

**Roe Engineering, L.C.**  
601 N. Cotton St. Suite No. 6 El Paso, TX 79902  
(915) 533-1416 - FAX: (915) 533-4972  
e-mail: roeeng@rweil.net  
ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING  
SHEET 76 OF 77

STORM WATER POLLUTION PREVENTION PLAN NARRATIVE

Project Title ENCHANTED HILLS UNIT THREE
Operator with Control Over Construction Plans and Specifications
Company Name and Address: Robert F. Foster, Inc. 6080 Surety Drive Suite 300
Operator's Representative: Javier Navarro
Prepared by: Roe Engineering, L.C.

Table with 4 columns: Revision No., Date, Description of Changes, Signature. Contains several rows of revisions.

Copy of NOI(s) or Site Notice(s) and TPDES General Permit TXR150000 attached?
Name of Receiving Water(s):

Name of Municipal Separate Storm Sewer System (MS4) Receiving Discharge (if applicable):

Total Area of Property: Acres
Total Area of Site to be Disturbed: Acres
Total Area of Off-site Material Storage & Borrow/Fill Sites: N/A Acres

Description of Project/Construction Activity:

Sequence of Major Construction Activities. Provide a description of the intended sequence of major activities that will disturb soils. Describe the general timing or sequence for implementation (and removal) of BMPs that will be used to minimize pollution in runoff.

Table with 3 columns: Activity/BMP, Estimated Start, Estimated Completion. Contains several rows of construction activities.

Existing Topography and Drainage Features. Describe the existing topography, drainage patterns, and natural drainage features including channels, creeks, watercourses, etc.

Table with 4 columns: Revision, Date, Page of, of. Contains several rows of revisions.

Existing (Pre-construction) Ground Cover. Describe existing vegetation on the drawing. Such features on tree clusters, grassy areas, and unique or sensitive vegetation should be shown.

Table with 3 columns: Type of Grass/Vegetation/Trees, Approximate Density (%), Site Coverage (%). Contains several rows of vegetation data.

Critical Areas. Describe the location, size, and characteristics of any wetlands, streams, or lakes that are adjacent or in close proximity to the site, and/or will receive discharges from disturbed areas of the project.

Description of Potential Pollutants. Describe potential pollutants, including construction and waste materials, chemicals, paints, solvents, etc. expected to be stored on-site.

Existing Storm Sewer System. Describe any existing onsite storm sewer systems including location of inlets and outfalls, pipe sizes, etc.

Permanent (Post-Construction) Storm Water Management Controls. Provide a description of measures that will be installed to control pollutants (sediment, oil, grease, fertilizer, pesticides, etc.) in storm water discharges that will occur after construction is complete and the developed property is placed in service.

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.

Certification signature block for Robert F. Foster, Inc. with fields for Name, Address, Title, Telephone, and Date.

TEN ELEMENTS OF A CONSTRUCTION SWPPP

For each of the following Ten Elements, describe the measures used to address the element. Include the type and location of BMPs used to satisfy the required element and the general timing or sequence for implementation. If an element is not applicable to a project, provide a written justification for why it is not necessary.

1. LIMIT SOIL DISTURBANCE
Provide a description of the areas including natural drainage features, trees and other vegetation, and appropriate buffers that are to be preserved within the construction area and the measures to be implemented to ensure protection.

2. PREVENT SOIL EROSION
Describe the temporary and permanent stabilization practices for disturbed areas of the site, including a schedule of when the practices will be implemented.

3. PROTECT SLOPES
Describe practices used to protect slopes and divert flows away from exposed soils or disturbed areas.

4. MINIMIZE SEDIMENT LOSS FROM SITE
Describe the practices to lessen the off-site transport of sediment and to reduce generation of dust. Sediment basins are required, where feasible, for common drainage locations that serve an area with ten or more acres disturbed at one time.

5. CONTROL FLOW RATES AND STABILIZE CHANNELS/OUTFALLS
Provide a description of velocity dissipation devices used at discharge locations and channel stabilization measures to provide non-erosive flows.

6. ESTABLISH CONSTRUCTION ACCESS
Provide a description of measures to minimize the off site tracking of sediment by vehicles.

7. PROTECT DRAIN INLETS
Provide a description of inlet protection measures to prevent sediment from entering the storm drain system.

8. CONTROL DEWATERING
Provide a description of controls to prevent the off-site transport of suspended sediments and other pollutants in discharges from dewatering operations.

9. CONTROL WASTE AND POLLUTANTS
Provide a description of controls to reduce pollutants and spill prevention and response procedures associated with construction and waste materials. Also provide a description of controls and measures that will be implemented to minimize pollutants in any discharges associated with industrial activity other than construction (i.e., dedicated asphalt or concrete plants) covered by the Construction General Permit.

10. CONSTRUCTION PHASING AND PROJECT MANAGEMENT
Provide a description of considerations given to project phasing in order to reduce the amount of soil exposed at one time.

11. 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.

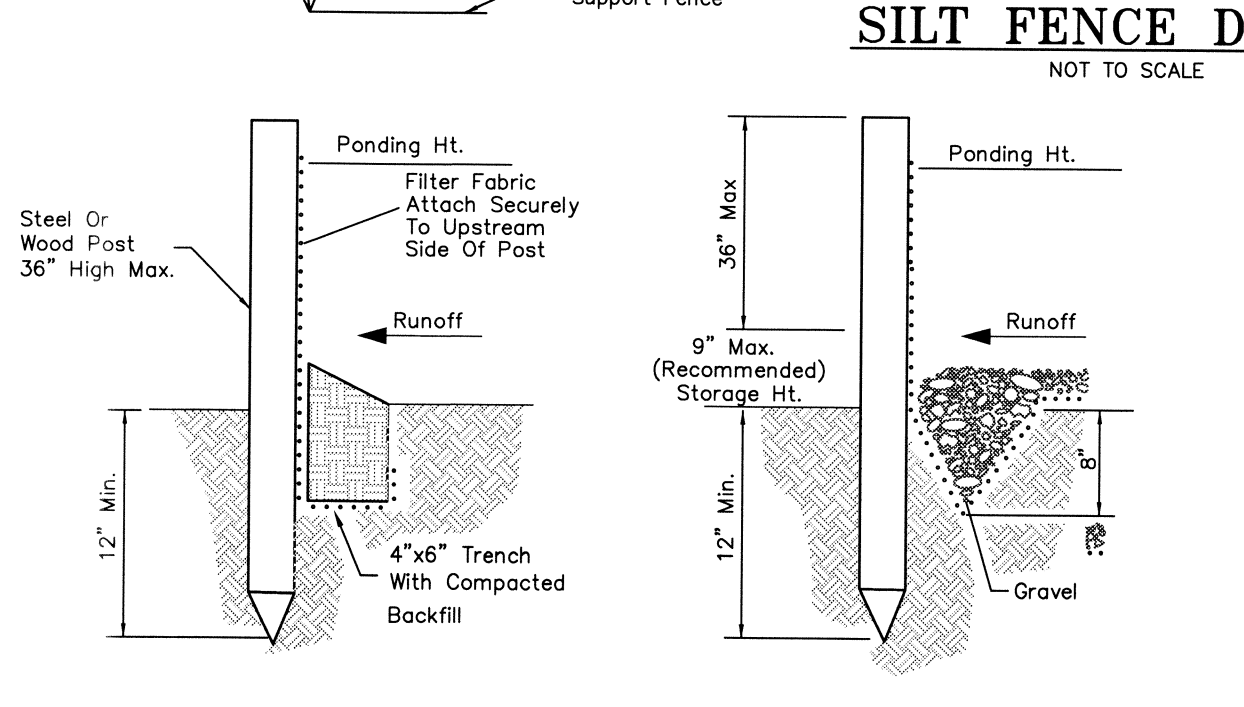
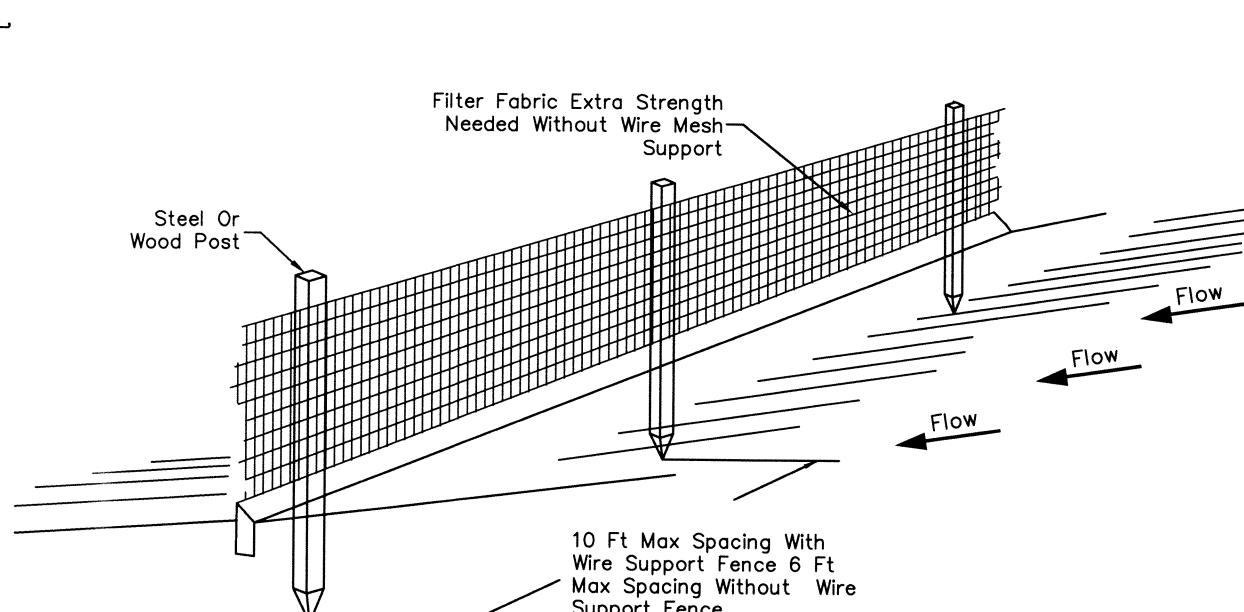
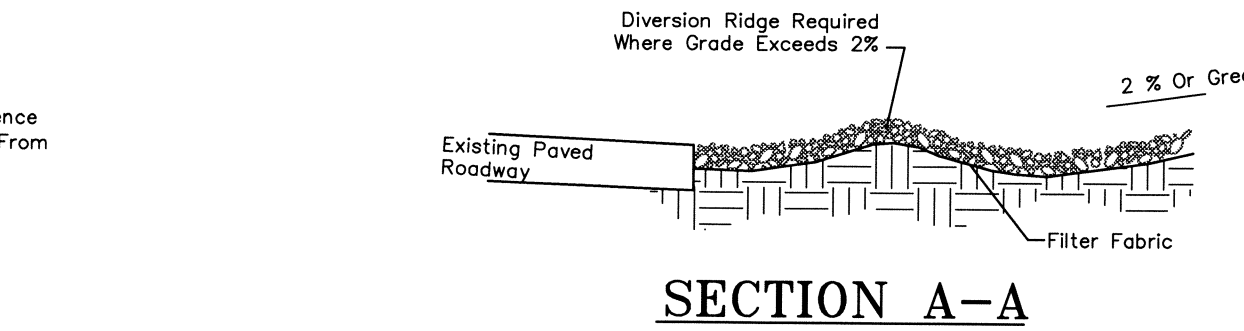
Subcontractor certification signature block with fields for Name, Title, Company, Address, Telephone, and Date.

OWNER CERTIFICATION
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate 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, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner certification signature block for Douglas A. Schwartz, Manager, with fields for Name, Title, Company, Address, Telephone, and Date.

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

- 1. Install Temporary Erosion And Sediment Controls (e.g. Silt Fence And/Or Erosion Berm, And Stabilized Construction Entrance).
2. Perform Roadway Clearing And Grubbing: From to
3. Excavation For Utilities: From to
4. Complete Lot Grading: From to
5. Construction Of Site Improvements: from to
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.



INSPECTION AND MAINTENANCE

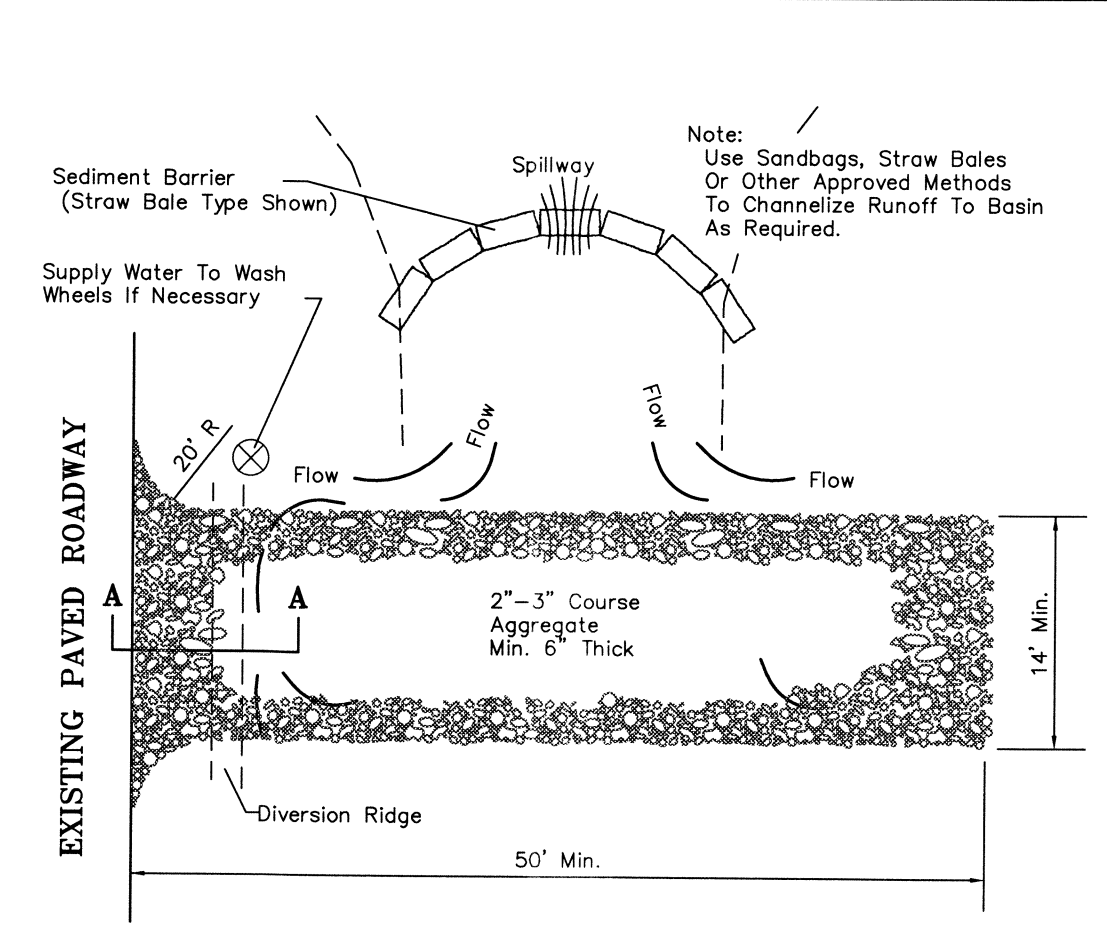
- 1. Silt Fences And Filter Barriers Shall Be Inspected Weekly And After Each Significant Storm (1" In 24 Hr.). Any Required Repairs Shall Be Made Immediately.
2. Sediment Shall Be Removed When It Reaches 1/3 Height Of The Fence Or 9 Inches Maximum.
3. The Removed Sediment Shall Vegetate Or Otherwise Be Stabilized.

NON-STORMWATER DISCHARGES ALLOWED

- A. No person shall introduce or cause to be introduced into the municipal separate storm sewer system (MS4) or waters within the jurisdiction of the city any discharge that is not composed entirely of stormwater.
B. It is an affirmative defense to any enforcement action for violation of subsection A of this section that the discharge was composed entirely of one or more of the following categories of discharges:
1. A discharge authorized by, and in full compliance with, an NPDES permit (other than the NPDES permit for discharges from the MS4);
2. A discharge resulting from firefighting;
3. Agricultural stormwater runoff;
4. A discharge from water line flushing, but not including a discharge from water line disinfection by superchlorination or other means unless it contains no harmful quantity of chlorine or any other chemical used in line disinfection;
5. A discharge from lawn watering, landscape irrigation, or other irrigation water;
6. A discharge from a diverted stream flow or natural spring;
7. A discharge from uncontaminated pumped groundwater or rising groundwater;
8. Uncontaminated groundwater infiltration (as defined as 40 CFR Section 35.2005 (20)) to the MS4;

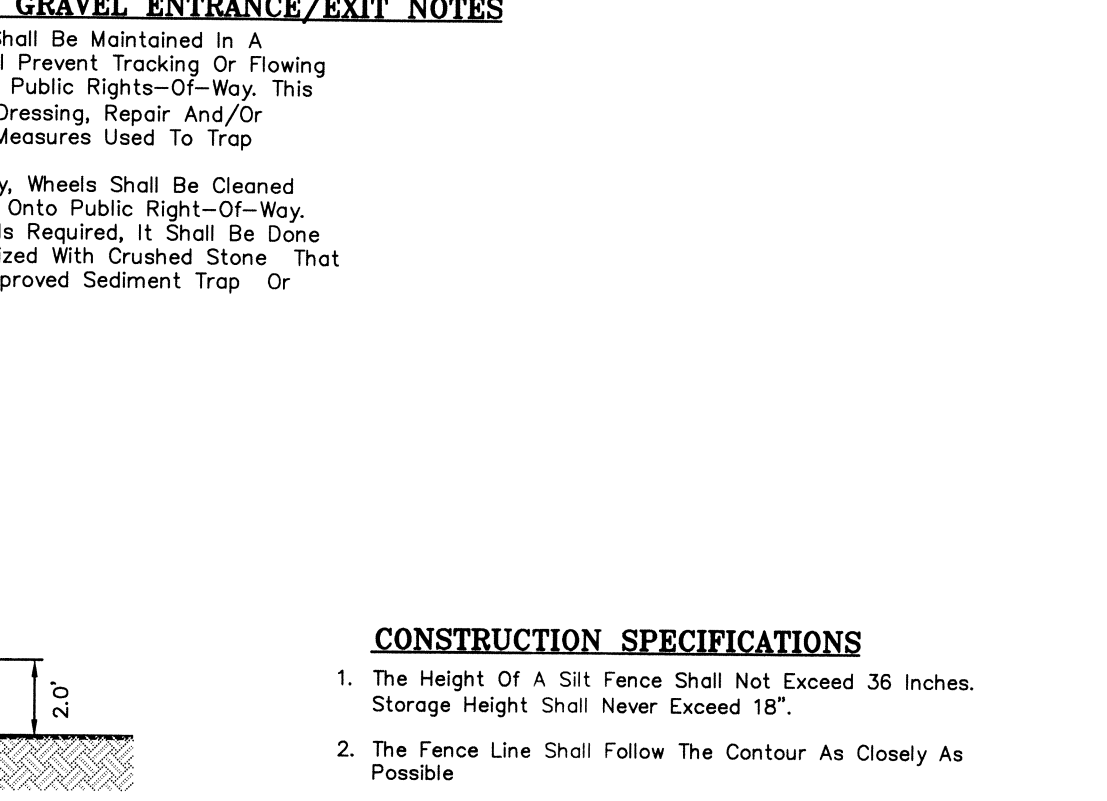
NOTES:
There Are No Listed Endangered Or Threatened Species Or Designated Critical Habitat In The Project Area.
There Is No Historical Impact Within The Project Limits.
A Copy Of The TPDES General Permit TXR150000 (Permit Language) Shall Be Read, Understood, And Maintained On-Site By The Operator.
No Asphalt/Batch plant

Owner certification signature block for Douglas A. Schwartz, Manager, with fields for Name, Title, Company, Address, Telephone, and Date.



TEMPORARY GRAVEL CONSTRUCTION ENTRANCE / EXIT

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 Cleanup 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 Stabilized With Crushed Stone That Drains Into An Approved Sediment Trap Or Sediment Basin.

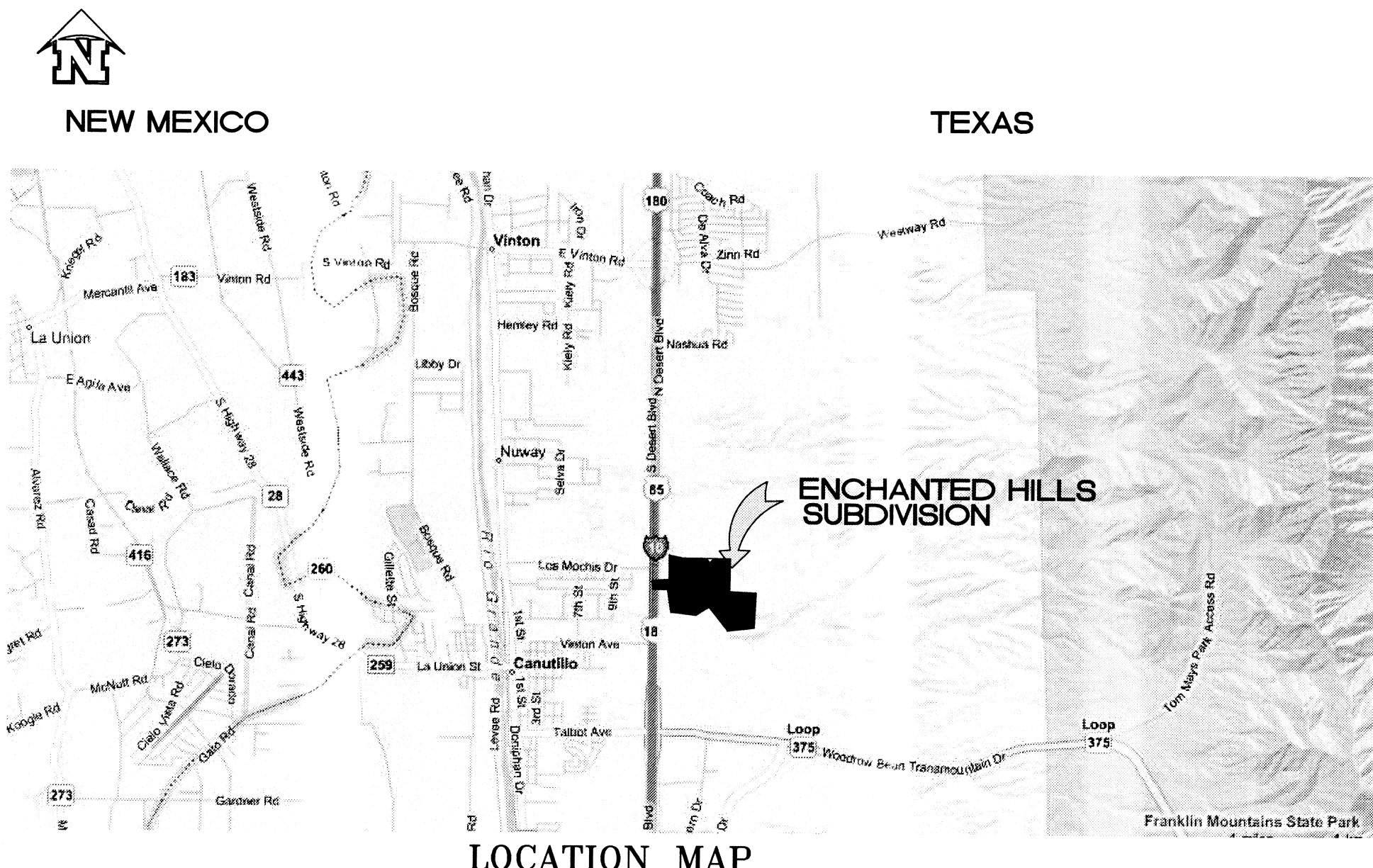


BEST MANAGEMENT PRACTICES CONTROLS

- I 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.
II SPILL PREVENTION:
The Following Practices Shall Be Used To Reduce The Risk Of Spills Or Other Accidental Exposures Of Materials To Storm Water Runoff.
III GOOD HOUSEKEEPING:
a. Store Only Enough Products Required To Do The Job
b. Neatly Store Materials On-Site In An Orderly Manner
c. Keep Products In Their Original Container
d. Do Not Mix Substances With One Another, Unless Otherwise Recommended By The Manufacturer
e. Use Entire Contents Of A Product Before Disposing The Container
f. Follow Manufacturer's Recommendations For Proper Use And Disposal

HAZARDOUS PRODUCTS:

- Practices Used To Reduce Risks:
a. Keep Products In Their Original Container If At All Possible
b. Retain Original Labels, Product Information And Material Safety Data Sheets (MSDS)
c. Dispose Surplus Product In Accordance With Manufacturer's Or Local & State Recommended Methods
VII 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 SDPPP.
VIII 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, Faisewalk, Piling Debris Or Other Obstructions Placed During Construction Operations That Are Not A Part Of The Finished Work.



LOCATION MAP

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FLOOD NOTE:
THE ABOVE REFERENCED PROPERTY IS WITHIN ZONE "A" AND ZONE "X" (EXPLANATION: ZONE "A" NO BASE FLOOD ELEVATIONS DETERMINED; EXPLANATION: ZONE "X" AREAS DETERMINED TO BE OUTSIDE THE 500 YEAR FLOODPLAIN.) ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER THE UNINCORPORATED AREAS COMMUNITY PANEL NO. 480212 0025 B. DATED SEPTEMBER 4, 1991.

Table with 4 columns: DATE, REVISIONS, BY, PRIMARY BENCHMARK. Contains revision history and benchmark information.

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EROSION AND DUST CONTROL PLAN
ENCHANTED HILLS UNIT THREE
Roe Engineering, L.C.
801 N. Cotton St. Suite No 6 El Paso, TX 79902
(915) 633-1416 - FAX: (915) 633-4972
e-mail: roeeng@earthlink.net

EROSION AND DUST CONTROL PLAN
SHEET 77 OF 77

ENGINEERING & CONSTRUCTION MANAGEMENT DEPARTMENT
REVIEWED

ENGINEERING/LAND DEVELOPMENT/PLANNING/SURVEYING