



BENCHMARK ENGINEERING CORPORATION
ENGINEERING • PLANNING • LAND SURVEYING

TEXAS BOARD OF PROFESSIONAL ENGINEERS
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HOUSTON, TEXAS 77057
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CONSULTING ENGINEERS

FAX (713) 266-3804

August 15, 2017



Mr. Richard W. Stolleis, P.E.
County Engineer
Fort Bend County, Texas
301 Jackson St., Suite 401
Richmond, Texas 77469

Re: Rancho Bella Parkway Street Dedication Sec. 4, Radius of Curvature Variance
Lakes of Bella Terra West

Dear Mr. Stolleis,

On behalf of LOB West Inc., Benchmark Engineering Corporation respectfully submits a variance request for a collector street to have centerline curve radii less than the minimum 850' required by the Fort Bend County Regulations of Subdivisions, Section 5.3(B)(4) and exclusion of the 50' tangent required by the City of Houston Code of Ordinances, Section 42-132(b).

The subject site is the Lakes of Bella Terra West Development, a single family residential community of approximately \pm 152 acres, located between FM 1093 and the existing terminus of Rancho Bella Parkway. The community proposes 350-450 single family homes, commercial property, a private recreation center, and several amenity lakes. According to the Fort Bend County Major Thoroughfare Plan, a future collector street crosses the property north to south, connecting the existing terminus of Rancho Bella Parkway to FM 1093/Westpark Tollway. The overall design of the Lakes of Bella Terra West incorporates this proposed collector street into a system of collector streets that also connects south to Bellaire Boulevard and feeds into the individual sections of the community.

We hereby request approval for three (3) reduced curve radii, as shown on the attached exhibit, for the collector street connection between FM 1093/Westpark Tollway and Bartella Street. The subject radii are 550', 550' and 700'. Each of these curves complies with the AASHTO standards for horizontal curves with design speeds up to 35-45 miles per hour (see attached AASHTO Table 3-13b). Since this collector street travels through a residential neighborhood, lower speeds are desirable, and curvilinear street patterns will encourage through-traffic to drive more carefully and watch for pedestrians, especially children travelling towards Hubenak Elementary School. In addition, we are requesting approval of an exclusion of a 50' tangent between the existing terminus of Rancho Bella Parkway and the 700' radius. The existing northern end of Rancho Bella Parkway at its current terminus has a very gentle radius of 4,560'. This is a very slight curve that feels straight to drivers which does not require a tangent.

From south to north, we're requesting the following variances: the exception from providing a 50' tangent that is located just north of the existing terminus of Rancho Bella Parkway Street Dedication Section 3, then the first proposed reduced radius of curvature of 700' at the connection of the existing terminus of Rancho Bella Parkway, and lastly, the second and third reduced radius of curvatures of 550' as part of the reverse curve that is located between proposed Afamia Drive and FM 1093/Westpark Tollway.

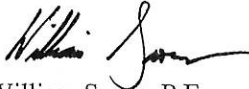
LOB West
Radius of Curvature Variance
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This request does not require any deviations from the infrastructure design standards regarding public water or sewer service, storm drainage, street paving and geometry, or required ADA sidewalks; therefore, this request is not detrimental to the public safety or welfare, or injurious to other property in the area.

In summary, we respectfully request a variance from the minimum curve radius for designated collector streets required by the Fort Bend County Regulations of Subdivisions, Section 5.3(B)(4) from the required 850' in three locations along the collector street that connects the existing terminus of Rancho Bella Parkway and F.M. 1093/Westpark Tollway and the exclusion of the 50' tangent requirement at the existing terminus of Rancho Bella Parkway.

Please contact me if you have any questions or comments.

Sincerely,

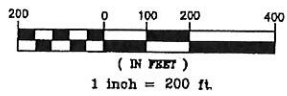


William Saour, P.E.





GRAPHIC SCALE



CURVE TABLE					
CURVE	RADIUS	LENGTH	CHORD	BEARING	DELTA
C1	4,525.00'	4.78'	4.78'	N07°13'47"E	00°03'38"
C2	30.00'	54.61'	47.38'	N00°56'06"E	104°18'22"
C3	1,025.00'	16.97'	16.97'	S50°44'36"E	00°56'54"
C4	30.00'	46.30'	41.84'	N85°31'16"E	88°25'07"
C5	585.00'	69.40'	69.36'	N10°23'03"W	06°47'49"
C6	300.00'	67.12'	66.98'	N13°23'43"W	12°49'09"
C7	300.00'	67.22'	67.08'	N13°23'08"W	12°50'19"
C8	30.00'	44.42'	40.47'	N49°22'51"W	84°49'44"
C9	30.00'	49.10'	43.80'	S41°19'04"W	93°46'23"
C10	300.00'	59.90'	59.61'	S00°09'06"W	11°26'27"
C11	300.00'	67.22'	67.08'	S00°32'50"E	12°50'19"
C12	515.00'	61.27'	61.23'	S10°22'28"E	06°48'59"
C13	30.00'	45.63'	41.36'	S01°55'50"E	87°09'03"
C14	30.00'	43.24'	39.59'	NR6°47'44"W	82°34'45"
C15	585.00'	11.98'	11.98'	S52°30'05"W	01°10'23"
C16	4,595.00'	4.96'	4.96'	S07°13'50"W	00°03'42"
C17	4,560.00'	4.87'	4.87'	N07°13'48"E	00°03'40"
C18	550.00'	65.43'	65.39'	S10°22'28"E	06°48'59"
C19	1,000.00'	99.70'	99.66'	N48°21'43"W	05°42'44"

LINE TABLE		
LINE	BEARING	LENGTH
L1	N45°30'21"W	4.39'
L2	N45°30'21"W	42.37'

NOTES:
C1, C17, and C16 DO NOT PROVIDE A 50' TANGENT

LEGEND	
F.B.C.P.R.	FORT BEND COUNTY PLAT RECORDS
F.B.C.C.F. NO	FORT BEND COUNTY CLERK'S FILE NUMBER
F.B.C.D.R.	FORT BEND COUNTY DEED RECORDS
87.00	EXISTING CONTOURS
R.O.W.	RIGHT-OF-WAY
Rest. Res.	RESTRICTED RESERVE
Vol.	VOLUME
Pg.	PAGE
B.L.	BUILDING LINE
S.S.E.	SANITARY SEWER EASEMENT
San. Svr.	SANITARY SEWER
U.E.	UTILITY EASEMENT
A.E.	AERIAL EASEMENT
Eas't.	EASEMENT
Stm. Svr.	STORM SEWER
W.L.E.	WATER LINE EASEMENT
Stm. E.	STORM SEWER EASEMENT

RANCHO BELLA PARKWAY STREET DEDICATION SEC 4

SCALE: 1"=200'

DATE: AUGUST, 2017

OWNER:
LOB WEST, Inc., a Texas Corporation
7500 San Felipe, Ste. #400
Houston, Texas 77063
(713) 952-0200

PREPARED BY:
BENCHMARK ENGINEERING CORPORATION

Consulting Engineers - Planners - Surveyors
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Texas Board of Professional Engineers
Registration Number P-6788
TBPLS FIRM NUMBER 10009000

B.E.C. JOB #04044-75-R8P

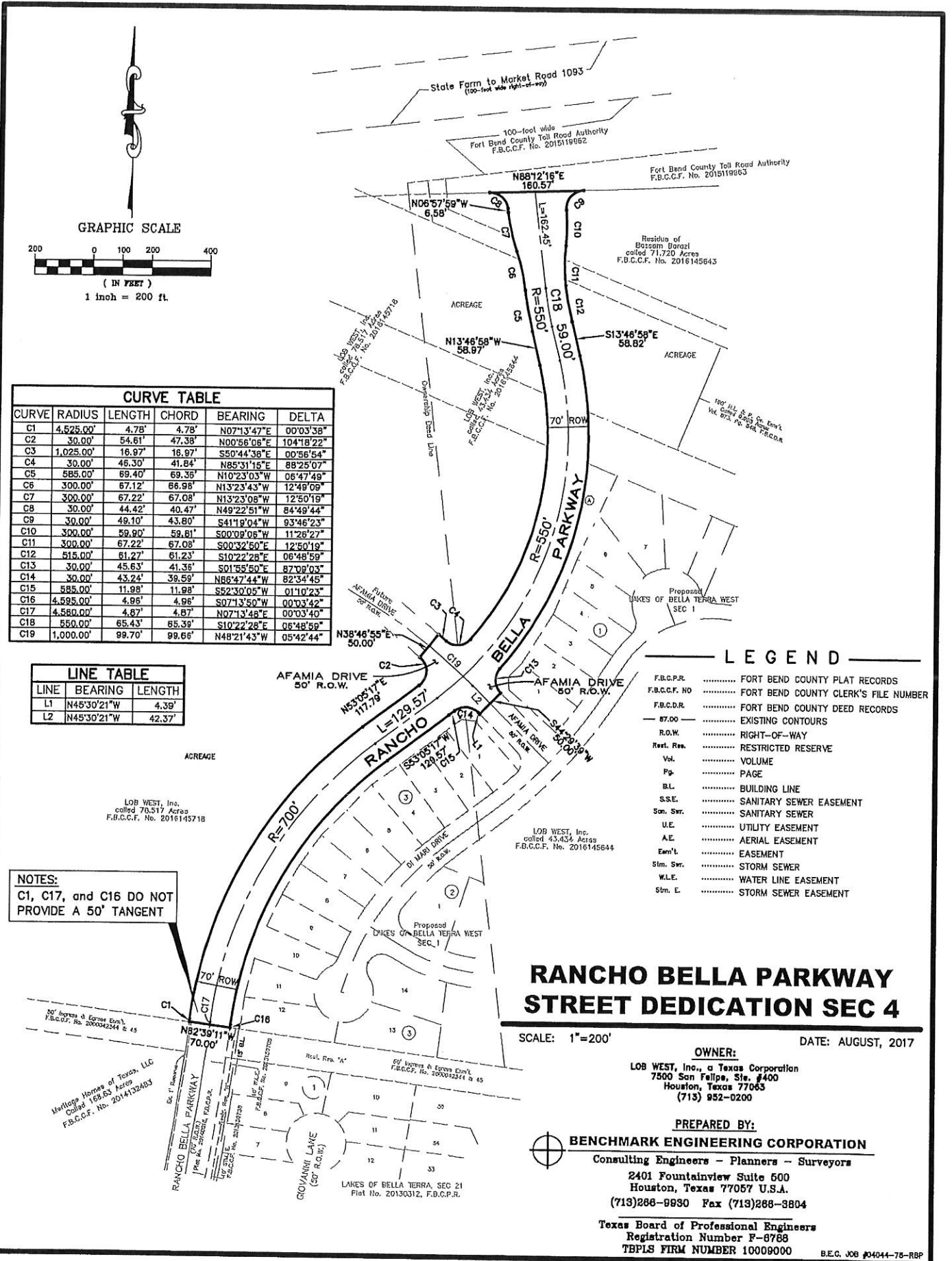


Table 3-13b. Minimum Radii and Superelevation for Low-Speed Urban Streets

U.S. Customary							
e (%)	$V_d = 15$ mph	$V_d = 20$ mph	$V_d = 25$ mph	$V_d = 30$ mph	$V_d = 35$ mph	$V_d = 40$ mph	$V_d = 45$ mph
	R (ft)	R (ft)	R (ft)	R (ft)	R (ft)	R (ft)	R (ft)
-6.0	58	127	245	429	681	1067	1500
-5.0	56	121	231	400	628	970	1350
-4.0	54	116	219	375	583	889	1227
-3.0	52	111	208	353	544	821	1125
-2.8	51	110	208	349	537	808	1107
-2.6	51	109	204	345	530	796	1089
-2.4	51	108	202	341	524	784	1071
-2.2	50	108	200	337	517	773	1055
-2.0	50	107	198	333	510	762	1039
-1.5	49	105	194	324	495	736	1000
0	47	99	181	300	454	667	900
1.5	45	94	170	279	419	610	818
2.0	44	92	167	273	408	593	794
2.2	44	91	165	270	404	585	785
2.4	44	91	164	268	400	580	776
2.6	43	90	163	265	395	573	767
2.8	43	89	161	263	393	567	758
3.0	43	89	160	261	389	561	750
3.2	43	88	159	259	385	556	742
3.4	42	88	158	256	382	550	734
3.6	42	87	157	254	378	544	726
3.8	42	87	155	252	375	539	718
4.0	42	86	154	250	371	533	711
4.2	41	85	153	248	368	528	703
4.4	41	85	152	246	365	523	696
4.6	41	84	151	244	361	518	689
4.8	41	84	150	242	358	513	682
5.0	41	83	149	240	355	508	675
5.2	40	83	148	238	352	503	668
5.4	40	82	147	236	349	498	662
5.6	40	82	146	234	346	494	655
5.8	40	81	145	233	343	489	649
6.0	39	81	144	231	340	485	643
6.2	39	80	143	229	337	480	637
6.4	39	80	142	227	335	476	631
6.6	39	79	141	226	332	472	625
6.8	39	79	140	224	329	468	619
7.0	38	78	139	222	327	464	614
7.2	38	78	138	221	324	460	608
7.4	38	78	137	219	322	456	603
7.6	38	77	136	217	319	452	597
7.8	38	77	135	216	317	448	592
8.0	38	76	134	214	314	444	587
8.2	37	76	134	213	312	441	582
8.4	37	75	133	211	309	437	577
8.6	37	75	132	210	307	434	572
8.8	37	74	131	208	305	430	567
9.0	37	74	130	207	302	427	563
9.2	36	74	129	205	300	423	558
9.4	36	73	129	204	298	420	553
9.6	36	73	128	203	296	417	549
9.8	36	72	127	201	294	413	544
10.0	36	72	126	200	292	410	540
10.2	36	72	126	199	290	407	536
10.4	35	71	125	197	288	404	531
10.6	35	71	124	196	286	401	527
10.8	35	71	123	195	284	398	523
11.0	35	70	123	194	282	395	519
11.2	35	70	122	192	280	392	515
11.4	35	69	121	191	278	389	511
11.6	34	69	120	190	276	386	508
11.8	34	69	120	189	274	384	504
12.0	34	68	119	188	272	381	500

Notes:

1. Computed using Superelevation Distribution Method 2.
2. Superelevation may be optional on low-speed urban streets.
3. Negative superelevation values beyond -2.0 percent should be used for unpaved surfaces such as gravel, crushed stone, and earth. However, a normal cross slope of -2.5 percent may be used on paved surfaces in areas with intense rainfall.