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February 4, 2005

Emily Gabel-Luddy
Deputy Advisory Agency
Los Angeles City Planning Department
200 North Spring Street
Los Angeles, California 90012

Robert Z. Dueñas
Hearing Officer
Los Angeles City Planning Department
Room 351
6262 Van Nuys Boulevard
Van Nuys, California 91401

Re: *Proper Calculation of Slope Density Ordinance*
Case No CPC 2004-4344
CPC 2004-4345
Vesting Tentative Tract No 61672
7000-8000 La Tuna Canyon Road
California Whitebird Inc (O)(A)

Dear Ms. Gabel-Luddy and Mr. Dueñas,

After examining the slope density analysis set forth on the slope density map prepared by Canyon Hills Whitebird ("Whitebird") and its engineers, it is evident that the slope density calculations are flawed. Whitebird contends that the minimum number of units allowed under the Slope Density Ordinance equals 175 dwelling units. However, the actual calculations allowed by the Los Angeles Municipal Code (LAMC) only permit 71 units. In fact, only 65 units are permissible if grids 209 and 210 are removed from the calculation since they are not actually part of the project.

The engineers employed by Whitebird have either mistakenly made multiple errors in their calculations OR HAVE DELIBERATELY MANIPULATED THE SLOPE DENSITY ORDINANCE TO ARTIFICIALLY INCREASE THE NUMBER OF ALLOWABLE UNITS. Their slope density map was "certified" on 12/6/04, a mere three days before the initial public hearing. Prior to this, alternative D of the final EIR stated that the slope density calculations allowed 87 dwelling units. (That number is now suspect.) This last minute map appears to be a ploy to justify the unjustifiable.

1. Reasons for Review. There are numerous reasons why the City of Los Angeles must make findings and conclusions based on the proper slope density calculations. They include but are not limited to the following:

- 1.1. Allowing a corporation to violate the LAMC significantly increases the legal liability of the City. This is especially true now that the City has been formally notified of these violations. For example, should the City permit Whitebird to exceed the number of units allowed by the Slope Density Ordinance, the City will have absolute civil liability. Building on hillsides creates many public safety issues including fire protection, ingress and egress issues and excessive cut and fill grading which leads to landslides and mudslides. It is for this reason that the Slope Density Ordinance was passed to limit hillside development. Allowing slope density miscalculations is to ignore the public safety.
- 1.2. When it becomes publicly known that the City and its representatives have allowed a private developer to manipulate and/or outright ignore the Slope Density Ordinance in order to increase corporate profits at the expense of homeowner safety and hillside preservation, the inevitable investigations will follow. This is a city-wide issue which affects all of the Hollywood Hills, the Santa Susana Mountains, Baldwin Hills, Sylmar and the Santa Monica Mountains.
- 1.3. When the proper slope density calculations are used, the City cannot make the findings to change the community plan to allow anywhere from 175 to 230 dwelling units.

Therefore, I would urge the City to carefully review the following discussion about the proper application of the Slope Density Ordinance.

2. Slope Density Ordinance. The following is a brief description of the Slope Density Ordinance. While somewhat dry in content, a complete understanding of the Slope Density Ordinance is necessary in order to fully comprehend how Whitebird improperly calculated the number of units.

The Slope Density Ordinance was passed in 1987 as Ordinance 162,144. A copy of such ordinance is attached hereto and marked Exhibit 1. The ordinance consisted of three substantive parts (the fourth part dealt with the effective date).

- 2.1. Part 1 added Section 17.02 to the Los Angeles Municipal Code. Section 17.02 provided the following:
 - 2.1.1. The definition of the "Average Natural Slope";
 - 2.1.2. The method for calculating the Average Natural Slope;

$$\text{Slope} = \frac{\text{Contour length} \times \text{Contour interval}}{\text{Square Feet}}$$

2.1.3. That “slopes may be computed by the entire parcel area or by 500 foot grid increments as shown on the City Engineers topographic map.”

2.2. Part 2 added a subsection C to Section 17.05 of the Los Angeles Municipal Code. Section 17.05 deals with tentative tract maps. The added provision states that in hillside areas with minimum density:

“The dwelling unit density shall not exceed that allowed by the following formula:

$$D = \frac{50 - S}{35}$$

Where: D = the maximum number of dwelling units per gross acre allowable, and
S = the average natural slope of the land in percent.”

The dwelling unit density is then multiplied by the number of acres to determine the total number of dwelling units permitted for the entire project. Section 17.05 goes on to provide for rounding either up or down to the nearest whole number of dwelling units. There are two significant points about section 17.05:

2.2.1. The first is that density is calculated by reference to the entire tentative tract map area - in other words, by units per gross acre.

2.2.2. Equally important, Section 17.05 does not address the limitations of Section 17.50. Please see the following paragraph for a description of Section 17.50.

2.3. Part 3 of the 1987 ordinance adds section 17.50 E which deals with slope density calculations in the parcel map context. Section 17.05 and 17.50 are identical with the exception that Section 17.50 dealing with parcel maps has a provision which states “In no case shall the permitted density be less than 0.05 dwelling units per gross acre.” This provision does not exist in the ordinance which enacted Section 17.05 dealing with subdivisions. The old code book published by BNI Business News Inc., which is attached hereto and marked Exhibit 2, correctly does not include that language in Section 17.05. However, the current website version of Section 17.05 contains that language **even though it is not a part of the ordinance.** (See exhibit 1.)

3. Problems with USGS Map Used to Calculate Slope Density. There are numerous problems with the developer's slope density map from which calculations were made including but not limited to the following:

- 3.1. The USGS map used by Whitebird was not prepared by the City Engineer, a civil engineer or a land surveyor as required by 17.02.
- 3.2. The USGS map is on 40 foot contours which Whitebird interpolated to 25 foot contours. This leads to a "false accuracy." See Exhibit 3.
- 3.3. Section 17.02 permits the use of 500 foot grids to calculate slope based on the City Engineer topographic maps. Numerous grids used by Whitebird exceed the 500 foot grid limitation set forth by Section 17.02. See Exhibit 4.
- 3.4. Section 17.02 only allows the use of 500 foot grids to calculate slope as indicated on the "City Engineer topographic maps" which means that only City Engineering maps, not interpolated USGS maps, can use the 500 foot grid method to calculate slope.
- 3.5. The developer's slope density map includes grids 209 and 210 which are not part of the project area. Compare the developer's Slope Density Map with Exhibit E-2 of the Mr. Dueñas report (See Exhibit 5). These additional grids inappropriately add 5.9 dwelling units regardless of the method of calculation.
- 3.6. The developer's slope density map calculates that there are 903.3 acres in the project. However every description of the project lists the acreage at 887 acres. Grids 209 and 210 are not part of the project as described in the EIR and account for a total of 9.9 acres. This still leaves 6 unaccounted acres. For purposes of this letter the 903.3 acres refers to the calculations on the developers slope density map even though that number does not correspond to the project description in the EIR. The 903.3 acres shall hereafter be referred to in quotes to note the inconsistency ("903.3").
- 3.7. Even if the City allowed the use of a USGS map, the map used by Whitebird was created prior to the construction of the 210 freeway and does not include the cut and fill slopes which were needed to construct the 210 freeway and which have existed for approximately 30 years.

4. Proper Method of Slope Density Calculation. Attached hereto and marked Exhibit 6 is a copy of Whitebird's slope density map and its density calculation chart.

Attached hereto and marked Exhibit 7 is a chart which replicates the developer's chart but adds, as the final two columns, the proper calculations under LAMC 17.05 for Density (Dwelling Units per acre - Du/Ac) and the proper number of Dwelling Units when the Du/Ac is multiplied by the number of acres. Despite the problems with the map as described in paragraph 3, for purposes of analysis and comparison one shall accept as true the contour length for each grid (Column 2), the contour interval (Column 3), the area in square feet (Column 4), the area in acres (Column 5) and the average slope (Column 6).

Since the slope calculations are not at issue for purpose of this section, the only issue is the proper calculation of density. The formula for calculating density as set forth in LAMC 17.05 is:

$$D = \frac{50 - (\text{Slope in percentage} \times 100)}{35} \times \text{Acres}$$

For example, if the slope is 45% and the number of acres equals 5.7 then the developer would be entitled to 0.8 dwelling units (See grid 68).

$$D = \frac{50 - 45}{35} \times 5.7 \text{ acres} = 0.8 \text{ units}$$

On the other hand if the slope were 55% and the number of acres remained at 5.7 then the developer would be entitled to a negative 0.8 dwelling units (See grid 99).

$$D = \frac{50 - 55}{35} \times 5.7 \text{ acres} = -0.8 \text{ units}$$

As illustrated in column 7 of Exhibit 7, when all of the positive number of dwelling units, which represent the less steep property, and negative number of dwelling units, which represent the steeper terrain, are added together, the total number of units allowed can be determined. When all of the 210 grids in the developer's slope density map are added, the number of allowable units under the LAMC equals 71 (70.8 rounded up). See the last column of Exhibit 7.

5. The Correct Alternative Methods of Calculating Density Yield Substantially Identical Results. There are two acceptable ways to calculate density both of which reach substantially similar results:

- 5.1. The first method is as described in section 3, which uses the slopes on a per grid basis to arrive at the number of dwelling units per acre and then multiplies by the number of acres to come up with either a positive or negative number after which the positive and negative numbers are added together. In the present case using the developer's slope density map the allowable number of units is 71. See the last two columns of Exhibit 7. (65 units if grids 209 and 210

are excluded as not being part of the project.)

- 5.2. The alternative acceptable method is to calculate the slope of the project as a whole and then apply the density formula. Using the figures in the developer's slope density map, the average natural slope as calculated pursuant to the formula of Section 17.02 equals 47.2%.

$$\text{Slope (47.2\%)} = \frac{\text{Total Contour Length (743,314)} \times \text{Contour Interval (25)}}{\text{Area in Sq. Ft. (39,356,163)}}$$

Once the overall slope is calculated the density formula as described in section 17.05 can be applied and the total allowed density for all "903.3" acres equals 72 units.

$$\text{Density (72.3 units)} = \frac{50 - 47.2 (\text{slope in percent times } 100)}{35} \times \text{"903.3" (gross acres)}$$

Calculating density by the grid method results in 71 units while calculating density based on the overall slope of the site allows for 72 units. The calculations are statistically identical and yield consistent results.

Even if the language requiring a minimum of 0.05 units per gross acre (i.e. 1 house per 20 acres) were included in section 17.05 (which it is not) then the current project would have more than the minimum number of dwelling units allowed since 0.05 houses per gross acre times "903.3" acres equals 45 houses. Only if the actual slope density calculations had yielded less than 45 dwelling units would that "minimum" calculation be relevant.

6. The Developer's Miscalculations. The question then becomes how can the developer, using the same slope and acreage, conclude that it can build a minimum of 175 units on the same "903.3" acres where only 71 are allowed under the LAMC. The means by which Whitebird arrived at its figure of 175 units was to state that Section 17.05 contained the language found in Section 17.50 which provides that "In no case shall the permitted density be less than 0.05 dwelling units per gross acres." Whitebird then misinterpreted such language.

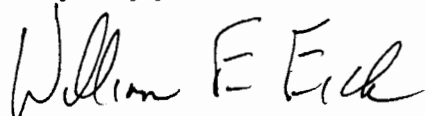
Since half of the slopes are so severe that they exceed 50%, Whitebird contends that the minimum number of dwelling units for each acre per grid is 0.05 as opposed to the correct determination that the 0.05 minimum is applicable to the overall number of gross acres. For example, in grid 99 of Exhibit 7 where the slope is 55%, Whitebird contends that it is entitled to density of at least 0.05 units for each acre per grid or 0.3 units for 5.7 acres. As demonstrated in columns 9 and 10 of Exhibit 7, for grid 99 the allowable dwelling units per acre (Du/Ac) equals a negative 0.14 Du/Ac which when multiplied by the 5.7 acres yields a negative 0.8 units for the same 5.7 acres. By misapplying the above quoted language Whitebird contends that it is entitled to units where none should be allowed. Density is calculated on the overall gross acreage not artificially limited on a per grid basis. The proper method is to take all of the positive numbers and the negative numbers to reach

a total density. Only when the total number of allowable units is less than 0.05 dwelling units per gross acre can the "minimum" calculation language be applied.

7. Obvious Inconsistency in Method Used By Whitebird. The correct alternative methods to calculate slope density allow either 71 or 72 units over the "903.3" acres. Whitebird's contention that it is entitled to 175 units under slope density yields a number which is 246% greater than the number actually allowed by the LAMC. Whitebird adds nonexistent language to LAMC 17.05 and then misinterprets its meaning.

8. Conclusion. For all of the reasons set forth in this letter the City of Los Angeles is respectfully requested to review the slope density calculations for this project and then make the appropriate changes to the Deputy Advisory Agency decisions and the Planning Department's recommendation to the Planning Commission regarding zone change and general plan amendments.

Very truly yours,



William E. Eick,
Attorney at Law

WEE/mr

cc: Honorable Wendy Gruel
Jan Chatten-Brown, Esq.
Santa Monica Mountains Conservancy
FALCON
Bart Paul
Sunland Tujunga Neighborhood Council
Sierra Club

ORDINANCE NO. 162144

An Ordinance amending Sections 17.02, 17.05 and 17.50 of the Los Angeles Municipal Code, relating to slope density.

THE PEOPLE OF THE CITY OF LOS ANGELES
DO ORDAIN AS FOLLOWS:

Section 1. Section 17.02 of the Los Angeles Municipal Code is hereby amended by the addition of two new definitions to be placed in proper alphabetical order as follows:

AVERAGE NATURAL SLOPE. The average of the ungraded slopes at selected contours within a given parcel of land divided by its area as computed from either the City Engineer's topographic maps or a topographic map prepared by a registered civil engineer or licensed land surveyor. Average natural slope shall be computed by the following formula:

$$S = \frac{C \times L}{A} \times 100$$

Where: S = average natural slope in percent.

C = contour interval in feet, at not greater than 25-foot intervals, resulting in at least 5 contour lines.

L = total accumulated length of all contours of interval "C" in feet.

A = the area being considered in square feet.

Slopes may be computed by the entire parcel area or by 500-foot grid increments, as shown on the City Engineer's topographic maps.

SLOPE. The plane or incline of land usually expressed as a percentage where $\text{slope} =$

$$\frac{\text{vertical distance}}{\text{horizontal distance}} \times 100$$

Sec. 2. Subsection C of Section 17.05 of the Los Angeles Municipal Code is hereby amended by adding to the end thereof several unnumbered paragraphs to read as follows:

In Hillside Areas as defined in Chapter IX of the Los Angeles Municipal Code which are designated in the Minimum Density housing category by the applicable element of the General Plan adopted by the City Council, the dwelling unit density shall not exceed that allowed by the following formula:

$$D = \frac{50 - S}{35}$$

Where: D = the maximum number of dwelling units per gross acre allowable, and
S = the average natural slope of the land in percent

Where the total allowable number of dwelling units per parcel map or tentative tract map calculated under the above formulas results in a number other than a whole number, it shall be rounded to the nearest whole number as follows: where the fractional portion of the total allowable number of dwelling units equals .5 or more, the total number of allowable dwelling units shall be rounded to the next larger whole number; where the fractional portion of the total allowable number of dwelling units equals less than .5, the total number of allowable dwelling units shall be rounded to the next smaller whole number.

Average natural slope is slope prior to any grading. Where previous grading on a site makes it difficult to determine average natural slope using the above formula, the Director of Planning shall determine the average natural slope in a manner to carry out the purpose and intent of this Subsection.

3. A new Subsection E is hereby added to Section 17.50 of the Los Angeles Municipal Code to read as follows:

E. SLOPE DENSITY. In Hillside Areas as defined in Chapter IX of the Los Angeles Municipal Code which are designated in the Minimum Density housing category by the applicable element of the General Plan adopted by the City Council, the dwelling unit density shall not exceed that allowed by the following formula:

$$D = \frac{50 - S}{35}$$

Where: D = the maximum number of dwelling units per gross acre allowable, and
S = the average natural slope of the land in percent

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Where the total allowable number of dwelling units per parcel map or tentative tract map calculated under the above formulas results in a number other than a whole number, it shall be rounded to the nearest whole number as follows:

where the fractional portion of the total allowable number of dwelling units equals .5 or more, the total number of allowable dwelling units shall be rounded to the next larger whole number; where the fractional portion of the total allowable number of dwelling units equals less

than .5, the total number of allowable dwelling units shall be rounded to the next smaller whole number.

In no case shall the permitted density be less than 0.05 dwelling units per gross acre. Average natural slope is slope prior to any grading. Where previous grading on a site makes it difficult to determine average natural slope using the above formula, the Director of Planning shall determine the average natural slope in a manner to carry out the purpose and intent of this Subsection.

Sec. 4. This Ordinance shall apply to the approval of any tentative map or preliminary parcel map for which an application was determined by the Advisory Agency to be complete pursuant to Government Code Section 65943 on or after the effective date of this Ordinance. The Advisory Agency may, at his or her discretion, also apply this Ordinance to the approval of any tentative map or preliminary parcel map for which an application was determined by the Advisory Agency to be complete on or after the date of publication of this Ordinance so long as said tentative map or preliminary parcel map is not finally approved prior to the effective date of this Ordinance.

Sec. 5. The City Clerk shall certify to the passage of this ordinance and cause the same to be published in some daily newspaper printed and published in the City of Los Angeles

I hereby certify that the foregoing ordinance was introduced at the meeting of the Council of the City of Los Angeles of MAR 25 1987 and was passed at its meeting of APR 01 1987

Approved APR 7 1987

ELIAS MARTINEZ, City Clerk

By Edward W. Anderson deputy

File No. 76-1795-SI

REPUBLIC due to
Clerical error.

35481 4/10/85

substantial grading operations have been completed before such extension is requested. *(Amended by Ord. No. 130,871, Eff. 9/20/65.)*

C. Conformance To General Plan. Each tentative map shall be designed in compliance with the zoning applying to the property or approved by the City Council for change or shall be subject to a condition requiring compliance with such zoning prior to the recordation of the final map. *(Amended by Ord. No. 156,960, Eff. 8/27/82.)*

In addition, where a tentative map involves land for which a General Plan including dwelling unit densities has been adopted by the Council, and said land is also in an "H" Hillside or Mountainous Area established by Article 2 of this chapter, the number of lots on said map shall be limited so that the number of dwelling units permitted by the applicable zoning regulations shall not substantially exceed the dwelling unit densities shown on said plan.

Each tentative map shall substantially conform to all other elements of the General Plan. In computing the number of dwelling units, only the area being designated for residential use and land that is being dedicated for public uses shall be considered, excepting, however, land set aside for "street purposes, or land required to be dedicated for park and recreation purposes pursuant to Ordinance 141,422." *(Amended by Ord. No. 149,492, Eff. 4/18/77.)*

In Hillside Areas as defined in Chapter IX of the Los Angeles Municipal Code which are designated in the minimum density housing category by the applicable element of the General Plan adopted by the City Council, the dwelling unit density shall not exceed that allowed by the following formula:

$$D = \frac{50 - S}{35}$$

Where D = the maximum number of dwelling units per gross acres allowable, and
S = the average natural slope of the land in percent.

Where the total allowable number of dwelling units per parcel map or tentative tract map calculated under the above formulas results in a number other than a whole number, it shall be rounded to the nearest whole number as follows: where the fractional portion of the total allowable number of dwelling units equals .5 or more, the total number of allowable dwelling units shall be rounded to the next larger whole number; where the fractional portion of the total allowable number of dwelling units equals less than .5, the total number of allowable dwelling units shall be rounded to the next smaller whole number.

Average natural slope is slope prior to any grading. Where previous grading on a site makes it difficult to determine average natural slope using the above formula, the Director of Planning shall determine the average natural slope in a manner to carry out the purpose and intent of this subsection. *(Added by Ord. No. 162,144, Eff. 5/11/87.)*

D. Streets.

1. **Right-of-Way and Roadway Widths.** All streets and alleys shall be designed to conform with standards adopted by the Commission.

STATE OF CALIFORNIA - STATE AND CONSUMER SERVICES AGENCY

ARNOLD SCHWARZENEGGER



BOARD FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS

2535 Capitol Oaks Drive, Suite 300, Sacramento, CA 95833-2944

Telephone: (916) 263-2222 CALNET: 8-435-2222

Facsimile: (916) 263-2246

www.dca.ca.gov/pels

January 24, 2005

Sent by Mail and Faxed

Don Keene
555 Canterbury Lane
Cambria, CA 93428

RE: USGS Quadrangle Maps

Dear Mr. Keene:

This letter is being sent in response to your request that the Board's Enforcement Unit address your concerns about the use of USGS Quadrangle Maps for topographic mapping in subdivision processing. Because of the technical nature of your questions, I forwarded your letter and supporting documentation to our staff Land Surveyor Consultant, Howard Brunner, for his review and comment.

Mr. Brunner reviewed your letter and advised me that your concerns are appropriate. Mr. Brunner advised that USGS Quadrangle maps should not be broken down to create sub contours from the contours on the maps. These maps are not accurate enough to be broken down. There is insufficient detail and accuracy to enable the maps to work at the smaller scale.

Mr. Brunner said that the local jurisdictions can allow these maps to be used but they can only be used "as is" and for the purposes for which they were created. Local developers, engineers, and/or surveyors should not be allowed to interpret or misinterpret the data on these maps for any other use.

I hope this information assists you in resolving this situation. If you have any questions, please contact me by telephone at (916) 263-2251 or by e-mail at Sally_Strubinger@dca.ca.gov.

Sincerely,



SALLY STRUBINGER
Enforcement Analyst
Enforcement Unit

Exhibit 3

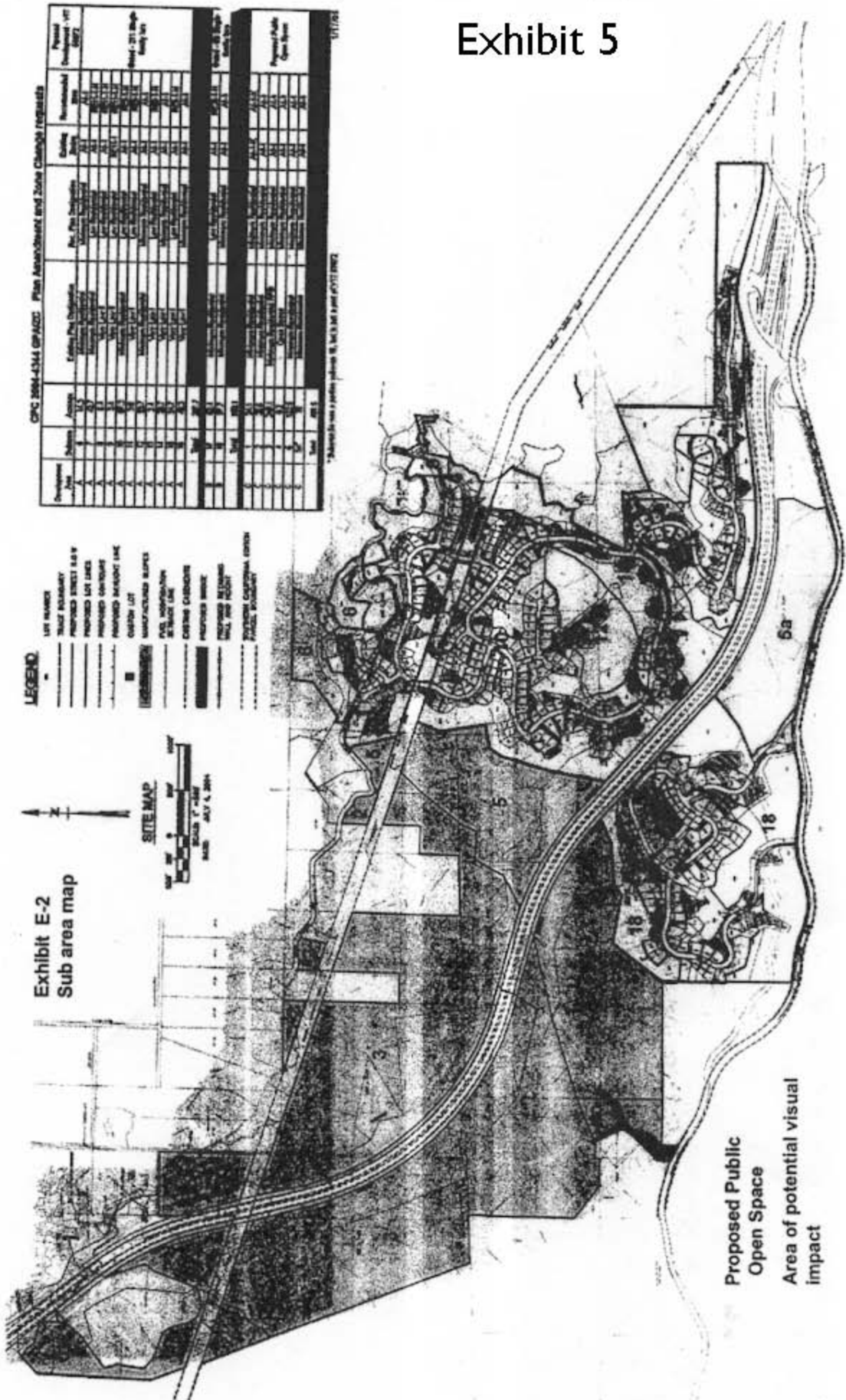
Exhibit 4

The code allows Average Natural Slope to be measure in “500 foot grid increments, as shown on the City Engineers topographic maps”. The grid system was inappropriately used on the developer’s slope density map because of the following defects:

- 1.1. Several of the grids exceeded the 500 foot limit allowed. A 500 foot grid equals 250,000 square feet. The following grids exceeded 250,000 square feet:

1.1.1.	Grid 33 -	289,941 sq. ft.
1.1.2.	Grid 50 -	433,865 sq. ft.
1.1.3.	Grid 53 -	266,288 sq. ft.
1.1.4.	Grid 85 -	277,537 sq. ft.
1.1.5.	Grid 148 -	290,567 sq. ft.
1.1.6.	Grid 183 -	284,744 sq. ft.
1.1.7.	Grid 184 -	286,797 sq. ft.
1.1.8.	Grid 185 -	259,198 sq. ft.
1.1.9.	Grid 196 -	291,844 sq. ft.
1.1.10.	Grid 197 -	281,652 sq. ft.
1.1.11.	Grid 198 -	281,901 sq. ft.
1.1.12.	Grid 199 -	255,264 sq. ft.
1.1.13.	Grid 200 -	294,199 sq. ft.

Exhibit 5



**EXHIBIT 7
CANYON HILLS/WHITEBIRD SLOPE DENSITY CALCULATIONS**

Sub Area	Contour Length	Contour Interval	Area Sq. Ft.	Area Acres	Ave Slope	Density Du/Ac Per Whitebird	Units Per Whitebird	Density Du/Ac Per LAMC 17.05	Units Per LAMC 17.05
1	1044	25	68079	1.6	38	0.34	0.5	0.34	0.5
2	2824	25	211269	4.9	33	0.49	2.4	0.49	2.4
3	724	25	41935	1.0	43	0.20	0.2	0.20	0.2
4	527	25	70661	1.6	19	0.89	1.4	0.89	1.4
5	1096	25	156257	3.6	18	0.93	3.3	0.93	3.3
6	2937	25	170723	3.9	43	0.20	0.8	0.20	0.8
7	3114	25	204477	4.7	38	0.34	1.6	0.34	1.6
8	1237	25	65998	1.5	47	0.09	0.1	0.09	0.1
9	3539	25	234716	5.4	38	0.34	1.8	0.34	1.8
10	5696	25	307642	7.1	46	0.11	0.8	0.11	0.8
11	853	25	63230	1.5	34	0.46	0.7	0.46	0.7
12	1551	25	81342	1.9	48	0.06	0.1	0.06	0.1
13	652	25	39688	0.9	41	0.26	0.2	0.26	0.2
14	4360	25	249531	5.7	44	0.17	1.0	0.17	1.0
15	5452	25	237450	5.5	57	0.05	0.3	-0.20	-1.1
16	2173	25	105490	2.4	51	0.05	0.1	-0.03	-0.1
17	2093	25	90150	2.1	58	0.05	0.1	-0.23	-0.5
18	1918	25	81686	1.9	59	0.05	0.1	-0.26	-0.5
19	5096	25	191418	4.4	67	0.05	0.2	-0.49	-2.2
20	4254	25	250000	5.7	43	0.20	1.1	0.20	1.1
21	3538	25	203724	4.7	43	0.20	0.9	0.21	0.9
22	4311	25	178497	4.1	60	0.05	0.2	-0.29	-1.2
23	5600	25	241664	5.5	58	0.05	0.3	-0.23	-1.3
24	2883	25	173111	4.0	42	0.23	0.9	0.23	0.9
25	2282	25	103092	2.4	55	0.05	0.1	-0.14	-0.3

Sub Area	Contour Length	Contour Interval	a Sq. Ft.	Area Acres	Ave Slope	Density Du/Ac Per Whitebird	Units Per Whitebird	Density Du/Ac Per LAMC 17.05	Units Per LAMC 17.05
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26	816	25	104246	2.4	20	0.86	2.1	0.86	2.1
27	1335	25	89359	2.1	37	0.37	0.8	0.37	0.8
28	3621	25	173275	4.0	52	0.05	0.2	-0.06	-0.2
29	4912	25	178618	4.1	69	0.05	0.2	-0.54	-2.2
30	858	25	33144	0.8	65	0.05	0.0	-0.43	-0.3
31	1818	25	93754	2.2	48	0.06	0.1	0.06	0.1
32	5017	25	250000	5.7	50	0.05	0.3	0.00	0.0
33	6002	25	289941	6.7	52	0.05	0.3	-0.06	-0.4
34	2046	25	86203	2.0	59	0.05	0.1	-0.26	-0.5
35	6066	25	250000	5.7	61	0.05	0.3	-0.31	-1.8
36	6318	25	250000	5.7	63	0.05	0.3	-0.37	-2.1
37	6006	25	250000	5.7	60	0.05	0.3	-0.29	-1.7
38	1968	25	72437	1.7	68	0.05	0.1	-0.51	-0.8
39	4227	25	192894	4.4	55	0.05	0.2	-0.14	-0.6
40	997	25	34637	0.8	72	0.05	0.0	-0.63	-0.5
41	1815	25	81869	1.9	55	0.05	0.1	-0.14	-0.3
42	910	25	76297	1.8	30	0.57	1.0	0.57	1.0
43	2955	25	211310	4.9	35	0.43	2.1	0.43	2.1
44	2686	25	250000	5.7	27	0.66	3.8	0.66	3.8
45	2719	25	207020	4.8	33	0.49	2.4	0.49	2.4
46	3933	25	181343	4.2	54	0.05	0.2	-0.11	-0.5
47	5280	25	246375	5.7	54	0.05	0.3	-0.11	-0.6
48	6414	25	250000	5.7	64	0.05	0.3	-0.40	-2.3
49	3203	25	178141	4.1	45	0.14	0.6	0.14	0.6
50	9891	25	433865	10.0	57	0.05	0.5	-0.20	-2.0
51	5316	25	250000	5.7	53	0.05	0.3	-0.09	-0.5
52	1456	25	68215	1.6	53	0.05	0.1	-0.09	-0.1

Sub Area	Contour Length	Contour Interval	Area Sq. Ft.	Area Acres	Ave Slope	Density Du/Ac Per Whitebird	Units Per Whitebird	Density Du/Ac Per LAMC 17.05	Units Per LAMC 17.05
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53	6459	25	266288	6.1	61	0.05	0.3	-0.31	-1.9
54	1379	25	63656	1.5	54	0.05	0.1	-0.11	-0.2
55	4426	25	156327	3.6	71	0.05	0.2	-0.60	-2.2
56	1392	25	63901	1.5	54	0.05	0.1	-0.11	-0.2
57	2825	25	110335	2.5	64	0.05	0.1	-0.40	-1.0
58	2020	25	141579	3.3	36	0.40	1.3	0.40	1.3
59	808	25	30689	0.7	66	0.05	0.0	-0.46	-0.3
60	3153	25	222064	5.1	36	0.40	2.0	0.40	2.0
61	3245	25	208486	4.8	39	0.31	1.5	0.31	1.5
62	2687	25	198325	4.6	34	0.46	2.1	0.46	2.1
63	2714	25	246323	5.7	28	0.63	3.6	0.63	3.6
64	2064	25	143338	3.3	36	0.40	1.3	0.40	1.3
65	987	25	80676	1.9	31	0.54	1.0	0.54	1.0
66	3600	25	148499	3.4	61	0.05	0.2	-0.31	-1.1
67	6347	25	250000	5.7	63	0.05	0.3	-0.37	-2.1
68	4471	25	250000	5.7	45	0.14	0.8	0.14	0.8
69	3366	25	141809	3.3	59	0.05	0.2	-0.26	-0.9
70	3828	25	190326	4.4	50	0.05	0.2	0.00	0.0
71	6046	25	250000	5.7	60	0.05	0.3	-0.29	-1.7
72	2383	25	98328	2.3	61	0.05	0.1	-0.31	-0.7
73	4900	25	250000	5.7	49	0.05	0.3	0.03	0.2
74	1524	25	87528	2.0	44	0.17	0.3	0.17	0.3
75	3023	25	133597	3.1	57	0.05	0.2	-0.20	-0.6
76	5749	25	250000	5.7	57	0.05	0.3	-0.20	-1.1
77	4674	25	250000	5.7	47	0.09	0.5	0.09	0.5
78	4526	25	249351	5.7	45	0.13	0.7	0.13	0.7
79	3398	25	199691	4.6	43	0.20	0.9	0.20	0.9

Sub Area	Contour Length	Contour Interval	Area Sq. Ft.	Area Acres	Ave Slope	Density Du/Ac Per Whitebird	Units Per Whitebird	Density Du/Ac Per LAMC 17.05	Units Per LAMC 17.05
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80	750	25	54764	1.3	34	0.46	0.6	0.46	0.6
81	905	25	119943	2.8	19	0.89	2.5	0.89	2.5
82	1164	25	132897	3.1	22	0.80	2.5	0.80	2.5
83	278	25	39242	0.9	18	0.91	0.8	0.91	0.8
84	2199	25	212237	4.9	26	0.69	3.4	0.69	3.4
85	3476	25	277537	6.4	31	0.54	3.5	0.54	3.5
86	543	25	48330	1.1	28	0.63	0.7	0.63	0.7
87	457	25	11518	0.3	99	0.05	0.0	-1.40	-0.4
88	2322	25	94733	2.2	61	0.05	0.1	-0.31	-1.8
89	4783	25	250000	5.7	48	0.06	0.3	0.06	0.3
90	6017	25	250000	5.7	60	0.05	0.3	-0.29	-1.7
91	6020	25	244999	5.6	61	0.05	0.3	-0.31	-1.7
92	1939	25	73080	1.7	66	0.05	0.1	-0.46	-0.8
93	3236	25	158760	3.6	51	0.05	0.2	-0.03	-0.1
94	4798	25	224912	5.2	53	0.05	0.3	-0.09	-0.5
95	4971	25	250000	5.7	50	0.05	0.3	0.00	0.0
96	4651	25	250000	5.7	47	0.09	0.5	0.09	0.5
97	4602	25	250000	5.7	46	0.11	0.6	0.11	0.6
98	4787	25	250000	5.7	48	0.06	0.3	0.06	0.3
99	5462	25	250000	5.7	55	0.05	0.3	-0.14	-0.8
100	3207	25	250000	5.7	32	0.51	2.9	0.51	2.9
101	4543	25	250000	5.7	45	0.14	0.8	0.14	0.8
102	2994	25	249995	5.7	30	0.57	3.2	0.57	3.2
103	1901	25	208730	4.8	23	0.77	3.7	0.77	3.7
104	1384	25	129941	3.0	27	0.66	2.0	0.66	2.0
105	1908	25	78894	1.8	60	0.05	0.1	-0.29	-0.5
106	3951	25	250000	5.7	40	0.29	1.7	0.29	1.7

Sub Area	Contour Length	Contour Interval	Area Sq. Ft.	Area Acres	Ave Slope	Density Du/Ac Per Whitebird	Units Per Whitebird	Density Du/Ac Per LAMC 17.05	Units Per LAMC 17.05
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107	5371	25	250000	5.7	54	0.05	0.3	-0.11	-0.6
108	5557	25	250000	5.7	56	0.05	0.3	-0.17	-1.0
109	5020	25	250000	5.7	50	0.05	0.3	0.00	0.0
110	4563	25	226136	5.2	50	0.05	0.3	0.00	0.0
111	3693	25	160804	3.7	57	0.05	0.2	-0.20	-0.7
112	2182	25	89663	2.1	61	0.05	0.1	-0.31	-0.7
113	5067	25	207547	4.8	61	0.05	0.2	-0.31	-1.5
114	4660	25	249406	5.7	47	0.09	0.5	0.09	0.5
115	5053	25	250000	5.7	51	0.05	0.3	-0.03	-0.2
116	3177	25	250000	5.7	32	0.51	2.9	0.51	2.9
117	4457	25	250000	5.7	45	0.14	0.8	0.14	0.8
118	5585	25	250000	5.7	56	0.05	0.3	-0.17	-1.0
119	5533	25	250000	5.7	55	0.05	0.3	-0.14	-0.8
120	3582	25	250000	5.7	36	0.40	2.3	0.40	2.3
121	1826	25	162899	3.7	28	0.63	2.3	0.63	2.3
122	1009	25	41979	1.0	60	0.05	0.1	-0.29	-0.3
123	4641	25	216063	5.0	54	0.05	0.3	-0.11	-0.6
124	3136	25	233231	5.4	34	0.46	2.5	0.46	2.5
125	3570	25	250000	5.7	36	0.40	2.3	0.40	2.3
126	4121	25	250000	5.7	41	0.26	1.5	0.26	1.5
127	6919	25	250000	5.7	69	0.05	0.3	-0.54	-3.1
128	6916	25	250000	5.7	69	0.05	0.3	-0.54	-3.1
129	6805	25	250000	5.7	68	0.05	0.3	-0.51	-2.9
130	5174	25	207266	4.8	62	0.05	0.2	-0.34	-1.6
131	1732	25	85074	2.0	51	0.05	0.1	-0.03	-0.1
132	585	25	38492	0.9	38	0.34	0.3	0.34	0.3
133	3647	25	242123	5.6	38	0.34	1.9	0.34	1.9

Sub Area	Contour Length	Contour Interval	Area Sq. Ft.	Area Acres	Ave Slope	Density Du/Ac Per Whitebird	Units Per Whitebird	Density Du/Ac Per LAMC 17.05	Units Per LAMC 17.05
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134	4230	25	250000	5.7	42	0.23	1.3	0.23	1.3
135	4305	25	250000	5.7	43	0.20	1.1	0.20	1.1
136	3811	25	250000	5.7	38	0.34	1.9	0.34	1.9
137	4148	25	250000	5.7	41	0.26	1.5	0.26	1.5
138	3337	25	200650	4.6	42	0.23	1.1	0.23	1.1
139	1952	25	137464	3.2	35	0.43	1.4	0.43	1.4
140	5416	25	250000	5.7	54	0.05	0.3	-0.11	-0.6
141	5339	25	250000	5.7	53	0.05	0.3	-0.09	-0.5
142	5655	25	250000	5.7	57	0.05	0.3	-0.20	-1.1
143	5593	25	250000	5.7	56	0.05	0.3	-0.17	-1.0
144	4514	25	250000	5.7	45	0.14	0.8	0.14	0.8
145	3455	25	250000	5.7	35	0.43	2.5	0.43	2.5
146	2656	25	231640	5.3	29	0.60	3.2	0.60	3.2
147	631	25	57759	1.3	27	0.66	0.9	0.66	0.9
148	5088	25	290567	6.7	44	0.17	1.1	0.17	1.1
149	3816	25	250000	5.7	38	0.34	1.9	0.34	1.9
150	4742	25	250278	5.7	47	0.09	0.5	0.09	0.5
151	4164	25	250000	5.7	42	0.23	1.3	0.23	1.3
152	2320	25	207098	4.8	28	0.63	3.0	0.63	3.0
153	2228	25	132863	3.1	42	0.23	0.7	0.23	0.7
154	2968	25	130912	3.0	57	0.05	0.2	-0.20	-0.6
155	1791	25	97196	2.2	46	0.11	0.2	0.11	0.2
156	671	25	58943	1.4	28	0.63	0.9	0.63	0.9
157	1227	25	59166	1.4	52	0.05	0.1	-0.06	-0.1
158	1301	25	57948	1.3	56	0.05	0.1	-0.17	-0.2
159	1676	25	85826	2.0	49	0.05	0.1	0.03	0.1
160	5316	25	250000	5.7	53	0.05	0.3	-0.09	-0.5

Sub Area	Contour Length	Contour Interval	Area Sq. Ft.	Area Acres	Ave Slope	Density Du/Ac Per Whitebird	Units Per Whitebird	Density Du/Ac Per LAMC 17.05	Units Per LAMC 17.05
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161	5064	25	250000	5.7	51	0.05	0.3	-0.03	-0.2
162	6203	25	250000	5.7	62	0.05	0.3	-0.34	-1.9
163	4404	25	250000	5.7	44	0.17	1.0	0.17	1.0
164	4304	25	241793	5.6	45	0.14	0.8	0.14	0.8
165	1432	25	81724	1.9	44	0.17	0.3	0.17	0.3
166	4616	25	255610	5.9	45	0.14	0.8	0.14	0.8
167	4680	25	250000	5.7	47	0.09	0.5	0.09	0.5
168	5767	25	250000	5.7	58	0.05	0.3	-0.23	-1.3
169	4283	25	250000	5.7	43	0.20	1.1	0.20	1.1
170	4924	25	250000	5.7	49	0.05	0.3	0.03	0.2
171	4205	25	250000	5.7	42	0.23	1.3	0.23	1.3
172	1839	25	120107	2.8	38	0.34	1.0	0.34	1.0
173	1147	25	39302	0.9	73	0.05	0.0	-0.66	-0.6
174	5667	25	249399	5.7	57	0.05	0.3	-0.20	-1.1
175	5521	25	250000	5.7	55	0.05	0.3	-0.14	-0.8
176	5166	25	250000	5.7	52	0.05	0.3	-0.06	-0.3
177	5126	25	250000	5.7	51	0.05	0.3	-0.03	-0.2
178	3241	25	250000	5.7	32	0.51	2.9	0.51	2.9
179	4559	25	248048	5.7	46	0.11	0.6	0.11	0.6
180	2559	25	134206	3.1	48	0.06	0.2	0.06	0.2
181	3624	25	158487	3.6	57	0.05	0.2	-0.20	-0.7
182	4055	25	237627	5.5	43	0.20	1.1	0.20	1.1
183	5412	25	284744	6.5	48	0.06	0.4	0.06	0.4
184	6690	25	286797	6.6	58	0.05	0.3	-0.23	-1.5
185	5191	25	259198	6.0	50	0.05	0.3	0.00	0.0
186	3209	25	199198	4.6	40	0.29	1.3	0.29	1.3
187	2550	25	162917	3.7	39	0.31	1.1	0.31	1.1

Sub Area	Contour Length	Contour Interval	Area Sq. Ft.	Area Acres	Ave Slope	Density Du/Ac Per Whitebird	Units Per Whitebird	Density Du/Ac Per LAMC 17.05	Units Per LAMC 17.05
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188	2037	25	138278	3.2	37	0.37	1.2	0.37	1.2
189	1924	25	146042	3.4	33	0.49	1.7	0.49	1.7
190	3240	25	209078	4.8	39	0.31	1.5	0.31	1.5
191	2680	25	192055	4.4	35	0.43	1.9	0.43	1.9
192	941	25	41769	1.0	56	0.05	0.1	-0.17	-0.2
193	6195	25	279409	6.4	55	0.05	0.3	-0.14	-0.9
194	5067	25	250000	5.7	51	0.05	0.3	-0.03	-0.2
195	1132	25	82252	1.9	34	0.46	0.9	0.46	0.9
196	5336	25	291844	6.7	46	0.11	0.7	0.11	0.7
197	6246	25	281652	6.5	55	0.05	0.3	-0.14	-0.9
198	3638	25	281901	6.5	32	0.51	3.3	0.51	3.3
199	5227	25	255264	5.9	51	0.05	0.3	-0.03	-0.2
200	5021	25	294199	6.8	43	0.20	1.4	0.20	1.4
201	4916	25	226254	5.2	54	0.05	0.3	-0.11	-0.6
202	1539	25	95366	2.2	40	0.29	0.6	0.29	0.6
203	2802	25	145392	3.3	48	0.06	0.2	0.06	0.2
204	3786	25	175631	4.0	54	0.05	0.2	-0.11	-0.4
205	2677	25	101607	2.3	66	0.05	0.1	-0.46	-1.1
206	4239	25	213328	4.9	50	0.05	0.2	0.00	0.0
207	1513	25	57882	1.3	65	0.05	0.1	-0.43	-0.6
208	3187	25	155176	3.6	51	0.05	0.2	-0.03	-0.1
209	3523	25	228905	5.3	38	0.34	1.8	0.34	1.8
210	1498	25	198328	4.6	19	0.89	4.1	0.89	4.9
Total:	743314	5250	39356163	903.3	Ave: 47.2		175.2		70.8