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ZONING CHANGE REVIEW SHEET

CASE: C14-85-288.8(RCA2)
Lantana Tract 28 RCA

P.C. DATE: October 28, 2014

ADDRESS: 5436 Vega Avenue

AREA: 26.705 acres

OWNER: Lantana Tract 28, L.P. (Barry P. Marcus)

APPLICANT: Smith, Robertson, Elliott & Douglas, L.L.P. (David Hartman)

NEIGHBORHOOD PLAN AREA: East Oak Hill
(Oak Hill Combined Neighborhood Plan Area)

REQUEST: Amend Public Restrictive Covenant to Delete Terms, Amend Terms, and/or Add New Terms

SUMMARY STAFF RECOMMENDATION

To amend the Existing Public Restrictive Covenant as follows:

1) Delete the existing reference to maximum net leasable square feet of buildable space and floor to area ratio (Paragraph 1);
2) Reduce the existing maximum allowable impervious cover from 35% and 65% for Barton Creek Watershed and Williamson Creek Watershed, respectively, to 28% of the gross site area (Paragraph 2); and
3) Waive certain provisions of the 2001 Stratus Settlement Agreement (these terms shall be listed on an exhibit prior to Council consideration)

PLANNING COMMISSION RECOMMENDATION:

Scheduled for consideration October 28, 2014

October 14, 2014 Pulled; Re-noticed for October 28, 2014

DEPARTMENTAL COMMENTS:

The subject property for which this amendment is proposed, is a 26.7-acre tract south of Southwest Parkway, between Rialto Boulevard and Vega Avenue (see Exhibits A). The property is also subject to a proposed neighborhood plan amendment (Case NPA-2014-0025.02) and a rezoning request (Case C14-2014-0112); please refer to the backup materials or other documents associated with those applications for additional information on those requests.

Staff recommendation for support of the public restrictive covenant amendments as noted above are contingent on approval of the referenced neighborhood plan amendment and rezoning. While procedurally possible, staff does not recommend approval of the proposed amendment without concurrent approval of the neighborhood plan amendment and rezoning.

BASIS FOR RECOMMENDATION:

1) Delete the existing reference to maximum net leasable square feet of buildable space and floor to area ratio (Item 1)

As noted in the association rezoning application (Case C14-2014-0112), this property was rezoned in August 1986 as one tract out of thirty-five, comprising an 800-plus acre rezoning.

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Each of those rezoning tracts was encumbered with a public restrictive covenant (RC). The RC for this tract (see Exhibit RC) is typical of the others. Eight months later, in April of 1987, an amending ordinance was filed on 14 of those 35 tracts. In each case, it was the acreage of the tract (based on updated or corrected field notes) that was amended, not the assigned zoning. However, at the same time the amending zoning ordinance was adopted, public RCs for those 14 tracts were also amended. As expected, the acreage was updated or corrected in each of those amended RCs. But in 9 of those amended documents, the maximum floor to area ratio specification was dropped. That is, even though the acreage may have changed, the specified amount of net leasable square feet of buildable space was retained – and it did not change in proportion to a change in acreage.

The following is a typical example from RC amendments of the time:

The paragraph of the Restrictive Covenant, which currently reads as follows:

1. *A maximum of 75,000 net leasable square feet of buildable space can be developed on the Property, or a maximum Floor to Area Ratio of 0.121 computed as specified in Chapter 13-2A of the Code of the City of Austin of 1981 as amended from time to time*

is terminated in its entirety, and from this date forward shall be considered to have been deleted, withdrawn, and excluded from the Restrictive Covenant, and replaced with the following paragraph:

1. *A maximum of 75,000 net leasable square feet of buildable space can be developed on the Property,*

All of the 9 amended RCs in which the floor to area ratio clause was dropped were commercial or office zoned properties. The point of the above is not to state that had this tract been included in the amending zoning ordinance (due to an error in the legal description) the attendant RC would have been amended to remove the FAR clause, but it can be inferred.

More to the point, net leasable square feet maximums and floor-area-ratio, which were retained in this case, are appropriate when characterizing a commercial or office project; this type of measurement is not appropriate for multifamily residential development, where the standard unit of measure is unit count or density in units per acre.

As the proposed rezoning is from office to multifamily, it is appropriate to delete the net leasable square feet measure. As proposed in the rezoning request, the project would instead be capped at 300 units and a density per acre of 17 units, corresponding to MF-1 district zoning standards. In reality, 300 units over this site yields an average units per acre of approximately 11 per acre. However, the proposed development intends to take advantage of MF-4 district zoning height allowances and a higher FAR in order to cluster the development and reduce impervious cover. Consequently, the entirety of the existing Item 1 clause requires deletion.

2) Reduce the existing maximum allowable impervious cover from 35% and 65% to 28% of the gross site area (Item 2)

The RC regulating this property, like those 34 restrictive covenants encumbering all the other 800-plus acres zoned as a result of the Oak Hill Study Area, was adopted after the Barton

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Creek Watershed ordinances of the early 1980s, but before the adoption of the Save Our Springs ordinances in the 1990s. In comparison with current City regulations of the Barton Springs Zone, the maximums adopted in these RCs may be considered generous.

The property is currently entitled to develop with a maximum impervious cover of 35% in the Barton Creek Watershed and 65% in the Williamson Creek Watershed. Roughly 2/3 of the site is within the Barton Creek Watershed and 1/3 is within the Williamson Creek Watershed (the actual boundary line between the two might require further analysis at the time of site planning). Regardless of the watershed, today's Barton Springs Zone requirements would limit the allowable impervious cover, whatever the associated zoning district is.

Based on the allowances for additional height and floor to area ratio, and a clustered building layout, the applicant proposes developing the site with a maximum impervious cover of 28%. While this is over the current standards for the Barton Creek Zone, it is a a significant reduction from the current entitlement.

For purposes of illustration, if the site were 2/3 Barton Creek Watershed and 1/3 Williamson Creek, the site could be developed with approximately 11.89 acres of impervious cover. With the proposed 28% maximum across the entire site, the impervious cover is reduced to approximately 7.48 acres; that 4.42-acre reduction in impervious cover represents a reduction of more than 37% under current entitlements.

3) Waive certain provisions of the 2001 Stratus Settlement Agreement (to be listed on Exhibit prior to Council)

The 2001 Settlement Agreement between the City of Austin and Stratus Properties Inc., which applies to this property, resulted from a 1984 preliminary plat and application of Chapter 245 Texas Local Government Code vesting claims that predate a number of current ordinances that would otherwise affect development of the property, including SOS ordinances and adoption of the Hill Country Roadway Corridor ordinance. Essentially, the Settlement Agreement determined the first permit for the project was filed on July 17, 1984 and that the rules and regulations in effect on that date would govern the project, except as otherwise modified or clarified in the Agreement, including rules and regulations exempt from Chapter 245. This Agreement covers the Lantana Project, which stretches from Weir Hills Road in the west to Patton Ranch (and Vega) on the east, from north of the (then) Motorola Campus to north of (current) Southwest Parkway.

A letter memorializing the Agreement is attached (see Exhibit SA-1). The applicant has proposed to waive all but two provisions of the Agreement. Waiving these provisions, or entitlements, will require development of the property that is very nearly in line with current code requirements. In other words, the applicant is voluntarily forfeiting some entitlements as part of the proposed restrictive covenant amendment. These proposed waivers are being developed with the approval of relevant environmental staff.

CITY COUNCIL ACTION: Scheduled for consideration November 6, 2014

CASE MANAGER: Lee Heckman **PHONE:** 512-974-7604
e-mail address: lee.heckman@austintexas.gov

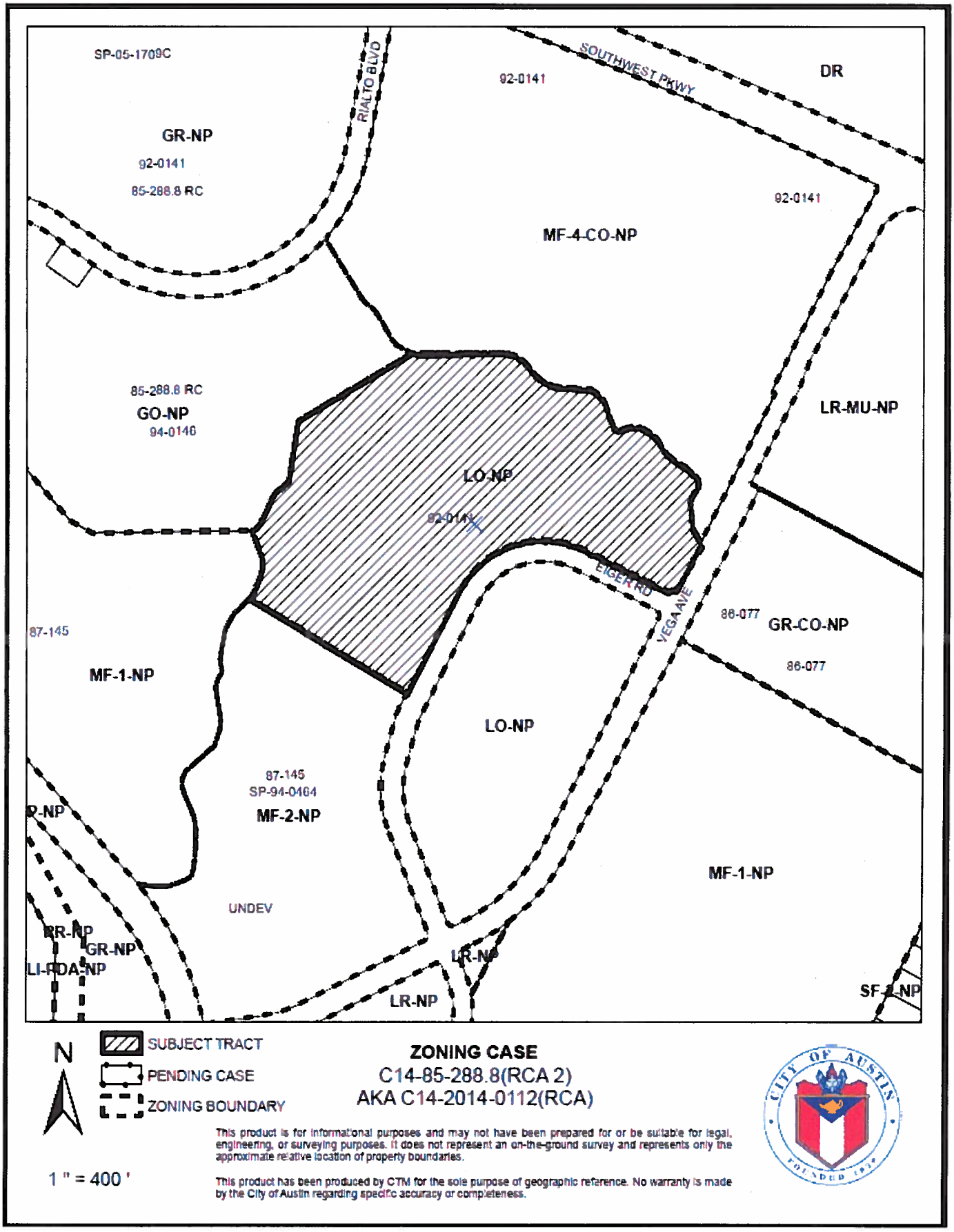
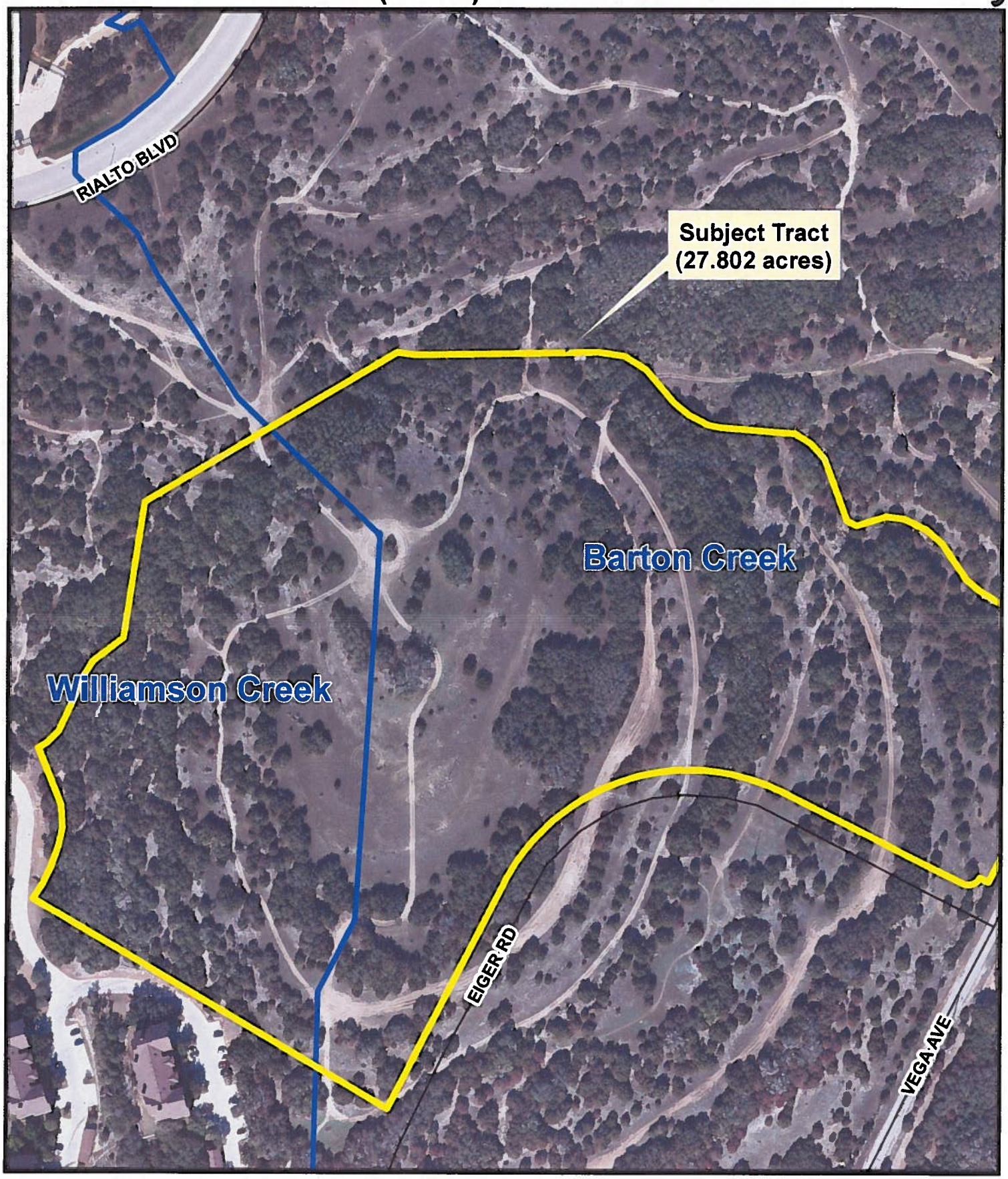


Exhibit A - Zoning Map

C14-85-288.8(RCA2) / Lantana Tract 28 RCA



Aerial: 2012-01
Contours: 2003

Exhibit A-1
Aerial & Watersheds (approximate)

Feet
0 100 200 400
N
1 inch = 200 feet

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C14-85-288.8
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RESTRICTIVE COVENANT

4 12 3089 9.00

THE STATE OF TEXAS §
§
COUNTY OF TRAVIS §

2000 277303 2 9.00 RTCA 09/22/86

WHEREAS, Realtex Funding Corporation, a Texas corporation ("Realtex") is the owner of approximately 27.89 acres of land situated in Travis County, Texas, more fully described by metes and bounds on Exhibit "A," attached to and incorporated into this document for all purposes ("Property"); and

WHEREAS, the City of Austin and Realtex have agreed that the Property should be impressed with certain covenants and restrictions running with the land and desire to set forth this agreement in writing;

NOW, THEREFORE, Realtex, for and in consideration of One and No/100 Dollars ($1.00) and other good and valuable consideration in hand to the undersigned paid by the City of Austin, the receipt and sufficiency of which is hereby acknowledged, does hereby agree with respect to the Property, such agreement to be deemed and considered as a covenant running with the land, and which shall be binding upon Realtex, its successors and assigns, as follows, to wit:

1. Either a maximum of 100,000 net leasable square feet of buildable space can be developed on the Property, or a maximum Floor to Area Ratio of 0.086 computed as specified in Chapter 13-2A of the Code of the City of Austin of 1981, as amended from time to time.

2. A maximum of sixty-five percent (65%) of the Property in Williamson Creek Watershed and thirty-five percent (35%) of the Property in Barton Creek Watershed may be covered with impervious material.

3. If any person, persons, corporation or entity of any other character shall violate or attempt to violate the foregoing agreement and covenant, it shall be lawful for the City of Austin, a municipal corporation, its successors and assigns, to prosecute proceedings at law, or in equity, against said person,

REAL PROPERTY RECORDS
Travis County, Texas

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or entity violating or attempting to violate such agreement or covenant and to prevent said person or entity from violating or attempting to violate such agreement or covenant.

4. If any part or provision of this agreement or covenant herein contained shall be declared invalid, by judgment or court order, the same shall in no way affect any of the other provisions of this agreement, and such remaining portion of this agreement shall remain in full force and effect.

5. The failure at any time to enforce any agreement by the City of Austin, its successors and assigns, whether any violations hereof are known or not, shall not constitute a waiver or estoppel of the right to do so.

6. This agreement may be modified, amended or terminated only by joint action of both (a) a majority of the members of the City Council of the City of Austin, or such other governing body as may succeed the City Council of the City of Austin, and (b) by the owners of the Property at the time of such modification, amendment or termination.

EXECUTED this 31 day of July, 1986.

REALTEX FUNDING CORPORATION,

By: Ray A Jones

Its: Vice-President

THE STATE OF TEXAS §
COUNTY OF ~~TRAVIS~~ Harris §

This instrument was acknowledged before me on the 31 day of July, 1986, by Ray A. Jones, Vice President of Realtex Funding Corporation, a Texas corporation, on behalf of said corporation.

Karen Lautner

Notary Public, State of Texas

NOTARY SEAL

Name Printed: KAREN LAUTNER

Commission Expires: Notary Public in and for the State of Texas My Commission Expires June 30, 1987

11-686.33

Exhibit RC - 2

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Oak Hill Surveying Co., Inc.

6120 Hwy. 290 West • Austin, TX 78735 • (512) 892-5320

N

May 23, 1986

L.O.-3

FIELD NOTES DESCRIBING A 27.8947 ACRE TRACT OF LAND OUT OF THE THOMAS ANDERSON SURVEY NO. 17 IN TRAVIS COUNTY, TEXAS, SAID 27.8947 ACRE TRACT OF LAND BEING OUT OF AND A PORTION OF THAT CERTAIN 888.051 ACRE TRACT OF LAND CONVEYED TO REALTEX FUNDING CORPORATION BY DEED RECORDED IN VOLUME 8522, PAGES 967-976 OF THE DEED RECORDS OF TRAVIS COUNTY, TEXAS SAID 27.8947 ACRE TRACT OF LAND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLWOS:

BEGINNING for reference at an iron pin found at the northwest corner of the Mrs. A.L. Patton Estate as recorded in volume 238 page 53 of the Travis County Deed Records.

THENCE N22°31'12"W for 117.68 feet to a point in the center of the proposed Patton Boulevard.

THENCE the next two (2) calls along the center of the proposed Patton Boulevard.

1. An arc distance of 49.29 feet along a curve to the left whose elements are: I=04°42'24", R=600.00', T=24.66, and whose chord bears N65°37'49"e For 49.28 feet to a point.
2. N63°16'37"E for 670.00 feet to a point at the centerline intersection of the proposed Patton Boulevard and Eiger Drive.

THENCE the next five (5) calls along the center of the proposed Eiger Drive.

1. N26°43'23"W for 408.70 feet to a point.
2. An arc distance of 296.83 feet along a curve to the right whose elements are: I=42°31', R=400.00, T=155.62, and whose chord bears N05°27'50"W for 290.07 feet.
3. N15°47'46"E for 130.77 feet to a point.
4. An arc distance 58.90 feet along a curve to the right whose elements are: I=11°15', R=300.00', T=29.55 and whose chord bears N21°25'11"E for 58.81 feet.
5. N27°02'41"E for 43.18 feet to the POINT OF BEGINNING of the herein.described tract.

THENCE the next fourty four (44) calls through the interior of the above said 888.051 acre tract.

1. N59°22'08"W for 710.74 feet to a point.
2. N33°51'42"E for 26.95 feet to a point.
3. N25°28'33"e for 31.70 feet to a point.
4. N17°40'47"E for 35.52 feet to a point.
5. N13°24'52"E for 30.33 feet to a point.
6. N03°34'02"W for 36.74 feet to a point.
7. N21°0'26"W for 101.07 feet to a point.
8. N57°51'36"E for 16.05 feet to a point.
9. N43°32'59"E For 25.07 feet to a point.
10. N25°13'14"E for 58.81 feet to a point.
11. N22°35'22"E for 39.29 feet to a point.

EXHIBIT A

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12. N33°06'15"E for 28.93 feet to a point.
13. N51°16'09"E for 61.17 feet to a point.
14. N08°49'08"E for 222.89 feet to a point.
15. N59°24'59"e for 479.40 feet to a point.
16. S82°14'37"EF or 28.54 feet to a point.
17. N89°14'13"Efor 301.07 feet to a point.
18. SB2°27'28"E for 42.12 feet to a point.
19. S58°25'47"E for 40.52 feet to a point.
20. S40°27'57"E for 72.22 feet to a point.
21. S50°33'02"E for 30.18 feet to a point.
22. S63°12'19"E for 35.48 feet to a point.
23. S76°11'43"E for 21.77 feet to a point.
24. S85°28'59"E for 122.58 feet to a point.
25. S58°05'02"E for 28.89 feet to a point.
26. S42°43'27"E for 34.65 feet to a point.
27. 19°45'18"E for 107.01 feet to a point.
28. S63°48'31"E for 18.05 feet to a point.
29. N73°05'58"E for 51.00 feet to a point.
30. S82°42'41"E for 30.13 feet to a point.
31. S64°50'24"E for 38.54 feet to a point.
32. S47°56'52"E for 34.79 feet to a point.
33. S33°14'21"E for 70.35 feet to a point.
34. S50°35'38"E for 28.13 feet to a point.
35. S58°44'03"E for 49.93 feet to a point.
36. S46°55'42"e for 18.61 feet to a point.
37. S49°20'04"E for 43.61 feet to a point.
38. $13°17'09"E for 24.54 feet to a point.
39. S31°07'19"W for 52.94 feet to a point.
40. S14°58'31"W for 20.21 feet to a point.
41. S05°30'15"E for 92.57 feet to a point.
42. S28°0'08"E for 22.28 feet to a point.
43. S28°44'20"e for 16.39 feet to a point.
44. S28°44'20"e for 23.77 feet to a point on the west line of Patton Lane.

THENCE S26°33'29"W along the west line of Patton Lane for 250.62 feet to a point in the center of the proposed Eiger Drive.

THENCE the next three (3) calls along the center of Eiger Drive.

1. N63°26'31"W for 366.69 feet to a point.
2. An arc distance of 468.69 feet along a curve to the left whose elements are: I=89°30'47", R=300.00', T=297.46, and whose chord bears S71°48'05"W for 422.46 feet.
3. S27°02'41"W for 414.35 feet to the POINT OF BEGINNING containing 27.8947 acres of land.

I HEREBY CERTIFY that these notes were compiled from records prepared from others and do not purport to be by actual survey on the grounds.

Jimmy P. Johnson, R.P.S. #4018

REGISTERED PUBLIC SURVEYOR

Return to:
City of Austin
Attn:
Dept of Law

STATE OF TEXAS COUNTY OF TRAVIS
I hereby certify that this instrument was FILED on the date and at the time stamped hereon by me; and was duly RECORDED, in the Volume and Page of the named RECORDS of Travis County, Texas on

FILED
1986 SEP 22 PM 2:40
DAVIS GRIGGS
COUNTY CLERK
TRAVIS COUNTY, TEXAS

SEP 22 1986
DAVIS GRIGGS
COUNTY CLERK
TRAVIS COUNTY, TEXAS

09888 0952

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FILED

City of Austin

Founded by Congress, Republic of Texas, 1839
Municipal Building, Eighth at Colorado, P.O. Box 1088, Austin, Texas 7876 Telephone 512-499-2

July 10, 2001

William H. Armstrong, III
Stratus Properties Inc.
98 San Jacinto Blvd., Suite 220
Austin, Texas 78701

Re: The project commonly know as "Lantana," described in the Patton Ranch Revised Preliminary Plan, number C8-84-102(88), approved on August 23, 1988.

Dear Mr. Armstrong:

This letter will memorialize our agreement and avoid a dispute between the City and Stratus Properties Inc., concerning the application of Chapter 245 of the Texas Local Government Code to the project described above. The City and Stratus Properties Inc., agree that the first permit for the project was filed on July 17, 1984, and that the rules and regulations in effect on that date shall govern the project, except as modified and clarified herein. The parties further agree that, except as modified or clarified herein, the project will be subject to those rules and regulations that would be exempt from Chapter 245.

1. Excluding development within (1) Lantana Phase 1, Section 2, (2) Rialto Park at Lantana, and (3) Lantana Lot 6, Block A, the Comprehensive Watershed Ordinance (Ordinance No. 860508-V) will be the base ordinance governing development in "Lantana," with the subject to the following exceptions modifications and clarifications:

   a. The definition of "Minor Waterway," "Intermediate Waterway," and "Major Waterway" as identified in Williamson Creek Watershed Ordinance No. 810319-M shall govern.
   b. Delete Section 13-15-223(e), (f).
   c. Replace Section 13-15-232 with Section 103.3 of Williamson Creek Watershed Ordinance No. 810319-M, but delete Subsection 103.3(c)(5) of Ordinance No. 810319-M.
   d. Modify Section 13-15-235 to:
      1) replace the term "four (4)" with "twelve (12)" in Subsections (a) and (b),
      2) delete the phrase "but must be placed in a manner consistent with Section 13-15-237" in Subsection (a),
      3) delete the phrase "consistent with Section 13-15-237" in Subsection (b),
      4) delete the language in Subsection (c), and replace it with the sentence, "Cut and fill for roadways may extend outside of the allowable roadway clearing widths to the extent necessary to achieve a 3 to 1 slope ratio without

Exhibit SA - 1

structural support; provided, however, that in no event shall cut and fill violate the setback requirements of Subsection (e) below,"

5) delete the sentence "Techniques to be used are to be specified with the final plat," in Subsection (d),
6) delete the phrase "and approved by the Director of the Office of Land Development Services" in Subsection (d), and
7) add Subsection (e) to state "No cut and fill shall occur within one hundred (100) feet of the centerline of a minor waterway or within one hundred fifty (150) feet of a critical environmental feature, unless otherwise allowed under this Section, Section 13-15-239, or Section 103.3 of Williamson Creek Watershed Ordinance No. 810319-M. All utilities may be located outside the Critical Water Quality Zone within one hundred (100) feet of the centerline of a minor waterway."

e. Delete Section 13-15-237, but include the construction on slopes criteria identified in Section 104.2(c) of Williamson Creek Watershed Ordinance No. 810319-M.

f. Delete Section 13-15-238, Section 13-15-277 and Section 13-15-287 and replace with the following:
Structural water quality controls shall be required for all development with impervious cover exceeding twenty (20) percent of the net site area, and shall consist of retention/irrigation basins. The design of the retention/irrigation basins and associated irrigation areas shall be based on the parameters presented in the LCRA Nonpoint Source Pollution Control Technical Manual, Third Edition, dated July 10, 1998. In particular, capture volume for the basins, which will include and satisfy the requirements for stream bank erosion control, will be solely based on Table B-5, Appendix B of the manual. The capture volume will also be deemed to satisfy the City of Austin's 2-year detention requirements. The irrigation area shall be sized in accordance with the formula presented in Appendix C, part 1.g.ii.(3) of the manual. As a clarification, water quality irrigation areas, including irrigation lines and limited removal of vegetation for irrigation purposes, shall be allowed within any required natural areas if/as necessary to reasonably meet the irrigation area requirements. Any disturbance of required natural areas shall be restored to preserve the aesthetic quality of the natural area to the greatest extent feasible. Installation of irrigation lines and associated removal of vegetation for irrigation purposes will not be allowed within the 50-foot roadway vegetative buffer adjacent to Southwest Parkway.

g. In Section 13-15-239(a), add the phrase "wastewater lines," to the first sentence between the phrases "other than for" and "yards or hiking trials". Also, the Lantana Southwest Preliminary Plan (C8-84-102.03) is exempt from the provisions of Section 13-15-239 as long as the street and lot configuration and general land use remain substantially consistent with the approved preliminary plan.

h. Delete Section 13-15-248(a).

i. Delete Section 13-15-274, but include Section 104.2(a), (b) of Williamson Creek Watershed Ordinance No. 810319-M.

j. Delete Section 13-15-275, Section 13-15-276, Section 13-15-285 and Section 13-15-286, and replace with the following:

For commercial tracts, the calculated impervious cover shall not exceed forty (40) percent of net site area in the uplands zone, exclusive of adjacent right-of-way impervious cover within the Williamson Creek Watershed. In all cases, right-of-way

impervious cover for adjacent, existing streets (Southwest Parkway, William Cannon Drive, Vega Avenue) shall not be calculated as part of the allowable impervious cover for any commercial tract. For the portion of the Lantana Southwest Preliminary Plan (C8-84-102.03) covered by this document, the calculated impervious cover shall not exceed twenty-five (25) percent of net site area in the uplands zone.

2. As a clarification, the requirements identified in Sections 13-15-223(a), 13-15-223(b)2., and 13-15-223(d) of the Comprehensive Watershed Ordinance will be satisfied by the FM Properties Operating Co. USFW 10(a) Permit Environmental Assessment/Habitat Conservation Plan, dated July 25, 1994, by SWCA, Inc., in conjunction with the report entitled Topography, Geology, and Soils of the Lantana Tract, Oak Hill Vicinity, Travis County, Texas, dated November 28, 1994, including Addendum Nos. 1, 2, 3 and 4, by Charles Woodruff, Jr., Consulting Geologist.

3. As a clarification, the tree survey described in Section 13-15-223(b)1 will only be required at the site development permitting stage of the development process.

4. Development will consist of raised curb and gutter street cross sections approved with the Preliminary Plan for Patton Ranch (C8-84-102), as revised, including an associated enclosed storm sewer drainage system.

5. Concentrated storm runoff will be dispersed and discharged, wherever practicable, to vegetated buffer areas or grass-lined swales. There will be no requirements for calculated pollutant removal performance standards associated with vegetated buffer areas or retention/irrigation basins.

6. The modifications and clarifications to the Comprehensive Watershed Ordinance described herein shall extend to and control all related references in other sections of the ordinance, so as to allow the modifications and clarifications to be fully implemented.

7. Further, if provisions contained in other sections of the City's Land Development Code and criteria manuals relating to cut and fill, construction on slopes, impervious cover, critical environmental features, water quality, and two-year detention impose different or more restrictive requirements than those contained in the Comprehensive Watershed Ordinance as modified and clarified herein, then the Comprehensive Watershed Ordinance as modified and clarified herein controls.

8. This project predates the Hill Country Roadway requirements. However, Stratus Properties Inc., in order to avoid a dispute regarding the application of those requirements, agrees that development in the project will comply with the height, setback, building materials, and landscaping provisions of the Hill Country Roadway requirements, within 1000 feet of Southwest Parkway, as that ordinance provides. Site plans within the project shall be reviewed administratively. Planning Commission review and approval of any site plan required to develop all or part of this project will not be sought or required, and Stratus Properties Inc. agrees not to assert any claim in litigation or otherwise that Chapter 245 entirely exempts the project from compliance with the agreed upon Hill Country Roadway requirements.

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If this letter accurately describes your understanding of our agreement, please indicate your agreement by signing below.

Very truly yours,

Lisa Y. Gordon, Assistant City Manager

Stratus Properties Inc.

William H. Armstrong, III, President

xc: Mayor and City Council
Mike Heitz, Director

Exhibit SA - 4

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L C R A

NONPOINT SOURCE POLLUTION CONTROL TECHNICAL MANUAL

LCRA
THE POWER TO MAKE A DIFFERENCE.

B. R. (Bob) Critendon P.E.
Engineer

P.O. BOX 220
AUSTIN, TEXAS 78767-0220
(512) 473-3200 Ext. 2091
1-800-776-5272
Fax: (512) 473-3501

Lower Colorado River Author

Effective: July 10, 1998

Third Edition

LOWER COLORADO RIVER AUTHORITY

Exhibit SA - 5

7. Streambank Erosion Control Requirements

The basic design approach to controlling streambank erosion is to detain post-development runoff long enough so that the pre-development bankfull flooding condition is approximately maintained for all storm events. This approach requires reducing both the peak and the frequency of bankfull conditions. In the absence of a detailed hydrologic analysis, a simplified approach of detaining and releasing the pre-development 1-year 3-hour design storm over a 24-hour period will be accepted. Table B-5 presents stormwater detention volumes necessary to meet streambank erosion prevention requirements for a range of impervious cover values. Typically, a single water quality BMP or series of BMPs can serve to meet streambank erosion control detention requirements.

TABLE B-5

Streambank Erosion Control Required Detention Volumes

Impervious Cover Percentage	Detention Volume (in.)
20%	0.53
30%	0.66
40%	0.79
50%	0.92
60%	1.05
70%	1.18
80%	1.31
90%	1.44
100%	1.57

(2) Pump and Wet Well System - A reliable pump, wet well, and rainfall sensor system must be used distribute the water quality volume. System specifications must be approved by LCRA. The irrigated water may require additional pretreatment to ensure that TSS concentrations are within the acceptable specifications for the irrigation system.

(3) Irrigation System - Generally a spray irrigation system is required to provide an adequate flow rate for timely distribution of the water quality volume. Alternative irrigation approaches are acceptable but must be approved by LCRA. In the absence of site-specific soil test results documenting a different infiltration rate, the land area required for irrigation shall be as follows:

Formula: $A = V * 1.25$

where: A = Required irrigation area (square feet)

V = Water Quality Volume to be irrigated (cubic feet)

(4) Offline Design - The pond shall be designed as an offline facility with a splitter structure to isolate the water quality volume. The splitter box shall be designed to convey the 25-year event without causing overtopping of the pond sideslopes.

(5) Detention Time - The irrigation schedule should allow for complete drawdown of the water quality volume within 2 dry days.

(6) Safety Considerations - Safety is provided either by fencing of the facility or by managing the contours of the pond to eliminate dropoffs and other hazards. Earthen sideslopes should not exceed 3:1 (h:v) and should terminate on a flat safety bench area. Landscaping can be used to impede access to the facility. The primary spillway opening must not permit access by small children. Outfall pipes above 48 inches in diameter should be fenced.

(7) Landscaping Plan - A landscaping plan shall be provided indicating how aquatic and terrestrial areas will be stabilized.