

SITE ANALYSIS REPORT

PLANNING AND ZONING COMMISSION COPY

CO9-13-16



FRONT ELEVATION UNIT I



FRONT ELEVATION UNIT II



FRONT ELEVATION UNIT III

AVILLA



SABINO EAST

SITE ANALYSIS REPORT
PLANNING AND ZONING COMMISSION DRAFT COPY

Co9-13-16

FOR

AVILLA SABINO EAST

Southeast Corner of River Road and Sabino Canyon Road

Pima County, Arizona

Respectfully submitted to:

Pima County
Development Services – Planning Division
201 North Stone Avenue
Tucson Arizona 85701

Prepared for:

Aerie Development LLC
Alta Vista Communities Sabino-River East LLC
1785 E Skyline Drive, Suite 181
Tucson, AZ 85718
(520) 977-5456

Prepared by:

STAR Consulting of Arizona, Inc.
5405 E Placita Hayuco
Tucson, Arizona 85718
(520) 529-1240

November 2013
Revised March 2014



TABLE OF CONTENTS

TABLE OF CONTENTS	3
LIST OF EXHIBITS	7
PART I - SITE INVENTORY:	9
I-A EXISTING LAND USES	9
1. LOCATION AND REGIONAL CONTEXT	9
2. EXISTING DEVELOPMENT	9
3. AERIAL PHOTO	10
4. SURROUNDING DEVELOPMENT.....	10
I-B TOPOGRAPHY AND GRADING.....	22
1. TOPOGRAPHIC FEATURES.....	22
2. AVERAGE CROSS SLOPE	22
I-C HYDROLOGY.....	25
1. OFFSITE WATERSHEDS.....	25
2. OFFSITE FEATURES.....	27
3. ACREAGE OF OFF-SITE WATERSHEDS.....	27
4. ON-SITE HYDROLOGY.....	28
5. DOWNSTREAM DRAINAGE CONDITIONS	30
I-D BIOLOGICAL RESOURCES.....	31
1. CONSERVATION LAND SYSTEMS	31
2. CRITICAL LANDSCAPE CONNECTIONS.....	31
3. PIMA PINEAPPLE CACTUS	31
4. NEEDLE-SPINED PINEAPPLE CACTUS.....	31
5. CACTUS FERRUGINOUS PYGMY OWL AND WESTERN BURROWING OWL.....	31
6. SPECIAL STATUS SPECIES	34
7. SAGUAROS.....	42
8. HABITAT PROTECTION AND COMMUNITY OPEN SPACE.....	44
9. OTHER IMPORTANT VEGETATION	44
10. VEGETATION COMMUNITIES/ASSOCIATIONS.....	44
I-E VIEWSHEDS	46
1. VISIBILITY AREAS.....	46
2. PHOTOS	46
I-F TRANSPORTATION	55
1. EXISTING/PLANNED OFF-SITE STREETS	55
2. DISTANCES TO EXISTING DRIVES/INTERSECTIONS	57
3. PUBLIC TRANSIT	57

I-G	SEWERS.....	64
1.	EXISTING PUBLIC SEWER.....	64
2.	SITE CONSTRAINTS FOR SEWER	64
I-H	RECREATION AND TRAILS.....	66
1.	EXISTING PARKS AND TRAILS.....	66
2.	PIMA REGIONAL TRAIL SYSTEM MASTER PLAN.....	68
I-I	CULTURAL RESOURCES: ARCHAEOLOGICAL AND HISTORIC SITES.....	70
1.	ARCHEOLOGICAL SITE RECORDS SEARCH	70
2.	ARCHEOLOGICAL AND HISTORIC SITE FINDINGS	70
3.	ARCHEOLOGICAL RECOMMENDATIONS.....	70
I-J	AIR QUALITY.....	73
I-K	COMPOSITE MAP	74
PART II – LAND USE PROPOSAL.....		76
II-A	PROJECT OVERVIEW	77
1.	PROPOSED ZONING BOUNDARIES	77
2.	PROJECT DESCRIPTION	77
3.	CONFORMANCE WITH SELECTED ORDINANCES.....	82
II-B	PRELIMINARY DEVELOPMENT PLAN (PDP).....	83
1.	PRELIMINARY DEVELOPMENT PLAN.....	83
2.	PDP SUPPORT DATA.....	83
II-C	TOPOGRAPHY AND GRADING.....	90
1.	DEVELOPMENT/MITIGATION ON STEEP SLOPES.....	90
2.	NATURAL AREAS UNDER HDZ.....	90
3.	AREAS TO BE DISTURBED, REVEGETATED AND NATURAL.....	90
4.	CHANGES TO NATURAL GRADE.....	90
5.	ENGINEERING/DESIGN FEATURES FOR MITIGATION	90
II-D	HYDROLOGY.....	91
1.	RESPONSE TO HYDRAULIC CONSTRAINTS	91
2.	REASONS FOR FLOODPLAIN ENCROACHMENT	91
3.	POST DEVELOPMENT DISCHARGE.....	91
4.	ENGINEERING/DESIGN FEATURES FOR MITIGATION	92
5.	CONFORMANCE WITH APPLICABLE POLICIES	94
II-E	BIOLOGICAL RESOURCES.....	97
1.	IMPACTS TO BIOLOGICAL RESOURCES.....	97
2.	PROTECTION OF LANDSCAPE CONNECTIVITY	97
II-F	LANDSCAPE AND BUFFER PLAN.....	98
II-G	VIEWSHEDS.....	104

1.	IMPACTS TO VIEWS	104
2.	MITIGATION OF VISUAL IMPACTS	104
II-H	TRANSPORTATION	109
1.	PROPOSED INGRESS AND EGRESS	109
2.	OFF-SITE IMPROVEMENTS	109
3.	CHANGES TO ADT	109
4.	TRAFFIC IMPACTS ON SURROUNDING LOCAL STREETS	115
5.	BICYCLE AND PEDESTRIAN PATHWAYS	115
6.	PROPOSED ROADS	115
7.	CONCURRENCY CONFORMANCE	116
8.	TRAFFIC IMPACT STUDY	116
9.	ALTERNATE MODES	116
II-I	ON-SITE WASTEWATER	120
II-J	SEWERS	121
1.	CAPACITY RESPONSE LETTER	121
2.	METHOD OF PROVIDING SEWER	121
3.	SEWER EASEMENTS	121
4.	MITIGATION OF SITE CONSTRAINTS	121
II-K	WATER (PRELIMINARY INTEGRATED WATER MANAGEMENT PLAN)	123
1.	WATER CONTEXT MAP	123
2.	EXISTING AND HISTORIC WATER USE	126
3.	PROPOSED WATER USE	126
4.	WATER SUPPLY OPTIONS	126
5.	WATER DEMAND PROJECTIONS	130
6.	PROXIMITY TO RENEWABLE AND POTABLE WATER SUPPLIES	133
7.	GROUNDWATER-DEPENDANT ECOSYSTEMS	133
8.	GROUNDWATER DEPTHS AND TRENDS	133
9.	GEOLOGIC AND HYDROGEOLOGIC DATA	133
10.	AREA WATER SUPPLY	133
11.	WELL TEST DATA	133
12.	DRAWDOWN ANALYSIS	133
II-L	SCHOOLS	134
1.	ACCESS TO ADJACENT OR ON-SITE SCHOOLS	134
2.	SCHOOL CAPACITY ANALYSIS AND LETTER	134
3.	AGREEMENT WITH SCHOOL DISTRICT FOR MITIGATION	134
II-M	RECREATION AND TRAILS	136
1.	ON-SITE RECREATION	136
2.	OWNERSHIP OF RECREATION AREAS	136

3.	PROPOSED TRAILS ON OR OFF-SITE	137
II-N	CULTURAL RESOURCES: ARCHAEOLOGICAL AND HISTORIC SITES.....	139
1.	PROTECTION OF KNOWN CULTURAL RESOURCES.....	139
2.	MITIGATION MEASURES OF POTENTIAL RESOURCES	139
3.	CULTURAL RESOURCES MITIGATION PLAN	139
II-O	ENVIRONMENTAL QUALITY	140
1.	METHODS OF CONTROLLING DUST POLLUTION.....	140
2.	AIR QUALITY AND HAZARDOUS MATERIALS FOR NON-RESIDENTIAL PROJECTS	140
II-P	AGREEMENTS	141

LIST OF EXHIBITS

EXHIBIT I-A.1: LOCATION AND REGIONAL CONTEXT	12
EXHIBIT I-A.2: Co7-13-02 COMPREHENSIVE PLAN AMENDMENT RESOLUTION.....	14
EXHIBIT I-A.3: AERIAL PHOTO	17
EXHIBIT I-A.4.A: SURROUNDING ZONING	18
EXHIBIT I-A.4.B: SURROUNDING LAND USES.....	19
EXHIBIT I-A.4.C: NUMBER OF STORIES	20
EXHIBIT I-A.4.E: SURROUNDING COMPREHENSIVE PLAN	21
EXHIBIT I-B.1: TOPOGRAPHIC CHARACTERISTICS	23
EXHIBIT I-B.2: AVERAGE CROSS SLOPE CALCULATIONS	24
TABLE I-C.1: OFFSITE WATERSHED SUMMARY	25
EXHIBIT I-C.1: OFFSITE DRAINAGE MAP	26
TABLE I-C.2: ONSITE EXISTING WATERSHED SUMMARY	28
EXHIBIT I-C.4: ON-SITE HYDROLOGY	29
EXHIBIT I-D.1: CONSERVATION LAND SYSTEMS (CLS)	32
EXHIBIT I-D.5: PRIORITY CONSERVATION AREA FOR THE CACTUS FERRUGINOUS PYGMY OWL	33
EXHIBIT I-D.6: AZ GAME AND FISH.....	35
EXHIBIT I-D.7: SAGUAROS	43
EXHIBIT I-E.2: GROUND-LEVEL PHOTOS	47
EXHIBIT I-F.1: EXISTING OFF-SITE STREETS ADT.....	58
EXHIBIT I-F.2: DISTANCES TO EXISTING DRIVES/INTERSECTIONS.....	59
EXHIBIT I-F.3: PUBLIC TRANSIT	60
EXHIBIT I-G.1: EXISTING PUBLIC SEWERS.....	65
EXHIBIT I-H.1: EXISTING RECREATION FACILITIES	67
EXHIBIT I-H.2: EASTERN PIMA COUNTY TRAIL SYSTEM MASTER PLAN.....	69
EXHIBIT I-I.1: ARCHEOLOGICAL SITE SEARCH RESULTS.....	71
EXHIBIT I-I.2: ARCHEOLOGICAL SITE RECOMMENDATIONS	72
EXHIBIT I-K.1: COMPOSITE MAP	75
EXHIBIT II-B.1.1: PRELIMINARY DEVELOPMENT PLAN	87
EXHIBIT II-B.1.2: PRELIMINARY DEVELOPMENT PLAN WITH TOPO	88
EXHIBIT II-B.1.3: PRELIMINARY DEVELOPMENT PLAN WITH AERIAL	89
EXHIBIT II-D.1: DEVELOPED CONDITIONS DRAINAGE	96
EXHIBIT II.F.1 BUFFERYARD PLAN.....	100
EXHIBIT II.F.2 LANDSCAPE BUFFERYARDS.....	101
EXHIBIT II.F.3 PERIMETER WALL.....	102
EXHIBIT II.F.4 EXISTING TREES TO REMAIN	103
EXHIBIT II-G.2: PRELIMINARY BUILDING ELEVATIONS	106
EXHIBIT II-H.1: PROPOSED INGRESS/EGRESS.....	118



EXHIBITII-H.5: BICYCLE AND PEDESTRIAN PATHWAYS 119
EXHIBITII-J.1: CAPACITY RESPONSE LETTER 122
EXHIBIT II-K.1: WATER CONTEXT MAP 124
EXHIBIT II-K.4 WATER SUPPLY OPTIONS..... 127
EXHIBIT II-L.2 SCHOOL CAPACITY RESPONSE 135
EXHIBITII-M.1: ON-SITE RECREATION 138

PART I - SITE INVENTORY:

The site inventory serves to identify and describe existing characteristics and conditions of the site. This section of the report will identify both development constraints and development opportunities of the site prior to the actual site design process.

I-A EXISTING LAND USES

1. LOCATION AND REGIONAL CONTEXT

The subject parcel is located in the region of Pima County northeast of the City of Tucson. Parcel 114-33-002G is located in the northwest quarter of the southwest quarter of Section 29, Township 13 South, Range 15 East. The parcel is located southeast of the River Road and Sabino Canyon Road intersection, bound by Sabino Canyon Road, Cloud Road and Knollwood Drive. Please see Exhibit 1-A.1 for a mapped description of the Location and Regional Context.

2. EXISTING DEVELOPMENT

- a. The existing land use on the subject property is vacant. Because the site is currently vacant, an exhibit has not been provided.
- b. No existing easements are known to be located on the subject property. A single family residential plat was previously recorded for this parcel, River View Estates. A subsequent Judgment, Road Proceeding and Parcel Combination was completed. A letter from the Development Services Director is provided as Exhibit 1-A.2.B for your reference. This letter clarifies that an Abandonment Plat is not required for this parcel and gives reference to the above mentioned transactions.
- c. The subject property is designated entirely with a Comprehensive Plan Land Use Intensity of Medium High Intensity Urban (MHIU). The Comprehensive Plan offers the following description of the MHIU Land Use Intensity Category:
 - a) *Purpose: To designate areas for a mix of medium to high density housing types and other compatible uses.*
 - b) *Objective: These area provide opportunities for a variety of residential housing types, including cluster option developments, single family attached dwellings, and apartment complexes. Special attention should be given in site design to assure that uses are compatible with adjacent lower density residential uses.*
 - c) *Residential Gross Density: Only land area zoned and planned for residential use, or natural or cluster option open spaces areas, shall be included in gross density calculations. Natural and cluster open space shall be defined as set forth in Section 18.09.040B, except that cluster open space shall not include land developed under the GC Golf Course Zone. Residential gross density shall conform with the following:*

- 1) *Minimum = none*
- 2) *Maximum = 24 RAC (* Limited to 13 RAC per Co7-13-01)*
- d) *Zoning Districts: Only the following zoning districts shall be deemed in conformance with the land use plan, except as provided for under Section 18.89.060D major resort community, Section 18.89.030A3b plan policies, or Section 18.90.030E specific plans:*
 - 1) *GC Golf Course Zone*
 - 2) *CR-1 Single Residence Zone*
 - 3) *CR-2 Single Residence Zone*
 - 4) *CR-3 Single Residence Zone*
 - 5) *CR-4 Mixed-Dwelling Type Zone*
 - 6) *CR-5 Multiple Residence Zone*
 - 7) *TR Transitional Zone*
 - 8) *CMH-1 County Manufactured and Mobile Home-1 Zone*
 - 9) *CMH-2 County Manufactured and Mobile Home-2 Zone*
 - 10) *MR Major Resort Zone*
 - 11) *CPI Campus Park Industrial Zone*

The property is located with the Catalina Foothills subregion.

The subject property's comprehensive plan designation was amended by the Pima County Board of Supervisors per Co7-13-01 on September 17, 2013. The Resolution is provided as Exhibit 1-A.2 for reference.

3. AERIAL PHOTO

An Aerial Photo showing the subject property and surrounding properties of the subject property is provided as Exhibit 1-A.3.

4. SURROUNDING DEVELOPMENT

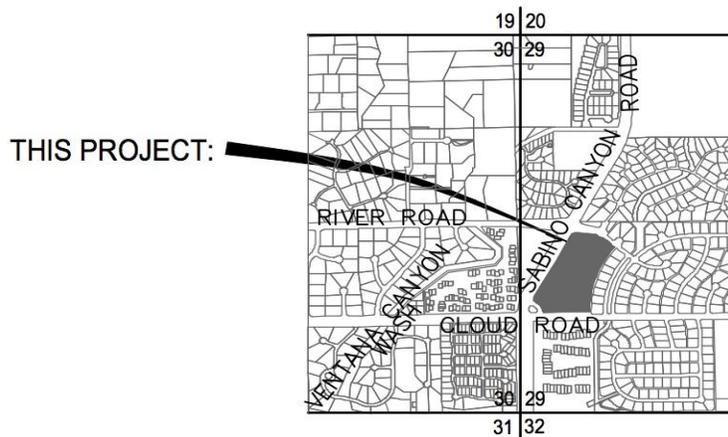
- a. The subject property is bounded by CR-2 zoning to the north and to the east. The subject property is bounded by CR-4 zoning to the northwest (across Sabino Canyon Road). The property immediately south of the subject parcel (across Cloud Road) is zoned CR-5. Within a one-quarter mile radius, zones SR, CR-1, CR-2, CR-3, CR-4 and CR-5 exist as shown on Exhibit 1-A.4.A.
- b. The surrounding land use for the subject parcel is entirely residential with one exception. The St. Albans Episcopal Church of Tucson is located approximately 875 feet north of the subject property on the opposite side of Sabino Canyon Road. One undeveloped parcel is located west of the subject parcel, directly across on Sabino Canyon Road, but construction on the site will

occur in the near future. The density of the existing residential developments varies from 1 resident per acre (RAC) to 9 RAC with lower density housing further away from the River Road and Sabino Canyon Road intersection. Please see Exhibit 1-A.4.B for additional information.

- c. The existing neighborhoods surrounding the site are comprised of one and two story single family residential developments. The structure styles range from detached to attached duplexes and triplexes located in Riverbend Estates to the west of the site and Sabino Vista Townhomes to the south. The height of the existing homes also ranges from low slung ranch style homes to pitched roof, box on box, 2-story construction. The average height of the one story homes range from 14' to 18' and the two story homes range in height from 20' to 24'.
- d. There is an approved rezoning for the property west of the project site directly across Sabino Canyon Road (Co9-12-05).
- e. The subject property is bounded by Medium Intensity Urban to the northwest (across River Road), and to the southwest (across Cloud Road). The subject property is bounded by Low Intensity Urban to the east. Resource Transition designated area space is west and south of the subject parcel along the Ventana Canyon Wash and the Tanque Verde Wash, respectively. The subject property and surrounding area is located entirely within the Catalina Foothills subregion. Please see Exhibit 1-A.4.E for additional information.



SCALE: 3" = 1 MILE



LOCATION MAP

SECTION 29, T13S, R15E, G&SRM
PIMA COUNTY, ARIZONA

Project Site is located in:
Section 29 of Township 13 South, Range 15 East

SUBJECT PROPERTY ACREAGE: 15.1 acres
REZONING AREA ACREAGE: 15.1 acres

Assessor Parcel Number: 114-33-002G





Carmine DeBonis Jr.
Director

Office: 520.740.6506
Fax: 520.740.6679

October 11, 2012

Jim Portner, Principal
PROJECTS INTERNATIONAL, INC.
10836 E. Armada Lane
Tucson, AZ 85749-9460

Re.: Sabino Canyon Gateway LLC; River View Estates, Pima County Assessor Parcel Number 114-33-002G

Dear Mr. Portner:

This letter responds to your letter dated August 20, 2012 concerning the property identified as Pima County Assessor Parcel Number 114-33-002G and the plat for River View Estates recorded in the Pima County Recorder's Book of Maps and Plats at Book 9, Page 117.

I have reviewed your letter, the Stipulation and Judgment entered November 19, 1990 In Pima County Superior Court case number C203913 (recorded in Book 8917, Page 2008), and current Pima County Assessor records for Parcel Number 114-33-002G.

Paragraph 13 of the 1990 Judgment states that the defendants would be vested with title to the "interior streets and alleys in River View Estates, which remain contiguous to the Blocks and lots of the said River view Estates after Pima County becomes vested with the land it is condemning in this action. The streets and alleys referred to are those dedicated roadways and alleys lying within the Plat of River View Estates, on record at the Pima County Recorder's Office in Book 9 at page 117 of Maps and Plats, not previously abandoned by Road Proceeding No. 1359, recorded in Book 10 at Page 44 of Road Maps in said county, except any portion of the right of way of Sabino Canyon Road which is to be 150 feet wide following this action and the designated park as shown on said River View Estates Plat." Subsequent to that Judgment the Pima County Assessor's Office permitted a series of tax parcel combinations and the various remaining tax parcels of River View Estates were assembled into a single tax parcel.

Based on my review of the information listed above, a plat of abandonment will not be required before the property owner proceeds to apply for a development plan or to re-plat the area previously platted as River View Estates. Title reports and legal descriptions will be required in accordance with existing Zoning Code requirements and Development Services procedures.

Sincerely,

Carmine DeBonis Jr.
Development Services Director

c: Debby Marchbanks, Subdivision Coordinator



RESOLUTION NO. 2014- 14

A RESOLUTION OF THE BOARD OF SUPERVISORS OF PIMA COUNTY, ARIZONA; RELATING TO PLANNING; AMENDING THE PIMA COUNTY COMPREHENSIVE PLAN LAND USE MAP FOR APPROXIMATELY 15.14 ACRES IN SECTION 29 OF TOWNSHIP 13 SOUTH, RANGE 15 EAST, IN THE CATALINA FOOTHILLS SUBREGION.

BE IT RESOLVED BY THE BOARD OF SUPERVISORS OF PIMA COUNTY, ARIZONA AS FOLLOWS:

Section 1. The Pima County Comprehensive Plan Land Use Map, Catalina Foothills Subregion, is hereby amended to change the planned land use intensity category for approximately **15.14 acres**, as referenced in **Co7-13-01 Sabino Canyon Properties, LLC – N. Sabino Canyon Road Plan Amendment**, located at the northeast corner of the intersection of N. Sabino Canyon Road and E. Cloud Road, in Section 29, Township 13 South, Range 15 East, as shown on the map attached hereto as Exhibit A and incorporated herein by this reference, from **Low Intensity Urban 3.0 (LIU 3.0) to Medium-High Intensity Urban (MHIU)**.

Section 2. The Pima County Comprehensive Plan Regional, Rezoning and Special Area Policies are hereby amended to include the subject site with the following Rezoning Policy:

Density shall be limited to a maximum of 13 residences per acre.

Section 3. The various County officers and employees are authorized and directed to perform all acts necessary to give effect to this Resolution.

Section 4. This Resolution shall become effective on the date of adoption.

PASSED AND ADOPTED this 18th day of February, 2014, by the Board of Supervisors of Pima County, Arizona.

ATTEST:

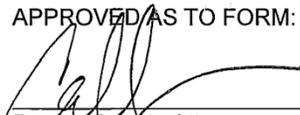
BOARD OF SUPERVISORS

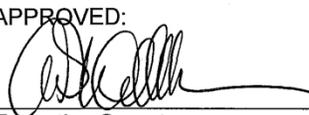

Clerk, Board of Supervisors


Chair, Board of Supervisors FEB 18 2014

APPROVED AS TO FORM:

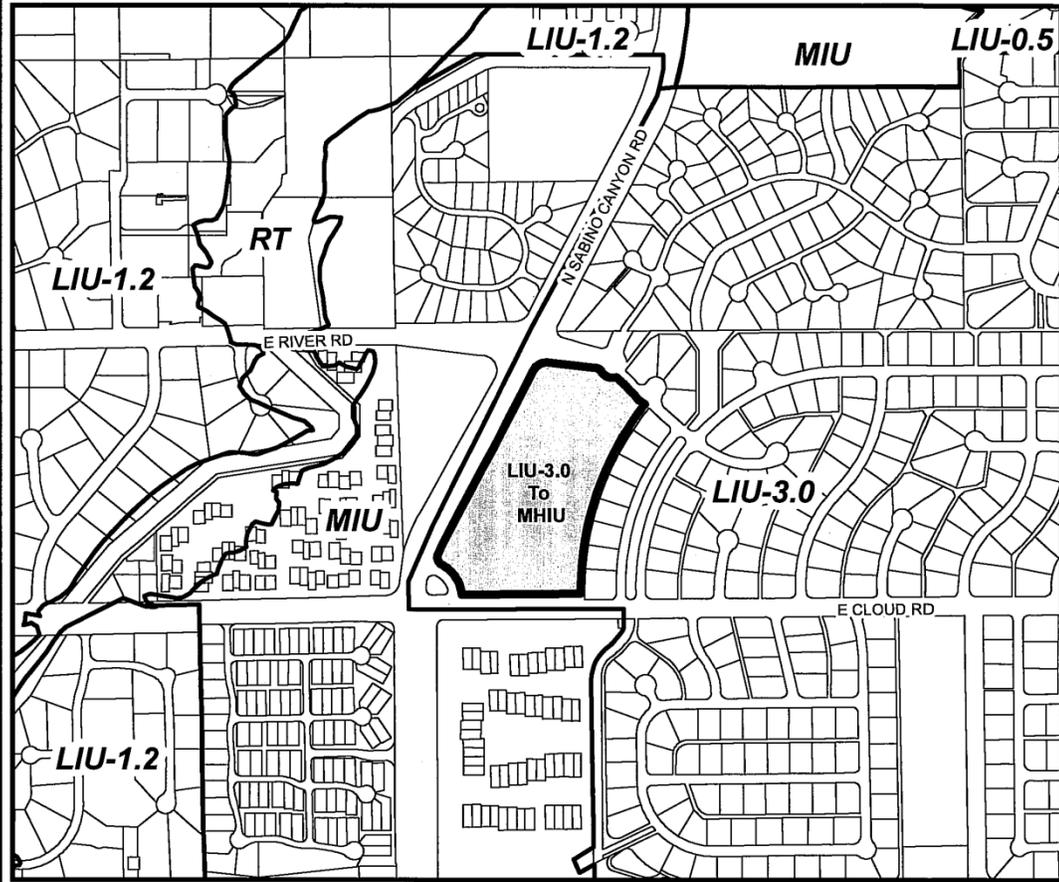
APPROVED:


Deputy County Attorney
ANDREW FLAGG


Executive Secretary
Planning and Zoning Commission

COMPREHENSIVE PLAN AMENDMENT

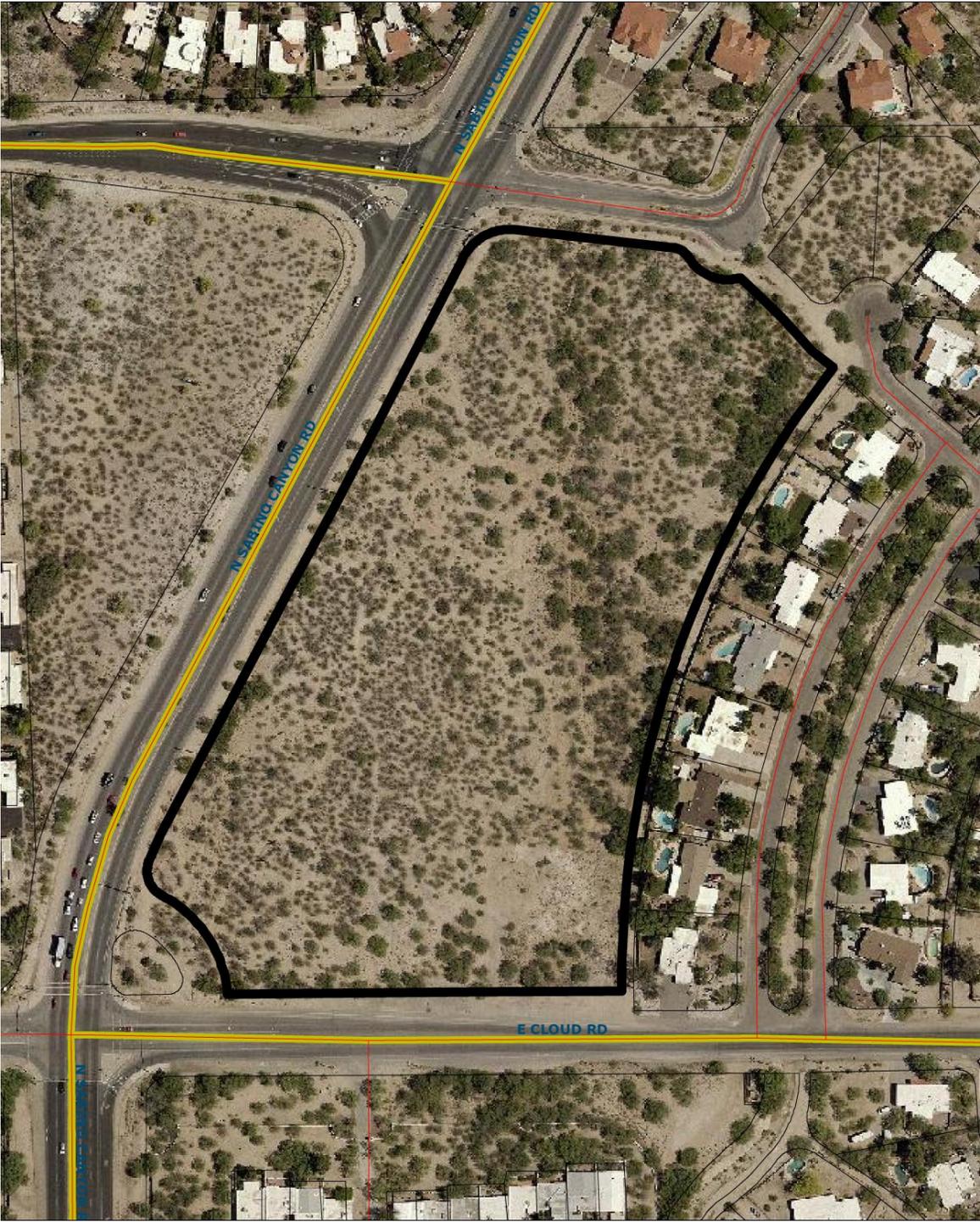
Exhibit A



0 287.5 575 1,150 Feet Amendment Area Planned Land Use

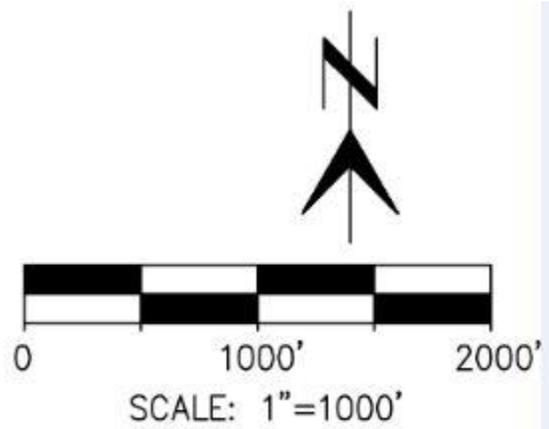
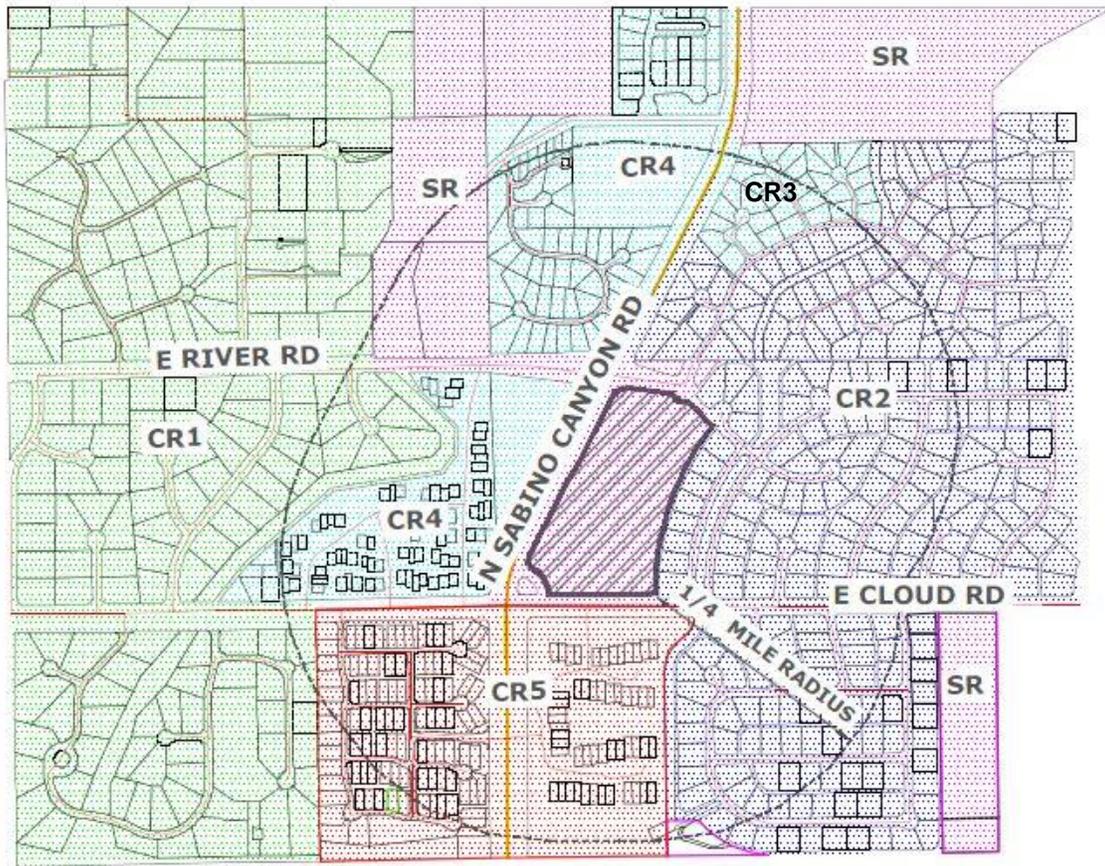
Taxcode: 114-33-002G	Co7-13-01 SABINO CANYON ROAD PROPERTIES, LLC – N. SABINO CANYON ROAD PLAN AMENDMENT		Location: Northeast corner of N. Sabino Canyon Road and E. Cloud Road
	Amend Planned Land Use From Low Intensity Urban 3.0 (LIU-3.0) To Medium-High Intensity Urban(MHIU), 15.14 Acres +/- Subject to Rezoning Policies (RP)		
	Catalina Foothills Subregion Section 29, Township 13 South, Range 15 East		
	Planning and Zoning Commission Hearing: July 31, 2013	Map Scale: 1:8,000	
	Board of Supervisors Hearing: September 17, 2013	Map Date: October 15, 2013	

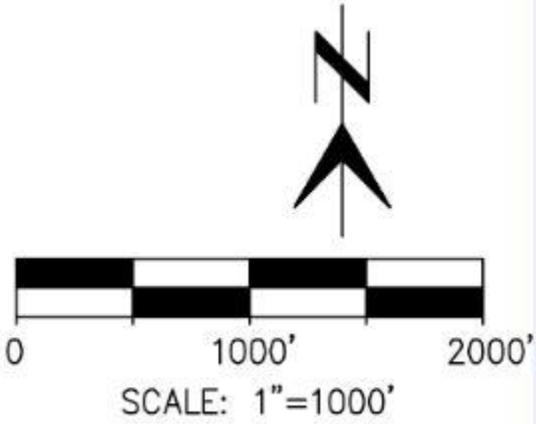
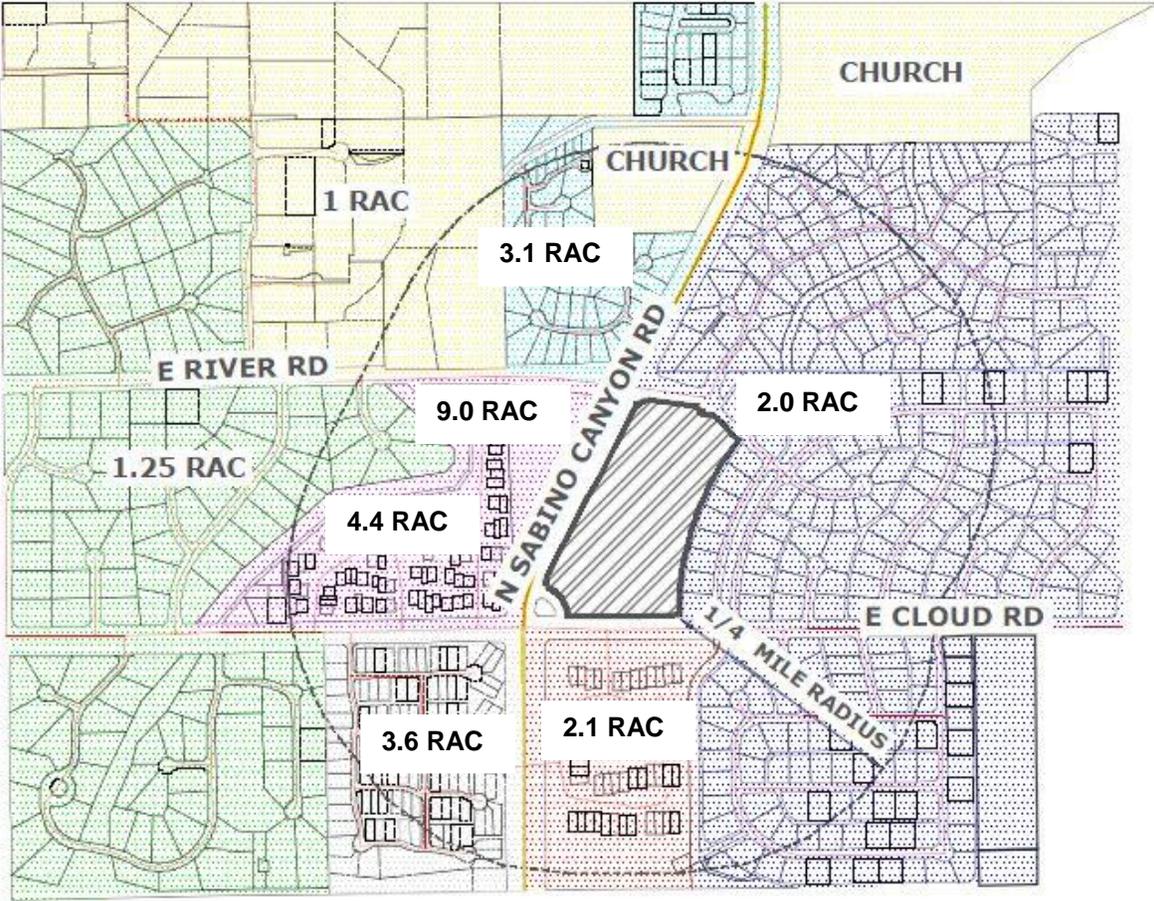
X:\Comprehensive Planning...\Co7-13-01\maps \ jrv

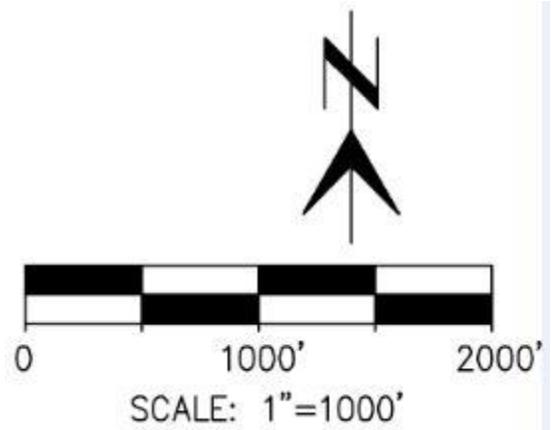
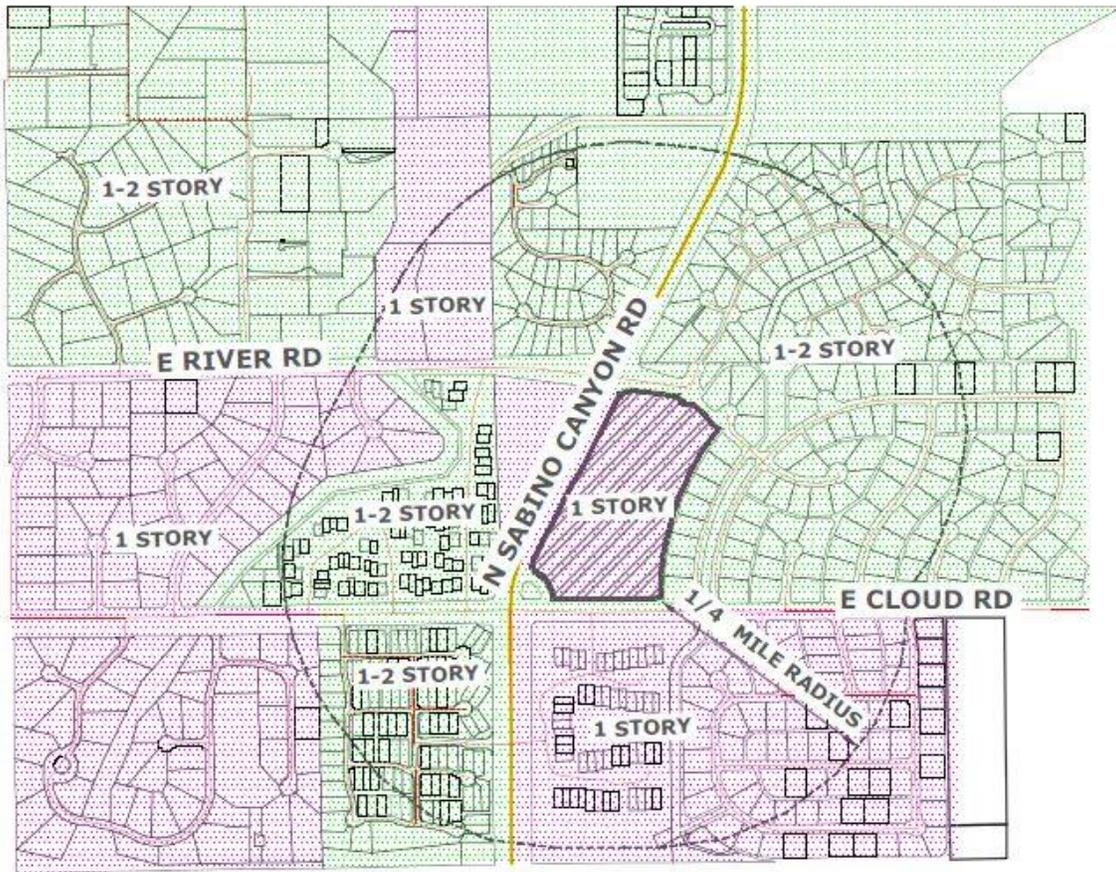


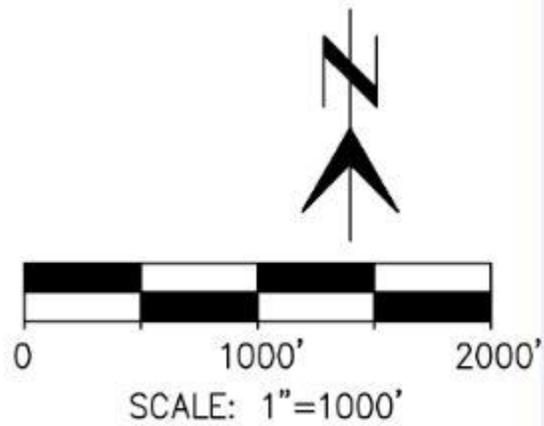
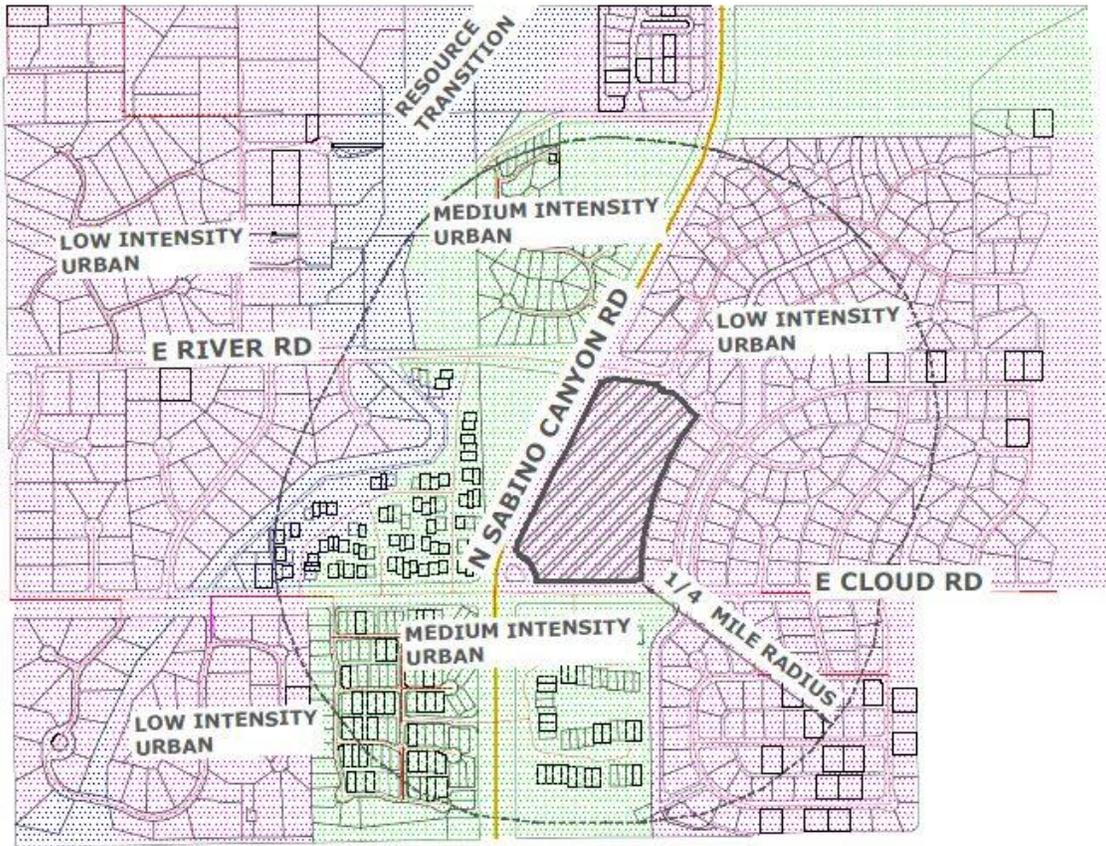
Source: Pima County MapGuide











I-B TOPOGRAPHY AND GRADING

1. TOPOGRAPHIC FEATURES

The site is gently sloping, approximately 1.7% from north to south and 2.4% from west to east under existing conditions with minimal significant topographic features.

There are no 15% or greater slopes within the site.

- a. There are no restricted peaks or ridges present on the site.
- b. There are no rock outcrops or talus slopes present on the site.
- c. The site is located in the FEMA FIRM Panel Zone X - areas determined to be outside of the 0.2% annual chance floodplain.
- d. There is only minimal existing ground disturbance on the site, primarily along the public rights of ways, and in the southeast corner of the site, where a well has been removed. The site is generally native desert vegetation.

2. AVERAGE CROSS SLOPE

The predevelopment average cross slope is 4.01% (rounded to 4%) as shown on the Pima County GIS Average Cross Slope Calculation. Please see Exhibit 1-B.2 for a copy of this calculation.

Parcel Average Cross Slope
Pima County Zoning Code
Chapter 18.61, Hillside Development Overlay Zone
 Calculations are derived from GIS data and are estimated.
 Accuracy is limited to that of the underlying GIS data.
 All data is subject to this [disclaimer](#).

Parcel
 11433002G - [Parcel detail](#)
 3500 N SABINO CANYON RD
 SABINO CANYON RD PROPERTIES LLC

Areas

Area Type	Acres	Square Feet
Parcel Area	14.8204	645,577
Exclusion Area(s)	(none)	(none)
Cross Slope Area	14.8204	645,577

Contour Lengths - 2 Foot Intervals, Year 1998

Contour	Feet
Parcel contour length	12,917.8
Exclusion contour length	(none)
Cross slope contour length	12,917.8

Project Average Cross Slope

$$(I \times L \times 0.0023) / A = \text{AverageCrossSlope}$$

$$(2 \times 12,917.8 \times 0.0023) / 14.8204 = \mathbf{4.01 \text{ percent (4 percent rounded)}}$$

[Exclusion \(Natural\) Areas Help](#)

I-C HYDROLOGY

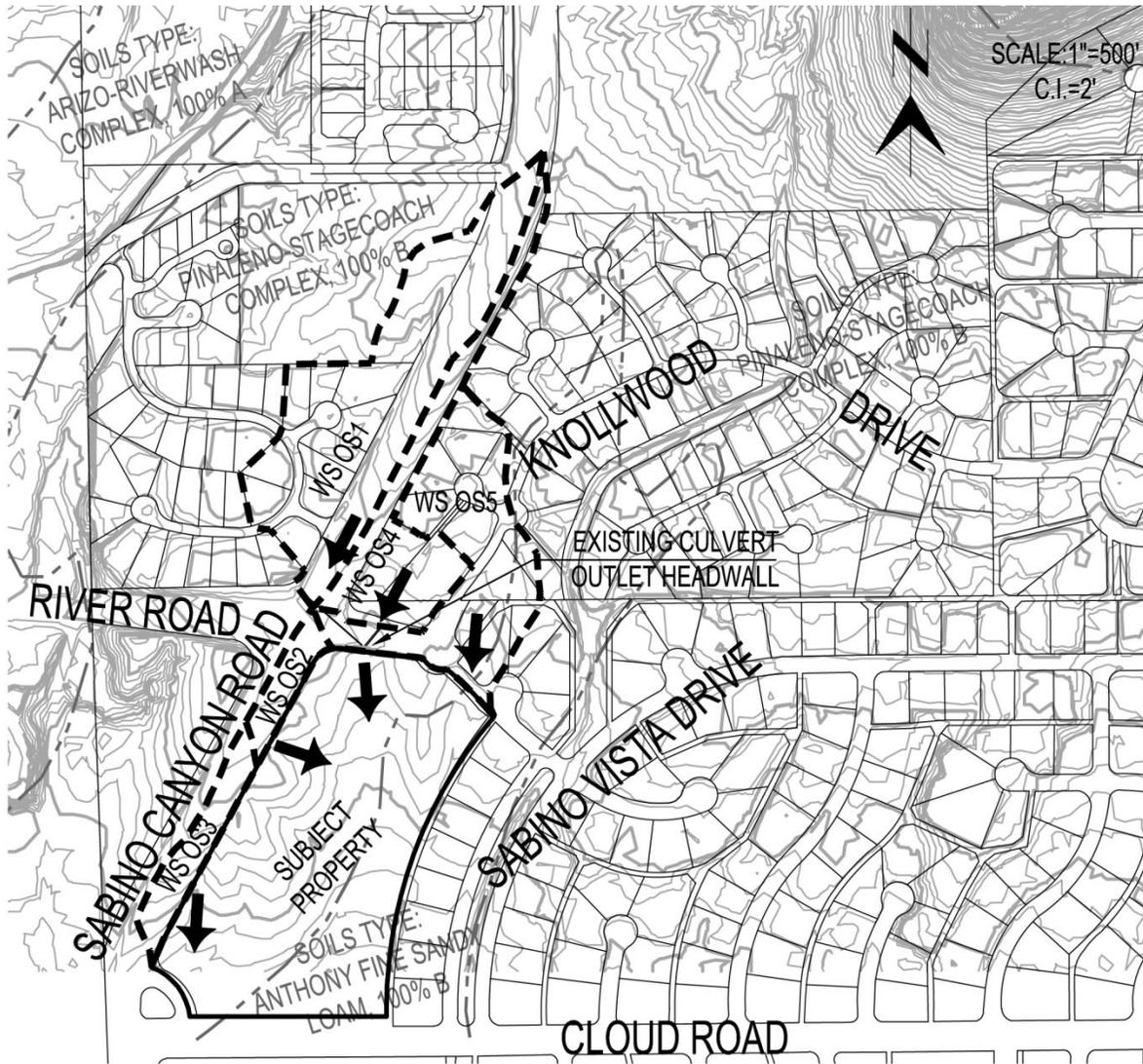
The land surrounding the project site consists of a mix of natural areas and low- and medium-density residential properties, and drains generally from the north to south. A new medium density residential project is currently under development on the 5.9 acre parcel immediately across Sabino Canyon Road, west of this project. The majority of the offsite runoff, from the area upstream of the subject property north of River Road, is conveyed under the roadway in culvert crossings near the intersection of Sabino Canyon Road and River Road. Additional runoff enters the subject property from the west along Sabino Canyon Road and at the northeast corner of the parcel. The terrain within the subject property slopes toward the south at approximately 1.6%. The FEMA FIRM Panel for this area indicates that all of the property is in Zone X, and not within a special flood hazard area. The Ventana Canyon Wash, (Q100=13,613 cfs, 250' EHS), is located 580' west of the property at its closest approach and has no impact on this parcel. Additionally, an Unnamed Wash within the Riverview Estates subdivision, (Q100<500 cfs, 25' EHS), is located 225' to the east and has no impact on this parcel. Runoff generated onsite combines with offsite runoff and drains to the southeast corner of the parcel, toward Cloud Road. Runoff is released in a sheet flow manner along the southern boundary line, draining across Cloud Road and into a private drainage easement within a residential development, (Sabino Vista Townhouses), eventually entering the Tanque Verde Wash approximately 1,500 feet south of the subject property.

1. OFFSITE WATERSHEDS

Five upstream drainage areas contribute significant runoff to the subject property. These drainage areas were delineated using 2' interval topography, (PAG 1998, NAVD 88), newly generated 1' interval topography and recent aerial photography, (Pima County MapGuide, Spring 2012). The resulting offsite watershed boundaries are presented on Figure II. 100-year peak storm water runoff estimates for each of the five offsite watersheds, (OS1 through OS5), were prepared utilizing the PCHydro software, which computes runoff following the Pima County Hydrology Method. The NRCS soils types for the project area are mapped and identified on Figure II, (Pima County MapGuide). Additional watershed characteristics for each drainage area were estimated based on recent aerial photography and confirmed during a site visit. A summary of the watershed characteristics and computed runoff is provided in the following table.

TABLE I-C.1: OFFSITE WATERSHED SUMMARY

Watershed	D.A. (ac.)	Slope (%)	Basin Factor	Tc (min.)	Q₁₀₀ (cfs)
OS1	8.83	1.83	0.022	5	70
OS2	0.88	1.08	0.018	5	8
OS3	1.45	2.51	0.018	5	13
OS4	3.62	2.07	0.022	5	31
OS5	5.60	2.16	0.022	5	43



LEGEND

- CONCENTRATION POINT
- WATERSHED BOUNDARY
- SOILS TYPE BOUNDARY
- PROJECT BOUNDARY

PEAK DISCHARGES (cfs)					
C.P.	D.A.	Q2	Q10	Q50	Q100
OS1	8.83	14	31	59	70
OS2	0.88	2	4	7	8
OS3	1.45	3	7	12	13
OS4	3.62	6	14	26	31
OS5	5.60	9	19	37	43

2. OFFSITE FEATURES

Runoff from watershed OS1 is conveyed to a catch basin inlet located at the northwest corner of the intersection of Sabino Canyon Road and River Road. OS1 generates a peak 100-year discharge of 70 cfs, which is conveyed in a 34" x 53" H.E.R.C.P. culvert, offsite culvert A, under the intersection. The design discharge for offsite culvert A is 66 cfs, (per the 1996 Sabino Canyon Road As-Built Plans, 4T8909). Offsite culvert A discharges at an existing outlet headwall located on the south side of River Road approximately 130' east of Sabino Canyon Road, (CP OS1/4).

Runoff from watersheds OS2 and OS3 discharges from the pavement into existing shoulder swales along the east side of Sabino Canyon Road. A peak 100-year discharge of 8 cfs from OS2 enters the project near the midpoint of the west property line, while a peak 100-year discharge of 13 cfs from OS3 enters the project near the southwest corner of the property.

Runoff from watershed OS4 drains to an existing inlet headwall located on the north side of River Road approximately 150' east of Sabino Canyon Road. OS4 generates a peak 100-year discharge of 31 cfs, which is conveyed in a 2 barrel, 24" x 38" H.E.R.C.P. culvert, offsite culvert B, under River Road. The design discharge for offsite culvert B is 37 cfs, (per the 1996 Sabino Canyon Road As-Built Plans, 4T8909). Offsite culvert B discharges at the same outlet headwall as offsite culvert A. The combined peak 100-year discharge at the outlet headwall, (CP OS1/4), is 103 cfs, using the slightly more conservative 1996 design discharge values.

Runoff from watershed OS5 discharges from the pavement at an existing roadway knuckle at the east end of River Road. OS5 generates a peak 100-year discharge of 43 cfs, which is conveyed under the sidewalk in a 4-cell scupper. Runoff from OS5 enters the subject property near the northeast corner of the parcel.

3. ACREAGE OF OFF-SITE WATERSHEDS

The drainage areas within the project were delineated into five watersheds and 4 sub-watersheds using 1' interval topography from a recent ground survey. The resulting watersheds are presented on Figure III. Runoff from the onsite watersheds drains toward the south where it crosses Cloud Road. 100-year peak storm water runoff estimates for each of the existing, onsite watersheds were prepared utilizing the PCHydro software. A summary of the watershed characteristics and computed runoff is provided in the following table:

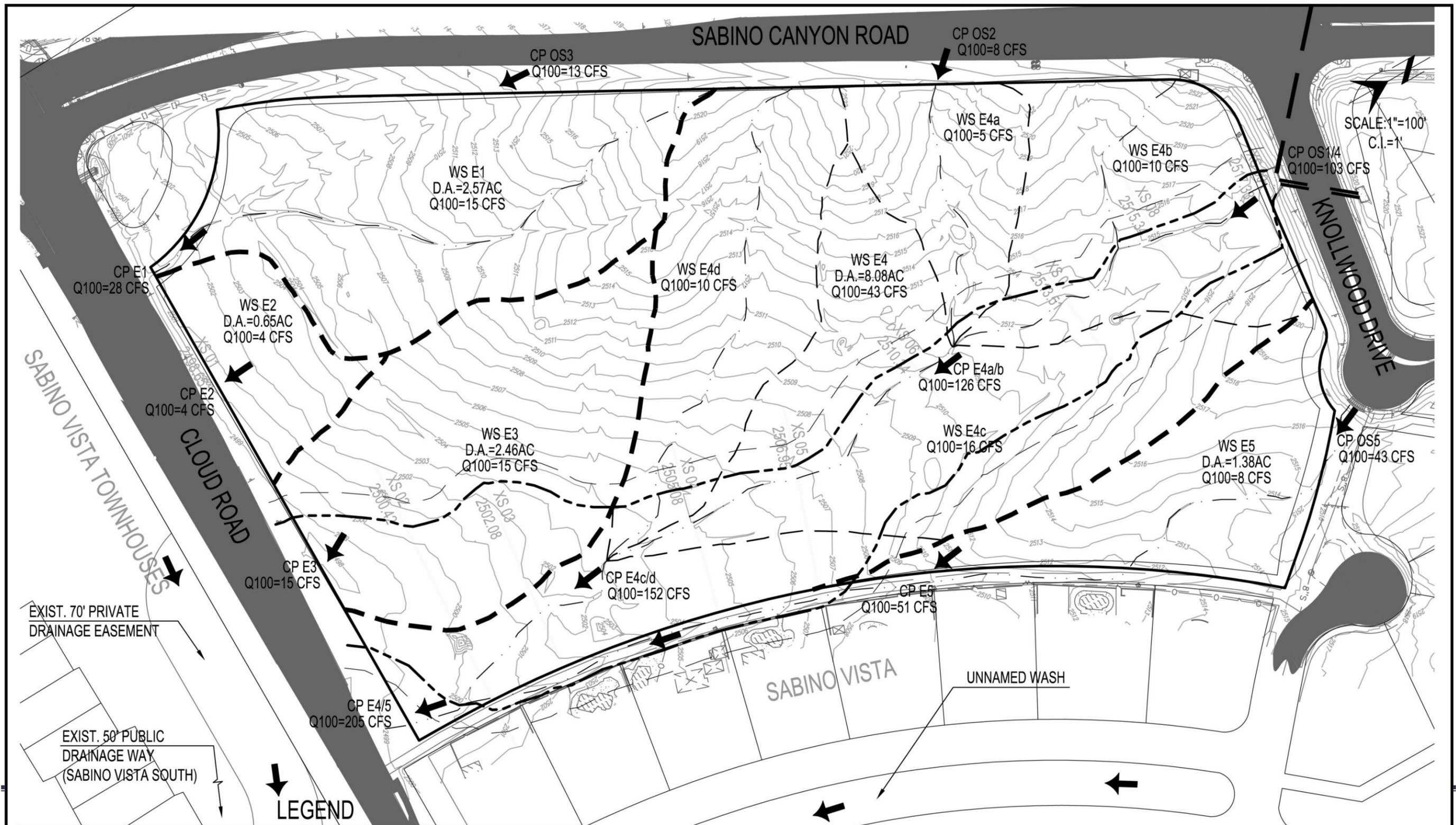
TABLE I-C.2: ONSITE EXISTING WATERSHED SUMMARY

Watershed	D.A. (ac.)	Slope (%)	Q ₂ (cfs)	Q ₁₀ (cfs)	Q ₁₀₀ (cfs)
E1	2.57	2.92	2	5	15
E2	0.65	3.61	0.4	1	4
E3	2.46	2.92	2	5	15
E4	8.08	1.81	4	15	43
E4a	0.83	2.90	1	2	5
E4b	1.70	2.88	1	4	10
E4c	2.74	1.44	2	6	16
E4d	1.69	2.97	1	4	10
E5	1.38	1.21	1	3	8

4. ON-SITE HYDROLOGY

Runoff generated within the southwest corner of the subject property (WS E1) combines with offsite runoff from Sabino Canyon Road (CP OS3) and exits the property at a concentration point at the south boundary line (CP E1). Runoff generated within watershed E2 drains toward Cloud Road in a sheet flow manner (CP E2). Runoff generated within watershed E3 also drains toward Cloud Road in a sheet flow manner, but begins to coalesce just upstream of the roadway (CP E3). Runoff from watersheds D4 and D5, combined with offsite runoff entering the project at CP OS2 and CP OS1/4, drains across the east half of the subject property in defined stream channels. Runoff from watershed E5 and CP OS5 drains into the unpaved alley at the east property line (CP E5). Runoff flowing south along the unpaved alley combines with runoff from watershed E4 and CP OS1/4 just upstream of Cloud Road (CP E4/5). At this location the combined peak 100-year discharge of 205 cfs enters the Cloud Road right-of-way.

A single wash within the subject property conveys a 100-year peak discharge in excess of 100 cfs; an unnamed stream flowing from the existing headwall south of River Road (CP OS1/4) to Cloud Road (CP E4/5). The Unnamed Wash 100-year floodplain limits, crosses the subject property from north to south. Water surface elevations for nine hydraulic cross sections along the wash were computed using Manning's Equation for normal depth in open channel flow. These water surface elevations were used to delineate the limits of the 100-year floodplain. The applicable EHS is 25', which was established as an offset from the 100-year floodplain limit lines.



	CONCENTRATION POINT		100-YEAR FLOODPLAIN
	WATERSHED BOUNDARY		EROSION HAZARD SETBACK
	SUB-WATERSHED BOUNDARY		WASH FLOWLINE
	PROJECT BOUNDARY		100-YEAR WSELS

STAR CONSULTING

5405 E. PLACITA HAYUCO
TUCSON, AZ 85718
(520) 425-3795*(520) 425-3764
geoff@starconsultingaz.com
PROJECT NO. 12039

FIGURE III: ONSITE EXISTING DRAINAGE MAP
AERIE @ SABINO/RIVER EAST

5. DOWNSTREAM DRAINAGE CONDITIONS

Runoff exiting the subject property crosses over Cloud Road and enters a 70' wide private drainage easement within the Sabino Vista Townhouses subdivision. The 70' wide easement area includes no drainage improvements, but slopes to the east directing runoff into an existing improved channel within a 50' wide public drainage way located between the Sabino Vista Townhouses and Sabino Vista South subdivisions. The 50' public drainage way, which consists of a constructed channel with concrete lined sides, drains to the south and outlets directly into the Tanque Verde Wash approximately 1,200' south of Cloud Road. Pima County Regional Flood Control designates the regulatory floodplain within the improved channel as less than 500 cfs. The constructed channel is detailed on the Paving and Sewer Plans for Sabino Vista South, (Wheeler Petterson Coffeen, 1965, PCRWRD Plan #S-316). Based on the channel construction drawings and PAG 2008 topographic mapping the channel consists of a trapezoidal section with a 20' wide bottom, 5:1 sides slopes and a longitudinal slope of 2.30%. The total channel depth provided is 3', including 1' of freeboard. Using Manning's normal depth equation the existing channel capacity is 782 cfs with 1' of freeboard and 1,718 cfs flowing full.

I-D BIOLOGICAL RESOURCES

1. CONSERVATION LAND SYSTEMS

Exhibit I-D.1 shows the regional context of the site in the Conservation Land System. This exhibit is taken from the Pima County GIS system. As shown, the site is not impacted by any Conservation Land Systems, including Special Species Management Areas, Scientific Research Areas, Agriculture In holdings, Biological Core Management Areas, Important Riparian Areas, and Multiple Use Management Areas.

A swath of Important Riparian Area follows the Vetana Wash to the west of the site and the Tanque Verde Wash south of the site.

2. CRITICAL LANDSCAPE CONNECTIONS

The site is not located within or adjacent to any of the six Critical Landscape Connections as shown on the Conservation Land Systems Map.

3. PIMA PINEAPPLE CACTUS

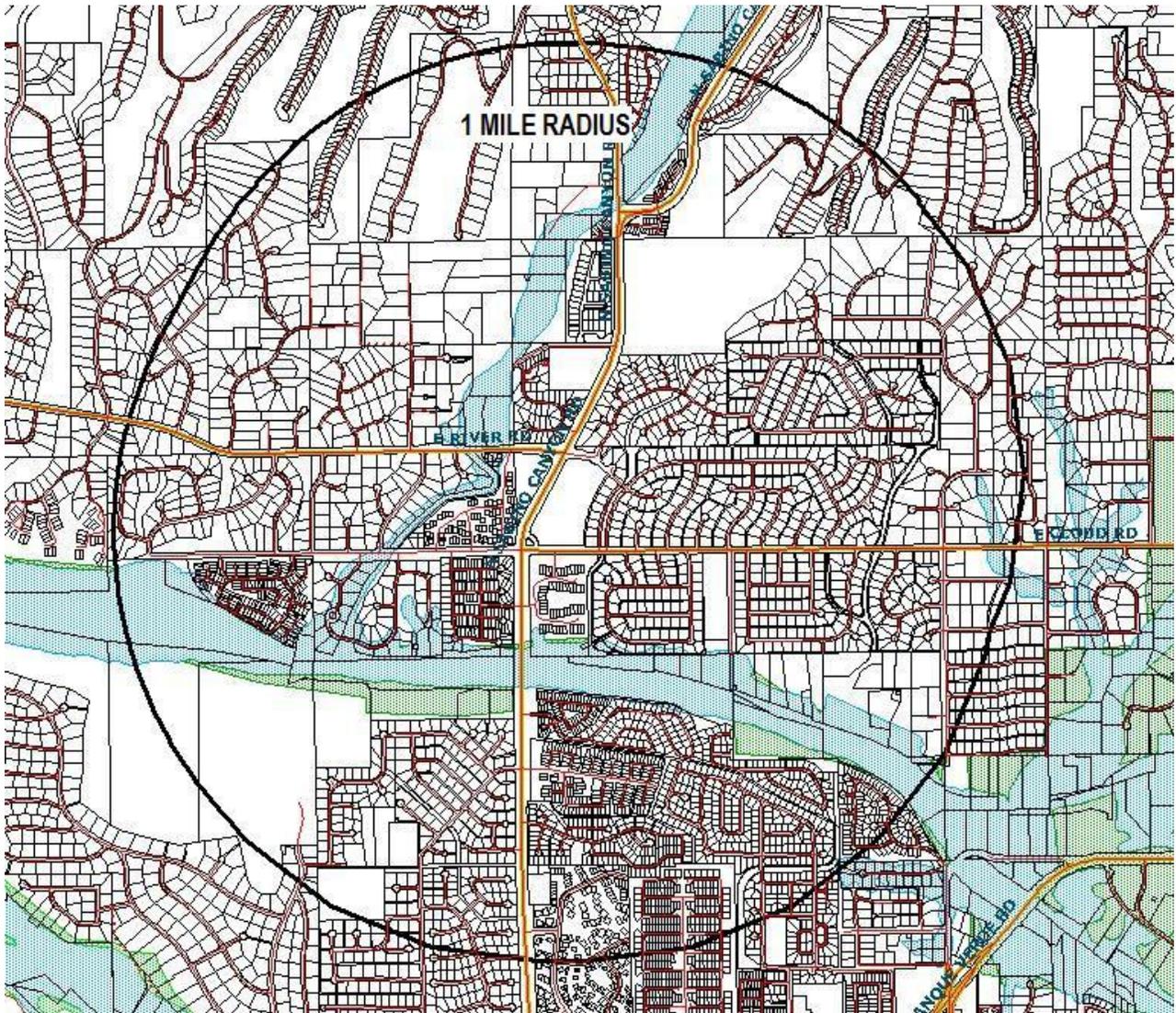
The site is not located within or adjacent to the Priority Conservation Area for the Pima Pineapple Cactus, as displayed on the Sonoran Desert Conservation Plan MapGuide. As such, an exhibit as not been provided.

4. NEEDLE-SPINED PINEAPPLE CACTUS

The site is not located within or adjacent to the Priority Conservation Area for the Needle-Spined Pineapple Cactus, as displayed on the Sonoran Desert Conservation Plan MapGuide. As such, an exhibit as not been provided.

5. CACTUS FERRUGINOUS PYGMY OWL AND WESTERN BURROWING OWL

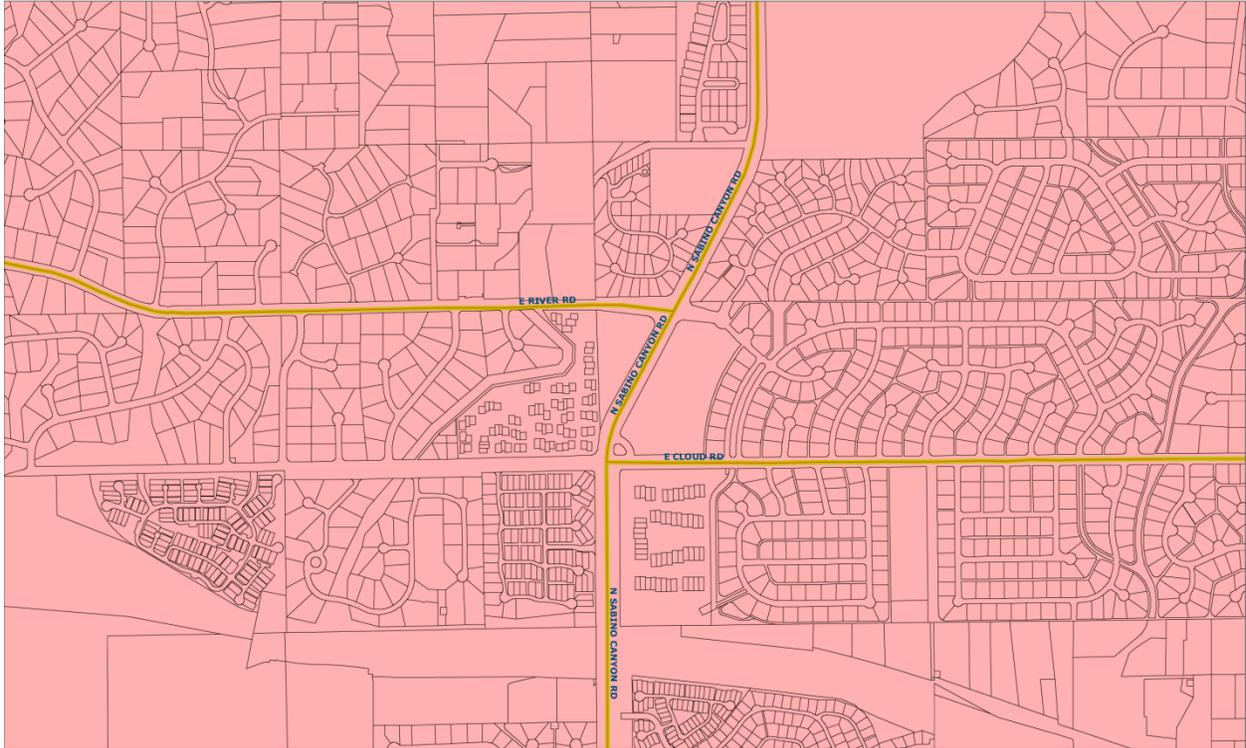
This site is located entirely within the Priority Conservation Area, Priority 1, for the Cactus Ferruginous Pygmy Owl. The site is not located within or adjacent to the Priority Conservation Area for the Western Burrowing Owl, as displayed on the Sonoran Desert Conservation Plan MapGuide. Exhibit I-D.5 shows the Priority Conservation Area for the Cactus Ferruginous Pygmy Owl within and surrounding the site.



The areas of blue hatch indicate areas of Important Riparian Area.
The areas of green hatch indicate areas of Biological Core Management Areas.

Source: Pima County GIS

EXHIBIT I-D.5: PRIORITY CONSERVATION AREA FOR THE CACTUS FERRUGINOUS PYGMY OWL



The areas of pink hatch indicate areas within the Priority Conservation Area, Priority 1, for the Cactus Ferruginous Pygmy Owl.

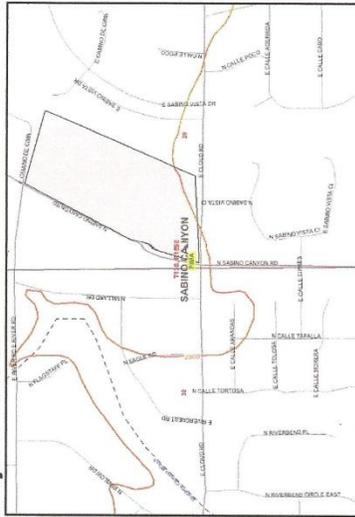
Source: Pima County GIS

6. SPECIAL STATUS SPECIES

Exhibit I-D.6 shows the results of the Arizona Game and Fish Department On-line Environmental Review Tool as well as the response letter from the Department.

Arizona's On-line Environmental Review Tool
 Search ID: 20130315019926
 Project Name: Aerie @ River and Sabino East
 Date: 3/15/2013 8:20:27 AM

Project Location



Project Name: Aerie @ River and Sabino East
 Submitted By: Geoff Harris
 On behalf of: PRIVATE
 Project Search ID: 20130315019926
 Date: 3/15/2013 8:20:23 AM
 Project Category: Development Outside Municipalities (Rural Development), Residential subdivision and associated infrastructure, New construction
 Project Coordinates (UTM Zone 12-NAD 83): 515131.335, 3570448.451 meter

Project Area: 15,826 acres
 Project Perimeter: 1094.275 meter
 County: PIMA
 USGS 7.5 Minute Quadrangle ID: 1726
 Quadrangle Name: SABINO CANYON
 Project locality is not anticipated to change

Location Accuracy Disclaimer

Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Receipt is solely responsible for the project location and thus the correctness of the Project Review Receipt content.

The Department appreciates the opportunity to provide in-depth comments and project review when additional information or environmental documentation becomes available.

Special Status Species Occurrences/Critical Habitat/Tribal Lands within 3 miles of Project Vicinity.

Name	Common Name	FWS	USFS	BLM	State
Argia sabino	Sabino Canyon Dancer	SC	S		
Bat Colony					
CH for Gila intermedia	Designated Critical Habitat for Gila chub				
Choronycteris mexicana	Mexican Long-tongued Bat	SC	S	S	WSC
Glaucidium brasilianum caedorum	Cactus Ferruginous Pygmy-owl	SC	S	S	WSC
Gopherus morafkai	Sonoran Desert Tortoise	C*	S		WSC
Lasiurus blossevilli	Western Red Bat		S		WSC
Lasiurus xanthinus	Western Yellow Bat		S		WSC
Nothlaena lemmonii	Lemmon Cloak Fern	SC			
Nyctinomops macrotis	Pocketed Free-tailed Bat		S		
Nyctinomops macrotis	Big Free-tailed Bat	SC			
Opuntia versicolor	Stag-horn Cholla				SR

APPLICATION INITIALS: GH



Arizona's On-line Environmental Review Tool
Search ID: 20130315019926
Project Name: Aerie @ River and Sabino East
Date: 3/15/2013 8:20:27 AM

Please review the entire receipt for project type recommendations and/or species or location information and retain a copy for future reference. If any of the information you provided did not accurately reflect this project, or if project plans change, another review should be conducted, as this determination may not be valid.

Arizona's On-line Environmental Review Tool:

1. This On-line Environmental Review Tool inquiry has generated recommendations regarding the potential impacts of your project on Special Status Species (SSS) and other wildlife of Arizona. SSS include all U.S. Fish and Wildlife Service federally listed, U.S. Bureau of Land Management sensitive, U.S. Forest Service sensitive, and Arizona Game and Fish Department (Department) recognized species of concern.

2. These recommendations have been made by the Department, under authority of Arizona Revised Statutes Title 5 (Amusements and Sports), 17 (Game and Fish), and 28 (Transportation). These recommendations are preliminary in scope, designed to provide early considerations for all species of wildlife, pertinent to the project type you entered.

3. This receipt, generated by the automated On-line Environmental Review Tool does not constitute an official project review by Department biologists and planners. Further coordination may be necessary as appropriate under the National Environmental Policy Act (NEPA) and/or the Endangered Species Act (ESA).

The U.S. Fish and Wildlife Service (USFWS) has regulatory authority over all federally listed species under the ESA. Contact USFWS Ecological Services Offices: <http://arizonaes.fws.gov/>.

Phoenix Main Office
2321 W. Royal Palm Road, Suite 103
Phoenix, AZ 85021
Phone 602-242-0210
Fax 602-242-2513

Tucson Sub-Office
201 North Bonita, Suite 141
Tucson, AZ 85745
Phone 520-670-6144
Fax 520-670-6154

Flagstaff Sub-Office
323 N. Leroux Street, Suite 101
Flagstaff, AZ 86001
Phone 928-226-0614
Fax 928-226-1099

Disclaimer:

1. This is a preliminary environmental screening tool. It is not a substitute for the potential knowledge gained by having a biologist conduct a field survey of the project area.
2. The Department's Heritage Data Management System (HDMS) data is not intended to include potential distribution of special status species. Arizona is large and diverse with plants, animals, and environmental conditions that are ever changing. Consequently, many areas may contain species that biologists do not know about or species previously noted in a particular area may no longer occur there.
3. Not all of Arizona has been surveyed for special status species, and surveys that have been conducted have varied greatly in scope and intensity. Such surveys may reveal previously undocumented population of species of special concern.
4. HDMS data contains information about species occurrences that have actually been reported to the Department.

Arizona Game and Fish Department Mission

To conserve, enhance, and restore Arizona's diverse wildlife resources and habitats through aggressive protection and

Arizona's On-line Environmental Review Tool
 Search ID: 20130315019926
 Project Name: Aerie @ River and Sabino East
 Date: 3/15/2013 8:20:27 AM

management programs, and to provide wildlife resources and safe watercraft and off-highway vehicle recreation for the enjoyment, appreciation, and use by present and future generations.

Project Category: Development Outside Municipalities (Rural Development), Residential subdivision and associated infrastructure, New construction

Project Type Recommendations:

All degraded and disturbed lands should be restored to their natural state. Vegetation restoration projects (including treatments of invasive or exotic species) should have a completed site-evaluation plan (identifying environmental conditions necessary to re-establish native vegetation), a revegetation plan (species, density, method of establishment), a short and long-term monitoring plan, including adaptive management guidelines to address needs for replacement vegetation.

Based on the project type entered; coordination with Arizona Department of Environmental Quality may be required (<http://www.azdeq.gov/>).

Based on the project type entered; coordination with Arizona Department of Water Resources may be required (<http://www.water.az.gov/adwr/>)

Based on the project type entered; coordination with County Flood

Control districts may be required.

Based on the project type entered; coordination with State Historic Preservation Office may be required (<http://azstateparks.com/SHPO/index.html>)

Based on the project type entered; coordination with U.S. Army Corps of Engineers may be required (<http://www.spl.usace.army.mil/regulatory/phonedir.html>)

Communities can actively support the sustainability and mobility of wildlife by incorporating wildlife planning into their regional/comprehensive plans, their regional transportation plans, and their open space/conservation land system programs. An effective approach to wildlife planning begins with the identification of the wildlife resources in need of protection, an assessment of important habitat blocks and connective corridors, and the incorporation of these critical wildlife components into the community plans and programs.

Community planners should identify open spaces and habitat blocks that can be maintained in their area, and the necessary connections between those blocks to be preserved or protected. Community planners should also work with State and local transportation planning entities, and planners from other communities, to foster coordination and cooperation in developing compatible development plans to ensure wildlife habitat connectivity. The Department's guidelines for incorporating wildlife considerations into community planning and developments can be found at <http://www.azgfd.gov/hgis/guidelines.aspx>.

Development plans should provide for open natural space for wildlife movement, while also minimizing the potential for wildlife-human interactions through design features. Please contact Project Evaluation Program for more information on living with urban wildlife.

During planning and construction, minimize potential introduction or spread of exotic invasive species. Invasive species can be plants,

Page 3 of 7 APPLICATION INITIALS:

Arizona's On-line Environmental Review Tool
Search ID: 20130315019926
Project Name: Aerie @ River and Sabino East
Date: 3/15/2013 8:20:27 AM

animals (exotic snails), and other organisms (e.g. microbes), which may cause alteration to ecological functions or compete with or prey upon native species and can cause social impacts (e.g. livestock forage reduction, increase wildfire risk). The terms noxious weed or invasive plants are often used interchangeably. Precautions should be taken to wash all equipment utilized in the project activities before and after project activities to reduce the spread of invasive species. Arizona has noxious weed regulations (Arizona Revised Statutes, Rules R3-4-244 and R3-4-245). See Arizona Department of Agriculture website for restricted plants <http://www.azda.gov/PSD/quarantine5.htm>. Additionally, the U.S. Department of Agriculture has information regarding pest and invasive plant control methods including: pesticide, herbicide, biological control agents, and mechanical control:

<http://www.usda.gov/wps/portal/usdahome>. The Department regulates the importation, purchasing, and transportation of wildlife and fish (Restricted Live Wildlife), please refer to the hunting regulations for further information http://www.azgrfd.gov/h_ifhunting_rules.shtml.

During the planning stages of your project, please consider the local or regional needs of wildlife in regards to movement, connectivity, and access to habitat needs. Loss of this permeability prevents wildlife from accessing resources, finding mates, reduces gene flow, prevents wildlife from re-colonizing areas where local extirpations may have occurred, and ultimately prevents wildlife from contributing to ecosystem functions, such as pollination, seed dispersal, control of prey numbers, and resistance to invasive species. In many cases, streams and washes provide natural movement corridors for wildlife and should be maintained in their natural state. Uplands also support a large diversity of species, and should be contained within important wildlife movement corridors. In addition, maintaining biodiversity and ecosystem functions can be facilitated through improving designs of structures, fences, roadways, and culverts to promote passage for a variety of wildlife.

Hydrological considerations: design culverts to minimize impacts to

channel geometry, or design channel geometry (low flow, overbank, floodplains) and substrates to carry expected discharge using local drainages of appropriate size as templates. Aquatic wildlife considerations: reduce/minimize barriers to migration of amphibians or fish (e.g. eliminate falls). Terrestrial wildlife: washes and stream corridors often provide important corridors for movement. Overall culvert width, height, and length should be optimized for movement of the greatest number and diversity of species expected to utilize the passage. Culvert designs should consider moisture, light, and noise, while providing clear views at both ends to maximize utilization. For many species, fencing is an important design feature that can be utilized with culverts to funnel wildlife into these areas and minimize the potential for roadway collisions. Guidelines for culvert designs to facilitate wildlife passage can be found at <http://www.azgrfd.gov/ngis/guidelines.aspx>.

Minimization and mitigation of impacts to wildlife and fish species due to changes in water quality, quantity, chemistry, temperature, and alteration to flow regimes (timing, magnitude, duration, and frequency of floods) should be evaluated. Minimize impacts to springs, in-stream flow, and consider irrigation improvements to decrease water use. If dredging is a project component, consider timing of the project in order to minimize impacts to spawning fish and other aquatic species (including spawning seasons), and to reduce spread of exotic invasive species. We recommend early direct coordination with Project Evaluation Program for projects that could impact water resources, wetlands, streams, springs, and/or riparian habitats.

Planning: consider impacts of lighting intensity on mammals and birds and develop measures or alternatives that can be taken to increase human safety while minimizing potential impacts to wildlife. Conduct wildlife surveys to determine species within project area, and evaluate proposed activities based on species biology and natural history to determine if artificial lighting may disrupt behavior patterns or habitat use.

Arizona's On-line Environmental Review Tool
Search ID: 20130315019926
Project Name: Aerie @ River and Sabino East
Date: 3/15/2013 8:20:27 AM

The Department recommends that wildlife surveys are conducted to determine if noise-sensitive species occur within the project area. Avoidance or minimization measures could include conducting project activities outside of breeding seasons.

The Department requests further coordination to provide project/species specific recommendations, please contact Project Evaluation Program directly.

The construction or maintenance of water developments should include: incorporation of aspects of the natural environment and the visual resources, maintaining the water for a variety of species, water surface area (e.g. bats require a greater area due to in-flight drinking), accessibility, year-round availability, minimizing potential for water quality problems, frequency of flushing, shading of natural features, regular clean-up of debris, escape ramps, minimizing obstacles, and minimizing accumulation of silt and mud.

Trenches should be covered or back-filled as soon as possible. Incorporate escape ramps in ditches or fencing along the perimeter to deter small mammals and herpetofauna (snakes, lizards, tortoise) from entering ditches.

Project Location and/or Species recommendations:

Heritage Data Management System records indicate that one or more listed, proposed, or candidate species or Critical Habitat (Designated or Proposed) have been documented in the vicinity of your project (refer to page 1 of the receipt). Please contact:
Ecological Services Office
US Fish and Wildlife Service
2321 W. Royal Palm Rd.
Phoenix, AZ 85021-4951
Phone: 602-242-0210
Fax: 602-242-2513

Heritage Data Management System records indicate that one or more native plants listed on the Arizona Native Plant Law and Antiquities Act have been documented within the vicinity of your project area (refer to page 1 of the receipt). Please contact:
Arizona Department of Agriculture
1688 W Adams
Phoenix, AZ 85007
Phone: 602-542-4373

Heritage Data Management System records indicate that Sonoran desert tortoise have been documented within the vicinity of your project area (refer to the species list on page 1 of the receipt). Please review the Tortoise Handling Guidelines found on the Environmental Review Home Page: <http://www.azgfd.gov/hgis/guidelines.azpx>.

Recommendations Disclaimer:

1. Potential impacts to fish and wildlife resources may be minimized or avoided by the recommendations generated from information submitted for your proposed project.
2. These recommendations are proposed actions or guidelines to be considered during preliminary project development.
3. Additional site specific recommendations may be proposed during further NEPA/ESA analysis or through coordination with affected agencies.
4. Making this information directly available does not substitute for the Department's review of project proposals, and should not decrease our opportunity to review and evaluate additional project information and/or new project proposals.
5. The Department is interested in the conservation of all fish and wildlife resources, including those Special Status Species listed on this receipt, and those that may have not been documented within the project vicinity as well as other game and nongame wildlife.

Page 5 of 7 APPLICATION INITIALS: NAE



Arizona's On-line Environmental Review Tool
Search ID: 20130315019926
Project Name: Aerie @ River and Sabino East
Date: 3/15/2013 8:20:27 AM

Print this Environmental Review Receipt using your Internet browser's print function and keep it for your records. Signature of this receipt indicates the signer has read and understands the information provided.

Signature: *Neil W. Jansen*
Date: 3/15/13

Proposed Date of Implementation: June 2014

Please provide point of contact information regarding this Environmental Review.

Application or organization responsible for project implementation

Agency/organization: ALTA VISTA COMMUNITIES
SABINO-RIVER EAST, LLC

Contact Name: ROGER KARBER

Address: 1785 E. SKYLINE DR, SUITE 131

City, State, Zip: Tucson, AZ 85718

Phone: (520) 977-5456

E-mail: aptcreator@hotmail.com

Person Conducting Search (if not applicant)

Agency/organization: STAR CONSULTING

Contact Name: GEORGE HARRIS

Address: 5405 E. PLACITA HAYUCO

City, State, Zip: Tucson, AZ 85718

Phone: (520) 529-1240

E-mail: geoff@starconsultingaz.com

APPLICATION INITIALS: *SHH*

Page 7 of 7

7. SAGUAROS

The site was evaluated for Saguaros and Ironwood in October of 2103 by ARC Studios. Eighteen saguaros were inventoried on site with thirteen being greater than 6 feet while five saguaros were 6 feet or under. No ironwood trees were found on site.

The majority of the larger saguaros are in fair to poor condition due to the nursing vegetation damage and rodent impacts that has damaged the growth by scaring or enabling the trunks and tops to continue to grow. Rodents have eaten away the base on many saguaros making them susceptible to disease, infection, or instability.

**VEGETATIVE COMMUNITIES/
ASSOCIATIONS**

-  Property Line
-  Paloverde-Cactus
- Mixed Scrub
-  Saguars Over 6'
-  Under 6' Saguaro
-  Disturbed Areas
- 35-45% Density



North
Scale 1" = 150'

Source: ARC Studios a TMHS Company

8. HABITAT PROTECTION AND COMMUNITY OPEN SPACE

The site is not located within or adjacent to Habitat Protection or Community Open Space priority acquisition property, as displayed on the Sonoran Desert Conservation Plan MapGuide. As such, an exhibit as not been provided.

9. OTHER IMPORTANT VEGETATION

The vegetation that occurs on this site is relatively light in density. A few larger specimens are found along the eastern edge and will be evaluated for preservation in place; however, no vegetation found on site is considered specimen quality and essential to scenic quality, screening or soil stability. Trees shall be evaluated for preservation in place based on the following criteria: current plant health conditions, relation to the existing utilities above, below and associated easement requirements, and required grading and drainage improvements per Pima County.

10. VEGETATION COMMUNITIES/ASSOCIATIONS

The overall site is 15.14 acres. ARC Studios evaluated the site in October 2013. ARC Studios is a Landscape Design firm of (3) Registered Landscape Architects with over 20 years of experience in Tucson and Surrounding Metropolitan area. Work includes; approval of over 100 native plant preservation plans and evaluation of over 10,000 saguaros and thousands of acres in Pima County. The vegetation within the project area is representative of the Arizona Upland Subdivision of Sonoran Desertscrub. Specifically, this site is characterized by sparse to moderately dense Creosote Bush with veins of Mesquite and Acacia species at runoff collection areas. Scattered Mesquite, Blue Palo Verde and Whitethorn Acacia are found throughout the site but overall are in decline or poor health with majority of vegetation have cycled through varied growth and die back periods creating vegetation that is low or poor quality. Human impacts to the site has aided in decline in of vegetation.

There is a main drainage discharge point centrally located at northern end of the site that fans out to sheet flow as it traverses south. A higher density of vegetation is found in the northeast corner where water collects from adjacent site improvements. Larger trees occur along the northeastern edge adjacent to an existing utility corridor. Many of these trees are infested with mistletoe and would not survive long term without aided care. These will unlikely survive transplant and may not be able to be preserved in place pending grading requirements for the site.

One distinct vegetative zone occurs on the entire property, shown on Exhibit I.D.7, Vegetative Community.

Paloverde-Cactus-Mixed Scrub Series – The plants in this native desert area are typical of upland Sonoran desert scrub. This area comprises the majority of the site. The following species were identified within this zone:

Cercidium microphyllum	Foothills Paloverde
Prosopis velutina	Velvet Mesquite
Acacia constricta	Whitethorn Acacia
Larrea tridentata	Creosote Bush
Ferrocactus sp.	Barrel Cactus
Fouquieria splendens	Ocotillo
Canegiea gigantea	Saguaro
Ephedra fasciculata	Mormon Tea
Calliandra eriophylla	Fairy Duster*
Ambrosia deltoidea	Triangle Bursage*

* Understory plants

The vegetation that occurs on this site is relatively uniform in density. A few larger specimens are found along the perimeters of the site where existing overhead and underground utilities coexist. Due to utility standards, infestation of mistletoe, necessary grading and drainage improvements, and perimeter improvement treatment, a majority of these perimeter trees will likely not be able to be preserved in place. However, plant material that is found to be viable shall be salvaged and or mitigated per the requirements of the Native Plant Preservation Ordinance.

Exhibit I.D.7, Vegetation Density shows the approximate percentages of plant cover.

Using 40-scale aerial photography, vegetation densities were identified and estimated. These zones were confirmed in the field and their boundaries adjusted based upon field observations. The two zones are identified as Disturbed and Density of 35-45%. The majority of the site is classified as 35-45% density, comprising approximately 13.85 acres. The disturbed areas are constant with River, Sabino Canyon Roadways and surrounding residential improvements with 1.29 acres.

I-E VIEWSHEDS

1. VISIBILITY AREAS

This project is not proposed to be developed under the Cluster Development Option of the Zoning Code.

2. PHOTOS

Several ground-level photos of the site have been provided on the following pages of this report.



Northwest Corner of Site facing south, southwest along Property Line



Northwest Corner of Site facing east along Knollwood Drive



Northwest Corner of Site facing west towards intersection of Sabino Canyon and River Rd



West Property Line facing south along Sabino Canyon Road (uncurbed)



West Property Line facing north along Sabino Canyon Road (uncurbed)



Southwest Corner of Site facing southwest towards intersection of River and Cloud Rd



Southwest Corner of Site facing west along River Road (Riverbend Estates shown)



Near Southwest Corner of Site facing east along Cloud Road (uncurbed)



Near Southeast Corner of Site facing west (Intersection of Sabino Canyon and Cloud Rd shown)



Southeast Corner of Site facing east along Cloud Road



Near Southeast Corner of Site facing North (alley)



Knollwood Drive Median from North Edge of Site facing northwest



Knollwood Drive median from along Knollwood Drive facing southwest



Knollwood Drive median along Knollwood Drive facing southeast



Existing Bus Stop immediately south of Cloud Road

I-F TRANSPORTATION

1. EXISTING/PLANNED OFF-SITE STREETS

The site will have direct access to north bound Sabino Canyon Road, south of the River Road intersection and north of the Cloud Road intersection. The site is immediately adjacent to Knollwood Drive, Cloud Road, and Sabino Canyon Road. The northbound left turn lane on Sabino Canyon Road is protected in that vehicles can only turn left on a green arrow, and must stop on a red arrow. Northbound to southbound U-Turns are prohibited. The Pima County Major Streets and Scenic Routes Plan offers the following development criteria:

Sabino Canyon Road:

- a. Existing Right of Way Width: 150'
- b. Pima County MS&R Width: 150' (Scenic, Major Route)
The existing right-of-way width DOES meet the Pima County width standards.
- c. The existing right-of-way widths ARE continuous in the vicinity of the site.
- d. No offsite roads or streets (e) are proposed for this project.
- e. Travel lanes: 2 NB and 2SB Thru Lanes
At River Road: Dual NB LTL
Single SB RTL

Posted Speed Limit: 40 MPH
Existing Pavement Edge: Thickened pavement edge
Capacity: 37,600 ADT
FDOT Generalized Annual Average Daily Volume
Non-state signalized, class 1, LOS D
(applying a 10% reduction and 5% increase for RTL)
- f. Existing ADT: 31,000 ADT (Cloud to River)
35,272 ADT (Tanque Verde to Cloud)
- g. Existing Bicycle way: Striped Shoulder
Existing Pedestrian way: Dirt path
- h. Per Rezoning Co9-12-05 for the development directly west of the site, a left turn slip lane will be developed.

Cloud Road:

- a. Existing Right of Way Width: 120'
- b. Pima County MS&R Width: 120' (Scenic, Major Route)
The existing right-of-way width DOES meet the Pima County width standards.
- c. The existing right-of-way widths ARE continuous in the vicinity of the site.
- d. No offsite roads or streets (e) are proposed for this project.

- e. Travel lanes: 1 EB and 1 WB
At Sabino Canyon Road: Dual WB LTL
Single EB LTL
- Posted Speed Limit: 35 MPH
- Existing Pavement Edge: Thickened pavement edge
- Capacity: 13,320 ADT
FDOT Generalized Annual Average Daily Volume
Non-state signalized, class 2, LOS D, 2-lane undivided
- f. Existing ADT: 5,366 ADT
- g. Existing Bicycle way: Striped Shoulder
Existing Pedestrian way: Dirt Path
- h. No known roadway improvements are scheduled for this road.

River Road (not adjacent to site):

- a. Existing Right of Way Width: VARIES at intersection
- b. Pima County MS&R Width: 150' (Scenic, Major Route)
The existing right-of-way width DOES NOT meet the Pima County width standards.
- c. The existing right-of-way widths ARE NOT continuous in the vicinity of the site.
- d. No offsite roads or streets (e) are proposed for this project.
- e. Travel lanes: 1 EB and 1-2 WB Thru Lanes
At Sabino Canyon Road: Dual EB RTL
Single EB LTL
- Posted Speed Limit: 35 MPH
- Existing Pavement Edge: Thickened pavement edge
- Capacity: 13,320 ADT
FDOT Generalized Annual Average Daily Volume
Non-state signalized, class 2, LOS D, 2-lane undivided
- f. Existing ADT: 20,000 ADT
- g. Existing Bicycle way: Striped Shoulder
Existing Pedestrian way: Dirt path
- h. No known roadway improvements are scheduled for this road.

Tanque Verde Road (not adjacent to site):

- a. Existing Right of Way Width: 120'
- b. Pima County MS&R Width: 120' (Scenic, Major Route)
The existing right-of-way width DOES meet the Pima County width standards.
- c. The existing right-of-way widths ARE continuous in the vicinity of the site.

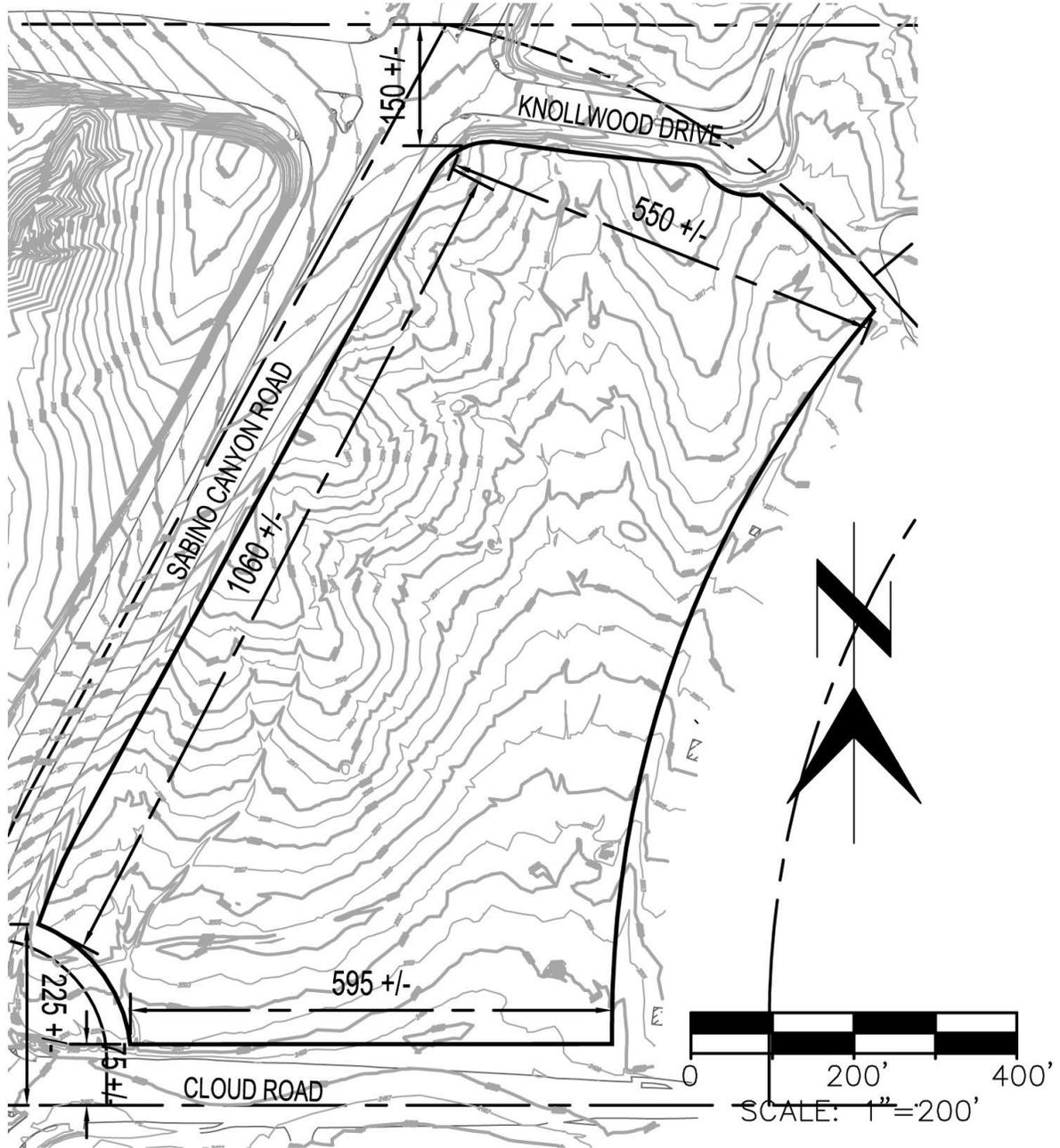
- d. No offsite roads or streets (e) are proposed for this project.
- e. Travel lanes: 3 EB and 3 WB
Turn lanes in all directions
- Posted Speed Limit: 40 MPH
- Existing Pavement Edge: Curb
- g. Existing Bicycle way: Striped Bike Path
- Existing Pedestrian way: Concrete Sidewalk
- h. No known roadway improvements are scheduled for this road.

2. DISTANCES TO EXISTING DRIVES/INTERSECTIONS

The existing site is located immediately north of Cloud Road and east of Sabino Canyon Road. The southern edge of the site is adjacent to Cloud Road. The north edge of the site is adjacent to Knollwood Drive. Sabino Canyon Road is a divided road with a continuous median across the frontage of this site. Additional distances are shown in Exhibit I-F.2.

3. PUBLIC TRANSIT

The existing public transit system as well as details for Route #37 (Pantano) are shown in Exhibit I-F.3. No new transit systems are proposed for this area.





Major, Scenic Routes shown in gold (River Road, Sabino Canyon Road and Cloud Road)
SunTran Bus Route shown in blue
Bus Stops shown as pink dots
School Crossing shown as green cross

Source: Pima County GIS

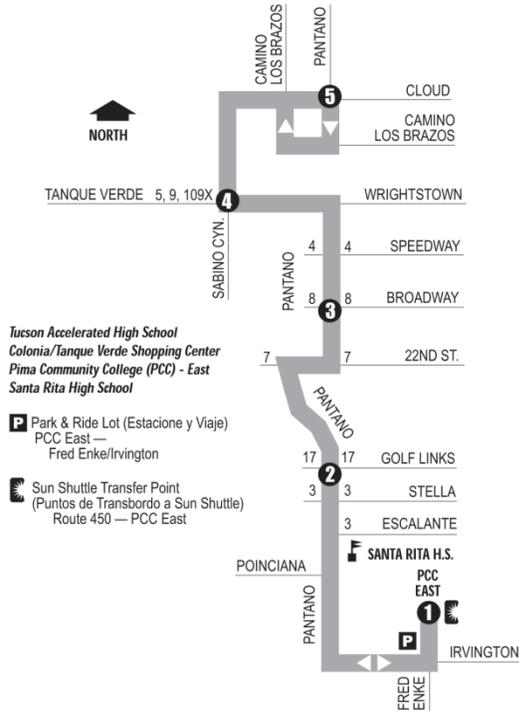




Source: SunTran Bus Route Map

Route 37

PANTANO



37

Route 37 M-F / Northbound

Route 37 M-F / Southbound

Route 37 M-F / Northbound					Route 37 M-F / Southbound					
PCC East	Pantano at Golf Links	Pantano at Broadway	Sabino Cyn. at Tanque Verde	Cloud at Pantano	Cloud at Pantano	Tanque Verde at Sabino Cyn.	Pantano at Broadway	Pantano at Golf Links	PCC East	To Route
1	2	3	4	5	5	4	3	2	1	
—	—	—	531	537	537	545	554	601	608	3
540	548	556	605	611	611	620	631	639	647	3
610	618	626	636	642	642	651	702	710	718	3
640	648	656	706	712	712	721	732	740	748	3
710	718	726	736	742	742	751	802	810	818	3
740	748	756	806	812	812	821	832	840	848	3
810	818	826	836	842	842	851	902	910	918	3
840	848	856	906	912	912	921	932	940	948	3
913	921	929	939	943	943	952	1003	1011	1019	3
943	951	959	1009	1013	1013	1022	1033	1041	1049	3
1013	1021	1029	1039	1043	1043	1052	1103	1111	1119	3
1043	1051	1059	1109	1113	1113	1122	1133	1141	1149	3
1113	1121	1129	1139	1143	1143	1152	1203	1211	1219	3
1143	1151	1159	1209	1213	1213	1222	1233	1241	1249	3
1213	1221	1229	1239	1243	1243	1252	103	111	119	3
1243	1251	1259	109	113	113	122	133	141	149	3
143	151	159	209	213	143	152	203	211	219	3
210	218	227	237	241	213	222	234	243	252	3
240	248	257	307	311	241	250	302	311	320	3
310	318	327	337	341	311	320	332	341	350	3
340	348	357	407	411	341	350	402	411	420	—
410	418	427	437	442	411	420	432	441	450	—
440	448	457	507	512	442	451	503	512	521	3
510	518	527	537	542	512	521	533	542	551	—
540	548	557	607	612	542	551	603	612	621	3
614	622	630	640	644	612	621	630	637	645	3
644	652	700	710	714	644	653	702	709	717	—
					714	722	731	738	745	—

Note: Route 37 buses do not stop on 22nd Street.
 Nota: Los autobuses de la Ruta 37 no paran en la Calle 22.



Route 37 SAT / Northbound

1	2	3	4	5
PCC East	Pantano at Golf Links	Pantano at Broadway	Sabino Cyn. at Tanque Verde	Cloud at Pantano
615	623	630	639	644
715	723	730	739	744
815	823	830	839	844
915	923	930	940	945
1015	1023	1030	1040	1045
1115	1123	1130	1140	1145
1215	1223	1230	1240	1245
115	123	130	140	145
215	223	230	240	245
315	323	330	340	345
415	423	430	440	445
515	523	530	540	545
615	623	630	639	644
715	723	730	739	744

Route 37 SAT / Southbound

5	4	3	2	1	To Route
Cloud at Pantano	Tanque Verde at Sabino Cyn.	Pantano at Broadway	Pantano at Golf Links	PCC East	To Route
644	652	701	708	715	3
744	752	801	808	815	3
844	852	901	908	915	3
945	953	1004	1012	1020	3
1045	1053	1104	1112	1120	3
1145	1153	1204	1212	1220	3
1245	1253	104	112	120	3
145	153	204	212	220	3
245	253	304	312	320	3
345	353	404	412	420	3
445	453	504	512	520	3
545	553	604	612	620	3
644	652	701	708	715	3
744	752	801	808	815	—

Route 37 SUN / Northbound

1	2	3	4	5
615	623	630	639	644
715	723	730	739	744
815	823	830	839	844
915	923	930	940	945
1015	1023	1030	1040	1045
1115	1123	1130	1140	1145
1215	1223	1230	1240	1245
115	123	130	140	145
215	223	230	240	245
315	323	330	340	345
415	423	430	440	445
515	523	530	540	545
615	623	630	639	644

Route 37 SUN / Southbound

5	4	3	2	1	To Route
644	652	701	708	715	3
744	752	801	808	815	3
844	852	901	908	915	3
945	953	1004	1012	1020	3
1045	1053	1104	1112	1120	3
1145	1153	1204	1212	1220	3
1245	1253	104	112	120	3
145	153	204	212	220	3
245	253	304	312	320	3
345	353	404	412	420	3
445	453	504	512	520	3
545	553	604	612	620	3
644	652	701	708	715	—

Source: SunTran Bus Schedule



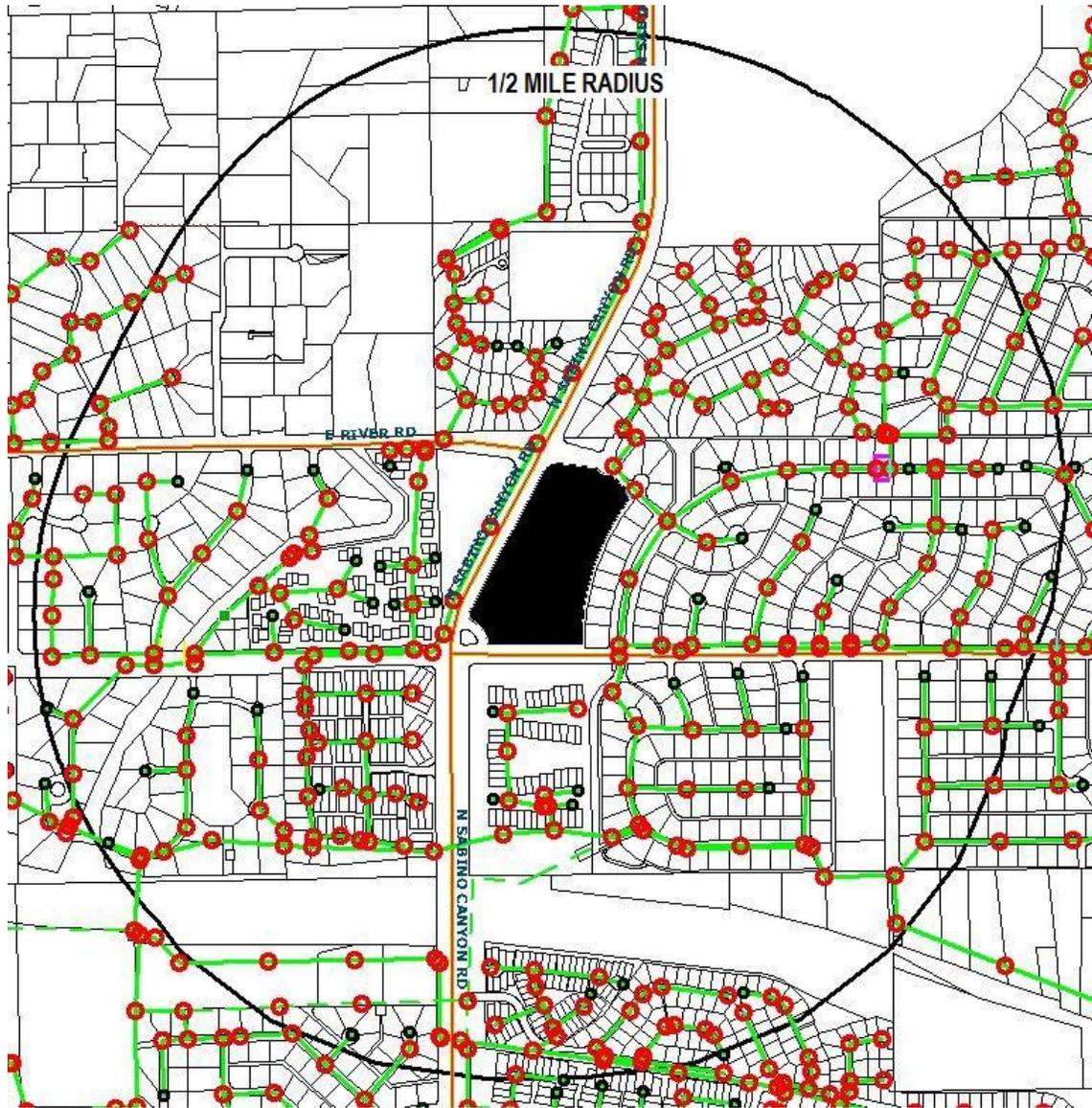
I-G SEWERS

1. EXISTING PUBLIC SEWER

The site is proposed to be served by public sewer. A map showing the size and location of the existing public sewer lines in relation to the project site is shown in Exhibit I-G.1. A survey map of the existing facilities immediately adjacent to the site is also shown.

2. SITE CONSTRAINTS FOR SEWER

The site has no known constraints which would impact the ability to be served by the public sewer. Existing Public Manholes 6160-05 and 6160-04 are located on the downstream side of the parcel on the west side of Sabino Canyon Road.



Source: Pima County GIS

I-H RECREATION AND TRAILS

1. EXISTING PARKS AND TRAILS

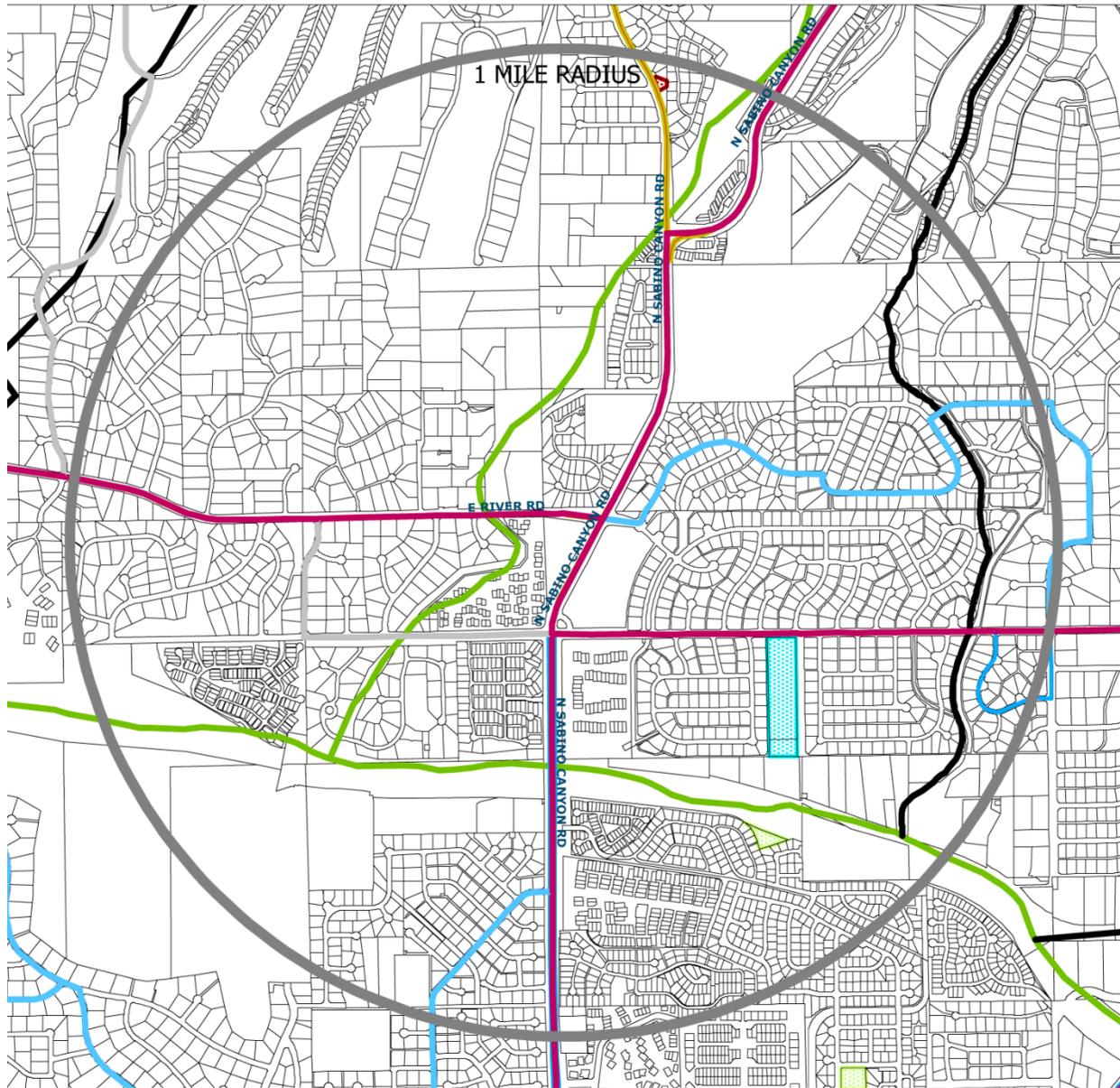
No public parks or recreation areas, accessible to the general public, are located within one mile of the site. The Ventana Canyon Wash Trail and Tanque Verde Wash Trail are located within one mile of the site, but not adjacent to or within the site.

The SunTran bus route is available on Sabino Canyon Road south of Cloud Road as well as on Cloud Road east of Sabino Canyon Road.

Several bicycle routes are available within one mile of the site. A bike route with striped shoulder is available on River Road, Cloud Road and Sabino Canyon Road, all adjacent to the site.

Points of interest within one mile of the site include the following: Fruchthendler Elementary School is located along Cloud Road southeast of the site and a fire department is located on Sabino Canyon Road north of the site.

Please see Exhibit I-H.1 for a map of these public elements located within one mile of the site.



- Green Line: Public Trail (Ventana Wash Trail and Tanque Verde Wash Trail)
- Black Line: Unknown Trail
- Light Cyan Line: SunTran Bus Route along Sabino Canyon Road and Cloud Road (south and east of intersection)
- Magenta Line: Bike Route with a Striped Shoulder
- Light Blue Line: Bike Route on a Residential Street
- Cyan Hatch: Fruchthendler Elementary School

Source: Pima County GIS

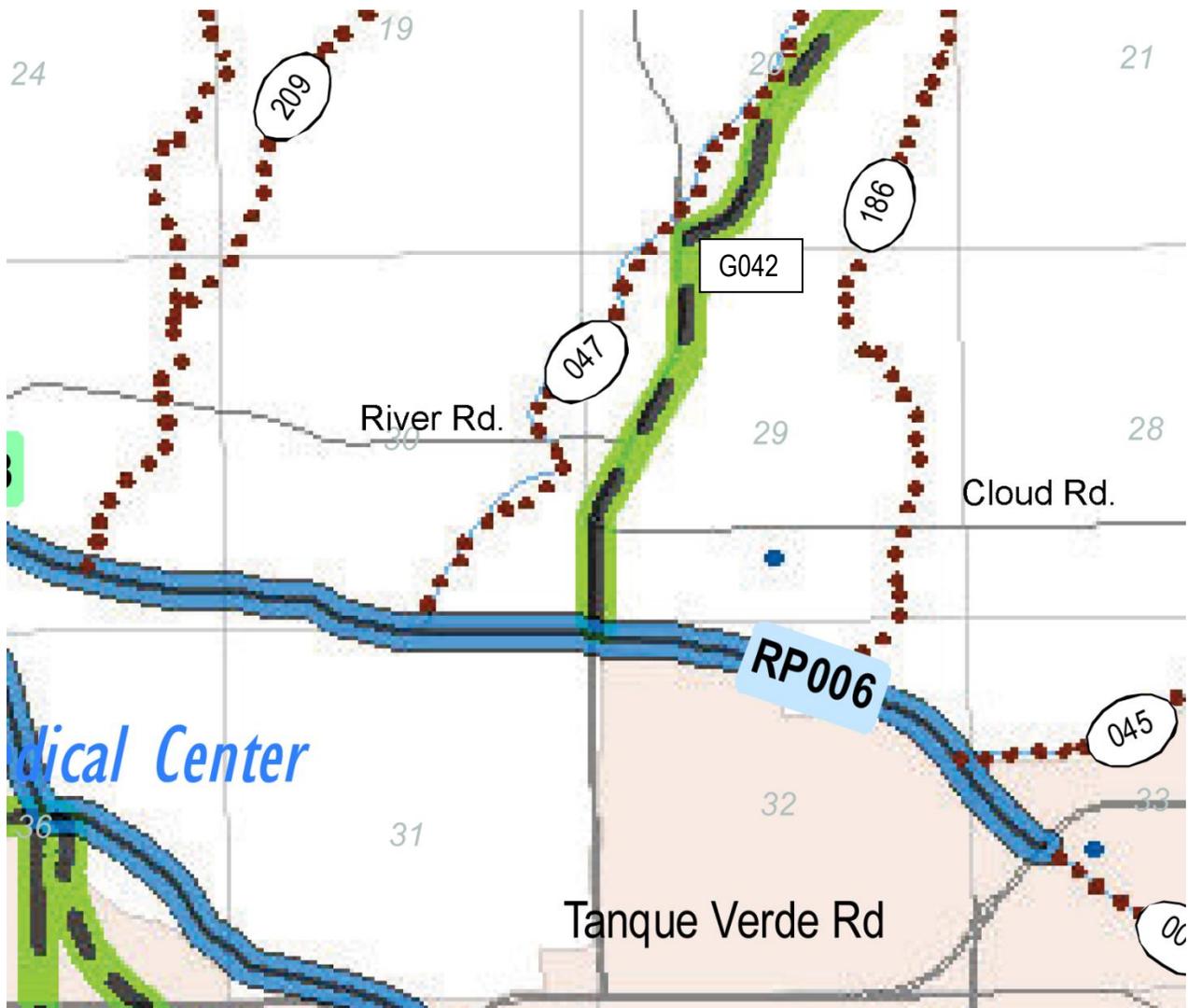
2. PIMA REGIONAL TRAIL SYSTEM MASTER PLAN

On the Pima Regional Trail System Master Plan, the following identifications have been made with close proximity to the site:

- G042: Sabino Canyon Road Greenway
- 045: Sabino Creek Singletrack Trail
- 047: Ventana Wash Singletrack Trail
- 186: Cloud Wash and Ridge Singletrack Trail
- 209 Tanuri Wash - East tributary
- RP006: Tanque Verde River Park
- Blue dot: Fruchthendler Elementary School

Sabino Canyon Road, immediately adjacent to the site is designated as a Greenway. The Sabino Canyon Road Greenway is a proposed four and six-tenths miles long greenway that connects the Tanque Verde River Park on the south to the Coronado National Forest on the north, approximately one and one-third miles north of Sunrise Drive. A Greenway is described as follows: Greenways are a corridor that typically features a path and trail, preserved native vegetation and/or landscape plantings, and pedestrian amenities. Greenways typically follow washes or drainage ways but can also be adjacent to roads. If the greenway is along a wash, the path and trail can be together on one side (equivalent to the Divided Urban Pathway) or one on each side of the wash. Greenways are similar to River Parks except that right-of-way width is less, features are less extensive, and at-grade crossings of streets are more common.

The Ventana Wash Trail, very close proximity to the site is designated as a Singletrack Trail. A Singletrack Trail is described as follows: These trails are predominantly located within preserved open space, washes, mountainous areas, non-developed, or protected areas. However, they are also located wherever a narrow trail is desired, including in urban and suburban areas. They are built with greater sensitivity to the existing natural environment and are therefore narrower than the 8-foot trail used in more developed parts of the system, but still should accommodate multiple user groups who prefer an unpaved surface. Singletrack Trails should be no wider than they need to be, with two to three feet being the recommended width range.



- G042: Sabino Canyon Road Greenway
- 045: Sabino Creek Trail
- 047: Ventana Wash Trail
- 186: Cloud Wash and Ridge
- 209: Tanuri Wash - East tributary
- RP006: Tanque Verde River Park
- Blue dot: Fruchthendler Elementary School

Source: Eastern Pima County Trail System Master Plan

I-I CULTURAL RESOURCES: ARCHAEOLOGICAL AND HISTORIC SITES

1. ARCHEOLOGICAL SITE RECORDS SEARCH

Principal Investigator David Stephen Ph.D. performed an Archeological Site Records Search. The summary of this search are shown in Exhibit I-I.1.

2. ARCHEOLOGICAL AND HISTORIC SITE FINDINGS

The field survey was completed by Dr. Stephen and 3 locations and 7 total artifacts were found on the project site.

3. ARCHEOLOGICAL RECOMMENDATIONS

Dr. Stephen produced recommendations for two of the archeological sites, AZ BB:9:441 (ASM) and AZ BB:9:43/90 (ASM). The summary of his recommendations are shown in Exhibit I-I.2

P.A.S.T. PROJECT SUMMARY FORM

P.A.S.T. JOB NO. 132012

SUMMARY. An on-foot cultural resources survey of private property (17.76 acres) near Tucson in Pima county identified cultural resources AZ BB:9:43(ASM), AZ BB:9:90(ASM) and AZ BB:9:441(ASM) and 7 isolated artifacts. The nature of two of the sites within the subject property and data about known sites in the study area and on adjacent lands suggests, that unless avoided completely, important cultural resources may be harmed by the proposed undertaking. Some of the cultural resources encountered may retain important information beyond that documented in this study. If the cultural resources cannot be fully avoided, further studies may be warranted on the property.

INTRODUCTION			
(D1)	Archaeological Survey Of The Aerie at Sabino Canyon East Project		
	Near Tucson, Pima County, AZ.		(D2) 5/10/2013
(D3) Agency Name:	Pima County		
(D4) ASM Permit No.	2013-052bl	Other Permits:	NA
(D5) Project Description:	The land is slated for residential development.		
(D6) Agency Reference:		Parcel:	114-33-002G
Project Sponsor:	STAR Consulting		
(D7) PROJECT LOCATION INFORMATION (see also attached copy of USGS map)			
County:	Pima	Vicinity of	Tucson AZ
Legal:	Within W2 of SW4 Section 29 T13S R15E G&SRB&M		
	AZ QUAD	USGS MAP NAME	MAP SCALE
	1. BB:9 SE	Sabino Canyon	7.5'
(D8) SURVEY INFORMATION			
Type:	Non-collection on-foot survey with systematic 20m transects or equal	Person-days	2
	17.76 acres AND/OR 0 miles long BY 0 foot wide right-of-way	Percent surveyed	100%
Land Ownership	Private		
Field Crew	D. Stephen	Project Director:	David Stephen
Field Work Dates	March 27 & 28, 2013	Ground visibility was effected	mildly
Additional Survey Records Submitted:	None	Artifact Collections Submitted to ASM:	None
(D9-10) CULTURAL RESOURCES WITHIN PROJECT AREA (see report narrative for additional information)			
Archives Researched:	ASM/AZSITE <input checked="" type="checkbox"/>	GLO <input checked="" type="checkbox"/>	SHPO <input type="checkbox"/> MNA <input type="checkbox"/> Other:
Numbers of eligible sites	Not established	Numbers of ineligible sites	AZ BB:9:441 (ASM)
Previously recorded sites	BB:9:43 & 90(ASM)	New sites found this project	AZ BB:9:441 (ASM)
Artifact scatters	NONE	Total sites	3
Sites within 160 meters	NONE	Isolate density/total artifacts	<1 per acre 7
Sites in 1.6 km radius	In addition to the above, eleven sites have been recorded (see Table A-2a)		
Ref. No. of Prior Surveys	No full coverage, 5 surveys covered small parts of parcel (see Table A-2b)		
(D11) RECOMMENDATIONS FOR FURTHER WORK (see also comments below)			
FURTHER WORK RECOMMENDED	NONE <input type="checkbox"/>	OR <input checked="" type="checkbox"/> MUNICIPALITY/AGENCY CONSULTATION	
SITE RECORDING <input checked="" type="checkbox"/>	MONITORING <input type="checkbox"/>	SUB-SURFACE TESTING <input checked="" type="checkbox"/>	DATA RECOVERY <input type="checkbox"/>
COMMENTS (see report narrative additional information)			
Based on the fieldwork and archival documentation, the cultural resources within the study area should be completely avoided. If not, further cultural resource studies should be undertaken on the subject property prior to the start of ground disturbing activities. These would involve the development of an appropriate treatment plan for the resources approved by the appropriate agency official			
Form Completed By	David Stephen	Form Rev. 1/02	Date 5/10/2013

Recommendations.

AZ BB:9:441(ASM). Based on the archival information, field methods, the observable surface indications and because none of the materials observed in association with this site have potential to provide important archaeological or historical information beyond what has already been obtained for these resources, P.A.S.T. supports no further studies for this resource. Although P.A.S.T. does not endorse additional archaeological studies, ground-disturbing activities on the property should not commence without authorization by the agency archaeologist(s).

AZ BB:9:43/90(ASM). The quantity and nature of artifacts within the subject property, as well as data about known archaeological sites in the study area and on adjacent lands, suggests important cultural resources will be impacted by ground disturbing activities associated with the development of the parcel. Based on the field work just completed and archival documentation, if the cultural resources identified have the potential to yield important information and they can't be avoided completely, further cultural resource studies should be undertaken on the subject property prior to the start of ground disturbing activities. These studies could include the development and implementation of an appropriate treatment plan that may incorporate eligibility testing or a systematic sub-surface testing strategy. Depending on the result of the sub-surface testing, it may need to be followed by a suitable level of data recovery based on a research design approved by the cognizant agency and municipal officials. These efforts should be documented in a report synthesizing the known information about the site and others in the vicinity. The treatment plan should be approved and implemented prior to the start of development related ground disturbing activities.

Ground disturbing activities on the property should not commence without consultation with the agency archaeologist(s) and the State Historic Preservation Office, as appropriate. There remains the possibility that ground disturbing activities could reveal the presence of heretofore undiscovered cultural resources. If such materials are discovered construction activities should stop. Consultation should be initiated with the appropriate agency archaeologist or official, and if applicable under ARS §41-841 *et seq.* the Arizona State Museum, to assess the potential significance of any materials unearthed. Under State law (ARS 41-§865 & §41-844) if human skeletal remains or funerary objects are discovered on either public or private lands the Arizona State Museum should be contacted immediately.

P.A.S.T.
Tucson, Arizona 85739-4265 USA
520.825.3536 pastarizona.com

I-J AIR QUALITY

The proposed development is a residential use and does not include any industrial facilities. Air quality analysis is not a requirement of this development.

I-K COMPOSITE MAP

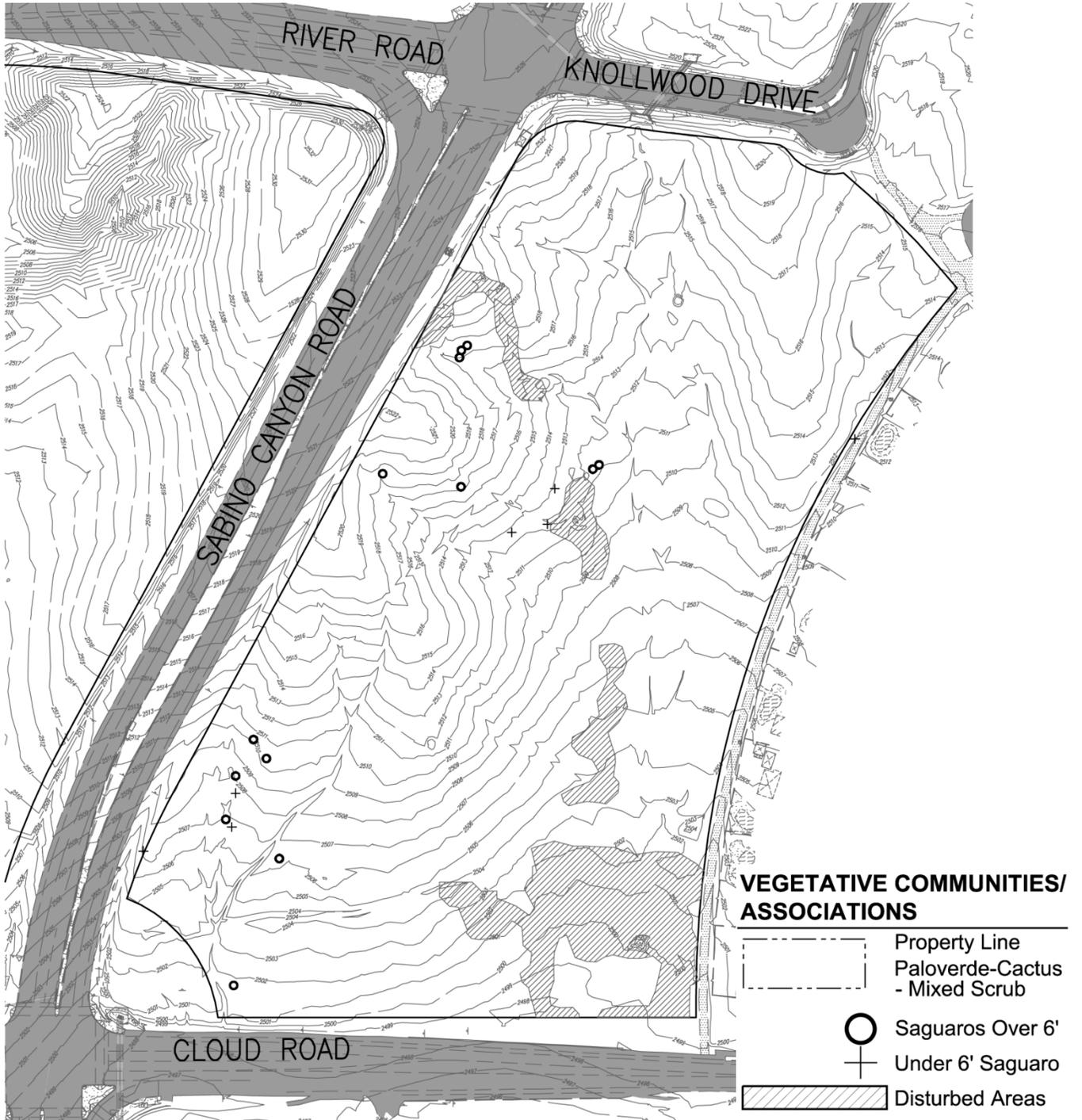
The following Composite Map shows the cumulative number of physical constraints that apply to specific locations of the site. This map can be used to identify areas that may require special evaluation in regards to proposed development due to the existence of several potential site constraints. Also identified on this map are any areas in which disturbance would be prohibited by any adopted Pima County Ordinance or policy.

The characteristics included on the map include the following design constraints:

- General topographic character
- Adjacent existing roads
- Existing saguaros and areas of disturbance

The following characteristics were found to NOT impact the site and are therefore not mapped:

- FEMA Flood Zone
- Restricted Peaks and Ridges
- Rock outcrops and talus slopes
- Slopes greater than 15%
- Sheet flooding areas
- Riparian areas
- Sources of perennial surface water
- Ironwood trees
- Pima pineapple cactus
- Needled spined pineapple cactus
- Areas of significant or important vegetation



PART II – LAND USE PROPOSAL

Alta Vista Communities, LLC (“Alta Vista”) is the proposed developer of approximately 15.14 acres located at the southeast corner of Sabino Canyon Road and River Road (the “Site”). Alta Vista is proposing to develop the Site as a unique, innovative, and upscale multi-family community in Pima County, known as Avilla Sabino East. Avilla Sabino East will be single-level, luxury multi-family community that will be an attractive presence in the area and an appropriate and compatible land use for the Site and surrounding area. Alta Vista is requesting the Site be zoned for CR-4, Multiple Residence Zone, along with approvals of the Preliminary Development Plan (PDP).

The remainder of this analysis is dedicated to describing the land use proposal and design concepts derived from the analysis of the site's characteristics, and to present sensitive design and mitigation techniques that respond to the unique site characteristics and the character of the surrounding neighborhood.

II-A PROJECT OVERVIEW

1. PROPOSED ZONING BOUNDARIES

A single zone is proposed for this parcel, CR-4. Multiple zoning districts are not requested. The proposed zoning will extend to the property line or center of adjacent public right-of-way as appropriate.

2. PROJECT DESCRIPTION

a. Avilla Sabino East is a hybrid of traditional single family and multi-family communities. The buildings are one story in height and about 90% of the site contains no more than 1 dwelling unit/building, creating a "single family subdivision" feel throughout the community. This land use will be compatible with the neighboring developments and will provide high quality, unique, and additional housing opportunities within Pima County, northeast of Tucson. The gated community is designed with move-up market finishes and features in an efficient setting. Upscale residents will be drawn to Avilla Sabino East's comfort, convenience, security and location. A single story residential project is the best of the options considered for this site. Interest has been expressed for uses including a charter school, multi-story assisted living, multi-story multi-family developments and a developer of commercial shopping centers. The Owner and Developer believe that the combination of single story and residential use will have the least impact on the surrounding neighborhoods while still effectively utilizing this Major Streets and Routes intersection parcel. Decorative masonry walls and wrought iron view fence in combination with enhanced bufferyards will help to mitigate the visual impact of the development. The proposed bufferyards are "enhanced" in a number of ways. In certain areas, the existing trees are being preserved in place, manicured to provide additional screening. In select locations, the wall is varied in and out around existing trees or a wrought iron fence is proposed. In nearly all instances, additional trees are provided on the inside of the wall, at a rate of one per back yard which will again provide an enhanced bufferyard. Traffic has been a concern of the neighbors. As such a traffic study will be completed and any recommendations from that study will be implemented to mitigate the traffic created by this development.

b. The subject property was designated entirely within a Comprehensive Plan Land Use Intensity of Low Intensity Urban (LIU-3.0). A Comprehensive Plan Amendment was approved for this site on September 17, 2013. Amendment Co7-13-01 changed the intensity from Low Intensity Urban to Medium-High Intensity Urban (MHIU). In accordance with the Comprehensive Plan the proposed community will be of medium density luxury rental homes. The proposed density is less than the 13 RAC maximum (condition of the approved Amendment). The requested zoning designation is CR-4, which is allowed in MHIU.

c. The applicant has met with the surrounding neighborhoods and neighbors on several occasions, conducted numerous phone conversations and has communicated with

neighbors by email. The general concerns as expressed by neighbors have included traffic, water use and the perceived negative impact of rental community. The nearby residential neighbors are concerned about increased traffic on River Road, Sabino Canyon Road, and Cloud Road. These concerns are addressed by proposing to install a right turn deceleration ingress lane and a right turn acceleration egress lane on Sabino Canyon Road. Offsite improvements have also been planned to reconfigure Knollwood Drive to facilitate increased traffic. To limit traffic on Cloud Road the connection from the site to Cloud Road will be exit only. The concern is also addressed by obtaining a Traffic Study which will address the current capacity of the adjacent roadway network.

The second concern which affected the site layout was the proximity to the adjacent single family houses along the east side of the property line. These existing homes have been constructed approximately 40' from their property line. Concerns expressed by these homeowners include the impact on their views that would be encroached on by 2-story developments, feeling of openness, noise levels and privacy. To address these concerns, the proposed site setback has been increased from 10' on the east side to 20'. In addition, only four homes are proposed along that building setback with the remainder of the area being dedicated to an open channel. With the existing 20' alley between the properties, the change will result in approximately 100' of separation between the existing homes and the newly constructed casitas. The proposed casitas will be single story, which also serves to reduce adjacent neighbor concerns. Pedestrian access to the alley way will be prevented by having no access points along the site perimeter wall. To limit vehicular noise and light pollution, the site has been designed with the rear yards of homes along the alley, not PAALs or parking areas.

During review of this project, staff has expressed concern regarding the massing and lack of variation along the eastern property line. Although this area abuts a public alley, existing single-story, low density SFR homes are opposite the alley. The Applicant has met individually with the majority of the homeowners along this shared alley (invitations were extended to all property owners, but some invitations for conversation were not accepted). These homeowners are considered to be critically important to the development team. Their specific concerns vary, but have each been met with an individual response. For example, one homeowner is concerned about noise from Sabino Canyon and asked that we place the largest home, double deep, directly west of his home as to block the traffic noise. Another homeowner asked that the homes behind him be rotated 90 so they could look at over the rear yards through a view corridor from their kitchen (the view is not of anything in particular but more a sense of openness). Other homeowners have specific trees along the property line that they enjoy and wanted to see remain. Although the landscape architect did not determine these trees to be of significant vegetation value from a code perspective, they are personally valuable to the neighbors. As such, the Applicant along with the landscape architect (to evaluate health) and the surveyor (to accurately locate)

walked the eastern property line flagging, evaluating and locating the priority trees for the neighbors. Those trees are shown on the Preliminary Development Plan and are proposed to remain in place. These trees are not nursery or planted trees but rather naturally grown. As such, the trees will be manicured by a landscaping company as to clean up the look, undergrowth, dead branches, etc. While onsite, the landscape company is also available to the adjacent neighbors (at no cost to them) to clean up their large trees that are otherwise difficult to maintain. The Applicant has made every effort along the eastern property line to respect the concerns of the neighbors. These efforts specifically include the following:

- Create a mass of sound dampening buildings with homes
- Increase the setback in the rear yard of homes
- Maintain several existing trees along the rear of homes
- Create a view corridor by rotating homes

The Agreements section of this report contains additional information.

d. Avilla Sabino East is a distinct, luxurious multi-family community that will provide an attractive presence in the area, will be an appropriate use on the Site, and its residential use is compatible with the surrounding area uses. The proposed PDP is consistent with the County's amended Comprehensive Plan. The development plans provide a combination of public and private open spaces, landscaping, and amenities. Avilla Sabino East will provide alternative housing opportunities within the County in a location that has direct access to employment and retail developments. The buildings' architecture respects the significance of the Arizona desert. The primary positive effect of the proposed development is that it is single story and a residential use. There are many potential uses for this Major Route intersection and the proposed use will present the least impact on the surrounding area while still utilizing the location and existing infrastructure. The negative effects include the development of a previously undeveloped parcel and additional traffic. Understanding that this property will be developed, the proposed use is a neighborhood friendly residential community for what is in effect a commercial property along two Major Routes. The additional traffic will be mitigated through implementation of any recommended improvements identified in the Traffic Study.

e. Growth is "smart" when it gives us great communities, with more choices and personal freedom, good return on public investment, greater opportunity across the community, a thriving natural environment, and a legacy we can be proud to leave our children and grandchildren.

According to www.smartgrowth.org, when communities choose smart growth strategies, they can create new neighborhoods and maintain existing ones that are attractive, convenient, safe, and healthy. They can foster design that encourages social, civic, and physical activity. They can protect the environment while stimulating economic growth. Most of all, we can create more choices for residents, workers, visitors, children, families, single people, and older adults-choices in

where to live, how to get around, and how to interact with the people around them. When communities do this kind of planning, they preserve the best of their past while creating a bright future for generations to come.

This community contributes to the very heart of smart growth. More specifically, the 10 principles are described below:

1. It is a dense (11 RAC) development located along three well maintained and major routes. No offsite transportation improvements or extensions are required to reach this development although offsite improvements will be completed to better facilitate traffic. These major routes can be used to direct the future residents directly to and from their places of work and commercial or retail centers.
2. The proposed development promotes a compact community with structures that vary from 1266 SF for the 1-bedroom duplex, 945 SF for the 2-bedroom unit to 1244 SF for the 3-bedroom unit. The structures are located 6 to 7 feet from each other in the dense areas of the project allowing for separate recreation areas and open space.
3. The unique and innovative design of the community is in response to the ever-changing needs of future families, couples, and individuals by providing luxurious living with ample amenities without a mortgage payment.
4. This development has an active recreational area at the center of the development with circulation within the development to encourage the resident to "get out" and walk to the mail box, pool, picnic area or dumpster.
5. The cluster arrangement of units allows for a courtyard feel at the entrances to private residences. Each cluster becomes its own little neighborhood within the neighborhood with the defensible space and social recognition occurring along the shared path from the common areas to each doorstep.
6. This development is proposing a continuous landscape palette throughout the site.
7. This development will serve to strengthen the neighborhood by providing a variety in the housing market and potentially provides additional students in the TUSD school district, which is currently under capacity.
8. The residents of this neighborhood will be able to walk the internal circulation path and will also be able to walk to the nearby bus stop. From that bus stop, the residents have transit service to the entire SunTran system.
9. The proposed density is predictable as it falls within the Comprehensive Plan designation, fair as the product is open to all qualifying applicants for a lease and cost effective due to the proximity to existing infrastructure.
10. The adjacent communities, as well as staff and elected officials, have provided significant input in the development decisions affecting this site.

f. The Owners are interested in building a high quality community that is healthy to live in and sustainable to operate and maintain. The green building techniques proposed at this site include the following:

- All duct connections are mastic/OBD registers/insulation and wired at the roof deck keeping all duct work in insulated space.
- The windows are dual glaze, soft coat, low E windows.
- All appliances are Energy Star rated
- Drainage swales lead from the roof scuppers to depressed landscape areas to harvest the rain water runoff.
- A drought resistant plant palette has been established by a local landscape architect for our arid climate.
- Low flow toilets and faucets are used in the bathrooms.
- All top plate penetrations, windows, doors and top of bottom plate to back of stucco system areas are sealed.
- Energy star fluorescent light bulbs are installed in every unit.

3. CONFORMANCE WITH SELECTED ORDINANCES

This site is NOT affected by the following zones:

- Gateway Overlay Zone
- Cluster Development Option
- Historic Zone
- Airport Environs and Facilities
- Hillside Development Zone

The site is affected by the Native Plant Preservation code and will be developed in accordance with Chapter 18.72 of the Pima County Zoning Code. This project will substantially conform with this code through the study, preparation and execution of a Native Plant Preservation Plan as prepared by an Arizona registered Landscape Architect and approved by Pima County. The PDP has allowed space for the preservation of the plants which are to remain in place and a location for the plants which are to be relocated on site. Additional mitigation vegetation will be provided throughout the site per the Landscape Plan as prepared by an Arizona registered Landscape Architect and approved by Pima County.

II-B PRELIMINARY DEVELOPMENT PLAN (PDP)

1. PRELIMINARY DEVELOPMENT PLAN

The Preliminary Development Plan is shown on the following pages of this analysis as Exhibits II.B.1.1 and II.B.1.2 along with acetate overlays (both with topographic contours and without contours).

2. PDP SUPPORT DATA

a. The gross floor area of commercial and industrial structures is 0 SF. The proposed use is multi-family residential.

b. The buildings are single story and have a varied roof line. The maximum building heights will not exceed the twenty-four (24') feet (Scenic Route) or the thirty-four (34') feet (Zoning Code) requirements. As designed, all the buildings are single story and are approximately 15'-6" in height. The height of the buildings allows for the homes to contain 10-foot high ceilings. The ceiling height will present additional storage opportunities for residents by allowing them to have an additional row of shelving within the closets. The closet shelving, when coupled with the private rear yards create adequate storage space for the residents' needs.

The 1-bedroom duplexes are 1266 SF (2 units per duplex structure).

The 2-bedroom units are 965 SF.

The 3-bedroom units are 1244 SF.

Eighteen (18) 1- bedroom units are proposed.

Sixty two (62) 2-bedroom units are proposed.

Eighty nine (89) 3-bedroom units are proposed.

The total square footage of 1-bedroom units is 11,394 SF

The total square footage of 2-bedroom units is 59,830 SF.

The total square footage of 3-bedroom units is 110,716 SF.

The total square footage of all buildings in the proposed development is 181,940 SF.

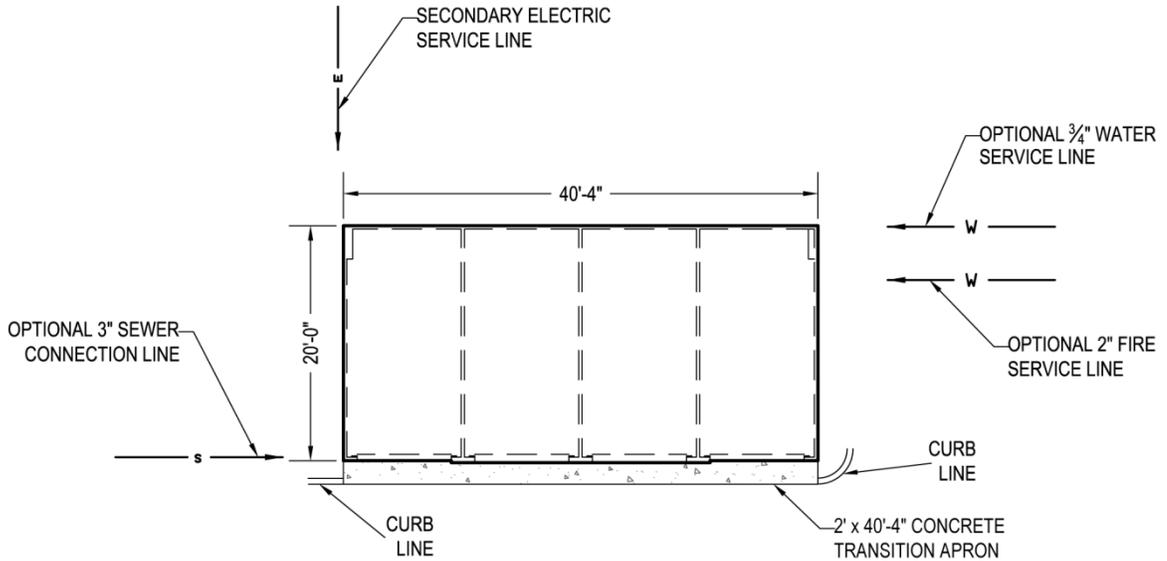
The CR-4 development standards state that maximum lot coverage is 60% for one story dwelling units (50% for main buildings). The proposed lot coverage is 17%.

A ramada is proposed near the pool area. The ramada is approximately 30' by 20' with a proposed height of less than 15'.

Garages will be provided for the use and benefit of the residents. The garage is a detached (from the homes), 4-car garage, which is positioned in the parking area. A sample location is provided on the PDP. The garage structures are used to create a visual offset in the otherwise linear

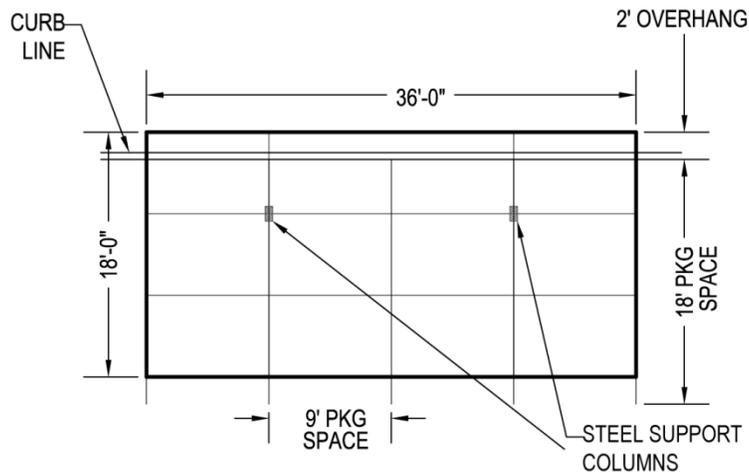
parking areas. The garages are proposed at a rate of one garage space for every 4 homes, for a total of 11 garages (44 garage parking spaces).

Typical Garage Detail:



Covered parking spaces will also be provided for the use and benefit of the residents. The covered parking space structure is a 4-6 car structure, which is positioned in the parking area. A sample location is provided on the PDP. The covered spaces are distributed evenly throughout the site with priority given to creating a convenient and direct route from each home to an assigned covered space. The covered spaces are proposed at a rate of one covered space for every home, for a total of 40-45 structures (~180 covered spaces).

Typical Covered Parking Structure:



- c. The total number of dwelling units proposed is 169 units.
- d. The maximum residential density of this site is 13 RAC (196 units). The maximum density is stipulated by condition of the Comprehensive Plan Amendment.
- e. The total number of parking spaces (required and provided) is 331 spaces.

One-bedroom:	1.0 per unit	1 X 18 =	18 spaces
Two-bedroom:	1.5 per unit	1.5 X 62 =	93 spaces
Three-bedroom:	2.0 per unit:	2 X 89 =	178 spaces
Visitor:	1.0 per 4 DU:	169 / 4 =	42 spaces
- f. The amount of landscaping is of sufficient intensity to create a pleasant and comfortable living environment. The density of plant material is dependent on the mature size of the vegetation and the shape and size of the areas to be landscaped. The planting design is tailored to provide shade onto buildings and walks while accentuating open space and courtyard features. The landscape palette is comprised of low-water use, desert native material that blends seamlessly with existing adjacent street landscaping and accentuates the architecture of the building design on this site.

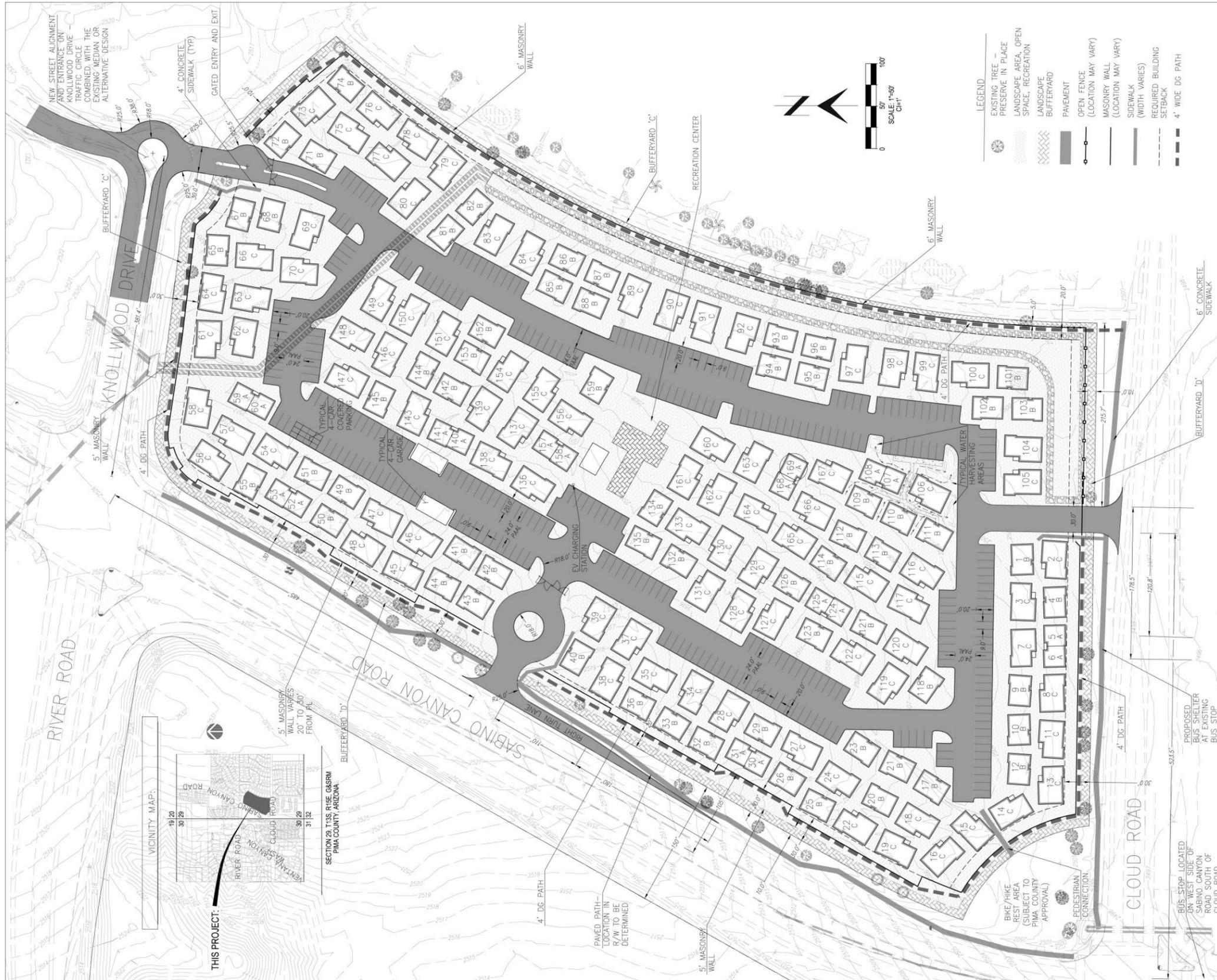
In addition to the above, the Applicant has discussed an alternative design in the bufferyards using larger tree specimens and more appropriate tree spacing to create the optimal screening in the bufferyards. ARC Studios, the landscape architect for this project, cautions the use of larger specimens for some species of trees due to the increased risk of shock on the tree and reduced ability of the tree to adapt to the new environment. Fast growing species (i.e.: Desert Museum Palo Verde or Hybrid Mesquite species) are recommended to be installed at the current code recommended sizes of 5 to 15 gallons. Larger tree sizes are recommended for slow-growing

species such as Ash, Pistache, Texas Mountain Laurel or Mesquites. These species of trees, and larger specimens, could be used as a feature element in the landscape.

g. The recreation requirement for this development is 460 SF per unit. The functional open space and recreation areas contribute to meeting these design criteria. The recreation area is focused around the pool amenity located near the center of the development and a connecting DG pedestrian around the perimeter of the community.

The designated areas are based on the preliminary development plan and are subject to small variation with the approved Recreation Area Plan and Landscape Plans. The total recreational area is 77,740 SF.

The Developer is also proposing to design and construct a bike and hike rest area in the Pima County owned, triangle shaped parcel to the northeast of the Sabino Canyon Road and Cloud Road intersection. This rest area would be subject to Pima County approval of the design and use of public right-of-way or a purchase agreement to acquire the parcel.





	AVILLA SABINO EAST PREFERRED APARTMENT BUILDERS	PRELIMINARY DEVELOPMENT PLAN	No. DATE: REVISIONS:	1	DATE: 03/06/14
			No. DATE: REVISIONS:	1	DATE: 03/06/14

II-C TOPOGRAPHY AND GRADING

1. DEVELOPMENT/MITIGATION ON STEEP SLOPES

This site does not naturally have areas of slopes of 15% or greater, with a 10' or greater natural fall.

2. NATURAL AREAS UNDER HDZ

The site does not have any area that meets the criteria for defining HDZ slopes.

3. AREAS TO BE DISTURBED, REVEGETATED AND NATURAL

The entire parcel is subject to disturbance. The open space of the development around the parking areas, homes, recreation facilities, etc will be revegetated per the Landscape Plan. All of the site will be either impervious due to constructed improvements or revegetated in accordance with the landscape design.

As this description fits the entire parcel, an exhibit has not been provided.

4. CHANGES TO NATURAL GRADE

The proposed site does not have any areas of grading which results in a cut or fill of greater than 5' of elevation change.

5. ENGINEERING/DESIGN FEATURES FOR MITIGATION

The section of text is not applicable to this site.

II-D HYDROLOGY

1. RESPONSE TO HYDRAULIC CONSTRAINTS

The drainage design for the proposed development will consist of two primary elements: 1) a storm drain system to convey offsite runoff through the property from Knollwood Drive to Cloud Road; and 2) a storm drain system to collect onsite runoff and direct it south to Cloud Road. The two systems will be identified in this discussion as the (offsite runoff) Conveyance System and the (onsite runoff) Collection System. The Conveyance System will consist of both large, (60" diameter), underground storm drain pipes and open channel flow. The Collection System will consist of small diameter underground storm drain pipes interconnecting catch basins and a series of underground storage chambers. Both the Conveyance System and the Collection System will outlet into a large open space, (Outlet Area), at the southeast corner of the property, before being released into the downstream drainage system.

2. REASONS FOR FLOODPLAIN ENCROACHMENT

Under existing conditions the 100-year floodplain and erosion hazard setback impacts approximately 4.7 acres or 31% of the parcel. The 100-year discharge is slightly above the 100 cfs threshold where it enters the subject property, and consists of runoff from upstream adjacent development that does not include retention or detention. For this reason it is highly likely that, prior to upstream development, much of the natural wash through the property was not subject to flows exceeding 100 cfs, and was therefore non-regulatory prior to upstream development. The existing wash is not designated Riparian Habitat. At the southeast corner of the subject property, where the greatest concentration of runoff occurs, an area of nearly an acre was disturbed by installation of a well by Metropolitan Water District, removing most vegetation and grading over the natural stream channel. It would not be feasible to develop the subject property for the proposed apartment use without reducing the amount of area required to convey the storm water runoff through the development.

3. POST DEVELOPMENT DISCHARGE

Under developed conditions runoff will exit the subject property along the south property directly into the Cloud Road right-of-way, as under existing conditions. By diverting runoff from the southwest corner of the project to the internal Collection System the 100-year peak runoff exiting the site at the southwest corner will be reduced from 28 cfs to 17 cfs. Through the use of above- and below-ground detention elements the 100-year peak discharge exiting the site at the southeast corner will be reduced from 205 cfs to 190 cfs. All onsite and offsite flows will be collected in the Outlet Area, which will consist of landscaped open space, with a shallow depression (6") to promote water harvesting within the Outlet Area. This major discharge release from the Outlet

Area will include erosion protection downstream of the outlet weir to prevent erosion of the roadway shoulder area.

4. ENGINEERING/DESIGN FEATURES FOR MITIGATION

The offsite runoff Conveyance System will consist of parallel 60" diameter CMP pipes. The pipes will capture offsite runoff immediately north of the subject property, where it is currently released at a culvert outlet headwall, and convey it underground approximately 800 feet, where it will be released at an outlet headwall into an open channel. The Main Channel, consisting of a 2.5' deep trapezoidal channel with a 15' wide, unlined bottom and 3:1, riprap-lined sides, will convey runoff approximately 350 feet to Outlet Area located at the southeast corner of the subject property. At the upstream end the culverts will receive a 100-year peak discharge of 103 cfs. At intermediate points along the run the Conveyance System will also receive post-detention discharge from the Collection System.

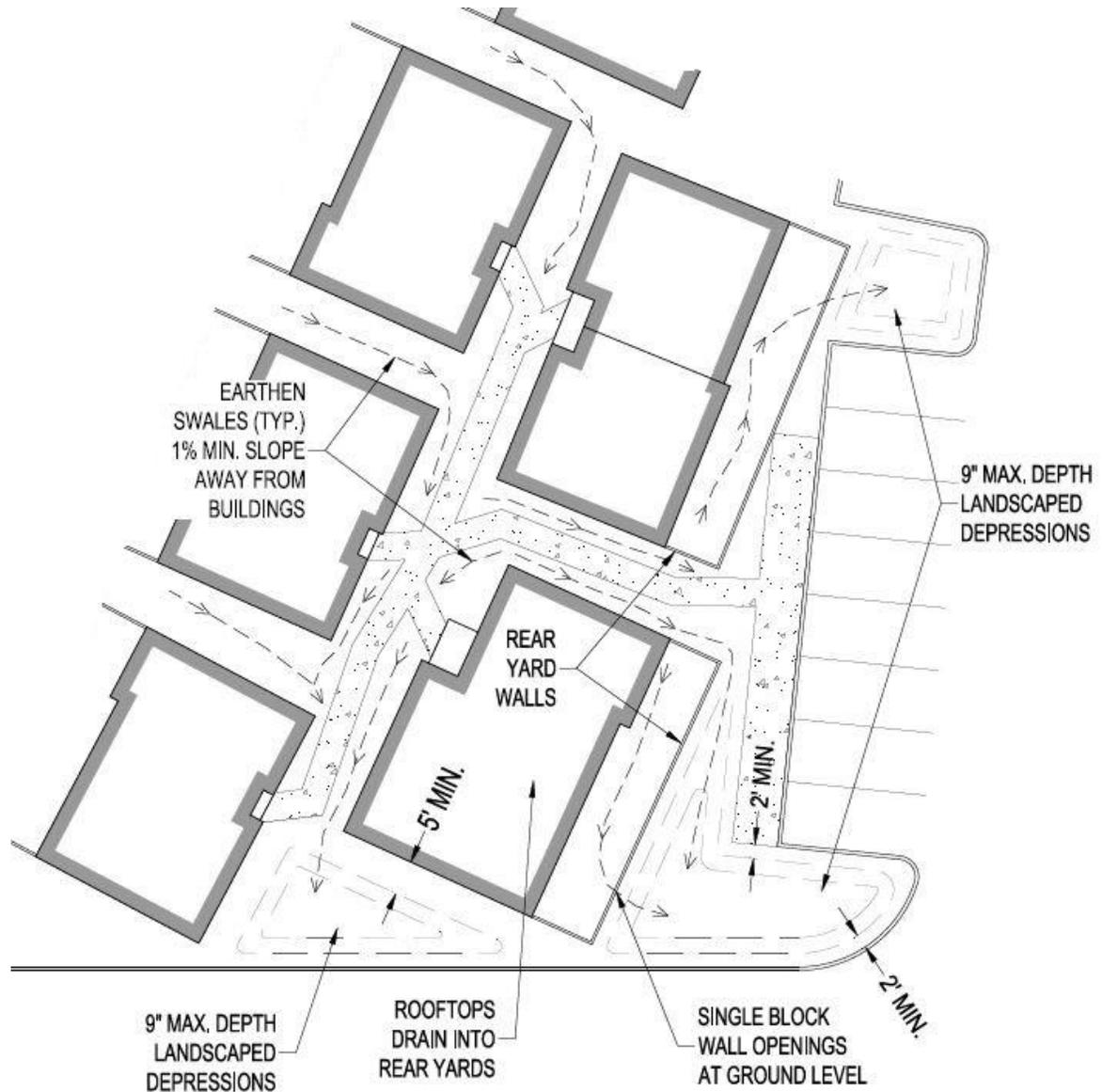
The onsite Collection System will be system of catch basins to collect onsite runoff, underground retention/detention chambers, and 18" to 30" CMP pipes to interconnect the elements. Each catch basin inlet will be located within pavement and will be sized to capture the 100-year event without overtopping the curb height. Each catch basin will direct runoff into a retention/detention facility, usually an underground chamber. The 105' long underground retention/detention chambers will consist of a double row of 100' long, 5' diameter CMP pipes located below paved parking areas. The chambers will include 13' long, 5' diameter header pipes with manhole access risers for maintenance on each end. Each chamber will have a total storage volume of 4,400 cubic feet, with at least 1,470 cubic feet of that volume, (33%), remaining empty during the 100-year event in each of the proposed chambers. This unused volume will be available to fulfill the "freeboard" detention requirement for underground storage. The different sections of the onsite Collection System will discharge post-detention runoff either into the next downstream storage chamber, into the 60" diameter Conveyance System, into the Main Channel or directly into the above ground Outlet Basin.

The above ground Outlet Area will occupy 5,500 square feet in the southeast corner of the project. The area will capture both onsite and offsite runoff and serve two functions. The geometry of the Outlet Area is designed to release runoff from the 100-year event through a 180 lf weir in a manner that closely approximates existing surface flow from a storm event under existing conditions. In addition, by providing depressing the area 6" below the outlet weir, the area will provide approximately 2,900 cubic feet, (0.07 acre-feet), of shallow water harvesting storage.

The Pima County Regional Flood Control District has recommended a condition to capture the "first flush" or first half inch of rainfall in water harvesting basins and or swales and then route the

overflow to the underground cisterns. This capture should include runoff from all impervious surfaces, including rooftops, parking lots, and disturbed areas. Throughout the design development phase, the use of pervious pavement on the parking spaces will also be considered. A conceptual example of the water harvesting area is shown in the attached detail on the PDP. The detail illustrates the use of swales to direct the roof top gutter line to the nearby landscape area. Said landscape area would then be depressed to contain the water for infiltration.

Typical Water Harvesting Area:

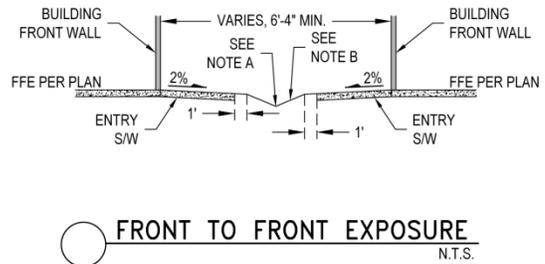
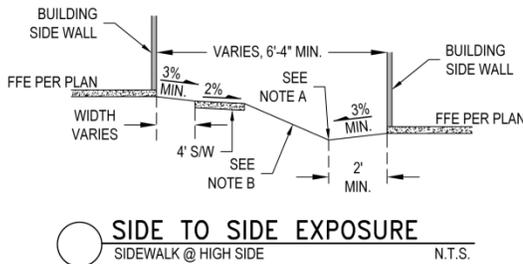
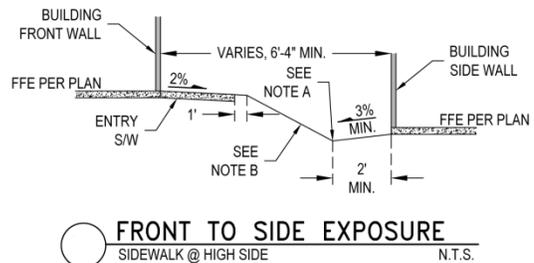
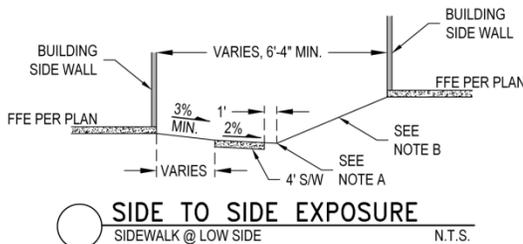
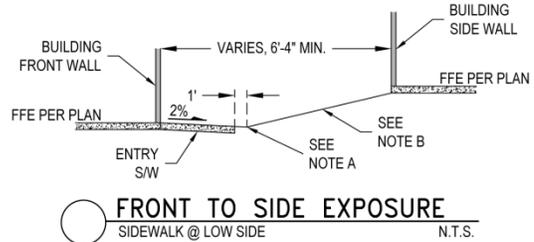
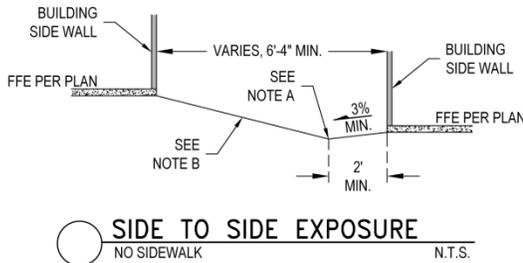


Typical Swale Grading between Buildings:

GUIDELINES FOR GRADING BETWEEN BUILDINGS:

NOTE A: PROVIDE FLOWLINE FOR CONTINUATION OF POSITIVE DRAINAGE AWAY FROM BUILDING EXTERIOR AT A MINIMUM SLOPE OF 1%. PROVIDE D.G. GROUND COVER PER LANDSCAPE PLAN (AT A MINIMUM).

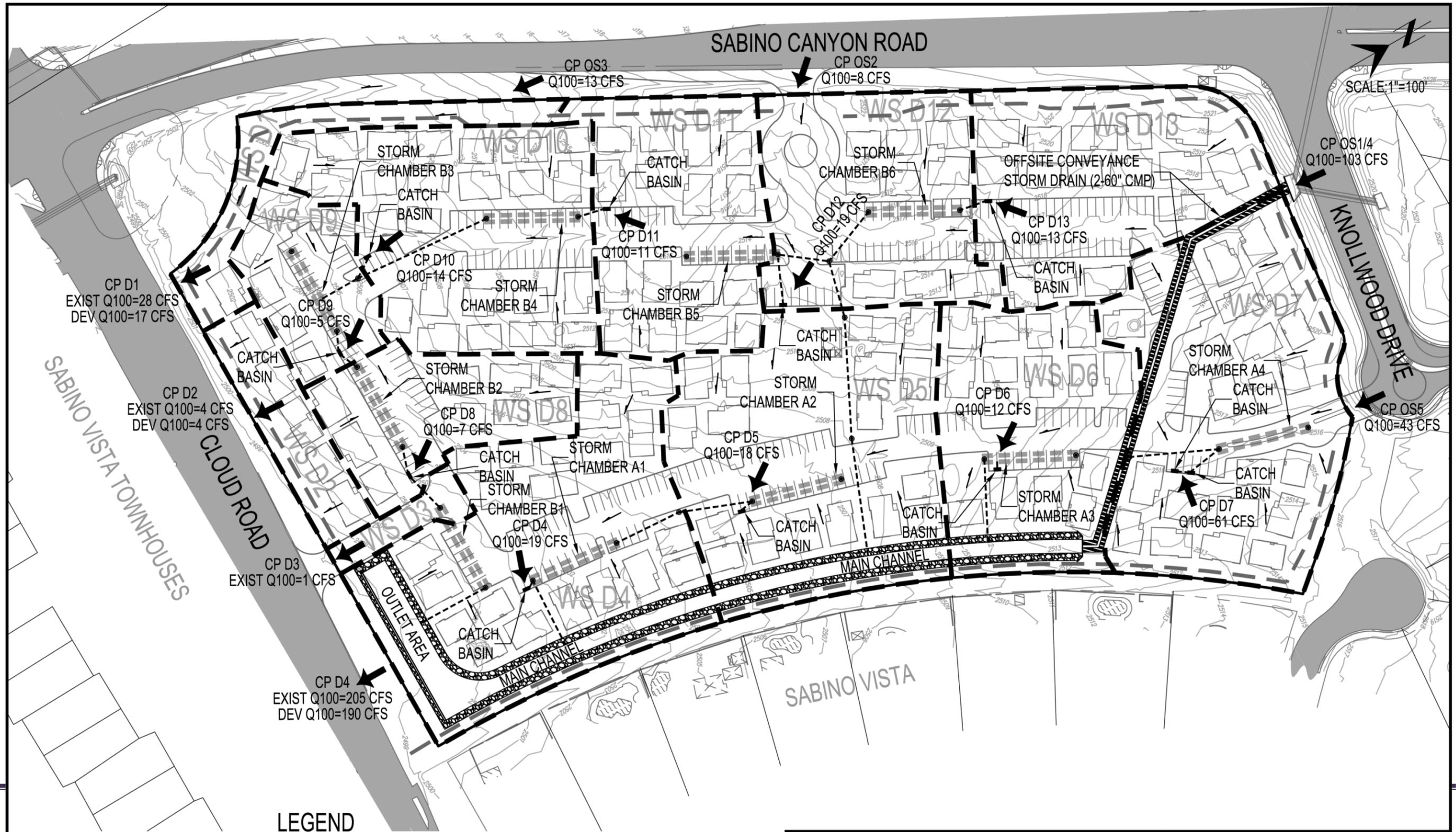
NOTE B: SLOPE AWAY FROM BUILDING EXTERIOR AT 3% MINIMUM SLOPE. PROVIDE SLOPE TREATMENT IN ACCORDANCE WITH GEOTECHNICAL REPORT RECOMMENDATIONS.



5. CONFORMANCE WITH APPLICABLE POLICIES

The proposed drainage design described above will be detailed in a Hydrology Report which will be submitted with a Development Plan in accordance with Pima County standards. Detention will be provided within the drainage design. This project will employ "First Flush" water harvesting throughout. The proposed development as designed will not result harm due to flooding or

erosion, either onsite or offsite. All methods and procedures employed in this study shall be consistent with local and state requirements and local standards of practice.



SCALE: 1"=100'

LEGEND

-
-
-
-



STAR
CONSULTING

5405 E. PLACITA HAYUCO
TUCSON, AZ 85718
(520) 425-3795*(520) 425-3764
geoff@starconsultingaz.com
PROJECT NO. 12039

II-E BIOLOGICAL RESOURCES

1. IMPACTS TO BIOLOGICAL RESOURCES

This project will use the selective plant methodology for compliance with the Native Plant Preservation Ordinance. Species on site shall be inventoried per the requirements of the Native Plant Preservation Ordinance.

Vegetation will be inventoried and mitigated per the requirements of the native plant preservation code.

All saguaros are found within the proposed improved areas. These will likely be impacted by proposed structures, grade changes, utilities, or drainage improvements. The Saguaros on site have been preliminary evaluated for overall health viability and transplant ability per the requirements of the Site Analysis Report. ARC Studios anticipates that only the Saguaros of 10' and under and other cacti will be salvageable. Final evaluations will be submitted once a full inventory and evaluation is preformed per the requirements of the Native Plant Preservation Code and plan submitted for review and acceptance.

Salvaging of trees and shrubs is not recommended due to the poor soil conditions that will incur poor root ball preservation. The limited number of trees on site maybe mitigation with new specimens of similar genesis and species would better serve the overall development and community as a whole.

2. PROTECTION OF LANDSCAPE CONNECTIVITY

The section of text is not applicable to this site.

II-F LANDSCAPE AND BUFFER PLAN

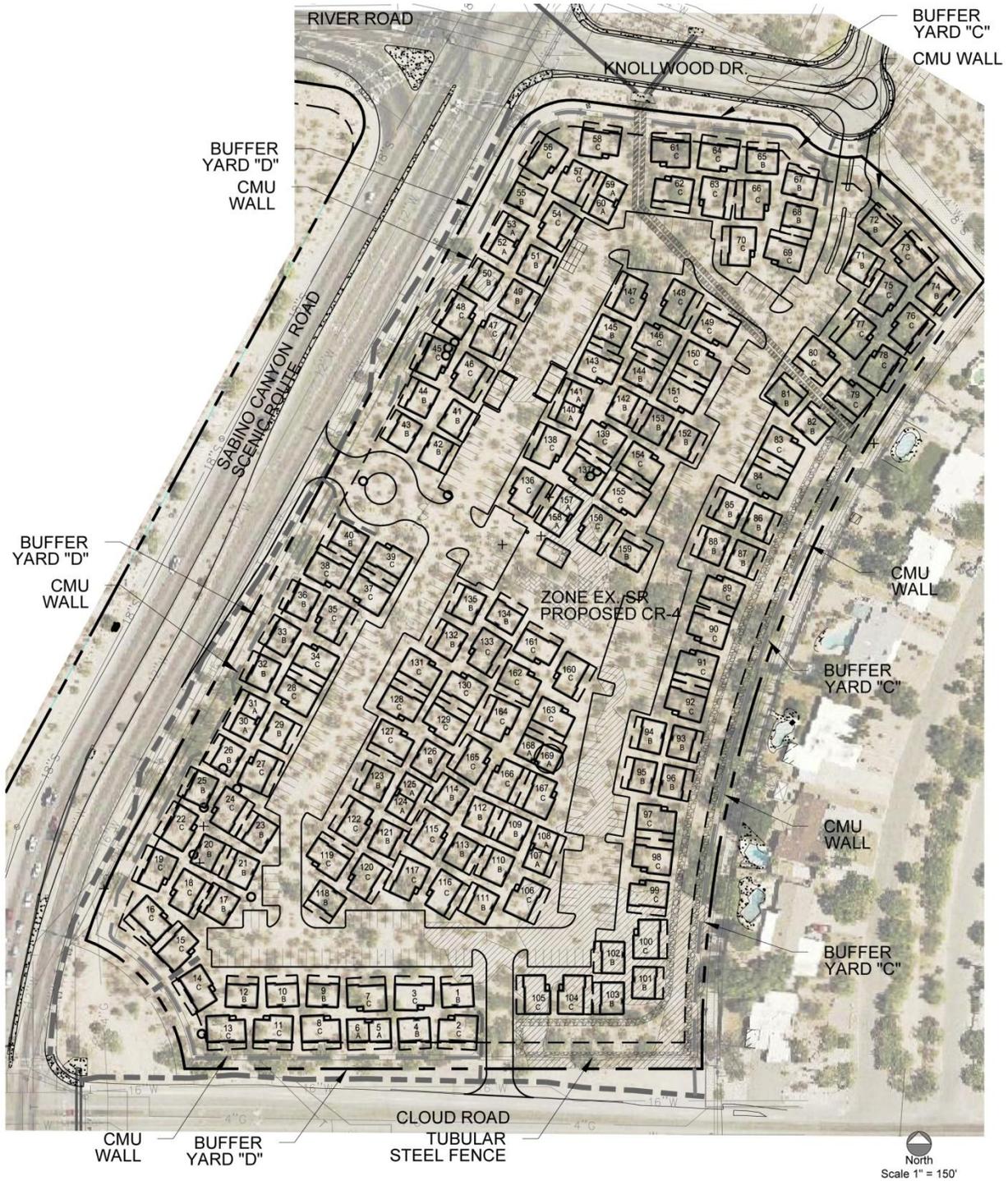
Exhibit II.F illustrates the buffers that will be utilized. Site is zoned SR and proposed zoning is CR-4. The Adjacent property East is zoned CR-2. There is an existing alley that separates the properties. The differing zones will require a Buffer yard “C” as the existing alley is not wide enough to satisfy the buffer yard requirements but will aid in mitigating the impacts from the proposed development. Roads North, South and West of property will require buffer yards. Sabino Canyon Road is Scenic Major Routes and requires a Buffer yard ‘D’. Widths will vary from 10’ to 20’ allowing flexibility of design and incorporating existing vegetation and site amenities to serve this development and surrounding community. Knollwood Drive and Cloud Road are side yards and require buffer yard “C” designation. Widths will vary from 5 to 20 feet allowing flexibility of design, incorporating existing vegetation, and site amenities to serve this development and surrounding community. Perimeter development that integrates screening requirements and planting along with pedestrian walks or trails and passive water harvesting improve the projects integration with the existing community. All buffer yards will be in compliance with Chapter 18.73 of Pima County Zoning Code.

Landscape and site planning within proposed multifamily development presents an opportunity to improve vegetation diversity. Site amenities both on the interior and exterior of the site will allow community collaboration and social interaction. The required buffer yards and enhanced interior landscape will create a diverse mix of native and drought tolerant vegetation that should improve the current declining conditions of the site. The landscape areas offer sustainable design principles for inhabitants and surrounding community through outdoor living spaces. Low water and native species such as native mesquites, palo verde, acacias and willows that are evergreen and deciduous provide consistency to Sonoran Desert Habitat. Vegetation shall be used to enhance the building and site features with emphasis on reducing heat island effects from hardscape areas, parking, and drive. Plantings shall be used to assist in energy conservation along the east, south, and west building facades. Accent and seasonal plant species will attract birds and other native wildlife and application of decorative rock, native flowering seed mix should minimize dust.

Water use is a critical element of sustainable practices in Pima County. Passive water harvesting shall be utilized where possible. Depressed landscape areas and careful selection of native and drought tolerant plant material allows reduction to the overall water demand. Our goal is to maintain or reduce the overall site runoff of the current built development and encourage soil percolation of ground water. Minor grading modifications to landscape areas will take full advantage of seasonal rain and reduce downstream storm water. Passive water harvesting techniques will offset the demand on irrigation and allow the plant material to thrive from seasonal rainfall. The irrigation systems shall be designed to ensure that the equipment utilizes the latest

technology for water conservation and climate adjustment devices like evapotranspiration and soil moisture sensors.

EXHIBIT II.F.1 BUFFERYARD PLAN



Source: ARC Studios, a TMHS Company





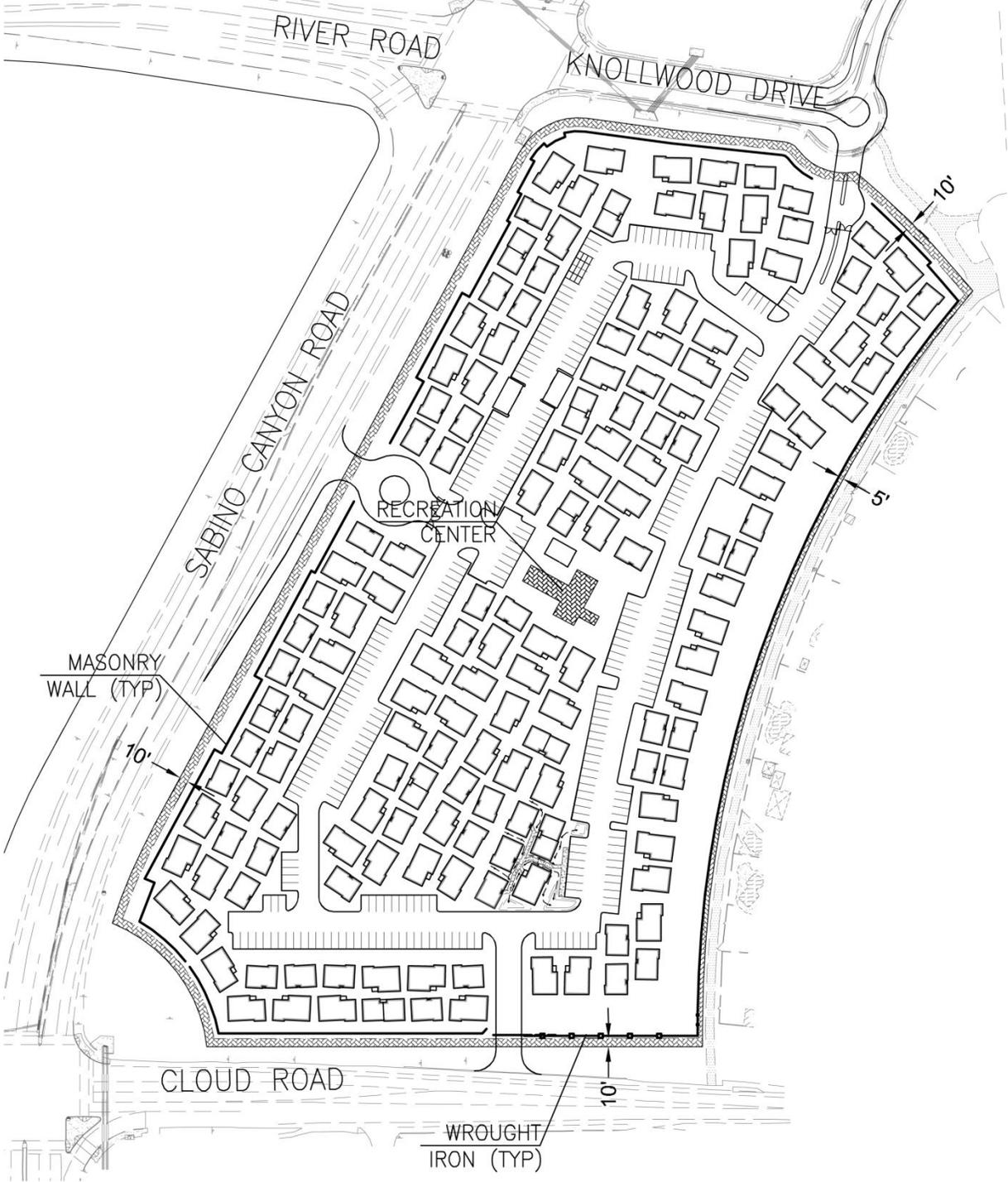
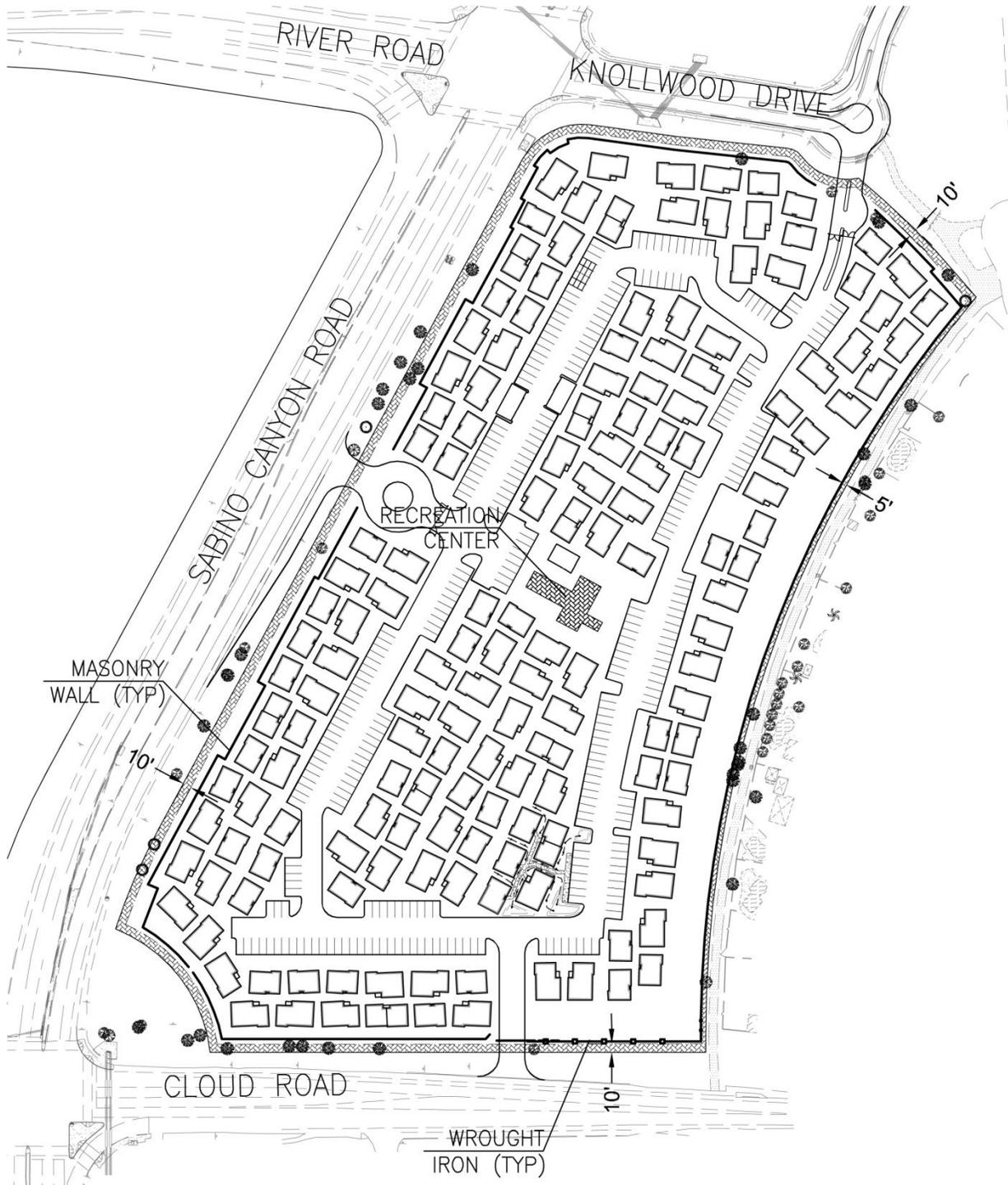


EXHIBIT II.F.4 EXISTING TREES TO REMAIN



II-G VIEWSHEDS

1. IMPACTS TO VIEWS

The views and vistas from adjacent properties and the adjacent scenic routes will be affected by this development. The existing site is undeveloped and contains native vegetation. While the mountains are seen in the distance in this area, due to the elevation of the area the views are not significant (for example when compared with the views from Sunrise Drive). The existing vegetation blocks the mountain views. The critical component of this development as relates to the limited views is the proposal for single story homes. A 6' wall in combination with the 5' bufferyard is proposed along the eastern alley. The impact on the existing views is minimized by the increased building setback along the eastern property line, building rotation and placement, building architecture and vegetation. In addition, the existing homes in this area all consistently have 5' to 8' masonry walls surrounding the back yards which is very similar in nature to the proposed masonry wall.

2. MITIGATION OF VISUAL IMPACTS

The mitigation of the visual impacts starts with the architecture and position of the buildings. The buildings are only one story in height, which is less than what would be found in a traditional multi-family community, single-family residential subdivision (1 and 2-story homes), and commercial developments. The placement of the buildings and yard walls has been designed to interact with the streetscape and adjacent developments by varying the roof lines and orientations, providing small scale pedestrian courtyards, amenities and landscape features, and architectural detail.

The proposed community consists of luxurious residences with three distinct building types that are arranged in a variety of different groups and combinations to provide a distinct feel for residents. The architectural theme is a "desert modern" style that consists of different sized and layered volumes, materials, and strategically placed linear horizontal elements. Please see Exhibit II-G.2, the Preliminary Building Elevations. Varied roof heights of the buildings enhance the visual depth of the community and increase the amount of shade provided to each elevation with all buildings being only 1-story. In addition, the main entrances to the residences are recessed to enhance the depth of the elevations and provide additional shading. The various elements of the development harmoniously blend a desert contemporary architectural style with color, form and texture.

Mechanical equipment throughout the development will be screened through the use of parapet walls on the building elevations.

Unique to the Site are depressed trash enclosures. The trash enclosures will be partially located below grade. The depressed trash enclosures will be screened with landscaping and be painted to match the colors from the buildings. The location of the enclosures will provide residents with easier access to dispose of their trash, eliminating the need to throw trash over an enclosure or

placing it outside the refuse container because the lid cannot be opened. Connections to the trash enclosures are provided via sidewalks or by convenient access from the drive aisles. Designing the trash enclosures in this fashion provides a more aesthetic solution and better security.

Lighting for Avilla will comply with the County's Lighting Code. External lighting will be appropriately located and designed to prevent light from spilling onto adjacent properties.



Preliminary Type 1 Building (1-bedroom unit duplex) Building Elevation Rendering (Front)

Source: *Anderson Studio Architects*



Preliminary Type 1 Building (1-bedroom unit duplex) Building Elevation Rendering (Rear)

Source: *Anderson Studio Architects*



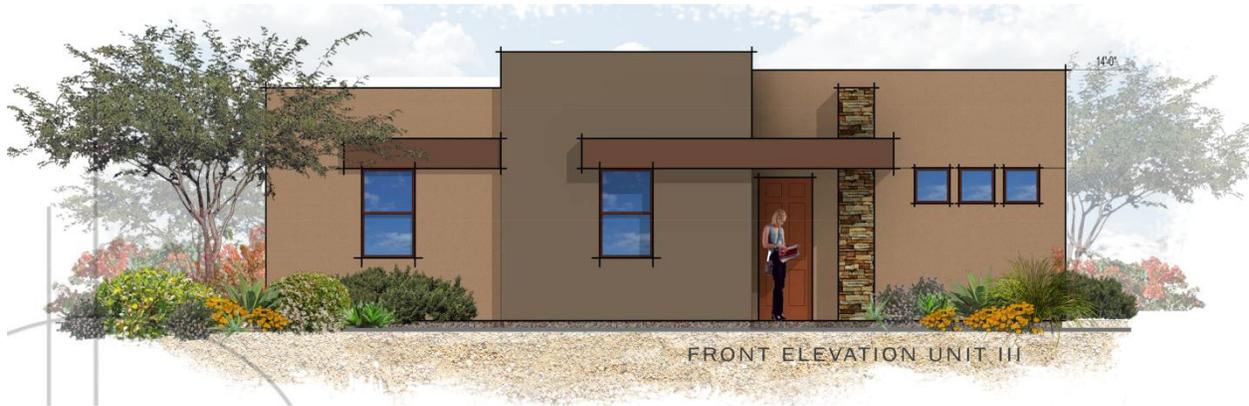
Preliminary Type 2 Building (2-bedroom unit) Building Elevation Rendering (Front)

Source: *Anderson Studio Architects*



Preliminary Type 2 Building (2-bedroom unit) Building Elevation Rendering (Rear)

Source: *Anderson Studio Architects*



Preliminary Type 3 Building (3-bedroom unit) Building Elevation Rendering (Front)

Source: *Anderson Studio Architects*



Preliminary Type 3 Building (3-bedroom unit) Building Elevation Rendering (Rear)

Source: *Anderson Studio Architects*

II-H TRANSPORTATION

1. PROPOSED INGRESS AND EGRESS

The primary access point to Avilla Sabino East is located south of the River Road and Sabino Canyon Road intersection on Sabino Canyon Road. The access point is proposed to be a right in and right out access only. A secondary access is proposed for Knollwood Drive, and will be a full access intersection. A third access point is located on Cloud Road, and is egress only. A median break is not existing or proposed along this section of Sabino Canyon Road. The distance between the proposed entrance and the existing intersection is approximately 500 feet. Please see Exhibit II-H.1 for an illustration of the proposed driveway spacing.

2. OFF-SITE IMPROVEMENTS

Off-site Improvements are anticipated for this development. A Traffic Study will be completed as a part of the Development Plan process and as a part of the neighborhood discussion. That Traffic Study will identify improvements that may be required to the intersection or the entrance to the proposed development. It is anticipated that a right turn lane may be warranted or desired for the primary entrance. There are also plans for improvements to the existing Knollwood Drive roadway north of the site.

An existing, unimproved, bus stop is located along Cloud Road near the southwest corner of the proposed project. It is recommended that bus stop improvements such as a concrete pad and shelter be considered by SunTran and PCDOT. If the appropriate licensing and permitting requirements are able to be worked out, such improvements should be constructed at the location determined by said agencies along with appropriate pedestrian connecting sidewalks.

3. CHANGES TO ADT

The project will generate:

134 morning peak hour trips,

179 evening peak hour trips,

1,190 weekday trips.

This increase in vehicular trips during the weekday peak hours will not require any major improvements along Sabino Canyon Road or at the nearby intersections, with the exception of a longer (30-40 feet) southbound left turn lane at Cloud Road. These site volume projections will add

about six percent to the total traffic volumes on Sabino Canyon Road and at the two closest intersections (Sabino Canyon Road/Cloud Road and Sabino Canyon Road/River Road).

The intersections of Sabino Canyon Road/River Road and Sabino Canyon Road/Cloud Road will continue to operate at the same levels of service as existing during the peak hours. These intersections currently operate at LOS D or better during the morning and evening peak hours.

The project driveways on Sabino Canyon Road, Cloud Road and Knollwood Drive will operate at LOS B/C during the morning and afternoon peak hours.

A northbound right turn lane at the project driveway on Sabino Canyon is numerically warranted based on Pima County criteria. The northbound right turn lane on Sabino Canyon Road should be designed with 110 feet of storage and a 180 foot taper.

None of the study area intersections or segments is listed in Pima County's 2012 Safety Management Report (SMR). The SMR includes a list of priority projects to improve safety conditions within Pima County.

There are no sidewalks along Sabino Canyon Road or River Road in the vicinity of the project. There is a separate path on the south side of Cloud Road. All of the project roadways are designated as bike routes.

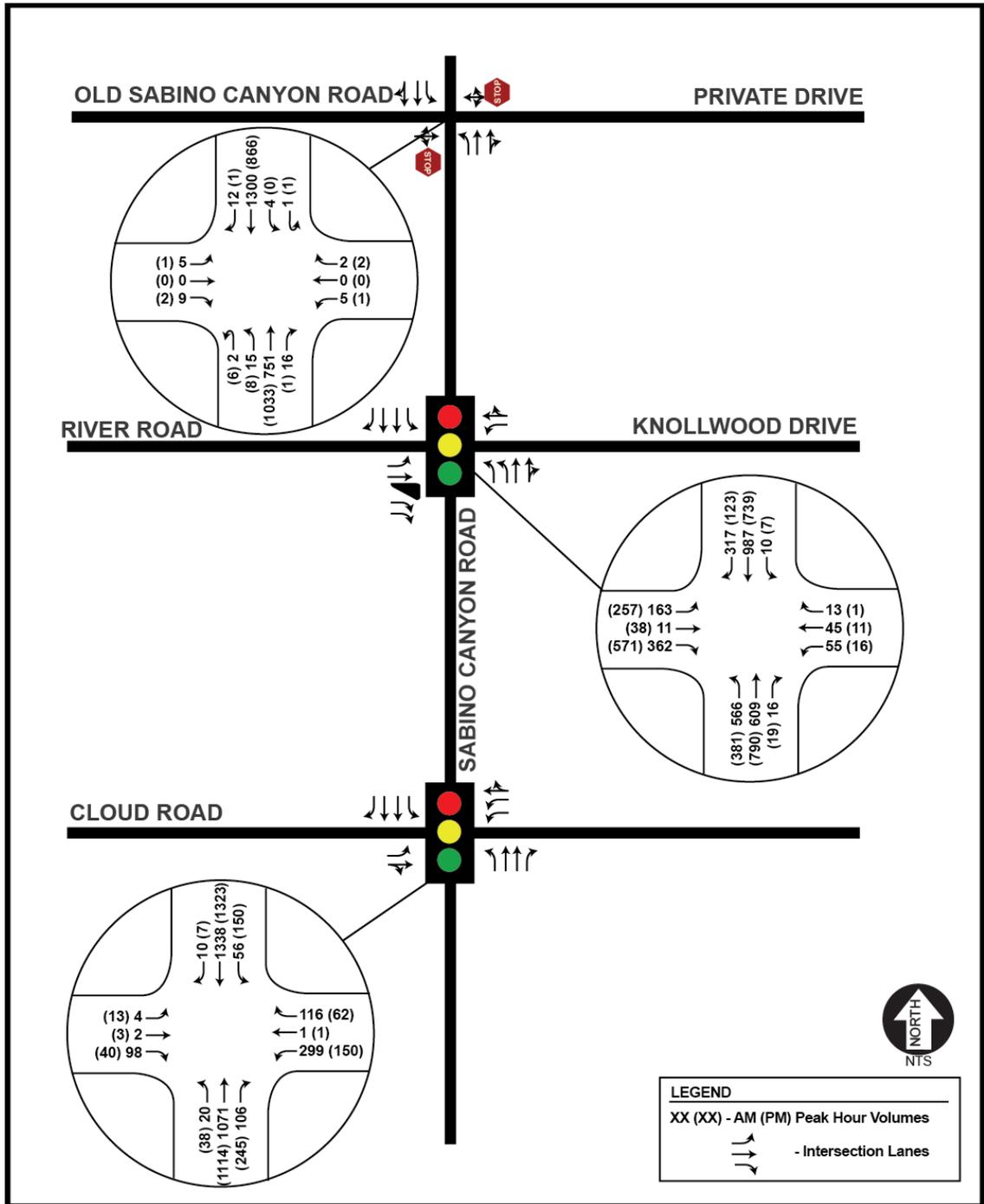
Sun Tran Route #37 provides fixed transit route service in the vicinity of the project. Route 37 (Pantano Road) runs north on Sabino Canyon Road and continues east on Cloud Road. Route 37 runs on 30 minute headways during the weekdays and on one hour headways during the weekends. The bus stop is located at the northeast corner of Sabino Canyon/Cloud Road, which is walkable from this development.

The project intersections must be designed to provide adequate sight distances, in conformance with Pima County standards, found in the Pima County Roadway Design Manual.

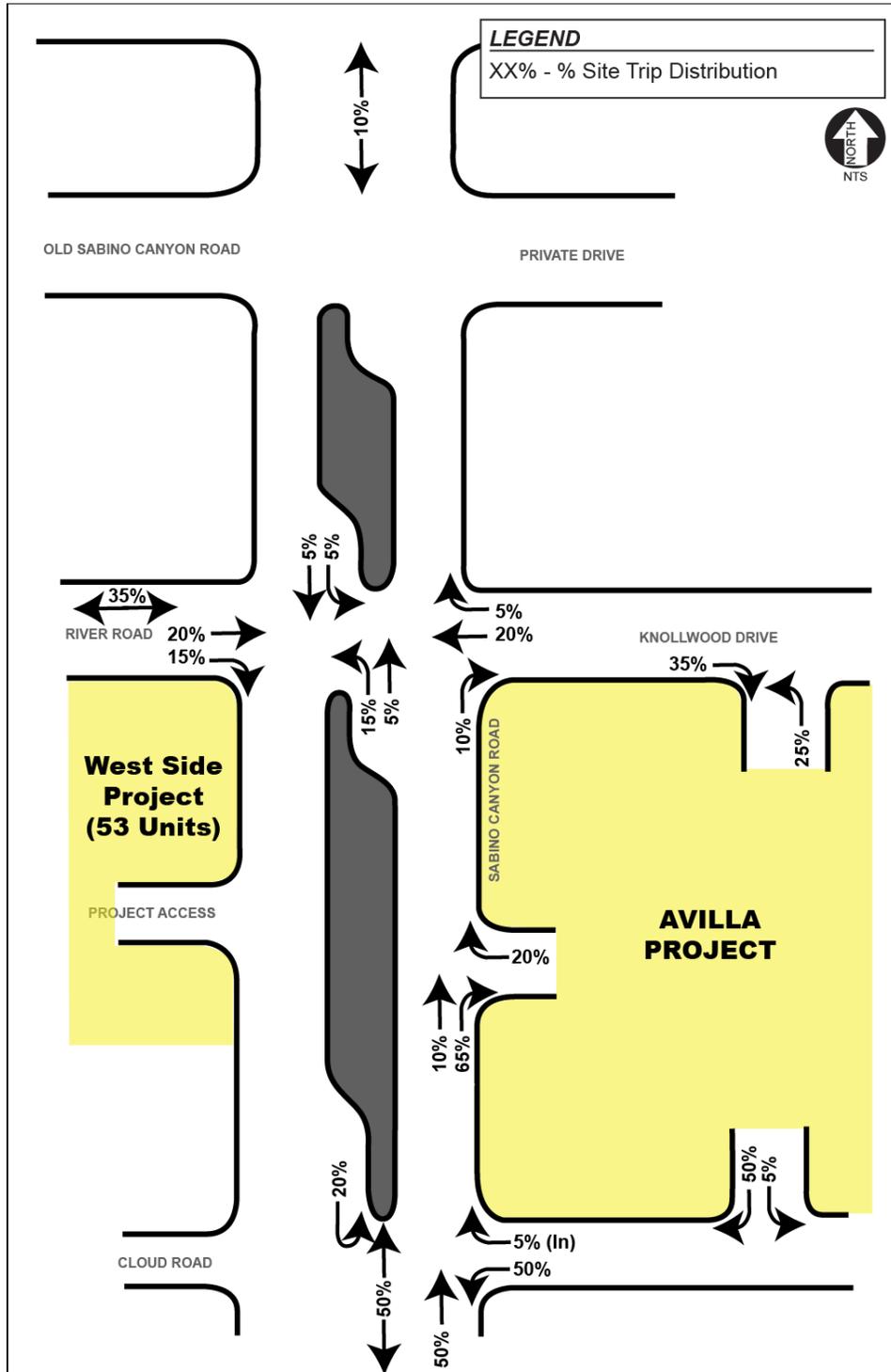
All signs and pavement markings associated with the recommended improvements must conform to the MUTCD and Pima County requirements.

The following illustrations further quantify and describe the surrounding traffic.

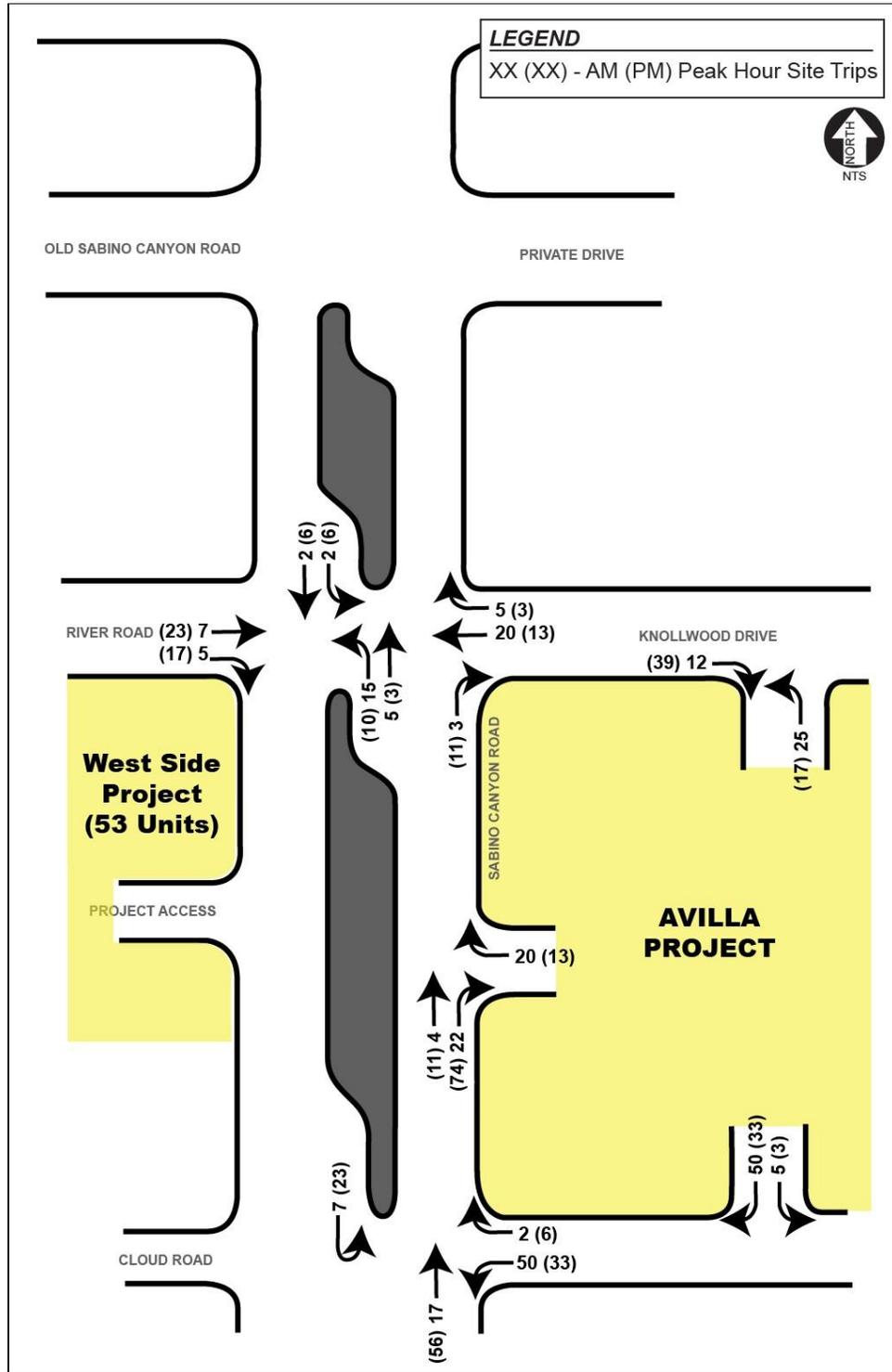
Existing Volumes:



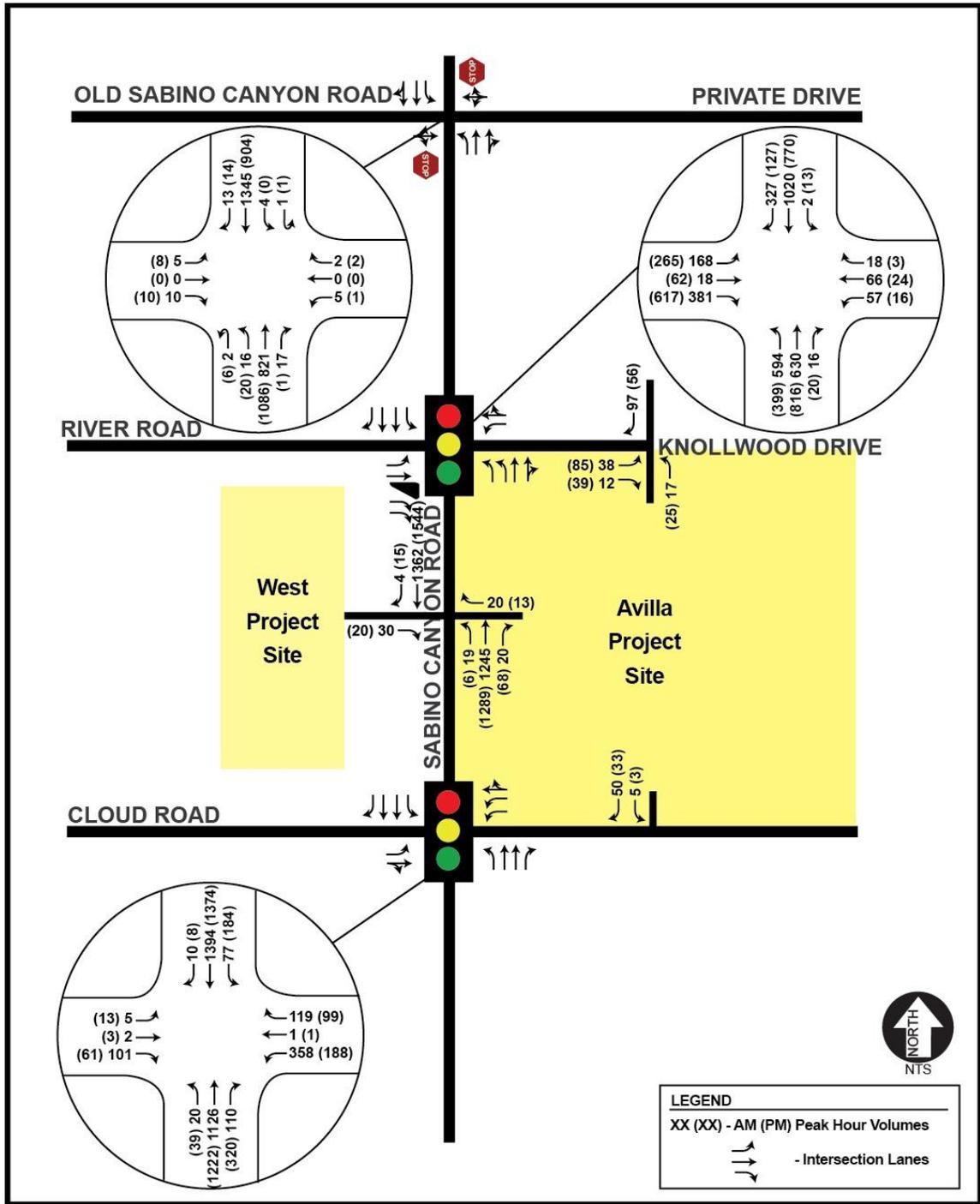
Project Trip Distribution:



Project Trips:



2014 Traffic with Project Trips:



4. TRAFFIC IMPACTS ON SURROUNDING LOCAL STREETS

The entrance has been designed to be well south of the minimum corner clearance requirement for the intersection. While this development will contribute to the traffic on the adjacent streets, the increase is marginal for major routes such as River Road and Sabino Canyon Road. It is anticipated that the impact to surrounding streets will be minimal.

In addition to the typical roadway improvements, the Applicant has worked extensively with the neighborhood to the north and Pima County staff to determine an appropriate solution to the current substandard knuckle at the east end of Knollwood Drive. The current concept is for a traffic circle in conjunction with maintaining the existing median in Knollwood. This concept is presented on the PDP.

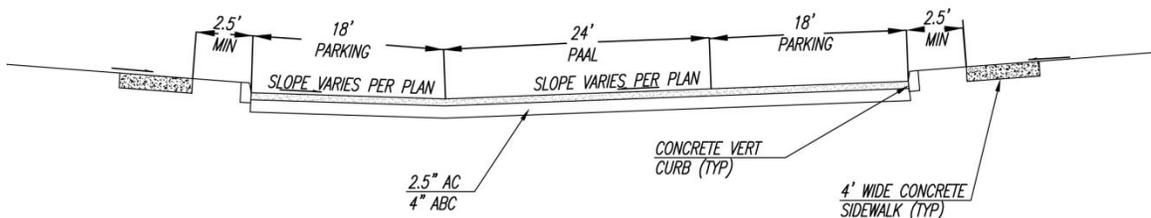
5. BICYCLE AND PEDESTRIAN PATHWAYS

As shown in Exhibit II-H.5, a sidewalk will be provided throughout the community connecting homes with the recreation areas and the pool area near the center of the site, a paved path will be provided along the roadway frontages and a DG path will be provided around the perimeter. This development has also focused on providing a safe route for children to walk or bike to school. The nearest school is Fruchthendler, located east of the proposed development and south of Cloud. This school is located along an existing bike route on Cloud Road. This community is proposing a bicycle connection to Cloud Road from the community. Once on Cloud Road, the children can use the existing bike route to traverse to school. The nearest middle and high schools are not located within a reasonable distance to encourage children to commute via bikes or walking paths.

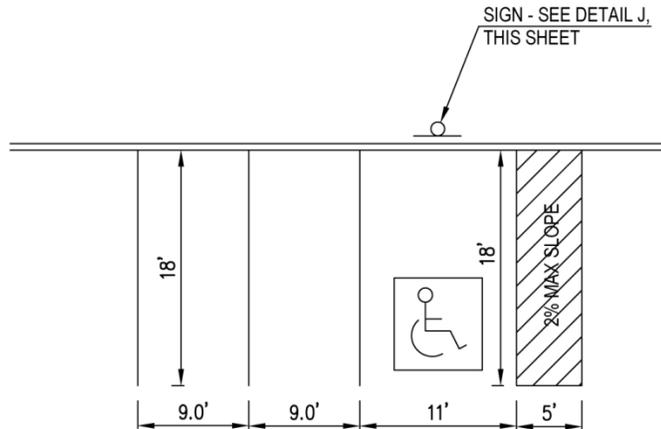
6. PROPOSED ROADS

The entire site will be gated; therefore, the interior circulation will be via private parking area access lanes with 24 foot width in accordance with Pima County Subdivision Street Standards. The following typical sections are preliminary and provided as a reference:

Typical Parking Area Section:



Typical Parking Space Detail:



7. CONCURRENCY CONFORMANCE

Curtis Lueck and Associates is the traffic engineer for this project and contributes the following to this report discussion: This project will comprise 3.5% of the total daily traffic on River Roan and on Sabino Canyon Road when built out. As this percentage should not be considered "significant", the site meets transportation concurrency for all major roads in the area. No public improvements are schedule for adjacent roads other than turn lanes at the entrances, as determined by the traffic report. Per staff, there is a secondary concurrency concern associated with traffic volumes on Sabino Canyon Road. River Road is functioning over capacity in this area. Traffic capacity for LOS D for Sabino Canyon Road is 37,600 ADT based on current (2010) Highway Capacity Manual criteria. Sabino Canyon Road between Cloud Road and River Road has a 2013 traffic count (Pima County) of 31,000 ADT. Sabino Canyon Road between Tanque Verde Road and Cloud Road has a 2013 traffic count (Pima County) of 35,272 ADT. Current traffic counts for River Road are 15,613 ADT, while capacity is around 13,320 ADT.

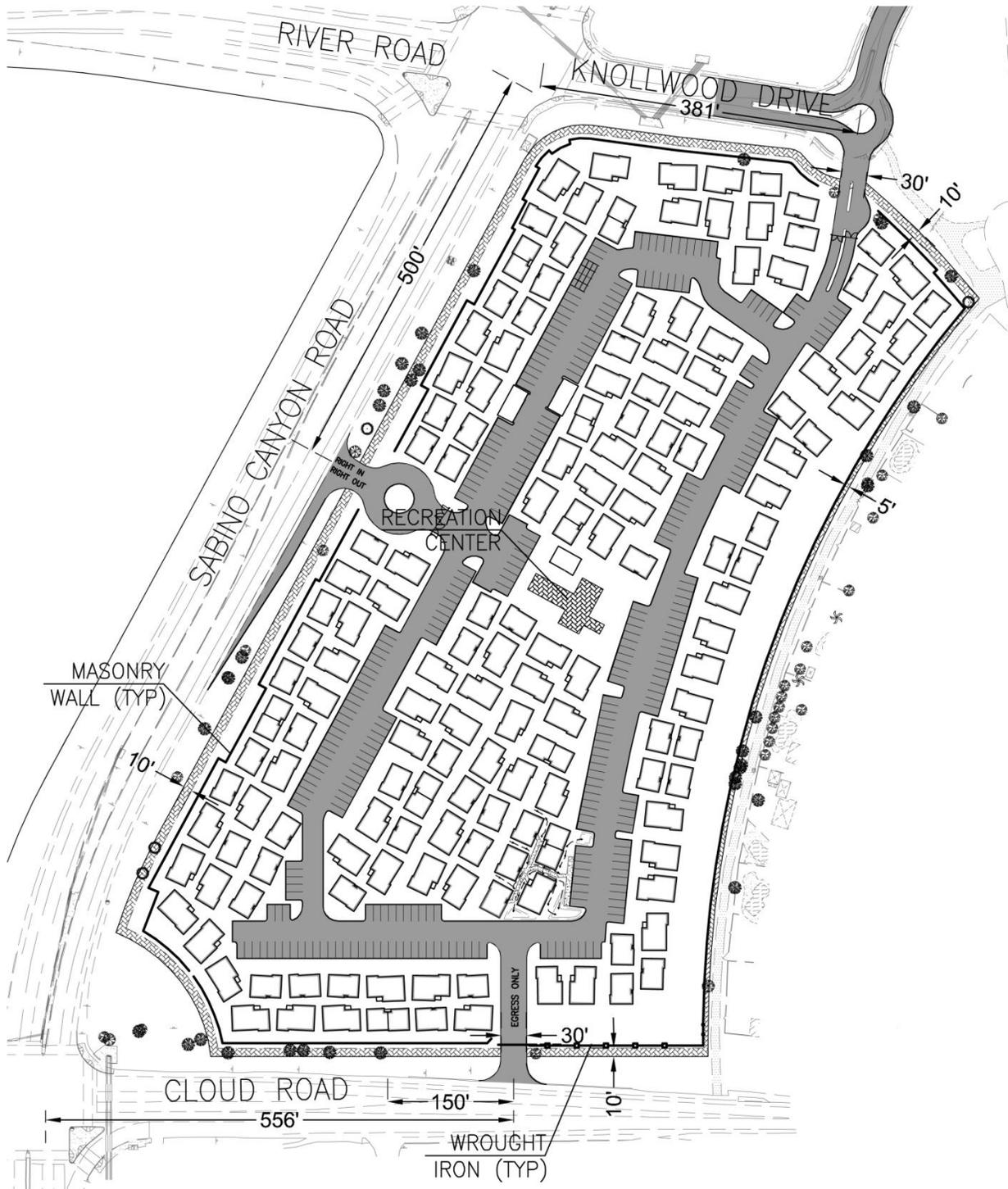
8. TRAFFIC IMPACT STUDY

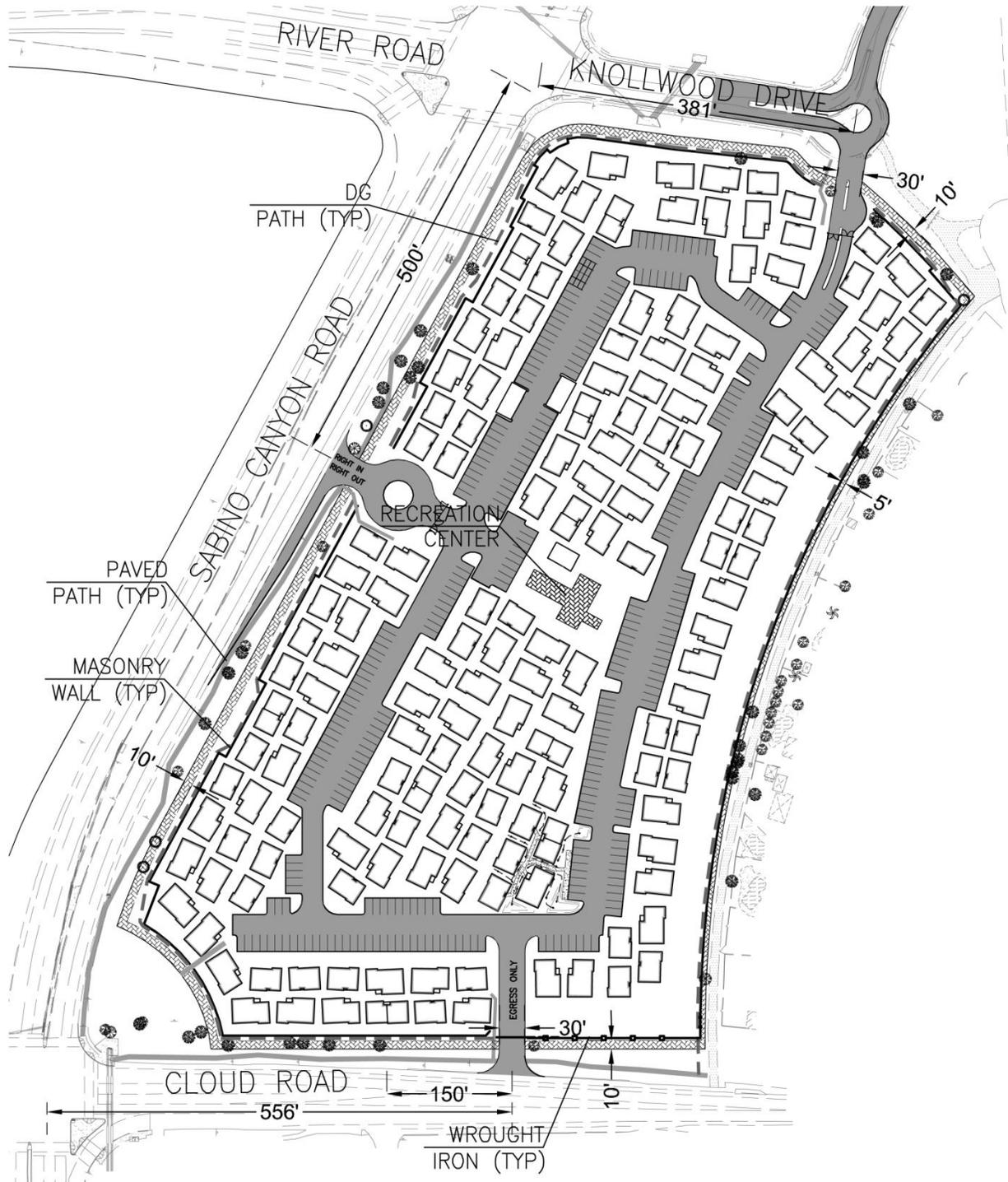
This project does meet the threshold requirements for a Traffic Impact Study and one will be provided in accordance with the Pima County DOT Standards.

9. ALTERNATE MODES

The proposed rental home style provides for a greater mix of higher density housing in an area within bicycle distance to employment and retails zones to the south at Tanque Verde Road. A bus stop is also existing immediately southwest of the proposed development at the intersection of

Cloud Road and Sabino Canyon Road. This bus stop can connect the user to the rest of the SunTran system in minutes.





II-I ON-SITE WASTEWATER Treatment and Disposal

On-site wastewater treatment/disposal facilities are not proposed for this project. For this reason, the detailed requirements of this section have been omitted.

II-J SEWERS

1. CAPACITY RESPONSE LETTER

This applicant has submitted to the Pima County Regional Wastewater Reclamation Department Planning Section for analysis of capacity in the downstream sewer system. The Type 1 Capacity Response has been included in this report as Exhibit II-J.1. The letter was written on November 8, 2013, within 90 days of application for this rezoning. The letter is valid for one year. The Pima County Regional Wastewater Reclamation Department Planning Section has indicated that capacity is currently available for this project in the 18-trunk line G-92-068, downstream from manhole 6160-04.

2. METHOD OF PROVIDING SEWER

The development will be served onsite by a private sewer collection system. The private sewer will connect to the public sewer at existing manhole 6160-04 in accordance with current design and construction standards.

3. SEWER EASEMENTS

No public sewer easements are anticipated for this development.

4. MITIGATION OF SITE CONSTRAINTS

No constraints to providing gravity sewer service have been identified. This section is not applicable to this development.



**Pima County
Regional Wastewater Reclamation Department**

Jackson Jenkins
Director

201 N. Stone Ave., 8th Floor
Tucson, Arizona 85701
(520) 724-6500

Website:
<http://www.pima.gov/wwm>

November 8, 2013

Erin Harris
STAR Consulting
5405 E. Placita Hayuco
Tucson, AZ 85718

Sewerage Capacity Investigation Response No. 13-237 Type I

**RE: Aerie at River and Sabino East on Parcel # 114-33-002G.
Estimated Flow 38,664 gpd (ADWF).**

Greetings:

The above referenced project is tributary to the Ina Road Wastewater Reclamation Facility via the North Rillito Interceptor.

Capacity is currently available for this project in the 18-inch public sewer G-92-068, downstream from manhole 6160-04.

This letter is not a reservation or commitment of treatment or conveyance capacity for this project. It is an analysis of the system as of this date and valid for one year. Allocation of capacity is made by the Type III Capacity Response.

Note: Conditions within the public sewer system constantly change. A Type II letter must be obtained to verify that capacity exists in the downstream public sewer system just prior to submitting the development plan or subdivision plat for review and approval.

If further information is needed, please feel free to contact us at (520) 724-6642.

Respectfully,

Ben Fyock, P.E.
PCRWRD Planning Section

BF:ks

c: T13, R15, Sec. 29



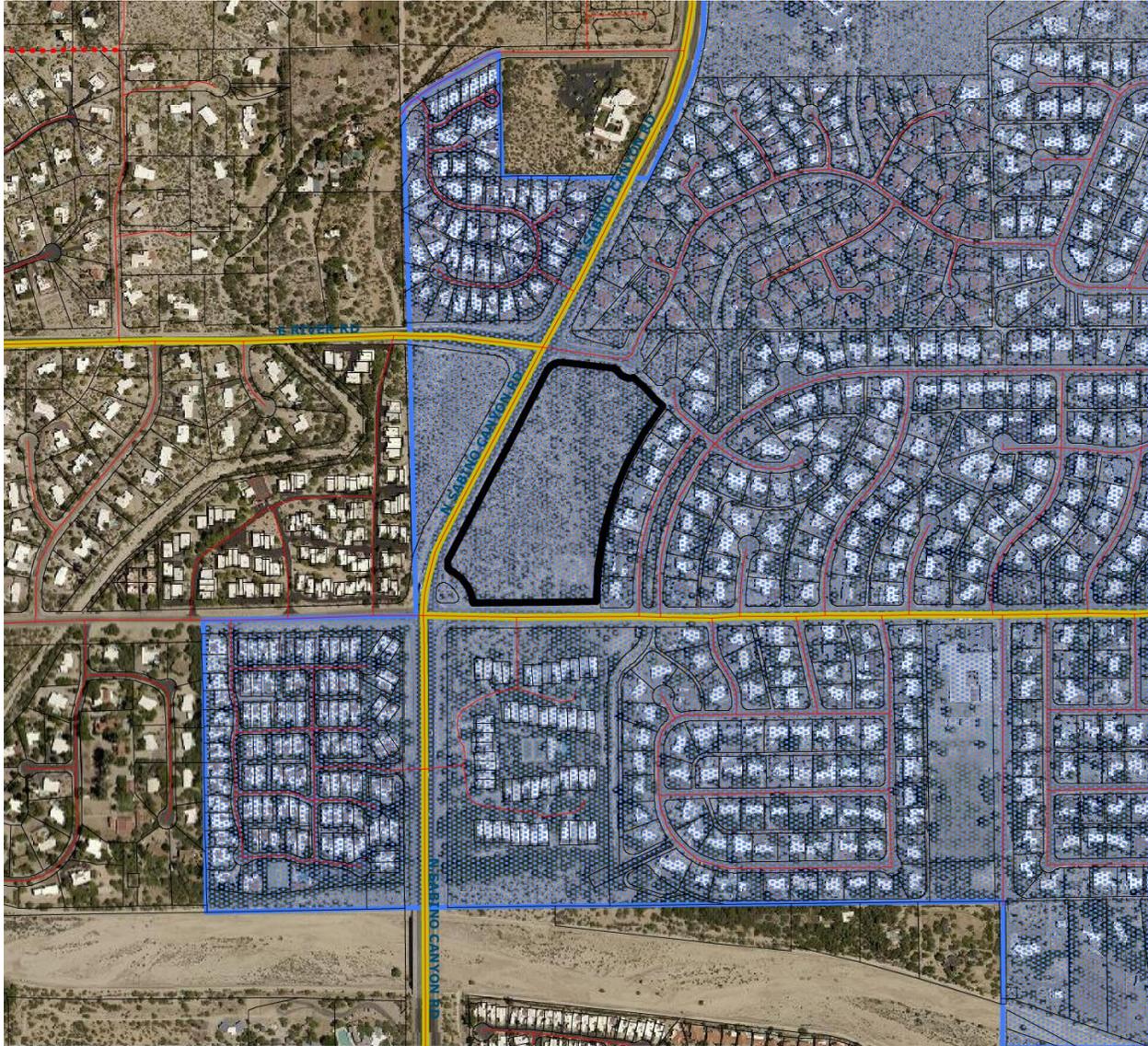
II-K WATER (PRELIMINARY INTEGRATED WATER MANAGEMENT PLAN)

1. WATER CONTEXT MAP

The site is located within a designated Water Provider Service Area - Metropolitan Domestic Water Improvement District (MDWID) or Metro Water. Metro Water serves the developments to the northeast of the site and has existing facilities nearby to the site. Metro Water has agreed to provide service to this site. Please see Exhibit II-K.1 for the Water Context Map and Service Letter from Metro Water.

Metro Water does not currently have access to renewable water unless it uses its interconnect with Tucson Water. The Pima County Regional Flood Control District has indicated that Tucson Water may in the future provide more water that is from a renewable source when infrastructure can boost the Avra Valley groundwater - CAP blend (Clearwater) to the area. Groundwater and Clearwater blend could be provided if the interconnect is utilized. Furthermore, Flood Control has stated that Metro Water currently has wells in a shallow groundwater area and additional demand on these wells will impact this groundwater dependent ecosystem.

Metro Water described the water system as an integrated water system that involves several wells and reservoir. In short, no one well serves the proposed development or any other property in the Metro-HUB water system. Metro Water offers the following explanation to assist the readers of this analysis with concerns or confusion: *... that this development would (not) put undue stress on the well capabilities or water levels at any one well in our system (such as HUB Well #3 in closest proximity), this is purposefully not how we operate and cycle the use of our wells in our overall water system under normal conditions...*



Water Service Provider Area (ADWR)

Source: *Pima County GIS*





July 30, 2013

Erin E. Harris, P.E.
STAR Consulting
5405 E. Placita Hayuco
Tucson, AZ 85718

**Re: ±14.82 Acres at the SEC of River Road and Sabino Canyon Road
(PN 114-33-002G)**

Dear Ms. Harris,

The above property lies within the legal boundary of the Metropolitan Domestic Water Improvement District (MDWID) obligated service area. Water service is potable and will be supplied upon demand.

Any onsite or offsite requirements deemed necessary to provide the domestic and fire flow water supply will be determined at the time of improvement plan submittal or whenever application for water service is received. Pipe sizing and system augmentation, if necessary, will be based on calculated demand for both domestic and fire flows as needed to adequately supply this area.

Please let me know if you have any questions or concerns at 575-8100.

Sincerely,

A handwritten signature in blue ink, appearing to read "Timothy Dinkel", with a stylized flourish extending to the right.

Timothy Dinkel
Development Supervisor

TD/td

c: Project File / Charlie A. Maish, District Engineer
Signature File

Metropolitan Domestic Water Improvement District
P.O. Box 36870 Tucson, Arizona 85740 (520) 575-8100 (520) 575-8454 FAX www.metrowater.com



2. EXISTING AND HISTORIC WATER USE

The site is currently undeveloped.

3. PROPOSED WATER USE

The proposed development includes 169 residential units, landscape and recreation center. The recreation center includes a pool.

This development of this site will not be phased.

4. WATER SUPPLY OPTIONS

Metro Water has stated that they will supply the project; however, significant offsite improvements are required in order to provide adequate fire flow protection. Please see Exhibit II-K.4 for Metro Water Facilities Maps and Tucson Water Facilities Maps.

TUCSON WATER SYSTEM VALVE MAP

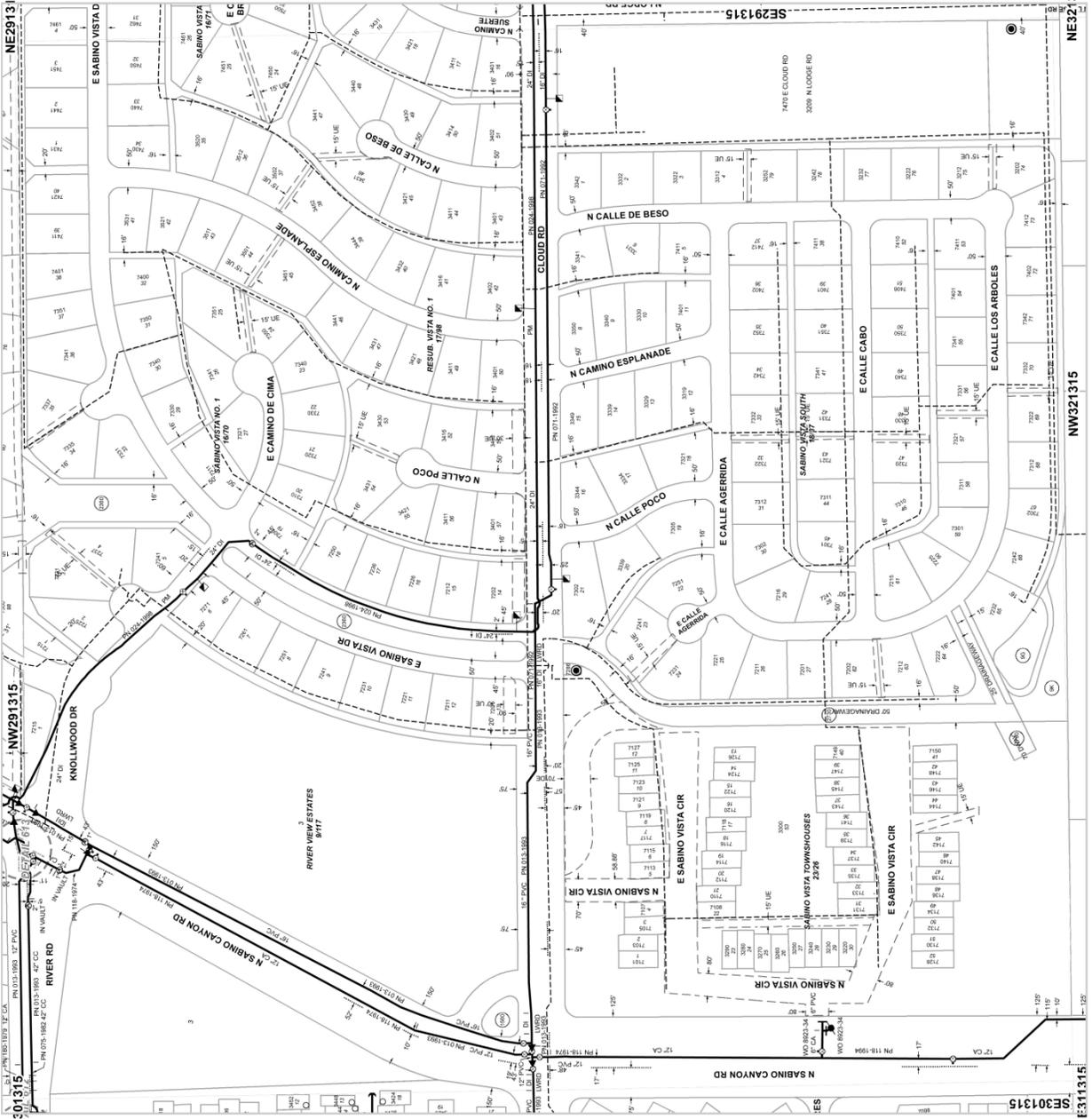


NOTES:

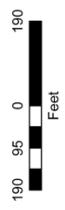
NUMBER	DESCRIPTION
--------	-------------

ABANDONMENTS:

NUMBER	DESCRIPTION
--------	-------------



- Breaker
- CTS
- CTSW/Abandon
- CTSW/Reference/Abandon
- Rectifier
- Air Release Valve
- Blowoff Valve
- Drain/Valve Assembly
- Fire Protection
- Meter/Flow Production
- Blind Flange
- Bottom Outlet
- End Cap
- Flanged Tee
- Plug
- Solenoid
- Standoff
- Tapped End Cap
- Top Outlet
- ⊗ Open Gate Valve
- ⊙ Closed Gate Valve
- ⊕ Open in Manhole
- ⊖ Closed in Manhole
- ⊗ Hydrant Valve
- ⊙ Open Butterfly Valve
- ⊕ Closed Butterfly Valve
- ⊖ Open Butterfly in Manhole
- ⊗ Closed Butterfly in Manhole
- ⊙ Hydrant Butterfly
- ⊕ Check Valve
- ⊖ Corporation Stop
- ⊗ Gate Valve Zone Boundary
- ⊙ Private Water Main
- ⊕ Nonpotable Water Main
- ⊖ Butterfly Valve ZB
- ⊗ Gate ZB in manhole
- ⊙ Steel
- ⊕ Fire Hydrant
- ⊖ Standoff Hydrant
- ⊗ Manhole
- ⊙ Compound Meter
- ⊕ Inverter
- ⊖ Temporary Remote Service
- ⊗ Water Service
- ⊕ Critical Customer
- ⊖ NPOT Service
- ⊗ Transfer Valve
- ⊕ Production Well
- ⊖ WWS Sampling
- ⊗ Potable Water Main
- ⊕ Private Water Main
- ⊖ Nonpotable Water Main
- ⊗ Concrete
- ⊕ Steel
- ⊖ Basement
- ⊗ Standoff Hydrant
- ⊕ Manhole



SW291315
PRINT DATE: August 09, 2012

5. WATER DEMAND PROJECTIONS

a. Water Demand

The requested zoning is CR-4 and the proposed land use is multiple residence zone.

ADWR Demand Calculator (1st Methodology):

The ADWR calculator was used to estimate the Project Demand. Based in this calculator, the average annual water demand is 33.85 acre-feet, iclududing the homes, pool and landscaping in the common areas and channel area, less than the 50 acre feet per year threshold. The results of the Project Demand Calculator are shown on the following page.

ADWR Demand Calculator Results:

March 12, 2014		PROJECT DEMAND CALCULATOR				
Name of Proposed Project:		Avilla Sabino East Rezoning				
INSTRUCTIONS: This spreadsheet is designed to help you calculate the water demand for your proposed development for purposes of applying for a Certificate of Assured Water Supply, Water Adequacy Report or Analysis of Assured (or Adequate) Water Supply. Please enter information into the blue boxes as applicable. If you need help with this form, please contact the Office of Assured and Adequate Water Supply at (602) 771-8599.						
NOTE: This sheet, when completed, does not constitute approval of the demand estimate for your proposed development. It is intended for general estimation purposes only. The final, official demand estimates will be determined by the Department upon review of your complete application.						
Enter the AMA the subdivision is located in*:		TUC	* Enter PHX for Phoenix, TUC for Tucson, PIN for Pinal, PRE for Prescott or SCR for Santa Cruz.			
If you are not sure if your are located inside or outside of an AMA, contact the Office of Assured and Adequate Water Supply at (602) 771-8599.						
Enter the COUNTY the subdivision is located in:		PIMA	* Enter either APACHE, COCHISE, COCONINO, GILA, GRAHAM, GREENLEE, LA PAZ, MARICOPA, MOHAVE, NAVAJO, PIMA, PINAL, SANTA CRUZ, YAVAPAI, or YUMA.			
Residential Usage*						
Category	PPHU	GPCD per house/day	Demand/HU/YR (af/yr)	No. HU (Lots)	Residential Demand/Yr (af/yr)	
Single Family (int)	0.00	57.00	0.00	0.00	0.00	
Multi-Family (int)	1.50	57.00	0.10	169.00	16.19	
Single Family Landscape (ext)	1.00	118.00	0.13	0.00	0.00	
Multi-Family Landscape (ext)	1.50	21.00	0.04	169.00	5.96	
Single family Demand/HU/YR			0.13			
Multifamily Demand/HU/YR			0.13			
	Square Feet	Acres	Demand Factor (af/yr)	No. HU (Lots)	Large Lot Adjustment Demand/Yr (af/yr)	
Average Lot Size (sq. ft)**	0.00	0.00				
TMP Model Lot Size (sq. ft)	7,500 - 10,000	0.17 - 0.23				
Large Lot Adjustment	0.00	0.00				
1/2 low water use	0.00	0.00	1.50	0.00	0.00	
1/2 turf	0.00	0.00	4.60	0.00	0.00	
**NOTE: If the subdivision contains several groupings of lot sizes, the large lot adjustment needs to be calculated for each grouping of large lot sizes. If CC&Rs with landscaping restrictions for the residential lots will be adopted, a modified large lot adjustment can be calculated based on the specific landscaping restrictions. Contact the Office of Assured and Adequate Water Supply for assistance in calculating the large lot adjustment for subdivisions with several groupings of large lot sizes or if CC&Rs limiting landscaping within the residential lots will be adopted.						
Total Residential Demand					22.15	
Non-Residential Usage***						
For each category please enter either square feet or acres of land for that type of non-residential use within your subdivision.						
Category	Square Feet	Acres	Demand Factor (af/ac)		Non-Residential Demand (af/yr)	
Common Area1		4.50	1.50 low water use		6.75	
Common Area2	0.00	0.00	4.60 turf		0.00	
Right of Way	0.00	0.00	1.50 low water use		0.00	
Golf Course	0.00	0.00	AMA Turf Program - contact AMA		0.00	
Commercial use	0.00	0.00	2.25 all acres		0.00	
Public Pool (length x width = square feet)	3050.00	0.07	Based on closest AMA pool		0.47	
Parks1	0.00	0.00	1.50 low water use		0.00	
Parks2	0.00	0.00	4.60 turf		0.00	
Retention/Detention Basins		0.90	1.50 low water use		1.35	
Retention/Detention Basins	0.00	0.00	4.60 turf		0.00	
School Landscape1	0.00	0.00	1.50 low water use		0.00	
School Landscape2	0.00	0.00	4.60 turf		0.00	
	Number of students					
Elementary school interior use	0.00		25 GPCD interior demand		0.00	
Middle/High School interior use	0.00		43 GPCD interior demand		0.00	
***NOTE: If your application is for a change of ownership from a previously issued Certificate of Assured Water Supply, and is for only a portion of the original Certificate, contact the Office of Assured and Adequate Water Supply to pro-rate non-residential area acreage.						
Total Non-Residential Demand					8.57	
Distribution Losses						
	Residential	Non-Residential	Total	Loss Factor %	Distribution Losses (af/yr)	
Demand af/yr	22.15	8.57	30.72	10.00	3.07	
Construction						
	No. of Lots	Demand (gals/lot)	100 yr demand (af)		Construction Demand (af/yr)	
	169.00	10000.00	5.92		0.06	
Total Demand Per Year						
Residential Usage af/yr	22.15	Non-Residential Usage	Lost & Unaccounted for	Construction	Total Non-Res	Total Demand Per Year (af/yr)
Residential Usage GPCD	78	8.57	3.07	0.06	11.70	33.85
					Total Demand GPCD	
Annual Build Out Demand	33.85					

Demand Calculator (Revised 7-25-08)



Water Demand Estimate (2nd Methodology):

The average site space per unit is 3,902 SF. The estimated annual baseline water demand using traditional estimates is 42.25 acre-feet (169 units * 0.25 acre feet/unit). In addition to the homes, the project will also have a pool and irrigated landscaping. The pool is estimated to increase the water demand by 0.22 acre-feet (10g/d/swimmer * 20 swimmers/d). The landscape will be irrigated until it is established and stable. The landscape will be comprised of native, drought tolerant plant varieties. The landscaped areas will be depressed as to take advantage of onsite water harvesting. The water harvesting will be primarily designed using swales directing water from the roof tops to the landscape areas. ARC Studios, the project landscape architect, estimated the irrigation use for the project as follows: *A 1" irrigation meter is sufficient for the required landscape. The estimated site landscape would require a range of 160,000 gallons per year to 400,000 gallons per year depending on the viable amount of water harvesting and site maintenance practices.* Using this estimate, the irrigation needs of the site would add a maximum of 1.23 acre feet per year (only during establishment period). Based on these factors, an increase to the annual baseline water demand for this site would be estimated at 43.70 acre feet, less than the 50 acre feet per year threshold.

b. Water Conservation

The Developer is committed to reducing water waste and encouraging water conservation throughout the development. The following measures are proposed for this development (15 total points proposed):

I-6: Install lavatory faucets that meet the proposed EPA's WaterSense™ criteria or have a maximum flow rate of 1.5 gpm @ 80 psi of pressure (3 points)

I-7: Install showerheads that meet the proposed EPA's WaterSense™ criteria or have a maximum flow rate of 1.5 gpm @ 80 psi of pressure (3 points)

I-8: Install toilets that meet the EPA's WaterSense™ rating (1.28 gpf) (3 points)

I-10: Install a washing machine with a water factor of 6.0 or less (2 points)

I-12: Install a refrigerator with an in-door filtered water system (0.5 points)

O-4: Install a gutter and downspout system or canals that tie to storm water infiltration trenches, bioswales, or rain gardens (2 points)

O-15: Install a high efficiency irrigation system that uses:

b. Check valves in heads and heads matched to the beds distinct watering needs (0.5 points)

- d. A timer/controller that irrigates during the hours of 10 pm-8 am to minimize evaporation (0.5 points)
- e. Drip irrigation for all planting beds (0.5 points)

6. PROXIMITY TO RENEWABLE AND POTABLE WATER SUPPLIES

This section is not applicable to this development.

7. GROUNDWATER-DEPENDANT ECOSYSTEMS

This section is not applicable to this development.

8. GROUNDWATER DEPTHS AND TRENDS

This section is not applicable to this development.

9. GEOLOGIC AND HYDROGEOLOGIC DATA

This section is not applicable to this development.

10. AREA WATER SUPPLY

This section is not applicable to this development.

11. WELL TEST DATA

This section is not applicable to this development.

12. DRAWDOWN ANALYSIS

This section is not applicable to this development.

II-L SCHOOLS

1. ACCESS TO ADJACENT OR ON-SITE SCHOOLS

There are no public or private schools adjacent to or within the proposed site. The section of text is not applicable to this site.

2. SCHOOL CAPACITY ANALYSIS AND LETTER

A school capacity analysis response has been received from Tucson Unified School District and is shown in Exhibit II-L.2. The schools to which this development will contribute are currently under capacity.

3. AGREEMENT WITH SCHOOL DISTRICT FOR MITIGATION

At the time of this report, there has been communications with TUSD regarding the mitigation of impacts of the proposed development and no mitigation is required.



TUCSON UNIFIED SCHOOL DISTRICT
 Department of Engineering, Facilities and Planning
 Planning Services Section
 2025 East Winsett Street
 Tucson, Arizona 85719
 (520) 225-4949
 (520) 225-4939 (fax)



To: Erin E. Harris, P.E.

From: Shaun Brown
 Planning Technician

Date: November 6, 2013

Re: Case/Project #:
 Project Name: East side of Sabino Canyon Road
 New Units: 179

IMPACTED SCHOOLS	CAPACITY	PROJECTED 2017 ENROLL	ADDITIONAL STUDENTS FROM PROJECT	PROJECTED ENROLL WITH PROJECT	STUDENTS EXCEEDING CAPACITY
Fruchthendler Elementary	450	419	28	447	-3 / -1%
Magee	720	567	12	579	-141 / -20%
Sabino High	1950	858	13	871	-1079 / -55%

Response:

Based on projected enrollment at TUSD there is adequate capacity to absorb the impact of proposed rezoning for Fruchthendler Elementary School. There is no impact to the schools above.



II-M RECREATION AND TRAILS

1. ON-SITE RECREATION

Avilla Sabino East has been planned with enhanced amenities consistent with Alta Vista's desire to create an upscale multi-family community where residents will be able to play, relax, or socialize in a pleasing environment. Please see Exhibit II-M.1 for location of recreation areas. The amenities include a resort style swimming pool and spa, outdoor lawn and lounge areas and a ramada. The onsite amenities are connected to a full site perimeter circulation system. This system is designed with the walking resident in mind - giving them access to a 0.50 mile decomposed granite (DG) exercise loop around the perimeter of the site which is incorporated into the bufferyard. More specifically described, the following items will be included in the proposed Recreation Plan:

- water
- electricity
- trail linkage as applicable
- signage
- fencing as needed
- landscaping, turf area (30% of area)
- parking
- vehicle barriers
- trash receptacle - 2
- bicycle rack - 1
- park bench – 2
- shade structure (concrete pad 20'x28')
- picnic table -2
- grills -2
- playground structure
- individual structure -3

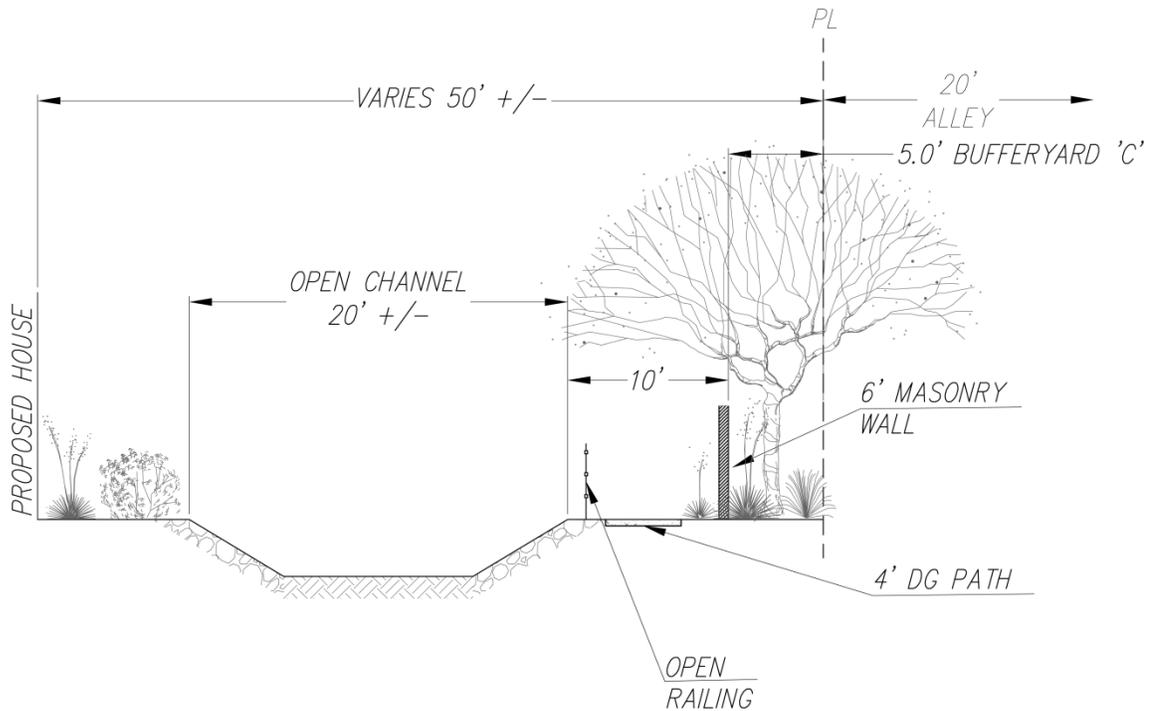
The specific location of the amenities has not yet been determined. Generally, they are proposed to be located throughout the site in pockets of converging sidewalks and enhanced vegetation, similar to the layout of Avilla Sabino West. Exhibit II-M.1 shows the "DG loop" in a brown color. The exhibit also shows a green hatching in the areas set aside for recreation area or circles for potential locations of smaller recreation "nodes" such as park benches or grills.

2. OWNERSHIP OF RECREATION AREAS

The ownership and maintenance responsibility of the recreation areas and open space will remain with the Developer, who will also own the entire development. The units are rental units and not proposed to be available for resale.

3. PROPOSED TRAILS ON OR OFF-SITE

A DG path is proposed along the perimeter of the site, within the widened bufferyard and outside of public right-of-way. The DG path would extend along Cloud Road, Sabino Canyon Road and Knollwood and would be in addition to the paved path. This trail would also connect to an internal segment along the eastern property line as well as the internal sidewalk system. The following preliminary cross section shows the conceptual plan for the DG path along the eastern property line (also shown are the bufferyard, landscaping, masonry wall, open railing and open channel).





II-N CULTURAL RESOURCES: ARCHAEOLOGICAL AND HISTORIC SITES

1. PROTECTION OF KNOWN CULTURAL RESOURCES

The Arizona State Museum has identified that previously recorded archeological or historic resources are known to exist on the site and no cultural resource surveys have been conducted on the site (see the Pima County Archeological Records Check Form, Exhibit I-L).

2. MITIGATION MEASURES OF POTENTIAL RESOURCES

An archaeological survey has been completed (WestLand Resources, Inc. 2006 and P.A.S.T. 2013).

Register-eligible site AZ BB:9:43(ASM) is located on the subject property and Tierra Right of Way Services has been contracted by the applicant to produce a Historic Properties Treatment Plan (HPTP) for archaeological data recovery within AZ BB:9:43(ASM) prior to development. The HPTP has been approved by Pima County's Office of Sustainability and Conservation and the State Historic Preservation Office (SHPO) (11/2013). Implementation of the HPTP and continued consultation with County OSC and SHPO on the data recovery results will be needed.

3. CULTURAL RESOURCES MITIGATION PLAN

In the event that cultural resources are revealed during ground-disturbing activities, all construction shall cease, and consultation shall be initiated with Arizona State Museum (ASM) to assess the potential significance of any unearthed materials (ARS §41-841). If human skeletal remains or funerary objects are discovered, ASM will be contacted immediately (ARS §41-865 and ARS §41-844).

The FINAL REPORT by Tierra Right of Way, EXTENT TESTING of AZ BB:9:43 (ASM) prepared by Chance Copperstone, Tierra Archeological Report No. 2013-136, Arizona State Museum Accession No. 2013-400, revised January 31, 2014 is complete and approved. It is recommended by the applicant that the Management Recommendations provided in this report be implemented.

II-O ENVIRONMENTAL QUALITY

1. METHODS OF CONTROLLING DUST POLLUTION

Dust Pollution will be controlled by the means and methods outlined in the Dust Control Permit and Storm water Pollution Protection Plan. This generally includes using a water truck during all grading operations. The wetted dirt is less likely to become dust pollution. This also includes limiting the time that the site is left disturbed and unfinished. The developer is proposing an aggressive construction schedule and all construction will be completed in one phase.

The Developer further assures that all newly created roads, road widening, PAALs and parking areas will be paved with asphalt or concrete pavement to County standards for public or private improvements as appropriate for the improvement.

2. AIR QUALITY AND HAZARDOUS MATERIALS FOR NON-RESIDENTIAL PROJECTS

The proposed use for this site is residential and therefore, this section has been omitted.

II-P AGREEMENTS

The Developer and Owner have worked with the surrounding neighborhoods and neighbors at length to develop a reasonable and sensitive project for this area. The project team has attended the following project meetings with the neighbors:

Meetings:	08/08/13:	Meeting with adjacent neighbors to the east
	08/15/13:	Meeting with adjacent neighbors to the east
	08/27/13:	Meeting with Sabino Creek Neighborhood Association
	08/28/13:	Meeting with Sabino Vista residents, hosted by Supervisor Miller
	10/02/13:	Meeting with PCDOT re: traffic concerns and proposed entrances
	10/04/13:	Meeting with Pima County staff re: neighborhood concerns
	10/04/13:	Meeting with adjacent neighbors to the east
	10/08/13:	Walk site to tag visually pleasing trees for screening neighbors
	10/19/13:	Walk door to door with neighbors in Sabino Vista Townhomes
	10/23/13:	Meeting with adjacent neighbors to the east

Future meetings are planned and will continue to be held throughout the process.

The discussions have focused on the priorities of the immediately adjacent neighbors to the east of the site. The following design elements have been offered by the Owner and Developer and received by the neighbors as acceptable answers to their questions and concerns:

Affirmation of Stated Project Design Objectives:

- Luxury, rental community
- Single story development
- Three entrances to the development as to reduce the traffic impact to any one road - right in and right out from Sabino Canyon Road, exit only to Cloud Road and full access to a reconfigured Knollwood Drive (T-intersection)
- A mix of architectural elements on one, two bedroom and three bedroom rental homes
- The one bedroom units are duplexes so the mass of the structure is more visually appealing and in balance with the remainder of the development
- Each rental home will have a private rear yard

In addition to the issues raised above, the Owner and Developer have offered the following concessions in an effort to fully cooperate with the surrounding communities and address specific concerns:

Cooperative Efforts by the Applicant:

- Clean-up the debris and trim the vegetation in the existing public alley immediately east of the site
- Construct a wall along the eastern property line with variations in material and layout as to create an attractive screen
- Provide a monetary contribution to the Fruchthendler PTA for use as they see appropriate
- Provide an enhanced and widened building setback (20') along the eastern property line
- Provide a T-intersection or Traffic Circle at Knollwood Drive. There is no proposal to connect Knollwood Drive to the Sabino Vista subdivision
- Willingness to construct a bike and hike rest area within the County right-of-way at the northeast corner of Sabino Canyon Road and Cloud Road