

**STEAM PUMP VILLAGE  
PLANNED AREA DEVELOPMENT  
DISTRICT  
PAD #12  
AND  
SITE ANALYSIS AND PAD  
SUBMITTAL  
FOR THE TOWN OF ORO VALLEY**

**ADOPTED BY ORDINANCE (O)171  
AUGUST 10, 1988**

**LATEST REVISION BY ORDINANCE (O)05-42  
OCTOBER 19, 2005**

**LATEST REVISION BY ORDINANCE O(11)-11  
APRIL 20, 2011**

**LATEST REVISION BY ORDINANCE O(17)-03  
MARCH 15, 2017**

**LATEST REVISION BY ORDINANCE O(22)-01  
JANUARY 5, 2022**

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## AMENDMENT HISTORY

Amendments pertaining to the Steam Pump Village PAD:

1. Ordinance: (O) 171  
Date: August 10, 1988
2. Ordinance: (O) 92-2  
Date: February 5, 1992  
Case #: OV9-91-
3. Ordinance: (O) 96-26  
Date: July 10, 1996  
Case # OV9-96-1
3. Ordinance: (O) 99-52  
Date: September 22, 1999  
Case #: OV9-99-111
4. Ordinance: (O) 00-01  
Date: January 5, 2000  
Case #: OV9-99-111
5. Ordinance: (O) 03-37  
Date: December 3, 2003  
Case #: OV9-99-111
6. Ordinance: (O) 05-42  
Date: October 19, 2005  
Case #: OV9-05-08
7. Ordinance: O(11)-11  
Date: April 20, 2011  
Case #: OV
8. Ordinance: O(17)-03  
Date: March 15, 2017  
Case #: OV1602876
9. Ordinance: O(22)-01  
Date: January 1, 2022  
Case #: 2102288

Previous Zoning History:

February 5, 1992 - PAD Ordinance No. (0)92-2  
July 10, 1996 - PAD OV9-96-1  
September 22, 1999 - PAD Ordinance No. (0) 99-52  
January 5, 2000 - PAD (0) 00-01

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## Section 1.1 *SITE INVENTORY AND ANALYSIS*

The Site Inventory and Analysis identifies and describes the existing characteristics and conditions of the site. Development opportunities and constraints are analyzed and serve as the basis for the site development design. A composite constraint exhibit is provided at the end of this section for easy reference.

### **A. Existing Land Uses**

1. The subject property, known as Steam Pump Village, comprises approximately 41.6 acres located on the north side of Oracle Road/Arizona State Route 77, approximately one-quarter mile north of First Avenue, in the Town of Oro Valley. Exhibit IA. 1, Regional Location, shows the property location in a regional context.
2. The property is predominantly vacant, with approximately half of the site as disturbed (agricultural and pasture activities) and the remainder in a natural state. As shown on Exhibit IA.2, Onsite Land Uses, located onsite is a non-functioning heliport with caretaker's dwelling and landing pads, which is now being utilized as a riding stable facility. Immediately south of the rezoning site is the original Steam Pump Ranch site of 15.2 acres that includes ranch buildings and corrals.
3. Exhibit IA.3/4, Existing Zoning/Land Use, indicates the existing zoning and land use within one-quarter mile of the site. The property is surrounded by the following existing zonings and land uses:

North - R1-144 (Oro Valley) Canada del Oro Wash and R1-36 Palisades Point subdivision, one to two story custom homes.

East - CPI (County) AiResearch, research and development, three stories, 45-foot building height (including mechanical equipment floor).

PAD (Oro Valley) Foothills Business Park office uses, one story, 20 - 25 foot building height.

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South - PAD (Oro Valley) La Reserve residential uses, one to two story custom tract homes and two story apartments.

West - PAD (Oro Valley) Rooney Ranch currently vacant

There are no pending rezonings within one-quarter mile of the site.

4. Wells: Three well sites, as shown on Exhibit I.K. 1, Utility Infrastructure, are located offsite and are under the ownership of Mr. John Leiber.

## **B. Topography**

1. The site's topography is comprised of a gently sloping riparian flatland located adjacent to the Canada del Oro Wash. Elevations range from 2626 at the northeast corner of the site to 2592 at the southern property line. There are no restricted peaks/ridges, rock outcrops or slopes of 15% or greater on the site. Topographic features of the site, are shown on Exhibit 113. 1, Topography. The soil for the subject property, as identified on the General Soil Map of Pima County Arizona, U.S. Department of Agriculture, Soil Conservation Service, 1974, is Pinaleno-Nickel-Palos Verdes Association.
2. The predevelopment average cross-slope of the total site, without excluding natural areas, is 4.4%. Table 1 contains the average cross-slope calculations.

**TABLE 1  
LENGTH OF CONTOURS**

<u>CONTOUR</u>	<u>LENGTH</u>
2625'	1750'
2620'	2550'
2615'	3100'
2610'	4600'
2605'	1800'
2600'	1450'
2595'	<u>640'</u>
Total	15,890'

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Contour Interval = 5'  
Length in Feet = 15,890'  
Area in Acres = 41.65

Average Cross-Slope Calculation

$$\frac{5 \times 15,890 \times .0023}{41.65} = 4.39\%$$

**C. Hydrology**

1/2/3 Exhibit IC. 1, Regional Hydrology, is an aerial photograph depicting offsite watershed impacts upstream of the subject property. Steam Pump Village has been removed from the 100-year geologic floodplain of the Canada del Oro Wash (CDO) by an extensive flood protection levee along the bank of the CDO adjacent to the site. The CDO Wash flows parallel -with the parcel's western boundary and has a regulatory 100-year flood of 33,000 cubic feet per second. Stormwater runoff associated with the CDO does not directly impact Steam Pump Village due to the channelization and stabilization of the wash and its banks.

There are other local watersheds in the vicinity of the site that originate in the western slopes of the Santa Catalina Mountains. Runoff from those sources do not impact Steam Pump Village as flood control improvements have diverted local flows around the parcel. Runoff generated from the Santa Catalina Mountains is intercepted by the Foothills Collector Channel east of the highway and conveyed southward and westward to the CDO Wash. The 100-year storm flow in the Foothills Collector is approximately 4,300 cubic feet per second.

Local runoff associated with AiResearch and the Foothills Business Park is collected in a drainage channel upstream of Oracle Road and discharged into the Foothills Collector Channel without impacting Steam Pump Village. Stormwater collected in the median of the highway is discharged into the same channel system described above and does not reach the property. Therefore, the only offsite runoff reaching Steam Pump Village is from the western portions of the Oracle Road right-of-way and the levee slope.

4/5 The project area, including the adjacent areas of the Oracle Road right-of-way and the levee slope, is divided into two

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existing conditions' basins by an earthen dike constructed onsite prior to the CDO Wash bank protection improvements. All onsite flow is from northwest to southwest, parallel to the CDO Wash and the highway. Runoff generated from the northeast portion of the site, 39 cfs for the 100-year event, is intercepted by the earthen dike. There is no outlet and, under existing conditions, this runoff ponds and eventually percolates and/or evaporates. The 100-year peak discharge, from the southwest portion of the site for existing conditions is 72 cfs. There are no defined drainageways onsite and therefore no onsite 100-year floodplains have been delineated. This runoff sheet flows across the site to the southwestern boundary and discharges to the existing Foothills Collector Channel (see Exhibit IC.4, Onsite Hydrology). Runoff rates are low for existing conditions because the native soils are sandy, type A soils which are very porous.

The site is not included in a designated 100-year floodplain as determined by the Federal Emergency Management Agency (FEMA) per the Pima County Flood Insurance Rate Map, Panel 040073 1040D, effective September 30, 1992. The FEMA map designates the property as within Zone X, which indicates an area previously inundated by the 100-year flood but is now protected by levee(s) as approved by FEMA with appropriate freeboard. The property is not included in either a critical or balanced basin per Pima County Floodplain Management.

#### **D. Vegetation**

1. a. The project site, which is located in the Arizona Upland Subdivision of the Sonoran Desert Scrub Biotic Community (Brown, 1982), was visited in October 1995. One major vegetation community association has been identified on the project site (delineated on Exhibit ID. 1, Vegetation Associations):
  - Sonoran Riparian Scrubland Series is located within the Canada del Oro Wash that parallels the site's northern boundary and, previous to the installation of the levee bank protection, this site was considered secondary floodplain of alluvium from the meandering Canada del Oro Wash. Therefore, the onsite vegetation (in non-agricultural/disturbed areas) takes on the appearance of scrubland association of the



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desert plants dominated by Mesquite, Foothill Palo Verde, Desert Willow and Tamarisk. Cactus communities of Cholla, Prickly Pear, and Pencil Cactus are scattered throughout the site. Groundcover consists of a mixture of Paperflower, Desert Marigold, Filaree, Globemallow, Bursage, Rabbitbrush, and clumps of native grasses, including Tobosa and Bush Muhly. Scrubby understory species occurring sporadically are Catclaw Acacia, Creosote Bush, Crucifixion Thorn, Desert Broom, Mormontea, and Desert Saltbush.

This vegetative community provides scenic values onsite due to the diversity of plant material, but the sparse distribution of canopy plants and low canopy height preclude a high rating for visual screening.

b. No plants currently listed as endangered are known to exist onsite. No visually prominent Saguaro and/or significant individual or groups of trees exist onsite, with the exception of a few large mesquite trees at the extreme northern end of the site (location of proposed natural park area).

2. Exhibit ID.2, Vegetation Density, delineates vegetation density, which was determined by analysis of aerial photos and onsite visual observations.

The photogrammetric method for defining density of vegetation involves taking an aerial photograph and visually dividing it into similar plant densities. Within these regions, at least three different line segments are randomly drawn. The places where the vegetation intersects the line segment are measured, added, and then divided by the total length of the line. This solution is then multiplied by 100 to give a percentage of plant density along the line. The percentages within a divided area are then averaged together to determine the overall density for the area.

## **E. Wildlife**

1. A letter of confirmation from the habitat specialist at the Arizona Game and Fish Department, Tucson Regional Office, is attached. There are no known rare or endangered floral or faunal species on the property. No aquatic ecosystems are present onsite. Exhibit ID. 1, Vegetation Associations, indicates the location of Class I wildlife habitat.

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2. As indicated in the letter from Arizona Game and Fish Department, no unusually high densities or diversity of species is expected to occupy the project site, and therefore Exhibit IE.2 is not required.

## **F. Viewsheds**

1. Exhibit IF. 1, Viewsheds, graphically depicts views and vistas from adjacent properties that could be affected by site development.
  - Views from adjacent residentially developed properties will not be impacted by development of the site due to the elevation difference between the flatland wash bottom elevation of the site (average 2600') and residentially developed bluffs north of the Canada del Oro (2700') and La Reserve (2700'-3000').
  - The viewsheds from AiResearch and Foothills Business Park will not be impacted by site development, as their view orientations are in an opposite direction towards the rocky ramparts of the Santa Catalina Mountains.
2. Areas of high, medium and low visibility on the site as seen from nearby offsite locations, primarily Oracle Road scenic route, are shown on Exhibit IF.2, Site Visibility. These designations were determined by field observations and topographic/photo reconnaissance. Generally, the low visibility areas from adjacent residentially developed properties occur within the Steam Pump Ranch complex. Medium visibility areas include portions of the site near the existing ranch corrals. High visibility of the site occurs within foreground and middleground visual access from Oracle Road, a scenic highway.
3. The subject property is designated by the Town of Oro Valley as being within the Oracle Road Scenic Corridor Overlay District, which requires rezonings to comply with the requirements of Section 10-405A Visual Analysis and Appendix B View Analysis Criteria of the Oracle Road Scenic Corridor Specific Plan. Exhibit IF.3, Visual Analysis, photographically documents the absence of any existing visual resources on and/or across the proposed development site as well as significant view corridors as defined by the

criteria established in Appendix B of the Oracle Road Scenic Corridor Specific Plan. Specifically, photographs nos. 1, 3, and 4 illustrate that intervening bluffs and Palisades Point homes (elevation 2650-2700) on the northside of the Canada del Oro Wash nearly obscure and compromise any views of the Tortolita Mountains as seen from Oracle Road across the subject property (elevation 2600-2625). There are no foreground and/or middle-ground views of the Canada del Oro Wash as the levee obscures any visual access of the wash from Oracle Road across the property. Included as Exhibit IF.3, Visual Analysis, is the View Analysis Criteria and Checklist which documents that the value of offsite scenic resources as seen from Oracle Road across the site are low and therefore are not subject to view corridor requirements.

**G. Traffic**

1. The area's existing circulation system, onto which the site will have access, is illustrated on Exhibit IG.1/2/3, Traffic. Project access will be from Oracle Road/Arizona State Route 77, a four-lane divided highway with median.
  - a. The following indicates rights-of-way, capacity, volume and other information.

**TRAFFIC CONDITIONS**

Street	Scenic Route	Existing ROW	Req. ROW	No. of Lanes	Posted Speed	Capacity ADT	1994 ADT	Bike/Ped'n
Oracle Road	yes	200'	200'	4	55	50,000	16,700	bikeable
First Avenue Road	yes	150'	150'	4	45	40,000	7,700	Bikeable/ Pedestrian

SOURCE: Pima Association of Governments

**H. Recreation and Trails**

1. Exhibit IH. 1, Recreation & Trails, shows the primary trail along Canada del Oro Wash and the connector trail along La Cholla/Honey Bee Loop along Big Wash, per the Eastern Pima County Trail System Master Plan (August 1989). The only public park within one mile of the subject property is the Catalina State Park, of approximately 5,500 acres, which is a desert park popular for hiking, picnicking and camping.

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## I. Cultural/Archaeologic/Historic Resources

1/2/3 The subject property was surveyed for archaeological resources in August 1991 by Dr. David Stephen, Archaeologist. The purpose of this survey was to locate and describe cultural resources that might be adversely affected by site development. No significant cultural resources were found. Dr. Stephen's letter and a letter from the Arizona State Museum are attached.

The original Steam Pump Ranch was founded in the late 1870's by George Pusch. In order to insure a continuous water supply for the Canada del Oro Ranch, a vast land holding and profitable cattle operation. of which Steam Pump was a part, Pusch installed a steam powered pump at the present site. Over the years, "Steam Pump" became an essential water stop for cattlemen as they drove their herds throughout the territory. In fact, early maps of Southern Arizona indicated the location of Steam Pump Ranch as an important landmark. Later, Steam Pump Ranch was utilized as a general store and post office.

Currently owned by the Leiber family, only two features of the old Steam Pump Ranch exist; the original adobe ranch house and a water tank (located approximately 350' north of the original adobe ranch house is a modern ranch house complex).

## J. Composite Map

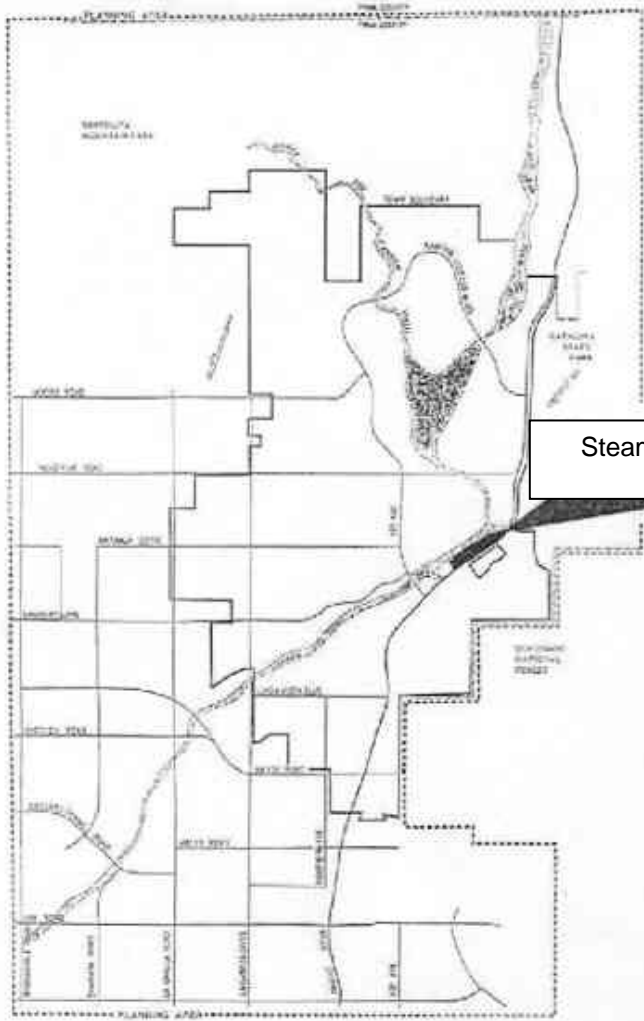
1. Exhibit IJ.1, Composite Map, indicates the cumulative number of site inventory characteristics applicable to specific locations onsite. Even though the following site characteristics were analyzed in the preceding section, only the asterisked (\*) features occur on the subject property and are shown on the Composite Map:

- "Hillside Natural" areas;
- Rock outcrops;
- Slopes equal to or greater than 15%;
- 100-year floodplains greater than or equal to 50 cfs;

- 
- ‘ Sheet flooding areas with flood depths greater than or equal to one foot;
  - ‘ Federally mapped floodway and floodplains;
  - \* Areas of medium or high vegetative densities;
  - ‘ Saguaros or other visually prominent cacti;
  - ‘ Areas where vegetation facilitates soil stabilization;
  - Wildlife habitats (Class I);
  - \* Areas onsite that are highly visible from offsite locations.

#### **K. Existing Utility Infrastructure**

1. The subject property is well-served by existing utility infrastructure as several utility transmission lines parallel Oracle Road/State Route 77 as shown on Exhibit IK.1, Utility Infrastructure.
  - A four-inch Southwest Gas line exists within a 10-foot easement located onsite adjacent to Oracle Road.
  - Sewer service is provided by a 21-inch main that runs along Oro, this sewer line crosses underneath the road, traverses the northern end of the property and continues north along the west side of the highway.
  - Water service will be provided by the Oro Valley Water Utility.
  - Telephone lines currently run along the east side of Oracle Road.
  - Electric service is provided by a 14kV line that runs along the west side of Oracle Road within the right-of-way. Approximately 1,000 feet south of Canada del Oro bridge, this electric line continues beneath the roadway and then runs along the east side of the highway.



Steam Pump Village

TOWN OF ORO VALLEY

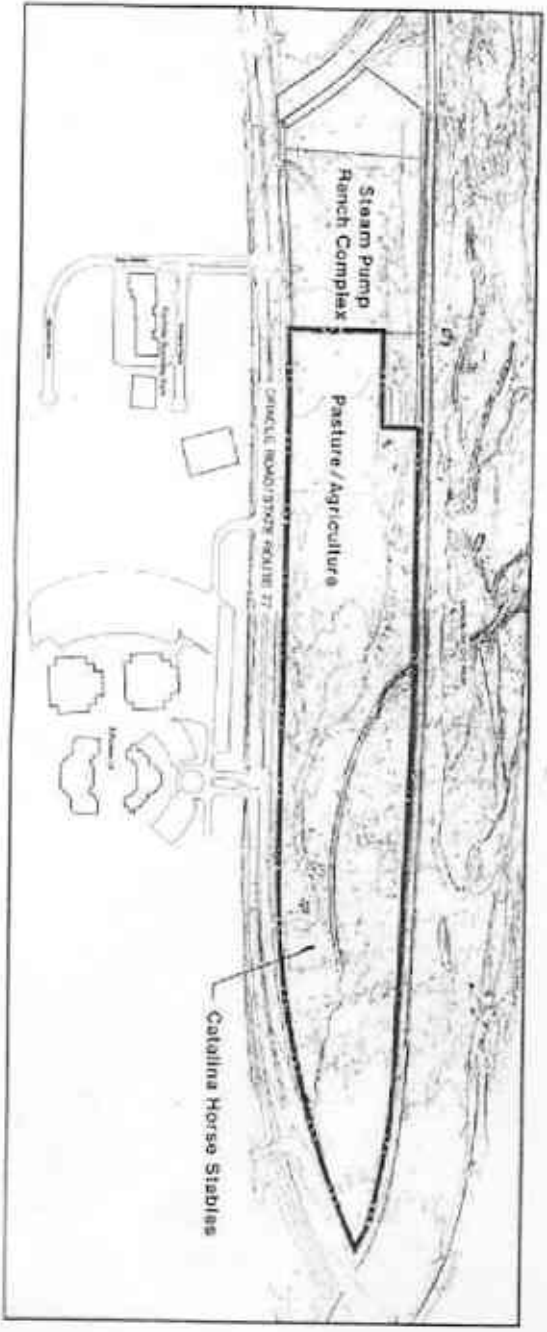
## REGIONAL LOCATION

EXHIBIT I.A.1

Steam Pump Village

OV 9-99-111

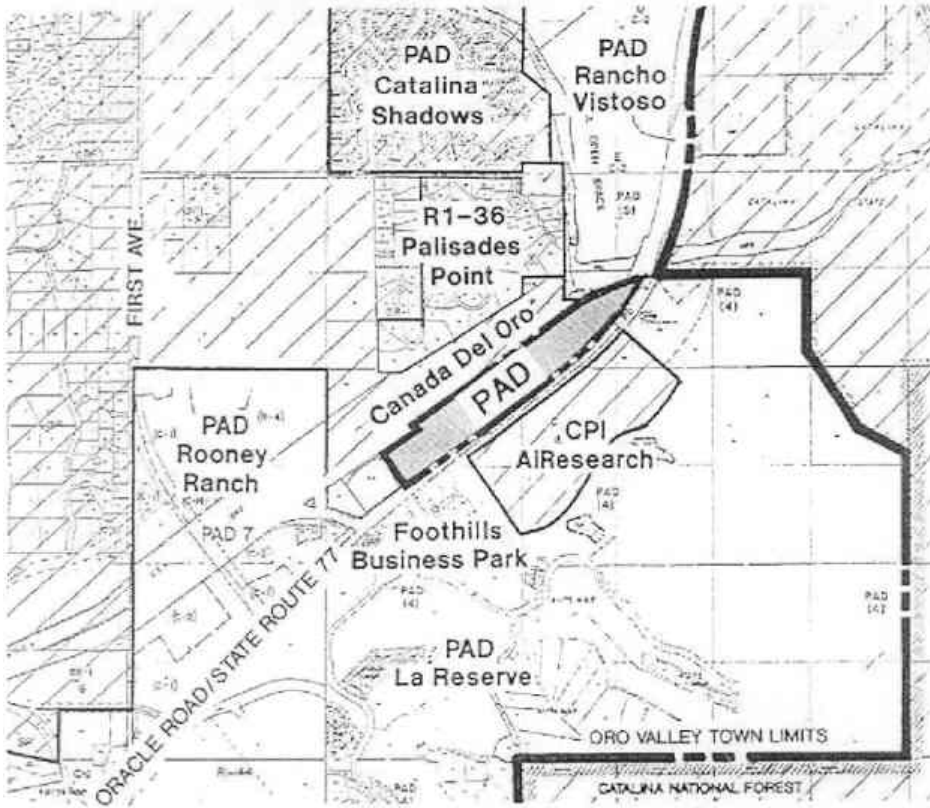




**ONSITE LAND USES**

SCALE: 1" = 400' EXHIBIT I.A.2

OV 9.09-111  
  
 SKANSKA



## EXISTING ZONING/ LAND USE

EXHIBIT I A.3/4

Note: Well locations are shown on Exhibit I K.1 Utility Infrastructure.

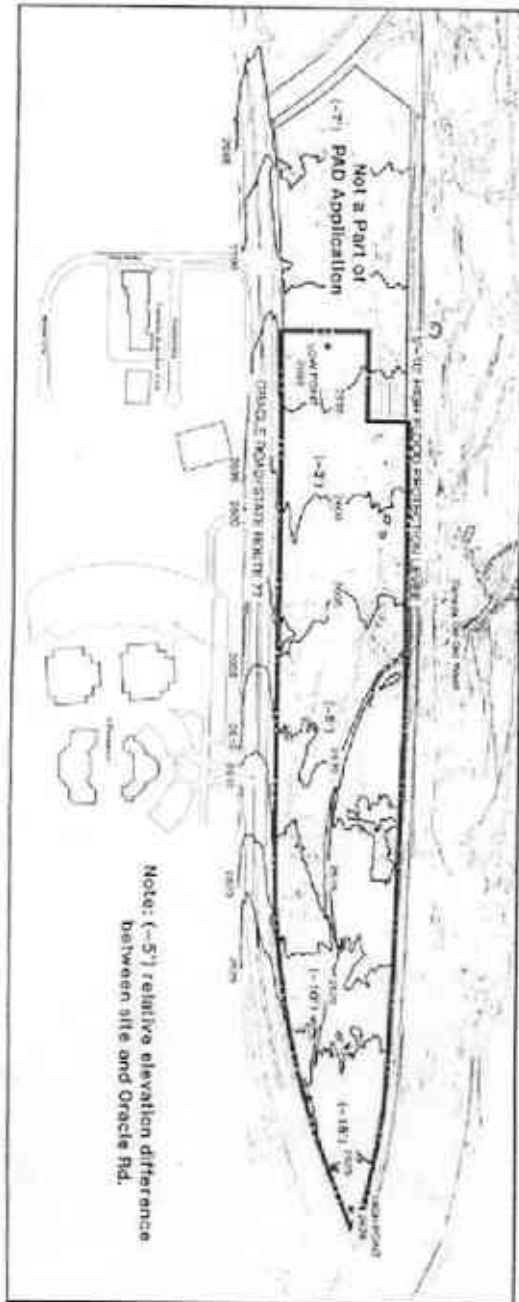


SCALE: 1" = 1200'

OV 9-99-111







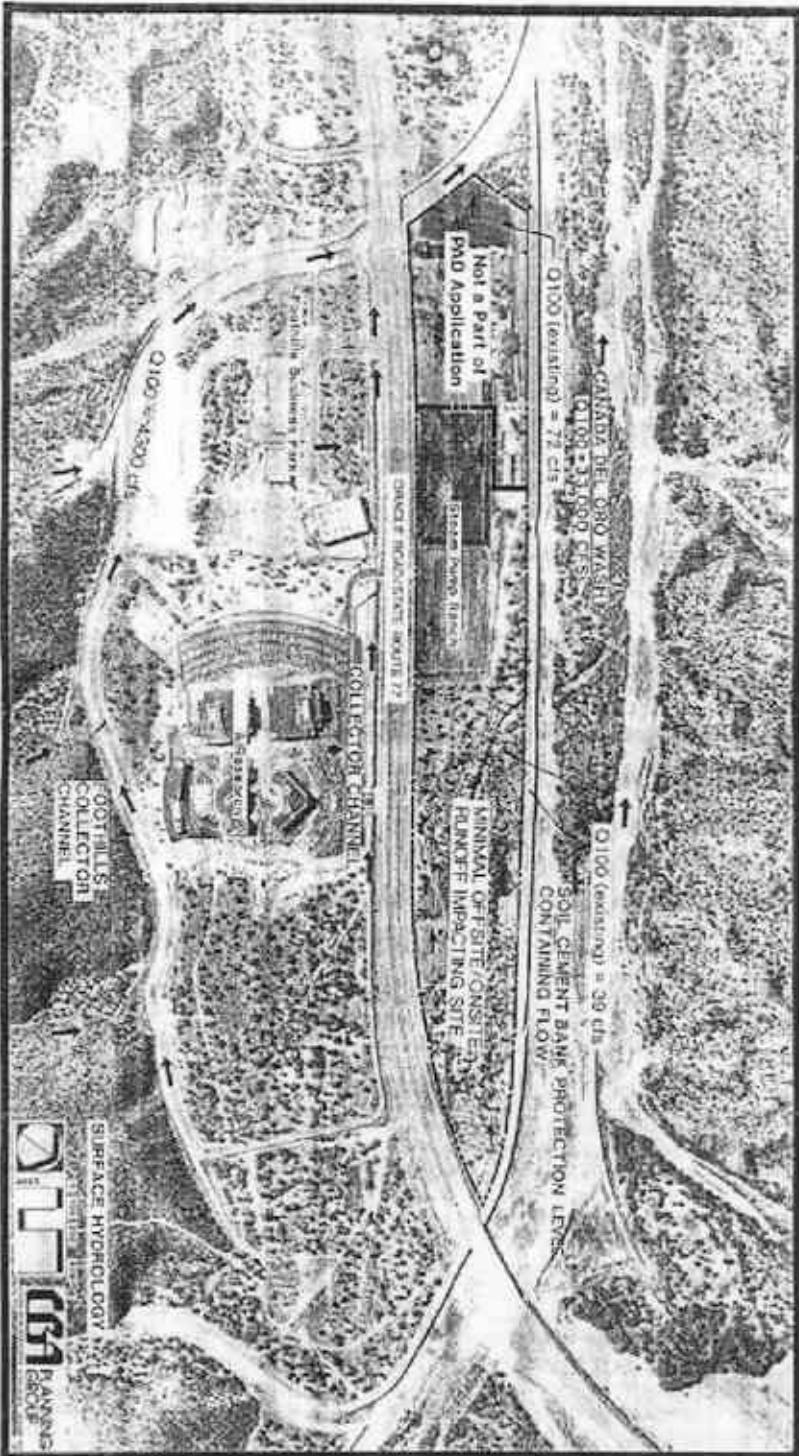
Note: (-5') relative elevation difference between site and Oracle Rd.

**TOPOGRAPHY**

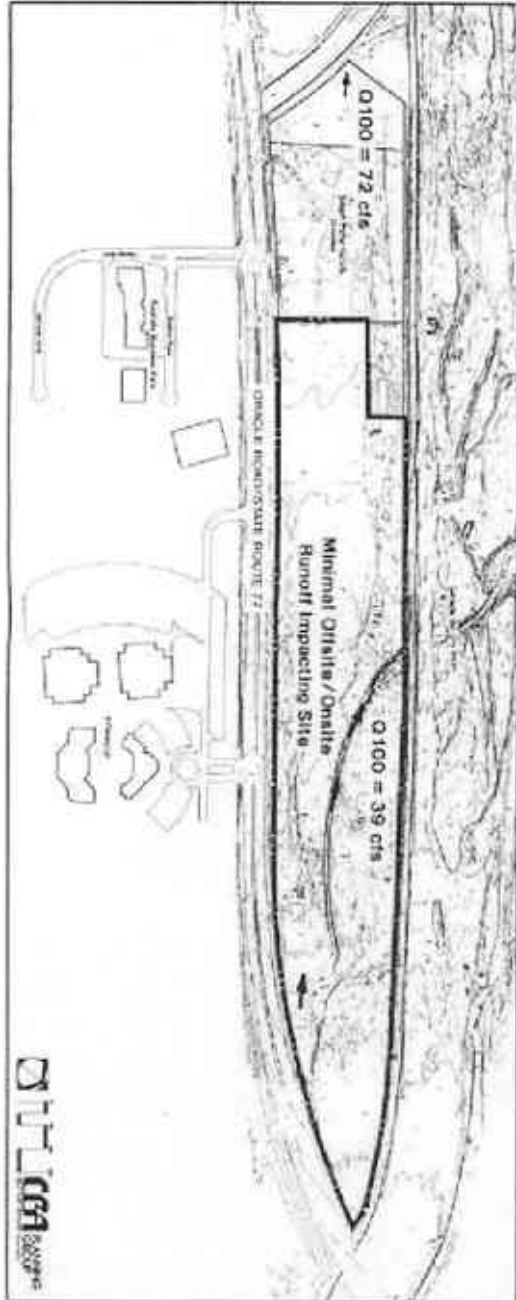
SCALE: 1" = 400' EXHIBIT (D.1)

OV 9-29-111





OV 9-09-111 REGIONAL HYDROLOGY  
 EXHIBIT 1.C.1/4



**ONSITE HYDROLOGY**

SCALE: 1" = 400' EXHIBIT 10.4

DV 9-99-111





REPLY TO  
ATTENTION OF:

DEPARTMENT OF THE ARMY  
LOS ANGELES DISTRICT, CORPS OF ENGINEERS  
ARIZONA-NEVADA AREA OFFICE  
3636 NORTH CENTRAL AVENUE, SUITE 760  
PHOENIX, ARIZONA 85012-1936

RECEIVED  
MAR 9 2000  
STANTEC-TUCSON

December 16, 1999

Office of the Chief  
Regulatory Branch

Mr. James A. Tress  
Westland Resources, Inc.  
2343 East Broadway Boulevard, Suite 202  
Tucson, Arizona 85719-6007

File Number: 2000-00360-LMR

Dear Mr. Tress:

Reference is made to your application and/or letter of November 22, 1999 in which you inquired as to whether or not a Section 404 permit is required from the U.S. Army Corps of Engineers to develop the Steam Pump Ranch property at (Section 5, 6, & 7, T12S, R14E), Oro Valley, Pima County, Arizona.

Based on the information furnished in your application and/or letter (referenced above), we have determined that your proposed project is not subject to our jurisdiction under Section 404 of the Clean Water Act. Since there are no waters of the United States within the aforementioned proposed project area, no Section 404 permit is required from our office.

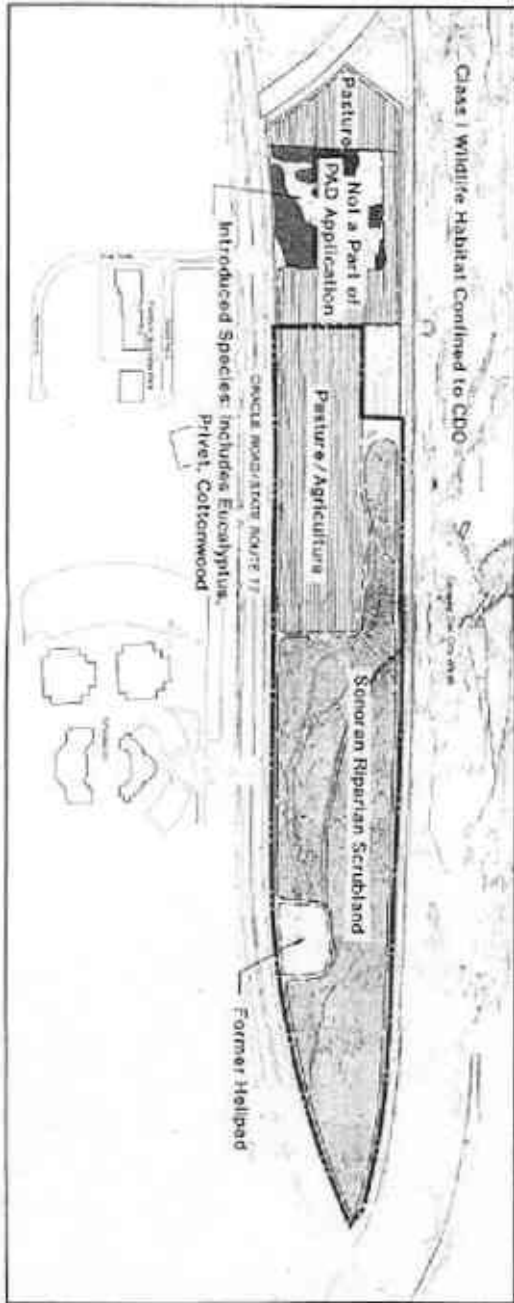
The receipt of your application and/or letter is appreciated. If you have questions, please contact Lynn Renish at (602) 640-5385 x 228.

Sincerely,

Cindy Lester  
Chief, Arizona Section  
Regulatory Branch

EXHIBIT I C.4

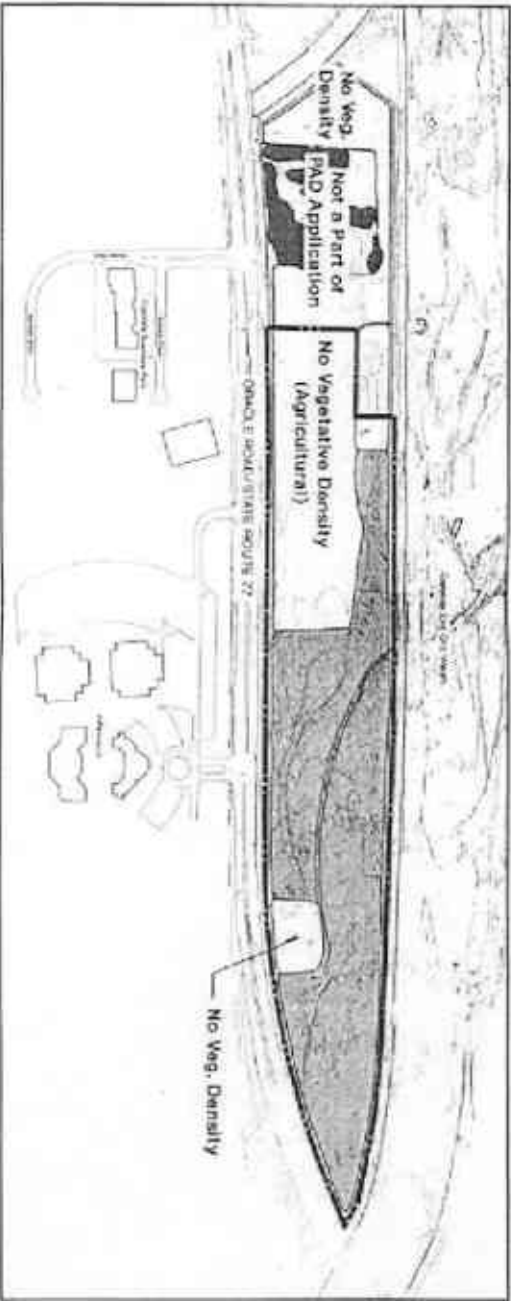




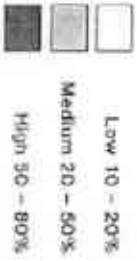
VEGETATION ASSOCIATION EXHIBIT 1.0.1

SCALE: 1" = 400'

OV 8-23-111



**VEGETATION DENSITY**



SCALE: 1" = 400' EXHIBIT 1.0.2

OV 9-99-111



THE STATE OF ARIZONA



## GAME & FISH DEPARTMENT

2221 West Greenway Road, Phoenix, Arizona 85023-4312 (602) 942-3000

Governor  
Rose Malford

Commissioners:  
Thomas G. Woods, Jr., Phoenix, Chairman  
Philip W. Ashcroft, Eagar  
Gordon K. Whiting, Kingdome  
Larry Taylor, Yuma  
Elizabeth T. Woodin, Tucson

Director  
Duane L. Shrutte

Deputy Director  
Thomas W. Spalding

555 N. Greasewood, Tucson, AZ 85745 (602) 628-5376

September 6, 1991

Mr. Gordon Stone  
Cella Barr Associates  
4911 East Broadway  
Tucson, AZ 85711

Dear Mr. Stone:

Re: Site Analysis; T12S, R14E, Sec. 5, 6, 7, and 8, (56 acres)  
Steam Pump Ranch, CBA File No. 105243-05-0014

The Arizona Game and Fish Department has reviewed the above-referenced project to develop approximately 56 acres in T12S, R14E, Sections 5, 6, 7, and 8 into a Planned Area Development, and we provide the following comments.

The project site is bordered on the southeast by the Tucson-Florence Highway, a major thoroughfare. The site is bordered on the northwest by the Canada del Oro Wash which is classified as Class I habitat as "Major Extensions of Riparian Habitat from Protected Areas" on the map of Critical and Sensitive Wildlife Habitats in Eastern Pima County. However, the project site has been hydrologically divided from the Canada del Oro Wash by a soil cement flood protection levee.

Some mesquites exist on the site. These trees would have been considered riparian habitat prior to the flood control levee, but their location on the outside of the current flood control levee decreases their value as riparian habitat. No other riparian or aquatic habitats are present on the project site.

No unusually high densities or diversity of species is expected to occupy the project site. Our Nongame Data Management System has been accessed, and current records do not document the presence of any special status species at the project site. However, the potential exists for the following species to occur there:

-Desert tortoise (*Xerobolus agassizii*) is a U.S. Fish and Wildlife Service (USFWS) candidate Category 2 species and a candidate species on the list of Threatened Native Wildlife in Arizona. It is fully protected under Arizona State Law.

EXHIBIT E.1



Stantec

Mr. Gordon Stone

2

September 6, 1991

-Gila monster (*Hemidactylus* *suspectus*) is a USFWS candidate Category 2C species and is fully protected under Arizona State Law.

- Tumamoc globe-berry (*Tumamocosa* *macdougalii*) is a USFWS Endangered Species.

We recommend that developers design a plan that will not result in significant impacts to the Canada del Oro Wash. Additionally, mature mesquite trees on the project site might be preserved in place or salvaged. We also recommend that native vegetation be used in all landscaping.

We appreciate the opportunity to review and comment on this project. If we can provide any additional information, please contact Rick Gerhart or me at 628-6375.

Sincerely,



John E. Scott  
North Tucson Wildlife Manager

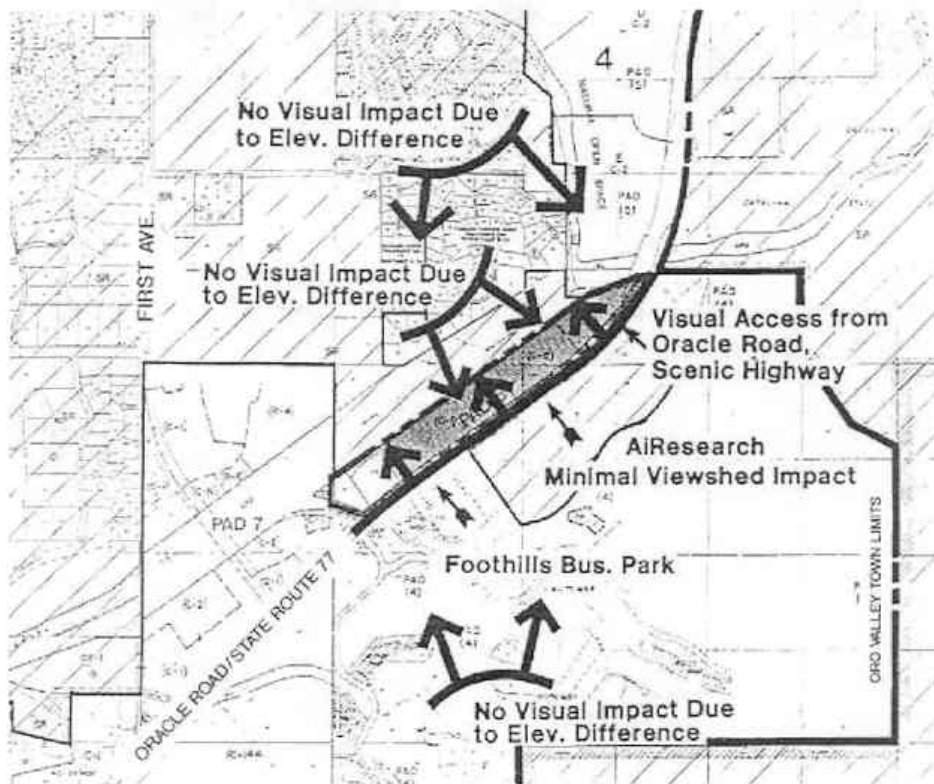
JES

cc: Rick Gerhart, Tucson Habitat Coordinator  
Jim Mazzocco, Pima County Planning Department

EXHIBIT | E.1







## VIEWSHEDS

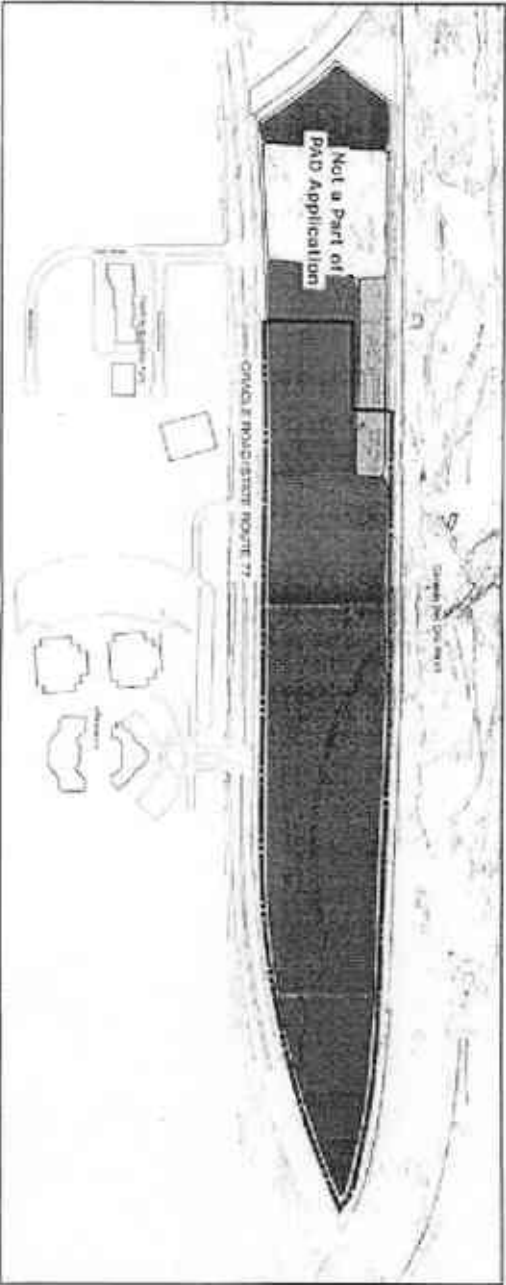
EXHIBIT I F.1



SCALE: 1" = 1200'

OV 9-99-111







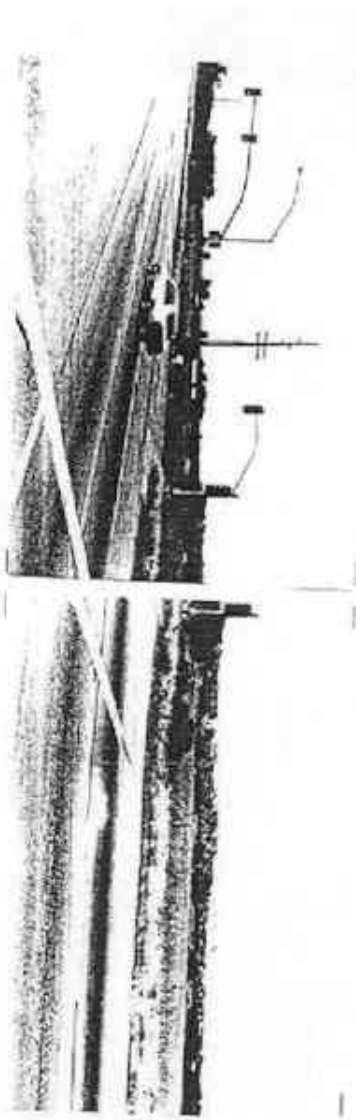
APPROX. SCALE: 1" = 400'

**VISUAL ANALYSIS**  
EXHIBIT 11.3

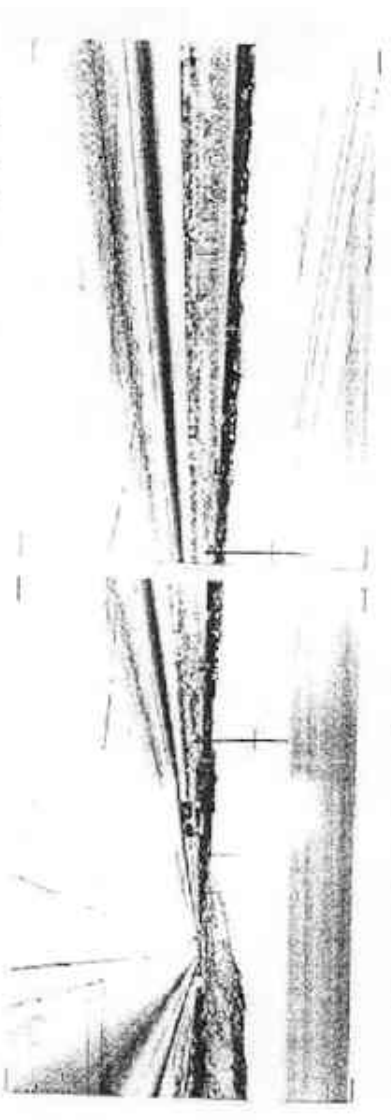
OV 9-99-113



S&S ENGINEERS

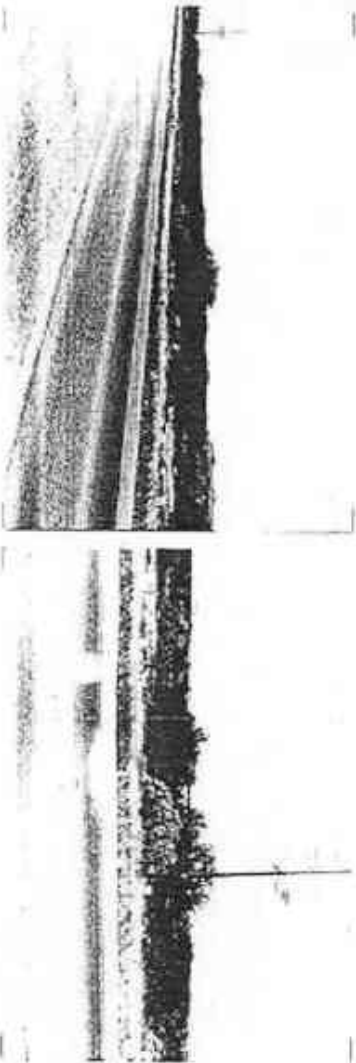


1 Oracle Road looking westerly across the site



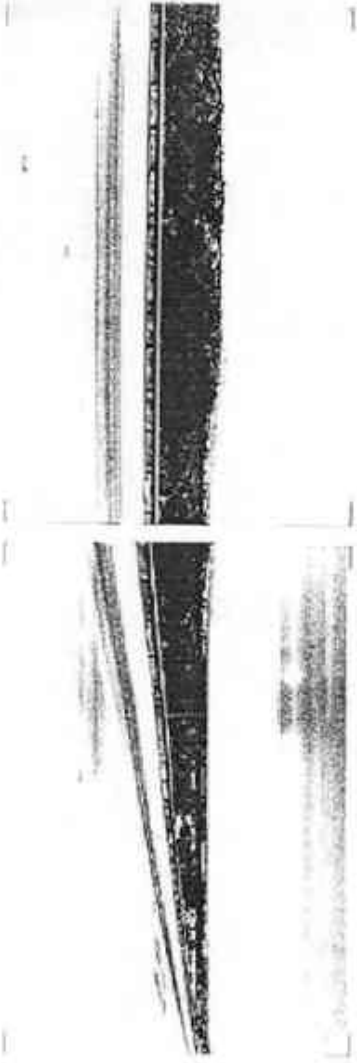
2 Oracle Road looking northerly across the site

VISUAL ANALYSIS  
EXHIBIT F.3



3

Oracle Road looking westerly across the site



4

Oracle Road looking northerly across the proposed park site

VISUAL ANALYSIS

EXHIBIT 1.F.3

OV 5-98-111



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## APPENDIX B

### Oracle Road Scenic Corridor Specific Plan View Analysis Criteria

#### PURPOSE

The Oracle Road Scenic Corridor Specific Plan seeks to protect significant views along the Oracle Road transportation corridor. -The corridor is rich in scenic resources, including views to three mountain ranges, views of foothills and prominent ridges, and views of riparian areas along the Canada del Oro Wash. Oro Valley staff and the applicant have worked hard to ensure compliance with these criteria in developing the viewshed and vegetative requirements for this PAD, which comply with these criteria.

#### VIEW CATEGORIES

The view analysis criteria for the Oracle Road Specific Plan include five (5) categories of views, weighted according to their visual importance. The five categories are:

- Background views of the Santa Catalina Mountains
- Background views of the Tortolita Mountains
- Background views of the Tucson Mountains
- Middle-ground views of rolling hillsides and ridges
- Foreground and/or middle-ground views of the Canada del Oro Wash

#### VIEW TYPES DEFINED

Within each of these categories, there are several view types. The view types are defined as follows:

***Significant panoramic background view*** - this view type consists of a view of an unobstructed or complete view of a large section of a mountain range. As a background, this scenery is set behind foreground and middle-ground views.

***Uncompromised view*** - an uncompromised view provides a window, or "framed," visual access to a significant visual resource that is not compromised by structures or surface disturbance in the foreground or middle-ground.

***View compromised by distant structures or surface disturbance*** - this type provides a window, or "framed" visual access to a significant visual resource that

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is compromised by structures or surface disturbance in the middle-ground or near background.

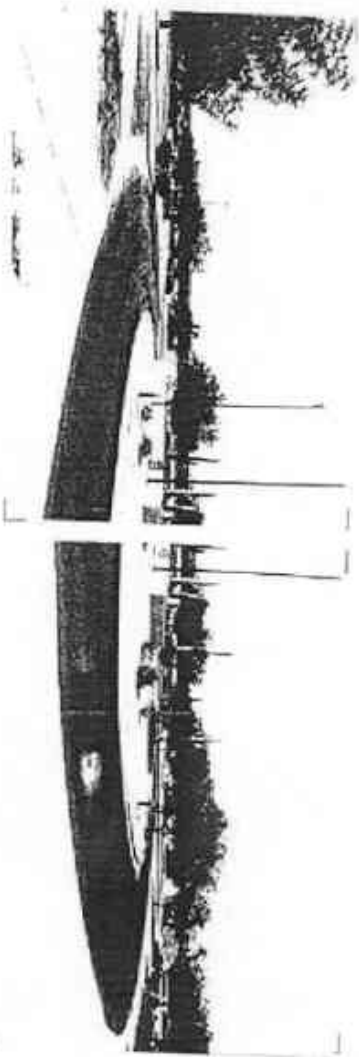
***View compromised by foreground utilities, signage, and structures*** - this type provides a window, or "framed" visual access to a significant visual resource that is compromised by above-ground utilities, structures, or surface disturbance in the foreground.

### **PARCELS SUBJECT TO VIEW CORRIDOR REQUIREMENTS**

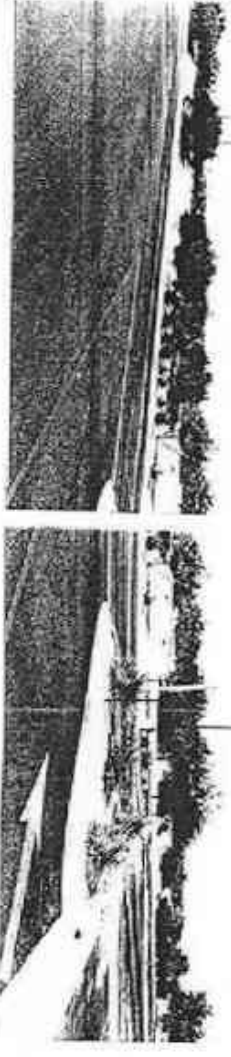
The following table provides weighted values for each of the view types within the five view categories. All views across a subject parcel from the Oracle Road corridor shall be identified and assigned the corresponding numerical value. Any parcel which scores a value of seven (7) or more shall be subject to view corridor requirements.

### **EXHIBIT I F.3**

#### ***Steam Pump Village***



5 Main entry of AlResearch looking westerly



6 AlResearch parking lot looking westerly

VISUAL ANALYSIS

EXHIBIT F.3

GV 0-03-111

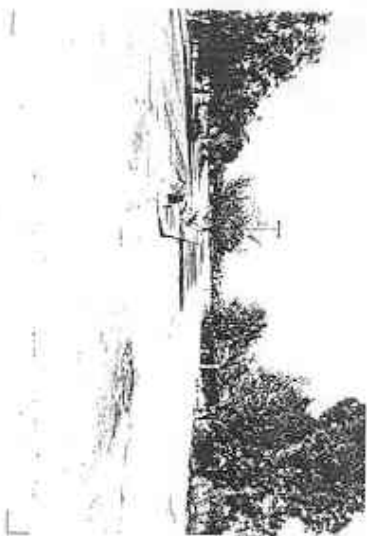




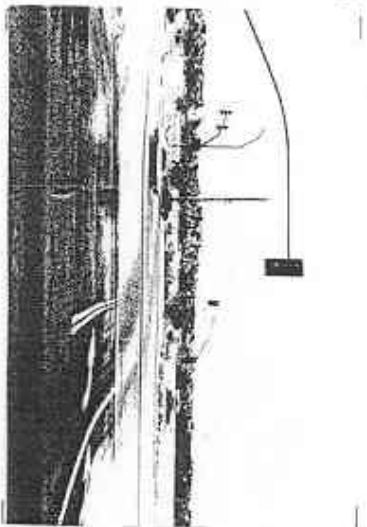
**Oracle Road Scenic Corridor Specific Plan  
View Analysis Criteria and Checklist**

VIEW CLASSIFICATION	WEIGHTED POINTS	VIEWS PRESENT ACROSS SITE?
1. Background views of the Santa Catalina Mountains		NA
• Significant panoramic background view	10	
• Uncompromised view	9	
• View compromised by distant structures or surface disturbance	7	
• View compromised by foreground utilities, signage, structures	0	
2. Background views of the Tortolita Mountains		
• Significant panoramic background view	9	
• Uncompromised view	8	
• View compromised by distant structures or surface disturbance	6	6
• View compromised by foreground utilities, signage, structures	5	
3. Background views of the Tucson Mountains		NA
• Significant panoramic background view	7	
• Uncompromised view	6	
• View compromised by distant structures or surface disturbance	4	
• View compromised by foreground utilities, signage, structures	3	
4. Middle ground views of rolling hillsides and ridges		NA
• Uncompromised views	5	
• View compromised by surface disturbances and/or structures	4	
• View compromised by foreground utilities, signage, and/or structures	2	
5. Foreground and/or middle ground views of the Cañada del Oro Wash		NA
• Uncompromised view of dense vegetative cover within the Cañada del Oro Wash	4	
• View compromised by surface disturbances and/or structures	3	
• View compromised by foreground utilities, signage, and/or structures	1	
<b>TOTAL POINTS</b>	<b>6</b>	<b>6</b>

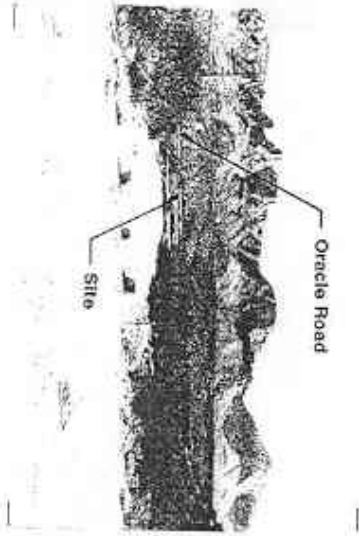
INSTRUCTIONS: Using photographic records of the views across the site from Oracle Road, identify the view classifications that are present. Enter the weighted point for each view classification in the right hand column. Total the weighted value for view protection on this property.



7 Intersection at Foothills Business Park



8 Main intersection of AlResearch



9 Palisades Point looking southerly

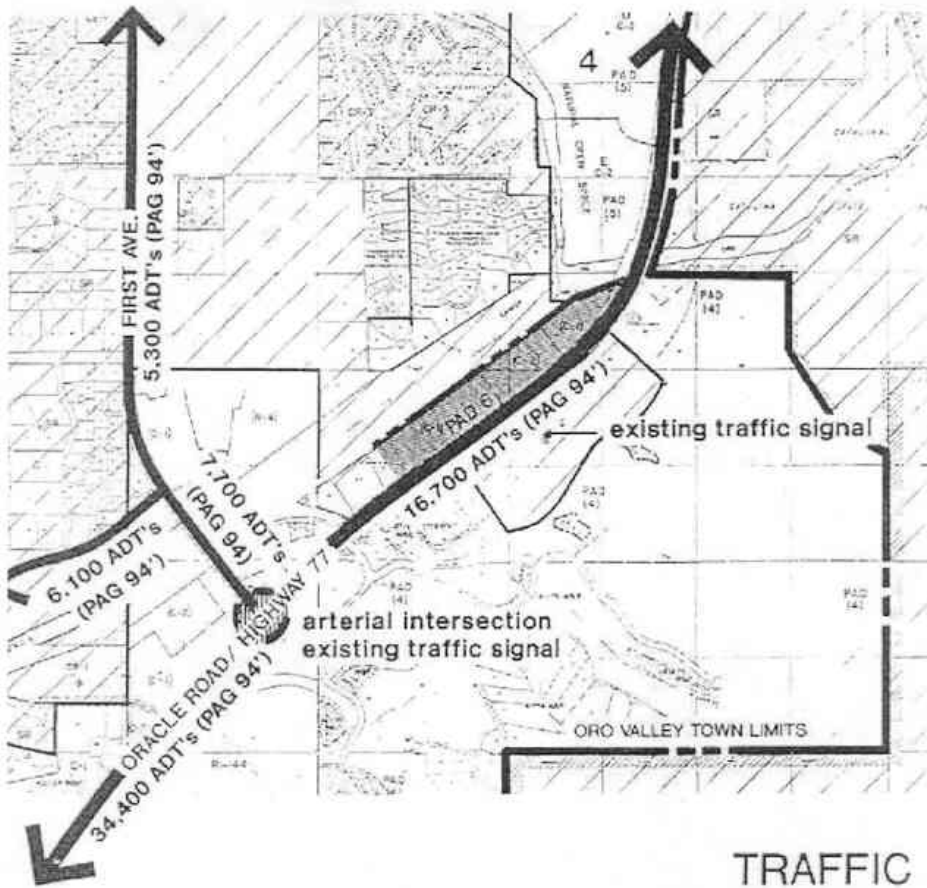


10 Palisades Point looking southerly

VISUAL ANALYSIS  
EXHIBIT F.3

OV 9-99-111





**TRAFFIC**

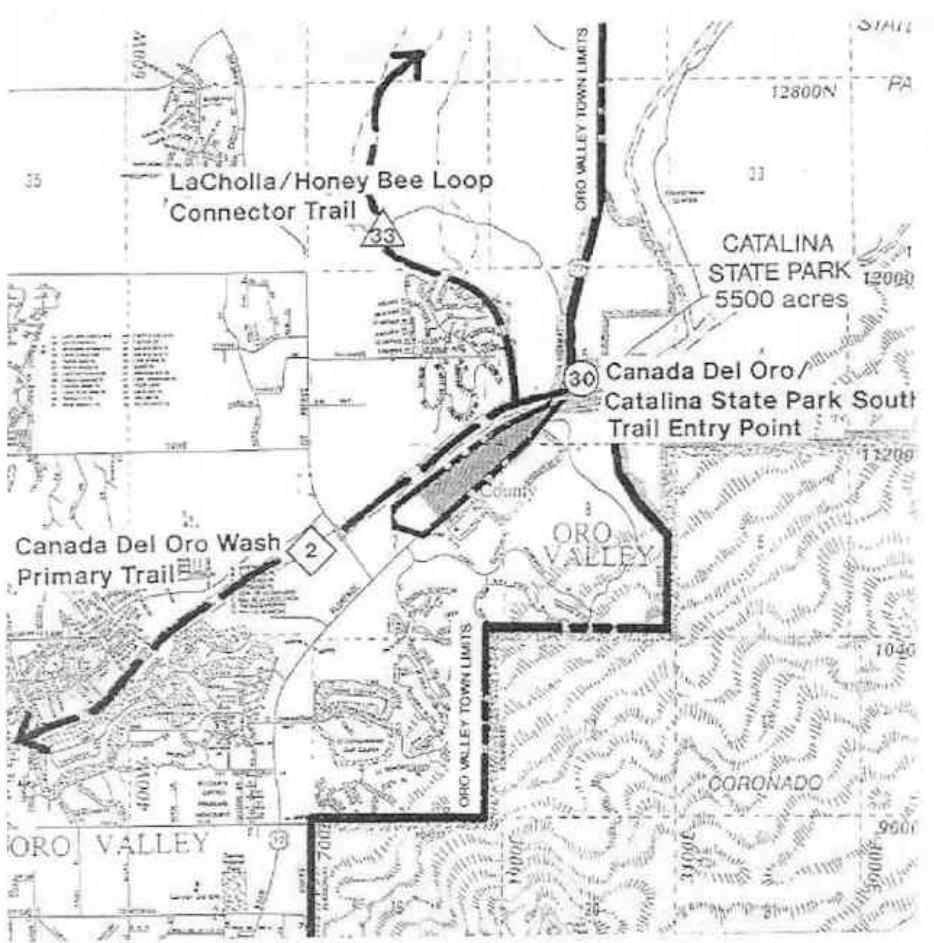
EXHIBIT | G.1/2/3



SCALE: 1" = 1200'


OV 9-99-111





## RECREATION & TRAILS

EXHIBIT I H.1


 SCALE: 1.5" = 1 Mile

OV 9-99-111



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## *Section 1.2 LAND USE PROPOSAL*

The following land use proposal for Steam Pump Village sets forth design concepts derived from the preceding inventory and analysis of the site's characteristics. Through this process, project planners and the developer have had the opportunity to devise sensitive design responses and mitigation techniques that reflect the characteristics of the site and area. This design and development approach is described in greater detail in the following Land Use Proposal Section.

### **A. Project Overview**

The Steam Pump Village development provides for the development of a mixed-use activity center consistent with the Town of Oro Valley General Plan and the intent of the Oracle Road Scenic Corridor Overlay District, which designates the subject property as Commercial/Activity Center. The activity center is planned as a high-end retail development to support the vision of the Town of Oro Valley in creating a technology-driven economy. The center will accommodate a range of distinct and complimentary land uses that are physically and functionally integrated. Steam Pump Village will include pedestrian and site amenities such as courtyards, shaded seating areas, pedestrian mall(s), landscaping, and an integrated pedestrian circulation system. Functionally, the center will accommodate a range of differing but complimentary land uses and be designed with amenities and architectural elements to reflect the quality development Oro Valley attracts. Functionally, the center will maximize the benefits of the mixed-use development concept, such as common driveways, internal circulation, shared parking opportunities and spin-off economic benefits among the various activities. Typical uses envisioned in the center include: retail uses, restaurants, entertainment facilities, banks and financial institutions, hotels, medical and professional offices, multi-family, residential, natural open space park and landscaped plazas - all of which are vital services for a high-tech industry and community.

### **B. Tentative Development Plan**

The Tentative Development Plan in the PAD will be replaced upon the approval of a Master Development Plan for the shopping center. This Master Development Plan will also include a set of Design Guidelines for Steam Pump Village regarding the design and aesthetics for future development to be similar to that which is currently constructed.

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The developer is working with the Town of Oro Valley to develop and implement an expedited conceptual plan review process in the spirit of achieving a “Shovel-Ready” program for Steam Pump.

### **C. Existing Land Uses**

1. Exhibit 11C. I indicates the requested zoning boundaries for the development. The zoning request is for Planned Area Development (PAD) on 41.64 acres.
2. Existing and proposed offsite land uses include residential, commercial, a State Park, and a major bio-technology research park and medical uses along Innovation Way and within Oro Valley. Steam Pump will complement the existing commercial and provide both retail services, hotel rooms and potential additional office space for expansion of the technology businesses located near the project.
3. The proposed development will have minimal impact on the existing Steam Pump Ranch complex, as adjacent retail uses will be compatible in scale and architecture to the existing Steam Pump Ranch house/complex, and landscape buffers (25') will be provided alongside common property lines. However, the proposed Pad # 1 in Phase I located adjacent to the Steam Pump Ranch complex shall have a landscape buffer of 5' from the northwest property line (as currently exists), a building setback of 15' to accommodate a small building and a maximum building height of 30'. In addition, light poles on the westerly property line shall not be permitted over 25' tall.

### **D. Topography**

1. The Tentative Development Plan design layout is intended to minimize the need for substantial grading and given the relatively flat nature of the site's topography, minimal impact to the natural topography is anticipated.

Generally the site in relation to Oracle Road is 10-15 feet lower at the northern portion and 3-5 feet lower at the central portion. Since none of the site is within the 100-year floodplain, filling of the site for building pads is unnecessary and therefore only minimal fill grading for project access to Oracle Road is anticipated.

2. There are no onsite slopes of 15% or greater.

- 
- 3./4. The subject property's pre-development average cross-slope is less than 15% and exclusion of natural open space in order to take advantage of the allowances provided in the Hillside Development Zone is unnecessary.
  - 5./6. Exhibit IID.5/6 shows areas to be graded, revegetated and natural open space. Balanced earthwork grading and disturbance will primarily occur where roads, driveways, building pads and parking areas, are established. It is anticipated that 33 acres, or 80% of the site will be graded, disturbed and revegetated or built upon. (Of the 33 acres it is estimated that approximately 25 acres have already been disturbed by agriculture/ranching activities and previous development, i.e., helipad.) The natural grade of the site is not expected to be changed by more than a few feet and engineering measures will be used to mitigate impacts from site disturbances and provide positive drainage.

## **E. Hydrology**

1. The Tentative Development Plan has been designed with sensitivity to the hydrologic characteristics of the site. As described in the Inventory and Analysis Section C, Hydrology, the subject property is protected from offsite watershed runoffs due to the extensive flood protection levee along the CDO, which contains the 100-year floodplain, the Foothills Collector Channel and the drainage channel along, Oracle Road. Therefore, the Tentative Development Plan anticipates that the project design will accommodate and direct only onsite generated post-development runoff to natural open space and landscaped areas.
2. There will be no encroachment into the 100-year floodplain of the Canada del Oro Wash, as depicted on Exhibit IIE.3/4.
3. There will be no significant impacts to upstream or downstream properties.
4. Erosion mitigation measures, such as vegetation, will be provided to stabilize graded areas necessary for building pads or parking areas.
5. The Tentative Development Plan conforms to the applicable flood control policies of the Town of Oro Valley General Plan and adopted Pima County policies. Under developed conditions, the 100-year peak discharge is 380 cfs. This is for

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the entire site, including offsite runoff from the levee and highway.

According to the County Floodplain Ordinance, the site is not located in a balanced basin, and therefore detention is not required. However, due to the mixed-use nature of this project, which is greater than one acre in commercial use, the County may require onsite retention. The threshold retention requirement for commercial developments greater than one (1) acre in size is based on the five-year event. In accordance with the procedures outlined in the Stormwater Detention/Retention Manual, the required retention volume for this project is estimated to be 3.43 acre-feet, or 149,000 cubic feet. (Assuming a retention basin of three feet deep, an area of approximately 1.5 acres would be required.) This volume may be provided in several basins located throughout the site, dependent upon the final detailed development plan. Specific onsite locations have not been identified at this time.

Ultimate project drainage designs, which will be determined during development plan/hydrology study review and approved by the Town Engineer, will consist of numerous acceptable engineering measures, including natural percolation, dry wells, onsite retention areas and/or conveyance of runoff to the northwestern property line collector channel (adjacent to the CDO Wash levee), which will empty to the Foothills Collector Channel.

6. A master hydrology study for the entire PAD shall be submitted to the Town for review along with submission of the first Development Plan, irrespective of its location within the PAD. A master property owners' association and/or individual lot owners will be responsible for onsite drainage improvements, including control, maintenance, safety and liability of private drainageways, and easements, access lanes, and detention/retention basins.

## **F. Vegetation**

1. The Tentative Development Plan has endeavored to preserve and incorporate into the project significant areas of medium density vegetation by sensitive site planning and, more importantly, the designation of the natural open space park at the northern end of the project. In addition, sensitive site planning will emphasize the preservation of significant native vegetation within project perimeters and landscape areas and salvage by transplantation of significant native vegetation to



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project entries, focal points and courts/plazas, in accordance with the Native Plant Salvage and Landscape Plan Requirements, Chapter 14 of the Town of Oro Valley Zoning Code

**G. Wildlife**

1. The existing offsite Class I critical riparian habitat, which exists within the Canada del Oro Wash, will be preserved as this area has been dedicated to Pima County and will not be impacted by project development.

**H. Buffer Plan**

1. This PAD specifies the location of the project bufferyards in accordance with the intent of Article 24.5, Oracle Road Scenic Corridor District Regulations/Guidelines and Chapter 27.6, Native Plant Salvage and Landscape Plan Requirements of the Town of Oro Valley Zoning Code. The landscape buffer along Oracle Road will be 30 feet in width and contain a 40" high landscape screen. Development adjacent to the existing Steam Pump Ranch facility will provide 25 feet landscape buffers along the common property lines as have been provided in Phase I-III, except as noted in Section 1.2 C-2.

In addition, design techniques such as interior parking lot landscaping of one canopy tree per 7 spaces, adequate building setbacks from Oracle Road, consistent architecture and landscaping and limited access to Oracle Road will significantly mitigate sound, visibility, lighting and traffic impacts.

2. Exhibit I.H.2 delineates the ranch complex and Oracle Road bufferyards.

**I. Viewsheds**

1. The Tentative Development Plan designates the northern natural open space park, perimeter bufferyards and interior project landscaped areas as positive visual elements that will serve to mitigate offsite visual impacts of the project. In addition, the overall project image, also applicable to those areas of high site visibility, will emphasize a consistent architectural treatment, the use of muted earthtone colors and

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landscaping with indigenous native plant material in order to minimize visual impacts. Projects CC&Rs will be developed to assure architectural and landscaping quality and continuity throughout the Steam Pump Village development. Exhibit 111.1 illustrates a post-development section of the site.

## **J. Traffic**

1.

- a. Oracle Road/State Route 77 (200' ROW) will serve as the only access to the project. The Tentative Development Plan proposes that major project entries occur at the three existing median openings along Oracle Road, one of which is signalized, and designates limited right-turn only minor entries at three locations. Internal circulation will consist of a looped parking lot drive that connects all development with the signalized major entry at AiResearch and the northern major entry, thus reducing needless turning movements and multiple access points onto Oracle Road.
- b. Project access does not depend on future improvements of Oracle Road, as the existing four-lane divided highway has adequate capacity to serve this project. However, in order to improve traffic safety, subject to Arizona Department of Transportation (ADOT) review and approval, proposed improvements on State Route 77, which shall be constructed by the developer and maintained by ADOT, include the following:

Traffic signal modification at the AiResearch Drive in order to accommodate the additional leg of Drive Number 2 including, lengthening of the existing northbound left-turn lane to 350 feet and widening the S.R. 77 southbound approach to include a separate right-turn lane. At the northernmost drive of this development, a 250-foot long left-turn lane shall be provided in the existing median and median opening for left-turn access. A southbound right-turn lane is also proposed at this location. There is a good potential that a traffic signal will be warranted at this location in the future, particularly with the development of the La Reserve CPI PAD, which has access at this intersection. With potential signalization at this location, interconnect conduit shall be provided from

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the signal at Drive 2 to this intersection, a distance of approximately 2,600 feet.

- c. Based upon 1994 ADOT traffic data and PAG projections on the surrounding roadways (Exhibit IG.1/2/3) and the additional approximately 11,953 trips generated from this project, the existing road capacity will remain adequate through the build-out of this project.
  - d. No through traffic to local streets of adjacent subdivisions or development from this project are proposed.
  - e./f. Exhibit IIJ.1 Traffic Volume Analysis, describes the peak hour trips for the proposed Tentative Development Plan and specifies the necessary pavement widths for the internal circulation system and the number of lanes required at access points.
  - g. All necessary circulation system improvements will be completed by the project developer, its successors or assigns.
2. Onsite internal circulation will be conveyed through driveways and parking access lanes that will be designed in accordance with the Town of Oro Valley requirements. Exhibit IIJ.1 illustrates typical project entry sections (however alternate designs, such as pavers instead of raised landscape medians, may be administratively approved by Town staff to meet varying site conditions.) Any proposed changes to the location, design or material of an entrance in the right-of-way is subject to ADOT approval.
  3. Pedestrian ways and bicycle trails will be constructed onsite to interconnect throughout the development and access the regional Canada del Oro Wash primary trail/riverpark and the La Cholla/Honey Bee Loop connector trail north of the project. (See Exhibit IIL.1/3.)
  4. In order to facilitate the use of alternative transit opportunities and reduce vehicular traffic, 5% of commercial area parking spaces will be provided for Park and Ride spaces and bicycle parking facilities will be constructed throughout the development.

- 
5. The location of driveways Nos. 1, 3 and 5 are conceptual. Justification and location of said driveways will be considered at the time of the Development Plan submittal.

#### **K. Sewers**

1. Public sewer service is available for the project by accessing the 21-inch sewer line along the east side of Oracle Road/State Route 77. It is anticipated that one sewer line connection, which is bored underneath Oracle Road to access the existing 21-inch line, will be necessary to serve the development and be located at the southern portion of the development. The capacity response letter from the Pima County Department of Wastewater Management is included as Exhibit IIK.1.

#### **L. Recreation/Trails**

1. Exhibit 11L. 1/3 describes the project recreation areas including the approximately two-acre natural open space park within the northernmost corner of the development.
2. Minor functional and/or natural open space on each development parcel, i.e. landscaped areas/plazas, etc., will be owned and maintained by individual lot owners. Major project-wide open space features, such as the northern park, project entries/landscaped frontages and trail facilities, will be owned in common and maintained by a master property association.
3. Project access to the regional recreational trail system, i.e., the Canada del Oro primary trail and the La Cholla/Honey Bee Loop connector trail, will be provided by direct connection to the flood protection levee along the CDO. (See Exhibit IIL.1 /3.)

#### **M. Cultural/Archaeological/Historic Resources**

1. Specific performance standards delineated in this PAD, including landscape buffers, compatible architectural style and building scale, will mitigate impacts and incorporate the Steam Pump Ranch architectural theme into the project.

The architectural theme and character of the existing Steam Pump Ranch complex can be categorized as two distinct

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architectural styles. The original old adobe ranch house, which dates from the late 1800's and currently is in disrepair, is an example of early Territorial Ranch House architecture. The more modern ranch house complex, constructed in 1939, has characteristics of the Spanish Colonial/Mediterranean Revival style prevalent in the 1930's.

2. An archaeologist performed a field investigation of the property and no resources were discovered (see Exhibit 11.1/2). If resources are discovered during construction, all earthwork will cease and an archaeologist will be consulted.

August 21, 1991

Mr. Gordon Stone  
Assistant Vice President  
Cella Barr Associates  
4911 E. Broadway  
Tucson, AZ 85711

RE: Report for Steam Pump Ranch  
Archaeological Exploration  
Legal: W1/2; NE1/4; T12S; R14E; S.7  
PAST Job No. 91300

Dear Mr. Stone:

Archaeologists from P.A.S.T. conducted a 1 personday, 47 acre exploration of the subject property on August 17, 1991, located in Pima county in the vicinity of Oro Valley. This exploration consisted of an intensive on-foot coverage of the property by our staff in order to identify and locate any cultural resources, historic or prehistoric, within the property boundaries. Field personnel (D. Stephen) were spaced approximately 20 meters apart and crossed the subject property in a series of contiguous corridors with areas of extreme slope covered less intensively. General conditions were good for conducting the field work. Ground visibility was minimally effected by the presence of trees, shrubs, semi-shrubs, succulents and grasses. The original land-form has been extensively disturbed by historic alterations to the ground surface. Although an occasional isolated prehistoric artifact was noted, there were no surface indications of significant prehistoric archaeological materials on the property. Archives at the Arizona State Museum showed there are no recorded prehistoric sites on the subject property. However, a registered historic site (AZ BB:9:75 ASM; Steam Pump Ranch) is located adjacent to the subject property.

This well known historic site was constructed in the 1870's by George Pusch and was a important focal point of early Anglo activities in the area which was to become modern Oro Valley. As such, it retains historic significance for Tucson as well as for the local community and would appear to qualify for inclusion in the National Register of Historic Places. Although the proposed

Mr. Gordon Stone, Cella Barr Associates  
Steam Pump Ranch Archaeological Exploration, Page 2

project may not have a direct adverse impact on this historic site, consideration should be given to potential indirect impacts which might adversely effect this resource. Any steps that could be taken to preserve the historic information associated with this site, not to mention the site itself, should be encouraged.

However, based on the field methods employed and the observable surface indications, there does not appear to be sufficient evidence to warrant further archaeological studies on the subject property except as noted above. Ground disturbing activities on the property should not commence without authorization by the cognizant agency archaeologist(s) and the State Historic Preservation Office, as appropriate.

The likelihood of buried materials being present is moderate. This leaves possible the chance that ground disturbing activities could reveal the presence of cultural resources. In the event such materials are discovered, construction activities should cease and a professional archaeologist be consulted to assess the potential significance of any artifacts or features unearthed.

Thank you for the opportunity to work with you on this project. If I may be of further assistance do not hesitate to contact me.

Cheers,



David V. M. Stephen  
Archaeologist

EXHIBIT 11.1/2





ARIZONA STATE MUSEUM  
THE UNIVERSITY OF ARIZONA  
TUCSON, ARIZONA 85721

August 19, 1991

Mr. Gordon Stone  
Assistant Vice President  
Celia Barr Associates  
4911 East Broadway Blvd.  
Tucson, AZ 85711

Dear Mr. Stone:

This letter is being sent in response to yours of August 7th requesting a site file check for your project: Steam Pump Ranch CDA File No. 105243-05-0014. This project is located at F12S R14E Secs 5, 6, 7, and 8.

The Archaeological Site Survey Files at the Arizona State Museum have been consulted with the following results. There have been no archaeological survey projects conducted on the subject property. One site is known for the area and that is AZ 88:9:75, known as the Steam Pump Ranch. Considering the location of the property, the potential for the recovery of cultural remains is low to medium at best. A survey would not necessarily have to be done. However, it is recommended that a thorough documentation project be conducted on the Steam Pump Ranch as it is a potentially eligible site for inclusion in both the State and National Register of Historic Places. Clearance on this property would not be recommended until after archaeological investigations have been completed by a qualified archaeologist.

If you have any questions concerning this statement, please feel free to contact me at 621-6011.

Sincerely,

A handwritten signature in cursive script that reads "Shurban".

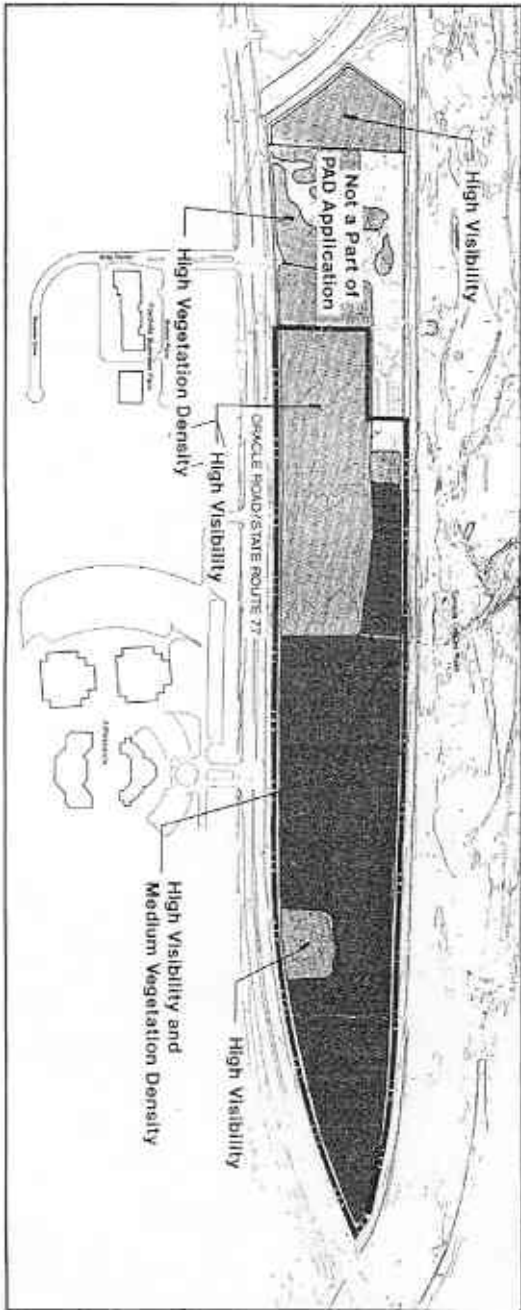
Sharon F. Urban (Miss)  
Public Archaeologist

SFU/ajc

EXHIBIT 11.1/2





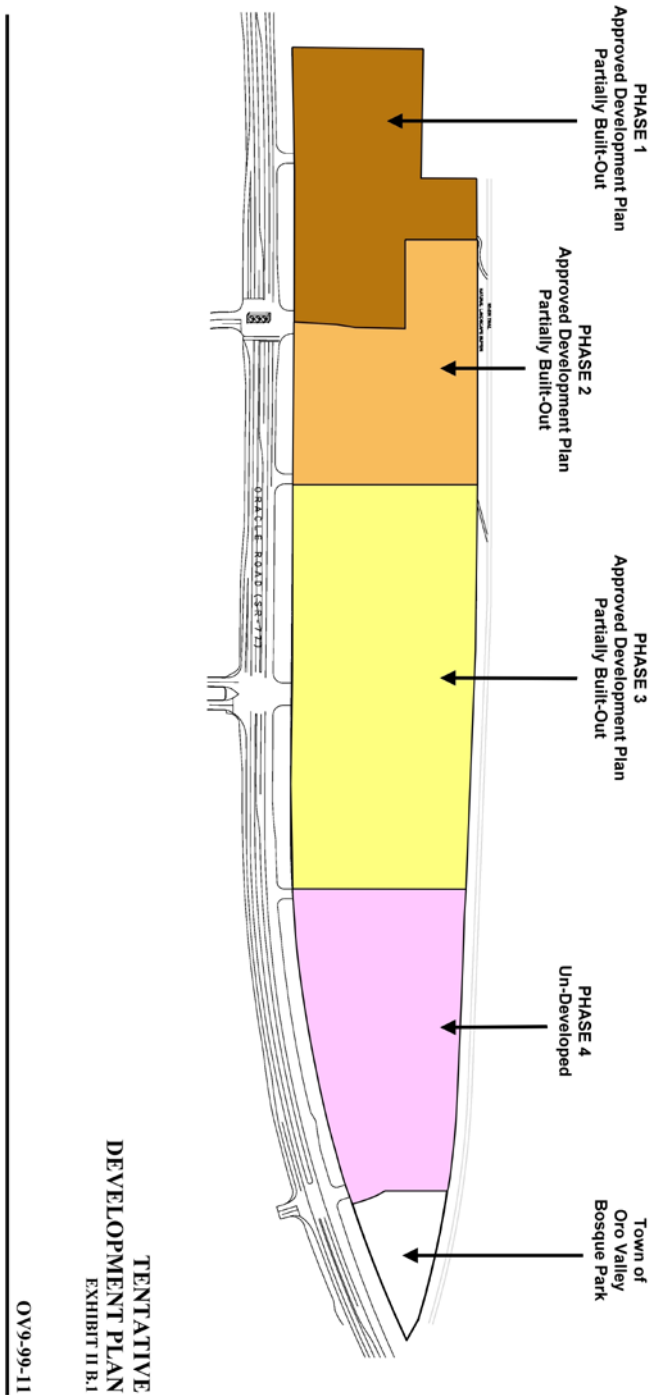


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- 1 Character
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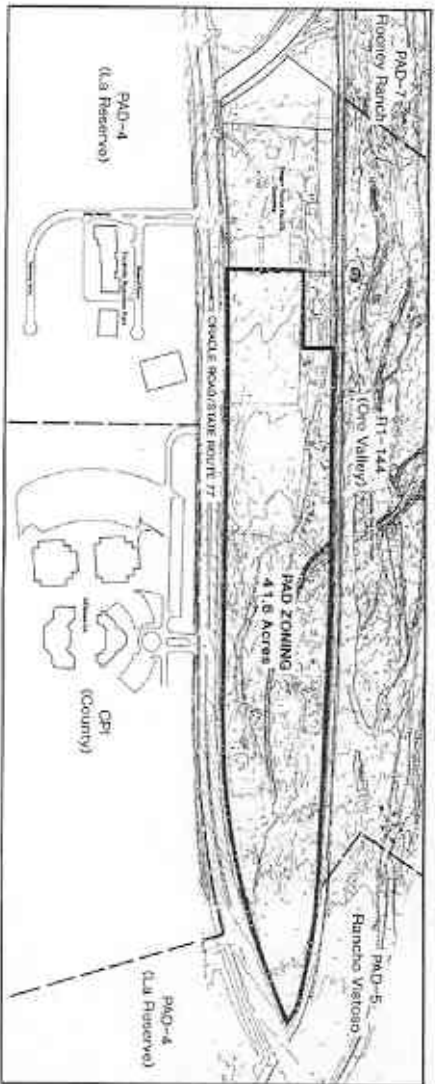
**COMPOSITE MAP**  
 SCALE: 1" = 400' EXHIBIT I.1.1

OV 9-99-111  
  
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The Tentative Development Plan shall be replaced upon Owners submittal and approval of a Master Development Plan to the Town of Oro Valley. Such new plan shall replace Exhibit II B.1 in the PAD upon approval by the Town Council.

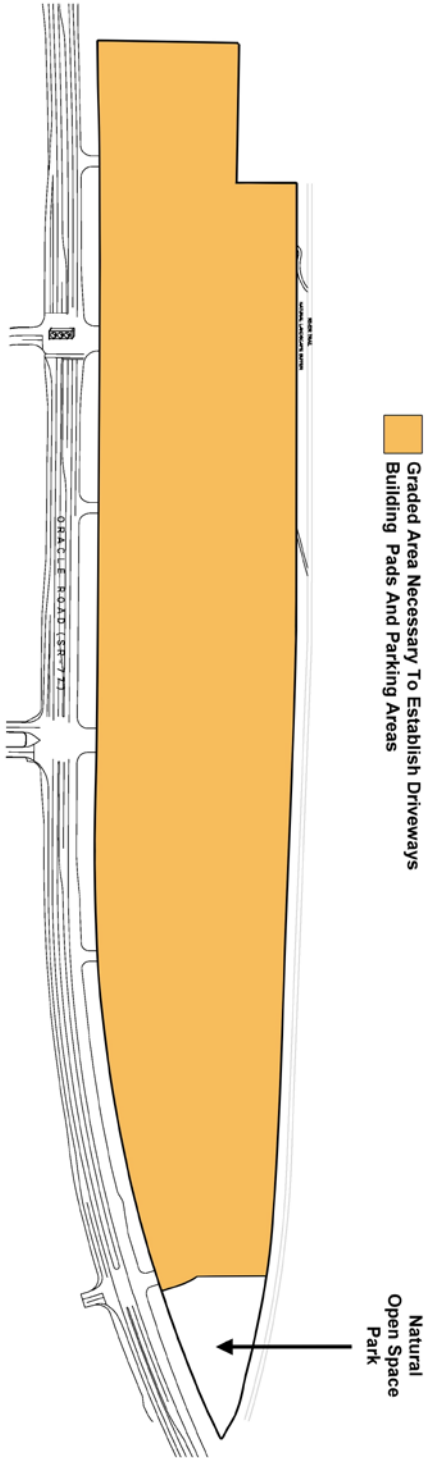


**REQUESTED PAD ZONING**

SCALE: 1" = 400' EXHIBIT I.C.1

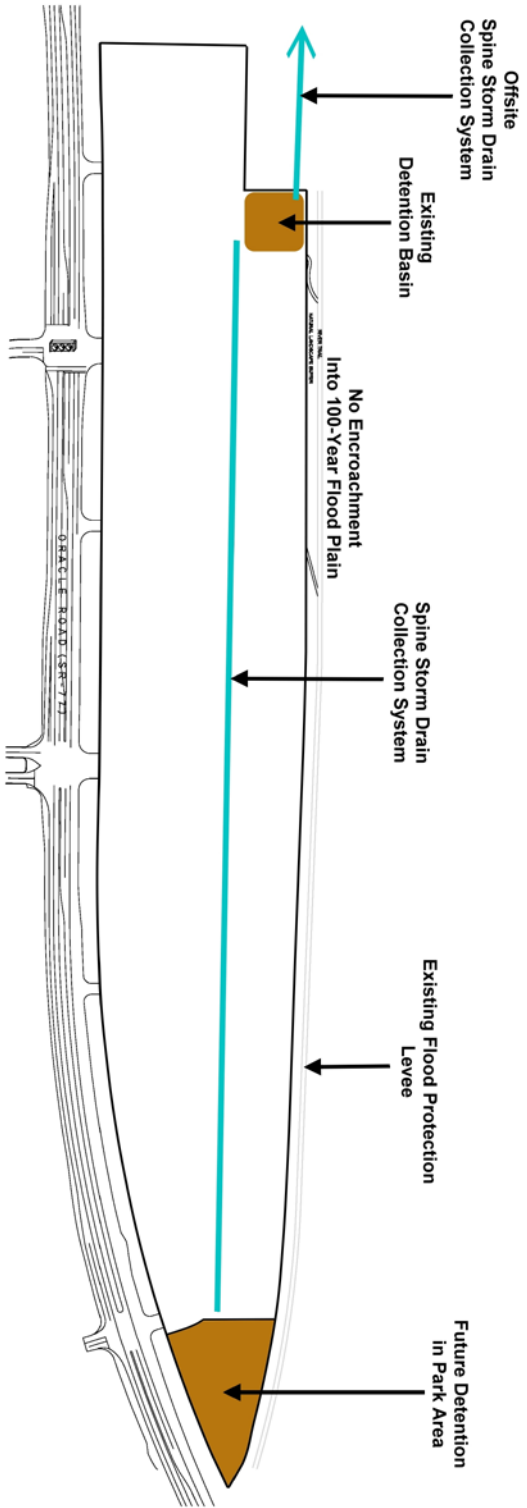
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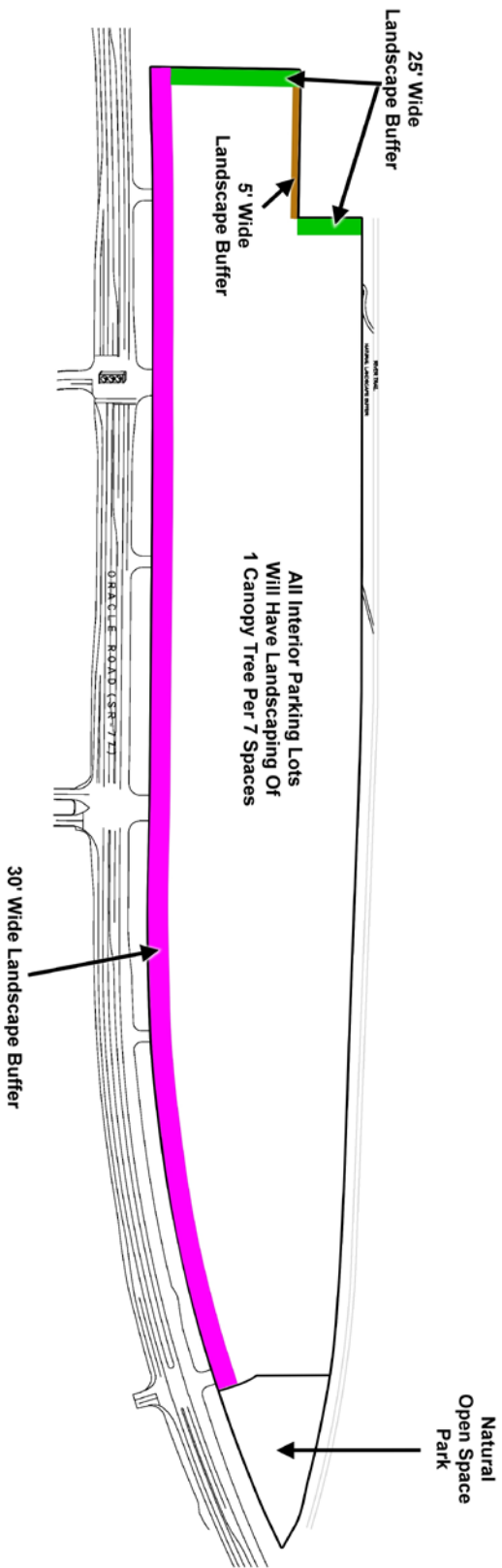
**TOPOGRAPHY**  
EXHIBIT II D 5/6

OV9-99-11



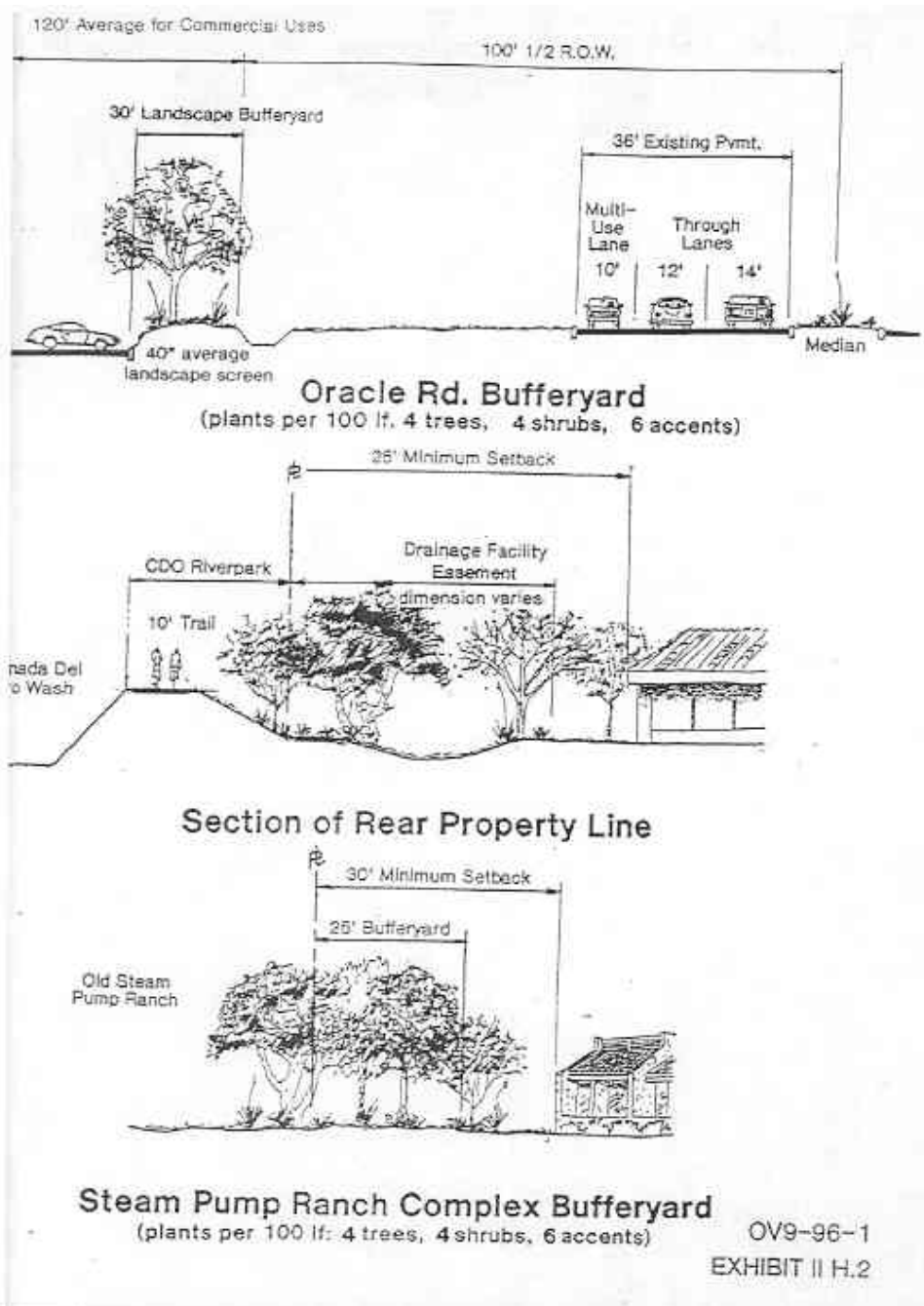
**HYDROLOGY**  
EXHIBIT II E.3/4

OY9-99-11



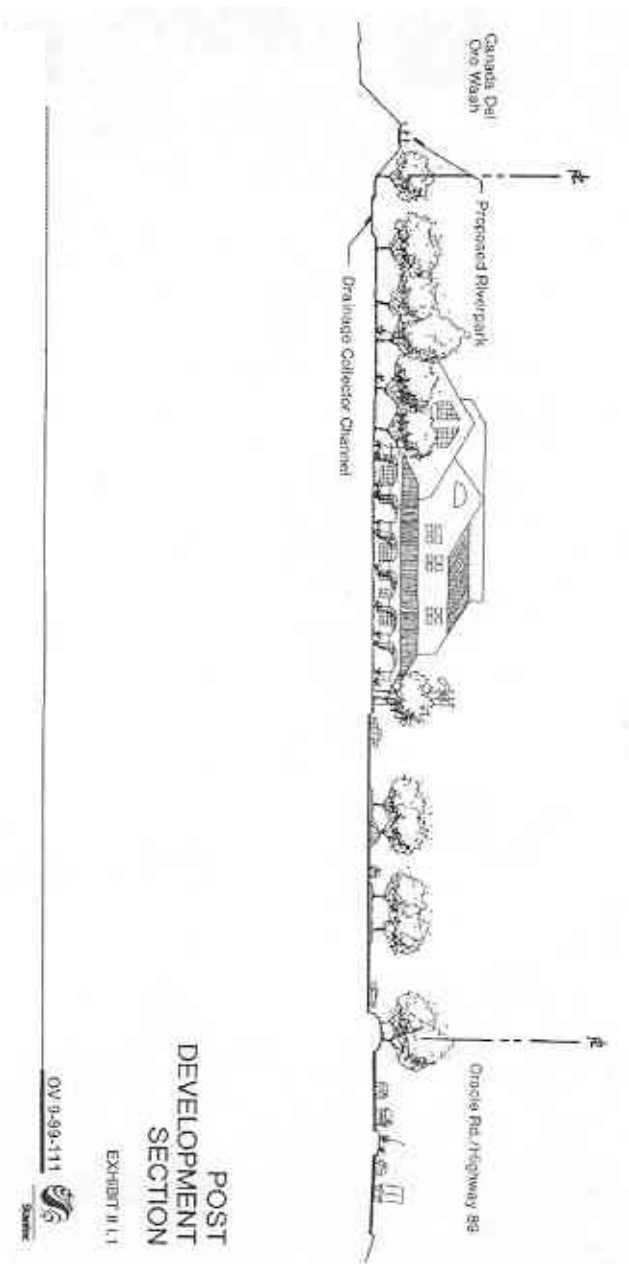
**BUFFER PLAN**  
EXHIBIT II.H.1

OV9-99-11



Note: The buffer yard and set-backs for Phase 1 Pad 1 are different per Section 1.2.C.2.





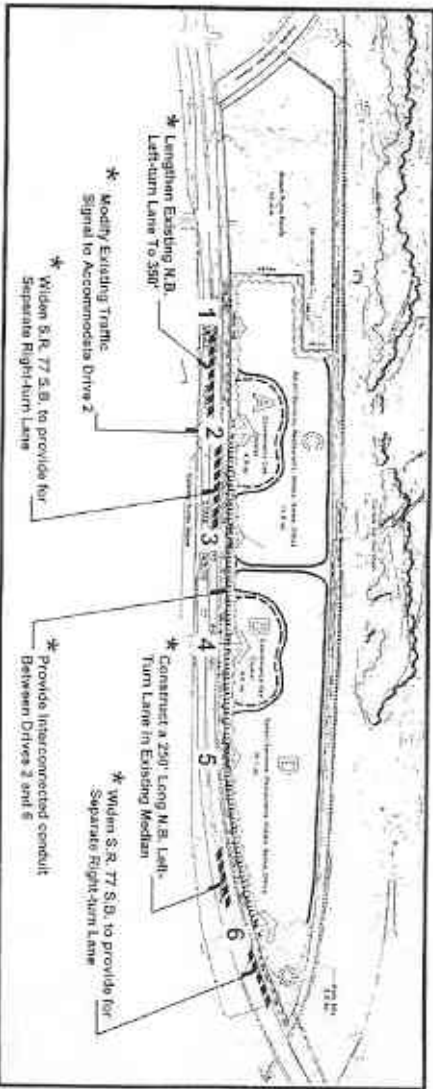
**POST  
DEVELOPMENT  
SECTION**

EXHIBIT 01.1

OV 9-99-111



ENGINEERS



**Anticipated Site Traffic Volumes**  
 Weekday Total Per Parcel

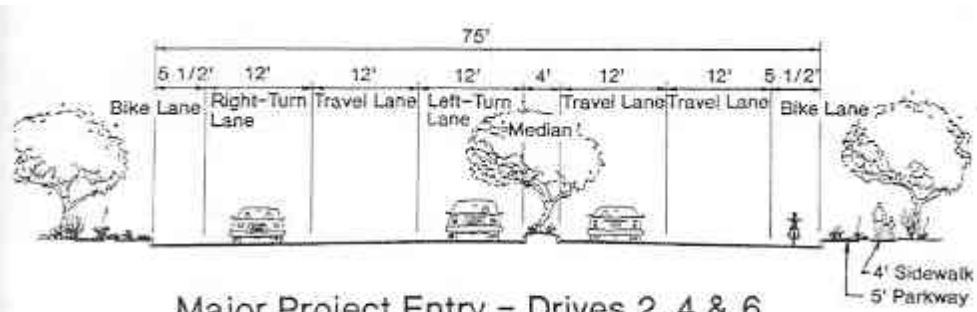
Dev. Area	24 Hour Total Vehicular Trips
A and B	11,502
C	2,151
D	1,185
<b>Total</b>	<b>14,838</b>

**Anticipated Site Traffic Volumes**  
 Weekday Total Per Project Entry

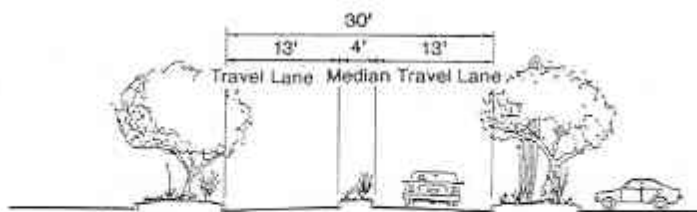
Drive No.	24 Hour Weekday Vehicular Volumes	Minimum Entry Widths
1	1,718	2 lanes/30'
2	6,390	4 lanes/52' plus median
3	1,054	2 lanes/30'
4	2,128	2 lanes/30'
5	068	2 lanes/30'
6	2,430	4 lanes/52' plus median
<b>Total</b>	<b>14,838</b>	

**TRAFFIC VOLUME ANALYSIS**  
 SCALE 1" = 400' EXHIBIT II 1.1

\* Improvements Subject to ADOT Requirements and Approval  
 Note: See Exhibit II 1.1 for Sections



Major Project Entry – Drives 2, 4 & 6  
(0-200' from Oracle R.O.W.)



Minor Project Entry – Drive 1, 3 & 5

## TYPICAL PROJECT ENTRY SECTIONS

EXHIBIT II J.1

OV 9-99-111



Medians may be raised landscape planters or other decorative design such as pavers.



PIMA COUNTY  
WASTEWATER MANAGEMENT DEPARTMENT  
251 NORTH STONE AVENUE  
TUCSON, ARIZONA 85701-1207

GEORGE BRANSKO

January 2, 1995

PH 740-6500

Director  
Todd Jaramillo  
Culla Saar Associates  
4911 East Broadway  
Tucson, Arizona 85711-3649

Re: CAPACITY RESPONSE NO. 96-2

Dear Mr. Jaramillo:

We have reviewed your request of December 21, 1994 regarding the availability of sewer service for the following proposed use and property:

A proposed commercial/office development on 41.6 acres between Oracle Road and the Canada Del Oro Wash, northeasterly of a drainageway easterly of First Avenue.

Under existing conditions (actual developments and commitments for service through approved Sewer Service Agreements), there is capacity for this proposed development in the downstream sewerage system and in the existing 21-inch diameter sewer located near the southeasterly side of Oracle Road near the drainageway and/or near Hanley Blvd. A sewer crossing of Oracle Road will require ADOT approval.

This response is not to be construed as a commitment for conveyance capacity allocation, but rather an analysis of the existing sewerage system as of this date.

Should you desire to enter into a Sewer Service Agreement, a Development Plan or Tentative Plat, showing the preliminary sewer layout for the proposed project, must be submitted and approved. To qualify as a public conveyance system, flow must be by gravity to an existing public sewer system. Public sewers may also be required if Wastewater Management determines that there is a flow-through requirement in order to serve upstream parcels.

Should you desire additional information regarding this subject, please contact this office (740-6547).

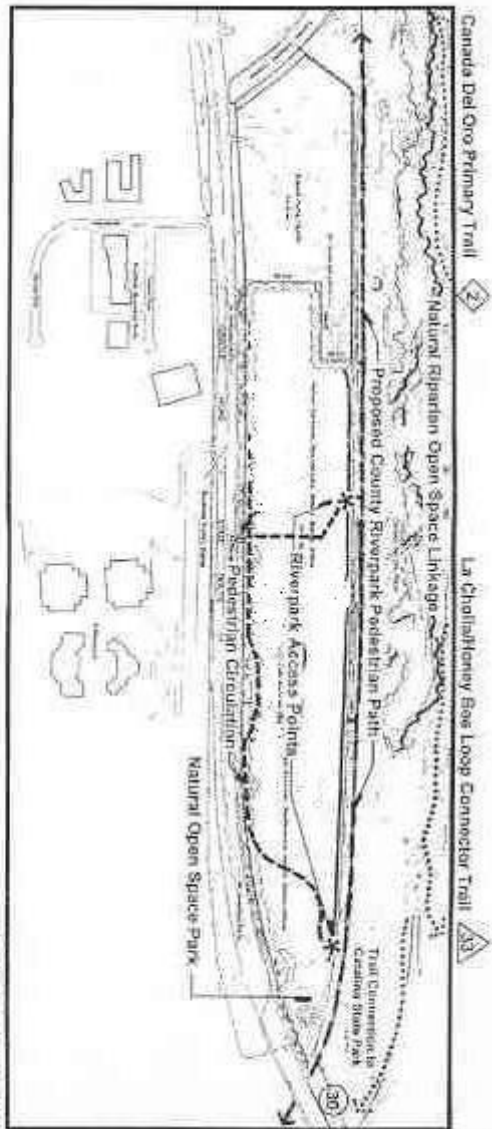
Very truly yours,

  
Glenn W. Hitz, S.E.  
Civil Engineer

Copy: Jerry Stratton  
Steve Magelli  
Capacity Response File/121407

EXHIBIT II K.1





**RECREATION/  
TRAILS**

SCALE: 1" = 400' EXHIBIT II.L.11D

01-13-09-111



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## **Section 1.3 PLANNED AREA DEVELOPMENT STANDARDS**

### **A. Development Performance Standards**

The Steam Pump Village PAD Development Standards establish the design and performance standards that are tailored to the unique qualities of the site. All development within the Steam Pump Village PAD will comply with the following Development Performance Standards and Design Guidelines, as well as the applicable provisions of the Town of Oro Valley Zoning Code, which have not been amended herein.

The Steam Pump Village PAD will produce a mixed-use activity center environment that is superior to that provided under CN, C-1 and C-2 standards. The PAD will provide an overall fabric and character for Steam Pump Village, that draws together the nearly mile-long development site into a unified project of compatible land uses and building architecture, consistent landscape design, integrated signage and entry monumentations, and interconnecting circulation systems for automobiles and pedestrians.

Development Areas A, B, C and D no longer have any regulatory meaning because they were eliminated in the 2011 PAD Amendment.

Any use permitted under CN, C-1 and C-2, as well as all convenience uses, are permitted land uses as of right in this PAD. All uses in the CN, C-1 and C-2 zoning districts which require a Conditional Use Permit (“CUP”) shall also be permitted so long as a CUP is obtained through the Town’s CUP process or as otherwise permitted in this PAD, with the following exception:

Self-storage use shall be a permitted use with no additional CUP required as long as the use is in conformance with this PAD. Self-storage use is defined as a facility used only for the storing of household and personal property. The self-storage use building shall contain a minimum 3,800 square feet of ground floor retail and/or office uses, that are otherwise permitted by this PAD and not directly related to operations of the self-storage use.

Self-storage use shall comply with the following:

- 
- Located only on the property designated as Pima County Assessor Parcel Number 220-08-454A in the PAD;
  - Contained within a completely enclosed building with individual self-storage units only accessible from the interior of the building;
  - No business shall be conducted from within individual self-storage units;
  - No outside storage shall be permitted, including vehicles, trailers, equipment, or products associated with self-storage use;
  - No motor vehicles, trailers, equipment or any device in, on or by which a person or property is or may be transported or drawn shall be offered for rent associated with the self-storage use;
  - Interior doors, signs, advertisements, corporate colors and graphics, and items within individual self-storage units shall not be visible from the exterior of the building;
  - Building architecture shall be designed and constructed as provided in Section 1.3.A.4.

Other similar enterprises or businesses of the same class, which in the opinion of the Zoning Administrator is no more detrimental than the enterprises or businesses enumerated above shall also be permitted.

The following land uses are permitted (subject to obtaining a conditional use permit if required in the CN, C-1 or C-2 zone by the Oro Valley Zoning Code):

Conference Center  
Community Buildings and Recreation Facilities  
Scientific Laboratory, Research and Fabrication  
Light Manufacturing  
Hospitals  
Urgent Care, Mature Adult Retirement Quarters, Rehabilitative Care Facility,  
Skilled Nursing Care Facility, Assisted Living Facility

In addition, up to 12 acres may be used for multi-family/residential purposes with a maximum of 300 dwelling units permitted, or a maximum of 4 acres may be used if the use is not integrated within a multi-use building.

The following uses shall not be permitted in the development:

Sanatorium  
Auto Services (unless in conjunction with new auto sales and service bays are adequately screened from Oracle)  
Taxidermist  
Pool Hall (unless in conjunction with a permitted restaurant use)  
Fortune Telling  
Lumberyard  
Helistop  
Adult book store, theatre or amusement facility  
Pawn shop  
Flea Market

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Massage Parlor (but the foregoing shall not prohibit a health club, a day spa, physical therapy rehabilitation center or other business using only licensed massage therapists, licensed physical therapists or other licensed health care professionals for massage or physical therapy)

Junk Yard

1. A maximum building height of 39 feet will be permitted for the entire site, excepts where otherwise noted, provided that the architecture provides visual relief to avoid bulk concerns.
2. Convenience Use Requirements: Convenience uses shall be permitted subject to the following conditions:
  - a. Subject to all the requirements as specified in Section 25.1G of the zoning code with the exception of the following:
    - i. Locational requirements
    - ii. Number of convenience uses
    - iii. Timing of development
    - iv. Minimum building site associated with gas stations and/or automotive services
  - b. The gas station use included with the PAD Amendment approved by Mayor and Town Council on April 20, 2011 shall be exempt from the Town of Oro Valley conditional use permit process and procedures. Any conditions specific to this gas station use shall be included in the staff recommendations associated with the approval of the 2011 PAD Amendment. Gas stations uses are subject to the following:
    - i. Up to a maximum canopy height of 20' is permitted subject to approval by the Planning and Zoning Administrator.
    - ii. No outside storage shall be permitted on site
    - iii. No accessory uses such as propane tank filling will be permitted
    - iv. If outdoor water and air service is available for patrons, this area shall be adequately screened from Oracle Road
    - v. The existing landscape area along Oracle Road adjacent to the gas station site and the landscaped area along the gas station perimeter shall include trees and shrubs from the Town's approved plant list that substantially screen the gas station use from the surrounding uses and Oracle Road
  - c. A maximum of four convenience uses within multi-tenant buildings and four convenience uses within freestanding pads shall be permitted on-site



- 
- d. No use permit will be required for convenience uses within multi-tenant buildings, unless it has a drive through component.
  - e. Financial institutions shall not be included as a convenience use in this PAD.
  - f. Only if deemed necessary by Town Staff, upon submittal of any development plan containing a convenience use a traffic study shall be prepared by a qualified traffic engineer to ensure safe access and free flow of traffic both internally and externally, and adequate stacking areas for drive-throughs.
  - g. Developer shall work with the Town of Oro Valley to ensure drive-thru lanes are located appropriately for traffic circulation and to minimize visibility from Oracle Road.
  - h. If two convenience uses are located adjacent to each other then the uses should relate to each other with respect to architectural design, pedestrian amenities and circulation integrated with each other and the rest of the development.

(Ord. 99-52)

(Ord. 05-42)

- 3. All landscaping shall be in conformance with the landscape requirements listed in the Oro Valley Zoning Code Revised (OVZCR).

Oro Valley Zoning Code Revised Section 24.5(D)(1)(d), related to significant vegetation, does not apply to this PAD. Instead, the following requirements shall apply to Phases III and IV:

- a. Significant vegetation, as defined in the ORSCOD section of the Zoning Code, and within 100 feet of Oracle Road shall be treated as follows:
  - A minimum of 30% of significant vegetation within 100 feet of the Oracle Road right-of-way in Phases III and IV shall be preserved in place. Any significant vegetation not preserved in place shall be transplanted or mitigated as follows: 1 – 24” box same species per each 4” – 6” tree removed, 1 – 36” box same species per each 7” – 9” tree removed, 2 – 36” box same species per each 10” – 15” tree removed, 3 – 36” box same species per each 16” + tree removed shall apply to all significant vegetation removed, as identified on Exhibit E. Additionally, five understory plants

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selected from the supplemental native plant list, Addendum C of the Code, will be planted for each mitigated or transplanted tree, and any cacti or other protected plants removed from site or destroyed will be replaced with the same size and species of plant.

- Removal of significant vegetation that results in less than 30% of significant vegetation being preserved or transplanted shall require a mitigation standard at double the above amounts for such vegetation.
  - Compliance with this condition shall be approved administratively by the Zoning Administrator, and can be appealed by the applicant to DRB and Town Council as part of the development plan approval for Phases III and IV.
- b. Trees shall be provided along the east side of the River Park Trail where the existing slope permits, with clusters of larger trees located where connections into the development occur, as generally depicted in the Typical Plan Views attached as Exhibit F, and where the existing slope permits.
- c. Transplanted and mitigated vegetation will be located along the Oracle Road right-of-way, along the River Park Trail, and within courtyards and other pedestrian gathering areas. Efforts will be made to group larger trees within the courtyard and pedestrian areas, in between buildings, and along Oracle Road.
- d. Existing native vegetation along Oracle Road will be preserved in place and incorporated into the final design whenever possible. Preserved existing vegetation along Oracle Road will be supplemented with plantings of additional new or transplanted native trees and shrubs in conformance with the species requirements of the Oracle Road Scenic Corridor Overlay District and the required landscape bufferyard. Supplemental native tree plantings will be grouped to enhance existing trees and to emulate the original species composition.

(Ord. 05-42)

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4. The following conditions shall apply to the architectural design of all future development on-site:
- Buildings shall be designed to express human scale at the ground or pedestrian level.
  - Variations in roof lines shall be used to add interest and to reduce the scale of larger buildings.
  - The mass of large buildings shall be broken up by dividing into basic geometric components, with intersecting wall planes.
  - Facades shall be articulated to reduce the scale and mass of buildings, and provide elements of visual interest. This is to be accomplished by:
  - Ground level facades shall have one-story pedestrian scale features for at least 2/3rds of the horizontal length of the side of a building. These features may include windows, entry areas, arcades, and / or overhangs (awnings, trellis, etc.)
  - Facades greater than 100' in length shall be broken by recesses or off-sets. Alternatively, the horizontal length may be broken by vertical elements. Off-sets or vertical elements shall be of sufficient size to effectively mitigate the visual impact of the horizontal line and mass. (Ord. 99-52)
- Architectural Elevations Specific to Self-Storage Use Building:
- The self-storage use building shall be designed and constructed in substantial conformance with the conceptual building elevations shown below, which are in compliance with this section. The Town Planning and Zoning Administrator shall determine whether the final design is in substantial conformance with this PAD pursuant to Section 1.3(c).



**EAST ELEVATION**

SCALE: 1/16" = 1'-0"



**NORTH ELEVATION**

SCALE: 1/16" = 1'-0"



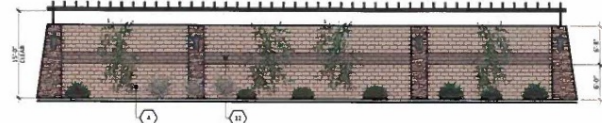
**WEST ELEVATION**

SCALE: 1/16" = 1'-0"



**SOUTH ELEVATION**

SCALE: 1/16" = 1'-0"

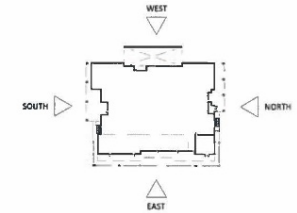


**LOADING SCREEN WALL**

SCALE: 1/8" = 1'-0"

**MATERIALS**

1	ANODIZED ALUMINUM STOREFRONT KAWNEER DARK BRONZE
2	CANDLES MBC DARK BRONZE SMOOTH FACE INTEGRAL COLOR
3	SUPERLITE BLOCK SOUTHWEST GOLD
4	SUPERLITE BLOCK - BONE
5	PANAPET/RAPPER TAILS DUNK EDWARDS COCOA (DEC755)
6	SPLIT FACE INTEGRAL COLOR SUPERLITE BLOCK MODESTO
7	TRIM DUNK EDWARDS SLOPES (DEC 721)
8	SMOOTH FACE INTEGRAL COLOR SUPERLITE BLOCK MODESTO
9	CORONADO STONE COUNTRY CASTLE SEQUOIA
10	STANDING SEAM METAL ROOF BERAIDGE COPPER BROWN
11	SMOOTH FACE INTEGRAL COLOR SUPERLITE BLOCK HOP SANDSTONE
12	SPLIT FACE INTEGRALLY COLORED CMU SUPERLITE BLOCK COCOA BROWN (LOADING SCREEN WALL)
13	SPLIT FACE INTEGRAL COLOR SUPERLITE BLOCK SOUTHWEST GOLD
14	H&I DOORS AND STUCCO FINE FINISH DUNK EDWARDS BUTTERCREAM FROSTING (DIET82)
15	COLUMNS STUCCO FINE FINISH DUNK EDWARDS SLOPES (DEC 721)
16	STERNBERG LIGHT FIXTURES 0630 PRAIRIE II
17	LOADING TRELIS SIO 200 HCB MEDIUM BRONZE



**KEY MAP**  
SCALE: N.T.S.

**RECEIVED**  
JUN 01 2017

BY: .....

APPROVED BY: TC/PZ/DRB/BOA

DATE

P. P. PROJECT MANAGER



<p><b>SHEET INDEX</b></p> <p>1. SITE PLAN 2. NOTES 3. OVERALL DEVELOPMENT PLAN 4. SITE DETAILS 5. SITE DETAILS 6. ELEVATIONS 7. COLOR ELEVATIONS</p>	<p><b>ARCHITECT</b></p> <p>RKAA ARCHITECTS, INC. 2223 EAST THOMAS ROAD PHOENIX, ARIZONA 85016 CONTACT: ROBERT KLUBICK PHONE: (602) 955-3100 EMAIL: rkubick@rkaa.com</p>
<p><b>SITE ADDRESS</b></p> <p>11051 NORTH ORACLE ROAD ORO VALLEY, ARIZONA 85137</p>	<p><b>DEVELOPER</b></p> <p>1784 CAPITAL HOLDINGS 7737 NORTH SCOTTSDALE ROAD SUITE 8270 SCOTTSDALE, ARIZONA 85253 CONTACT: KELLY MCORNE PHONE: (602) 885-2552 EMAIL: kmcorne@1784holdings.com</p>
<p><b>DATE:</b> 05.22.17</p> <p><b>SCALE:</b> 1/16" = 1'-0"</p> <p><b>C.I.:</b> NA</p>	<p><b>CONCEPTUAL/FINAL DESIGN</b></p> <p><b>SITE PLAN FOR THE</b></p> <p><b>SELF-STORAGE AT</b></p> <p><b>STEAM PUMP VILLAGE: LOT 3</b></p> <p><b>COLOR ELEVATIONS</b></p>



- 
5. The parking provision and design requirements of the OVZCR shall apply, with the following exceptions:
- The location of parking spaces are to be distributed across the site, with a goal of 75% maximum of the parking occurring in front of the buildings, with 25% minimum of the spaces located to the sides and rear of the structures. (Ord. 99-52)
6. The development shall be subject to the following design requirements:
- a. Buildings in Phase III shall be situated so as to create a pedestrian feel with strong pedestrian connections. Phase III will create an atmosphere of “park and walk”, where a customer will park once and be able to comfortably and safely walk to any of the businesses. The pedestrian connections in Phase III will be shaded with landscaping or other shade elements and a courtyard effect will be created by using outdoor seating, planters, consistent decorative lamp post lighting, specialty pavers or paving, and/or public art.
  - b. Steam Pump Village will provide strong vehicular and pedestrian connections. Driveways and pedestrian linkages shall connect each of the Phases in a minimum of two (2) locations.
  - c. The development shall include a minimum of three pedestrian access points to the River Park Trail.
  - d. Expanses between the buildings shall be minimized or mitigated to facilitate pedestrian movement throughout the site, in a manner consistent with Phase I and Phase II.
  - e. Phase IV shall be designed in a manner to provide visual and pedestrian access to the open space mesquite bosque that is prescribed for preservation.
  - f. No more than 4 freestanding retail and 4 freestanding office/medical buildings less than 5,000 square feet in size may be located within 65 feet of Oracle Road.

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(Ord. 05-42)

7. Project lighting shall conform to C-2 zoning provisions of the OVZCR existing as of October 19, 2005 (date PAD Amendment was approved) and shall apply until January 1, 2018. On January 1, 2018, the OVZCR lighting requirements in effect on that date and as may be amended in the future by the Town of Oro Valley shall apply to any development within the PAD.
8. This PAD addresses with specificity the building placement, vegetation, building heights and other elements specific to Steam Pump Village. Therefore, Section 24.5 of the Oro Valley Zoning Code does not apply.

(Ord. 05-42)

1)	Maximum Floor Area Ratio (FAR):	Up to 119' from Oracle (.25) 120' or more from Oracle (.35) 1.0 (hotel) 1.6 (self-storage building only)
2)	Maximum Building Height:	Up to 100' from Oracle 25' (restaurant) 30' (other uses) 100' to 150' from Oracle 39' 150' or more from Oracle 49' including architectural elements
3)	Minimum Building Setbacks:	120' average (Oracle Road)* 30' (Rear property line) Note: A rear building setback of 50' from the property line is required where the building (or the portion of the building) height will exceed 39'

4)	Minimum Landscaped Open Space:	20%; including Phase I detention basin/park and Bosque Park at north end of property.
5)	Landscape Buffers:	30' (Oracle Road) 0' (rear property line adjacent to river park trail – due to existing berm & vegetation between the trail and Steam Pump Ranch).

\*60 feet from Oracle Road for any convenience use or on property contiguous to Drive No. 4 in Exhibit II J.1. All other uses shall be set back an average of 120 feet along the *entire* Oracle Road project frontage. Any building located less than 60 feet from Oracle Road and not separated from an adjacent building by a driveway must have a setback that is at least 20 feet closer to or further away from Oracle Road than another adjacent building. The 20 feet is measured based on the closest wall to Oracle Road for each building.

(Ord. 05-42)

Note: The design standards of the Oro Valley Zoning Code, including Parking and Loading Requirements, Signs, and Native Plant Salvage and Landscape Plan Requirements are required for this development, unless modified herein.

The Oro Valley Design Guidelines apply to this development until a Master Development Plan and Design Guidelines have been approved by the Town.

The following uses are prohibited: hazardous materials and storage, heavy equipment manufacturing, refining and salvaging facilities, outdoor equipment storage facilities, outdoor auto repair or painting, adult entertainment establishments and motels as defined in the OVZCR (Section 2-101, Nos. 208 & 209).

Restrictions apply to quantity, design, and type of convenience uses as indicated in the Development Performance Standards Section 1.3, A2.

## B. Design Guidelines

### 1. Introduction and Purpose

The Design Guidelines have been developed as an overall center. The purpose of these guidelines is to ensure consistently high quality development that will enhance the setting of this unique site. They provide a documented basis

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for evaluating and directing the planning and design of improvements to each parcel.

The guidelines are design criteria to be used by project developers, builders, architects, engineers, landscape architects and other professionals to maintain the design quality proposed herein. They are also presented to give guidance to Steam Pump Village Design Review Committee, Town staff, Development Review Board, Planning and Zoning Commission and Town Council in their review of development projects within the Steam Pump Village PAD Plan Area, as applicable. All elements of design review are subject to development review in accordance with Chapter 22 of the Oro Valley Zoning Code Revised and conformance with the General Plan and any other adopted sector, neighborhood or area plans.

Enforcement of the Design Guidelines will be the responsibility of the Declarant as stipulated in the Common Operation and Reciprocal Easement Agreement.

The following goals form the basis for these guidelines:

- Encouragement of imaginative and innovative site design in a manner sensitive to topography, natural vegetation and views;
- Cohesiveness and compatibility among various developments within the project;
- Variety, interest and high standards of architectural and landscape design;
- Implement the policies and standards with respect to Parking and Loading Requirements, Signs, and Native Plant Salvage and Landscape Plan Requirements in the Oro Valley Zoning Code.

## 2. Circulation

a. Interior circulation design shall consider:

- natural contours of the land



- 
- soil characteristics
  - drainage patterns
  - stormwater runoff
  - safety features
  - economy of construction
  - convenience and economy of use

b. Pedestrian linkages shall be integrated with the circulation system.

c. Circulation design shall provide for:

- a safe and adequate means of ingress and egress of vehicular and pedestrian traffic to and within the project
- access of emergency vehicles necessary to serve the project area

d. Access control shall be exercised along Oracle Road/State Route 77 to ensure adequate traffic flows are maintained in compliance with Arizona Department of Transportation requirements.

- installation of an acceleration/deceleration lane may be phased in as development of the parcel warrants, or as prescribed by ADOT.

### 3. Infrastructure

a. Storm drainage facilities shall ensure the acceptance and disposal of storm runoff without damage to streets or adjacent properties.

b. Utility easements shall be provided as required to facilitate an appropriate service network within the project area.

c. All proposed utility facilities, such as electrical and telephone lines, shall be visually screened through undergrounding or appropriate vegetative screening for above-ground transformers/pedestals.

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#### 4. Site Development

##### a. Setbacks

- Avoid long linear vistas and building edges within the variations in setbacks.
- Random setbacks of buildings and landscaping are encouraged.

#### 5. Landscape Guidelines

The landscape concept for Steam Pump Village is essential in achieving a unified development character for the project area. The project character is reinforced through the coordinated design and selection of landscape and paving materials, street furniture and lighting. To achieve the desired design continuity, guidelines are required for the following elements: streetscapes, project entries, street furniture/lighting, walls and fences and buffering/screening.

Landscape materials should enhance the major architectural design elements through the coordinated use of flower and leaf colors, tree forms, plant material masses, and lighting.

- Grouped masses of plant material should be designed to texture, density and form on both the vertical and horizontal planes.
- Landscaping design shall establish project identity and accentuate common entrance areas. Landscaping should be interspersed within parking areas and used to screen parking areas and non-residential storage areas.

- 
- Native and drought-tolerant plant material shall be used and non-drought tolerant plant material will be limited to 25% of the landscaped area.
  - Appropriate plant materials should be used to define space, create a visual image and separate differing land uses.
  - Landscaping shall consider solar rights of adjacent structures.
  - Landscaping and walls or a combination, shall be utilized to visually screen and/or physically enclose outdoor storage areas, loading docks and ramps, transformers, storage tanks, and other appurtenant items of poor visual quality.
  - All landscaped areas will utilize underground drip irrigation.
  - All landscaping shall comply with Oro Valley Zoning Code Revised (OVZCR) unless stated otherwise within this PAD.
- Streetscapes

Generally, parking lot design shall emphasize efficient circulation patterns, which allow for reduced speeds, variations of views and flexibility of building orientations. Setbacks of buildings will be varied to create an interesting Oracle Road street scene.

In order to achieve a uniform landscape theme within the Plan Area, the areas within the medians, parking strips, and streetscape setback areas shall have a coordinated landscape palette.

Parking areas which are situated along Oracle Road shall be screened by a combination of landscape berm or vegetative screen or walls with an average height of 40" measured from the parking surface.

Landscaping as permitted by ADOT within the Oracle Road/State Route 77 right-of-way to provide a continuity of landscape character between the project and right-of-way streetscape.

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- Project Entries

Primary and secondary project entries on Oracle Road serve to introduce and define the limits and character of the Steam Pump Village activity center. The landscape concept at these project entries is intended to announce the project theme through the use of decorative walls, special signing, enriched accent landscaping and a widened roadway.

Entries into interior sites will consist of defined areas and should include such features as monumentation, signage, and native and introduced vegetation. All entries shall be consistent with the project's integrated design program of landscaping, monumentation, signage and lighting.

- Street Furniture/Lighting

Numerous styles and designs for street furniture would be acceptable for project consistency is obtained from the Steam Pump Village Design Review Committee. Street furniture should include light standards, walkway and bollard lighting, benches, litter receptacles and plant containers.

- The design of light fixtures and their structural support shall be architecturally compatible with the surrounding buildings and be located, as much as possible, within landscaped areas/planters.
- Light fixtures should exhibit a degree of aesthetic attractiveness, complementing adjacent building architecture, the landscape theme and street furniture design and conform to Town design standards as embodied in the Zoning Code.

- Walls and Fences

A combination of landscaping, walls and fences shall be used to define property boundaries, screen or buffer elements of poor visual quality (i.e., parking, loading docks) and provide onsite security. The walls and fences within the project shall be designed of similar materials, colors and general style as the primary buildings on a site. Grape-stake wooden and chainlink fences will not be permitted in bufferyards.

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The following materials are recommended for walls and fences subject to the Steam Pump Village Design Review Committee approval:

- ◇ split rail
- ◇ wrought iron
- ◇ brick
- ◇ natural rock
- ◇ cement stucco over CMU
- ◇ split face block

- Buffering and Screening

Loading dock areas shall be set back, recessed, screened or a combination of these, so as not to be visible from streets or neighboring properties.

Electrical equipment shall be mounted on the interior of buildings where possible. When interior mounting is not practical, such equipment shall be installed where it is screened from public view. In no case shall exterior electrical equipment be mounted on the streetside or primary exposure side of any building. Roof mounted mechanical equipment shall be screened by a parapet of sufficient height or other screening device that will appear as an integrated part of the building.

Transformers and other utility structures may be installed in underground vaults. Where this is impossible, they shall be screened from view from streets and surrounding area, utilizing specified walls and planting.

All refuse containers shall be visually screened with a 6'-0" high wall of material which matches the building architecture, so that it is not visible from streets or adjacent property. A recessed dumpster location may be incorporated as an alternate to the above screening method.

- Landscape Plant Palette

The following recommended plant list is provided to assist developers and builders of Steam Pump Village in making appropriate plant material selections for their specific site

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landscape requirements while achieving a consistent overall design theme. The listed plant materials place emphasis on the use of native plant materials and drought-tolerant species.

<u>COMMON NAME</u>	<u>BOTANICAL NAME</u>
<p>Trees:</p> <p>Abyssinian Acacia  Acacia  Chilean Mesquite  Velvet Mesquite  Foothill Palo Verde  Blue Palo Verde  Desert Willow  Heritage Oak  Western Hackberry</p> <p>Shrubs:</p> <p>Agave  Feathery Cassia  Red Bird of Paradise  Texas Ranger  Purple Hopbush  Purple Fountain Grass  Desert Spoon  Ocotillo  Heavenly Bamboo  Xylosma</p>	<p>Acacia abyssinica  Acacia species  Prosopis chilensis  Prosopis velutina  Cercidium microtheca  Cercidium floridum  Chilopsis linearis  Quercus virginian  "Heritage"  Celtis reticulata</p> <p>Agave species  Cassia artemisiodes  Caesalpinia pulcherrima  Leucophyllum frutescens  Dodonea viscosa  'Purpurea'  Pennisetum cupreum  Dasylium wheeleri  Fouquieria splendens  Nandina domestica  Xylosma congestum</p>

Fan and Date Palms, Common Bermuda Grass, Mulberry Trees and Olive Trees are specifically excluded from use in the landscaping of this PAD.

## 6. Signage Standards

The purpose of the signage standards is to contribute to an integrated well-planned, high quality environment envisioned for the Plan Area. These standards shall set forth a system of reasonable, non-discriminatory criteria to regulate and control the size, location, type and quality of signs.

Plans for signs shall be reviewed by the Declarant under the Common Operation and Reciprocal Easement Agreement as part of the architectural and design controls to ensure aesthetic treatment and compatibility within the development

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and the surrounding properties. Project signage will be in accordance with the Town approved Master Sign Program.

All light sources, either internal or external, used to illuminate signage shall be placed or directed away from public streets, sidewalks or adjacent premises so as not to cause glare or reflection that may constitute a traffic hazard or nuisance.

Any sign located on vacant or unoccupied property, that was erected for a business which no longer exists, or any sign which pertains to a time, event or purpose which no longer exists, shall be removed within 30 days after the use has been abandoned.

An additional monument sign shall be permitted to advertise gasoline pricing (as required by state law), so long as such sign is designed to be consistent with the appearance of the shared monument sign as approved in the Master Sign Program. The pricing sign shall be located on the parcel where the gasoline use is operated.

All signage shall be designed to conceal bracing, angle-iron, guy wires, cables or similar devices.

The exposed backs of all signs visible to the public shall be suitably covered, finished and properly maintained.

All signs shall be maintained in good repair, including display surface, which shall be kept neatly painted or posted.

## 7. Architectural Guidelines

It is the intent of the Steam Pump Village activity center to promote a high quality of overall design that establishes a special project environment and identity. Architecture or building design, materials, colors and textures shall be consistent with or of equal quality with surrounding elements, such as other buildings, landscaping, street furniture, plaza areas and signage. All architecture is intended to appear as an integrated part of an overall design theme. To ensure a high level of architectural quality and consistency, each project will be reviewed by the Declarant under the recorded Common Operation and Reciprocal Easement Agreement Steam Pump Village Design Review Committee and written approval obtained prior to submittal to the Town of Oro Valley for final approval.



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The following guidelines are not intended to limit designs, but to provide a flexible framework to accomplish an overriding design concept and to encourage quality development.

Building architecture shall be in conformance with the Design Guidelines for Steam Pump Village approved by the Town.

Avoid long, unarticulated building facades. Buildings with varied front setbacks are strongly encouraged.

Conceal service areas and storage areas within the building themselves or by screening walls of a material and color consistent with the building architecture or appropriate screening approved by the Design Review Committee.

Avoid long linear vistas and building edges, both within the development envelope and along the streetscape, through setback variations.

Buildings shall be sited in a manner that will complement the adjacent buildings and landscape. Building sites shall be developed in a coordinated manner to provide order and diversity.

There is a wealth of building materials to choose from. It is not the intent of these guidelines to limit the ingenuity of the individual designer, but to emphasize the coherence of the project. Since new materials are continually being developed, this particular area of design restriction will necessarily be reevaluated and shall be subject to revision as approved by the Town's Staff as a part of the Master Development Plan. The recommended building materials are provided to maintain a visual quality throughout the phasing of the development and to provide criteria for the review of the development.

Exterior finished building materials should consist predominantly of masonry and/or wood frame with a masonry or stucco exterior finish. The use of large expanses of glass, particularly highly reflective glass, is discouraged, due to the obtrusive glare and low energy efficiency. In general, subdued earthtone colors are recommended; however, the use of strong accent colors of materials and graphics are encouraged to create tasteful variety and interest.

Flat roofs with parapet walls to screen rooftop equipment are appropriate, although building with angular forms and changes in roof planes are encouraged.

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All exterior wall elevations of buildings facing streets are to have architectural treatment that is consistent with that of the Design Guidelines

In the event an electrical transformer is located outdoors on any site, it shall be screened from view with a wall or solid landscaping.

All fire and other sprinkler pipes shall enter buildings at the lowest possible point and shall be screened with landscaping.

All changes to the exterior of any of the existing buildings must have prior approval of the Town Staff and in accordance with the Design Guidelines. Minor changes may be administratively approved by the Planning Manager. More significant changes, as determined by the Planning Manager, must be approved by the Development Review Board.

All roof and ground mounted mechanical equipment shall be screened from public view on all sides by an enclosure which is an integral part of the overall building design and volume.

No mechanical equipment shall be exposed on the wall surface of a building.

All gutters and downspouts shall be integrated with the building architecture.

Vents, louvers, exposed flashing, overhead doors and service doors shall be painted consistent with the color scheme of the building.

Overlay District of the Oro Valley Zoning Code, shall be adhered, excluding the required 150' building setback and 100' landscape buffer per Employment and Institutional Regulations, Section 10-407132.

## **C. Plan Administration**

### **1. Implementation**

Development will be implemented in conformance with the regulations and guidance contained within the Steam Pump Village PAD. This section contains the procedures for administration of the provisions contained herein.

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Adoption - The Steam Pump Village PAD Plan will be processed in and may be amended from time to time in accordance with such provisions.

Administration and Enforcement - The PAD shall be administered and enforced by the Town Planning Manager and Director/ Building Official. Input from the Steam Pump Village Design Review Committee is encouraged.

Minor Changes - The Planning and Zoning Director may allow minor changes to the criteria set forth in the Steam Pump Village PAD Plan, provided said changes are not in conflict with the overall intent as expressed in the Plan. Minor changes do not include anything which alters allowable uses, building heights, floor area ratios, and landscape coverages.

Any changes must conform to the Town of Oro Valley Zoning Code or as modified herein. Significant changes to the PAD will be governed by the Planning and Zoning Department's significant change policy.

Amendments - The approved Steam Pump Village PAD Plan may be amended from time to time by the Town of Oro Valley. Proposed amendments shall be submitted by the Owner to the Planning and Zoning Director for review along with a report describing the proposed amendments and recommendations. All amendments shall conform to the procedures outlined under Section 22.3 of the Oro Valley Zoning Code.

Severability - If any provision, sentence, clause, section or subsection or phrase of this Plan is for any reason held to be invalid or unconstitutional, such decision shall not affect the validity of the remaining portion or portions of this Plan.

## 2. Consistency

All of the provisions of the Steam Pump Village PAD, as well as any land use authorized by the Plan, shall be consistent with the Town of Oro Valley General Plan, adopted July 10, 1996 (Focus 20-20). Consistency shall mean that the Steam Pump Village PAD, as described herein, is in conformance with the objectives, policies, general land uses and programs specified in the Oro Valley General Plan, Oro Valley Zoning Code Revised (adopted March 13, 1981,

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Ordinance No. 58). Where standards are not specified, the Oro Valley Zoning Code Revised shall govern development.

3. Oracle Road and Rams Field Pass Traffic Signal

Steam Pump Village will pay its proportionate share, as defined below, for the traffic signal at the intersection of Oracle Road and Rams Field Pass when warrants are met approved by the Town of Oro Valley and ADOT. Proportionate share shall be determined by the Town Engineer based on a traffic impact analysis report provided by a registered traffic engineer and assessing the traffic generated and trip distribution at this intersection created by the ultimate build-out of both Steam Pump Village and Big Horn Commerce Center developments. The traffic signal shall be installed at no cost to the Town of Oro Valley when warrants are met.

4. PAD Vesting

The PAD zoning shall be ordinated and become vested upon completion of \$500,000 worth of improvements. The following improvements shall be required:

- The Riverpark Trail is to be constructed by the developer along the full length of the rear property line, and is to be built as a minimum 12' wide asphalt path in accordance with AASHTO standards.
- Construction of main water and wastewater trunk lines on-site
- Construction of two entrances to the project site.

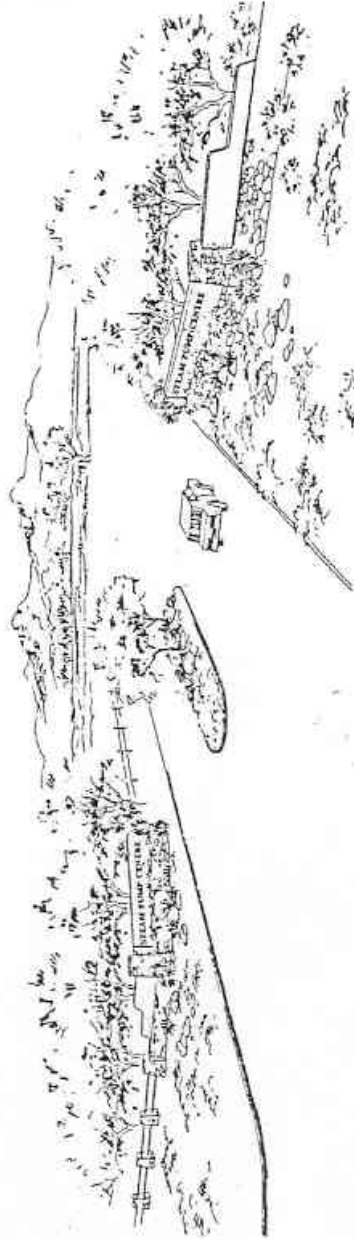
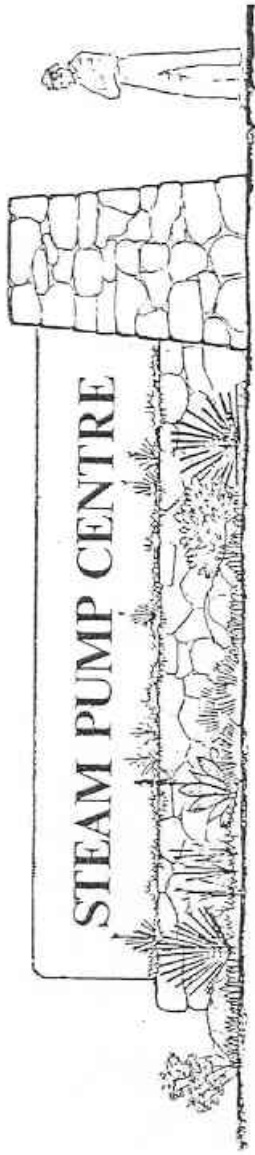
(Ord. 99-52; 00-01)

The conditional zoning shall be extended for a period of five years from the date of approval of ordinance no. 99-52, that being the 22<sup>nd</sup> day of September, 1999.

(Ord. 00-01)

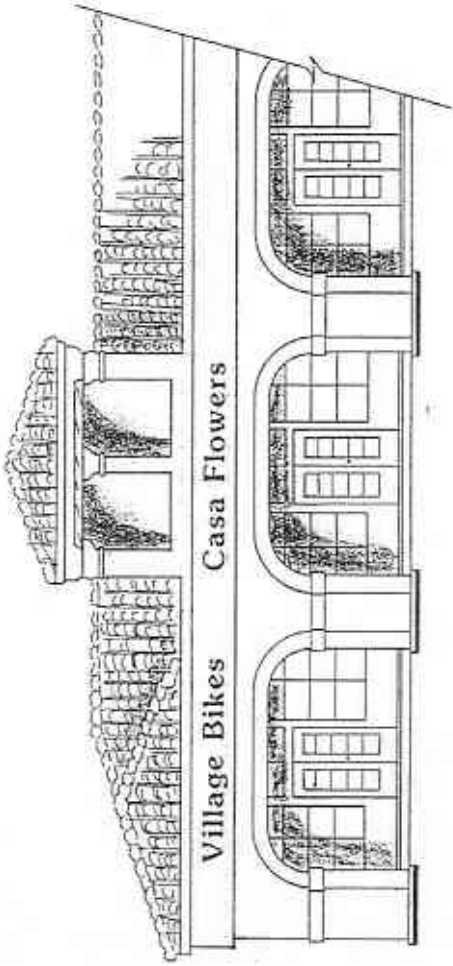
On December 3, 2003, the Town Council by Ordinance No. (0) 03-37 extended the conditional zoning by one year to September 22, 2005.

(Ord. 03-37)



**ENTRY MONUMENTATION SIGNAGE**  
EXHIBIT III B.6

for illustrative purposes only



**WALL SIGNAGE**  
EXHIBIT III B.6

for illustrative purposes only

---

## **APPENDIX A**

### **BIBLIOGRAPHY**

General Plan, Town of Oro Valley, adopted by Mayor and Council, December 19, 1990.

Old Steam Pump Ranch, National Register of Historic Places, Inventory and Nomination Form, Jo Anne Kipps, March 12, 1980.

Oracle Road Scenic Corridor Specific Plan and Overlay District, adopted by Mayor and Council, Town of Oro Valley, February 2, 1994.

Steam Pump Ranch Planned Area Development District, Cella Barr Associates, adopted August 10, 1988, Ordinance No. 171.

Steam Pump Ranch Planned Area Development District, Cella Barr Associates, adopted February 5, 1992, Ordinance No. (O) 92-2

Steam Pump Ranch Planned Area Development District, Cella Barr Associates, adopted July 10, 1996, OV9-96-1

U.S. Highway 89 Access Control Study, Arizona Department of Transportation, May 10, 1991.

Zoning Code Revised, Town of Oro Valley, adopted March 13, 1981.

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**APPENDIX B**

**TRAFFIC IMPACT ANALYSIS**



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TRAFFIC IMPACT ANALYSIS  
STEAM PUMP RANCH  
PLANNED AREA DEVELOPMENT  
TOWN OF ORO VALLEY

January 31, 1996  
CBA File No. 1-05243-08-0014  
DRB00358.00R

CELLA BARR ASSOCIATES  
4911 East Broadway Boulevard  
Tucson, Arizona 85711



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DRB00338.00X

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## **1.0 INTRODUCTION**

The Steam Pump Ranch Planned Area Development (PAD) comprises approximately 42 acres located on the west side of U.S. 89 (Oracle Road) in the Town of Oro Valley. The site contains approximately 4,100 linear feet of frontage along SR 77 beginning at approximate SR 77 milepost (MP) 80.00. The purpose of this traffic impact analysis is to investigate potential future traffic impacts, access and traffic control requirements, and general site development traffic recommendations as part of the Steam Pump Ranch Site Analysis and PAD submittal for the Town of Oro Valley.

Site-specific parcel development within the Steam Pump Ranch PAD rezoning areas will most probably require ADOT-approved Traffic Impact Reports prior to issuance of driveway permits. This analysis is intended as a more general overview of traffic impacts and general requirements prior to the more detailed Traffic Impact Studies required by ADOT for specific sites. ADOT's U.S. 89 Access Control Study was reviewed as a part of this analysis and in the development of the PAD access control strategy.

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## 2.0 EXISTING AND FUTURE TRAFFIC CONDITIONS

SR 77 in the project vicinity is a four-lane, divided, high-speed arterial with fairly limited access. The existing right-of-way is 200 feet with cross-section elements including a 16-foot-wide raised median and 10-foot-wide paved multi-use lanes (shoulders). Existing land uses in the area are described in the PAD Site Inventory and Analysis. The site is located between the Tangerine Road tie-in to SR 77 and First Avenue and is across from the existing AiResearch facility. There are four median openings adjacent to the site, the southernmost at Hanley Boulevard, two at AiResearch and the northernmost one accessing Pusch Ridge Riding Stables.

Existing traffic data for SR 77 was obtained from hourly counts provided by ADOT and ADOT's U.S. 89 Access Control Study. ADOT also provided 1994 Average Daily Traffic (ADT) volumes for the segment of SR 77 between First Avenue and Tangerine Road. Existing traffic data are as follows:

ADT	=	24,400
K	=	8.5% (PM)
D	=	58% (SB, PM)
T	=	5%

In addition, afternoon peak hour intersection turning movement counts were conducted at Hanley Boulevard/SR 77 (the location of Foothills Business Park) and the signalized intersection at AiResearch/SR 77. Peak hour turning movement summaries are in the Appendix.

Future traffic volume projections were obtained from the Pima Association of Governments Transportation Planning Division (PAG). The year 2015 24-hour traffic projection for this segment of SR 77 is 42,600 vehicles. The tentative build-out of this project is estimated to be the year 2006. The year 2006 24-hour traffic projection is 33,550 vehicles. Future requirements of SR 77, as indicated by PAG year 2015 projections, show an ultimate need for widening the facility to a six-lane divided roadway in order to accommodate future traffic volumes.

---

### 3.0 TRAFFIC GENERATOR CHARACTERISTICS

The Steam Pump Development Plan contains five new development parcels with mixed use commercial activities. The following table shows each parcel's acreage, type of facility and estimated square footage:

**TABLE 2**  
**STEAM PUMP RANCH – ESTIMATED**  
**SQUARE FEET GROSS LEASABLE AREA (GLA)**

<u>Parcel</u>	<u>Land Use</u>	<u>Acres</u>	<u>Square Feet</u> <u>GLA</u>
A	Entertainment Complex (Shopping Center)	14.5	150,000
B	Retail Services (Shopping Center)	12.0	68,000
C	Hotel	6.0	*250 rooms
D	Professional Office (General Office)	9.1	80, 000

\* Hotel-site-generated traffic is estimated from the total number of occupiable rooms.

The access control to the four parcels consists of limiting access to six driveway locations along the site's frontage with SR 77 as shown in Exhibit 1. Three drives are located at existing median openings. The three other drives will provide for right-turn maneuvers only.

A four-lane divided collector roadway is proposed to extend internally approximately 3,100 linear feet from Drive No. 2 to Drive No. 6, which are approximately 2,600 feet apart on SR 77. This will provide for internal circulation needs, particularly for the retail facilities.

Anticipated site-generated traffic volumes were developed utilizing ITE's Trip Generation, 5th Edition. Parcel A, which contains a mix of retail, entertainment and restaurants has been combined with Parcel B (retail) because, together, they exhibit the characteristics of a shopping center. The combined square footage of Parcels A and B is 218,000. The following table shows the anticipated average weekday total vehicle trip ends:

**TABLE 3**  
**STEAM PUMP RANCH**

**ANTICIPATED DAILY TRIPS**

<u>Parcel</u>	<u>ITE Land USE Code</u>	<u>Average Weekday Vehicle Trip Ends</u>
A and B	820	11, 502
C	310	2, 141
D	710	1, 185
	TOTAL =	14, 828

Morning and afternoon peak hour volumes were developed for the various parcels and are shown in the following table:

**TABLE 4**

**ANTICIPATED PEAK HOUR  
SITE-GENERATED TRAFFIC VOLUMES**

<u>Parcel</u>	<u>A.M. Peak Hour</u>			<u>P.M. Peak Hour</u>		
	Enter	Exit	Total	Enter	Exit	Total
A and B	162	95	257	539	539	1,078
C	100	66	166	99	85	184
D	143	18	161	27	131	158
TOTAL	405	179	584	665	755	1, 420

The estimate of an approach/departure distribution for site traffic and its assignment to the roadway is essential in determining the traffic impact of a development. The future viability of the retail/commercial parcel will depend, in part, on trips generated from residential PADS to the north, including Rancho Vistoso and SaddleBrooke. Distribution of site-generated traffic volumes for the retail parcel (A and B) and hotel (C) is estimated for the year 2006 at 65% to and from the south and 35% to and from the north. The vast majority of employment base for the office facilities is assumed to be from Tucson. Distribution of site-generated traffic volumes for Parcel D in the year 2000 is estimated at 80% to and from the south and 20% to and from the north.

In order to evaluate anticipated traffic volume conditions, peak hour site-generated traffic volumes and turning movements are combined with projected year 2006 (project build-out) peak hour background volumes. Year 2006 peak hour volumes have been developed utilizing the existing and future traffic data discussed under "Existing and Future Traffic Conditions." The greatest impact of intersection operations will occur during the P.M. peak hour with high commercial use and exiting employees from Parcels A, B and D.

---

In order to anticipate intersection operations at Drive No. 2, existing peak hour volumes were utilized for the AiResearch facility intersection approach at Drive No. 2. At the Drive No. 6 intersection location, the existing Pusch Ridge Riding Stables drive approach is within the La Reserve PAD. Twenty acres of campus park industrial (CPI) type use are planned to access this drive. P.M. peak hour traffic volumes for this type of facility were estimated at 237 vehicles (79% exiting) based on ITE land use code 130.

Total site-generated traffic on SR 77 was adjusted to account for pass-by trips for the shopping center facility of Parcels A and B. This results in a net total of new site-generated traffic on SR 77 of 11,953 vehicles as compared with 14,828 total daily trip ends. The pass-by distribution was applied to the P.M. peak hour site-generated traffic volumes in developing anticipated year 2006 combined P.M. peak hour volumes. Exhibit I shows the anticipated year 2006 P.M. peak hour combined intersection turning movement volumes of the proposed six drives for Steam Pump Ranch. Pass-by volumes were estimated at 25% for total daily generation rates and calculated at 34.5% for P.M. peak hour generation volumes.

---

## 4.0 OPERATIONAL CHARACTERISTICS

### 4.1 Traffic Signal Warrants

Traffic control signals should not be installed, unless one or more of the signal warrants -in the Manual of Uniform Traffic Control Devices are met. In addition, it should be shown that a traffic signal will improve the overall safety and/or operation of the intersection.

In the previous Traffic Impact Analysis for the Steam Pump Ranch PAD (January 20, 1992), which has similar characteristics to this development, traffic signal warrants were investigated for Drive No. 6 which provides access to the internal collector roadway. Opposite the drive is the proposed access for the La Reserve PAD CPI parcel of 20 acres. Traffic warrants investigated included the following:

- Warrant 1, Minimum Vehicular Volume
- Warrant 2, Interruption of Continuous Traffic
- Warrant 8, Combination of Warrants
- Warrant 9, Four Hour Volumes
- Warrant 11, Peak Hour Volume

The warrants were investigated based on a full build-out of Steam Pump Ranch and the La Reserve PAD CPI parcel (anticipated year 2000 combined traffic volumes). Within the volume warrants, only left-turns were considered for the minor-street approaches. In investigating the eight-hour minimum volume requirements of the warrants, the eight highest volume hours were developed by adjusting peak hour volumes based on existing K-factors for SR 77 and adjusting Drive No. 6 volumes based on hourly variations of shopping center traffic contained within ITE's Trip Generation. Based on the investigation, the following signal warrants were met or exceeded:

- Warrant 2, Interruption of Continuous Traffic
- Warrant 9, Four Hour Volumes
- Warrant 11, Peak Hour Volume

From an operational and safety standpoint, with the current PAD proposal, this intersection would not function acceptably without a traffic signal due to the high left-turn demand from both Steam Pump Ranch and the La Reserve CPI and the lack of acceptable gaps with the high through volumes on SR 77.

### 4.2 Capacity Analysis

The capacity analysis utilized for SR 77 is in accordance with the 1994 Highway Capacity Manual (HCM). Techniques utilized are for multi-lane highways (Chapter 7), signalized intersections (Chapter 9), unsignalized intersections (Chapter 10),



and urban and suburban arterials (Chapter 11). The FHWA Highway Capacity Software (HCS) Release 2 was utilized and pertinent worksheets and summaries are contained in the Appendix.

Level of service (LOS) criteria for highway segments are primarily based on average running speed, percent time delay and capacity utilization. LOS criteria for intersections are based on expected delay to the approaching traffic. Table 5 provides a generalized LOS definition for both highway segments and intersections.

**TABLE 5**

**LEVEL OF SERVICE DEFINITIONS**

	<u>Highway Segment</u>	<u>Intersection</u>
LOS A:	Free-flow condition	Little or no delay
LOS B:	Free-flow with increased delays	Short traffic delays
LOS C:	Noticeable platoon formation	Average traffic delays
LOS D:	Approaching unstable traffic flow	Long traffic delays
LOS E:	Unstable traffic flow, intense platooning	Very long traffic delays
LOS F:	Heavily congested, forced flow	Extreme delays with forced queuing

Capacity analysis was performed utilizing existing peak hour volumes, anticipated year 2006 P.M. peak hour background volumes and the anticipated year 2006 P.M. peak hour combined traffic volumes shown in Exhibit 1. Factors used in the analysis include  $T = 5\%$  on SR 77 and a peak hour factor of 0.90. At the signalized intersections of Drives Nos. 2 and 6, a 100-second cycle and three-phase operation with SR 77 left-turn lags was utilized for the year 2006 analyses. Results of the analysis are as follows:

TABLE 6  
 STEAM PUMP RANCH  
 EXISTING AND YEAR 2006 INTERSECTION LOS  
 P.M. PEAK HOUR

<u>Stop Controlled Intersections</u>	<u>Approach</u>	<u>LOS</u>		
		<u>Existing 1996</u>	<u>Year 2006 Background</u>	<u>Year 2006 Combined</u>
Hanley Blvd.	WB Right	A	B	B
AiResearch	WB Left	F	F	F
	WB Right	A	B	B
	WB Left	E	F	F
Drive #1	EB Right	-	-	C
Drive #2	EB Right	-	-	D
	EB Left	-	-	F
Drive #3	EB Right	-	-	B
Drive #5	EB Right	-	-	B
<u>Signalized Intersections</u>				
Drive #2/ AiResearch	EB	-	-	D
	WB	-	-	C
	NB	-	-	C
	SB	-	-	C
Overall Intersection		B	B	C
Drive #6/ La Reserve CPI	EB	-	-	C
	WB	-	-	C
	NB	-	-	B
	SB	-	-	B
Overall Intersection		-	-	C

A multi-lane highway capacity analysis was performed for the highest SR 77 hourly directional volumes which are southbound from the site during the P.M. peak hour. With an input hourly direction volume of 1,970, a LOS C was achieved.

In addition, an arterial analysis was performed across the site's frontage on SR 77 to assess the impact of an additional traffic signal and progression feasibility. The most critical segment is between the signals at Drives Nos. 2 and 6. During the P.M. peak hour, this segment could operate at a LOS B northbound and LOS B southbound. This is based, however, on free flow speeds of 40 mph and average segment speeds (accounting for intersection delay) of 30 mph and less.

Overall, acceptable levels of service could be maintained on SR 77 with the development of Steam Pump Ranch. Specific improvements required in order to maintain acceptable traffic operations are discussed below.

#### 4.3 Traffic Control Requirements

---

Specific traffic control changes are required along SR 77 in order to achieve acceptable LOS at the project build-out. Proposed improvements include the following and are also shown in Exhibit 2:

- Lengthen the existing northbound left-turn lane at Drive No. 2 to a minimum 350 feet.
- Modify the existing traffic signal at the AiResearch Drive to accommodate the new Drive No. 2 leg.
- Widen the SR 77 southbound approach to Drive No. 2 to provide for a separate right-turn lane.
- Construct a minimum 250-foot-long northbound left-turn lane in the existing median on approach to the existing median opening at Drive No. 6.
- Widen the SR 77 southbound approach to Drive No. 6 to provide for a separate right-turn lane.
- Provide interconnect conduit between Drives Nos. 2 and 6 for future interconnect needs of a traffic signal at Drive No. 6. A traffic signal; however, should not be installed until it is warranted.

Separate right-turn lanes are recommended at Drives Nos. 2 and 6, not only to remove decelerating vehicles from the through lanes, but to encourage right turns at these major entry points. A continuous acceleration/deceleration lane was previously proposed across the site's frontage; however, there is insufficient distance between some of drives to provide a true acceleration lane (60 mph design speed) and follow it by a deceleration lane. Right turns from the minor drives with stop control should only be made when acceptable gaps are present on SR 77 and not predicated on a merge requirement. There is presently a 10-foot multi-use lane outside the through lanes that can be utilized by right-turning vehicles into the minor drive locations.

---

## 5.0 CONCLUSION

The proposed Steam Pump Ranch PAD is anticipated to generate approximately 11,953 new daily vehicular trips on SR 77 and 14,828 total daily vehicular trips. SR 77, a four-lane divided arterial, has sufficient capacity for the site-generated traffic through the anticipated build-out time frame of the project.

Proposed access to the site consists of two major entry points at existing median openings which are connected internally with a proposed collector roadway. The four other access points will provide for right-turn maneuvers only. Drive No. 2 has an existing traffic signal that presently services AiResearch. With the addition of site traffic, this intersection will continue to operate at acceptable levels of service. At Drive No. 6, across from the La Reserve CPI, a traffic signal may be warranted in the future due both to Steam Pump Ranch development and the La Reserve CPI anticipated traffic.

General traffic control requirements for the site development are as proposed in Chapter 4. These recommendations will require approval from ADOT which will occur during the permitting process of parcel development. Traffic impact studies, in accordance with ADOT requirements, will be required for any parcel development accessing onto SR 77. Parcels A and B, containing shopping center type facilities, will be the largest traffic generator, and thus the key project in implementing recommended improvements to SR 77.

---

## 6.0 APPENDIX

Center For Microcomputers In Transportation

\*\*\*\*\*

File Name ..... HANLEL96PM.HCO  
 Streets: (N-S) SR 77 (E-W) HANLEY  
 Major Street Direction.... NS  
 Length of Time Analyzed... 60 (min)  
 Analyst..... DRB  
 Date of Analysis..... 1/29/96  
 Other Information..... YR 1996 PM PEAK

Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2<	0	1	2	0	0	0	0	1	0	1
Stop/Yield			N			N						
Volumes		884	31	12	1191					80		23
PHF		.94	.94	.91	.91					.9		.9
Grade		0		0			0			0		
MC's (%)		0	0	0	0					0		0
SU/RV's (%)		0	0	0	0					0		0
CV's (%)		1	0	0	1					0		0
PCE's		1.01	1.1	1.1	1.01					1.1		1.1

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

*1 will be 2-step*

WorkSheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)	458	
Potential Capacity: (pcph)	811	
Movement Capacity: (pcph)	811	
Prob. of Queue-free State:	0.96	
Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph)	915	
Potential Capacity: (pcph)	553	
Movement Capacity: (pcph)	553	
Prob. of Queue-free State:	0.97	
Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph)	2102	
Potential Capacity: (pcph)	48	
Major LT, Minor TH		
Impedance Factor:	0.97	
Adjusted Impedance Factor:	0.97	
Capacity Adjustment Factor due to Impeding Movements	0.97	
Movement Capacity: (pcph)	47	

Intersection Performance Summary

Movement	FlowRate v(pcph)	MoveCap Cm(pcph)	SharedCap Csh(pcph)	Avg.Total Delay	LOS	Delay By App
WB L	98	47	*		F	*
WB R	29	811		4.6	A	
SB L	14	553		6.7	B	0.1

Intersection Delay = 78.1

\* The calculated delay was greater than 999.9 sec.



File Name ..... HANLEY06PMC0MB.HCO  
Streets: (N-S) SR 77 (E-W) HANLEY  
Major Street Direction.... NS  
Length of Time Analyzed... 60 (min)  
Analyst..... DRB  
Date of Analysis..... 1/29/96  
Other Information..... YR 2006 PM PK BACKGRD

Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2<	0	1	2	0	0	0	0	1	0	1
Stop/Yield			N			N						
Volumes		1167	31	12	1574					80		23
PHF		.94	.94	.91	.91					.9		.9
Grade		0			0			0			0	
MC's (%)		0	0	0	0					0		0
SU/RV's (%)		0	0	0	0					0		0
CV's (%)		1	0	0	1					0		0
PCE's		1	1.1	1.1	1					1.1		1.1

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

WorkSheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)	599	
Potential Capacity: (pcph)	688	
Movement Capacity: (pcph)	688	
Prob. of Queue-free State:	0.96	
Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph)	1198	
Potential Capacity: (pcph)	390	
Movement Capacity: (pcph)	390	
Prob. of Queue-free State:	0.96	
Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph)	2768	
Potential Capacity: (pcph)	18	
Major LT, Minor TH		
Impedance Factor:	0.96	
Adjusted Impedance Factor:	0.96	
Capacity Adjustment Factor due to Impeding Movements	0.96	
Movement Capacity: (pcph)	17	

Intersection Performance Summary

Movement	FlowRate v(pcph)	MoveCap Cm(pcph)	SharedCap Csh(pcph)	Avg.Total Delay	LOS	Delay By App
WB L	98	17		*	F	*
WB R	29	688		5.5	B	
SB L	14	390		9.6	B	0.1

Intersection Delay = 250.5

\* The calculated delay was greater than 999.9 sec.

File Name ..... HANLEY06PMCOMB.HCO  
 Streets: (N-S) SR 77 (E-W) HANLEY  
 Major Street Direction.... NS  
 Length of Time Analyzed... 60 (min)  
 Analyst..... DRB  
 Date of Analysis..... 1/29/96  
 Other Information..... YR 2006 PM PK COMB.

Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2<	0	1	2	0	0	0	0	1	0	1
Stop/Yield			N			N						
Volumes	1482	31		12	1958					80		23
PHF	.94	.94		.91	.91					.9		.9
Grade	0			0			0			0		
MC's (%)	0	0		0	0					0		0
SU/RV's (%)	0	0		0	0					0		0
CV's (%)	1	0		0	1					0		0
PCE's	1	1.1		1.1	1					1.1		1.1

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

WorkSheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)	756	
Potential Capacity: (pcph)	573	
Movement Capacity: (pcph)	573	
Prob. of Queue-free State:	0.95	
Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph)	1513	
Potential Capacity: (pcph)	264	
Movement Capacity: (pcph)	264	
Prob. of Queue-free State:	0.95	
Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph)	3468	
Potential Capacity: (pcph)	6	
Major LT, Minor TH		
Impedance Factor:	0.95	
Adjusted Impedance Factor:	0.95	
Capacity Adjustment Factor		
due to Impeding Movements	0.95	
Movement Capacity: (pcph)	6	

Intersection Performance Summary ^

Movement	FlowRate v(pcph)	MoveCap Cm(pcph)	SharedCap Csh(pcph)	Avg.Total Delay	LOS	Delay By App
WB L	98	6		*	F	
WB R	29	573		6.6	B	
SB L	14	264		14.4	C	0.1

Intersection Delay = 643.1

\* The calculated delay was greater than 999.9 sec.

File Name ..... AIREAS96.HCO #  
 Streets: (N-S) SR77 (E-W) AIRESEARCH  
 Major Street Direction.... NS  
 Length of Time Analyzed... 60 (min)  
 Analyst..... DRB  
 Date of Analysis..... 1/29/96  
 Other Information..... 1996 PM PK

Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	1	1	1	0	0	0	0	1	0	1
Stop/Yield			N			N						
Volumes		900	1	1	976					20		5
PHF		.94	.94	.91	.91					.9		.9
Grade		0			0			0			0	
MC's (%)		0	0	0	0					0		0
SU/RV's (%)		0	0	0	0					0		0
CV's (%)		1	0	0	2					0		0
PCE's		1	1.1	1.1	1					1.1		1.1

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

WorkSheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)	450	
Potential Capacity: (pcph)	819	
Movement Capacity: (pcph)	819	
Prob. of Queue-free State:	0.99	
Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph)	901	
Potential Capacity: (pcph)	638	
Movement Capacity: (pcph)	638	
Prob. of Queue-free State:	1.00	
Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph)	1878	
Potential Capacity: (pcph)	87	
Major LT, Minor TH		
Impedance Factor:	1.00	
Adjusted Impedance Factor:	1.00	
Capacity Adjustment Factor due to Impeding Movements	1.00	
Movement Capacity: (pcph)	87	



Intersection Performance Summary

Movement	FlowRate v(pcph)	MoveCap Cm(pcph)	SharedCap Csh(pcph)	Avg.Total Delay	LOS	Delay By App
WB L	24	87		57.0	F	
WB R	7	819		4.4	A	46.5
SB L	1	638		5.7	B	0.0
Intersection Delay =				0.6		

File Name ..... AIREAS96.HCO <sup>#3</sup>  
 Streets: (N-S) SR77 (E-W) AIRESEARCH <sup>#4</sup>  
 Major Street Direction.... NS  
 Length of Time Analyzed... 60 (min)  
 Analyst..... DRB  
 Date of Analysis..... 1/29/96  
 Other Information..... 2006PM BACKGROUND

Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	1	1	1	0	0	0	0	1	0	1
Stop/Yield			N			N						
Volumes	1170	1		1	1341					20		5
PHF	.94	.94		.91	.91					.9		.9
Grade	0			0	0		0			0	0	
MC's (%)	0	0		0	0					0		0
SU/RV's (%)	0	0		0	0					0		0
CV's (%)	1	0		0	2					0		0
PCE's	1	1.1		1.1	1					1.1		1.1

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

WorkSheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)	585	
Potential Capacity: (pcph)	700	
Movement Capacity: (pcph)	700	
Prob. of Queue-free State:	0.99	
Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph)	1171	
Potential Capacity: (pcph)	474	
Movement Capacity: (pcph)	474	
Prob. of Queue-free State:	1.00	
Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph)	2512	
Potential Capacity: (pcph)	37	
Major LT, Minor TH		
Impedance Factor:	1.00	
Adjusted Impedance Factor:	1.00	
Capacity Adjustment Factor due to Impeding Movements	1.00	
Movement Capacity: (pcph)	37	

Intersection Performance Summary

Movement	FlowRate v(pcph)	MoveCap Cm(pcph)	SharedCap Csh(pcph)	Avg.Total Delay	LOS	Delay By App
WB L	24	37		243.2	F	
WB R	7	700		5.2	B	195.6
SB L	1	474		7.6	B	0.0

Intersection Delay = 1.9

File Name ..... AIREAS96.HCO  
Streets: (N-S) SR77 (E-W) AIRESEARCH Drive #4  
Major Street Direction... NS  
Length of Time Analyzed... 60 (min)  
Analyst..... DRB  
Date of Analysis..... 1/29/96  
Other Information..... 2006PM COMBINED

Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	1	1	1	1	0>	1	1	0>	1	1
Stop/Yield			N			N						
Volumes	73	1323	1	1	1534	68	5	0	57	20	0	5
PHF	.95	.94	.94	.91	.91	.95	.95	.95	.95	.9	.95	.9
Grade		0			0			0			0	
MC's (%)	0	0	0	0	0	0	0	0	0	0	0	0
SU/RV's (%)	0	0	0	0	0	0	0	0	0	0	0	0
CV's (%)	0	1	0	0	2	0	0	0	0	0	0	0
PCE's	1.1	1	1.1	1.1	1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

\*\*\*\*\*

## WorkSheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)	662	1534
Potential Capacity: (pcph)	640	231
Movement Capacity: (pcph)	640	231
Prob. of Queue-free State:	0.99	0.71
Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph)	1324	1602
Potential Capacity: (pcph)	401	296
Movement Capacity: (pcph)	401	296
Prob. of Queue-free State:	1.00	0.71
Step 3: TH from Minor Street	WB	EB
Conflicting Flows: (vph)	2999	2932
Potential Capacity: (pcph)	29	32
Capacity Adjustment Factor due to Impeding Movements	0.71	0.71
Movement Capacity: (pcph)	21	23
Prob. of Queue-free State:	1.00	1.00
Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph)	2960	2966
Potential Capacity: (pcph)	20	20
Major LT, Minor TH Impedance Factor:	0.71	0.71
Adjusted Impedance Factor:	0.78	0.78
Capacity Adjustment Factor due to Impeding Movements	0.55	0.77
Movement Capacity: (pcph)	11	15

Intersection Performance Summary

Movement	FlowRate v(pcph)	MoveCap Cm(pcph)	SharedCap Csh(pcph)	Avg.Total Delay	LOS	Delay By App
EB L	6	15 >	15	> 381.5	> F	56.0
EB R	66	231		21.8	D	
WB L	24	11 >	11	> *	> F	*
WB R	7	640		5.7	B	
NB L	85	296		17.0	C	0.9
SB L	1	401		9.0	B	0.0

Intersection Delay = 21.3

\* The calculated delay was greater than 999.9 sec.

File Name ..... DRIV1.HCO  
 Streets: (N-S) SR 77 (E-W) DRIVE NO 1  
 Major Street Direction... NS  
 Length of Time Analyzed... 60 (min)  
 Analyst..... DRB  
 Date of Analysis..... 1/29/96  
 Other Information..... 2006 PM COMB

Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	2<	0	0	0	1	0	0	0
Stop/Yield			N			N						
Volumes				1854	56				116			
PHF				.95	.95				.95			
Grade		0		0			0			0		
MC's (%)				0	0				0			
SU/RV's (%)				0	0				0			
CV's (%)				2	0				0			
PCE's				1.02	1.1				1.1			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40



WorkSheet for TWSC Intersection

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Step 1: RT from Minor Street	WB	EB
-----		
Conflicting Flows: (vph)		955
Potential Capacity: (pcph)		454
Movement Capacity: (pcph)		454
Prob. of Queue-free State:		0.70
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Intersection Performance Summary

Movement	FlowRate v(pcph)	MoveCap Cm(pcph)	SharedCap Csh(pcph)	Avg.Total Delay	LOS	Delay By App
EB R	134	454		11.2	C	

Intersection Delay = 0.6

File Name ..... DRIVE<sup>3</sup>.HCO  
 Streets: (N-S) SR 77 (E-W) DRIVE NO 3  
 Major Street Direction... NS  
 Length of Time Analyzed... 60 (min)  
 Analyst..... DRB  
 Date of Analysis..... 1/29/96  
 Other Information..... 2006 PM COMB

Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	2<	0	0	0	1	0	0	0
Stop/Yield			N			N						
Volumes				1568	43				62			
PHF				.95	.95				.95			
Grade		0		0			0			0		
MC's (%)				0	0				0			
SU/RV's (%)				0	0				0			
CV's (%)				2	0				0			
PCE's				1	1.1				1.1			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

WorkSheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)		806
Potential Capacity: (pcph)		541
Movement Capacity: (pcph)		541
Prob. of Queue-free State:		0.87

Intersection Performance Summary

Movement	FlowRate v(pcph)	MoveCap Cm(pcph)	SharedCap Csh(pcph)	Avg.Total Delay	LOS	Delay By App
EB R	72	541		7.7	B	

Intersection Delay = 0.3

File Name ..... DRIV5.HCO  
 Streets: (N-S) SR 77 (E-W) DRIVE NO 5  
 Major Street Direction.... NS  
 Length of Time Analyzed... 60 (min)  
 Analyst..... DRB  
 Date of Analysis..... 1/29/96  
 Other Information..... 2006 PM COMB

Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	2<	0	0	0	1	0	0	0
Stop/Yield			N			N						
Volumes				1537	39				65			
PHF				.95	.95				.95			
Grade		0		0			0			0		
MC's (%)				0	0				0			
SU/RV's (%)				0	0				0			
CV's (%)				2	0				0			
PCE's				1	1.1				1.1			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

WorkSheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)		788
Potential Capacity: (pcph)		552
Movement Capacity: (pcph)		552
Prob. of Queue-free State:		0.86

Intersection Performance Summary

Movement	FlowRate v(pcph)	MoveCap Cm(pcph)	SharedCap Csh(pcph)	Avg.Total Delay	LOS	Delay By App
EB R	75	552		7.5	B	

Intersection Delay =    0.3



HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4 01-29-1996  
 Center For Microcomputers in Transportation

Streets: (E-W) AIRESEARCH (N-S) SR77  
 Analyst: DRB File Name: EXST96AIRES.HC9  
 Area Type: Other 1-29-96 PM PK  
 Comment: EXIST VOL,4-5PM

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes				2			2	1		1	2	
Volumes				226			907	7		1	976	
Lane Width				12.0			12.0	12.0		14.0	12.0	
RTOR Vols						0			0			0
Lost Time				3.00			3.00	3.00		3.00	3.00	

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					*			
Thru					*			
Right					*			
Peds					*			
WB Left		*						
Thru								
Right								
Peds		*						
NB Right								
SB Right								
Green	15.0A				55.0P			
Yellow/AR	5.0				5.0			
Cycle Length:	80 secs Phase combination order: #1 #5							

Intersection Performance Summary

Lane	Group:	Adj Sat	v/c	g/C	Delay	LOS	Approach:	Delay	LOS
Mvmts	Cap	Flow	Ratio	Ratio			Delay	LOS	
WB L	767	3610	0.338	0.213	20.4	C	20.4	C	
NB T	2579	3619	0.389	0.712	3.5	A	3.5	A	
R	1151	1615	0.006	0.712	2.5	A			
SB L	207	290	0.005	0.712	2.5	A	3.6	A	
T	2579	3619	0.418	0.712	3.6	A			
Intersection Delay =					5.4 sec/veh	Intersection LOS = B			
Lost Time/Cycle, L =					6.0 sec	Critical v/c(x) =		0.400	

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4 01-29-1996  
 Center For Microcomputers In Transportation

Streets: (E-W) AIRESEARCH (N-S) SR 77  
 Analyst: DRB File Name: 06PMAIRESBKGD.HC9  
 Area Type: Other 1-29-96 06PMPK  
 Comment: 2006 PM PK BACKGROUND

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes				2			2	1		1	2	
Volumes				226			1180	10		1	1360	
Lane Width				12.0			12.0	12.0		14.0	12.0	
RTOR Vols						0			0			0
Lost Time				3.00			3.00	3.00		3.00	3.00	

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left								
Thru					*			
Right					*			
Peds					*			
WB Left	*							
Thru								
Right								
Peds	*							
NB Right								
SB Right								
Green	15.0A				55.0P			
Yellow/AR	5.0				5.0			
Cycle Length:	80 secs Phase combination order: #1 #5							

Intersection Performance Summary

Lane	Group:	Adj Sat	v/c	g/C	Delay	LOS	Approach:	Delay	LOS
Mvmts	Cap	Flow	Ratio	Ratio					
WB L	767	3610	0.319	0.213	20.3	C	20.3	C	
NB T	2579	3619	0.506	0.712	4.1	A	4.1	A	
R	1151	1615	0.010	0.712	2.5	A			
SB L	114	160	0.009	0.712	2.5	A	4.6	A	
T	2579	3619	0.583	0.712	4.6	A			

Intersection Delay = 5.6 sec/veh Intersection LOS = B  
 Lost Time/Cycle, L = 6.0 sec Critical v/c(x) = 0.523

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4 01-29-1996  
 Center For Microcomputers In Transportation

Streets: (E-W) AIRESEARCH/DR 2 (N-S) SR 77  
 Analyst: DRB File Name: DR4AIRES06PM.HC9  
 Area Type: Other 1-29-96 PM  
 Comment: 2006 PM PK COMBINED

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	> 1	1		1	> 1	<	1	2	1	1	2	1
Volumes	150	1	119	226	2	2	251	1244	10	1	1565	64
Lane Width		14.0	12.0	12.0	12.0		14.0	12.0	12.0	14.0	12.0	12.0
RTOR Vols			30			0			0			10
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	*							
EB Thru	*							
EB Right	*							
EB Peds	*							
WB Left	*	*						
WB Thru	*	*						
WB Right	*	*						
WB Peds	*							
NB Right					*	*		
SB Right					*	*		
Green	19.0A	5.0A			51.0P	9.0A		
Yellow/AR	4.0	4.0			4.0	4.0		

Cycle Length: 100 secs Phase combination order: #1 #2 #5 #6

Intersection Performance Summary

Lane	Group:	Adj Sat	v/c	g/C	Delay	LOS	Approach:		
							Delay	LOS	
Mvmts	Cap	Flow	Ratio	Ratio					
EB	LT	206	1029	0.773	0.200	39.8	D	34.7	D
	R	323	1615	0.288	0.200	25.9	D		
WB	L	310	1805	0.384	0.180	28.8	D	24.7	C
	LTR	473	1630	0.260	0.290	20.8	C		
NB	L	331	1925	0.798	0.260	38.2	D	18.8	C
	T	1882	3619	0.730	0.520	15.2	C		
	R	840	1615	0.013	0.520	8.8	B		
SB	L	331	1925	0.003	0.260	14.5	B	22.0	C
	T	1882	3619	0.919	0.520	22.4	C		
	R	840	1615	0.067	0.520	9.1	B		

Intersection Delay = 21.6 sec/veh Intersection LOS = C  
 Lost Time/Cycle, L = 6.0 sec Critical v/c(x) = 0.825

Streets: (E-W) DR6/LA RESERVE (N-S) SR 77  
 Analyst: DRB File Name: DR6LARES06PM.HC9  
 Area Type: Other 1-29-96 PM PK  
 Comment: 2006 COMBINED VOL.

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	<	1	1	<	1	2	1	1	2	1
Volumes	99	3	85	150	2	35	55	1233	45	5	1341	14
Lane Width	14.0	12.0		14.0	12.0		14.0	12.0	12.0	14.0	12.0	12.0
RTOR Vols			20			5			5			3
Last Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	*							
Thru	*							
Right	*							
Peds	*							
WB Left	*							
Thru	*							
Right	*							
Peds	*							
NB Right					*			
SB Right					*			
Green	25.0A				51.0P	8.0A		
Yellow/AR	6.0				6.0	4.0		
Cycle Length: 100 secs Phase combination order: #1 #5 #6								

Intersection Performance Summary

	Lane	Group:	Adj Sat	v/c	g/C	Delay	LOS	Approach:		
								Mvmts	Cap	Flow
EB	L		477	1704	0.218	0.280	21.0	C	20.9	C
	TR		451	1610	0.157	0.280	20.6	C		
WB	L		410	1466	0.385	0.280	22.4	C	22.0	C
	TR		435	1554	0.078	0.280	20.1	C		
NB	L		312	1925	0.186	0.240	18.5	C	13.7	B
	T		1954	3619	0.697	0.540	13.7	B		
	R		831	1538	0.051	0.540	8.3	B		
SB	L		297	1834	0.017	0.240	13.5	B	14.8	B
	T		1954	3619	0.759	0.540	14.9	B		
	R		863	1599	0.014	0.540	8.1	B		
Intersection Delay = 15.1 sec/veh Intersection LOS = C										
Lost Time/Cycle, L = 6.0 sec Critical v/c(x) = 0.551										

HCS: Arterial Release 2.1

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*****
File Name ..... SR771.HC1
Arterial..... SR 77
From/To..... HAN/AIRES
Direction ..... N
Analyst..... DRB
Time of Analysis.... PM PK
Date of Analysis.... 01/29/96
Other Information.... COMB 2006 VOL
  
```

A. Description of Arterial

Seg.	Intersection File Name	Street Name	Length (mi)	Art. Class	Free Flow Speed (mph)	Sect.
1	DR4AIRES.HC9 DR6LARES.HC9	DR 4 /AIRES DR 6	0.50	1	* 55	1

\* Free flow speed is out of bounds of Table 11-4. Free-flow speed will be used as arterial speed to compute running times.

B. Intersection Delay Estimates

Seg.	C	g/C	v/c	Arrival				D2	Inter. Stopped Delay	Inter. Total Delay	Inter. LOS
				c	Type	D1	DF				
1	100	0.54	0.697	1954	3	12.9	1.000	0.8	13.7	17.8	B

C. Arterial Level of Service

Seg.	Sect.	Running Time	Int. Total Delay	Other Delay	Section		Arterial Speed (mph)	Arterial LOS
					Sum of Time	Sum of Length (mi)		
1	1	32.7	17.8	0.0	50.5	0.50	35.6	A

```

Grand sum of time:      50.5
Grand sum of length:   0.50 mi
Arterial Speed:       35.6 mph
Arterial LOS:         A
  
```

HCS: Arterial Release 2.1

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File Name ..... SR771.HC1  
 Arterial..... SR 77  
 From/To..... HAN/AIRES  
 Direction ..... S  
 Analyst..... DRB  
 Time of Analysis..... PM PK  
 Date of Analysis..... 01/29/96  
 Other Information.... COMB 2006 VOL

A. Description of Arterial

Seg.	Intersection File Name	Street Name	Length (mi)	Art. Class	Free Flow Speed (mph)	Flow Sect.
1	DR4AIRES.HC9 DR6LARES.HC9	DR 4 /AIRES DR 6	0.50	I	* 55	1

\* Free flow speed is out of bounds of Table 11-4. Free-flow speed will be used as arterial speed to compute running times.

B. Intersection Delay Estimates

Seg.	C	g/C	v/c	c	Arrival			D2	Inter. Delay	Inter. Total Delay	Inter. LOS
					Type	D1	DF				
1	100	0.54	0.759	1954	3	13.6	1.000	1.3	14.9	19.3	B

C. Arterial Level of Service

Seg.	Sect.	Running Time	Int. Total Delay	Other Delay	Section		Arterial Speed (mph)	Arterial LOS
					Sum of Time	Sum of Length (mi)		
1	1	32.7	19.3	0.0	52.0	0.50	34.6	B

Grand sum of time: 52.0  
 Grand sum of length: 0.50 mi  
 Arterial Speed: 34.6 mph  
 Arterial LOS: B

HCS: Multilane Highways Release 2.1

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File Name .....  
 SR772006.HC7  
 Facility Section.....  
 SR 77  
 From/To.....  
 HANLEY-AIRESEACH  
 Analyst.....  
 DRB  
 Time of Analysis.....  
 2006 PMPK  
 Date of Analysis.....  
 01/29/96  
 Other Information.... PMPK COMBINED

A. Adjustment Data	Direction 1	Direction 2
Volume	1550	1970
Percentage of Trucks and Buses	5.0	5.0
Percentage of Recreational Vehicles		
	1.0	1.0
Ideal Free-Flow Speed	60.0	60.0
Peak-Hour Factor or Peak 15 Minutes		
	0.92	0.92
Lane Width	12.0	12.0
Access Points per Mile	10.0	10.0
Distance from Roadway Edge	2.0	2.0
Type of Median	D	D

B. Adjustment Factors

Terrain Type	E		F		F		F	
	T	R	HV	M	LW	LC	A	
LEVEL	1.50	1.20	0.97	0.00	0.00	3.60	2.50	
	1.50	1.20	0.97	0.00	0.00	3.60	2.50	

C. Level of Service Results

	Direction 1	Direction 2
Service Flow Rate (Vp)	865	1100
Average Passenger Car Speed (mph)		
	54	54
Free Flow Speed (mph)	54	54
Density (pcpmp1)	16	20
Level of Service (LOS)	B	C

HCS: Arterial Release 2.1

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File Name ..... SR771.HC1  
 Arterial..... SR 77  
 From/To..... HAN/AIRES  
 Direction ..... S  
 Analyst..... DRB  
 Time of Analysis..... PM PK  
 Date of Analysis..... 01/29/96  
 Other Information.... COMB 2006 VOL

A. Description of Arterial

Seg.	Intersection File Name	Street Name	Length (mi)	Art. Class	Free Flow Speed (mph)	Sect.
1	DR4AIRES.HC9 DR6LARES.HC9	DR 4 /AIRES DR 6	0.50	1	* 45	1

\* Free flow speed is out of bounds of Table 11-4. Free-flow speed will be used as arterial speed to compute running times.

B. Intersection Delay Estimates

Seg.	C	g/C	v/c	c	Arrival			D2	Inter. Stopped Delay	Inter. Total Delay	Inter. LOS
					Type	D1	DF				
1	100	0.54	0.759	1954	3	13.6	1.000	1.3	14.9	19.3	B

C. Arterial Level of Service

Seg.	Sect.	Running Time	Int. Total Delay	Other Delay	Section		Arterial Speed (mph)	Arterial LOS
					Sum of Time	Sum of Length (mi)		
1	1	44.0	19.3	0.0	63.3	0.50	28.4	B

Grand sum of time: 63.3  
 Grand sum of length: 0.50 mi  
 Arterial Speed: 28.4 mph  
 Arterial LOS: B



HCS: Arterial Release 2.1

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File Name ..... SR771.HC1  
 Arterial..... SR 77  
 From/To..... HAN/AIRES  
 Direction ..... N  
 Analyst..... DRB  
 Time of Analysis.... PM PK  
 Date of Analysis.... 01/29/96  
 Other Information.... COMB 2006 VOL

A. Description of Arterial

Seg.	Intersection File Name	Street Name	Length (mi)	Art. Class	Free Flow Speed (mph)	Sect.
1	DR4AIRES.HC9 DR6LARES.HC9	DR 4 /AIRES DR 6	0.50	1	* 45	1

\* Free flow speed is out of bounds of Table 11-4. Free-flow speed will be used as arterial speed to compute running times.

B. Intersection Delay Estimates

Seg.	C	g/C	v/c	c	Arrival			D2	Inter. Stopped Delay	Inter. Total Delay	Inter. LOS
					Type	D1	DF				
1	100	0.54	0.697	1954	3	12.9	1.000	0.8	13.7	17.8	B

C. Arterial Level of Service

Seg.	Sect.	Running Time	Int. Total Delay	Other Delay	Section		Arterial Speed (mph)	Arterial LOS
					Sum of Time	Sum of Length (mi)		
1	1	44.0	17.8	0.0	61.8	0.50	29.1	B

Grand sum of time: 61.8  
 Grand sum of length: 0.50 mi  
 Arterial Speed: 29.1 mph  
 Arterial LOS: B