

COUNTRYSIDE

A PLANNED AREA DEVELOPMENT (P.A.D.) ON APPROXIMATELY 200 ACRES
LOCATED ON THE EAST SIDE OF REEMS ROAD,
SOUTH OF GREENWAY ROAD IN
SURPRISE, ARIZONA

APPLICATION P.A.D. 98-108

P.A.D. DEVELOPMENT PLAN APPROVAL FOR
A P.A.D. ZONED RESIDENTIAL PROPERTY WITH COMMERCIAL

Revised SEPTEMBER 25, 1998
Revised DECEMBER 1, 1998
Revised DECEMBER 28, 1998
Revised JANUARY 21, 1999
Revised FEBRUARY 11, 1999
MAY 25, 1999

SUBMITTED TO:

City of Surprise Planning Department
12425 West Bell Road, Suite D-100
Surprise, Arizona 85374
(602) 583-1088

PREPARED BY:

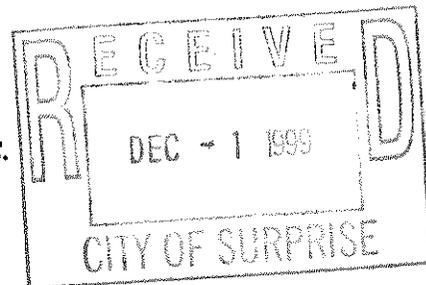
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CITY OF SURPRISE PLANNING AND ZONING DEPARTMENT APPROVED	
Case No.:	PAD 98-108
P&Z Comm. Approval:	
City Council Approval:	8/26/1999
B.O.A. Approval:	ord # 19-16
Stipulations:	





James D. Lemon, P.E., R.L.S.
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Civil Engineering • Surveying • Environmental
November 19, 1999

Mr. Scott Phillips
Planner
City of Surprise
12425 W. Bell Road, Suite B-205
Surprise, Arizona 85374

Via Hand Delivery

*Re: Countryside; P.A.D. 98-108; Zoning Ordinance No. 99-16
City of Surprise Stipulation Response Letter*

Dear Scott:

Landmark Engineering, Inc. ("LEI"), representing the ownership group of the Countryside Master Planned Community, is submitting this requested Written Response to Stipulations letter. The ownership group of Countryside are the Surprise 80 L.L.C., North Buckeye Properties I, Reems Road South 20 L.L.C., Avalon Development Company L.L.C., and North Buckeye Properties IA (the "Owners"). The Owners have requested that LEI, the "Applicant" for the Owners in the above referenced zoning case, provide this letter as requested by the stipulation requirements in Zoning Ordinance No. 99-16. The Owners, or their authorized assignee, are also referred to as the "Developer" in the approved Development Agreement between the Owners and the City of Surprise for Countryside. Please find below our response to the Special Stipulations and Standard Stipulations listed under this Zoning Ordinance.

SPECIAL STIPULATIONS

- a. The Developer will contribute adequate funding towards the installation of traffic signals at selected intersections, as provided in the approved Development Agreement between the Developer and the City of Surprise.
- b. The Developer will submit a preliminary and full set of landscape construction drawings for review and approval by the Community Development Director prior to final plat approval for any part of this development.
- c. The Developer understands that all street cross-sections, except for street rights-of-way, are conceptual and shall not be considered final approved documents unless otherwise indicated in the approved Development Agreement between the Developer and the City of Surprise.
- d. The Developer understands that the lot layouts indicated within the Planned Area Development documents shall not be considered approved with the approval of this zoning ordinance, and shall be considered as conceptual only.

- e. The Developer will provide the following amenities for the active recreational areas in Countryside. Those active recreational areas, such as, by of example, but not by way of limitation, are turf areas for field sports, a modified 2-way basketball court, ramadas with picnic areas, or "tot-lot" exercise equipment for use as amenities in this development and as designated within the proposed PAD document. If the Developer so requests, these designated active recreation areas can be altered or replaced by different active recreation areas, but the alterations are subject to the review and approval of the Community Development Director.
- f. The Developer understands that they are required to install a sanitary sewer system pursuant to the approved development agreement.
- g. The Developer understands that they will pay Sewer Development Fees per the approved development agreement.
- h. There is a 40-acre parcel of land at the southwest corner of the Countryside development that is designated in this zoning case to tie into the Reems Road sewer line. The Developer understands that any and all lots within this 40-acre parcel are subject to a sewer fee, if the lots tie into the Reems Road sewer line. The Reems Road Sewer Extension fee in the amount of \$410.00 per house, if assessed, is to be collected by the City for the Sewer tie-in, payable upon issuance of a building permit.
- i. The Developer, by this letter, is including these stipulations within the final P.A.D. document as part of that document.
- j. The Developer understands that they are to provide new residential home product information (i.e., colored elevations and materials sample information) and related materials prior to release of the standard construction drawings. This information is subject to review and approval by the Community Development Director.

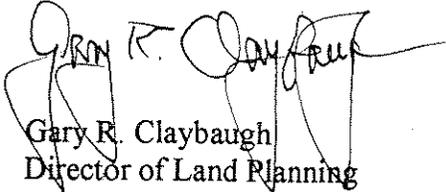
STANDARD STIPULATIONS

- k. The Developer understands that major changes to this Planned Area Development, with regard to use and intensity, must be processed as a revised application with approval by the City Council upon recommendation of the Planning and Zoning Commission. They further understand that minor changes to this Planned Area Development may be administratively approved by the City Manager and the Community Development Director.
- l. The Developer has directed LEI to submit this Written Response to Stipulations and five (5) copies of the revised P.A.D. Said submission will be under one (1) transmittal package.

LEI and the Developer trust that this Written Response to Stipulations and the submittal of the attached five copies of the revised P.A.D. Narrative meet the zoning ordinance stipulations and complete all requirements of LEI and the Developer outlined in the zoning ordinance.

Sincerely,

LANDMARK ENGINEERING, INC.



Gary R. Claybaugh
Director of Land Planning

cc: Clayton McKnight, Surprise 80, L.L.C.
John Stegall, Avalon Development Company, L.L.C.
Bill Blair, North Buckeye Properties I, North Buckeye Properties IA
Marvin Davis, Burch & Cracchiolo, P.A

Attachments: Five Copies of Revised P.A.D. Narrative

RECOMMENDATIONS: (PAD98-108)

Subject request is consistent with the proposed Surprise Comprehensive Development Guide. Furthermore, approval of this request would allow for efficient and orderly development. The Planning and Zoning Commission recommends that the City Council approve the rezone of 199.3 acres from R1-43 (Single Family Residential) to Planned Area Development (PAD98-108) for Countryside, subject to the following stipulations:

SPECIAL STIPULATIONS:

- a) The applicant shall contribute adequate funding towards the installation of traffic signals at selected intersections, as provided in the approved Development Agreement between the applicant and the City of Surprise;
- b) The applicant shall submit a preliminary and full set of landscape construction drawings for review and approval by the Community Development Director prior to final plat approval for any part of this development;
- c) All street cross-sections, except for street right-of-way, are conceptual and shall not be considered final approved documents unless otherwise indicated in the approved Development Agreement between the applicant and the City of Surprise;
- d) Lot layouts indicated within the Planned Area Development documents shall not be considered approved with the approval of this document, and shall be considered as conceptual only;
- e) The applicant shall provide amenities for the active recreational areas, such as, by of example but not by way of limitation, basketball courts, gazebos with picnic areas, or additional exercise equipment for adult use in addition to the amenities indicated within the proposed PAD document, subject to the review and approval of the Community Development Director;
- f) Installation of the sanitary sewer system is required pursuant to the approved development agreement;
- g) Sewer Development fees shall be collected per the development agreement;
- h) All lots within the 40 acre piece that is to tie into the Reems Road sewer line are subject to a Reems Road Sewer Extension fee of the amount of 410 dollars per house to be collected by the City for the Sewer tie-in, payable upon issuance of a building permit;

- i) The applicant shall include these stipulations within the final PAD document;
- j) The applicant shall provide new residential home product information (i.e., colored elevations and materials sample information) and related materials prior to release of the standard construction drawings, subject to review and approval by the Community Development Director;

STANDARD STIPULATIONS:

- k) Major changes to this Planned Area Development with regard to use and intensity, must be processed as a revised application with approval by the City Council upon recommendation of the Planning and Zoning Commission. Minor changes to this Planned Area Development may be administratively approved by the City Manager and the Community Development Director;
- l) The applicant shall submit a Written Response to Stipulations and five (5) copies of the revised P.A.D. Said submission must be under one (1) transmittal package;

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**COUNTRYSIDE
P.A.D. DEVELOPMENT PLAN**

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1. VICINITY MAP
2. LOCATION MAP
3. OWNERSHIP MAP
4. TOPOGRAPHIC MAP
5. CONCEPTUAL P.A.D. DEVELOPMENT PLAN (REDUCED)
6. CONCEPTUAL P.A.D. LAND PLAN (REDUCED)
7. CONCEPTUAL SUBDIVISION EXHIBIT (REDUCED)
8. CONCEPTUAL PHASING EXHIBIT (REDUCED)

APPENDIX

- A. LEGAL DESCRIPTION [5 ALTA SURVEYS] (REDUCED)
- B. CONCEPTUAL LANDSCAPING PLAN & PRIVATE OPEN SPACE PEDESTRIAN ACCESS EXHIBIT
- C. MASTER WATER AND SEWER STUDY
- D. CITY OF SURPRISE MUNICIPAL CODE REFERENCE DOCUMENTS
- E. ADWR APPROVED PLANT LIST

COUNTRYSIDE

1.0 PROJECT SUMMARY

COUNTRYSIDE is a proposed master planned community that is located on the south side of the Greenway Road alignment, on the east side of Reems Road (the "Site"). The Site is to be developed on approximately 200 acres. This single-family residential property with an approximate 12-acre commercial corner is being proposed by an ownership venture of three property owners of the 200 acres. Clayton McKnight is the managing partner of the ownership group (the "Owners"). The Owners have teamed with Landmark Engineering, Inc. ("LEI") to design this master planned development and provide the zoning coordination and the engineering of the Site for development in the City of Surprise. The Owners and the members of the project team are listed in Section 8.0 below.

COUNTRYSIDE is in the eastern portion of two half sections of land that were recently annexed into the City of Surprise. The Annexation Resolution Number is 97-05 and the Annexation Ordinance Number is 98-06. The Owners are proposing Planned Area Development (P.A.D.) zoning for the Site. The Conceptual P.A.D. Development Plan is attached as Exhibit 5. This application package is being submitted to the City of Surprise with a formal request for the review and approval of the Conceptual Development Plan under P.A.D. zoning.

COUNTRYSIDE will be a thoughtfully planned residential development that will provide the homeowners a wonderful living environment. The development will include a lush, green landscaped open space and trail system that is integrated into the community. The landscaping includes a theme wall along Greenway Road, Reems Road and Acoma Drive, and a signed entry into the community from Reems Road and Greenway Road. There also will be three active, useable "pocket parks" created for this community. There will be approximately 21.2 acres of open space/retention area that will be landscaped to maximize the turf area and create a visual and active use area for families to enjoy. This open space area represents approximately 10.6% of the land area of the Site. The designated open space tracts will be dedicated and maintained by a master homeowner's association. The City of Surprise will not be responsible for the maintenance of any open space within this development. A Conceptual Landscape Plan and Open Space Exhibit are attached as Appendix B.

COUNTRYSIDE will provide the homebuilding community with the opportunity to showcase their homes on five different lot configurations with varying lot widths. Each model type will have a variety of elevations, roof-lines and colors. This variety of lots and homes, and the varying looks of the elevations, will create diversity within the Site and add to the character of this development as well as the neighboring subdivisions.

The Conceptual P.A.D. Development Plan for COUNTRYSIDE has been prepared to reflect the zoning designations that the homebuilders will comply with in developing this project. This development will be constructed as the type of residential community that is characteristic of the single family residential and commercial uses that the City of Surprise is striving to bring to their city.

1.1 CONSISTENCY WITH THE SURPRISE COMPREHENSIVE DEVELOPMENT GUIDE

The Comprehensive Development Plan (the "Plan") that is part of the City of Surprise Comprehensive Development Guide (the "Development Guide") reflects that the area encompassing the Site is a Typical Neighborhood Land Use with densities of 6 to 7 dwelling units per acre. The proposed COUNTRYSIDE community consists of single-family subdivisions, a commercial corner, active open space and pedestrian access that are consistent with the Plan.

COUNTRYSIDE

COUNTRYSIDE has been thoughtfully planned and engineered to be in compliance with the Development Guide including Section C. "Goals, Objective and Policies." Several component areas of this section of the Development Guide, which are complemented by this proposed development, include:

1. In accordance with Objective B-1 and Objective B-1d, the Site will create stable, identifiable single family residential neighborhoods with open space, access, cohesive flow of traffic, and supportive commercial facilities.
2. In accordance with Objective C-1 and D-2, the Site has been designed to encourage new housing developments offering diverse housing types and sizes within the various subdivisions.
3. In accordance with Objective E-2, the Site will create stable, identifiable and functional commercial corner that will provide supportive facilities that are compatible with the surrounding neighborhoods.

COUNTRYSIDE

2.0 PROPERTY DESCRIPTION

COUNTRYSIDE is a master planned residential community proposed for development in the City of Surprise. A description and the conditions of the Site and the surrounding area are presented in the following sections.

2.1 LEGAL DESCRIPTION

This proposed community is comprised of five contiguous parcels of land. These five parcels are located in the north half of the southwest quarter, and in the northwest quarter (i.e., except for the northeast quarter of the northwest quarter) of Section 8, Township 3 North, Range 1 West; G&SRB&M; Maricopa County, Arizona. The location of the Site is at the southeast corner of the intersection of Reems Road and the Greenway Road alignment in Surprise (Maricopa County), Arizona. The legal descriptions of the five parcels of land are included with this report as Appendix A. Maps showing the vicinity around the Site and the location of the Site are presented as Exhibits 1 and 2 respectively.

2.2 OWNERSHIP

The ownership for the five parcels of land that make up the approximate 200 acres of the Site is as follows:

Parcel 501-17-014:	Avalon Development Company, L.L.C. [Stegall]	40 acres
Parcel 501-17-013:	Surprise 80, L.L.C. [McKnight]	80 acres
Parcel 501-17-012F:	North Buckeye Properties I [Blair]	20 acres
Parcel 501-17-012B:	North Buckeye Properties IA [Blair]	40 acres
Parcel 501-17-012G:	Reems Road South 20, L.L.C. [McKnight]	20 acres

An exhibit showing the location of these five parcels of land is presented as Exhibit 3.

2.3 APPLICANT'S INTEREST

COUNTRYSIDE has now been annexed into the incorporated city limits of the western portion of Surprise, Arizona. Based on the proposed and existing developments to the north, east and west of the Site, this overall area is projected to experience substantial new growth of residential communities with limited commercial use. The applicant is interested in developing a diversely designed master planned community under the Planned Area Development Zone P.A.D. District of the City of Surprise Municipal Code; Section 17.28.140.

2.4 AREA DESCRIPTION

The existing land use within a one-quarter mile search radius of the Site may be characterized as being a mixture of agricultural uses, residential uses, a former cotton gin property and undeveloped land.

North: A portion of the Site fronts on the Greenway Road alignment. The adjoining land to the north consists of existing five-acre homesites and The Orchards, a proposed P.A.D. development, approved by the City of Surprise.

COUNTRYSIDE

East: A majority of the Site is adjacent to a development known as "Ashton Ranch," a P.A.D. residential development with it's first unit currently under development. The first unit of Ashton Ranch is east of the Site and south of Acoma Drive, a mid-section line collector street. The second unit of Ashton Ranch is being reviewed for development by the City of Surprise and will be the next section of houses to be constructed. Unit 2 is also east of the Site, but north of Acoma Drive. The remaining northeastern portion of the Site wraps around a tract of land that is proposed to be a City of Surprise municipal development. This 40-acre parcel of land is to be dedicated to the City of Surprise by the developers of "The Orchards" P.A.D. development. The potential future uses are a high school site, a park, and a public water storage facility area.

South: There is an existing cotton gin on the 80-acre property to the south of the Site.

West: The Site fronts onto Reems Road. A majority of the property to the west of Reems Road is a new proposed single family development, Greenway Parc. This development has recently been approved for R1-5 zoning with a C-2 commercial corner. The location of Greenway Parc and the C-2 commercial corner are identified on Exhibit 6.

2.5 EXISTING SITE CONDITIONS

The Site contains a total acreage of approximately 200 gross acres. Until recently, a majority of the Site has been used for agricultural purposes. The Site was recently annexed from Maricopa County with a zoning designation of R1-43, Single Family Residential Zone. This zoning designation was the most comparable to the previous Maricopa County zoning of R-43.

2.5.1 Topographic Contours

A majority of the Site has been graded to accommodate the irrigation of crops. The fields are gently sloping to the southeast. The high point of the Site, in the northwest corner of the Site, is approximately 1,231 feet above mean sea level (MSL). The low point of the Site, in the southeast corner of the Site, is approximately 1,210 feet above MSL. Elevation and topographic information was derived from the U.S. Geological Survey (USGS) Waddell, Arizona, 7.5-Minute Series quadrangle map, 1957, photo revised 1971. Topographic contours for the Site are shown on Exhibit 6.

2.5.2 Vegetation and Wildlife

The Site had previously been utilized for agricultural purposes with planted crops on a majority of the Site. The Site contains no significant native vegetation and has minimal wildlife. The wildlife species most likely to be found on the Site include jackrabbits, skunks, coyotes, mourning doves, quail and songbirds. A copy of three separate Phase I Environmental Site Assessments covering the Site have been provided to the City of Surprise.

2.5.3 Streams and Ponding Areas

The Site has been previously graded for agricultural uses and there were not any natural washes or streams observed on the Site.

COUNTRYSIDE

2.5.4 Existing Drainage Patterns

The Site had previously been subjected to off-site surface water flows from the properties to the northwest. These off-site flows from the northwest concentrated at the Greenway Road and Reems Road intersection. Historically, water that concentrated at this intersection split and flowed down the west side of Reems Road and across the northeast portion of the Site.

The Site has been noted to be impacted by both a Zone "X" and Zone "A" Flood Plain designation as indicated on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM); Panel Number 04013C1585 F, effective date September 30, 1995. This FIRM Panel indicates that the land area containing the Site, immediate east of Reems Road, falls within **Zone X**. The area within the designated land area for the Reems Road right-of-way, and land areas immediately upstream and to the west of Reems Road, fall within **Flood Zone A**. The **Zone X** designation is indicated as land areas lying within 500-year flood; and areas of 100-year flooding with average depths less than one foot or with drainage area is less than one square mile and areas protected by levees from 100-year flood. The **Zone A** designation means this right-of-way is in an area that no base flood elevations have been determined.

Based on meetings with the City of Surprise engineering department, a countywide storm water retention policy has been implemented and all new developments in this area are required to retain the 100-year, 2-hour duration design storm on-site. The engineering department staff stated that Mountain Vista Ranch, a P.A.D. zoned development north of Greenway Road and west of Reems Road, has been designed to conform to this new storm water retention policy which will reduce the stormwater flows concentrating along the Reems Road corridor. A new single family home development, Greenway Parc, that is on the west side of Reems Road and adjacent to the Site's western property line, has also been designed to carry storm water flows along the west side of Reems Road in a 40 foot drainage channel. This new drainage channel that will be built as part of the Greenway Parc development will eliminate the off-site storm water flows that previously crossed the intersection of Reems Road and Greenway Road and onto the Site.

The phased construction and completion of the drainage channel to be built as part of Greenway Parc will be monitored prior to the initial construction of the first phase of the COUNTRYSIDE development. If the City of Surprise Engineer deems that construction delays on the building of the channel may impede the start of homebuilding within COUNTRYSIDE, a channel construction alternative may be invoked.

2.5.5 Utilities

Water: The Site is located in the water service area of the City of Surprise. The City of Surprise is overseeing the initial construction of a water tank farm for the storage and distribution of water for the area containing the Site. This water distribution facility is approximately 1,100 feet east of the northeast corner of the Site. Construction of the initial water storage tanks and the distribution lines are underway. This water distribution facility is part of an integrated City of Surprise water supply system that will provide water service to the Site. The water lines for the Site will be designed to connect in Greenway Road with this new City of Surprise water service system and then loop with the cities' water lines existing in Acoma Drive in the Ashton Ranch development to the east. A Development Agreement, between the City of Surprise and the Owners, will address the City of Surprise water service to COUNTRYSIDE. A copy of the Master Water Study with exhibits is attached in Appendix C.

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Sewer: The Site is located in the sewer collection system area of the City of Surprise. There is an existing 24-inch sewer line in Reems Road that will service 40-acres in the southwest corner of the Site. This sewer line is located outside of the existing pavement on the east side of the existing right-of-way.

The balance of the Site will be served by the construction of a new off-site sewer line to be installed from the southeast corner of the Site to an existing 15-inch sewer line. The existing line is located one-half mile southeast of the Site in Waddell Road at the entrance to the Ashton Ranch development. A Development Agreement, between the City of Surprise and the Owners, will address the City of Surprise sewer service to COUNTRYSIDE. A copy of the Master Sewer Study with exhibits is attached is attached in Appendix C.

Electric: The Site is located in the service area of Arizona Public Service (APS). There is existing electric service for the area from overhead electric lines located adjacent to the Site in public utility easements along the north side of Waddell Road. There are also overhead electric lines along the east side of Reems Road, adjacent to the south portion of the Site, and along the west side of Reems Road, adjacent to the northern portion of the Site. There are additional electric service lines in the immediate area along the Greenway Road alignment and Waddell Road. All electric service for this development will be underground.

Gas: The Site is located in an area serviced by Southwest Gas Company. There is a 4-inch gas distribution line in Reems Road. This gas line provides service to the immediate area of the Site. Gas service into the Site will be designed to integrate with the existing gas service in the area.

Telephone: The Site is located in an area that is being provided service by U.S. West Communications. There is existing telephone service in this area along the full length of Reems Road between the Greenway Road alignment and Waddell Road. Telephone service into the Site will be designed to integrate with the existing telephone service in the area.

Cable: The Site is not in an area presently serviced by a Cable TV company, although Cox Communications is presently servicing the subdivision development to the north known as Mountain Vista Ranch. Cox has stated that they will upgrade or extend service to the Site as the area develops.

2.5.6 Private Irrigation System

The northern and central portions of the Site are still being farmed. There are numerous, concrete lined and dirt lined irrigation delivery and tail water ditches traversing the Site. This irrigation system is a private system that does not service any other adjacent properties. The irrigation system will be taken out of service and the irrigation water well, the concrete and dirt irrigation canals and the tail water ditches will be physically removed from the Site prior to this development being built. The farming operations presently leasing portions of the Site for agricultural uses have been notified and will begin ceasing their farming operations by the end of the current growing season.

COUNTRYSIDE

3.0 PROPOSED ALLOCATIONS OF LAND USE

COUNTRYSIDE has been land planned to follow the established land uses under the City of Surprise Comprehensive Development Guide. As previously stated in Section 1.0 above, the Plan in the Development Guide reflects that the overall Site is projected to be a Typical Neighborhood Land Use with densities of 6 to 7 dwelling units per acre. The Plan also reflects a Neighborhood Commercial/Service Node of 10 to 12 gross acres per corner at the intersection of Reems Road and Greenway Road.

Planned Area Development (P.A.D.) zoning is proposed for the residential and commercial uses in COUNTRYSIDE. Approximately 187 gross acres of this community will be developed as single family homes with common useable open space under a P.A.D. Low Density Residential (LDR) designation. The P.A.D. LDR designation has a land use density of 2 to 6 dwelling units per acre. The commercial corner, containing approximately 12 gross acres, will be developed under a P.A.D. C-2, Community Commercial Zone designation.

A Conceptual P.A.D. Development Plan for COUNTRYSIDE (the "P.A.D. Development Plan") has been created to reflect the proposed allocation of these two land use designations. Thirteen subdivision land parcels or "bubbles", with integrated open space and retention areas, have been designed with the P.A.D. LDR designation. The P.A.D. C-2 designated Commercial Corner has been designed in the northwest corner of the Site. The P.A.D. Development Plan is included as Exhibit 5.

3.1 RESIDENTIAL USES

The proposed residential uses for COUNTRYSIDE will be all single family residential dwelling units built in accordance with the approved Conceptual P.A.D. Development Plan under the P.A.D. LDR designation. The City of Surprise R1-5 zoning is the most nearly equivalent to the LDR land use. The residential uses on the Site will be designed and developed under the current provisions for R1-5 zoning in the City of Surprise Municipal Code, Section 17.28.040, unless specifically amended below.

3.2 COMMERCIAL USE

The proposed future commercial corner for COUNTRYSIDE will be an approximate 12 gross acre neighborhood commercial center to be built in accordance with the approved Conceptual P.A.D. Development Plan under the P.A.D. C-2 designation. The City of Surprise C-2 zoning is the most nearly equivalent to the proposed commercial use. This one commercial use proposed for the Site and the uses that will be permitted will be designed and developed under the current provisions for C-2 zoning in the City of Surprise Municipal Code, Section 17.28.080, unless specifically amended below.

3.3 DENSITY

As per the City of Surprise density definitions, the Gross Density for COUNTRYSIDE established for the Conceptual P.A.D. Development Plan will be 4.05 residential dwelling units per acre. Excluding the P.A.D. C-2 Commercial Corner, the Gross Density for the 187.6 acres of the residential portion of COUNTRYSIDE will be 4.30 residential dwelling units per acre. As per the City of Surprise density definitions, the Net Residential Density for COUNTRYSIDE will be 4.6 residential dwelling units per acre.

These densities classify this development as a Low-Density Residential (LDR) designation under Section D.1.2 of the Surprise Comprehensive Development Guide.

COUNTRYSIDE

3.4 SITE ACREAGE AND CONCEPTUAL DWELLING UNITS, DENSITY AND DEVELOPMENT ACREAGE

Based on the proposed densities for COUNTRYSIDE, the following conceptual acreage, dwelling units, densities and open space allotments have been listed below.

TOTAL ACREAGE OF PROJECT	GROSS COMMERCIAL ACREAGE	CONCEPTUAL NO. OF DWELLING UNITS	GROSS DENSITY PER P.A.D. LDR ACRE	ARTERIAL STREET ACREAGE	PRIVATE OPEN SPACE ACREAGE	NET DENSITY PER ACREAGE FORMULA
199.3	11.7	807	4.3	12.3	21.2	4.6

3.5 LOT SIZE

The P.A.D. Development Plan for the Site has 13 residential development parcels (subdivisions) and one commercial parcel. The proposed Conceptual Land Use Plan for the Site will be designed with five different lot widths within the 13 subdivisions shown. This use of 5 lot widths will vary the types of homes to be built within the development. The P.A.D. LDR designated lots will all have a depth of 110 feet. The lot widths will be 48 feet, 50 feet, 53 feet, 55 feet and 58 feet.

The conceptual lot yield for the proposed 13 residential subdivisions to be developed under the P.A.D. LDR zoning are as follows:

SUBDIVISION	YIELD (LOTS)	MINIMUM LOT SIZE
A	48	48' X 110'
B	42	50' X 110'
C	36	48' X 110'
D	49	50' X 110'
E	67	50' X 110'
F	60	53' X 110'
G	41	58' X 110'
H	61	55' X 110'
I	98	53' X 110'
J	85	50' X 110'
K	94	48' X 110'
L	79	50' X 110'
M	47	48' X 110'
N	---	COMMERCIAL
TOTAL	807	

COUNTRYSIDE

3.6 CONCEPTUAL LAND USE PLAN

A Conceptual P.A.D. Land Use Plan (the "Land Use Plan"), based on the P.A.D. LDR and the P.A.D. C-2 zoning designations, has also been prepared to illustrate the proposed, conceptual land uses for COUNTRYSIDE. This Land Use Plan reflects a proposed lot configuration for the 13 subdivisions and the future C-2 commercial corner established in the P.A.D. Development Plan.

This Land Use Plan shows compliance and consistency with the City of Surprise Development Guide and is included as Exhibit 6.

3.7 P.A.D. DEVELOPMENT STANDARDS

DESCRIPTION	COUNTRYSIDE P.A.D. STANDARDS
Minimum Net Lot Area	5,280 square feet
Minimum Lot Width	48 feet ¹
Minimum Lot Depth	110 feet
Maximum % of Lots Under 50'	25%
Front Yard Setback	15 minimum
Front Yard Setback – Stagger	3 feet minimum
Front Yard Setback – Side Entry Garages	12 feet
Back of Property Line to Vertical Garage Door	18 feet minimum
Minimum Rear Setback	20 feet
Minimum Side Setback	8 and 5 feet ³
Minimum Distance Between Buildings on Adjacent Lots	10 feet
Minimum Street Side yard Setback	13 feet ²
Maximum Structure Height	30 feet
Useable Open Space	21.2 acres (10.6% of Gross Acreage)

Footnotes:

1. Minimum lot widths will be measured at the front setback line.
2. Street side yard setbacks shall not apply to lots adjacent to landscape tracts.
3. Non-foundation home features will be allowed to encroach two (2) feet into the side yard setback, but no closer than four (4) feet from the property line.

3.8 RESIDENTIAL DWELLING UNITS UNDER 50 FEET IN WIDTH

No more than 25% of the total lot yield in COUNTRYSIDE shall have lot widths between 45 and 49 feet.

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3.9 CIRCULATION

Reems Road and Greenway Road provide the primary access to COUNTRYSIDE. Reems Road is identified as a major arterial with a 130-foot right-of-way in the City of Surprise Comprehensive Development Guide. Reems Road is currently a two lane rural road that presently provides primary access to the Site. Greenway Road is identified as a minor arterial with a 110-foot right-of-way. This proposed arterial is presently a dirt service road. Both arterial streets will be designed as per the City of Surprise Municipal Code, Title 16 Subdivision; Section 16.20.030 Streets, a copy of which is included as Appendix D.

A mid-section primary collector, Acoma Drive, consisting of a 60-foot right-of-way with a 10-foot landscape tract on each side of the street, is planned to tie in to the existing 60-foot right-of-way in Phase 1 of the Ashton Ranch residential development to the east. This collector road will be extended through the Site and will serve as the primary collector for the internal traffic flow from the thirteen subdivision parcels in the Site. The balance of all interior residential streets for this development will be constructed as 50-foot right-of-way residential streets, except for Custer Lane. This quarter-section road does not continue to the east in the Ashton Ranch development and therefore will transition from a 60-foot right-of-way at the entry off of Reems Road to a 50-foot collector street within our development. All internal streets will be designed as per the City of Surprise Municipal Code, Title 16 Subdivision; Section 16.20.030 Streets, a copy of which is included in Appendix D.

3.9.1 Traffic Analysis

There are two pre-existing traffic studies on file with the City of Surprise for Mountain Vista and for Ashton Ranch. These two developments are at the northwest corner of the Site and along the full eastern boundary of the Site. Reems Road, Greenway Road and Acoma Drive provide primary or secondary access to one or both of these developments.

COUNTRYSIDE is also provided primary or secondary access by Reems Road, Greenway Road and Acoma Drive. All three roads will be designed and constructed as per the City of Surprise Municipal Code, Title 16 Subdivision; Section 16.20.030 Streets, a copy of which is included in Appendix D.

Based on the existing traffic studies and the compliance with the City of Surprise street design standards, The City of Surprise Engineering Department stipulated that no additional traffic analysis will be required for this development.

3.9.2 Traffic Signal

An appropriately located traffic signal, as identified in the Development Agreement, will be included as part of the public facilities that may be provided in conjunction with the development of COUNTRYSIDE. In particular, the City of Surprise is in the process of planning for the location of a future traffic signal at the intersection of Greenway Road and Reems Road.

3.9.3 Bus Bays

Public bus routes have not been established for the portion of the City of Surprise containing the COUNTRYSIDE development. Therefore, bus bays will not be included as part of the public facilities that may be provided within COUNTRYSIDE.

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3.10 OPEN SPACE

The conceptual Land Use Plan for COUNTRYSIDE has approximately 21.2 acres of common area open space that will be utilized for pedestrian access, active recreation purposes, and surface water retention. This allocation of open space is approximately 10.6% of the total P.A.D. area of this development. These areas have been designed to be centralized in the development and have continuity and flow between the 13 subdivision parcels. One of the primary purposes is to create pedestrian flow within the community using the open spaces and the public rights-of-way.

The developer will create and record a set of Covenants, Conditions, and Restrictions (CC&R's) establishing a master homeowner's association (HOA) which will be responsible for the maintenance of the landscaping in all common areas and rights-of-ways.

3.10.1 Public

There have not been any parcels of land set aside for public use within this development.

3.10.2 Private

The approximate 21.2 acres of common area open space are divided between the 13 subdivision parcels. These common open spaces are linked to be part of an integrated retention basin design that will handle the surface water retention for each of the parcels. These retention basins will be sized for a 100-year, 2-hour storm. These common areas will also be utilized for recreation purposes and pedestrian access. A Conceptual Landscaping Plan and an exhibit showing the location of the open space are included as Appendix B.

The recreational uses will be in full compliance with the Planned Area Development Zone P.A.D. District of the City of Surprise Zoning Code; Section 17.28.140, a copy of which is included in Appendix D.

3.10.3 Active Open Space

There are three common area open space tracts that have been designed to provide active recreational uses for this community. These three active recreation areas are known as the North Park, the Central Park and the South Park. A Conceptual Landscaping Plan and an exhibit showing the location of the active open spaces are included as Appendix B.

The North Park is predominately a large, active turf area that will be utilized for field sports (i.e., soccer, etc.). This active recreation park contains approximately 3.6 acres. The central portion of the field sports turf area has been designed to provide a dual use as retention area for a portion of the community. This landscaped park area will also contain park benches, picnic tables and drinking fountain. A meandering sidewalk will provide pedestrian and bicycle access to and through this active park area from all subdivisions in this community. A second designated active area will also be set aside within North Park for a tot-lot play area. This area will have designated play equipment for different age groups. A Conceptual Landscaping Plan showing the location and uses in North Park is included in Appendix B as Plate L1 and L5.

The Central Park is a large, active turf area that will be have a designated, modified 2-way basketball courts and a sand volleyball court. The turf area can also be utilized for field sports (i.e., soccer, etc.). This active recreation park contains approximately 3.1 acres. The middle portion of the turf area of this park has been designed to provide a dual use as retention area for a portion of the community. This landscaped park area will also contain a ramada with BBQ, park benches, picnic tables and drinking fountain. A meandering sidewalk will provide pedestrian and bicycle access to and through this active park area from all subdivision in this community. A second designated active area will also be set aside within Central Park, or Private Open

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Space Tract M to the east, for a tot-lot play area. This area will have designated play equipment for different age groups. A Conceptual Landscaping Plan showing the location and uses in Central Park is included in Appendix B as Plate L1 and L6.

The South Park is a smaller, active turf area that will have a tot-lot play area. This area will have designated play equipment for different age groups. The turf area north of the tot-lot can also be utilized as a play area for youth field activities. This active recreation park contains approximately 1.3 acres. The middle portion of the turf area of this play park has been designed to provide a dual use as retention area for a portion of the community. This landscaped park area will also contain a ramada with BBQ, park benches, picnic tables and drinking fountain. A meandering sidewalk will provide pedestrian and bicycle access to and through this active park area from all subdivision in this community. A Conceptual Landscaping Plan showing the location and uses in North Park is included in Appendix B as Plate L1 and L7.

3.10.4 Pedestrian and Bicycle Access

Pedestrian and bicycle access to and from all 13 subdivisions to the three active recreation parks, the commercial corner and the future school and park area have been provided by use of designated trail system within COUNTRYSIDE. The trail will be linked throughout this development using a combination of meandering concrete paths within the open spaces and the sidewalks in each subdivision. A Conceptual Landscaping Plan and exhibit showing the location of the access trails and uses are included as Appendix B.

3.10.5 Walls, Landscaping and Trails

The theme and interior walls, the landscaping and trail system for this development will be designed and constructed in full compliance with the Planned Area Development Zone P.A.D. District of the City of Surprise Municipal Code, Section 17.28.140, a copy of which is included in Appendix D. An expanded breakdown of the landscaping design elements that will be constructed for COUNTRYSIDE is presented in Section 7.0.

3.11 TEMPORARY FACILITIES/CONDITIONAL PERMITTED USES

Installation or construction and operation of development-related facilities, including, but not limited to, one or more contractor's storage yards, temporary construction trailers, temporary sales office buildings, model home complexes and appurtenant parking facilities will be allowed in COUNTRYSIDE under the following provision. This temporary permitted use is allowed provided that prior written administrative approval has been obtained from the City of Surprise Community Development Director. For purposes of this P.A.D. development, "administrative approval" shall mean written approval of the development-related facility by the Community Development Director following the Director's review of a written request for the approval of this development-related facility.

3.12 DEVELOPMENT STANDARDS ORDINANCE/DESIGN STANDARD PROVISIONS

Unless specifically amended by this PAD Plan and the Development Agreement referenced herein, all provisions of the City of Surprise Municipal Code, Section 16.20.030, Streets; Section 17.28.140 P.A.D. zone, 17.28.040, Single Family Residential zone (R1-5); and 17.28.080, Community Commercial zone (C-2) shall apply to the COUNTRYSIDE subdivisions. Copies of these City of Surprise documents are included in Appendix D.

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4.0 PHASING

COUNTRYSIDE contains five distinctive ownership parcels that have each been planned to have subdivision tracts containing lots with varying widths. The ownership parcels have been designed with a minimum of two lot sizes. The 80-acre ownership parcel in the center of the community contains four varying lot widths. These five ownership parcels contain a total of 13 subdivision tracts that potentially will be developed by more than four separate homebuilders. Each of the 13 subdivision tracts, the smallest containing 35 lots, will have homes constructed in more than one phase. A Conceptual Phasing Plan for the proposed phasing of the 13 subdivision tracts and the estimated time schedules are included in Exhibit 8.

The Phasing Plan sets forth the intended times for the beginning and completion of each phase within the designated subdivisions. Construction in any phase may be commenced prior to the time shown on the Phasing Plan. Commencement of construction of a phase prior to or within the time designated on the Phasing Plan for commencement of that phase shall satisfy the current Municipal Code, Section 17.36.060, a copy of which is included in Appendix D.

The City of Surprise Community Development Director may administratively approve extensions of time for up to two years to commence construction on any phase. Extensions of time for greater than two years may be approved by the City of Surprise when deemed necessary. This extension process will be completed through either the minor changes or major changes processes for amendments to the P.A.D. Development Plan approval as found in the current Section 17.36.060.

Phase 1 has been designated to provide for the installation of the off-site infrastructure to serve this development. The off-site water and sewer lines, outlined in Section 2.5.5 Utilities, will be installed as part of this first phase of development. Phase 1 is also designated for the half right-of-way construction of Reems Road, south from the Greenway Road intersection to Acoma Drive and south along the eastern Reems Road frontage of the COUNTRYSIDE subdivisions. This first phase also provides for the half right-of-way construction of the north half of Acoma Drive, from Reems Road east to tie into the existing Acoma Drive in Unit 1 of Ashton Ranch. The design standards for these roads are addressed in Section 3.9 Circulation. Similar means of paved access and emergency (all weather) access will be provided, as necessary and appropriate, in conjunction with the development of subsequent phases of COUNTRYSIDE.

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5.0 INFRASTRUCTURE IMPROVEMENTS

The following eight sub-sections provide information on the engineering design and infrastructure improvements for the Site.

5.1 WATER LINES

The Site is located in the water franchise service area of the City of Surprise. LEI is coordinating with the engineering department of the City of Surprise to design the water system to service this project. All on-site and off-site water lines and/or water storage and distribution facilities will be designed and built as per the City of Surprise Engineer and the approved Development Agreement. A copy of the Master Water & Sewer Study is included in Appendix C.

5.2 SANITARY SEWERS

The Site is located in the sewer collection system area of the City of Surprise. LEI is coordinating with the engineering department of the City of Surprise to design the sewer system to service this project. A portion of the southwest corner of the Site will be provided sewer service from the existing sewer line in Reems Road. The balance of the development will receive sewer service from any existing sewer line in Waddell Road, approximately one-half mile southeast of the Site. The off-site sewer lines will be sized to handle the residential units proposed for the Site. All on-site and off-site sewer lines will be designed and built as per the City of Surprise Engineer and the approved Development Agreement. A copy of the Master Water & Sewer Study is included in Appendix C.

5.3 STORM SEWERS

Storm sewers are not proposed or needed for this development.

5.4 UTILITIES

All electric, gas, telephone and cable television utilities will be placed underground.

5.5 IRRIGATION

The existing irrigation system is a private system that does not service any other adjacent properties. The irrigation system will be taken out of service and the concrete and dirt irrigation canals physically removed from the Site prior to this development being built.

5.6 PROPOSED SURFACE DRAINAGE PATTERNS

Historical drainage flow for the Site is southeasterly. Some off-site drainage enters the Site from the north and west across the Reems Road/Greenway Road intersection. As the developments to the north and west are built, the off-site drainage will be reduced significantly, as discussed in Section 2.5.4 above,

On-site runoff will be routed through the Site utilizing the streets, open space and drainage easements. This on-site drainage will be directed into several grass lined retention basins that have been designed to handle the drainage from the thirteen development parcels. A drainage report will be prepared for the COUNTRYSIDE P.A.D. Development Plan. The report will be submitted to the City of Surprise Engineer for review and approval prior to final plat approval for the first subdivision to be developed. The retention basins will be sized for a 100-year, 2- hour storm per the Drainage Design Manual for Maricopa County, Volume I, Hydrology, published by the Flood Control District of Maricopa County.

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The retention basins for the subdivision parcels in the Site will provide one (1) foot of freeboard. The basins will provide flow through for all basin overflows without ponding in the streets of the various subdivisions. The retention basins will be constructed with 6:1 minimum side slopes adjacent to the street rights-of-ways and will be constructed with 4:1 minimum side slopes adjacent to the lots. All cross sections for this retention basin and the adjacent streets will be shown in the Preliminary Drainage Report to be submitted with the Preliminary Plat for this development.

5.7 PROJECT MASTER CC&R's

The developer will create and will record a set of Covenants, Conditions, and Restrictions (CC&R's) establishing a master homeowner's association (HOA) which will be responsible for the maintenance of the perimeter theme walls, signage, and the landscaping in all common areas and right-of-ways.

A Preliminary Draft of the CC&R's for COUNTRYSIDE will be submitted to the City of Surprise Planning Department for review and acceptance. This document will be transmitted during the review of the Preliminary Plat submittal package.

5.8 DEVELOPMENT AGREEMENT

The Development Agreement for COUNTRYSIDE has been submitted to the City of Surprise. It will be reviewed and approved in conjunction with this P.A.D. Development Plan and before approval of any Preliminary Plat for COUNTRYSIDE.

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6.0 DESIGN GUIDELINES

The following eight sub-sections provide information on the engineering and architectural design guidelines that will be followed in the construction of the subdivisions in the Site. These eight sub-sections outline the design guidelines to be followed in COUNTRYSIDE. These sub-sections have been formulated to establish housing development criteria that will complement the pending City of Surprise Design Guidelines for Single Family Residential Development.

6.1 ARCHITECTURAL STYLE

It is projected that a minimum of four (4) homebuilders will be constructing single family subdivisions within COUNTRYSIDE. The single-family homes in COUNTRYSIDE will vary in architectural style with a predominate accent toward a southwestern design.

6.2 SQUARE FOOTAGE OF HOMES

The homes to be constructed in each of the subdivisions within COUNTRYSIDE will consist of both single story and two story homes. The square footage of the homes will vary with each homebuilder.

6.3 MODEL ELEVATIONS

The number of elevations will vary in each of the subdivisions within COUNTRYSIDE according to the housing product mix offered by the homebuilder. Each subdivision will have a minimum of three (3) house plans with a minimum of three (3) distinct elevations offered for each plan built within each subdivision. Each elevation will have its distinctiveness derived through varying projections, window designs, and roof profiles.

No lot is to front onto a collector street that is 60 foot wide or greater. The homebuilders shall upgrade rear and side elevations along arterial and collector streets and open space areas.

The homebuilders will be encouraged to vary the homes built so that the same house plan with the same or similar front elevation will not be placed on adjacent lots or directly across the street from one another. The same house plan may be placed on adjacent lots or directly across the street from one another only if the house elevation contrasts from one lot to the next to create street front variety. All homes are to be designed and constructed with the goal of providing a diverse housing mix in the residential subdivisions. Homebuilders shall emphasize distinctive architectural details in the front elevations (e.g., covered front entries and/or covered front porches, door and window details, roof overhangs, parapet walls with cap features, etc.).

6.4 ROOFING

The homes in each subdivision will be constructed with all tile roofs. A minimum of two styles of roof tiles will be offered in each subdivision. No composition shingles will be permitted on homes in this development.

6.5 GARAGES

The homes in each subdivision will have a minimum of a two (2) car garage.

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6.6 FENCING

The side and rear yards of each home in COUNTRYSIDE will have a concrete block fence that will typically be a maximum of six (6) feet in height.

A future P.A.D. C-2 commercial corner will be constructed at the northwest corner of the Site. The side and rear yard fencing of the residential lots in COUNTRYSIDE, along the common interior property line along the south and east side of this future commercial corner, will be a maximum of eight (8) feet in height.

6.7 COLOR COMBINATIONS PER SUBDIVISION

The single-family homes in each subdivision in COUNTRYSIDE will have coordinated exterior colors. The fascia and exterior of the homes will be painted in different, varying colors. The homebuilders will offer a minimum of two (2) housing colors for each subdivision.

In order to vary and coordinate the exterior color combinations, a minimum of four (4) different fascia colors will be offered in combination with the minimum of two (2) different exterior color schemes for the homes.

A minimum of two (2) colors of roof tile will be offered in COUNTRYSIDE by the homebuilders.

6.8 HOUSE PRODUCT DESIGN GUIDELINES AND PROVISIONS

Unless specifically amended by this P.A.D. Development Plan and the Development Agreement referenced herein, all provisions of the City of Surprise Municipal Code Section 17.28.140 P.A.D. zone shall apply to the homes built in the subdivisions in COUNTRYSIDE. A copy of this City of Surprise document is included in Appendix D.

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7.0 CONCEPTUAL LANDSCAPING, WALL AND MONUMENTATION PLAN

A conceptual landscape plan has been designed for COUNTRYSIDE by the firm Neill/Vecchia & Associates, Inc. A summary of the design criteria for the walls, entry monumentation and landscaping are presented in the following five sub-sections.

7.1 CONCEPTUAL SUBDIVISION THEME WALL

COUNTRYSIDE will have a perimeter theme wall on Reems Road, Greenway Road and on the interior collector, Acoma Drive. This wall will be decoratively designed and built to meet current City of Surprise standards. The theme wall will be staggered to a visually pleasing streetscape along all three roads. A copy of the Conceptual Landscape Plan is included in Appendix B.

The staggering of the theme wall will be accomplished with an "offset wall treatment" that will be aesthetically placed as shown on the Conceptual Landscape Plan. The offset wall treatment will protrude out from the theme wall and will have a pilaster on each side that will be constructed with colored split face block. Pictorial renderings of this offset wall and the proposed locations are presented in the Theme Wall Conceptual Plan on Panel L1 and L2 in Appendix B.

The theme wall will also have a "theme feature panel" with a decorative planter that will be placed along Reems Road and Acoma Drive. The theme feature panel will have a split face block wainscot with a stucco wall above. Pictorial renderings of this theme feature panel and the proposed locations are presented in the Conceptual Landscape Plan in Appendix B on Panel L1, L2 and L3.

The theme wall will be designed to contain both vertical and horizontal movement in its architecture. The wall be constructed with 4" by 8" by 16" CMU Block with Split Face Decorative Block accents. The color of the theme wall will be colored in desert hues. The 2' 6" by 2' 6" columns of the theme wall will be maximum of 6 feet tall and will be constructed with 2' 0" by 2' 0" CMU Block with Split Face Decorative Block accents. A concrete cap block, colored to match the wall will be placed on each column. The theme wall will have columns at wall ends and at a maximum of a 200' spacing. Pictorial renderings of this wall and its proposed location are presented in the Conceptual Landscape Plan in Appendix B on Panel L1, L2 and L3.

A standard, maximum 6 foot tall subdivision perimeter wall, colored in desert hues, will be provided at the northeast corner of the development, along the common boundary line with the proposed City of Surprise school and park complex proposed in the Orchard P.A.D. Development Plan. This same standard wall will be placed along the southern boundary of the Site. These perimeter walls at the northeast corner and the southern boundary will be built to tie in with the existing perimeter block wall on the eastern boundary line of the Site. This existing perimeter wall is part of Unit 1 and Unit 2 of Ashton Ranch.

A standard, maximum 8 foot tall subdivision perimeter wall, colored in desert hues, will be provided at the northwest corner of the Site, along the common boundary line with the proposed future commercial corner.

The theme wall and the perimeter wall for COUNTRYSIDE will be maintained by the Master Homeowner's Association.

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7.2 RIGHT-OF-WAY AND OPEN SPACE LANDSCAPING

Landscaping will be provided along the frontage of the two arterial streets serving this subdivision, Greenway Road and Reems Road, and along both sides of the mid-section collector road, Acoma Drive. The arterial and collector road landscaping will be in portions of the rights-of-way and in additional open space tracts that have been designed for the Site. There are 10-foot wide open space tracts for expanded landscaping along the south side of Greenway Road and on both sides of the frontage along Acoma Drive. There also are additional 15 to 20 foot wide open space tracts for expanded landscaping that have been created the full frontage of Reems Road. A 9 foot wide by 90 foot long landscaped median will be added to Acoma Drive at the intersection with Reems Road. Plant information and pictorial renderings of the conceptual landscaping along the theme wall are presented in the Conceptual Landscape Plan in Appendix B on Panel L1, L2, L3 and L4.

Landscaping will also be provided in the open space/retention basin tracts within the Site. The landscaping will, at a minimum, fulfill the requirements identified in the provisions of the City of Surprise current Municipal Code Section 17.32.030. Landscape materials will be drought tolerant and will be subject to review and approval by the City of Surprise Community Development Director. All landscaping will be done in accordance with ADWR water conservation guidelines. Plant materials will be selected from the approved Arizona Department of Water Resources (ADWR) plant list. A copy of the ADWR Low Water Using Plant List is included in Appendix E. Plant information and pictorial renderings of the conceptual landscaping in the open space areas are presented in the Conceptual Landscape Plan in Appendix B on Panel L5, L6 and L7.

7.3 SIGNAGE AND ENTRY MONUMENTATION

COUNTRYSIDE will have its primary signage and entry monumentation placed at the Acoma Drive entrance at Reems Road. There also will be secondary subdivision signage at the Greenway Road entry in this development. Additional secondary signage may be placed at two separate entries into the development along the Reems Road frontage. A pictorial rendering of the conceptual signage and monumentation is presented in the Conceptual Landscape Plan in Appendix B on Panel L1, L2 and L3.

7.4 RESIDENTIAL HOME LANDSCAPING

Landscaping shall be provided in the front yards of the single-family homes in each of the subdivisions in COUNTRYSIDE. To enhance and screen the streetscape of the lots, the front yards shall be landscaped with a combination of trees, shrubs and ground cover. The ground cover for the front yards may be turf, decomposed granite or other natural rock material. All bare earth must be covered by an approved organic material to provide a neat, dust-free appearance. Rocks and boulders, railroad ties and other decorative materials may be used to supplement and create imaginative landscaping design compatible with the southwest character of the development. The creative use of lighting is encouraged. Artificially colored rock yards are not acceptable in any of the subdivisions.

The front yards of all single-family homes must be landscaped and the trees along the street planted within 90 days of the completion of construction of the home in any subdivision. Plant materials will be selected from the approved Arizona Department of Water Resources (ADWR) plant list. A copy of the ADWR Low Water Using Plant List is included in Appendix E.

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7.5 COMMERCIAL CORNER LANDSCAPING

Landscaping shall be provided for the future commercial corner in COUNTRYSIDE. The landscaping will, at a minimum, fulfill the requirements identified in the provisions of the City of Surprise current Municipal Code Section 17.32.030, and will be submitted a part of the Site Plan approval process. Landscape materials will be drought tolerant and will be subject to review and approval by the City of Surprise Community Development Director. Plant materials will be selected from the approved Arizona Department of Water Resources (ADWR) plant list. A copy of the ADWR Low Water Using Plant List is included in Appendix E.

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8.0 PROJECT TEAM/CONTACT LIST

SUBDIVIDER

Village Builders, L.L.C.
Managing Partner for Countryside
Contact: Clayton M. McKnight
1616 East Indian School Road, Suite 145
Phoenix, Arizona 85016
(602) 285-01864

OWNERSHIP

Surprise 80, L.L.C.
501-17-013 [Parcels H, I, J & K]
c/o Clayton M. McKnight
1616 East Indian School Road, Suite 145
Phoenix, Arizona 85016
(602) 285-1864

North Buckeye Properties
501-17-012F [Parcels C & D]
c/o Bill Blair
4333 North Civic Center Plaza, Suite 600
Scottsdale, Arizona 85251
(602) 947-9253

Reems Road South 20, L.L.C.
501-17-012G [Parcels A & B]
c/o Clayton M. McKnight
1616 East Indian School Road, Suite 145
Phoenix, Arizona 85016
(602) 285-1864

ENGINEER/PLANNING

Landmark Engineering, Inc.
Contact: Michael G. Rhodes, P.E.
Contact: Gary R. Claybaugh
7310 North 16th Street, Suite 285
Phoenix, Arizona 85020
(602) 861-2005

ZONING ATTORNEY

Burch & Cracchiolo, P.A.
Contact: Marvin Davis
702 East Osborn Road
Phoenix, Arizona 85014
(602) 285-01864

Avalon Development Company, L.L.C.
501-17-014 [Parcels L, M & N]
c/o A John Stegall III
2910 East Camelback Road, Suite 190
Phoenix, Arizona 85016
(602) 840-4880

North Buckeye Properties IA
501-17-012B [Parcels E, F & G]
c/o Bill Blair
4333 North Civic Center Plaza, Suite 600
Scottsdale, Arizona 85251
(602) 947-9253

SURVEYOR

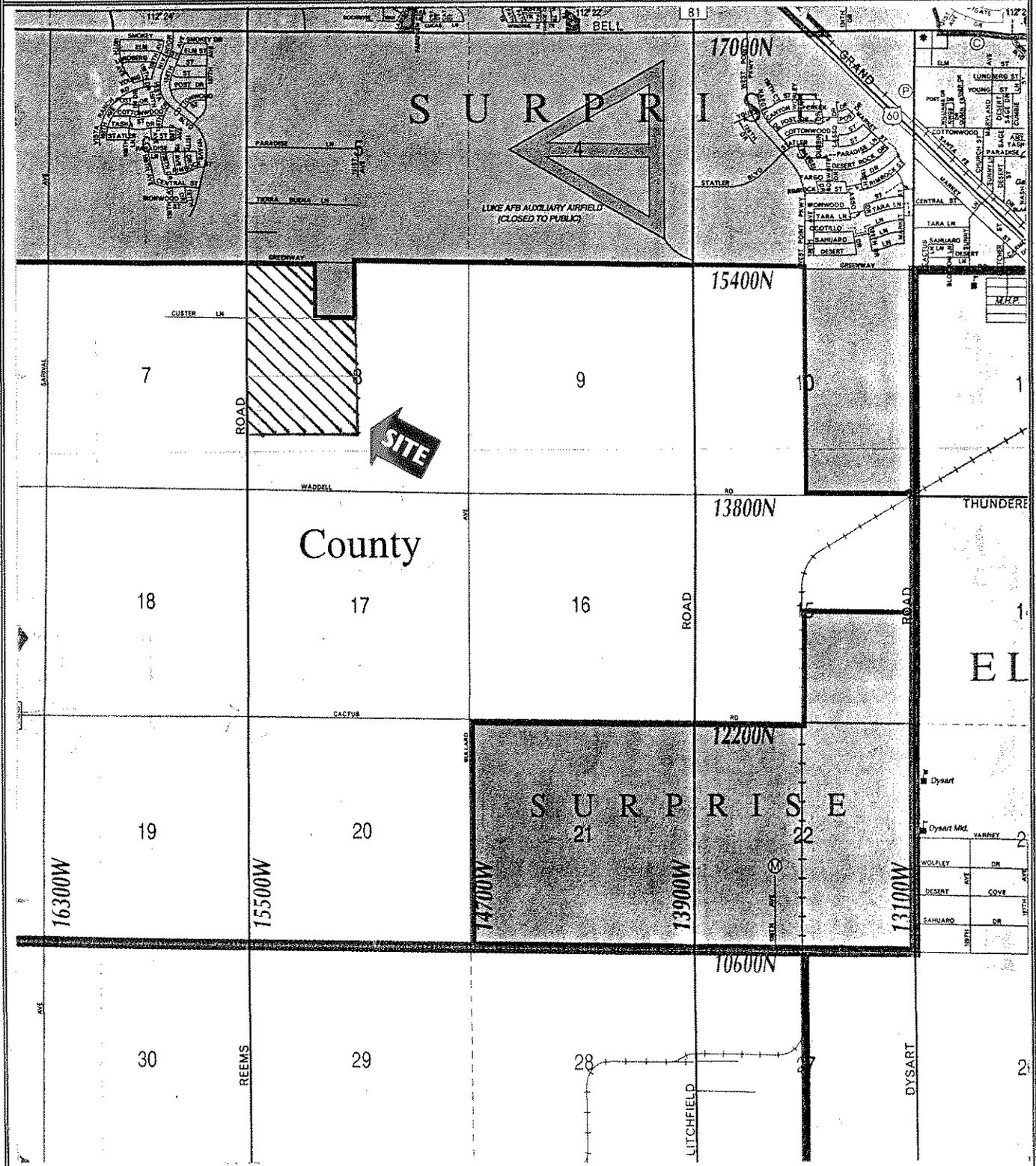
Landmark Engineering, Inc.
Contact: Gary B. Valenzuela, R.L.S.
7310 North 16th Street, Suite 285
Phoenix, Arizona 85020
(602) 861-2005

LANDSCAPE ARCHITECT

Neill/Vecchia & Associates, Inc.
Contact: Paul Vecchia
3295 N. Civic Center Blvd., Suite 11
Scottsdale, Arizona 85251
(602) 949-7127

VICINITY MAP
EXHIBIT 1

COUNTRYSIDE
EAST OF REEMS ROAD/SOUTH OF GREENWAY ROAD; SURPRISE, ARIZONA



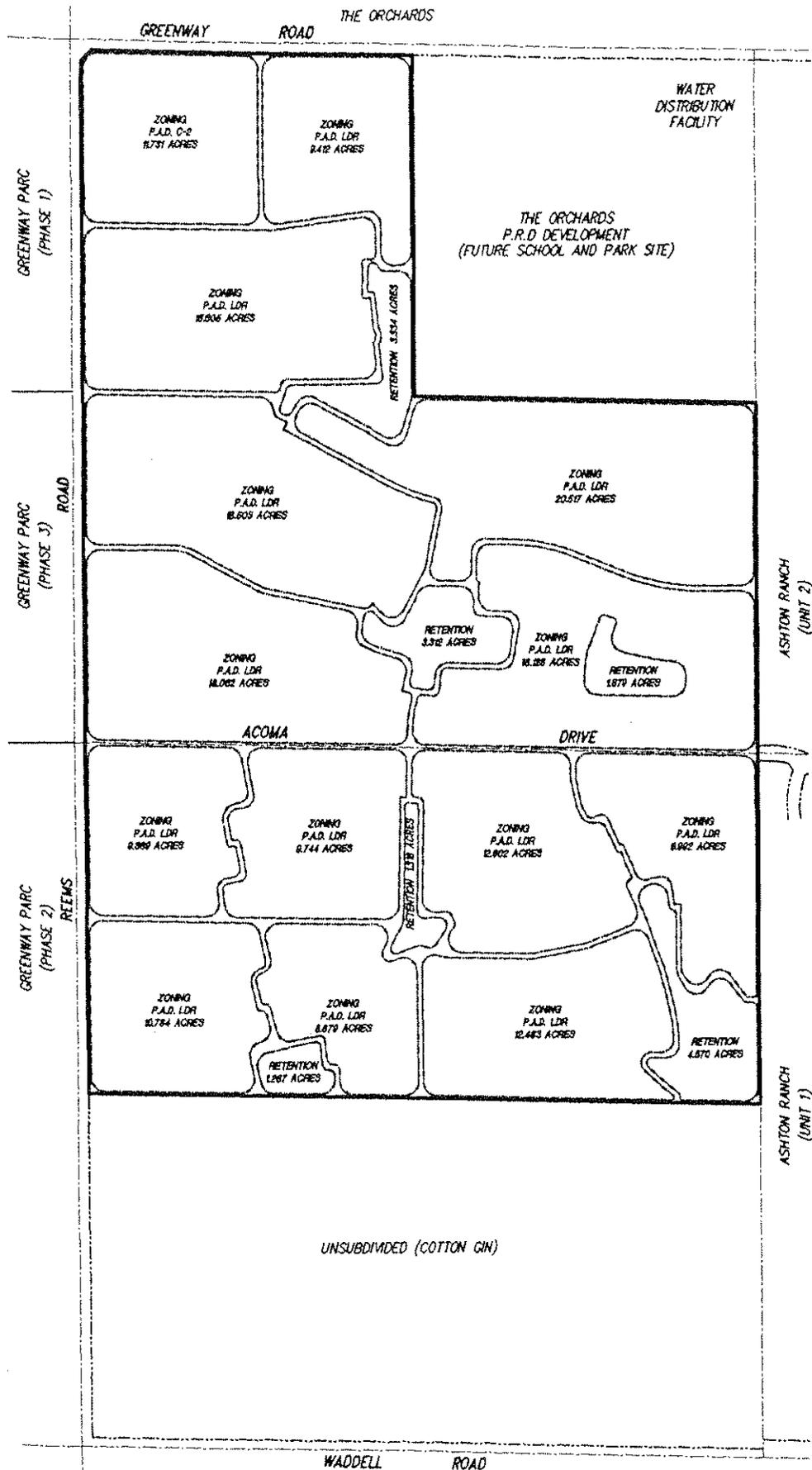
September 23, 1998

Reviewed By
Mike Rhodes

Prepared By
Gary Claybaugh

98023

LANDMARK
ENGINEERING, INC.



**COUNTRYSIDE
LOCATION MAP EXHIBIT 2**

**LANDMARK
ENGINEERING, INC.**
134.50 N. SCOTTSDALE RD. SUITE 202
SCOTTSDALE, ARIZONA 85254 (602)922-1100

THE ORCHARDS

GREENWAY ROAD

WATER DISTRIBUTION FACILITY

ZONING P.A.D. C-2
11,731 ACRES

ZONING P.A.D. LDR
11.4 ACRES

TAX PARCEL #501-17-011A

ZONING P.A.D. LDR
13,606 ACRES

RETENTION 3,034 ACRES

THE ORCHARDS P.A.D. DEVELOPMENT
(FUTURE SCHOOL AND PARK SITE)

GREENWAY PARK (PHASE 1)



ZONING P.A.D. LDR
18,503 ACRES

ZONING P.A.D. LDR
20,517 ACRES

TAX PARCEL #501-17-013

RETENTION 3,512 ACRES

ZONING P.A.D. LDR
18,082 ACRES

ZONING P.A.D. LDR
18,128 ACRES

RETENTION 1,879 ACRES

GREENWAY PARK (PHASE 3)

ROAD

ASTON RANCH (PART 2)

TAX PARCEL #501-17-012F

ZONING P.A.D. LDR
9,368 ACRES

ZONING P.A.D. LDR
9,744 ACRES

ZONING P.A.D. LDR
12,602 ACRES

ZONING P.A.D. LDR
9,882 ACRES

MEANS

RETENTION 1,319 ACRES

ASTON RANCH (PART 1)

TAX PARCEL #501-17-012G

ZONING P.A.D. LDR
10,784 ACRES

ZONING P.A.D. LDR
8,879 ACRES

ZONING P.A.D. LDR
12,602 ACRES

ZONING P.A.D. LDR
9,882 ACRES

RETENTION 1,287 ACRES

ZONING P.A.D. LDR
12,483 ACRES

RETENTION 4,570 ACRES

GREENWAY PARK (PHASE 2)

UNSUBDIVIDED (COTTON DIN)

COUNTRYSIDE OWNERSHIP MAP EXHIBIT 3

LANDMARK ENGINEERING, INC.

13430 N. SCOTTSDALE RD. SUITE 202
SCOTTSDALE, ARIZONA 85254 (802)922-1100

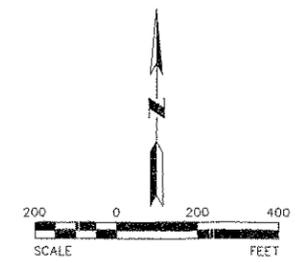
S:\2003\10023\006.dwg 1/21/99 J. ALVAREZ

THE ORCHARDS

GREENWAY ROAD

WATER DISTRIBUTION FACILITY

THE ORCHARDS P.A.D. DEVELOPMENT (FUTURE SCHOOL AND PARK SITE)



CONCEPTUAL LOT DIMENSION SCHEDULE

SUBDIVISION	YIELD (LOTS)	MINIMUM LOT SIZE
A	47	48'x110'
B	41	50'x110'
C	35	48'x110'
D	48	50'x110'
E	66	50'x110'
F	59	53'x110'
G	40	58'x110'
H	60	55'x110'
I	97	53'x110'
J	84	50'x110'
K	93	48'x110'
L	78	50'x110'
M	47	48'x110'
N	---	COMMERCIAL
CONCEPTUAL TOTAL		795

NOTES

1. NO MORE THAN 25 PERCENT OF THE TOTAL LOT YIELD SHALL HAVE LOT WIDTHS BETWEEN 45 AND 49 FEET
2. GROSS DENSITY IS PROPOSED TO BE APPROXIMATELY 4.0 RESIDENTIAL DWELLING UNITS PER ACRE
3. NET DENSITY IS PROPOSED TO BE APPROXIMATELY 4.6 RESIDENTIAL DWELLING UNITS PER ACRE (CITY OF SURPRISE FORMULA)

CONCEPTUAL LOT YIELD

OWNERSHIP	SUBDIVISION	YIELD (LOTS)
501-17-014 (STEGALL)	L	78
	M	47
	N	---
		TOTAL: 125
501-17-013 (McKNIGHT)	H	60
	I	97
	J	84
	K	93
		TOTAL: 334
501-17-012F (BLAIR)	C	35
	D	48
		TOTAL: 83
501-17-012B (BLAIR)	E	66
	F	59
	G	40
		TOTAL: 165
501-17-012C (McKNIGHT)	A	47
	B	41
		TOTAL: 88

GREENWAY PARK (PHASE 1)

GREENWAY PARK (PHASE 3)

GREENWAY PARK (PHASE 2)

ROAD

REEMS

CUSTER LANE

ACOMA DRIVE

ASHTON RANCH (UNIT 2)

ASHTON RANCH (UNIT 1)

UNSUBDIVIDED (COTTON GR)

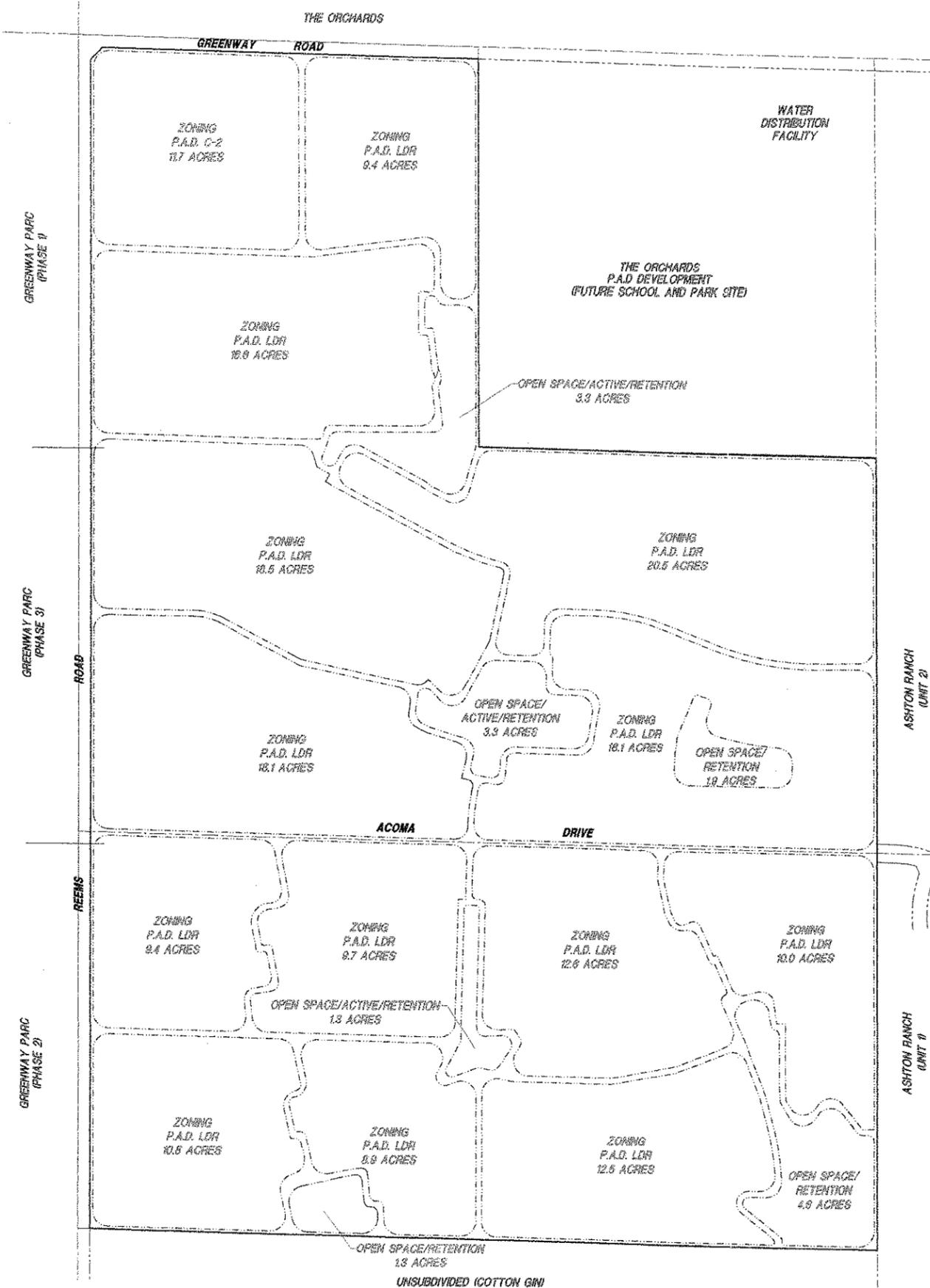
LANDMARK ENGINEERING, INC.
13430 N. SCOTTSDALE RD., SUITE 202
SCOTTSDALE, ARIZONA 85254 (602)922-1100

COUNTRYSIDE CONCEPTUAL SUBDIVISION EXHIBIT
A PORTION OF THE WEST HALF OF SECTION 8, TOWNSHIP 3 NORTH, RANGE 1 WEST, G&SR B&M MARICOPA COUNTY, ARIZONA

NO.	DESCRIPTION/DATE	BY

JOB NO.	98023
DESIGNED	J. ALVAREZ
DRAWN	J. ALVAREZ
ACAD FILE	8025XB06
CHECKED	G. CLAYBAUGH
DATE	1/21/99

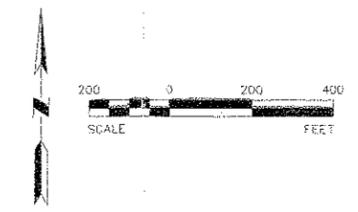
E:\SCEK\98023\fig\9023PRD2.dwg 1/21/99 J. ALVAREZ



COUNTRYSIDE

A PLANNED RESIDENTIAL DEVELOPMENT

CONCEPTUAL P.A.D. DEVELOPMENT PLAN



REVISIONS		
NO.	DESCRIPTION/DATE	BY

LANDMARK
ENGINEERING, INC.
 13430 N. SCOTTSDALE RD. SUITE 202
 SCOTTSDALE, ARIZONA 85254 (602)922-1100

COUNTRYSIDE
CONCEPTUAL P.A.D. DEVELOPMENT PLAN
 A PORTION OF THE WEST HALF OF
 SECTION 8, TOWNSHIP 3 NORTH, RANGE 1 WEST, G&SR B&M
 MARICOPA COUNTY, ARIZONA

JOB NO.	98023
DESIGNED	J. ALVAREZ
DRAWN	J. ALVAREZ
ACAD FILE	8023PRD2
CHECKED	G. CLAYBAUGH
DATE	1/21/99

COUNTRYSIDE A PLANNED RESIDENTIAL DEVELOPMENT CONCEPTUAL P.A.D. DEVELOPMENT PLAN

A PORTION OF THE WEST HALF OF
SECTION 8, TOWNSHIP 3 NORTH, RANGE 1 WEST, G.&S.R.B.&M.,
MARICOPA COUNTY, ARIZONA

LANDMARK ENGINEERING, INC.
SUITE 202
13430 N. SCOTTSDALE RD.
SCOTTSDALE, ARIZONA 85254 (602)922-1100

**COUNTRYSIDE
CONCEPTUAL P.A.D. DEVELOPMENT PLAN**
A PORTION OF THE WEST HALF OF
SECTION 8, TOWNSHIP 3 NORTH, RANGE 1 WEST,
MARICOPA COUNTY, ARIZONA

JOB NO.	98023
DESIGNED	J. ALVAREZ
DRAWN	SHELLEY
HEAD FILE	8023PRD1
CHECKED	G. CLAYBAUGH
DATE	1/21/99

LEGAL DESCRIPTION

THE WEST HALF OF SECTION 8, TOWNSHIP 3 NORTH, RANGE 1 WEST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA
EXCEPT THE WEST 40 FEET THEREOF; AND
EXCEPT THE NORTH 40 FEET THEREOF; AND
EXCEPT THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 8; AND
EXCEPT THE SOUTH HALF OF THE SOUTHWEST QUARTER OF SAID SECTION 8; AND
EXCEPT THE FOLLOWING DESCRIBED PARCEL:
COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 8;
THENCE S88°44'44"E, ALONG THE NORTH LINE OF SAID SECTION 8, A DISTANCE OF 81.08 FEET;
THENCE S01°15'16"W A DISTANCE OF 40.00 FEET TO THE POINT OF BEGINNING;
THENCE S45°29'10"W A DISTANCE OF 55.81 FEET;
THENCE N00°15'58"W A DISTANCE OF 40.00 FEET;
THENCE S88°44'44"E A DISTANCE OF 40.00 FEET TO THE POINT OF BEGINNING.

SITE DATA

GROSS AREA	199.3 ACRES
ARTERIAL STREETS	
EXISTING RIGHT-OF-WAY	4.8 ACRES
PROPOSED RIGHT-OF-WAY	7.5 ACRES
GROSS COMMERCIAL AREA	11.7 ACRES
OPEN SPACE	
PRIVATE	21.2 ACRES (10.6%)

P.A.D. LAND USE

PAD L.D.R. LOW DENSITY RESIDENTIAL (DETACHED DWELLING UNITS)
LOT SIZES: 48', 50', 53', 55', 58'

PAD C-2 COMMUNITY COMMERCIAL

1. THE CONCEPTUAL PAD LAND PLAN FOR THIS RESIDENTIAL DEVELOPMENT PROPOSES 795 P.A.D. LDR LOTS
2. NO MORE THAN 25 PERCENT OF THE TOTAL LOT YIELD SHALL HAVE LOT WIDTHS BETWEEN 45 AND 49 FEET
3. GROSS DENSITY IS PROPOSED TO BE APPROXIMATELY 4.0 RESIDENTIAL DWELLING UNITS PER ACRE
4. NET DENSITY IS PROPOSED TO BE APPROXIMATELY 4.6 RESIDENTIAL DWELLING UNITS PER ACRE (CITY OF SURPRISE FORMULA).

SUBDIVIDER

VILLAGE BUILDERS, L.L.C.
CONTACT: CLAYTON M. MCKNIGHT
1616 E. WILSON SCHOOL ROAD, SUITE 415
PHOENIX, ARIZONA 85016
PHONE: (602) 265-1864

ENGINEER

LANDMARK ENGINEERING, INC
CONTACT: MICHAEL G. RHODES
13430 N. SCOTTSDALE RD., SUITE 202
SCOTTSDALE, ARIZONA 85254
PHONE: 602-922-1100

SURVEYOR

LANDMARK ENGINEERING, INC
CONTACT: CARRY B. VALERZUELA
13430 N. SCOTTSDALE RD., SUITE 202
SCOTTSDALE, ARIZONA 85254
PHONE: 602-922-1100

OWNERS

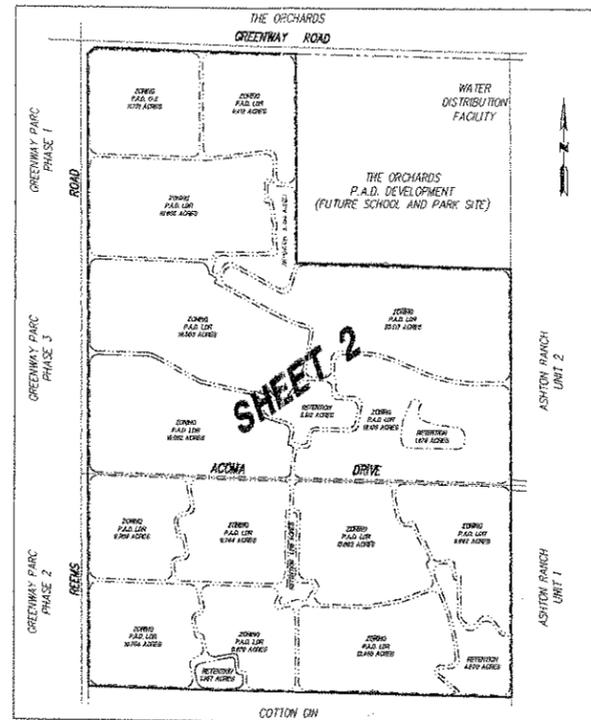
- TAX PARCEL NO. 501-17-014
AVALON DEVELOPMENT COMPANY, L.L.C. [STEGALL]
- TAX PARCEL NO. 501-17-013
SURPRISE 80, L.L.C. [MCKNIGHT]
- TAX PARCEL NO. 501-17-012F
NORTH BUCKEYE PROPERTIES [BLAIR]
- TAX PARCEL NO. 501-17-012B
DICKLIN NEISES CONSTRUCTION COMPANY [BLAIR]
- TAX PARCEL NO. 501-17-012G
REEMS ROAD SOUTH 20, L.L.C. [MCKNIGHT]

UTILITIES

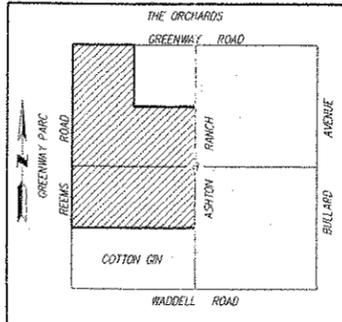
WATER	CITY OF SURPRISE
SEWER	CITY OF SURPRISE
ELECTRICITY	ARIZONA PUBLIC SERVICE
TELEPHONE	U S WEST
GAS	SOUTHWEST GAS
CATV	CDX COMMUNICATIONS

BENCHMARK

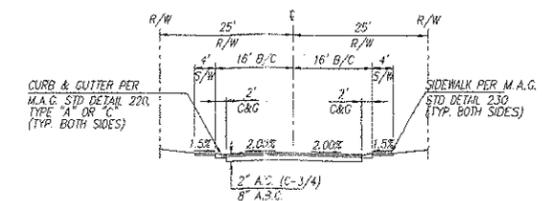
BRASS CAP IN HANDHOLE AT THE INTERSECTION OF BELL ROAD & REEMS ROAD
ELEV.=1247.88 (CITY OF SURPRISE DATUM)



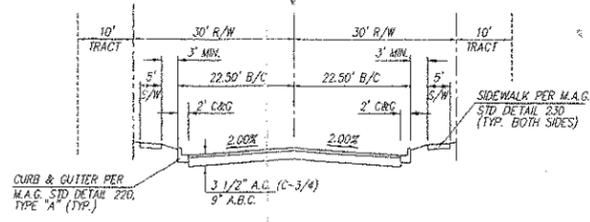
KEY MAP
SCALE: NONE



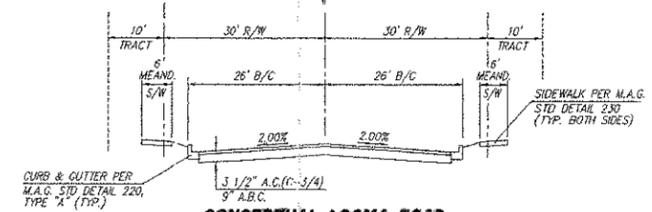
VICINITY MAP
SECTION 8
T.3N., R.1W., G.&S.R.B.&M.
MARICOPA COUNTY, ARIZONA
NOT TO SCALE



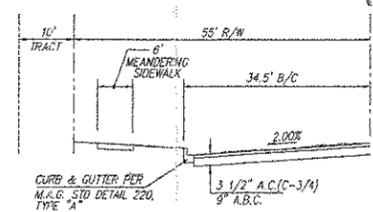
CONCEPTUAL RESIDENTIAL (INTERIOR) STREETS
APPROVAL REQUIRED BY CITY ENGINEER
N.T.S.



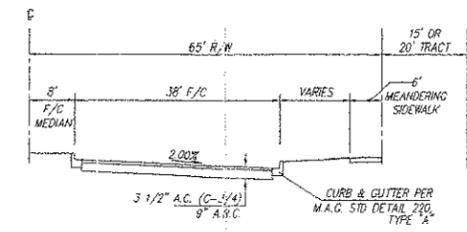
CONCEPTUAL CUSTER LANE
APPROVAL REQUIRED BY CITY ENGINEER
(ENTRANCE ONLY)
MINOR COLLECTOR
N.T.S.



CONCEPTUAL ACOMA ROAD
APPROVAL REQUIRED BY CITY ENGINEER
MAJOR COLLECTOR
N.T.S.



CONCEPTUAL GREENWAY ROAD
APPROVAL REQUIRED BY CITY ENGINEER
MINOR ARTERIAL
N.T.S.



CONCEPTUAL REEMS ROAD
APPROVAL REQUIRED BY CITY ENGINEER
MAJOR ARTERIAL
N.T.S.

I:\S023\98023\8023.dwg 8/6/98 4:43 PM J. ALVAREZ

\\S:\S\98023\98023.PEX.dwg Tue Jan 09 09:12:12 1999 J. ALVAREZ

GREENWAY PARC
PHASE I
COMMERCIAL SITE

GREENWAY PARC
PHASE II

GREENWAY PARC
PHASE III

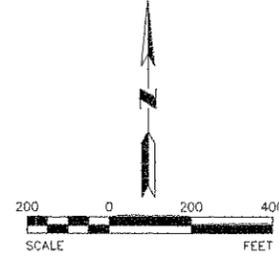
GREENWAY PARC
PHASE IV



COUNTRYSIDE

A PLANNED RESIDENTIAL DEVELOPMENT

CONCEPTUAL P.A.D. LAND PLAN



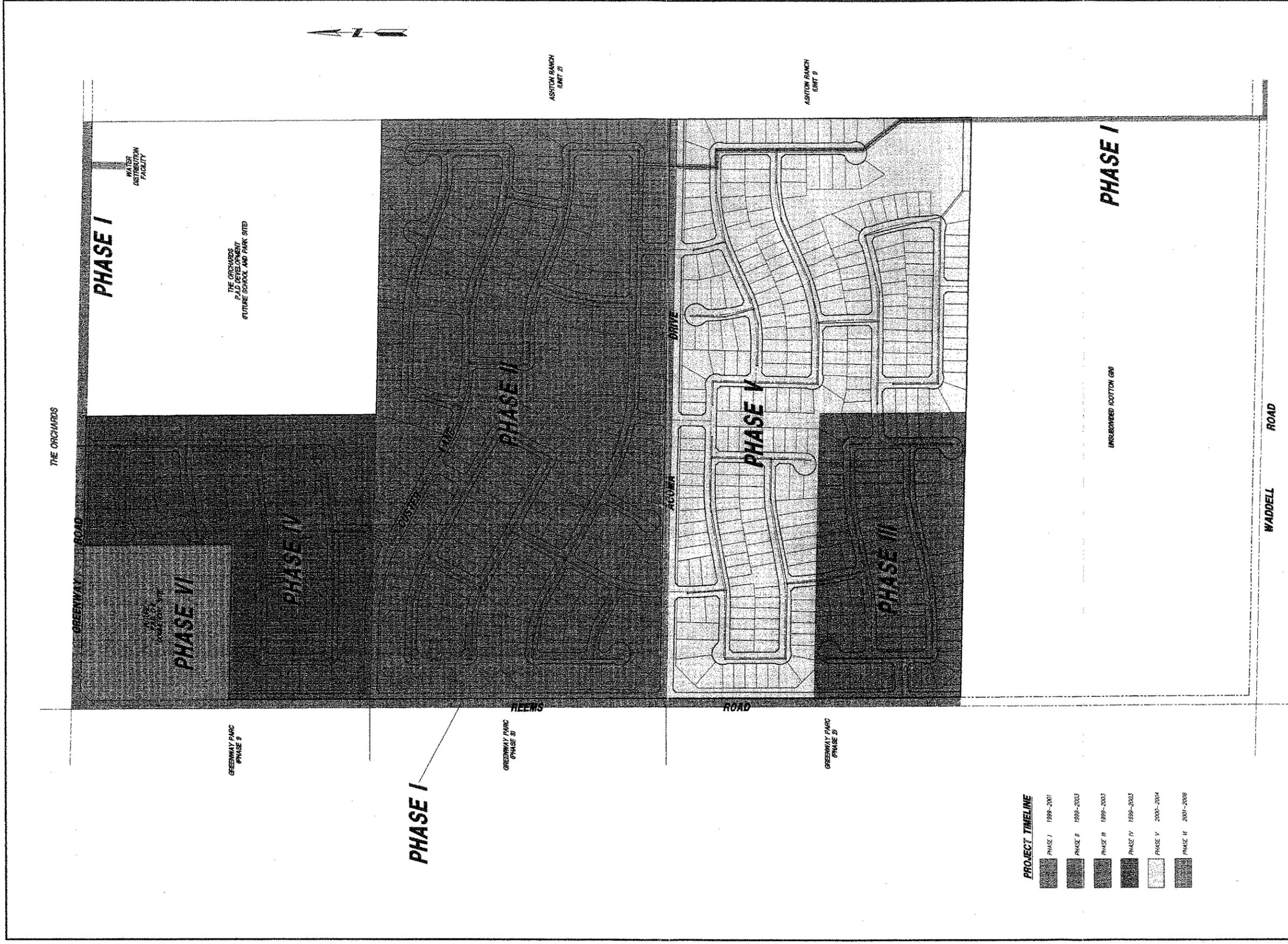
NO.	DESCRIPTION/DATE	BY

LANDMARK
ENGINEERING, INC.
13430 N. SCOTTSDALE RD. SUITE 202
SCOTTSDALE, ARIZONA 85254 (602)922-1100

COUNTRYSIDE
CONCEPTUAL P.A.D. LAND PLAN
A PORTION OF THE WEST HALF OF
SECTION 8, TOWNSHIP 3 NORTH, RANGE 1 WEST, G&SR B&M
MARICOPA COUNTY, ARIZONA

JOB NO.	98023
DESIGNED	J. ALVAREZ
DRAWN	J. ALVAREZ
ACAD FILE	8023LPEX
CHECKED	G. CLAYBAUGH
DATE	1/25/99

E:\SERV\0202149\0202149.DWG 1/25/99 10:42:17 1999 J. ALVAREZ



PROJECT TIMELINE

PHASE I	1999-2001
PHASE II	1999-2003
PHASE III	1999-2003
PHASE IV	1999-2003
PHASE V	2001-2004
PHASE VI	2001-2008

REVISIONS		
NO.	DESCRIPTION/DATE	BY

LANDMARK
ENGINEERING, INC.
13430 N. SCOTTSDALE RD. SUITE 202
SCOTTSDALE, ARIZONA 85254 (602)922-1100

COUNTRYSIDE
CONCEPTUAL PHASING EXHIBIT
A PORTION OF THE WEST HALF OF
SECTION 8, TOWNSHIP 3 NORTH, RANGE 1 WEST, G&SR B&M
MARICOPA COUNTY, ARIZONA

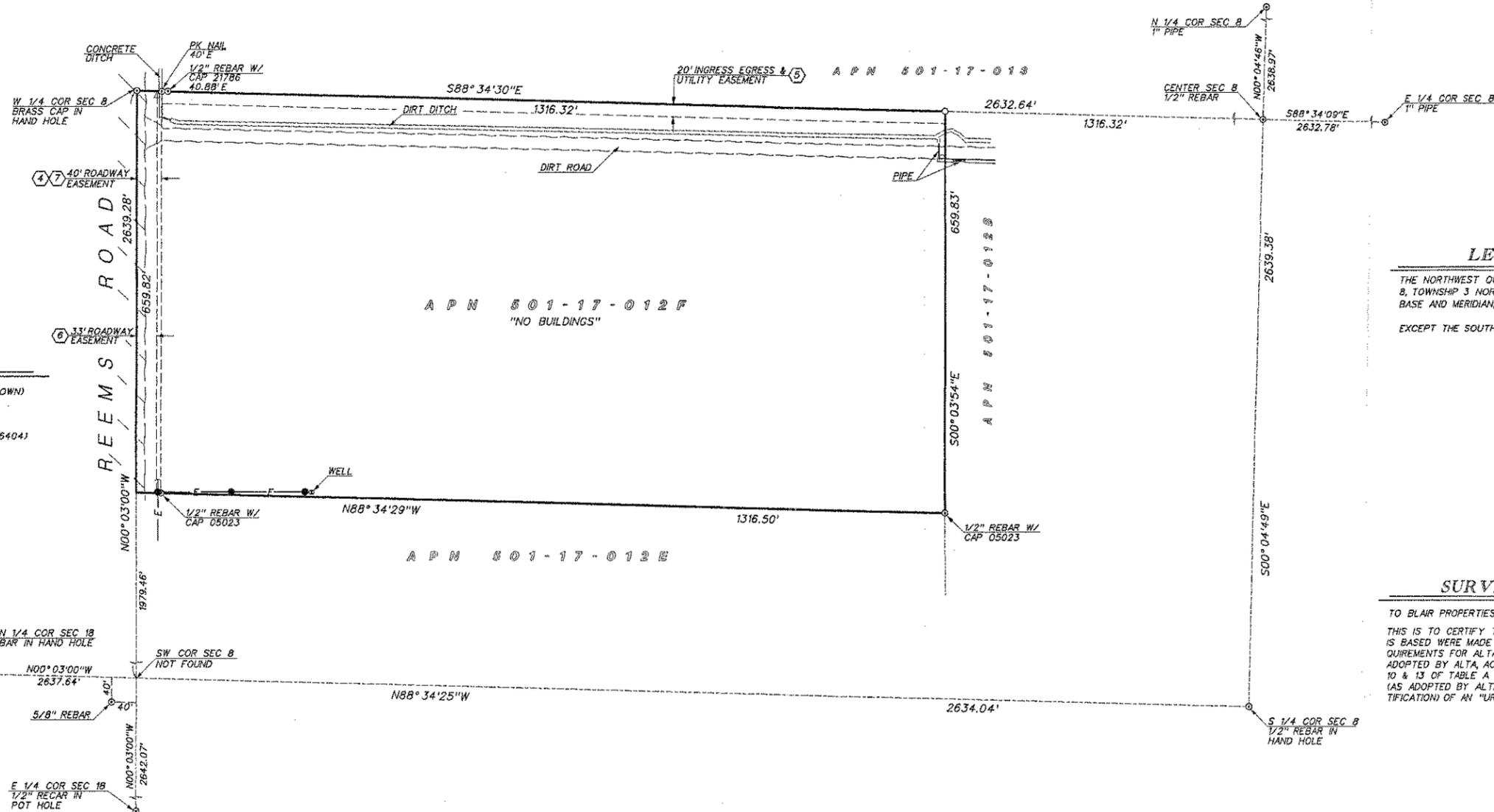
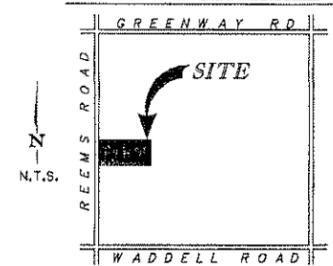
JOB NO.	98023
DESIGNED	J. ALVAREZ
DRAWN	J. ALVAREZ
ACAD FILE	8023PH1EY
CHECKED	G. CLAYBAUGH
DATE	1/25/99

A.L.T.A. - A.C.S.M. LAND TITLE SURVEY

OF

A PORTION OF THE SOUTHWEST QUARTER OF SECTION 8, TOWNSHIP 3 NORTH, RANGE 1 WEST
OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA

VICINITY MAP



LEGAL DESCRIPTION

THE NORTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 8, TOWNSHIP 3 NORTH, RANGE 1 WEST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA.

EXCEPT THE SOUTH HALF THEREOF.

AREA

19.934 ACRES (GROSS)
18.742 ACRES (NET)
EX: N 20' & W 40'

SURVEYOR'S CERTIFICATION

TO BLAIR PROPERTIES AND FIRST AMERICAN TITLE INSURANCE COMPANY:
THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE (i) IN ACCORDANCE WITH "MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS," JOINTLY ESTABLISHED AND ADOPTED BY ALTA, ACSM AND NSPS IN 1997, AND INCLUDES ITEMS 1, 2, 4, 8, 9, 10 & 13 OF TABLE A THEREOF, AND (ii) PURSUANT TO THE ACCURACY STANDARDS (AS ADOPTED BY ALTA AND ACSM AND IN EFFECT ON THE DATE OF THIS CERTIFICATION) OF AN "URBAN SURVEY".



ADOPTED BY THE AMERICAN LAND TITLE ASSOCIATION ON SEPTEMBER 27, 1997.
ADOPTED BY THE BOARD OF DIRECTION, AMERICAN CONGRESS ON SURVEYING AND MAPPING ON APRIL 10, 1997.
ADOPTED BY THE BOARD OF DIRECTORS, NATIONAL SOCIETY OF PROFESSIONAL SURVEYORS ON APRIL 8, 1997.

LEGEND

- FOUND MONUMENT (TYPE SHOWN)
- PROPERTY LINE
- SET MONUMENT (1/2" REBAR W/ CAP 26404)
- POWER POLE
- GUY WIRE
- FENCE
- STAND PIPE
- APN ASSESSOR PARCEL NUMBER
- OVERHEAD ELECTRIC LINE
- ▨ A/C PAVEMENT

SCHEDULE "B"

- (4) AN EASEMENT AND RIGHTS INCIDENT THERETO FOR HIGHWAY, AS SET FORTH IN INSTRUMENT RECORDED IN DOCKET 4327, PAGE 138.
- (5) AN EASEMENT AND RIGHTS INCIDENT THERETO FOR INGRESS, EGRESS AND UTILITIES, AS SET FORTH IN INSTRUMENT RECORDED IN DOCKET 11203, PAGE 304.
- (6) A PLAT RECORDED IN BOOK B OF ROAD MAPS, PAGE 40, PURPORTING TO SHOW A COUNTY ROADWAY.
- (7) A PLAT RECORDED IN BOOK 14 OF ROAD MAPS, PAGE 43, PURPORTING TO SHOW A COUNTY ROADWAY.

NOTES

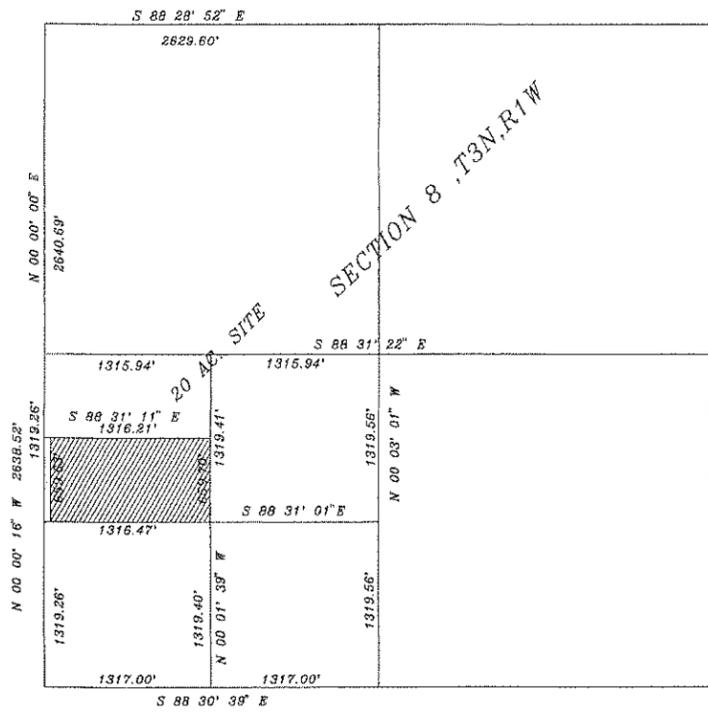
1. ALL TITLE INFORMATION IS BASED ON A TITLE REPORT PREPARED BY FIRST AMERICAN TITLE INSURANCE COMPANY. COMMITMENT NO.: 9807005540; EFFECTIVE DATE: FEB. 25, 1998
2. THE BASIS OF BEARING IS THE MONUMENT LINE OF REEMS ROAD WHICH BEARS N00°03'00"W PER RECORD OF SURVEY, BOOK 293 OF MAPS, PAGE 33, MARICOPA COUNTY RECORDS.



0 50 100 200
GRAPHIC SCALE 1" = 100'

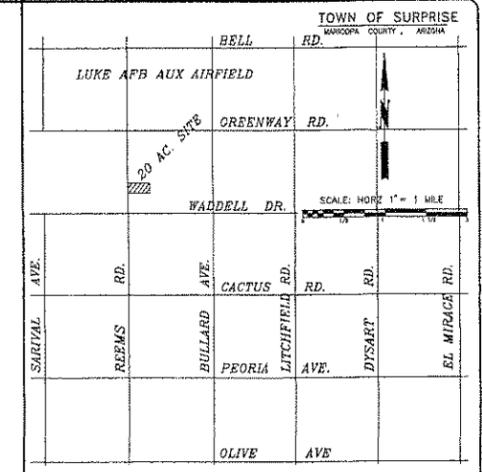
**CONSULTING
LAND
SURVEYORS**

7020 EAST FIRST AVENUE, SUITE C
SCOTTSDALE, ARIZONA 85251
PHONE (602) 941-1000
FAX (602) 941-1001



BREAKDOWN OF SECTION 8

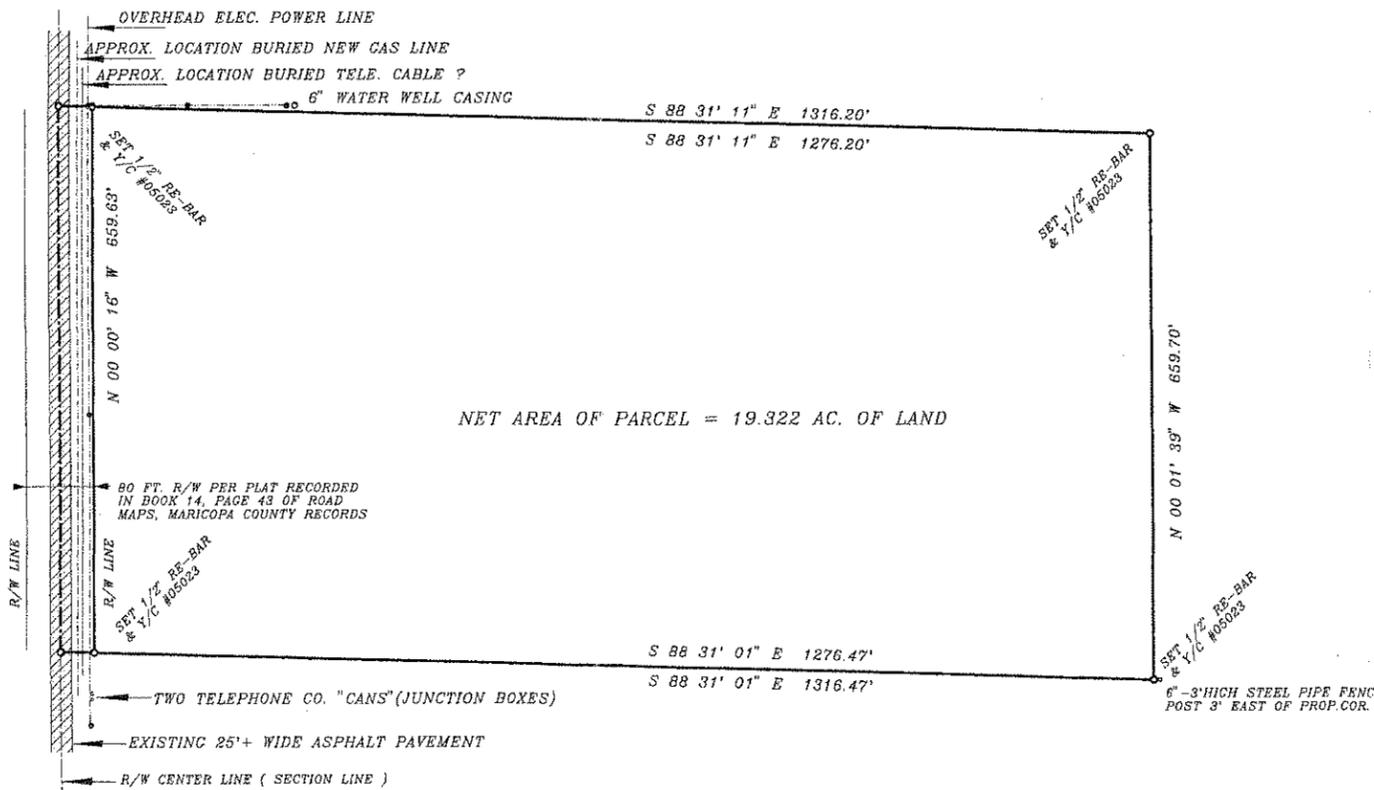
SCALE : 8" = 1 MILE



**LOCATION MAP
TOWN OF SURPRISE
MARICOPA COUNTY, ARIZONA**

LEGAL DESCRIPTION OF PARCEL

THE SOUTH HALF OF THE NORTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 8, TOWNSHIP 3 NORTH, RANGE 1 WEST, OF THE CILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA.



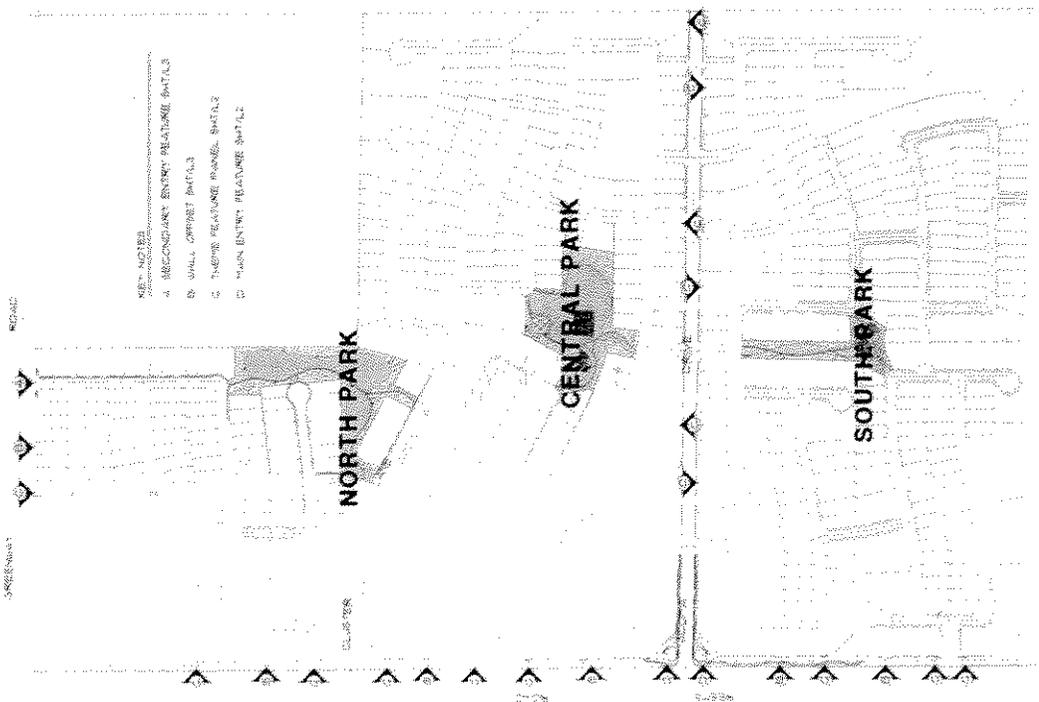
CERTIFICATION

THE UNDERSIGNED HEREBY CERTIFIES TO REEMS ROAD SOUTH 20, L.L.C., AN ARIZONA LIMITED LIABILITY COMPANY, AND FIRST AMERICAN TITLE INSURANCE COMPANY, THAT THE SURVEY SHOWN HEREON CORRECTLY SHOWS THE LOCATION OF ALL BUILDINGS, STRUCTURES AND OTHER IMPROVEMENTS SITUATED ON THE PREMISES; AND THAT, EXCEPT AS SHOWN, THERE ARE NO VISIBLE EASEMENTS OR RIGHTS OF WAY ACROSS SAID PREMISES OR ANY OTHER EASEMENTS OR RIGHTS OF WAY OF WHICH THE UNDERSIGNED HAS BEEN ADVISED, NO PARTY WALLS, NO ENCROACHMENTS ONTO THE ADJOINING PREMISES, STREETS OR ALLEYS BY ANY OF SAID BUILDINGS, STRUCTURES, OR OTHER IMPROVEMENTS AND NO ENCROACHMENTS ONTO THE PREMISES OF ANY BUILDING, STRUCTURES OR OTHER IMPROVEMENTS SITUATED ON ADJOINING PROPERTY.

DATED THIS 20 DAY OF APRIL, 1997.
EUGENE C. SPROUT, REGISTERED LAND SURVEYOR # 05023

<p>CLIFFORD ENGINEERS</p> <p>1586 WEST MAGGIO WAY NO. 2092 CHANDLER, AZ., 85224</p> <p>TELE. [602] 917-7480 FAX [602] 917-2598</p>	<p>EUGENE C. SPROUT, R.L.S.</p>	<p>PORTION OF - SW 1/4 OF SEC. 8, T.3N., R.1W., G.&S.R. B. & M.</p> <p>A.L.T.A. / ACSM Land Title Survey</p> <p>TWENTY ACRE SURPRISE PROPERTY-REEMS ROAD</p>		<p>SHEET 1 OF 1</p>
		<p>FOR: VILLAGE BUILDERS, L.L.C., TEL. (602) 285-1864 % CLAYTON MCKNIGHT, SUITE 415, 1616 E. INDIAN SCHOOL RD. PHOENIX, AZ. 85016</p> <p>JOB NO.: 9703-084 DRAWN: E.C.S. CHECKED: E.C.S. DATE: APRIL 97</p> <p>REVISIONS: REV #1 11-20-97 CHANGE CERTIFICATION</p>		

Reems Rd 20 11/21/97



GENERAL NOTES

1. ALL ITEMS USED WITHIN THIS PROJECT SHALL BE NUMBERED UNLESS OTHERWISE SPECIFIED. QUANTITIES SHALL BE LISTED IN THE CONSTRUCTION DRAWINGS AND SHALL BE VERIFIED BY THE ARCHITECT PRIOR TO CONSTRUCTION. QUANTITIES SHALL BE LISTED IN THE CONSTRUCTION DRAWINGS AND SHALL BE VERIFIED BY THE ARCHITECT PRIOR TO CONSTRUCTION.

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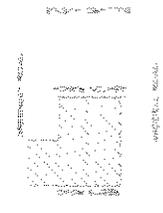
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VICINITY MAP



SHEET INDEX

- 1. COVER SHEET & KEY MAP
- 2. NORTH PARK
- 3. CENTRAL PARK
- 4. SOUTH PARK
- 5. LEGEND
- 6. GENERAL NOTES
- 7. CONSTRUCTION DRAWINGS



CountrySide

COVER SHEET & KEY MAP

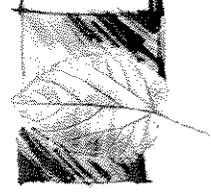
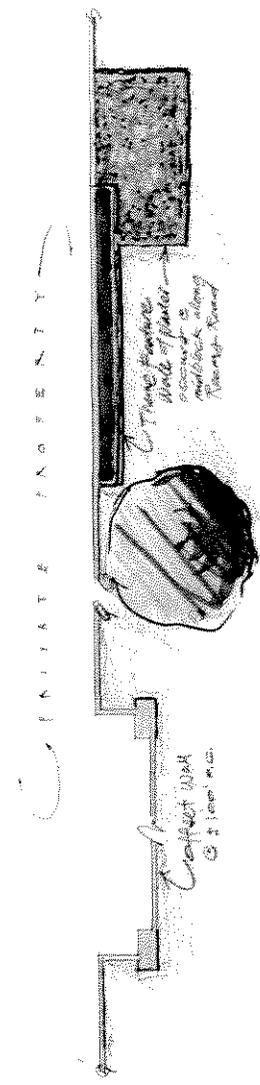
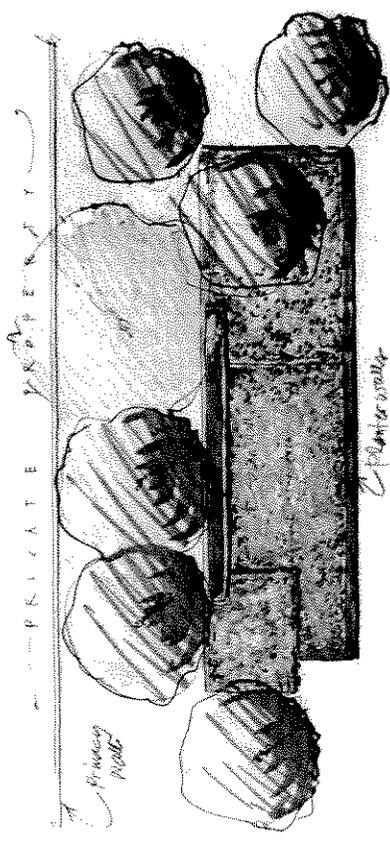
Neill Vecchia & Associates, Inc.

ARCHITECTS

1000 W. WASHINGTON ST., SUITE 200
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 FAX: 312.467.1001
 WWW.NEILLVECCIA.COM



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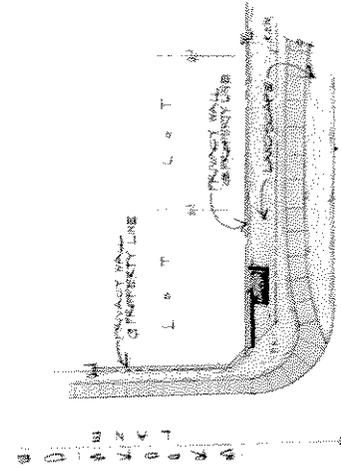
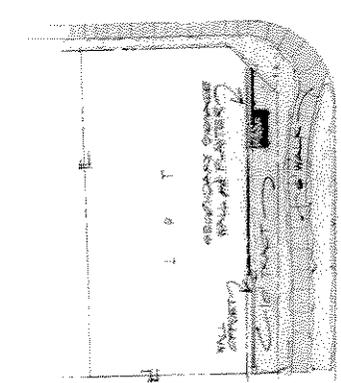
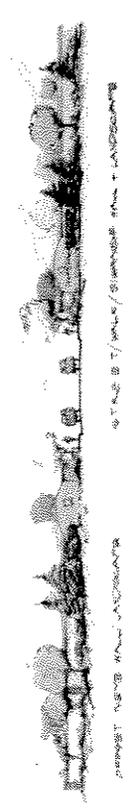
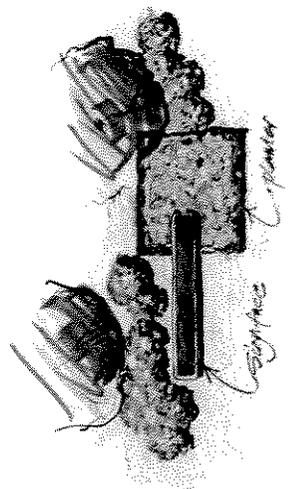
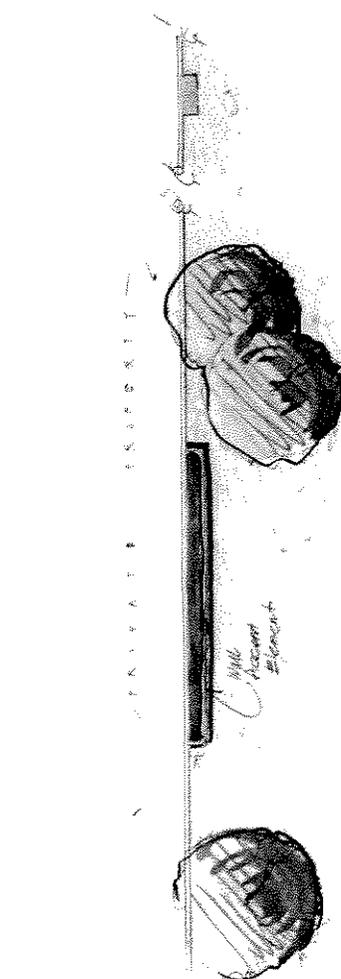
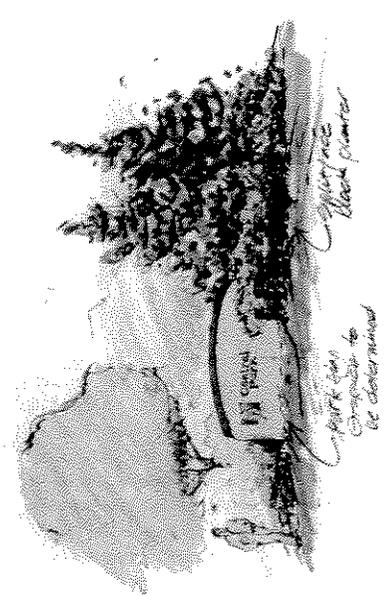
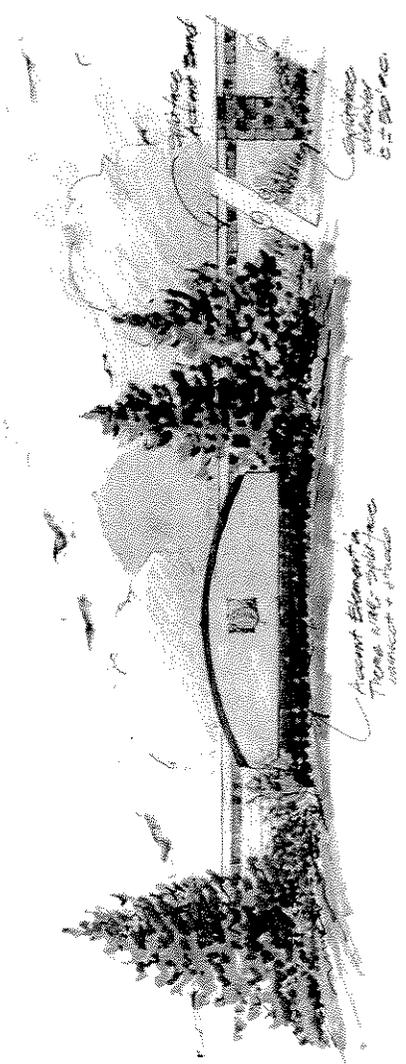


CountrySide

MAJOR ENTRY MONUMENT & THEME WALL DETAILS



Neill/Vecchia
 & Associates, Inc.
 Landscape Architecture
 1400 PARKWAY DRIVE, SUITE 200
 NEWTON, MASSACHUSETTS 02459
 TEL: 617-552-1100 FAX: 617-552-1101
 WWW.NEILLVECHCIA.COM



CountrySide

MINOR ENTRY & WALL ACCENT DETAILS



Neill Vecchia
& Associates, Inc.
Landscape Architecture
3000 Peachtree
Landscaping, Urban Design
www.neillvecchia.com

PLANT SCHEDULE
REIMS BOTANICAL GARDEN

PLANT
 1. *Quercus laevis*
 2. *Quercus prinus*
 3. *Quercus macrocarpa*
 4. *Quercus bicolor*
 5. *Quercus alba*
 6. *Quercus falcata*
 7. *Quercus muhlenbergii*
 8. *Quercus coccinea*
 9. *Quercus prinus*
 10. *Quercus laevis*

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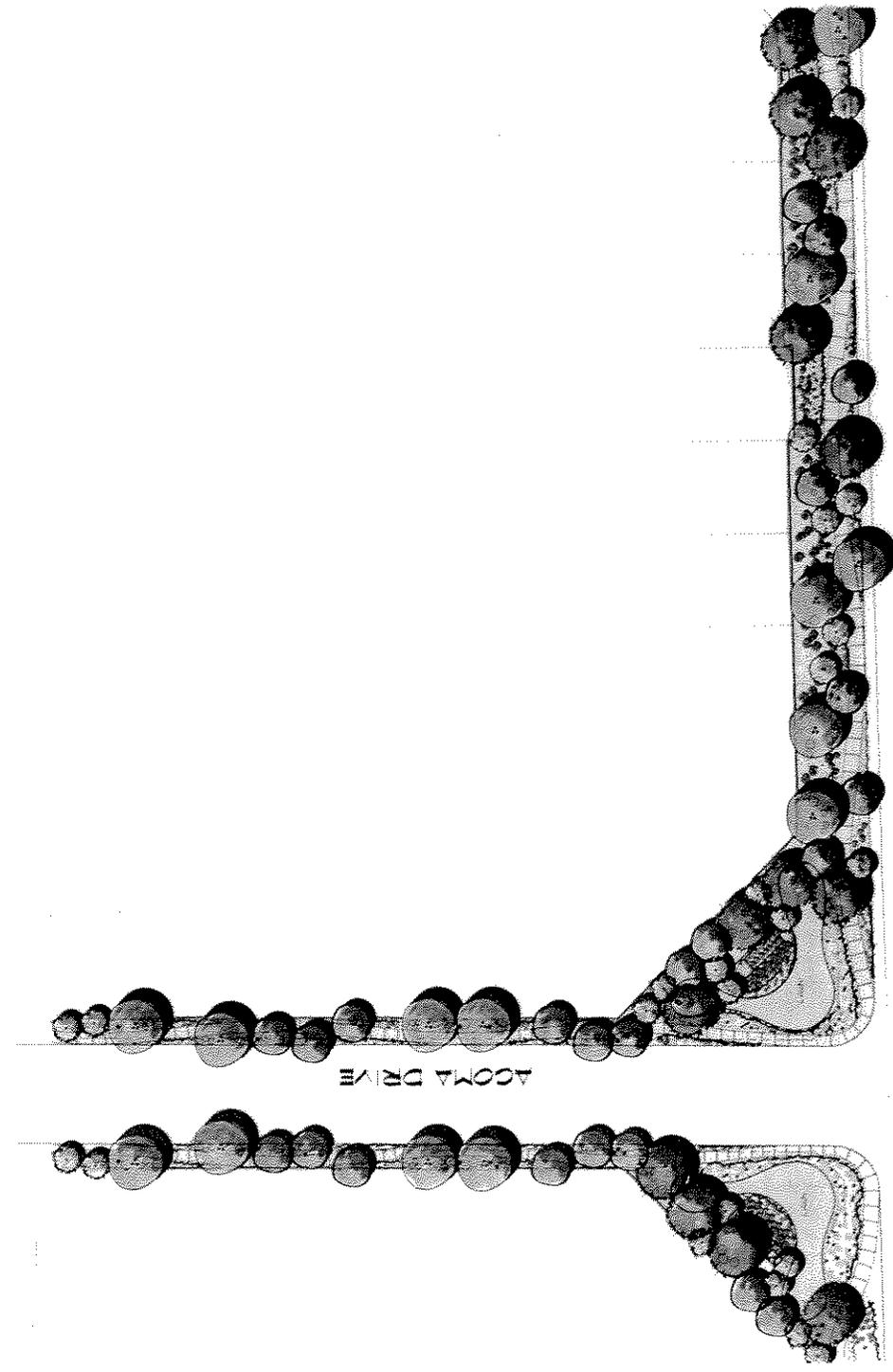
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CountrySide
STREETSCAPE



Neill Vecchia
 & Associates, Inc.

1000 W. ...
 ...
 ...

25 DEC 89
 1:48 PM
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PLANT SCHEDULE
SYMBOL BOTANICAL NAME

TREES

- Small tree
- Medium tree
- Large tree
- Shrub
- Small shrub
- Large shrub
- Ground cover

SHRUBS

- Small shrub
- Medium shrub
- Large shrub
- Shrub
- Small shrub
- Large shrub
- Ground cover

GROUND COVERS

- Small ground cover
- Medium ground cover
- Large ground cover
- Ground cover
- Small ground cover
- Large ground cover
- Ground cover

ACCENTS

- Small accent
- Medium accent
- Large accent
- Accent
- Small accent
- Large accent
- Accent

WIND WALLS

- Small wind wall
- Medium wind wall
- Large wind wall
- Wind wall
- Small wind wall
- Large wind wall
- Wind wall

WATER FEATURES

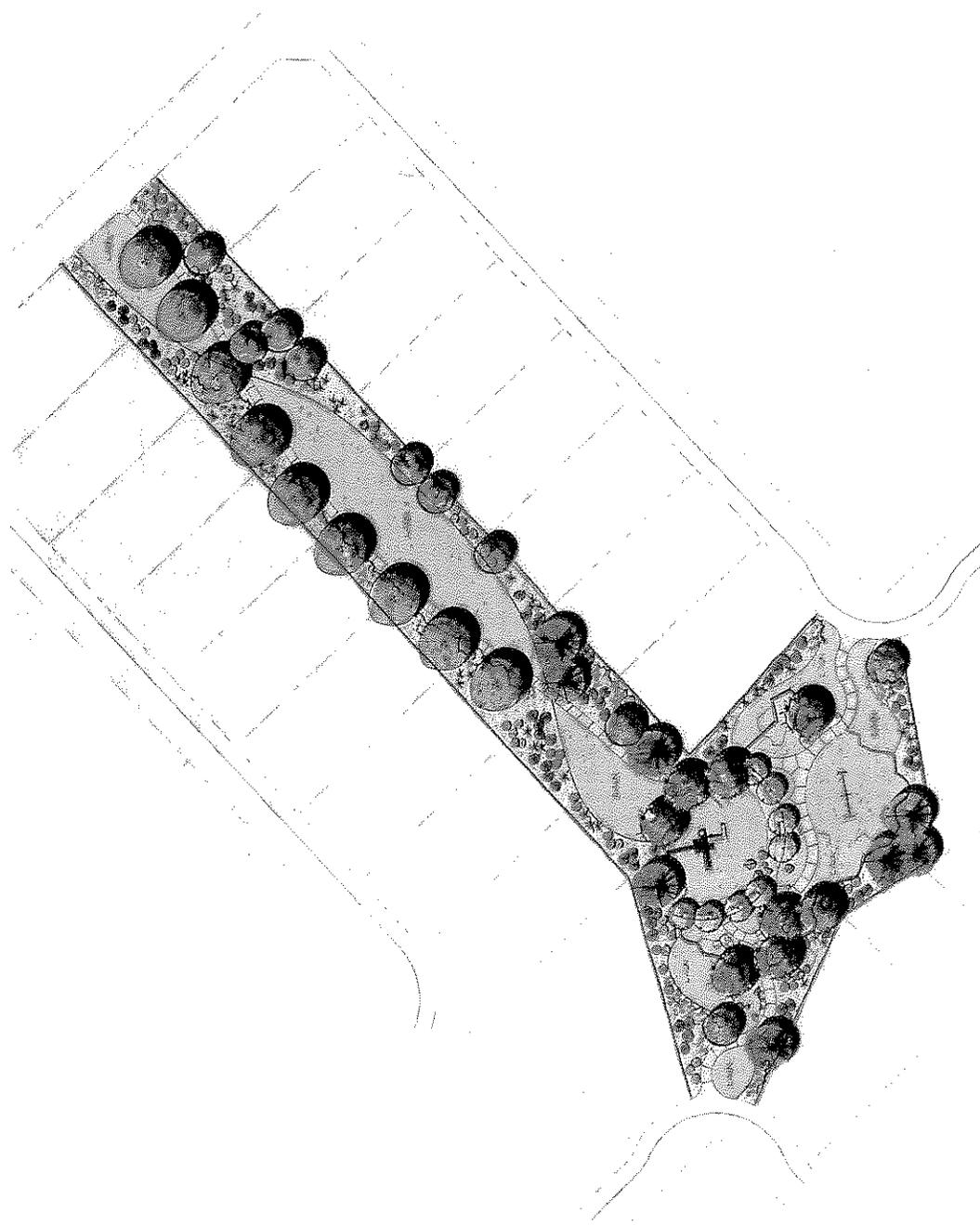
- Small water feature
- Medium water feature
- Large water feature
- Water feature
- Small water feature
- Large water feature
- Water feature

ACCENTS

- Small accent
- Medium accent
- Large accent
- Accent
- Small accent
- Large accent
- Accent

WIND WALLS

- Small wind wall
- Medium wind wall
- Large wind wall
- Wind wall
- Small wind wall
- Large wind wall
- Wind wall



CountrySide
SOUTH PARK

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 & Associates, Inc.
 10000 Old Orchard Road
 Suite 100
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 Fax: 972-346-1112
 www.neillvecchia.com



COUNTRYSIDE

A PLANNED AREA DEVELOPMENT ON 200 ACRES
LOCATED ON THE EAST SIDE OF REEMS ROAD,
SOUTH OF GREENWAY ROAD
SURPRISE, ARIZONA

MASTER WATER & SEWER STUDY

NOVEMBER 30, 1998

Prepared for:

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CLAYTON M. MCKNIGHT, MANAGING GENERAL PARTNER
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Prepared by:

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ENGINEERING, INC.
Civil Engineering • Surveying • Environmental

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MEMORANDUM

DATE: December 2, 1998

TO: Gary R. Claybaugh

FROM: Thomas E. Granillo, P.E.

SUBJECT: Countryside Offsite Water & Sewer Study

This memorandum is prepared on behalf of Countryside a 200-acre master planned residential project located at the southeast corner of Greenway & Reems Roads. The information and data attached consists of engineering calculations, tables, and sketches in support of offsite water and sewer needs for the project's Planned Residential Development (PRD) submittal to the City of Surprise. This document is technical in nature therefore will appendix the PRD submittal in attachment form.

The purpose of this memorandum is to addresses minimum lines sizes, lengths and locations for water supply and sanitary sewer service such that upon there installation they will provide a functioning project that meets state, county and local guidelines for such systems. Information about the existing water and sewer facilities has been determined from our research effort with City Officials, adjacent developers, and their engineers. Minimum line sizes and water production facility requirements have been estimated on a planning level in order to determine approximate quantities.

An opinion of probable cost for offsite water and sewer systems is included for review. Following is a discussion of the procedures, guidelines, and results obtained from this analysis.

Offsite Water System:

As of the date of this study, the existence of water supply, water production facilities, and water lines are limited. Development of the project will require expansion of existing facilities and development of new offsite waterlines to bring water to the project at rates required for domestic use and fire flow.

Supply to the project is believed to be from by the City of Surprise via production wells currently under development by other developers. Wells will be the principal source of water and will deliver city water to ground storage tanks and water systems using the delivery grid as they are connected. The development of new wells by the City and other developers contribute to the systems supply capability. At this time we are informed that developers for Ashton Ranch will be refurbish an existing irrigation well which is scheduled to produce over 1,250 g.p.m.

Ground Storage and booster pumps for delivery will be stationed at the Water Production Facility (WPF) located on the south side of Greenway Road along the extended east property line of the 200-acre project. This site has been identified on plans prepared by American Engineering for Ashton Ranch Units 1, 2, 3, & 4. This WPF site appears to be of sufficient size for expansion and is understood to be a key municipal facility for the pressure zones. At this time we understand that Ashton Ranch will be developing a 1.0-million gallon ground storage facility at this location which has no additional reserve capacity for other developments. Projects such as Countryside will have to provide it's own requirements as approved by the City and identified in this technical memorandum. The WPF improvements by Ashton Ranch will include booster pumps capable of providing peak flow demands for Ashton Ranch as well as fire flows; water is understood to be produced at a scheduled pressure of 65-p.s.i. primarily for delivery to Ashton Ranch.

Using standard system demands for residential subdivisions and various flow scenarios with fire flow, the system was modeled for evaluation and performance of line sizes to provide minimum system pressures. The primary analysis involved a study of the future conditions, which employed the presence of a zone boundary along the east property line. This boundary is understood to be the downstream limit of the zone within a standard zone of 45-p.s.i. to 120-p.s.i.; this part of the zone is therefore assumed to have the highest pressures available of 120-p.s.i. in-lieu of 65-p.s.i. currently scheduled for the water production facility. This modeling technique was chosen since it identifies the ultimate operating condition of the backbone water system by the City, given the ultimate pressure zone conditions. This method becomes the basis of analyzing the least amount of infrastructure by Countryside developers on a stand alone basis and given no additional support from other developments.

Plate 1 illustrates these minimum line sizes. Plate 2 illustrates minimum line sizes as believed required by the City to meet their minimum standards for their area grid. The minimum line sizes shown on Plate 2 will provide adequate pressures within the subdivision under the flow scenarios discussed. This analysis and assumption is based on a second connection to the interior waterline system from the east via the existing 8-inch waterline in Acoma from Ashter Ranch Unit 2. Future use of Pressure Reducing Valves (P.R.V.'s) by the City to perfect the zone boundaries or make adjustments to the system is beyond the scope of this study and should not encumber the Countryside developer now or any time in the future.

Future operational schedules or adjustments to pressures within zone boundaries must be maintained or regulated by the City only. The operation of the regional water system is a City function beyond the control or planning horizon of this developer or it's engineer.

An Engineer's Opinion of Probable Cost are prepared for both systems and are found attached herewith.

Offsite Sewer System:

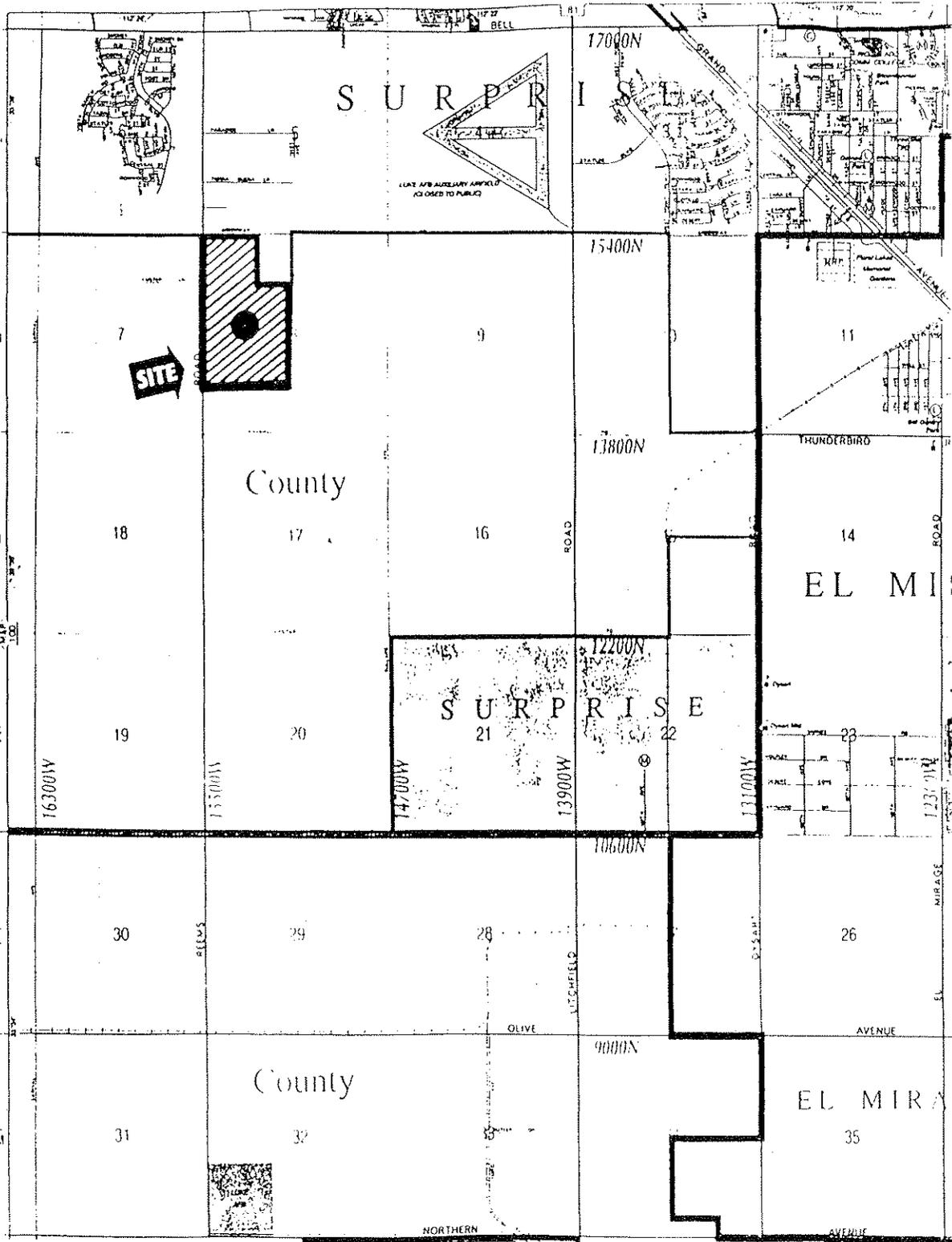
Sewer facilities are available to serve only the southwest 40-acre portion of the overall 200-acre project based on a connection to the existing sewer in Reems Road. Agreements for capacity and reservations with the City are believed to be in place with the specific owners of the two 20-acre parcels.

This connection will be utilized for these 40-acres only to the maximum extent possible. From observation of the existing contours it is apparent that the natural ground slopes easterly from Reems Road in the opposite direction of the future sewer slope. The exact service area within these 40-acres will be dictated by two key factors: the depth of the existing sewer; and, minimum sewer slope allowed within the subdivision. Only the final design will determine which direction specific lots will sewer. For purposes of evaluating minimum line sizes for service to these 40-acres, the total area is believed to contribute to the existing sewer main in Reems Road. This is not withstanding the opportunity for portions of this same 40-acres to sewer into other systems developed for the balance of the 200-acres as deemed most economical.

Other portions of the site will require additional sewer main construction for service. This extension will originate from the last point of the sewer main extension provided by Ashton Ranch located in Waddell Road southeasterly of the Countryside project. An analysis has been prepared evaluating the minimum sewer line sizes to this point of connection based on the Countryside project only. Quantities for the extensions are included in an Engineer's Opinion of Probable Cost attached herewith this study. Separate exhibits (Plate 1 and Plate 2) show the corridor for the new offsite sewer and main extension within the project. An additional Engineer's Opinion of Probable Cost is also included which reflects the same offsite system with line sizes increased to meet the City's minimum 15-inch line size for Waddell Road (major roadway corridor). Both evaluations ignore future flow contributions from the Cotton Gin property located immediately south of Countryside.

VICINITY MAP
EXHIBIT 1

COUNTRYSIDE
EAST OF REEMS ROAD/SOUTH OF GREENWAY ROAD; SURPRISE, ARIZONA



September 23, 1998

Reviewed By
Mike Rhodes

Prepared By
Gary Claybaugh

98023

LANDMARK
ENGINEERING, INC.

Basic Assumptions

1. 280-ft Head Available @ WPF; $280 \times 2.31 = 647 \text{ psi}$
2. Future Zone Boundaries @ East P2 will be analyzed if become the basis for determining all water supply lines;
3. Ashton Ranch Units 3, 3 & 4 will remain in downstream zones; the existing 8" ϕ in Acoma Drive will therefore not be considered a source in modeling available pressure at reg'd flow.
4. Lines will be sized to provide the following minimum pressures at the stated flow rates:

a. Average Day Demand (ADD); 60 p.s.i. (min)

b. Maximum Daily Demand (MDD) + FF; 20 p.s.i. (min.)

c. Peak Hourly Demand (PHD); 40 p.s.i. (min.)

ADD:

$$\text{Res.} = 1200 \text{ gal/cap/day} \times 3.2 \text{ pers/d.u.} = 640 \text{ gal/d.u./day}$$
$$\text{Comm.} = 3000 \text{ gal/cere/day}$$

MDD:

$$= \text{ADD} \times 2.0$$

PHD:

$$= \text{MDD} \times 1.7$$

$$= \text{ADD} \times 3.4$$

Basic Assumptions, Cont'd

5. Storage Volume will be calculated for the project to meet minimum requirements for ANEG & State of Arizona Fire Marshall as follows:

a. meet minimum criteria for both conditions:

Diagrams → Condition 1:

Volume shall exceed 1 ADD

$$1 \text{ day} [(798 \text{ D.U.} \times 690 \text{ gal/D.U./day}) + (10.4 \text{ Ac} \times 3000 \text{ Ac})]$$

$$510,720 + 31,320 = \underline{542,040}$$
Condition 2:

$$> 451,020$$

Volume shall exceed 2 Has Fire Flow + 20% MDD + 5% MDD (for emergencies)

where Fire Flow = 1500 g.p.m. residential
 = 1500 g.p.m. commercial *

* $1500 \text{ gal/min} \times 2 \text{ Has} \times 60 \text{ min/hr} = 180,000 \text{ gal/hr}$

Volume shall exceed 180,000 gal + 25% MDD

$$180,000 + (25)(2 \times 542,040) = \underline{451,020}$$

6. Hazen Williams Formula for flow w/ HW C value = 120 will apply to the modeling of pipes

7. Vacant parcels outside the boundary of the Countryside master plan prep are ignored for water flow analysis & their demands to minimum line sizes are not considered.

8. Upsizing Requirements by the City to support other commercial parcels is beyond the scope of this analysis.

Table 1
 COUNTRYSIDE
 Estimated
 Average Daily Water Demand
 By Parcel

Parcel Designation	Land Use	No. D.U.	Estimated Population	Average Daily Demand (gpd)	Average Daily Demand (gpm)
A	Residential	47	150	30,080	21
B	Residential	41	131	26,240	18
C	Residential	35	112	22,400	16
D	Residential	48	154	30,720	21
E	Residential	59	189	37,760	26
F	Residential	66	211	42,240	29
G	Residential	40	128	25,600	18
H	Residential	72	230	46,080	32
I	Residential	95	304	60,800	42
J	Residential	104	333	66,560	46
K	Residential	61	195	39,040	27
L	Residential	78	250	49,920	35
M	Residential	47	150	30,080	21
N	Commercial	10.44-Ac	N.A.	31,320	22
	Totals =	793	2,538	538,840	374

Table 2
 COUNTRYSIDE
 Estimated
 Average Daily Water Demand
 By Node

Water Demand Node	Tributary Parcels	Average Daily Demand (gpd)	Average Daily Demand (gpm)
1	A thru K	427,520	297
2	L, M, & N	111,320	77
	Totals =	538,840	374

COUNTRYSIDE

Results Of Flow Analysis For Offsite Water System

Water Production Facility:

Elevation = 100
 Pressure = 280 (120 p.s.i)
 Fixed Grade Node = 380

WPF to Node 1: 12-Inch, 2640-ft

Node 1 to Node 2 : 8-Inch, 3960-ft

Modeling Condition	Peak Factor	Node 1 Results				Node 2 Results			
		Node Elevation = 111.0		Node Elevation = 98.0		Node Elevation = 1500		Node Elevation = 1000	
		Flow (gpm)	Pressure (psi)	Velocity (ft/sec)	Fire Flow (gpm)	Flow (gpm)	Pressure (psi)	Velocity (ft/sec)	Fire Flow (gpm)
Average Day Demand (ADD)	1.0	374	115	1.1	297	117	1.9		
Maximum Day Demand (MDD) + Fire Flow At Node 1	2.0	2248	100	6.3	594	92	3.8		
Maximum Day Demand (MDD) + Fire Flow At Node 2	2.0	1748	105	5.0	1594	25	10.2		
Peak Hourly Flow (PHF)	3.4	1272	110	3.6	1010	79	6.4		

Table W-4.1
 COUNTRYSIDE
 Offsite Water Cost Estimate
 Minimum Requirements To Satisfy Subdivision

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COSTS FOR OFFSITE WATER & WATER PRODUCTION					
Item No.	Description	Qty	Unit	Unit Price	Cost
1	12-Inch PVC Water In Greeway Road	2640	L.F.	\$35.00	\$92,400.00
2	8-Inch PVC Water In Reems Road	3960	L.F.	\$25.00	\$99,000.00
3	Ground Storage Tank, Pumping Facilities, Hydro-pneumatic Tank, & Controlling Eqpt.	542,040	Gal	\$1.15	\$623,346.00
4	12-Inch Water Valves	4	Ea.	\$2,500.00	\$10,000.00
5	8-Inch Water Valves	6	Ea.	\$1,500.00	\$9,000.00
6	8-Inch PVC Water Stubs	400	L.F.	\$25.00	\$10,000.00
				Subtotal =	\$843,746.00
9	Design Contingency @ 30%	30%			\$253,123.80
10	Engineering Design Fees @ 7% Construction Cost	7%			\$59,062.22
11	Post Design Services @ 7% Construction Cost (Const. Mgt./ Staking/As-Builts)	7%			\$59,062.22
				Total =	\$1,214,994.24

Notes:

1. Minimum Line Sizes Are Based On A Separate Analysis Conducted By LEI Which Verifies Minimum Pressures Under Various Flow Scenarios For The Countryside Project Only. Upsizing Required By The City For The Development Of The Area Water Line Grid Is Not Reflected
2. Costs For Water Production Facility Upgrading Are Limited To Approximate Costs For Ground Storage Tank Construction Only. This Cost Est. Does Not Reflect Site Improvements, Additional Pumping Equipment, Hydro-pneumatic Tanks, Yard Piping, Electronic Systems, Chlorination Devices, Etc.
3. This Estimate Does Not Reflect Pipe Quantities, Water System Appurtenances, Services, Etc. For Interior Lots Nor Any Interior Streets Including Acoma Drive.

Offsite Water Cost Estimate

Provides Line Sizes To Satisfy Minimum City Requirements On Major Roadways

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COSTS FOR OFFSITE WATER & WATER PRODUCTION					
Item No.	Description	Qty	Unit	Unit Price	Cost
1	12-Inch PVC Water In Greeway Road	2640	L.F.	\$45.00	\$118,800.00
2	12-Inch PVC Water In Reems Road	3960	L.F.	\$35.00	\$138,600.00
3	Ground Storage Tank, Pumping Facilities, Hydropneumatic Tank, & Controlling Eqpt.	542,040	Gal	\$1.15	\$623,346.00
4	16-Inch Water Valves	2	Ea.	\$4,500.00	\$9,000.00
5	12-Inch Water Valves	5	Ea.	\$2,500.00	\$12,500.00
6	8-Inch Water Valves	6	Ea.	\$1,500.00	\$9,000.00
7	8-Inch PVC Water Stubs	400	L.F.	\$25.00	\$10,000.00
				Subtotal =	\$921,246.00
9	Design Contingency @ 30%	30%			\$276,373.80
10	Engineering Design Fees @ 7% Construction Cost	7%			\$64,487.22
11	Post Design Services @ 7% Construction Cost (Const. Mgt./ Staking/As-Builts)	7%			\$64,487.22
				Total =	\$1,326,594.24

Notes:

1. Line Sizes Are Based On Minimum City Requirements For The Development Of The Area Water Line Grid.
2. Costs For Water Production Facility Upgrading Are Limited To Approximate Costs On A Per Ground Storage Requirement Basis Only. Unit Prices Reflect Average Costs For Tank Construction, Limited Site Improvements, Additional Pumping Equipment, Hydropneumatic Tanks, Yard Piping, Electronic Systems, Chlorination Devices, Etc. This Estimate Does Not Reflect A Detailed Cost Analysis Based On Any Design Or Concept; It Is A Planning Estimate & Not To Be Construed As A Bid Price. The Owner Is Urged To Have A Qualified Contractor Provide An Accurate Price Based On Final Plans.
3. This Estimate Does Not Reflect Pipe Quantities, Water System Appurtenances, Services, Etc. For Interior Lots Nor Any Interior Streets Including Acoma Drive.

Sewer Line	Sewer Node	Contributing Parcels	Trib. Commer.	Commercial Flows =		Tributary D.U.	D.U. Flow		Peak Flow (gpd)	Cumm. Flow (cfs)	Pipe Size (in.)	Minimum Slope (ft/ft)	Design Slope (ft/ft)	Capacity Full (cfs)	Velocity (fps)
				2000 gpdp	70 gpcpd		Pop. Dens	3.2 person per D.U.							
Line "A"	A-7	N	10.4	10.4	0	20,800	3.00	62,400	0.10	8	0.0033	0.0033	0.705	2.00	
	A-6	L, M	10.4	10.4	125	48,800	3.00	146,400	0.23	8	0.0033	0.0033	0.705	2.00	
	A-5	Pt H, Pt I	10.4	10.4	40	57,760	3.00	173,280	0.27	8	0.0033	0.0033	0.705	2.00	
		Line "B"	10.4	10.4	180	98,080	3.00	294,240	0.46	8	0.0033	0.0033	0.705	2.00	
	A-4	Line "C"	10.4	10.4	107	122,048	3.00	366,144	0.57	8	0.0033	0.0033	0.705	2.00	
	A-3	Pt F, G	10.4	10.4	84	140,864	3.00	422,592	0.65	8	0.0033	0.0033	0.705	2.00	
	A-2	Line "D"	10.4	10.4	84	159,680	3.00	479,040	0.74	8	0.0036	0.0036	0.758	2.00	
	A-1	Future Units	10.4	10.4	620	159,680	3.00	479,040	0.74	8	0.0036	0.0036	0.758	2.40	
		Ashton Ranch Units 1 & 2			672	289,408	3.00	868,224	1.34	10	0.0037	0.005	1.580	2.85	
Line "B"	B-1	J, K	0	0	180	40,320	3.00	120,960	0.19	8	0.0033	0.0033	0.705	2.00	
Line "C"	C-1	Pt H, Pt I	0	0	107	23,968	3.00	71,904	0.11	8	0.0033	0.0033	0.705	2.00	
Line "D"	D-1	Pt F, E	0	0	84	18,816	3.00	56,448	0.09	8	0.0033	0.0033	0.705	2.00	
Line "E"	E-1	A, B, C, D	0	0	171	38,304	3.00	114,912	0.18	8	0.0033	0.0033	0.705	2.00	

Table S-2.1
 COUNTRYSIDE
 Offsite Sewer Cost Estimate
 Minimum Requirements To Satisfy
 Subdivision Only

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COSTS FOR OFFSITE SEWER					
Item No.	Description	Qty	Unit	Unit Price	Cost
1	8-Inch Vetrified Clay Sewer	1320	L.F.	\$35.00	\$46,200.00
2	8-Inch Vetrified Clay Sewer For Waddell Road	1320	L.F.	\$35.00	\$46,200.00
3	Sanitary Sewer Manholes, M.A.G. Std. Detail 420	6	Ea.	\$2,500.00	\$15,000.00
4	Sawcut, Remove & Replace Existing A.C. Paving (3-ft min. width) For Waddell Rd.	440	S.Y.	\$40.00	\$17,600.00
				Subtotal =	\$125,000.00
5	Design Contingency @ 30%	30%			\$37,500.00
6	Engineering Design Fees @ 7% Construction Cost	7%			\$8,750.00
7	Post Design Services @ 7% Construction Cost (Const. Mgt./ Staking/As-Builts)	7%			\$8,750.00
				Total =	\$180,000.00

Notes:

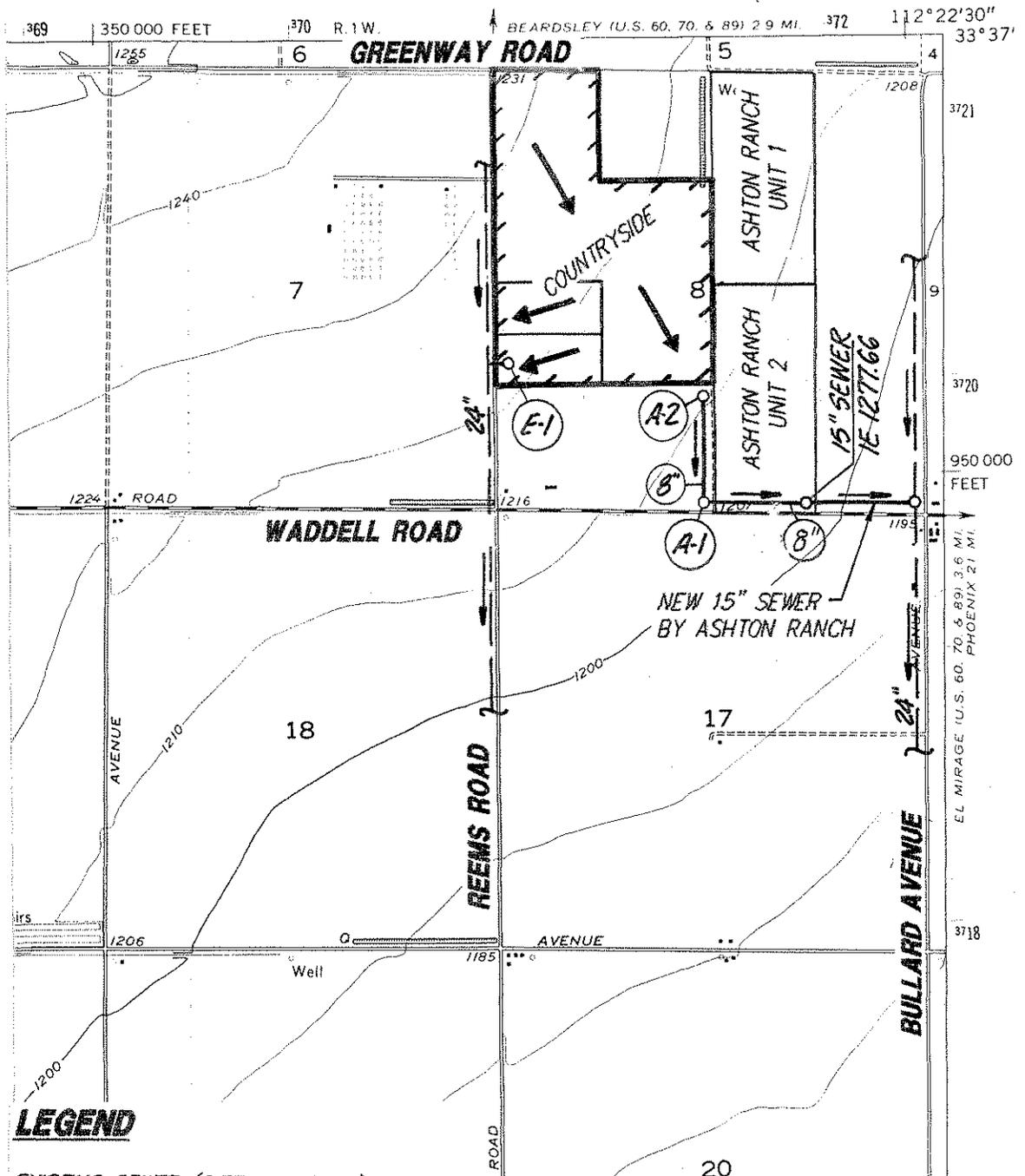
- Proposed 8-Inch Sewer For Waddell Is Not Upsized To Accommodate Future Dwelling Units From The 80-Ac.Cotton Gin Property Immediately South of COUNTRYSIDE.

Table S-2.2
 COUNTRYSIDE
 Offsite Sewer Cost Estimate
 Minimum Requirements To Meet
 City Upsizing

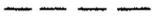
ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COSTS FOR OFFSITE SEWER					
Item No.	Description	Qty	Unit	Unit Price	Cost
1	8-Inch Vetrified Clay Sewer	1320	L.F.	\$35.00	\$46,200.00
2	15-Inch Vetrified Clay Sewer For Waddell Road	1320	L.F.	\$45.00	\$59,400.00
3	Sanitary Sewer Manholes, M.A.G. Std. Detail 420	6	Ea.	\$2,500.00	\$15,000.00
4	Sawcut, Remove & Replace Existing A.C. Paving (3-ft min. width) For Waddell Rd.	440	S.Y.	\$40.00	\$17,600.00
				Subtotal =	\$138,200.00
5	Design Contingency @ 30%	30%			\$41,460.00
6	Engineering Design Fees @ 7% Construction Cost	7%			\$9,674.00
7	Post Design Services @ 7% Construction Cost (Const. Mgt./ Staking/As-Builts)	7%			\$9,674.00
				Total =	\$199,008.00

Notes:

- Proposed 15-Inch Sewer For Waddell Is Upsized To Accommodate Approximately 672 Future Dwelling Units From The 80-Ac.Cotton Gin Property Immediately South of COUNTRYSIDE.



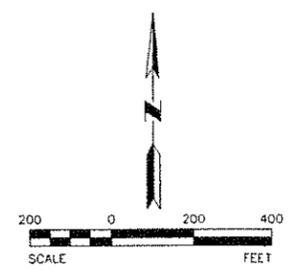
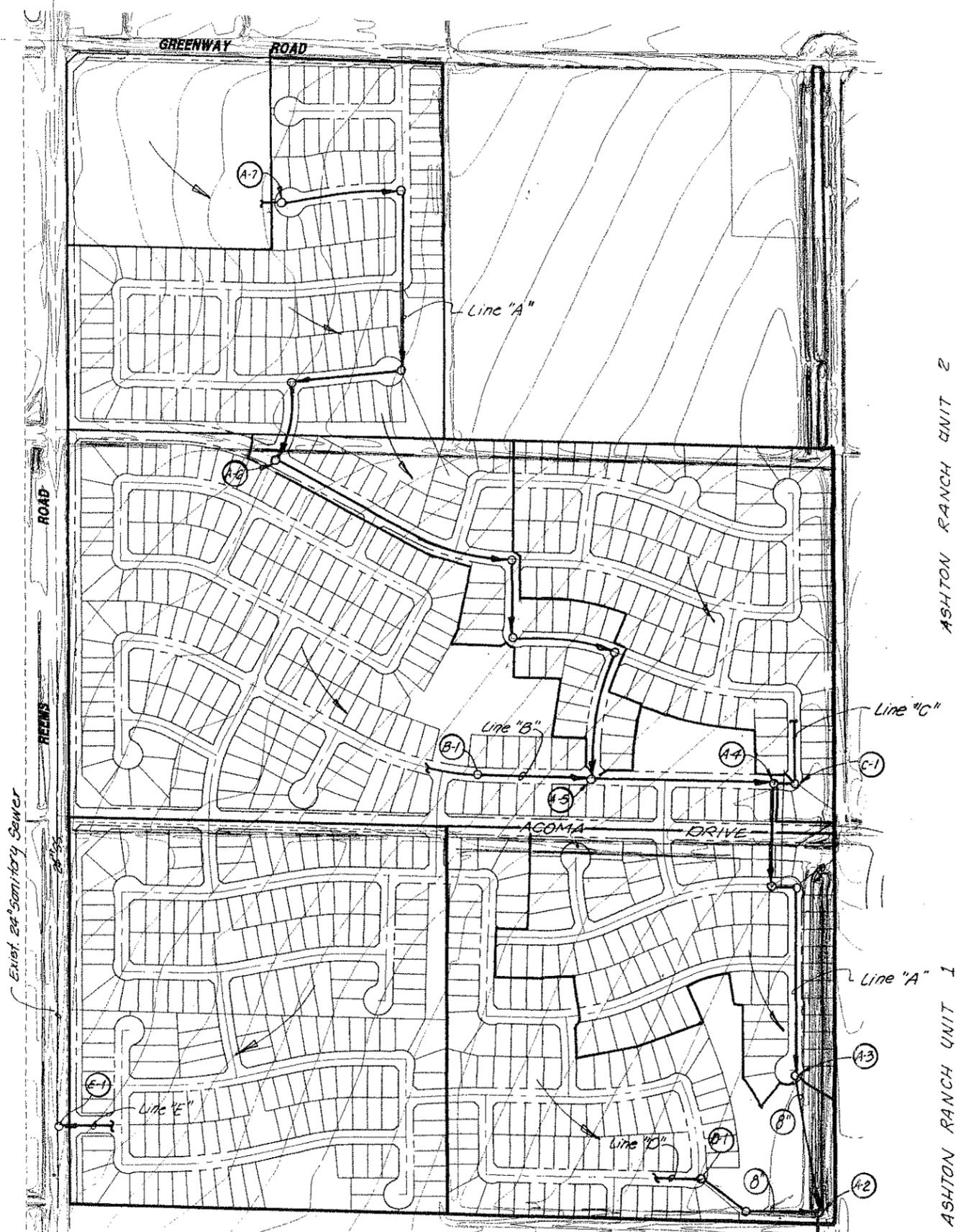
LEGEND

-  EXISTING SEWER (SIZE AS NOTED)
-  NEW SEWER TRUNK MAIN (SIZE AS NOTED)
-  SEWER COLLECTION NODE
-  SEWER SERVICE BOUNDARY
-  MINIMUM SEWER LINE SIZE

LANDMARK
ENGINEERING, INC.
 13430 N. SCOTTSDALE RD. SUITE 202
 SCOTTSDALE, ARIZONA 85254 (602)922-1100

COUNTRYSIDE
OFF-SITE SEWER
EXHIBIT

PLATE
1



LEGEND

- 18" --- EXISTING SEWER (18 INCH)
- NEW SEWER TRUNK MAIN (SIZE AS NOTED)
- ⊙ 8" MINIMUM SEWER LINE SIZE REQUIRED
- ⊠ A/25 SEWER COLLECTION AREA (NO D.U.'S NOTED)
- ⊙ A-1 SEWER COLLECTION NODE
- SEWER SERVICE BOUNDARY

REVISIONS		
NO.	DESCRIPTION/DATE	BY

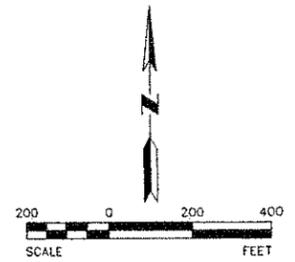
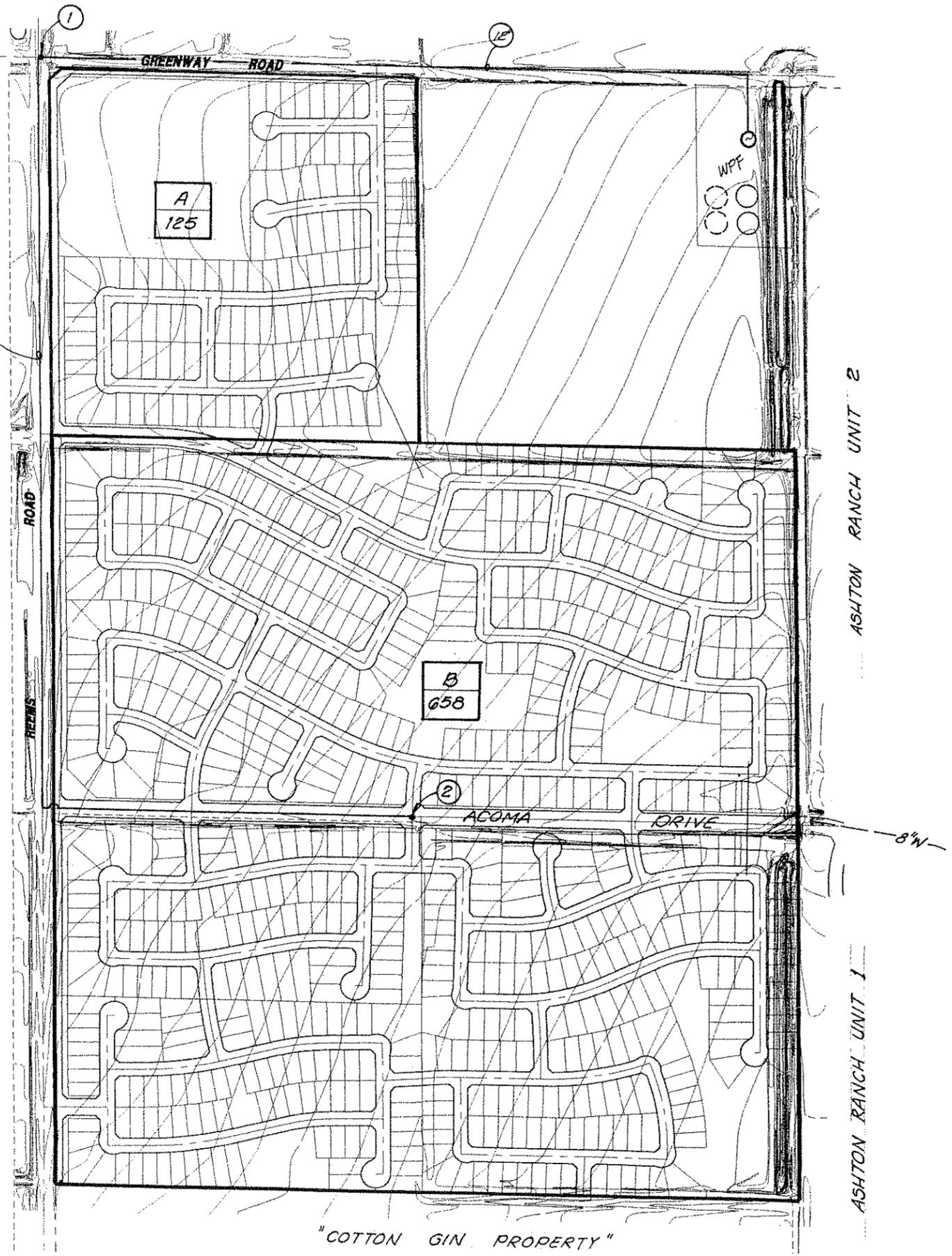
LANDMARK ENGINEERING, INC.
 13430 N. SCOTTSDALE RD., SUITE 202
 SCOTTSDALE, ARIZONA 85254 (602)922-1100

SEWER MASTER PLAN EXHIBIT COUNTRYSIDE
 A PORTION OF THE WEST HALF OF SECTION 8, T.3N., R.1W., G&SR B&M MARICOPA COUNTY, ARIZONA

JOB NO.	9802J
DESIGNED	J. ALVAREZ
DRAWN	J. ALVAREZ
ACAD FILE	8023XB04
CHECKED	T. GRANILLO
DATE	11/03/98

PLATE 2

"CITIZENS UTILITY CO. SERVICE AREA"



LEGEND

- 12" — EXISTING WATER (12 INCH)
- ② WATER PRODUCTION FACILITY (WPF)
- NEW WATER LINE (SIZE AS NOTED)
- ⑧ REQUIRED WATER LINE SIZE
- ①/25 WATER DISTRIBUTION AREA (NO D.U.'S NOTED)
- ① WATER DEMAND NODE (COLLECTIVE D.U. DEMAND NOTED)
- WATER SERVICE BOUNDARY

NO.	DESCRIPTION/DATE	BY

LANDMARK ENGINEERING, INC.
 13430 N. SCOTTSDALE RD., SUITE 202
 SCOTTSDALE, ARIZONA 85254 (602)922-1100

WATER MASTER PLAN EXHIBIT COUNTRYSIDE
 A PORTION OF THE WEST HALF OF SECTION 8, T.3N., R.1W., G&SR B&M MARICOPA COUNTY, ARIZONA

JOB NO.	98023
DESIGNED	J. ALVAREZ
DRAWN	J. ALVAREZ
ACAD FILE	8023KB05
CHECKED	T. GRANILLO
DATE	11/03/98

PLATE 1

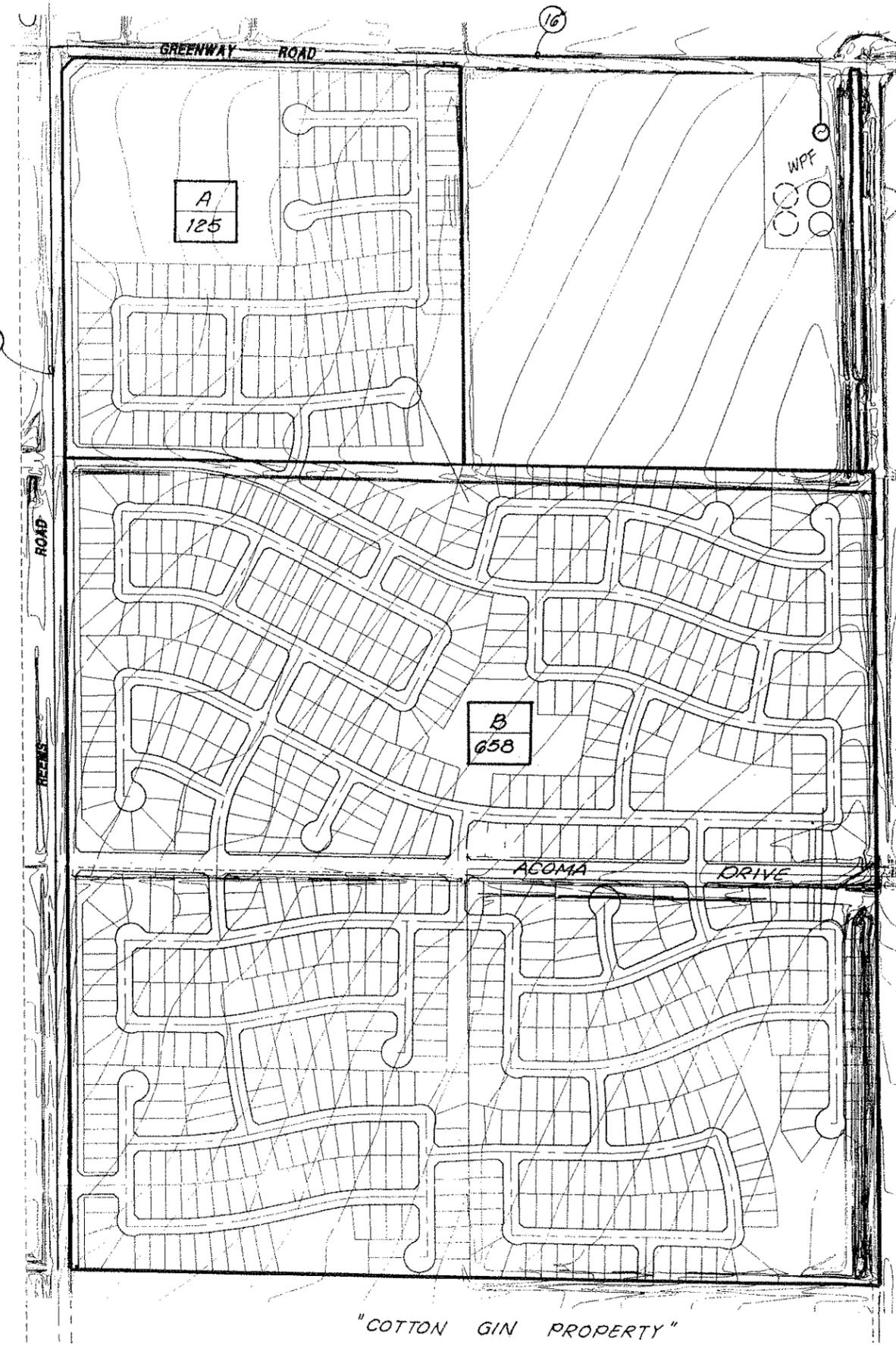
NO.	DESCRIPTION/DATE	BY

LANDMARK ENGINEERING, INC.
 13430 N. SCOTTSDALE RD. SUITE 202
 SCOTTSDALE, ARIZONA 85254 (602)922-1100

WATER MASTER PLAN EXHIBIT COUNTRYSIDE
 A PORTION OF THE WEST HALF OF SECTION 8, T.3N., R.1W., G&SR B&M MARICOPA COUNTY, ARIZONA

JOB NO.	98023
DESIGNED	J. ALVAREZ
DRAWN	J. ALVAREZ
ACAD FILE	8023XB05
CHECKED	T. GRANILLO
DATE	11/03/98

PLATE 2



- LEGEND**
- 12" --- EXISTING WATER (12 INCH)
 - ⊙ WATER PRODUCTION FACILITY (WPF)
 - NEW WATER LINE (SIZE AS NOTED)
 - ⊙ 8" REQUIRED WATER LINE SIZE TO MEET MIN. CITY REQ'D
 - ⊡ A 25 WATER DISTRIBUTION AREA (NO D.U.'S NOTED)
 - ⊙ WATER DEMAND NODE (COLLECTIVE D.U. DEMAND NOTED)
 - WATER SERVICE BOUNDARIES

"CITIZENS UTILITY CO. SERVICE AREA"

ASHTON RANCH UNIT 2

ASHTON RANCH UNIT 1

"COTTON GIN PROPERTY"

to height and material on the final plat. No certificate of occupancy shall be issued until said fence improvements have been duly installed.

G. Performance Bond to Include Lot Improvement. The performance bond or other financial guarantee shall include an amount to guarantee completion of all requirements contained in this section regulations including, but not limited to, soil preservation, final grading, lot drainage, removal of debris and waste, fencing, and all other lot improvements required by the city council.

Whether or not a certificate of occupancy has been issued, at the expiration of the performance bond, the city may enforce the provisions of the bond where the provisions of this section or any other applicable law, ordinance or regulation have not been satisfied. (Ord. 86-7 §11-1105(B), 1986)

16.20.030 Streets. A. General Requirements.

1. Frontage on Improved Streets. No subdivision shall be approved unless the area to be subdivided shall have frontage on, and access from, an existing street and unless such street is:

a. A street shown upon a plat approved by the city council and recorded in the county recorder's office. Such street or highway must be suitably improved as required by the highway rules, regulations, specifications or orders, or be secured by a performance bond required under these subdivision regulations, with the width and right-of-way required by these subdivision regulations or the comprehensive development guide. Wherever the area to be subdivided is to utilize existing road frontage, such road shall be suitably improved as provided herein above.

2. Grading and Improvement Plan. Roads shall be graded and improved and conform to the city construction standards and specifications and shall be approved as to design and specifications by the city engineer, in accordance with the construction plans required to be submitted prior to final plat approval.

3. Topography and Arrangement.

a. Roads shall be related appropriately to the topography. Local roads shall be curved wherever possible to avoid conformity of lot appearance. All streets shall be arranged so as to obtain as many as possible of the building sites at, or above, the grades of the streets. Grades of streets shall conform as closely as possible to the original topography. Specific standards are contained in the design standards of these regulations.

b. All streets shall be properly integrated with the existing and proposed system of thoroughfares and dedicated rights-of-way as established in the comprehensive development guide.

c. Local streets shall be laid out to conform as much as possible to the topography, to discourage use by through traffic, to permit efficient drainage and utility systems, and to require the minimum number of streets necessary to provide convenient and safe access to property.

d. Proposed streets shall be extended to the boundary lines of the tract to be subdivided, unless prevented by topography or other physical conditions, or unless in the opinion of the city council, such extension is not necessary or desirable for the coordination of the layout of the subdivision with the existing layout or the most advantageous future development of adjacent tracts.

4. Blocks.

a. Blocks shall have sufficient width to provide for two tiers of lots of appropriate depths. Exceptions to this prescribed block width shall be permitted in blocks adjacent to major streets, railroads, waterways or parks.

b. The lengths, widths and shapes of blocks shall be such as are appropriate for the locality and the type of development contemplated. The maximum length of blocks, measured along the center line of the street, and between intersecting street center lines, shall be one thousand five hundred feet. Minimum block length shall be two hundred feet. The maximum length of cul-de-sac streets shall be six hundred feet, measured from the intersection of right-of-way lines to extreme depth of the turning circle right-of-way along the street center line. With the approval of the city council, the maximum block length may be exceeded along an arterial or major collector street, if the adjoining lots do not have direct access onto the arterial or major collector street. All other exceptions to these standards require a variance, as provided in Chapter 16.16.

c. In long blocks the city council may require the reservation of an easement through the block to accommodate utilities, drainage facilities, emergency access, or pedestrian traffic.

5. Access to Arterial Streets. Where a subdivision borders on or contains an existing or proposed arterial street, the city may require that access to such streets be limited by one of the following means:

a. The subdivision of lots so that the lots back onto the arterial street and front onto a parallel local street; no direct access shall be provided from the arterial street;

b. A series of cul-de-sacs, U-shaped streets, or short loops entered from and designed generally at right angles to such a parallel street, with the rear lines of their terminal lots backing onto the arterial street;

c. A marginal access or service road (separated from the arterial street by a planting or landscaped strip and having access thereto at suitable points).

6. Street Names. Street names shall be sufficiently different in sound and in spelling from other street names in the city so as not to cause confusion. A street which exists or is planned as a continuation of an existing street shall bear the same name.

7. Street Names and Regulatory Signs. The applicant shall deposit with the city at the time of final subdivision approval an amount equal to the cost of each street sign required by the city engineer at all road intersections. The city shall install all street signs before issuance of certificates of occupancy for any residence on the streets approved. Street name signs are to be placed at all intersections within or abutting the subdivision, the type and location of which are to be approved by the city engineer.

8. Street Lights. Installation of street lights shall be required in accordance with design and specification standards approved by the city engineer. Lighting on local and collector streets shall maintain a minimum of .4 lumens at any given point along the street right-of-way while .7 lumens shall be maintained along arterial streets. In addition, light standards shall be spaced such that each intersection is provided at least one light standard.

9. Construction of Streets and Dead-End Streets.

a. Construction of Streets. The arrangement of streets shall provide for the continuation of principal streets between adjacent properties when such continuation is necessary for convenient movement of traffic, effective fire protection, for efficient provision of utilities, and where such continuation is in accordance with the city comprehensive development guide. If the adjacent property is undeveloped and the street must be a dead-end street temporarily, the right-of-way shall be extended to the property line. A temporary T- or L-shaped turnabout shall be provided on all temporary dead-end streets, with the notation on the subdivision plat that land outside the normal street right-of-way shall revert to abutters whenever the street is continued. The city may limit the length of temporary dead-end streets in accordance with the design standards of these regulations.

b. Dead-End Streets (Permanent). Where a street does not extend to the boundary of the subdivision and its continuation is not required by the city for access to adjoining property, its terminus shall normally not be nearer to such boundary than fifty feet. However, the city may require the reservation of an appropriate easement to accommodate drainage facilities, pedestrian traffic or utilities. A cul-de-sac shall be provided at the end of a

permanent dead-end street in accordance with construction standards and specifications.

For greater convenience to traffic and more effective police and fire protection, permanent dead-end streets shall, in general, be limited in length in accordance with the design standards of these regulations.

B. Design Standards.

1. General. In order to provide for streets of suitable location, width and improvement to accommodate prospective traffic and afford satisfactory access to police, fire protection, sanitation and street-maintenance equipment, and to coordinate streets so as to compose a convenient system and avoid undue hardships to adjoining properties, Table 1 sets forth design standards for streets.

TABLE 1
Design Standards for Streets

<u>Improvement</u>	<u>Dimensions in Feet</u>
Minimum Width of Right-of-Way	
Local	50
Minor collector	60
Major collector	80
Minor arterial	110
Major arterial	
Multi-lane roadway	130
Parkway	150
Principal arterial	300
Minimum Pavement Width (defined as face of curb to face of curb)	
Local	28-24
Minor/major collector	44-64
Minor arterial	68
Major arterial	
Multi-lane roadway	92
Parkway	102
Principal arterial	112
Minimum Radius of Curve	
Local	100
Collector	100
Minor arterial	300
Principal arterial	500
Minimum Length of Tangents Between Reverse Curves	
Local	150
Collector	150

TABLE 1 (Continued)
Design Standards for Streets

<u>Improvement</u>	<u>Dimensions in Feet</u>
Minor arterial	250
Principal arterial	350
Minimum Sight Distance	
Local	200
Collector	240
Minor arterial	275
Principal arterial	300
Minimum Turn-Around (local streets only)	
Right-of-way diameter	110
Pavement	100
Maximum Block Length	1500
Permanent Cul-de-Sac	600
Temporary Cul-de-Sac	200
Minimum Block Length	200

2. Street Surfacing and Improvements. After sewer and water utilities have been installed by the developer, the applicant shall construct curbs and gutters and shall surface or cause to be surfaced roadways to the widths prescribed in this title. Said surfacing shall be of such character as is suitable for the expected traffic and in harmony with similar improvements in the surrounding areas. Types of pavement shall be as determined by the city engineer. Adequate provision shall be made for culverts, drains and bridges.

All street pavements, shoulders, drainage improvements and structures, curbs, turnarounds and sidewalks shall conform to the Uniform Standard Details Specifications adopted by the city council and shall be incorporated into the construction plans required to be submitted by the developer for plat approval.

3. Railroads and Limited Access Highways. Railroad rights-of-way and limited access highways where so located as to affect the subdivision of adjoining lands shall be treated as follows:

a. In residential districts a buffer strip at least twenty-five feet in depth in addition to the normal depth of the lot required in the district shall be provided adjacent to the railroad right-of-way or limited access highway. This strip shall be part of the platted lots and shall be designated on the plat: "This strip is reserved for screening. The placement of structures, except for street signs and lighting, hereon is prohibited."



1. Any property located in the I-3 zone as well as the F-1 or F-2 overlay zones must comply with the regulations of the overlay zones.

2. A conditional use permit approval may include provisions that modify the screening, landscaping, parking or other requirements of Title 17 as necessary to meet the specific site conditions. (Ord. 97-16 §19, 1997)

17.28.140 Planned area development zone--P.A.D.

A. Purpose.

1. As an alternative to conventional zoning and development approaches and processes, the planned area development (P.A.D.) procedures and regulations are set forth in order that the public health, safety and general welfare be furthered in an era of increasing urbanization; to encourage innovations in residential, commercial and industrial development so that greater opportunities for better housing, recreation, shopping and employment, conveniently located, may extend to all citizens and residents of Surprise; to reflect changes in the technology of land development; to encourage a more creative approach in the utilization of land in order to accomplish a more efficient, aesthetic and desirable development which may be characterized by special features of the geography, topography, size or shape of a particular property, and to provide a compatible and stable environment, in harmony with that of the surrounding area.

2. The P.A.D. may include any development having one or more principal uses or structures on a single parcel of ground or contiguous parcels. The P.A.D. shall consist of a harmonious selection of uses and groupings of buildings, parking areas, circulation and open spaces, and shall be designed as an integrated unit, in such a manner as to constitute a safe, efficient and convenient urban area.

B. General Requirements and Standards.

1. Ownership. The tract shall be a development of land under unified control at the time of application and planned and scheduled to be developed as a whole.

2. Conformance with Comprehensive Development Guide. The land uses and design of the proposed P.A.D. shall be consistent with the city comprehensive development guide.

3. P.A.D. Regulations.

a. The minimum total P.A.D. shall be no less than five acres unless the applicant can show that the minimum P.A.D. requirements should be waived because the waiver would be in the public interest and that one or both of the following conditions exist:

i. Unusual physical features of the property itself or of the surrounding neighborhood are such that development under the standard provisions of the residential districts would not be appropriate in order to con-

serve a physical or terrain feature of importance to the neighborhood or community.

ii. The property is adjacent to or across the street from property which has been developed under the provisions of this section and will contribute to the amenities of the neighborhood.

4. Uses in a P.A.D. Any use may be allowed in a P.A.D., provided it is consistent with the Comprehensive Development Guide.

5. Residential Density in P.A.D.s.

a. Residential development in a P.A.D. may provide for a variety of housing types allowed in any one of the basic residential zoning districts. In addition, the number of dwelling units allowed may be flexible relative to the number of dwelling units per acre that would otherwise be permitted by the zoning regulations applicable to the site. However, the total number of dwelling units and the resulting density allowed in a P.A.D. shall be consistent with the land use plan of the city's comprehensive development guide.

b. In determining the reasonableness of the densities in a P.A.D., the planning and zoning commission and city council shall consider increased efficiency in the provision of public facilities and services based, in part, upon:

i. The location, amount and proposed use of common open space;

ii. The location, design and type of dwelling units;

iii. The physical characteristics of the site;

iv. Particular distinctiveness and excellence in siting, design and landscaping.

6. Front, Rear and Side Yard Building Setback Regulations.

a. Front and rear yard setbacks shall be established by the city council at the time of approval of the final subdivision plat and shall be clearly identified on the final subdivision plat.

b. Unless a common wall or zero lot line is approved by the city council, there shall be a minimum separation between structures on adjoining residential lots of ten feet.

c. There shall be a side yard setback of not less than twenty feet from the curb line on any lot which adjoins a public or private street.

d. Commercial building setbacks shall be a minimum of thirty-five feet or such greater distance as may be equal to the maximum height of the building.

7. More than One Building per Lot. More than one building may be placed on one platted or recorded lot in any P.A.D. Areas for single-family detached dwellings or

other housing types providing privately owned lots must comply with the city's subdivision ordinance in all respects not specifically noted in this section as appropriate variances or waivers.

8. One Housing Type not Inconsistent with Intent. A P.A.D. which only involves one housing type such as all detached or all attached units shall not be considered inconsistent with the stated purposes and objectives of this section and shall not be the sole basis for denial or approval.

9. Architectural Style, Appearance. Architectural style of buildings shall not solely be a basis for denial or approval of a plan. However, the overall appearance and compatibility of individual buildings to other site elements or to surrounding development will be primary considerations during P.A.D. review by the planning and zoning commission and council.

10. Phasing of Development.

a. Any P.A.D. plan proposed to be constructed in phases shall include full details relating thereto, and the city council may approve or modify where necessary any such proposals.

b. The phasing shall include the time for beginning and completion of each phase. Such timing may be modified by the city on the showing of good cause by the developer.

c. The land owner or developer shall make such easements, covenants, and other arrangements and shall furnish such financial guarantees as may be determined by the city to be reasonably required to assure performance in accordance with the plan and to protect the public.

11. Streets, Utilities, Services and Public Facilities. The uniqueness of each proposal for a P.A.D. may allow specifications and standards for streets, utilities and services to be subject to minor modifications of the specifications and standards established in this and other city ordinances governing their construction. The city may, therefore, waive or modify the specifications or standards where it is found that they are not required in the interests of the residents of the P.A.D. or the city. The plans and profiles of all streets, utilities and services shall be reviewed, modified if necessary, and approved by the city prior to the final approval of the P.A.D. All P.A.D.s shall be served by public or community water and sewer systems.

12. Open Space Provision. At least seven percent of the total P.A.D. area shall be set aside for public and/or private open space and recreational use. The city shall determine what portion of the seven percent shall be private and what shall be public.

13. Operating and Maintenance Requirements for Planned Area Development Common Facilities. In the event

that certain land areas or structures are provided within the P.A.D. for private recreational use or as service facilities, the owner of such land and buildings shall establish an arrangement to assure the city of a continued standard of maintenance. These common areas may be placed under the ownership of one of the following, depending which is more appropriate:

a. Dedicated to public where a communitywide use would be anticipated;

b. Landlord control;

c. Landowners association, provided all of the following conditions are met:

i. The landowners association must be established prior to any sale.

ii. Membership must be mandatory for each owner and any successive buyer.

iii. The open space restrictions must be permanent or tied to a long-term agreement (e.g., ninety-nine years).

iv. The association must be responsible for liability insurance and the maintenance of recreational, service and other facilities as deemed necessary by the city.

v. Landowners must pay their pro rata share of the cost and the assessment levied by the association can become a lien on the property in accordance with Arizona statutes.

vi. The association must be required to adjust its assessment to meet changing needs.

vii. The association must be required to, at minimum, adjust its assessment on an annual basis by a percentage not less than the previous year's increase in the consumer price index.

14. Building Height and Setbacks. Maximum building height: thirty-five feet; provided, however, that a building may exceed thirty-five feet in height if the entire portion of the building which exceeds thirty-five feet is so constructed that it cannot be used or occupied by humans for any purpose, and if the planning and zoning commission approves the extension above thirty-five feet prior to the commencement of construction. In determining whether to approve a height extension, the planning and zoning commission shall consider whether the proposed extension will pose an unreasonable risk of injury to persons or property in light of the city's fire fighting equipment and capabilities. In general, a building's setback from property adjacent to the P.A.D. site shall approximate its height.

15. Landscaping. Landscaping and/or fencing shall be provided according to a plan approved by the city and shall include a detailed planting list with sizes indicated.



16. Utilities. All utilities, including electricity and telephone, shall be installed underground. (Ord. 97-16 §16(part), 1997; Ord. 94-5 §5, 1994; Ord. 91-7, 1991; Ord. 86-6 §7-711, 1986)

17.28.150 Age restricted overlay zone (AR). A. Purpose. The age restricted (AR) overlay zone is intended to allow for orderly and planned residential development which is specially designed for residency by persons of advanced age by enacting age-specific conditions, covenants, restrictions, or regulations on parcels in the city.

B. Principally Permitted Uses. The principally permitted uses shall be the same as are allowed in the underlying zoning district which may be any of the residential zones or planned area development zone (PAD) as defined in the Code of Ordinances as it exists or may be amended, but not with any other zoning district.

C. Conditionally Permitted Uses. The conditionally permitted uses shall be the same as are allowed in the underlying zoning district which may be any of the residential zones or planned area development zone (PAD) as defined in the Code of Ordinances as it exists or may be amended, but not with any other zoning district.

D. Permitted Accessory Uses. The permitted accessory uses shall be the same as are allowed in the underlying zoning district which may be any of the residential zones or planned area development zone (PAD) as defined in the Code of Ordinances as it exists or may be amended, but not with any other zoning district.

E. Size. The age restricted overlay zone shall only be established on parcels of forty or more contiguous acres.

F. Application Requirements.

1. Any person applying for an age restricted overlay zone shall submit the following:

- a. A petition signed by one hundred percent of the owners of property within the proposed district; or
- b. Clear and convincing documentation that all of the property within the proposed district has been developed, advertised and sold or rented under specific age restrictions.

2. The city will not consider any application for an age restricted overlay zone until all requirements of this subsection have been met.

G. Application Procedure. Any person requesting an age restricted overlay zone shall follow the procedure specified in Section 17.36.020 of the Code of Ordinances as it exists or shall be amended.

H. Prohibited Acts. No person shall enact age-specific conditions, covenants, restrictions, or regulations on any parcel in any area of the city except where an age

- 2. Maximum building height: thirty feet.
- G. Encroachment into Required Front and Side Yard Setbacks. See Section 17.28.010(G).
- H. Additional Building and Performance Standards. Development of any parcel of land within this district shall be subject to all applicable requirements of Chapter 17.32 of this title.
- I. Relationship to Overlay Zones. Any property located in the R1-8 zone as well as the F-1, F-2, or AR overlay zones must comply with the regulations of the overlay zones. (Ord. 97-16 §8, 1997; Ord. 86-6 §7-703, 1986)

17.28.040 Single-family residential zone (R1-5). A. Purpose. The purpose of the R1-5 single-family residential zone is to provide for the development of single-family detached dwellings and directly related complementary uses at a moderate density. The zone is intended to be strictly residential in character with a minimum of disturbances due to traffic or overcrowding.

- B. Principally Permitted Uses. See Section 17.24.020(A).
- C. Conditionally Permitted Uses. See Section 17.24.020(B).
- D. Permitted Accessory Uses. See Section 17.24.020(C).
- E. Lot Area and Lot Dimensions.

1. Required lot area:

<u>Use</u>	<u>Minimum Lot Area</u>
Single-family dwelling units	5,500 square feet*
Other permitted uses	Minimum area to be determined by building area, parking requirements and required setbacks.

2. Required lot dimensions:

* This may be calculated as an average lot size for lots within a given subdivision, provided no lot is less than five thousand two hundred square feet in size and not more than ten percent of the lots are less than five thousand five hundred square feet in size.

<u>Use</u>	<u>Minimum Lot Width</u>	<u>Minimum Lot Depth</u>
Single-family dwelling units	50 feet	100 feet
Other permitted uses	Lot dimensions to be determined by building area, parking requirements and required setbacks.	

3. Density: There shall not be more than one single-family dwelling unit on any one lot.

F. Setbacks, Yards and Heights.

1. Minimum setbacks from property line:

<u>Use</u>	<u>Front</u>	<u>Interior Side</u>	<u>Corner Side</u>	<u>Rear Yard</u>
Single-family dwelling	20'	10'*	20'	20'
Schools, civic, cultural and religious institutions (including their accessory use structures)	50'	50'	50'	50'
Structures accessory to single-family residences	20'	3'	20'	3'
Structures for all other principal, conditional or accessory uses	20'	10'	20'	20'

Zero lot line development may be permitted which may result in the creation of a two-family residential structure.

* At least one side yard shall be ten feet; the setback for the remaining side may be less than ten providing principal building separations are at least ten feet and that in the case of detached units, the other side yard is at least three feet.

2. Maximum building height: thirty feet.

G. Encroachment into Required Front and Side Yard Setbacks. See Section 17.28.010(G).

H. Additional Building and Performance Standards. Development of any parcel of land within this district shall be subject to all applicable requirements of Chapter 17.32 of this title.

I. Relationship to Overlay Zones. Any property located in the R1-5 zone as well as the F-1, F-2, or AR overlay zones must comply with the regulations of the overlay zones. (Ord. 97-16 §9, 1997; Ord. 86-6 §7-704, 1986)

17.28.050 Multifamily residential zone (R-2). A. Purpose. The purpose of the R-2 multifamily residential zone is to provide for medium density housing in multiple-family structures and directly related complementary uses. The R-2 zone is designed to allow economical use of land while creating an attractive, functional and safe residential environment.

B. Principally Permitted Uses. See Section 17.24.020(A).

C. Conditionally Permitted Uses. See Section 17.24.020(B).

D. Permitted Accessory Uses. See Section 17.24.020(C).

E. Lot Area and Lot Dimensions. In determining minimum lot area and minimum lot dimensions, the following table should be used:

<u>Use</u>	<u>Minimum Area per Unit</u>	<u>Minimum Lot Dimensions*</u>	<u>Outdoor Living Area**</u>
Two-family dwelling	3,000 sq. ft.	Width: 70' Depth: 90'	600 sq. ft./ dwelling unit

* These dimensions apply to the initial lot size per structure. Initial lots may be divided to accommodate individual ownership of the structures' dwelling units.

** Outdoor living area in the minimum amount specified above must be provided on any lot occupied by the multiple residence or townhouse building. This space must be easily accessible for daily recreational use by the occupants of the building. Driveways, parking areas, ornamental landscaped areas (having a width of less than twenty feet), and required side or front yards shall not be considered as an outdoor living area, except in the case of interior townhouse units where said unit is less than twenty feet in width, in which case the minimum width of the outdoor living area shall be the width of the lot.

- i. Front, 35 feet,
- ii. Interior side and rear, 15 feet,
- iii. Corner side, 15 feet,
- iv. Residential zone boundary, 45 feet;
- b. Parking lot:
 - i. Front, 4 feet,
 - ii. Interior side and rear, 3 feet,
 - iii. Corner side, 4 feet,
 - iv. Residential zone boundary, 3 feet.
- 2. The maximum height of structures shall be thirty feet.

G. Lot Width and Lot Area.

- 1. The minimum lot width shall be one hundred feet.
- 2. Minimum lot area shall be determined by building area, parking requirements and required setbacks.

H. Additional Building and Performance Standards. Development of any parcel of land within this district shall be subject to all applicable requirements of Chapter 17.32 of this title.

I. Relationship to Overlay Zones. Any property located in the C-1 zone as well as the F-1 or F-2 overlay zones must comply with the regulations of the overlay zones. (Ord. 97-16 §12, 1997; Ord. 86-6 §7-707, 1986)

17.28.080 Community commercial zone (C-2). A. Purpose. The purpose of the C-2 community commercial zone is to provide for low intensity, retail or service outlets which deal directly with the consumer for whom the goods or services are intended, or which render a nonconsumer oriented service which does not materially increase vehicular traffic or other pollution, and which does not decrease the suitability of the surrounding area for residential or general commercial purposes. Except as set forth above, the uses allowed in this district are intended to provide goods and services on a community market scale, located in areas which are served by arterial street facilities.

B. Principally Permitted Uses. See Section 17.24.030(A).

C. Conditionally Permitted Uses.

- 1. Automobile service stations:
 - a. Site improvements such as buildings or structures (permanent or temporary) shall be separated from any residential zone by at least fifty feet. Parking areas shall be separated from any residential zone by at least fifteen feet.
 - b. The total site area shall not be less than twelve thousand square feet.
 - c. Pump islands shall be set back not less than twenty-five feet from any street right-of-way line, not less than forty feet from any nonstreet property line and

not less than seventy-five feet from any residential zone boundary.

d. Hydraulic hoists, pits, and all lubrication, greasing, washing, repair and diagnostic equipment shall be used and enclosed within a building.

e. Interior curbs of not less than six inches in height shall be constructed to separate driving surfaces from sidewalks, landscaped areas and street rights-of-way.

f. No automobile service station on a site contiguous to any residential zone shall be operated between the hours of eleven p.m. and seven a.m. of the following day.

2. Automobile washing establishments:

a. Automobile washing establishments shall be subject to the same limitations and conditions as are specified heretofore in subsections (C)(1)(a), (b), (c), (e) and (f) of this section.

b. Sufficient off-street area to provide space for not less than ten automobiles waiting to be washed or three waiting spaces per washing stall, whichever is greater, shall be provided. A space twenty feet by nine feet shall be deemed adequate for each such required space.

c. All washwater disposal facilities including sludge, grit removal and disposal equipment shall be subject to the approval of the city engineer, and shall conform with all city ordinances regarding sewage and health and shall be designed so as not to detrimentally affect the city sewer system.

3. Convenience food restaurants: Convenience food restaurants shall be subject to the same limitations and conditions as are specified heretofore in subsections (C)(1)(a), (e) and (f) of this section for Automobile Service Stations.

4. Day care center:

a. A minimum of seventy-five square feet of outdoor play space per child shall be provided from which at least fifty square feet of fenced in play space per child shall be provided. Fenced in, outdoor, play space shall not include driveways, parking areas or land unsuited by virtue of other usage or natural features for children's play space.

b. At least two hundred fifty square feet of lot area per child shall be provided.

5. Model homes, temporary.

6. Recreational vehicle, mobile home and manufactured home park and overnight campground. No person shall place or occupy any mobile home anywhere in the city except in a mobile home and manufactured home park which has been established pursuant to this section. No person shall place or occupy any manufactured home anywhere in the city except in a mobile home and manufactured home park which has been established pursuant to this section or in a manu-

factured home subdivision which has been established pursuant to Section 17.32.140. Additionally, no person shall occupy any recreational vehicle anywhere in the city except in a recreational vehicle, mobile home and manufactured home park or overnight campground which has been established pursuant to this section.

a. Minimum size of park shall be ten net acres.

b. The minimum space for a mobile home or manufactured home shall be four thousand square feet; for a travel trailer, park model and motor home two thousand square feet.

c. Travel trailer, park models and motor homes in mobile/manufactured home parks shall constitute no more than fifteen percent of the total spaces. These spaces must be delineated on the approved development plan for each mobile/manufactured home park. These spaces should be located together and not spread throughout the park. These spaces shall not be continuously occupied for more than six months.

d. No more than one mobile home, manufactured home, travel trailer, park model or motor home shall be placed on each space.

e. The minimum building setback, including accessory buildings, from any lot line or street right-of-way shall be as set forth below:

	<u>Setbacks</u>	<u>Feet</u>
i.	Front,	10
ii.	Interior side,	5
iii.	Corner side,	10
iv.	Rear,	-10

f. Off-street parking for at least two automobiles shall be provided in each space or on each lot or on a separate designated parking area within a park.

g. Interior private streets shall not be less than thirty-two feet in width, and shall be paved with a dust-free surface. Individual recreational vehicle parking pads shall be plainly marked and paved with a dust-free surface.

h. Screening shall be provided around the exterior of the park by a minimum six-foot masonry wall.

i. All mobile/manufactured homes shall be skirted in a uniform manner.

j. No mobile/manufactured home or recreational vehicle space shall be located within fifteen feet of any street. Such area shall be maintained as a landscape buffer area which can be used for recreation or as part of a retention area.

k. A common area of five hundred square feet for each rental space shall be provided and approved for recreation, laundry, and service purposes.

l. No space within a recreational vehicle, mobile home and manufactured home park and overnight campground shall be used as a storage area; however, motor homes or travel trailers which are set up for occupancy, but which are vacant, are allowed.

m. Mobile/manufactured home and recreational vehicle parks may include accessory storage buildings, office buildings, recreational facilities, laundry facilities, storage areas, and other common facilities use provided for park residents.

n. Approval of all mobile/manufactured home and recreational vehicle parks shall be subject to the provisions in Chapter 17.32 and any amendments thereto.

o. Approved trash disposal and toilet facilities shall be provided for use of overnight campers.

p. Campground plans, certified approved by Maricopa department of health services shall be submitted.

7. Video arcades.

8. Laboratories or facilities for monitoring or analyzing substances or materials provided that no materials or substances shall be permitted in such zone if they constitute an increased risk of fire, disease of damage to the public health of persons in the vicinity thereof and further provided that any such facilities shall be so constructed, or screened, as to ensure that the visual impact of such use is in keeping with the principally permitted uses of this zone.

9. Temporary facilities for sale of automobiles, recreational vehicles, boats, mobile or manufactured homes provided that there shall be no on-site facilities for servicing or repair thereof. For purposes of this section temporary means a period of time not to exceed six calendar months.

10. Automobile retail sales:

a. The primary business of an automobile sales establishment must be the retail sale of new automobiles.

b. On-site servicing and repair of automobiles is not permitted.

c. No retail automobile sales establishment shall be operated between the hours of eleven p.m. and seven a.m.

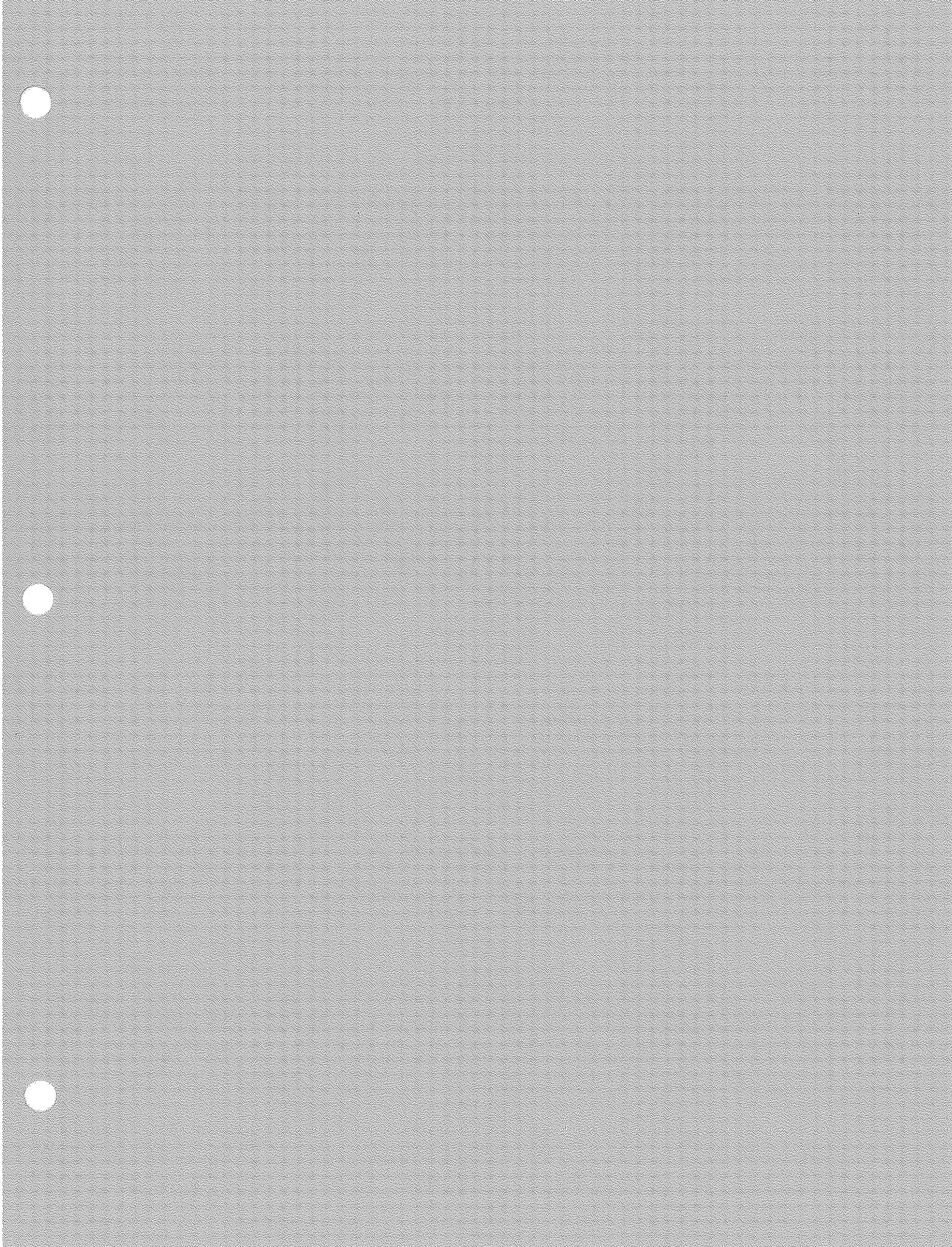
d. Site improvements such as buildings or structures (temporary or permanent) shall be separated from every residential zone by a minimum of fifty feet.

11. Automobile rental/leasing:

a. The primary business of an automobile rental/leasing facility must be the rental and leasing of automobiles.

- b. No rental or leasing of other vehicles such as trucks, trailers or RVs shall be allowed.
 - c. No automobile rental/leasing facility shall be operated between the hours of eleven p.m. and seven a.m.
 - d. No outside storage of any type shall be permitted, except for passenger vehicle storage.
 - e. On-site service and repairs of automobiles is prohibited, except for vacuuming, window cleaning and checking fluids.
 - f. The area used for parking and/or vehicle storage shall be properly screened with a wall, fence, hedge, plantings or combination thereof.
 - g. The area used for parking and/or storage shall be paved.
 - h. Site improvements such as buildings or structures (temporary or permanent) shall be separated and screened from all residential zones by a minimum of fifty feet.
12. Automobile service center, minor, provided that
- a. All services and repairs shall be conducted entirely within an enclosed building except sales of gasoline.
 - b. Outdoor storage is prohibited.
 - c. Outdoor displays are prohibited.
 - d. No person shall operate a minor automobile service center between the hours of eleven p.m. and seven a.m.
 - e. All buildings and/or structures (temporary or permanent) shall be screened from any residential zone.
 - f. Any area used for parking shall be paved.
 - g. There shall be no manufacturing, compounding, processing or treatment of products other than that which is clearly incidental to retail sales or the business operation of a minor automobile service center, and where all such completed products are sold at retail on the premises.
13. Outdoor recreational facility provided the entire facility not exceed three acres in size.
14. Retail plant nursery, provided all incidental equipment and supplies including fertilizer and empty cans, are kept within a completely enclosed building or within an area enclosed on all sides by a solid fence or wall at least six feet in height and no goods, materials or objects are stacked higher than the fence or wall so erected.
15. Shelter care facility.
16. Personal wireless service facilities as per Section 17.32.150.
- D. Permitted Accessory Uses.
- 1. Those accessory uses permitted under Section 17.28.070(D).
- E. Access.

1. Access to commercial activities shall be allowed only on arterial streets or a street specifically designed for such development.
2. Access points shall be located at least one hundred fifty feet from any street intersection.
3. Access points on the same street shall not be spaced closer than one hundred feet (as measured from centerlines). Commercial developments of a small scale shall be encouraged to develop common access drives and parking facilities.



ing that the applicant has not shown that the conditions required for approval do exist. No application for a conditional use permit which has been denied wholly or in part shall be resubmitted for a period of six months from the date of said order of denial, except on grounds of new evidence or proof of change of conditions found to be valid by the commission.

D. Notification of Commission Action. The applicant shall be notified in writing of the action taken by the commission within seven days of its action. If the application has been granted, the permit shall be issued upon the signature of the chairman of the planning and zoning commission and the community development director, and any conditions, automatic termination date or period of review shall be stated on the permit. (Ord. 86-6 §9-905, 1986)

17.36.060 Procedure for planned area development (P.A.D.). A. Generally. Any development proposal which meets the requirements of Section 17.28.110, planned area development, shall be reviewed according to the provisions of this section. All P.A.D. applications shall be reviewed and approved by the planning and zoning commission and city council prior to any physical development on the subject property.

B. Application.

1. The applicant is encouraged to meet with appropriate city staff prior to making application for P.A.D. approval to discuss the development concept, the review and approval process, and the submittal requirements.

2. The applicant shall obtain the necessary application forms from the community development director. Application forms properly completed and accompanied by the required fee shall be submitted to the community development director. Concept plan exhibits shall accompany the application. The concept plan shall be submitted at least seven days prior to meeting with city staff.

C. Concept Plan.

1. Submittal Requirements. The concept plan shall indicate proposed land uses, general circulation patterns, property boundaries, existing land uses on adjacent properties, special site conditions or problems. A computation table showing proposed land use allocations in acres and percent of total site area shall be included on the concept plan.

D. Preliminary Development Plan.

1. Submittal Requirements. Based upon comments received regarding the concept plan, the applicant shall prepare a preliminary development plan. A preliminary development plan shall be submitted at least twenty-one days prior to the hearing by the planning and zoning com-

mission. The following information shall be submitted to the community development director:

- a. Legal description of property and indication of gross area;
- b. Nature of the applicant's interest in the land to be developed;
- c. A generalized location map showing surrounding land use and traffic circulation patterns;
- d. Site conditions: An analysis of the existing site conditions which indicates at a minimum:
 - i. Topographic contours with intervals of no more than two feet, to a distance of one hundred feet beyond the property boundary,
 - ii. Location and extent of major vegetative cover (if any),
 - iii. Location and extent of perennial or intermittent streams and water ponding areas,
 - iv. Existing drainage patterns,
 - v. Other information considered relevant by the applicant or city staff;
- e. Proposed allocations of land use expressed as a percentage of the total area, as well as in acres. Uses to be indicated include:
 - i. Arterial streets,
 - ii. Open space (public),
 - iii. Open space (private),
 - iv. Residential (if appropriate),
 - v. A stratification of residential uses in terms of single-family detached units, patio homes, townhouses, garden apartments, etc.,
 - vi. Commercial (if appropriate),
 - vii. Industrial (if appropriate),
- f. A land use plan at a scale not smaller than one inch equals one hundred feet, indicating land uses, acres and development densities of each land use and the most nearly equivalent zoning categories; all arterial and collector street circulation elements, pedestrian and/or bicycle circulation elements, exact perimeter locations of any/all arterial streets and major collector streets; open spaces; and recreational areas;
- g. Plans indicating the approximate alignment and sizing of water lines, sanitary sewers and storm sewers (if any), as well as easements for all utilities, if necessary. Also indicated should be proposed surface drainage patterns;
- h. A preliminary plat of the proposed development if land subdivision is proposed;
 - i. Conceptual architectural renderings indicating the elevations and exterior wall finishes of proposed buildings types;
 - j. Conceptual landscaping plans, indicating landscaping theme character of the development;

k. A traffic analysis report, if deemed necessary by the city;

1. Phasing plan, if development is to take more than one year.

2. Planning Commission Review and Hearing.

a. Notice of Hearing. The commission shall hold a public hearing on the preliminary development plan. A notice of the time, date, place and purpose of the hearing shall be published in the official newspaper of the city at least fifteen days prior to the date of the hearing.

A similar notice shall be mailed at least seven days before the day of the hearing to each owner of property situated wholly or partly within two hundred feet of the property to which the P.A.D. relates. The community development director shall be responsible for placing and mailing such notices. For purposes of giving mailed notice, the community development director shall require the applicant to furnish the names and addresses of all property owners within two hundred feet of the property.

b. Review. In considering applications for P.A.D. approval, the commission shall consider the following:

- i. Interrelationship with the plan elements to conditions both on and off the property,
- ii. Conformance to the comprehensive development guide,
- iii. The impact of the plan on the existing and anticipated traffic and parking conditions,
- iv. The adequacy of the plan with respect to land use,
- v. Pedestrian and vehicular ingress and egress,
- vi. Architectural design,
- vii. Landscaping,
- viii. Provisions for utilities,
- ix. Site drainage,
- x. Open space and/or public land dedications,
- xi. Grading,
- xii. Other related matters.

The commission shall consider oral or written statements from the applicant, the public, city staff or its own members. It may question the applicant and approve, disapprove or table the preliminary development plan. The application may not be tabled for more than two regular meetings of the commission.

If the commission shall determine by motion that the proposed preliminary development plan will not be detrimental to the health, safety or welfare of the community, will not cause traffic congestion or depreciate surrounding property values and, at the same time, is in harmony with

the purposes and intent of this title, the plan for the area, and the comprehensive development guide, the commission may recommend granting preliminary development plan approval, along with necessary conditions and safeguards, including provisions, as applicable, for public land dedications.

The commission shall notify the city council, in writing, of its recommendation.

3. City Council Consideration and Hearing.

a. Consideration and Hearing. The city council, after receipt of the report and recommendation of the planning and zoning commission, may consider the P.A.D. request. If requested in writing by any member of the public or the town council, the council shall hold a public hearing on the request. A notice of the time, place and purpose of the hearing shall be published in the official newspaper of the city at least fifteen days prior to the date of the hearing.

A preliminary development plan which has been recommended for denial by the commission shall not be reviewed by the council except upon written request by the applicant and shall require a public hearing.

b. Review and Approval. In its deliberations on the preliminary development plan, the council shall consider oral or written statements from the applicant, city staff, the public and its own members. The council's review shall encompass the same spectrum of considerations as did the commission's. The city council may approve the preliminary development plan, deny the request, or table the request. The application may not be tabled for more than two meetings in succession.

Conditions may be applied to the approval and/or periodic review of the approval may be required. Approvals, if granted, shall be for a particular development, not for a particular applicant.

c. Public Protests Against P.A.D. If there is written protest against the preliminary development plan signed by the owners of twenty percent or more of the property within one hundred fifty feet of the proposed P.A.D., the preliminary development plan shall not be approved except upon affirmative vote of three-fourths of all members of the city council. If the above protest requirements are not met, approval may be by majority vote of the membership of the city council.

d. Duration of P.A.D. Zoning. Approval of a P.A.D. rezoning request shall be conditioned upon the start of construction beginning within one year of the date of approval action taken by the city council. If, at the expiration of this period, the start of construction has not begun, the property shall revert to its former zoning classification without council or commission action.

In the case of a proposed phased development, start of construction for the first phase must commence within one year, with the remaining phases commencing according to the approved phasing plan.

The city may authorize extensions when deemed necessary.

E. Final Development Plan.

1. Approval. Final P.A.D. development plan approval and the issuance of a development permit for any portion of a P.A.D. shall occur only when:

a. A reproducible copy of the approved preliminary development plan with appropriate signatures is received.

b. The design and construction specifications for all utilities, property and street improvements have been approved by the city engineer.

c. A site plan, subject to the requirements of Section 17.36.040 of this chapter, for the specific portion of the P.A.D. in question has been submitted and has been approved by the planning and zoning commission, as in conformance with the preliminary development plan. (Upon approval of the site plan, a reproducible copy shall be submitted.)

d. Architectural elevations of the buildings, with materials lists, are submitted and approved by the planning and zoning commission.

e. A landscaping plan is submitted and approved by the planning and zoning commission.

f. A performance bond, cash escrow agreement or other acceptable instrument has been deposited with the city in an amount as set by the city council based upon the city engineer's recommendation. This financial guarantee shall be used to ensure the full completion, as specified, of:

i. Public and private streets and utilities;
 ii. Landscaping; and
 iii. Privately owned and maintained recreational facilities.

g. Any land dedication agreements made as part of the preliminary development plan approval are fulfilled.

2. Platting Requirements. All applicants for a planned area development permit shall be required to file with Maricopa County a final plat of said planned area development complying with all of the requirements of the subdivision ordinance of the city, except to the extent that the council may give specific permission to the effect that the specific portions of the subdivision ordinance need not be complied with. Such required plats shall contain on their face a cross-reference to the P.A.D. development plan.

F. Method of Withdrawing an Application for P.A.D. Approval. Any application for a planned area development

permit may be withdrawn by the applicant at any time prior to filing the final plat upon written notification to the community development director and/or city clerk. The P.A.D. shall be null and void upon receipt of such notice by the city.

G. Amendments to P.A.D. Approval.

1. Minor Changes. Minor changes in the location and placement of buildings may be authorized by the community development director and city engineer where unforeseen circumstances such as engineering requirements dictate such change. When in question, the community development director and the city engineer may determine whether the changes shall be classified as minor or major, or may refer the question to the planning and zoning commission, if they deem it necessary.

2. Major Changes. Major changes, such as alterations in structural types, in the shapes and arrangements of lots and blocks, in the allocation of open space or other land uses which increase density and/or intensity of the project, and all other changes which significantly affect the overall design or intent of the project shall be referred to the planning and zoning commission, after which the commission shall consider and shall either approve or deny the changes in the final development plan. If such changes are authorized, the developer shall submit a revised plan showing the authorized changes. Requirements of Section 17.36.040C and D shall apply to requests for major changes.

H. Denial of P.A.D. Approval. If an application for planned area development approval is denied at either the preliminary development plan or final development plan stage, a new application for a P.A.D. approval by the same applicant on the same site or portion of the site cannot be filed prior to ninety days after the date of denial. (Ord. 86-6 §9-906, 1986)

17.36.070 Procedure for appeals to board of adjustment. A. Application for Appeal. Any aggrieved person or any officer or department of the city affected by a decision of an administrative officer, pertaining to this title, may appeal to the board of adjustment by filing an application with the zoning administrator. The application shall state the name and address (or city office) of the applicant and the reasons for filing the appeal. The application shall be made within twenty-one days of the date of the decision which is being appealed. The zoning administrator shall then transmit to the board the complete record of the action for which the appeal is made. Appeals to the board may be made only in conjunction with an action.

B. Stay of Proceedings. An appeal to the board stays all proceedings in furtherance of the action appealed un-

LOW WATER USING PLANT LIST

PHOENIX ACTIVE MANAGEMENT AREA

ARIZONA DEPARTMENT OF WATER RESOURCES



The Low Water Using Plant List (List) is used by the Department of Water Resources as a regulatory document in both the Municipal and Industrial Conservation Programs of the Second Management Plan.

The List was compiled by the Department of Water Resources in cooperation with the Arizona Municipal Water Users Association, Landscape Technical Committee, comprised of experts from the Desert Botanical Garden, the Arizona Department of Transportation and various municipal, nursery and landscape specialists in the Phoenix AMA. Individuals wishing to add or delete plants from the list may submit information to the Director for consideration. The Director will amend the list as appropriate.

The List does not imply that every plant listed is suited to every right-of-way or low water use landscape situation. It is the responsibility of the landscape designer, architect or contractor to determine which plants are suitable for a specific location and situation. The bibliography provides substantial educational information to determine specific plant characteristics and needs.

PLANTS ARE PLACED IN THE CATEGORIES WHERE THEY ARE MOST OFTEN USED. THIS DOES NOT PRECLUDE THE USE OF ANY PLANT IN ANOTHER GROWTH FORM.

TREES

<i>Botanical Name</i> Common Name	<i>Botanical Name</i> Common Name	<i>Botanical Name</i> Common Name
<i>Acacia</i> spp. Acacia, Wattle	<i>Callistemon viminalis</i> Weeping Bottlebrush	<i>Cercis canadensis</i> var. <i>texensis</i> Texas Redbud
<i>Bauhinia congesta</i> Anacacho Orchid Tree	<i>Canotia holacantha</i> Crucifixion Thorn	<i>Cercis canadensis</i> var. <i>mexicana</i> Mexican Redbud
<i>Brachychiton populneus</i> Bottle Tree	<i>Casuarina</i> spp. Beefwood	<i>Chamaerops humilis</i> Mediterranean Fan Palm
<i>Brahea</i> spp. Fan Palm	<i>Chitalpa tashkentensis</i> Chitalpa	<i>Chilopsis linearis</i> Desert-willow
<i>Bursera</i> spp. Elephant Tree	<i>Celtis reticulata</i> Western Hackberry	<i>Cupressus arizonica</i> Arizona Cypress
<i>Butia capitata</i> Jelly Palm	<i>Ceratonia siliqua</i> St. John's Bread Tree, Carob Tree	<i>Cupressus sempervirens</i> Italian Cypress
<i>Caesalpinia</i> spp. Bird-of-Paradise	<i>Cercidium</i> spp. Palo Verde	<i>Dalbergia sissoo</i> Sissoo Tree

Trees (continued)

<i>Botanical Name</i> Common Name	<i>Botanical Name</i> Common Name	<i>Botanical Name</i> Common Name
<i>Eucalyptus</i> spp. Eucalyptus	<i>Pinus canariensis</i> Canary Island Pine	<i>Schinus molle</i> California Pepper Tree
<i>Geijera parviflora</i> Australian-willow	<i>Pinus eldarica</i> Afghan Pine	<i>Schinus terebinthifolius</i> Brazilian Pepper Tree
<i>Gleditsia triacanthos</i> Honey Locust	<i>Pinus halepensis</i> Aleppo Pine	<i>Sophora secundiflora</i> Texas Mountain-laurel, Mescal Bean
<i>Holacantha emoryi</i> (<i>Castela emoryi</i>) Crucifixion Thorn	<i>Pinus pinea</i> Italian Stone Pine	<i>Tamarix aphylla</i> Athel Tree
<i>Leucaena retusa</i> Golden Ball Lead Tree	<i>Pinus roxburghii</i> Chir Pine	<i>Tipuana tipu</i> Tipu Tree
<i>Lysiloma</i> spp. Desert-fern	<i>Pistacia</i> spp. Pistachio	<i>Ulmus parvifolia</i> cv. 'Sempervirens' Evergreen Elm
<i>Olea europaea</i> Olive	<i>Pithecellobium</i> spp. Ebony	<i>Ungnadia speciosa</i> Mexican-buckeye
<i>Olneya tesota</i> Ironwood	<i>Pittosporum phillyraeoides</i> Willow Pittosporum	<i>Vitex agnus-castus</i> Chaste Tree
<i>Parkinsonia aculeata</i> Mexican Palo Verde, Jerusalem Thorn	<i>Prosopis</i> spp. Mesquite	<i>Washingtonia</i> spp. Desert Fan Palm
<i>Phoenix canariensis</i> Canary Island Date Palm	<i>Quercus</i> spp. Oak	<i>Xylosma congestum</i> Xylosma
<i>Phoenix dactylifera</i> Date Palm	<i>Rhus lancea</i> African Sumac	<i>Ziziphus jujuba</i> Chinese Jujube
	<i>Rhus lanceolata</i> Prairie Flameleaf Sumac	

SHRUBS

<i>Botanical Name</i> Common Name	<i>Botanical Name</i> Common Name	<i>Botanical Name</i> Common Name
<i>Abutilon palmeri</i> Superstition Mallow	<i>Aloysia</i> spp. Beebrush	<i>Ambrosia deltoidea</i> Triangleleaf Bur-sage
<i>Acacia</i> spp. Acacia, Wattle	<i>Ambrosia ambrosioides</i> Canyon Ragweed	<i>Ambrosia dumosa</i> White Bur-sage

SHRUBS (continued)

Botanical Name
Common Name

Anisacanthus spp.
Desert Honeysuckle

Artemisia spp.
Sagebrush

Asclepias linaria
Pine-leaf Milkweed

Asclepias subulata
Desert Milkweed

Atriplex spp.
Saltbush

Baccharis spp.
Desert Broom

Bauhinia congesta (*lunarioides*)
Anacacho

Bauhinia macarantnera
Orchid Tree

Bauhinia ramosissima
Orchid Tree

Berberis haematocarpa
Red Barberry

Berberis trifoliolata
Agarita

Buddleia marrubifolia
Woolly Butterfly Bush

Caesalpinia spp.
Bird-of-Paradise

Calliandra californica
Baja Red Fairy Duster

Calliandra eriophylla
Pink Fairy Duster

Calliandra peninsularis
Fairy Duster

Botanical Name
Common Name

Callistemon citrinus
Lemon Bottlebrush

Callistemon phoeniceus
Salt Resistant Bottlebrush

Callistemon viminalis
cv. 'Captain Cook'
Dwarf Bottlebrush

Calothamnus spp.
Net Bush

Cassia (*Senna*) spp.
Cassia

Celtis pallida
Desert Hackberry

Chrysactinia mexicana
Damianita

Chrysothamnus nauseosus
Rabbit Brush

Cistus spp.
Rockrose

Condalia globosa
Bitter Condalia

Convolvulus cneorum
Bush Morning Glory,
Silverbush

Cordia boissieri
Anacahuita

Cordia parvifolia
Little Leaf Cordia

Dalea spp.
Smoketree, Indigo Bush

Dodonaea viscosa
Hopbush

Encelia spp.
Brittlebush

Botanical Name
Common Name

Ephedra spp.
Mormon-tea

Eremophila spp.
Emu Bush

Ericameria laricifolia
Turpentine Bush

Ericameria linearifolia
Turpentine Bush

Eriogonum spp.
Buckwheat

Erythrina flabelliformis
Southwest Coralbean

Euphorbia antisiphilitica
Wax Plant, Candelilla

Euphorbia rigida
Euphorbia

Forestiera neomexicana
Desert Olive

Fraxinus greggii
Littleleaf Ash

Genista hispanica
Spanish Broom

Gutierrezia microcephala
Snakeweed

Hamelia patens
Fire Bush

Hechtia montana
Hechtia

Hymenoclea monogyra
Burrobrush

Hyptis emoryi
Desert-lavender

Jasminum mesnyi
Primrose Jasmine

SHRUBS (continued)

<i>Botanical Name</i> Common Name	<i>Botanical Name</i> Common Name	<i>Botanical Name</i> Common Name
<i>Jatropha</i> spp. Limberbush	<i>Nandina domestica</i> Heavenly-bamboo	<i>Solanum xanti</i> Solanum
<i>Juniperus chinensis</i> varieties Juniper	<i>Nerium oleander</i> varieties Oleander	<i>Sophora arizonica</i> Arizona Sophora
<i>Justicia</i> spp. Mexican Honeysuckle, Chuparosa	<i>Perovskia atriplicifolia</i> cv. 'Heavenly Blue' Russian Sage	<i>Sophora formosa</i> Sophora
<i>Krameria parvifolia</i> Ratany	<i>Plumbago scandens</i> Plumbago	<i>Tecoma stans</i> Yellowbells
<i>Lantana camara</i> Bush Lantana	<i>Punica granatum</i> varieties Pomegranate	<i>Tecomaria capensis</i> Cape Honeysuckle
<i>Larrea tridentata</i> Creosote Bush	<i>Pyracantha</i> spp. Pyracantha, Fire-thorn	<i>Teucrium fruticans</i> Bush Germander
<i>Leucophyllum</i> spp. Texas Sage, Texas Ranger	<i>Rhus choriophylla</i> Mearns Sumac	<i>Thamnosma montana</i> Turpentine Broom
<i>Lippia (berlandieri)</i> Mexican Oregano	<i>Rhus microphylla</i> Desert Sumac	<i>Thevetia peruviana</i> Yellow Oleander
<i>Lycium</i> spp. Wolfberry	<i>Rhus ovata</i> Sugarbush	<i>Trixis californica</i> Trixis
<i>Maytenus phyllanthoides</i> Mangle Dulce	<i>Rhus trilobata</i> Skunkbush	<i>Vauquelinia</i> spp. Rosewood
<i>Melaleuca</i> spp. Australian Myrtle	<i>Rhus virens</i> Evergreen Sumac	<i>Viguiera deltoidea</i> Golden Eye
<i>Mimosa biuncifera</i> Wait-a-Minute Bush	<i>Rosmarinus officinalis</i> Bush Rosemary	<i>Viguiera tomentosa</i> Golden Eye
<i>Mimosa dysocarpa</i> Velvet Pod Mimosa	<i>Ruellia californica</i> Ruellia	<i>Westringia rosmariniformis</i> Westringia
<i>Myrtus communis</i> True Myrtle, Roman Myrtle	<i>Ruellia peninsularis</i> Ruellia	<i>Zexmenia hispida</i> cv. 'Devil's River' Rough Zexmenia
<i>Myrtus communis</i> cv. 'Boetica' Twisted Myrtle	<i>Salvia</i> spp. Sage	<i>Ziziphus obtusifolia</i> Greythorn
<i>Myrtus communis</i> cv. 'Compacta' Dwarf Myrtle	<i>Simmondsia chinensis</i> Jojoba	

GROUNDCOVERS

Botanical Name
Common Name

Acacia spp.
Acacia

Asparagus densiflorus
cv. 'Sprengerii'
Sprenger Asparagus

Atriplex spp.
Saltbush

Baccharis spp.
Desert Broom,
Coyote Bush

Clanthus formosus
Sturt's Desert Pea

Convolvulus mauritanicus
Ground Morning Glory

Dalea spp.
Indigo Bush

Gazania spp.
Gazania

Lantana montevidensis
Trailing Lantana

Botanical Name
Common Name

Myoporum parvifolium
Myoporum

Eschscholzia mexicana
Mexican Gold Poppy

Oenothera berlandieri
Mexican Evening Primrose

Oenothera stubbei
Saltillo Primrose

Pentzia incana
Karoo Bush

Rosmarinus officinalis
cv. 'Prostratus'
Prostrate Rosemary

Salvia chamaedryoides
Blue Sage

Salvia farinacea
Mealy Cup Sage

Santolina chamaecyparissus
Lavender Cotton

Botanical Name
Common Name

Santolina virens
Green Santolina

Sesuvium verrucosum
Sea Purslane

Teucrium chamaedrys
cv. 'Prostrata'
Germander

Verbena bipinnatifida
Verbena

Verbena peruviana
Peruvian Verbena

Verbena tenera
Moss Verbena

Verbena rigida
Sandpaper Verbena

Wedelia trilobata
Yellow Dot

Zauschneria spp.
Hummingbird Flower

SUCCULENTS/ACCENTS

Botanical Name
Common Name

Agave spp.
Century Plant, Agave

Aizoaceae spp.
Ice Plant Family

Aloe spp.
Aloe

Bulbine frutescens
Bulbine

Botanical Name
Common Name

Cactaceae
Cactus Family

Dasyllirion spp.
Desert Spoon

Fouquieria spp.
Ocotillo

Hesperaloe spp.
Hesperaloe

Botanical Name
Common Name

Manfreda maculosa
Manfreda

Nolina spp.
Bear-grass

Pedilanthus macrocarpus
Lady Slipper

Yucca spp.
Yucca

ANNUAL WILDFLOWERS

<i>Botanical Name</i> Common Name	<i>Botanical Name</i> Common Name	<i>Botanical Name</i> Common Name
<i>Abronia villosa</i> Sand-verbena	<i>Eschscholzia californica</i> California Poppy	<i>Linum grandiflorum</i> cv. 'Rubrum' Red Flax
<i>Argemone pleiacantha</i> Prickly-poppy	<i>Euphorbia heterophylla</i> Painted Spurge	<i>Lupinus arizonicus</i> Arizona Lupine
<i>Camissonia brevipes</i> Yellow Cups	<i>Gaillardia pulchella</i> Fire Wheel, Blanket Flower	<i>Lupinus densiflorus</i> Lupine
<i>Camissonia cardiophylla</i> Heart-leaved Primrose	<i>Geraea canescens</i> Desert Sunflower	<i>Lupinus sparsiflorus</i> Desert Lupine
<i>Catharanthus roseus</i> Madagascar Periwinkle	<i>Gilia leptantha</i> Showy Blue Gilia	<i>Lupinus succulentus</i> Arroyo Lupine
<i>Centaurea rothrockii</i> Basket Flower	<i>Gomphrena globosa</i> Globe Amaranth	<i>Machaeranthera canescens</i> (<i>Aster bigelovii</i>) Blue Aster
<i>Cirsium neomexicanum</i> Thistle	<i>Helianthus annuus</i> Wild Sunflower	<i>Machaeranthera tanacetifolia</i> (<i>Aster</i>) Purple Aster, Tahoka Daisy
<i>Clarkia amoena</i> Farewell-to-Spring	<i>Helichrysum bracteatum</i> Everlasting Daisy	<i>Matricaria grandiflora</i> Pineapple Weed
<i>Collinsia heterophylla</i> Chinese-houses	<i>Helipterum</i> spp. Helipterum	<i>Matthiola longipetala</i> cv. 'Bicornis' Evening Scented Stock
<i>Coreopsis bigelovii</i> Desert Coreopsis	<i>Ipomoea cristulata</i> Morning Glory	<i>Mentzelia</i> spp. Blazing Star
<i>Cosmos</i> spp. Cosmos	<i>Ipomoea leptotoma</i> Morning Glory	<i>Mimulus bigelovii</i> Bigelow's Monkeyflower
<i>Dimorphotheca</i> spp. African Daisy	<i>Kallstroemia grandiflora</i> Arizona poppy	<i>Mohavea confertiflora</i> Ghost Flower
<i>Eriastrum diffusum</i> Prickly Stars	<i>Lasthenia chrysostoma</i> (<i>Baeria chrysostoma</i>) Goldfield	<i>Monarda austromontana</i> Bee Balm
<i>Eriophyllum lanosum</i> Woolly Daisy	<i>Layia platyglossa</i> Tidy Tips	<i>Monoptilon bellioides</i> Belly Flower
<i>Eriophyllum wallacei</i> Woolly Daisy	<i>Lesquerella gordonii</i> Yellow Blanket	<i>Nama demissum</i> Purple Mat
	<i>Linaria</i> spp. Toadflax	

ANNUAL WILDFLOWERS

(continued)

Botanical Name
Common Name

Nama hispidum
Purple Mat

Nemophila maculata
Five Spot

Nemophila menziesii
Baby Blue Eyes

Oenothera deltoides
Birdcage Evening Primrose

Oenothera primiveris
Evening Primrose

Orthocarpus purpurascens
Owl's Clover

Papaver rhoeas
Shirley Poppy

Botanical Name
Common Name

Pectis papposa
Chinch Weed

Perityle emoryi
Rock Daisy

Phacelia spp.
Scorpion Weed

Plantago spp.
Indian-wheat

Platystemon californicus
Cream Cups

Proboscidea parviflora
Devil's Claw

Rafinesquia neomexicana
Desert-chicory

Botanical Name
Common Name

Salvia columbariae
Chia

Sisymbrium ambiguum
Purple Rocket

Solanum xanti
Solanum

Tithonia rotundifolia
Mexican Sunflower

Ursinia spp.
Ursinia

Verbesina encelioides
Golden Crown Beard

Viguiera annua
Golden Eye

PERENNIAL WILDFLOWERS

Botanical Name
Common Name

Allionia incarnata
Trailing Windmills

Amsonia palmeri
Amsonia

Anigozanthos spp.
Kangaroo-paw

Anisodontea hypomandrum
African Mallow

Arctotis spp.
African Daisy

Argemone munita
Prickly Poppy

Argemone platyceras
Prickly Poppy

Botanical Name
Common Name

Bahia absinthifolia
Bahia

Baileya multiradiata
Desert Marigold

Berlandiera lyrata
Chocolate Flower

Castilleja chromosa
Indian Paintbrush

Castilleja lanata
Indian Paintbrush

Datura innoxia
Sacred Datura, Jimsonweed

Delphinium amabile
Larkspur

Botanical Name
Common Name

Delphinium scaposum
Barestem Larkspur

Dichelostemma pulchellum
Bluedicks

Dyssodia acerosa
Dyssodia

Dyssodia pentachaeta
Dyssodia

Erigeron divergens
Spreading Fleabane

Eupatorium greggii
Eupatorium

Evolvulus arizonicus
Arizona Blue Eyes

PERENNIAL WILDFLOWERS (continued)

Botanical Name
Common Name

Gaura lindheimeri
Desert Orchid

Hesperocallis undulata
Ajo Lily

Hibiscus coulteri
Desert Rose Mallow

Hymenoxys acaulis
Angelita Daisy

Ipomopsis longiflora
Pale Blue Trumpets

Justicia sonorae
Sonoran Justicia

Linum lewisii
Blue Flax

Lotus rigidus
Desert Rock Pea

Machaeranthera gracilis
Yellow Aster

Machaeranthera tortifolia
Mohave Aster

Botanical Name
Common Name

Melampodium leucanthum
Blackfoot Daisy

Mirabilis multiflora
Desert Four O'Clock

Oenothera caespitosa
Tufted Evening Primrose

Penstemon spp.
Penstemon

Portulacaria afra
Elephants Food

Proboscidea altheaefolia
Devil's Claw

Psilostrophe cooperi
Paperflower

Psilostrophe tagetina
Paperflower

Ratibida columnaris
Mexican Hat, Coneflower

Botanical Name
Common Name

Romneya coulteri
Matilija Poppy

Senna covesii (Cassia covesii)
Desert Senna

Sphaeralcea spp.
Globe-mallow

Stachys coccinea
Red Mint, Betony

Tagetes spp.
Marigold

Verbena gooddingii
Goodding Verbena

Zephyranthes spp.
Rain Lily

Zinnia acerosa
Desert Zinnia

Zinnia grandiflora
Rocky Mountain Zinnia

GRASSES

Botanical Name
Common Name

Aristida purpurea
Purple Three-awn

Bouteloua aristidoides
Six-weeks Grama

Bouteloua curtipendula
Side Oats Grama

Bouteloua gracilis
Blue Grama

Botanical Name
Common Name

Erioneuron pulchellum
Fluffgrass

Hilaria rigida
Big Galleta

Muhlenbergia capillaris
Gulf Muhly

Muhlenbergia dumosa
Giant Muhly

Botanical Name
Common Name

Muhlenbergia emersleyi
Bull Grass

Muhlenbergia lindheimeri
Lindheimer Muhly

Muhlenbergia porteri
Bush Muhly

Muhlenbergia rigida
Deer Grass

GRASSES (continued)

Botanical Name
Common Name

Muhlenbergia rigens
Deer Grass

Pennisetum setaceum
cv. 'Cupreum'
Purple Fountain Grass

Botanical Name
Common Name

Schismus barbatus
Mediterranean Grass

Setaria macrostachya
Plains Bristlegrass

Botanical Name
Common Name

Sporobolus cryptandrus
Sand Dropseed

Trichachne californica
Cotton-top

VINES

Botanical Name
Common Name

Antigonon leptopus
Coral Vine, Queens Wreath

Bougainvillea spp.
Bougainvillea

Callaeum macroptera
(*Mascagnia macroptera*)
Yellow Orchid Vine

Campsis radicans
Common Trumpet Creeper

Cissus trifoliata
Grape Ivy

Botanical Name
Common Name

Clematis drummondii
Virgin's Bower

Hardenbergia comptoniana
Wild Wisteria

Kennedia nigricans
Black Yellow Vine

Macfadyena unguis - cati
Cat's Claw

Mascagnia lilacina
Purple Mascagnia

Maurandya antirrhiniflora
Snapdragon Vine

Botanical Name
Common Name

Maurandya wislizeni
Snapdragon Vine

Merremia aurea
Yuca

Podranea ricasoliana
Pink Trumpet Vine

Rhynchosia texana
Rosary Bead Vine

Rosa banksiae
Lady Bank's Rose

Solanum jasminoides
Potato Vine



SUPPLEMENTAL INFORMATION

PHOENIX ACTIVE MANAGEMENT AREA



ARIZONA DEPARTMENT OF WATER RESOURCES

The Department of Water Resources has created this supplemental listing as an informational appendix to the Low Water Use Plant List. The supplement contains a listing of species, which are considered representatives of the genera listed in the Low Water Use Plant List. This list was compiled by the Department of Water Resources in cooperation with the Arizona Municipal Water Users Association, Landscape Technical Committee, comprised of experts from the Desert Botanical Garden, the Arizona Department of Transportation and various municipal, nursery, and landscape specialists in the Phoenix AMA. Individuals wishing to add or delete plants from the list may submit information to the Director for consideration. The Director will amend the list as appropriate.

This supplement is an informational tool only and is not intended to limit the use of any species or cultivars within a genus.

TREES		
Genus	Species	Common Name
<i>Acacia</i>	<i>abyssinica</i>	Abyssinian Acacia
	<i>aneura</i>	Mulga
	<i>coriacea</i>	
	<i>erioloba</i>	Camel Thorn
	<i>farnesiana (smallii, minuta)</i>	Sweet Acacia
	<i>greggii</i>	Catclaw Acacia
	<i>salicina</i>	Willow-leaf Acacia
	<i>schaffneri</i>	Twisted Acacia
	<i>stenophylla</i>	Shoestring Acacia
	<i>willardiana</i>	Palo Blanco
<i>Brahea</i>	<i>armata</i>	Mexican Blue Palm
	<i>edulis</i>	Guadalupe Palm
<i>Bursera</i>	<i>hindsiana</i>	Copal
	<i>microphylla</i>	Elephant Tree
<i>Caesalpinia</i>	<i>cacalaco</i>	Cascalote

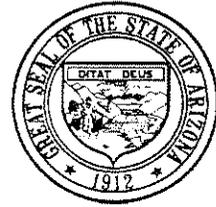
TREES

Genus	Species	Common Name
<i>Casuarina</i>	<i>cunninghamiana</i>	River She Oak
	<i>equisetifolia</i>	Horsetail Tree
	<i>stricta</i>	Coast Beefwood
<i>Cercidium</i>	<i>floridum</i>	Blue Palo Verde
	<i>microphyllum</i>	Foothill Palo Verde
	<i>praecox</i>	Sonoran Palo Verde, Palo Brea
<i>Eucalyptus</i>	<i>erythrocorys</i>	Red Cap Gum
	<i>formanii</i>	Forman's Eucalyptus
	<i>leucoxylon</i>	White Ironbark
	<i>microtheca</i>	Coolibah
	<i>papuana</i>	Ghost Gum
	<i>populnea</i>	Poplar-leaf Eucalyptus
	<i>spathulata</i>	Narrow-leaf Gimlet
<i>Lysiloma</i>	<i>candida</i>	Palo Blanco
	<i>microphylla</i> var. <i>thornberi</i>	Desert Fern
<i>Pistacia</i>	<i>atlantica</i>	Mt. Atlas Pistache
	<i>chinensis</i>	Chinese Pistache
<i>Pithecellobium</i>	<i>flexicaule</i>	Texas Ebony
	<i>mexicanum</i>	Palo Chino
	<i>pallens</i>	Apes-earring
<i>Prosopis</i>	<i>alba</i>	Argentine Mesquite
	<i>chilensis</i>	Chilean Mesquite
	<i>glandulosa</i> var. <i>torreyana</i>	Texas Honey Mesquite
	<i>pubescens</i>	Screwbean Mesquite
	<i>velutina</i> (<i>juliflora</i>)	Velvet Mesquite
<i>Quercus</i>	<i>buckleyi</i>	Texas Red Oak
	<i>emoryi</i>	Emory Oak
	<i>suber</i>	Cork Oak
	<i>turbinella</i>	Shurb Live Oak
	<i>virginiana</i>	Southern Live Oak
<i>Washingtonia</i>	<i>filifera</i>	California Fan Palm
	<i>robusta</i>	Mexican Fan Palm

LOW WATER USING PLANT BIBLIOGRAPHY

PHOENIX ACTIVE MANAGEMENT AREA

ARIZONA DEPARTMENT OF WATER RESOURCES



The Low Water Using Plant Bibliography was created as a reference tool for those interested in additional information about the plants listed in the Department of Water Resource Low Water Using Plant List.

The bibliography was compiled by the Department of Water Resources in cooperation with the Arizona Municipal Water Users Association, Landscape Technical Committee, comprised of experts from the Desert Botanical Garden, the Arizona Department of Transportation and various municipal, nursery and landscape specialists in the Phoenix AMA.

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SHRUBS		
Genus	Species	Common Name
<i>Acacia</i>	<i>angustissima</i> var. <i>hirta</i>	Fern Acacia
	<i>berlandieri</i>	Guajillo
	<i>constricta</i>	White Thorn Acacia
	<i>craspedocarpa</i>	Leather-leaf Acacia
	<i>millefolia</i>	Santa Rita Acacia
	<i>notabilis</i>	
	<i>rigens</i>	Needle Acacia
	<i>rigidula</i>	Blackbrush Acacia
<i>Aloysia</i>	<i>gratissima</i>	Bee Brush
	<i>lycioides</i>	Bee Bush
	<i>macrostachya</i>	Sweet-stem
	<i>wrightii</i>	Oreganillo
<i>Anisacanthus</i>	<i>andersonii</i>	Anderson's Honeysuckle
	<i>quadrifidus</i>	Flame Honeysuckle
	<i>thurberi</i>	Desert Honeysuckle
<i>Artemesia</i>	<i>ludoviciana</i>	White Sage
<i>Atriplex</i>	<i>canescens</i>	Fourwing Saltbush
	<i>hymenelytra</i>	Desert Holly
	<i>lentiformis</i>	Quail Bush
	<i>nummularia</i>	Old Man Saltbush
<i>Baccharis</i>	<i>sarothroides</i>	Desert Broom
<i>Caesalpinia</i>	<i>gilliesii</i>	Desert Bird of Paradise
	<i>mexicana</i>	Mexican Bird of Paradise
	<i>pulcherrima</i>	Red Bird of Paradise
<i>Calothamnus</i>	<i>quadrifidus</i>	
	<i>villosus</i>	Woolly Netbush
<i>Cassia (Senna)</i>	<i>artemisioides</i>	Feathery Cassia
	<i>biflora</i>	Twin Flower Cassia
	<i>goldmannii</i>	
	<i>nemophila</i>	Desert Cassia
	<i>phyllodinea</i>	Silver-leaf Cassia
	<i>wislizenii</i>	Shrubby Cassia
<i>Cistus</i>	<i>incanus (villosus)</i>	Rockrose
<i>Dalea</i>	<i>bicolor</i> var. <i>argyraea</i>	Silver Dalea
	<i>frutescens</i>	Black Dalea
	<i>pulchra</i>	Indigo Bush
	<i>versicolor</i> var. <i>sessilis</i>	Wislizenus Dalea

SHRUBS		
Genus	Species	Common Name
<i>Encelia</i>	<i>farinosa</i>	Brittle Bush
<i>Ephedra</i>	<i>nevadensis</i> var. <i>aspera</i> <i>trifurca</i>	Boundary Ephedra Mormon Tea
<i>Eremophila</i>	<i>glabra</i> <i>maculata</i>	Spotted Emu Bush Emu Bush
<i>Eriogonum</i>	<i>fasciculatum</i>	California Buckwheat
<i>Jatropha</i>	<i>cardiophylla</i> <i>cinerea</i> <i>dioica</i>	Limberbush Lombay Leatherstem
<i>Justicia</i>	<i>californica</i> <i>candicans</i> (<i>ovata</i>) <i>spicigera</i> <i>sonorae</i>	Chuparosa Red Justicia Mexican Honeysuckle Palm Canyon Justicia
<i>Leucophyllum</i>	<i>candidum</i> <i>frutescens</i> <i>laevigatum</i> <i>langmanniae</i> <i>pruinatum</i> <i>zygophyllum</i>	Silver Sage (cv. 'Silver Cloud', 'Thunder Cloud') Texas Sage (cv. 'Green Cloud', 'White Cloud', 'Compacta') Chihuahuan Sage Sierra Madre Sage Fragrant Sage Blue Ranger
<i>Lycium</i>	<i>andersonii</i> <i>brevipes</i> <i>fremontii</i>	Anderson Thornbush Fruittilla Wolfberry
<i>Pyracantha</i>	<i>coccinea</i>	Firethorn
<i>Salvia</i>	<i>clevelandii</i> <i>greggii</i> <i>leucantha</i> <i>leucophylla</i> <i>dorrii</i> <i>chamaedryoides</i>	Chapparal Sage Autumn Sage Mexican Bush Sage Purple Sage Desert Sage Blue Sage
<i>Senna</i> (<i>Cassia</i>)	<i>artemisioides</i> <i>biflora</i> <i>goldmannii</i> <i>nemophila</i> <i>phyllodinea</i> <i>wislizenii</i>	Feathery Cassia Twin Flower Cassia Desert Cassia Silver-leaf Cassia Shrubby Cassia

SHRUBS		
Genus	Species	Common Name
<i>Vauquelinia</i>	<i>corymbosa</i>	Narrow-leaf Rosewood
	<i>californica</i>	Arizona Rosewood

GROUNDCOVERS		
Genus	Species	Common Name
<i>Acacia</i>	<i>redolens</i>	Trailing Acacia (cv. 'Desert Carpet')
<i>Atriplex</i>	<i>semibaccata</i>	Australian Saltbush
<i>Baccharis</i>	cv. 'Centennial'	Centennial Baccharis
<i>Dalea</i>	<i>greggii</i>	Trailing Dalea
<i>Gazania</i>	<i>rigens</i>	Trailing Gazania
<i>Zauschneria</i>	<i>californica</i>	Hummingbird Flower

SUCCULENTS/ACCENTS		
Genus	Species	Common Name
<i>Agave</i>	<i>americana</i>	Century Plant
	<i>colorata</i>	Mescal Ceniza
	<i>parryi</i>	Parry's Agave
	<i>victoriae - reginae</i>	Royal Agave
	<i>vilmoriniana</i>	Octopus Agave
	<i>murpheyi</i>	Murphy's Agave
<i>Aizoaceae - Ice Plant Family</i>		
<i>Carpobrotus</i>	<i>chilensis</i>	Ice Plant
	<i>edulis</i>	Hottentot Fig
<i>Cephalophyllum</i>	cv. 'Red Spike'	Red Spike Ice Plant
<i>Drosanthemum</i>	<i>speciosum</i>	Dewflower
<i>Malephora</i>	<i>crocea</i>	Ice Plant
<i>Mesembryanthemum</i>	<i>crystallinum</i>	Common Ice Plant
<i>Aloe</i>	<i>barbadensis (vera)</i>	Medicinal Aloe
	<i>ferox</i>	Tree Aloe
	<i>saponaria</i>	Tiger Aloe
	<i>marlothii</i>	
	<i>striata</i>	Coral Aloe

SUCCULENTS/ACCENTS

Genus	Species	Common Name
Cactaceae - Cactus Family		
	<i>Carnegiea gigantea</i>	Saguaro
	<i>Cereus hildmannianus</i>	Hildmann's Cereus
	<i>Echinocactus grusonii</i>	Golden Barrel
	<i>Echinocereus engelmannii</i>	Engelmann's Hedgehog
	<i>Ferocactus acanthodes</i>	Compass Barrel
	<i>Ferocactus wislizenii</i>	Fishhook Barrel
	<i>Lophocereus schottii</i>	Senita
	<i>Opuntia acanthocarpa</i>	Buckhorn Cholla
	<i>Opuntia basilaris</i>	Beavertail Prickly Pear
	<i>Opuntia bigelovii</i>	Teddy Bear Cholla
	<i>Opuntia engelmannii</i>	Desert Prickly Pear
	<i>Opuntia ficus-indica</i>	Indian Fig
	<i>Opuntia violacea</i>	Purple Prickly Pear
	<i>Pachycereus marginatus</i>	Mexican Organ Pipe
	<i>Stenocereus thurberi</i>	Arizona Organ Pipe
	<i>Trichocereus candicans</i>	Argentine Trichocereus
<i>Dasyliirion</i>	<i>acrotriche</i> <i>wheeleri</i>	Green Desert Spoon Sotol, Desert Spoon
<i>Fouquieria</i>	<i>macdougalii</i> <i>splendens</i>	Chunari Ocotillo
<i>Hesperaloe</i>	<i>campanula</i> <i>funifera</i> <i>parviflora</i> <i>nocturna</i>	Bell Flower Coahuilan Hesperaloe Red Hesperaloe
<i>Nolina</i>	<i>matapensis</i> <i>microcarpa</i>	Tree Bear Grass Bear Grass
<i>Yucca</i>	<i>aloifolia</i> <i>baccata</i> <i>brevifolia</i> <i>elata</i> <i>rigida</i> <i>rostrata</i>	Spanish Bayonet Banana Yucca Joshua Tree Soaptree Yucca Blue Yucca Beaked Yucca

ANNUAL WILDFLOWERS		
Genus	Species	Common Name
<i>Cosmos</i>	<i>bipinnatus</i>	Yellow Cosmos
	<i>parviflorus</i>	
	<i>sulphureus</i>	
<i>Dimorphotheca</i>	<i>sinuata</i>	African Daisy
<i>Helipterum</i>	<i>roseum</i>	Pink Everlasting
<i>Linaria</i>	<i>texana</i>	Toadflax
	<i>pinnifolia</i>	Toadflax
	<i>maroccana</i>	Toadflax
<i>Mentzelia</i>	<i>involucrata</i>	Morning Stars
	<i>lindleyi</i>	Blazing Stars
<i>Phacelia</i>	<i>campanularia</i>	California Bluebell
	<i>tanacetifolia</i>	Scorpion Weed
<i>Plantago</i>	<i>insularis</i>	Indian Wheat
<i>Ursinia</i>	<i>calenduliflora</i>	
	<i>chrysanthemoides</i>	
	<i>speciosa</i>	

PERENNIAL WILDFLOWERS		
Genus	Species	Common Name
<i>Anigozanthos</i>	<i>flavidus</i>	Kangaroo Paw
	<i>viridis</i>	Kangaroo Paw
	<i>manglesii</i>	Kangaroo Paw
<i>Arctotis</i>	<i>acaulis</i>	African Daisy
<i>Penstemon</i>	<i>baccharifolius</i>	Rock Penstemon
	<i>barbatus</i>	Scarlet Penstemon
	<i>eatonii</i>	Firecracker Penstemon
	<i>palmeri</i>	Palmer's Penstemon
	<i>parryi</i>	Parry's Penstemon
	<i>pseudospectabilis</i>	Canyon Penstemon
	<i>spectabilis</i>	Royal Penstemon
<i>superbus</i>	Superb Penstemon	
<i>Sphaeralcea</i>	<i>ambigua</i>	Globe Mallow

PERENNIAL WILDFLOWERS		
Genus	Species	Common Name
<i>Tagetes</i>	<i>palmeri(lemmoni)</i>	Mt. Lemmon Marigold
	<i>lucida</i>	Mexican Mint Marigold
<i>Zephyranthes</i>	<i>candida</i>	Zephyr Flower
	<i>citrina</i>	Fairy Lily
	<i>grandiflora</i>	Rain Lily

VINES		
Genus	Species	Common Name
<i>Bougainvillea</i>	<i>spectabilis (brasiliensis)</i>	Bougainvillea