

# Tentative Subdivision Map Application **Prado Ranch North**

Submitted to Washoe County

January 16, 2018

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Prepared for

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## Washoe County Development Application

Your entire application is a public record. If you have a concern about releasing personal information, please contact Planning and Development staff at 775.328.3600.

<b>Project Information</b>		Staff Assigned Case No.: _____	
Project Name: <b>Prado Ranch North</b>			
Project Description: A Tentative Map for a 506 lot common open space development with single family residential lots ranging in size from 5,500 - 24,058 square feet.			
Project Address: 0 Lemmon Drive, Washoe County 89506			
Project Area (acres or square feet): ~154.5 acres			
Project Location (with point of reference to major cross streets <b>AND</b> area locator):			
<small>The proposed project is located along the east side of Lemmon Drive between Nectar Street and Tupelo Street in the North Valleys Area Plan/LVS Character Mgmt Area</small>			
Assessor's Parcel No.(s):	Parcel Acreage:	Assessor's Parcel No.(s):	Parcel Acreage:
See Attached List		See Attached List	
Section(s)/Township/Range: S23/T21/R19 and S22/T21/R19			
Indicate any previous Washoe County approvals associated with this application:			
Case No.(s).			
<b>Applicant Information (attach additional sheets if necessary)</b>			
<b>Property Owner:</b>		<b>Professional Consultant:</b>	
Name: North Valleys Investment Group LLC		Name: Wood Rodgers, Inc.	
Address: 10345 Professional Circle Suite 100		Address: 1361 Corporate Blvd; Reno, NV	
Zip: 89521		Zip: 89502	
Phone: 775-789-3234	Fax:	Phone: 775-823-5258	Fax: 823-4066
Email:		Email: shuggins@woodrodgers.com	
Cell:	Other:	Cell: 775-250-8213	Other:
Contact Person: Dustin Barker		Contact Person: Stacie Huggins	
<b>Applicant/Developer: Lansing-Arcus, LLC</b>		<b>Other Persons to be Contacted:</b>	
Name:		Name: Chris Coombs	
Address: 12671 High Bluff Drive, Suite 150, San Diego, CA		Address:	
Zip: 92130		Zip:	
Phone: 858-523-0719	Fax:	Phone:	Fax:
Email: wroberts@lansingcompanies.com		Email: coombs.lansing@gmail.com	
Cell:	Other:	Cell: 775-815-8425	Other:
Contact Person: Will Roberts		Contact Person: Chris Coombs	
<b>For Office Use Only</b>			
Date Received:	Initial:	Planning Area:	
County Commission District:		Master Plan Designation(s):	
CAB(s):		Regulatory Zoning(s):	

## Tentative Subdivision Map Application Supplemental Information

(All required information may be separately attached)

Chapter 110 of the Washoe County Code is commonly known as the Development Code. Specific references to tentative subdivision maps may be found in Article 608, Tentative Subdivision Maps.

1. What is the location (address or distance and direction from nearest intersection)?

The proposed Prado Ranch North project is located within Washoe County in an area that is commonly referred to as the North Valleys near the intersection of Lemmon and Chickadee Drive. More specifically the project site is bordered by Lemmon Drive to the west, Tupelo Street and undeveloped land to the north, Chesapeake Drive to the east, and Nectar Street to the south.

2. What is the subdivision name (proposed name must not duplicate the name of any existing subdivision)?

Prado Ranch North

3. Density and lot design:

a. Acreage of project site	154.5 acres
b. Total number of lots	506
c. Dwelling units per acre	3.3 du/acre
d. Minimum and maximum area of proposed lots	5,500 sq. ft. to 24,058 sq. ft.
e. Minimum width of proposed lots	50 feet
f. Average lot size	8,825 sq. ft.

4. Utilities:

a. Sewer Service	Reno-Stead Wastewater Treatment Facility
b. Electrical Service	NV Energy
c. Telephone Service	AT&T
d. LPG or Natural Gas Service	NV Energy
e. Solid Waste Disposal Service	Waste Management
f. Cable Television Service	Charter Communications
g. Water Service	TMWA

5. For common open space subdivisions (Article 408), please answer the following:

a. Acreage of common open space:

17.5+/- acres

b. Development constraints within common open space (slope, wetlands, faults, springs, ridgelines):

Common open space areas provided to address perimeter buffering, on-site drainage channels, pocket parks within each Village, and a neighborhood park. No development constraints exist within the areas proposed for common open space.

c. Range of lot sizes (include minimum and maximum lot size):

min lot size = 5,500+/- sqft; max lot size = 24,058+/- sqft

d. Average lot size:

8,825+/- square feet

e. Proposed yard setbacks if different from standard:

Setbacks for Prado Ranch North will be in accordance with the zoning setbacks outlined for MDS4. Specifically, all lots will include 20 feet on the front & rear and 7 feet on the sides.

The project does propose to vary the minimum lot width from 70 feet to 55 feet.

f. Justification for setback reduction or increase, if requested:

The varied lot width is proposed in order to achieve a more efficient use of the site while providing open space corridors and buffers around the perimeter. In accordance with Article 408, Section 110.408.25 typical building envelopes have been included on the tentative map for reference. See Sheets G-01 thru G-06 of the tentative map plans.

g. Identify all proposed non-residential uses:

The proposed project does not include any non-residential uses at this time.

- h. Improvements proposed for the common open space:

The project includes approximately 17.5 acres of common open space which includes perimeter buffers, drainage channels, and parks. Specific improvements in common open space areas include an 8-foot wide DG meandering path within the perimeter buffers providing connection to existing pedestrian access, 60-100 ft wide drainage channels designed to safely convey storm flows across the site and into Swan Lake, pocket parks in each Village and a larger neighborhood park accessible to the public. Refer to Section 2 - Project Description and Section 4 - Drainage Report for additional information.

- i. Describe or show on the tentative map any public or private trail systems within common open space of the development:

In accordance with the North Valleys Area Plan, the proposed project includes a meandering 8-foot wide DG path located within the 30-foot wide landscape buffer around the project perimeter. This meandering path will provide public connectivity in and around the proposed project. In addition, sidewalks will be provided along local roadways.

- j. Describe the connectivity of the proposed trail system with existing trails or open space adjacent to or near the property:

There are currently no known trail "systems" in the area. However, there is an existing multi-use paved path along the east side of Lemmon Dr. The 8-foot meandering DG path proposed as part of this project around the perimeter will provide an opportunity for pedestrians to safely access the Lemmon Dr path in several locations. It should also be noted that this DG path will provide connectivity to existing undeveloped areas surrounding the project.

- k. If there are ridgelines on the property, how are they protected from development?

There are no ridgelines on the property.

- l. Will fencing be allowed on lot lines or restricted? If so, how?

Yes, solid privacy fencing will be provided on side and rear lot lines between lots in accordance with Washoe County standards.

m. Identify the party responsible for maintenance of the common open space:

It is anticipated that a Homeowners Association (HOA), Landscape Maintenance Association (LMA) or equivalent will be established for the overall project and will be responsible for maintenance associated with open space, drainage channels and perimeter buffers.

6. Is the project adjacent to public lands or impacted by "Presumed Public Roads" as shown on the adopted April 27, 1999 Presumed Public Roads (see Washoe County Engineering website at <http://www.washoecounty.us/pubworks/engineering.htm>). If so, how is access to those features provided?

According to the 1999 Presumed Public Roads map, the project site is bisected by a "presumed public road" known as Chickadee Drive. As a part of the proposed project, Chickadee Dr is proposed to be realigned and improved to arterial standards in accordance with the sections identified on sheet LB-1 of the Tentative Map. This road will continue to provide connectivity to the east where it ultimately connects, via dirt roads, to Eagle Canyon Road.

7. Is the parcel within the Truckee Meadows Service Area?

Yes  No

8. Is the parcel within the Cooperative Planning Area as defined by the Regional Plan?

Yes  No If yes, within what city? City of Reno

9. Will a special use permit be required for utility improvement? If so, what special use permits are required and are they submitted with the application package?

No special use permits are required for this project at this time.

10. Has an archeological survey been reviewed and approved by SHPO on the property? If yes, what were the findings?

At this time, an archaeological survey has not been conducted.



11. Indicate the type and quantity of water rights the application has or proposes to have available:

a. Permit #	N/A	acre-feet per year	
b. Certificate #	N/A	acre-feet per year	
c. Surface Claim #	N/A	acre-feet per year	
d. Other #	N/A	acre-feet per year	

e. Title of those rights (as filed with the State Engineer in the Division of Water Resources of the Department of Conservation and Natural Resources):

The applicant has conducted an Annexation/Discovery analysis with Truckee Meadows Water Authority. The analysis found that the project site is currently outside of the TMWA retail service territory and will require annexation by TMWA prior to a water service agreement. According to the TMWA Discovery, supply to the project can be met from the Fish Springs Ranch supply via TMWA's high pressure supply main in Matterhorn Boulevard.

For additional information, refer to TMWA Annexation/Discovery in Section 4 of this submittal packet.

12. Describe the aspects of the tentative subdivision that contribute to energy conservation:

To address energy conservation, homes are anticipated to be constructed using any of the following: smart or programmable thermostats, high efficiency heating and cooling systems, efficient lighting and appliances, energy efficient windows, and water protection systems.

13. Is the subject property in an area identified Planning and Development as potentially containing rare or endangered plants and/or animals, critical breeding habitat, migration routes or winter range? If so, please list the species and describe what mitigation measures will be taken to prevent adverse impacts to the species:

A review of the Master Plan Conservation Element confirms that the project site is NOT in an area containing rare or endangered plants and/or animals, critical breeding habits, migration routes or winter range.

14. If private roads are proposed, will the community be gated? If so, is a public trail system easement provided through the subdivision?

The proposed project does not include any private roads or gates. All roads proposed with this project will be designed to meet Washoe County street standards and safe pedestrian access will be provided via sidewalks through the project site.

15. Is the subject property located adjacent to an existing residential subdivision? If so, describe how the tentative map complies with each additional adopted policy and code requirement of Article 434, Regional Development Standards within Cooperative Planning Areas and all of Washoe County, in particular, grading within 50 and 200 feet of the adjacent developed properties under 5 acres and parcel matching criteria:

Yes, since the proposed project is surrounded by existing residential lots, a 30-foot wide common open space buffer with an 8-foot wide DG path has been provided around the entire perimeter. To further mitigate impacts of new development adjacent to existing development, lots proposed adjacent to existing residents (around the project perimeter) will be a minimum of 15,000 square feet. These design elements are in conformance with the Lemmon Valley Character Management Area found in the North Valleys Area Plan.

16. Are there any applicable policies of the adopted area plan in which the project is located that require compliance? If so, which policies and how does the project comply?

Goal 6 of the North Valleys Area Plan includes several policies that relate to this project. Specifically, Policy NV6.1 includes requirements specific to new single family subdivisions on properties designated MDS4. As designed and previously discussed, this project complies with these standards specifically addressing residential adjacency buffers, frontage only on new roads, and minimal street lighting. Refer to Section 2 - Project Description for additional information.

17. Are there any applicable area plan modifiers in the Development Code in which the project is located that require compliance? If so, which modifiers and how does the project comply?

Section 110.208.10 Residential Subdivision Landscaping requires the use of climatic adaptive landscaping in the front yard of each new residential lot. As part of the proposal all new lots will be subject to this modifier. Additionally there are no signs proposed in this project, however, any new sign will be subject to Section 110.208.20 of the WC development code.

18. Will the project be completed in one phase or is phasing planned? If so, please provide that phasing plan:

The project is expected to be completed in multiple phases. Development is phased to stay outside of the 100-year flood zone until a regional drainage solution is adopted by both Washoe County and City of Reno.

A preliminary phasing plan has been included in Section 3 of this application.

19. Is the project subject to Article 424, Hillside Development? If yes, please address all requirements of the Hillside Ordinance in a separate set of attachments and maps.

Yes     No    If yes, include a separate set of attachments and maps.

20. Is the project subject to Article 418, Significant Hydrologic Resources? If yes, please address Special Review Considerations within Section 110.418.30 in a separate attachment.

Yes     No    If yes, include separate attachments.

### Grading

Please complete the following additional questions if the project anticipates grading that involves: (1) Disturbed area exceeding twenty-five thousand (25,000) square feet not covered by streets, buildings and landscaping; (2) More than one thousand (1,000) cubic yards of earth to be imported and placed as fill in a special flood hazard area; (3) More than five thousand (5,000) cubic yards of earth to be imported and placed as fill; (4) More than one thousand (1,000) cubic yards to be excavated, whether or not the earth will be exported from the property; or (5) If a permanent earthen structure will be established over four and one-half (4.5) feet high:

21. How many cubic yards of material are you proposing to excavate on site?

0 cubic yards will be excavated on-site

22. How many cubic yards of material are you exporting or importing? If exporting of material is anticipated, where will the material be sent? If the disposal site is within unincorporated Washoe County, what measures will be taken for erosion control and revegetation at the site? If none, how are you balancing the work on-site?

The project will require approximately 1 million cubic yards of import. It is anticipated that the import needed for this project will come from other properties owned by the Developer.

23. Can the disturbed area be seen from off-site? If yes, from which directions, and which properties or roadways? What measures will be taken to mitigate their impacts?

Yes. The proposed development will be visible from all directions. A 30 foot landscaped buffer with trees will be provided adjacent to all existing lots to mitigate visual impacts. Additionally, fencing will be provided along all side and rear lot lines to further mitigate visual impacts.

24. What is the slope (Horizontal:Vertical) of the cut and fill areas proposed to be? What methods will be used to prevent erosion until the revegetation is established?

Slopes associated with the proposed development will not exceed 3:1 maximum. Where necessary, erosion control matting or equivalent may be utilized until such revegetation is established.

25. Are you planning any berms and, if so, how tall is the berm at its highest? How will it be stabilized and/or revegetated?

No berms are proposed as a part of this project.

26. Are retaining walls going to be required? If so, how high will the walls be, will there be multiple walls with intervening terracing, and what is the wall construction (i.e. rockery, concrete, timber, manufactured block)? How will the visual impacts be mitigated?

Due to topography, it is likely that retaining walls will be required in some areas adjacent to the 30 foot wide landscape buffer. Where necessary, the site has been designed to ensure that walls will not exceed 6 feet in height and will likely be manufactured block or equivalent.

27. Will the grading proposed require removal of any trees? If so, what species, how many, and of what size?

No. The proposed project does not require removal of any trees.

28. What type of revegetation seed mix are you planning to use and how many pounds per acre do you intend to broadcast? Will you use mulch and, if so, what type?

Specific seed mix for revegetation areas will be determined during final design, however, the applicant does not anticipate using mulch.

29. How are you providing temporary irrigation to the disturbed area?

The proposed project does not include temporary irrigation. Dust control on flatter areas of the graded site will be provided through the use of dust palliative or other acceptable, non-irrigated means.

30. Have you reviewed the revegetation plan with the Washoe Storey Conservation District? If yes, have you incorporated their suggestions?

No.

## **Project Description**

### **Location**

The Prado Ranch North project is located at the intersection of Lemmon and Chickadee Drive within Washoe County in an area that is commonly referred to as the North Valleys. The project area consists of 154.5± acres and includes all of Washoe County Assessor Parcel Number (APN) of 080-723-01 and portions of APN's 080-723-02, & 03, and 080-721-03, 04 & 05. The property is generally surrounded by undeveloped/vacant land and single-family residences and is more specifically bordered by Lemmon Drive and Matterhorn Blvd to the west, Tupelo Street and undeveloped land to the north, undeveloped land and Chesapeake Drive to the east, and Nectar Street to the south, (*Refer to Vicinity Map, Assessor's Parcel Map and Site Aerial in Section 3 of this submittal packet*).

### **Site Characteristics**

The project site is in a nearly flat area with gentle sloping from east to west. The entire site is free of steep slopes with no slope over 15%. The site is divided by two roads running east to west, Chickadee Drive and Sand Pit Road. Chickadee Drive is a paved road that provides access to Lemmon Drive and the existing residential development to the east. Sand Pit Road is a dirt road providing access to a sand pit northeast of the site. The site is characterized by native vegetation (primarily native shrubs, sagebrush, and grasses). The southwestern portion of the site is within the FEMA flood hazard zone AE.

### **Zoning and Master Plan Designations**

The project site is located within the Lemmon Valley Suburban Character Management Area (LVSCMA) of the North Valleys Area Plan (NVAP). The Master Plan designation is Suburban Residential and the zoning designation is Medium Density Suburban 4 (MDS4) (*Refer to Existing Zoning Map, Existing Master Plan Map Exhibits in Section 3 of this submittal packet*).

### **Character Management Area**

Goal six of the North Valleys Area Plan includes several policies that apply to the Lemmon Valley Suburban Character Management Area (LVSCMA). Policy NV 6.1 applies to new single family residential developments on properties zoned MDS4. Specifically, the proposed project is in conformance with the following policies:

***NV6.1(a) – When adjacent to or across a street from residential development in existence as of the final adoption of this plan, provide a minimum 30-foot wide, open space buffer, containing a minimum 8-foot wide decomposed granite trail, on the perimeter AND maintain a minimum parcel size of 15,000 square feet for any parcel located on the perimeter; OR provide for perimeter parcel sizes that match the existing residential parcels.***

**RESPONSE:** There are existing single-family residences to the northwest and southeast of the project area. In accordance with the Policy, proposed parcels adjacent to existing development have been designed as 15,000 square foot minimum lots and 30-foot landscape buffer with an 8-foot wide DG path. Furthermore, in addition to these standards, additional open space and drainage facilities have been provided along/adjacent to roads to further help minimize visual impacts to the existing residences and to be in compliance with the requirements in the LVSCMA.

***NV6.1 (b) – Limit all dwellings to a single story located on the perimeter when adjacent to or across a street from residential development in existence as of the final adoption of this plan.***

**RESPONSE:** Although house plans have not yet been formalized for this project, the Applicant understands and will restrict perimeter housing when adjacent to or across a street from existing residential to single story homes.

***NV6.1 (d) – In regulatory zones LDS 1, LDS2; MDS3; and LDS4, new residential parcels shall not front on existing streets.***

**RESPONSE:** As designed, all proposed lots front onto new streets within the proposed development. No lots associated with Prado Ranch North will have direct access to existing streets in the area.

***NV6.1 (h) – Minimize the use of street lighting. Any lighting proposed must show how it is consistent with current best practice “dark-sky” standards.***

**RESPONSE:** The proposed project does not include street lighting with the exception of at main street intersections. Where street lights are proposed at intersections, they will not exceed 15 feet in height and will include refractors to direct lighting down toward the street.

#### **Current Request**

The current request is to develop a 506-lot common open space single family residential development on approximately 154.5± acres. To meet the common open space (COS) requirements, the proposed project has been designed with a mix of lot sizes ranging from 5,500 square feet to 24,058 square feet with an average lot size of 8,825 square feet. The overall density is 3.3 units per acre and is in accordance with the allowed maximum density of 4.0 units per acre as outlined in the NVAP. The project includes 17.5± acres of common area, open space and neighborhood parks and is in accordance with Article 408 of the Washoe County Development Code.

The request is summarized as follows:

- A **Tentative Subdivision Map** to permit development of a 506-lot single-family subdivision on 154.5± acres through the Common Open Space Development Standards.

#### **Common Open Space Tentative Map Design**

The Prado Ranch North Common Open Space development is an appropriate use for the project site given the preservations of open space and efficient use of land. The Tentative Map has been designed in conformance with the zoning designation (MDS4) with a mix of lot sizes intended to provide a transition from the larger existing residential to the proposed slightly smaller residential lots. As noted previously, the proposed project has been designed in accordance with the policies outlined in the NVAP Lemmon Valley Suburban Character Management Area and other pertinent Washoe County Development Code regulations.

The project has been divided into four Villages with a newly proposed major arterial road, Prado Ranch Boulevard, which will connect to Lemmon Drive and provide access to the northeast, eventually connecting to Eagle Canyon (as identified in the RTC RTP). This new road will replace and improve the existing connection between Chickadee Drive and Lemmon Drive and Chesapeake Drive. Villages 1, 2, and 3 will be located to the south of Prado Ranch Blvd. and Village 4 will be located to the north.

Looking specifically at density associated with the proposed project, in the Medium Density Suburban-4 zoning district, 4 dwelling units per acre are permitted. Based on the total project acreage, under the existing zoning, a total of 615 units are permitted. As designed, the proposed project is seeking approval for 506 lots, which equates to 3.3 dwelling units per acre.

Although the minimum lot size in the MDS4 zoning designation is 9,000 square feet, through the Common Open Space development standards, lot sizes can be modified as long as the overall project, and in this case, each Village, is within the minimum number of dwelling units per acre. The breakdown below shows that in addition to the overall density, each Village within the project meets the density requirement.

- Village 1 (7,000 SF – 70x100) = ±77 Lots; 3.9 du/ac
- Village 2 (6,000 SF – 60x100) = ±147 Lots; 3.6 du/ac
- Village 3 (7,000 SF – 70x100) = ±131 Lots; 3.6 du/ac
- Village 4 (6,000 SF – 60x100) = ±151 Lots; 3.3 du/ac

It is worth noting that in accordance with the NVAP, 15,000 square foot lots have been proposed along the project perimeter adjacent to existing development. These perimeter lots provide a transition between the larger existing lots and the proposed lots.

In addition to residential development, the project includes approximately 17.5± acres of common open space including a 3.5-acre neighborhood park site located near Village 4. Each Village also includes a pocket park that will be maintained by an HOA or equivalent. (*Refer to Tentative Map Plan Set in Section 3 and Map Pocket of this submittal packet*).

Minimum lot sizes, widths and setbacks for the tentative map are proposed as follows:

Minimum Lot Size: 5,500± square feet

Minimum Lot Width: 55 feet

Minimum Building Envelope: 2,100 square feet

Minimum Setbacks:

Front Yard Setback = 20 feet

Side Yard Setback = 7 feet

Rear Yard Setback = 20 feet

It should be noted that approximately 12± acres along Lemmon Drive have been reserved for “Future Development” and is not a part of this tentative map application. This area was not included in the Single-Family subdivision in order to provide flexibility and options for future use, which may include Commercial uses as allowed in the MDS4 zoning district when market demands warrant such development.

House Design

Homes within each village are proposed to be one and two-story designs with minimum two car garages. As previously mentioned, house plans have not yet been formalized for this project, however, the Applicant understands and will restrict perimeter housing when adjacent to or across a street from existing residential to single story homes.



### **Grading**

The project site grading is such that the site is virtually all fill. As any portion of the project that falls within the AE flood hazard zone will need to be raised to an elevation in accordance with Section 110.416.65 of the Washoe County Development Code, much of the western edge of the site adjacent to Lemmon Drive must be raised above existing ground. Due to minimum street slope requirements within Washoe County Code, the grading on site is unable to generate any onsite cut to offset fill, and therefore the site will require importation of approximately 1,000,000 cubic yards from other properties owned by the Developer to complete onsite grading.

It should be noted that if it is determined that raising the elevation of any portion of Lemmon Drive directly adjacent to the proposed project is necessary, then Lansing-ARCUS will work with Washoe County to determine a mutually agreeable elevation to satisfy any potential requirements set forth by the Engineering & Capital Projects Division. *(Refer to Tentative Map Plan Set in Section 3 and Map Pocket of this submittal packet)*

### **Drainage**

A drainage system consisting of two open channels will collect offsite sheet flows from the undeveloped land and the surrounding residential units to the north and east and convey it through the property to the west and into Swan Lake. The main channel will range in size from 60-100 feet wide and will carry offsite flows as well as flows from Villages 1 and 3 and convey them to the west. The main channel will convey these flows along the south side of the proposed Prado Ranch Blvd, under Lemmon Drive through pipes and into a retention basin located within the City of Reno. A smaller channel approximately 60 feet wide will feed into the main channel. This will run north to south and will collect offsite flows north of the site as well as onsite flows from portions of Village 4 and convey them south under Prado Ranch Blvd and into the main channel.

Onsite sheet flows from the Villages and streets will flow into gutters which will convey the storm water into drop inlets and underground storm pipes. The storm pipes will then convey to the open channel ditches and be conveyed through the site, under Lemmon Drive, and into an offsite retention basin. Onsite flows from Village 2 will be conveyed under Lemmon Drive and into the retention basin. There will be no negative impacts to adjacent or downstream properties as a result of the proposed development during the 5-year and 100-year storms due to the implementation of the proposed mitigation/retention basin. This retention basin will be located across the street from Lemmon Drive on APN 080-722-03 within the City of Reno, *(Refer to Tentative Map Plan set in Section 3 and Preliminary Drainage Report in Section 4 and Map Pocket of this submittal packet)*.

Any fill placed within the flood hazard zone will be mitigated as required by County Code, in addition to the increase in storm water volume to the flood hazard area due to development of the project. The mitigation area is proposed on APN 080-722-03 which is located within the City of Reno limits across the street of Lemmon Drive. In accordance with the Preliminary Hydrology Report in Section 4 of this application it is anticipated that up to 247,000 cubic yards will be removed from this parcel as mitigation for the fill that will occur within the AE flood hazard zone in the project area, in addition to mitigation for increase in storm water volume due to development. Any permits required to provide this mitigation will be obtained through the City of Reno. Disturbed areas will be landscaped and/or revegetated with native vegetation and stabilized in accordance with Washoe County requirements, *(Refer to Tentative Map Plan Set in Section 3 and Map Pocket of this submittal packet)*.

### **Traffic and Circulation**

There will be several access points into the proposed project with the main entrance being the newly proposed Prado Ranch Blvd accessed off of Lemmon Drive and will be located approximately 1,600 feet north of Nectar Street and approximately 1,000 feet south of Tupelo Street. Prado Ranch Blvd is referred to as the major arterial on Sheet LB-1 of the tentative map plans and will extend off Lemmon Drive, run northeasterly through the site and terminate at the project's northeast boundary.

Prado Ranch Parkway will replace the existing segment of Chickadee Drive between Lemmon Drive and Chesapeake Drive. As part of the project, a new segment of Chickadee Drive will be constructed between Chesapeake Drive and Prado Ranch Parkway near the project's northeast boundary. Access to the four villages will be provided from two access roads intersecting Prado Ranch Parkway and one access road intersecting Nectar Street and Chickadee Drive.

Prado Ranch Blvd will act as the backbone road and provide several points of access to the north and south subdivisions as well as connectivity to the existing Chickadee Drive. From Prado Ranch Blvd several collectors will provide access into the various villages ultimately connecting with a network of local streets providing connectivity throughout the project.

In accordance with Washoe County standards for Major Arterials, Prado Ranch Blvd is proposed as a 100-foot right-of-way with four travel lanes, bike lanes, a 16-foot landscape median with a minimum 5-foot wide sidewalk and parkway strips on both sides. All collectors and major local streets will be a 68-foot right-of-way with two travel lanes and a 4-foot wide park strip and 5-foot wide sidewalk on both sides. The minor local streets will have the smallest right-of-way at 42 feet and will consist of two travel lanes with a minimum 4-foot wide sidewalk on both sides, (*Refer to Tentative Map Plan Set in Section 3 and Map Pocket of this submittal packet*).

A Traffic Report was prepared by Solaegui Engineers based on the proposed project layout. The Study found that the project is anticipated to generate 4,939 average daily trips with 386 AM peak trips and 478 PM peak trips occurring. In order to mitigate the increased traffic resulting from the proposed project the following improvements will be provided:

- Lemmon Drive/Nectar Street intersection should include an exclusive right turn lane at the south approach containing 245 feet of storage/deceleration length with a 100-foot taper.
- Lemmon Drive/Prado Ranch Parkway intersection should include stop sign control and separate left and right turn lanes at the east approach and an exclusive right turn lane at the south approach containing 245 feet of storage/deceleration length with a 100-foot taper.
- Where access is provided to Nectar Street through Village 2, this segment will be designed as a collector street.

A copy of the full Traffic Report prepared by Solaegui Engineers is provided in Section 4 of this application for reference.

### **Common Areas**

A total of 17.5± acres (11%) of the project will be dedicated to common open space. This includes open channel drainage, open space buffer/trail access, and four parks. In order to meet the residential adjacency standards found within Goal Six of the NVAP, the project includes a 30-foot wide buffer around the perimeter that consists of landscaping and a minimum 8-foot wide multi-use trail. This landscaped buffer, combined with the larger 15,000 square foot lots, aids in the transition from the existing residential to the new residential.

In order to promote pedestrian circulation, access to the perimeter trail has been provided within each Village. Additionally, where public access is currently available via existing dirt roads in and around the site, that access will be perpetuated (*Refer to Trails Map in Section 3 of this application*). It should be noted that while public access will still be available to the surrounding undeveloped areas, most of those properties are privately owned and should not be considered as public property.

The project also includes a number of parks varying in size and location. In addition to the 3.7± acre neighborhood park proposed adjacent to Village 4, each Village includes a pocket park ranging in size that will be maintained by an HOA or LMA, or equivalent. Each of these parks will be accessible to pedestrians via sidewalks or the public trail network around the project.

All open space will be landscaped and/or revegetated with a native vegetation mix and all parks will receive formal landscaping and/or park amenities. All areas dedicated to common area will be maintained by a future Home Owners Association (HOA) or Landscape Maintenance Association (LMA) or equivalent (*Refer to Preliminary Landscaping Plan in Section 3 and the Map Pocket of this submittal packet*).

#### **Landscaping**

In accordance with Section 110.412.35 all front, rear or side yards that adjoin a public street include a minimum of one tree for every fifty linear feet of street frontage. Where lots abut a proposed arterial, collector, or major local the project includes a 5-foot wide buffer strip with a minimum of one tree per every 50 feet. (*Refer to Preliminary Landscaping Plan in Section 3 and the Map Pocket of this submittal packet*)

Front yard landscaping will also be provided for each lot in accordance with Washoe County Code including Section 110.208.10 which requires the use of climatic adaptive landscaping in the front yard of each new residential lot.

#### **Fencing**

With construction of the homes, standard, 6-foot high, solid fencing will be provided along rear and side lot lines throughout the development.

#### **Project Signage**

Signage is not proposed at this time. However, it is likely that monument style entry sign(s) maybe located near each Village entry point. Materials will be consistent with the style of the future homes. Lighting of the sign(s) will be indirect.

#### **Water, Sewer and Utilities**

Utilities are currently stubbed near the site in Lemmon Drive and Nectar Street.

The applicant has conducted an Annexation/Discovery analysis with Truckee Meadows Water Authority. The analysis found that the project site is currently outside of the TMWA retail service territory and will require annexation by TMWA prior to a water service agreement. According to the TMWA Discovery, supply to the project can be met from the Fish Springs Ranch supply via TMWA's high pressure supply main in Matterhorn Boulevard. For additional information, refer to TMWA Annexation/Discovery in Section 4 of this submittal packet.

Sewer service is anticipated to be provided by the City of Reno with treatment at the Reno-Stead Wastewater Treatment Plant. The proposed project is anticipated to generate approximately 434,760 gallons per day at peak flow with treated flow estimated at 116,663 gallons per day. A preliminary sanitary sewer report is provided in Section 4 of this application packet.

NV Energy will provide gas and electrical service to the project. Telephone service will be provided by AT&T while cable service will be from Charter Communications.

### **Schools**

Students residing in the project area will attend Lemmon Valley Elementary School; O'Brien Middle School and North Valleys High School.

### **Police and Fire Service**

Police will be provided by Washoe County and fire service will be provided by the City of Reno. The closest fully staffed fire station is Reno Station 9 which is located approximately 4.3 miles away, near the Reno/Stead Airport. A volunteer Washoe County fire department is located adjacent to the property and is referred to as Truckee Meadows Fire Station 223 located at 130 Nectar Street just west of the intersection of Nectar Street and Redpine Road.

### **Parks**

The project is approximately 1,500 feet to the west of Lemmon Valley Horseman's Arena which is considered a special use park. Other special use parks include the Swan Lake Nature Study Area southwest of the project that provides a trail system and educational amenities. With the exception of these recreational opportunities, the project is generally in an area that is considered underserved by park amenities by the Washoe County Regional Parks and Open Space.

To address the lack of park facilities in the area, the Developer has designed the project to include several parks including a 3.75-acre neighborhood park that will be accessible to the public. All parks within Prado Ranch North will be maintained by the HOA or LMA, or equivalent.

### **Development Statistics Summary**

The following is a summary of the development statistics of the site:

Total Site Area:	154.5± acres
Total Dwelling Units:	506 single family residences
Gross Density:	3.3± d.u./acre
Total Lot Area:	102.5± acres (66%±)
Total Right of Way Area:	34.5± acres (22%±)
Total Common Area/Open Space	17.5± acres (11%±)

**Site Analysis**

*Land Use:* The site is currently undeveloped with a Master Plan designation of Suburban Residential and corresponding zoning designation of Medium Density Suburban 4 (MDS4). The proposed land use is single family residential, which meets the policies of the Master Plan and Zoning designations. Surrounding property designations are shown on the Zoning Map included in Section 3 of this application. At the time of this application, there are no known development plans on adjacent unbuilt sites.

*Existing Structures:* The subject site is currently undeveloped and does not include any structures.

*Existing Vegetation:* The subject site consists primarily of native shrubs, sagebrush and desert grasses. There are no trees on the subject site.

*Topography:* The project site is in a nearly flat area with gentle sloping from east to west. The entire site is free of steep slopes with no slope over 15%.

*Soil:* The subject site is located within the eastern portion of Lemmon Valley with a portion of the site located within the Lemmon Valley playa. Soils associated with future development of Villages 1 and 2 are generally clayey sand overlying poorly graded sand with silt and sandy lean clay. Soils associated with Villages 3 and 4 generally consist of silty sand and poorly graded sand with silt. A preliminary soils report is included in Section 4 of this application.

*Natural Drainageways:* There are no natural drainageways on or adjacent to the site.

*Wetlands and Water Bodies:* There are no wetlands on the site. A Conceptual Drainage Report prepared by Cardno is included in Section 4 of this application.

*Flood Hazards:* A portion of the project site is located within the FEMA mapped 100-year Swan Lake Floodplain. FEMA Flood zone designations are identified on the Tentative Map.

*Seismic Hazards:* There are no known seismic hazards on or near the subject site.

*Avalanche Hazards:* There are no known avalanche or other landslide hazards on the site.

*Sensitive Habitat and Migration Routes:* There are no sensitive habitats or migrations routes on the site.

*Significant Views:* See attached photos.

*Easements:* Refer to Tentative Map sheets for easements.

*Utilities:* Refer to Tentative Map Utility Sheets.

*Appropriate Access Points:* The subject site is accessed via Lemmon Drive which will connect to a newly proposed road, Prado Ranch Boulevard. This road will be designed as a major arterial in accordance with the 2040 RTC RTP which identifies this road as a future connection to Eagle Canyon. In addition to providing future access to Eagle Canyon/Spanish Springs area, this road will connect with Chickadee Drive and Chesapeake Drive, both of which are existing dirt public roads.

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**TENTATIVE MAP FINDINGS**

- (a) Plan Consistency. That the proposed map is consistent with the Master Plan and any specific plan;**

The proposed map is consistent with the current Master Plan designation of Suburban Residential and meets applicable goals and policies of the Washoe County Master Plan and the North Valleys Area Plan.

- (b) Design or Improvement. That the design or improvement of the proposed subdivision is consistent with the Master Plan and any specific plan;**

The proposed subdivision is consistent with the Master Plan and the North Valleys Area Plan, particularly as related to the Lemmon Valley Suburban Character Management Area goals and policies (NV 6.1) regarding regulatory zones, parcel sizes, limiting dwellings to single story on the perimeter when adjacent to or across the street from existing residential development, landscape design, and lighting.

- (c) Type of Development. That the site is physically suited for the type of development proposed;**

The project site is a nearly flat area with gentle sloping from east to west and is physically suited for the residential developed as designed. The number of dwellings and configuration of the proposed subdivision is consistent with the requirements of the master plan.

- (d) Availability of Services. That the subdivision will meet the requirements of Article 702, Adequate Public Facilities Management System;**

In accordance with Article 702, the proposed project has been designed to ensure that public infrastructure necessary to support the project is available concurrently with the impacts of the project without causing the level of service to fall below adopted standards. It is anticipated that as a part of this project, new facilities/infrastructure will be constructed by the Developer to Washoe County standards to ensure that sanitary sewer service is provided to all new dwelling units.

- (e) Fish and Wildlife. That neither the design of the subdivision nor any proposed improvements is likely to cause substantial environmental damage, or substantial and avoidable injury to any endangered plant, wildlife or their habitat;**

The proposed subdivision is not located within an environmentally sensitive location. The improvements associated with the project are not anticipated to cause substantial environmental damage or harm to endangered plants or wildlife habitats.

- (f) Public Health. That the design of the subdivision or type of improvement is not likely to cause significant public health problems;**

The proposed subdivision has been designed in accordance with environmental and health laws and regulations concerning water and air pollution, solid waste disposal, water service and sewer service. All necessary infrastructure to serve the proposed project will be constructed by

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the Developer. Refer to attached engineering reports in Section 4 of this application packet for detailed information.

- (g) Easements. That the design of the subdivision or the type of improvements will not conflict with easements acquired by the public at large for access through, or use of property within, the proposed subdivision;**

Existing easements through the subdivision have been incorporated into the proposed project. As designed, there are no conflicts with easements for access through or use of the property within the proposed subdivision. The project has also been designed with pedestrian sidewalks and trails that will be perpetuated for public use.

- (h) Access. That the design of the subdivision provides any necessary access to surrounding, adjacent land and provides appropriate secondary access for emergency vehicles;**

The subdivision has been designed to provide access to the adjacent lands including easements that extend from the subdivision to the surrounding properties. In addition to sidewalks along all roadways, there is a public trail system provided around the project perimeter that provides connection to the existing undeveloped lands. The public trail system consists of an 8-foot wide DG path that can accommodate pedestrian or horses on the path. In addition to the improved trail system associated with the project, access to existing dirt roads in the area will be perpetuated.

All roads within Prado Ranch North will be paved and each Village will include two points of access to ensure safe, emergency access is available.

- (i) Dedications. That any land or improvements to be dedicated to the County is consistent with the Master Plan; and**

All common open space, parks, or drainage channels will be maintained by a Homeowners Association, Landscape Maintenance District, or equivalent, as approved by Washoe County.

- (j) Energy. That the design of the subdivision provides, to the extent feasible, for future passive or natural heating or cooling opportunities in the subdivision.**

At this time, specific building designs are not available for the project. However, the orientation of the lots will allow for natural passive cooling and solar building designs. It is anticipated that new high-performance building and material technologies will be used for energy efficiency.



Looking SW near Nectar Street & Southeastern boundary



Looking SW from Chesapeake Drive





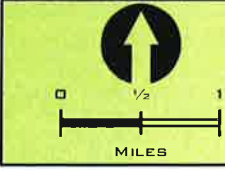
Looking SW from Chickadee Dr



Looking East from Lemmon Dr (western project boundary)



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



### Vicinity Map

### Prado Ranch North

April, 2018



**WOOD RODGERS**  
 BUILDING RELATIONSHIPS ONE PROJECT AT A TIME  
 1361 Corporate Boulevard Reno, NV 89502  
 Tel: 775.823.4068 Fax: 775.023.4066

Assessor's Map Number  
**080-72**

STATE OF NEVADA  
**WASHOE COUNTY**  
ASSESSOR'S OFFICE  
MICHAEL C. CLARK, ASSESSOR

MIKE CLARK, ASSESSOR  
D.L. HEDGECOCK, COUNTY CLERK  
N. J. HARRIS, COUNTY CLERK  
T. J. HARRIS, COUNTY CLERK



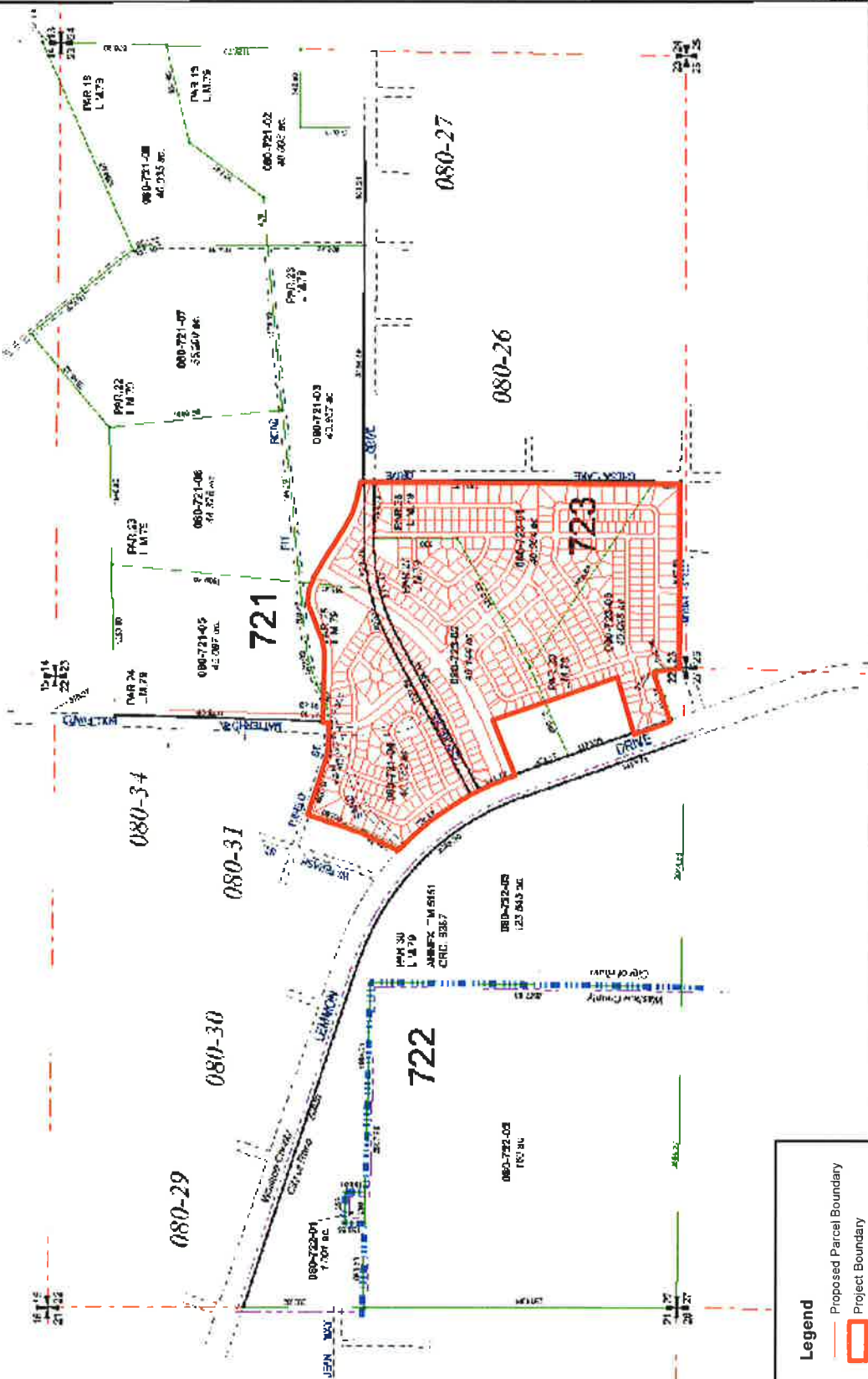
1 inch = 500 feet



DATE: 03/27/2018  
TIME: 10:00 AM  
PROJECT: 080-72

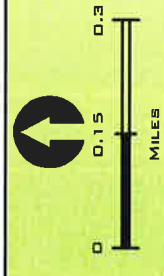
NOTE: THIS MAP IS A PRELIMINARY MAP AND IS NOT A FINAL MAP. IT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE ASSessor'S OFFICE IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS. THE USER ASSUMES ALL LIABILITY FOR ANY SUCH ERRORS OR OMISSIONS.

**MAP OF DIVISION INTO  
LARGE PARCELS #79**  
POR. SECTIONS 14, 22 & 23, T21N - R19E



**Legend**

- Proposed Parcel Boundary
- Project Boundary

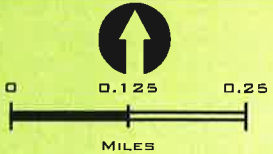
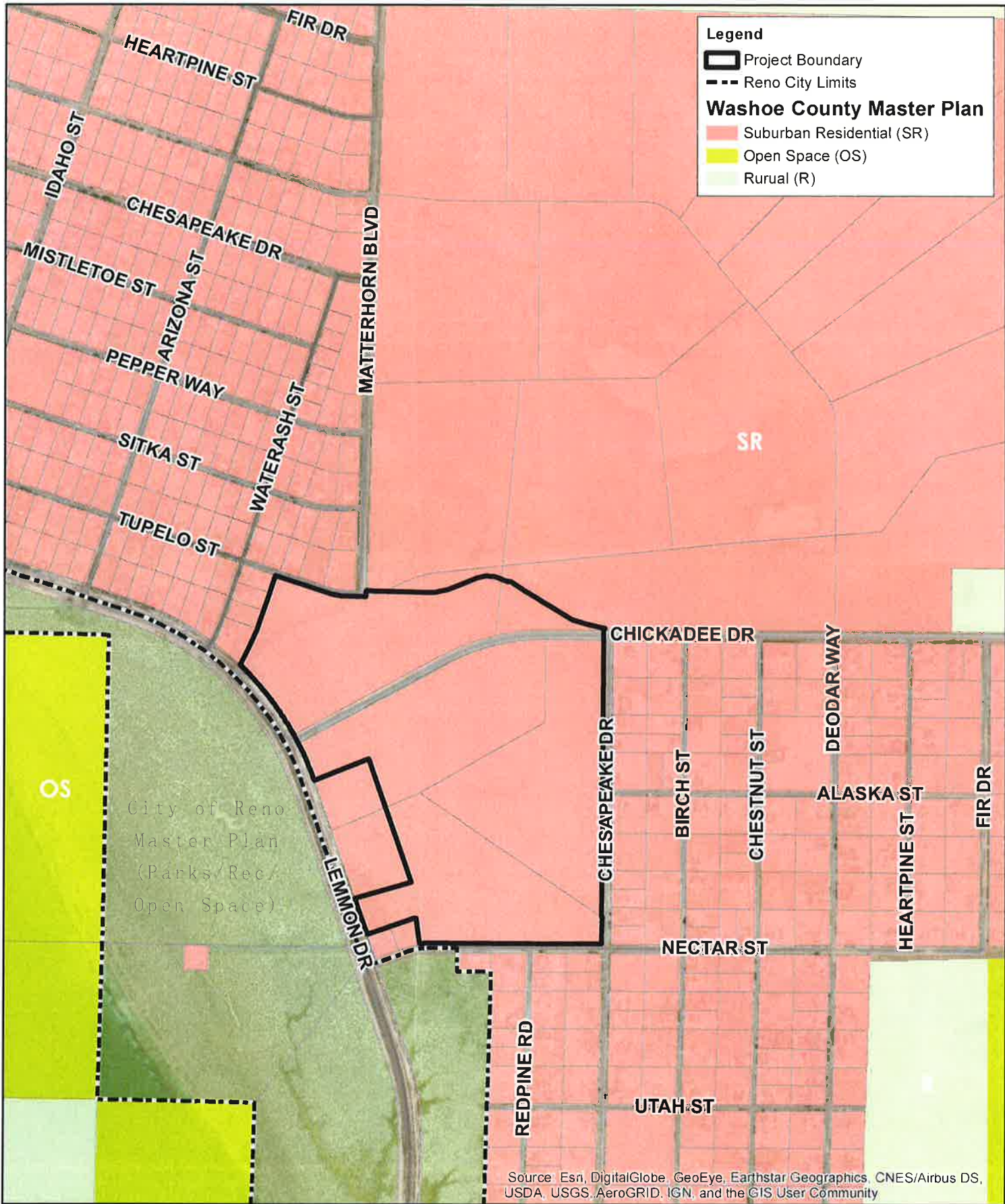


**Assessor Parcel Map**

Prado Ranch North  
April, 2018



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1361 Corporate Boulevard  
Hend, NV 89502  
Tel: 775-823-4068  
Fax: 775-823-4066

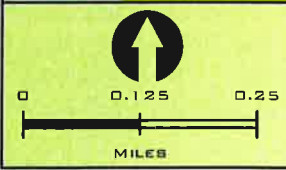
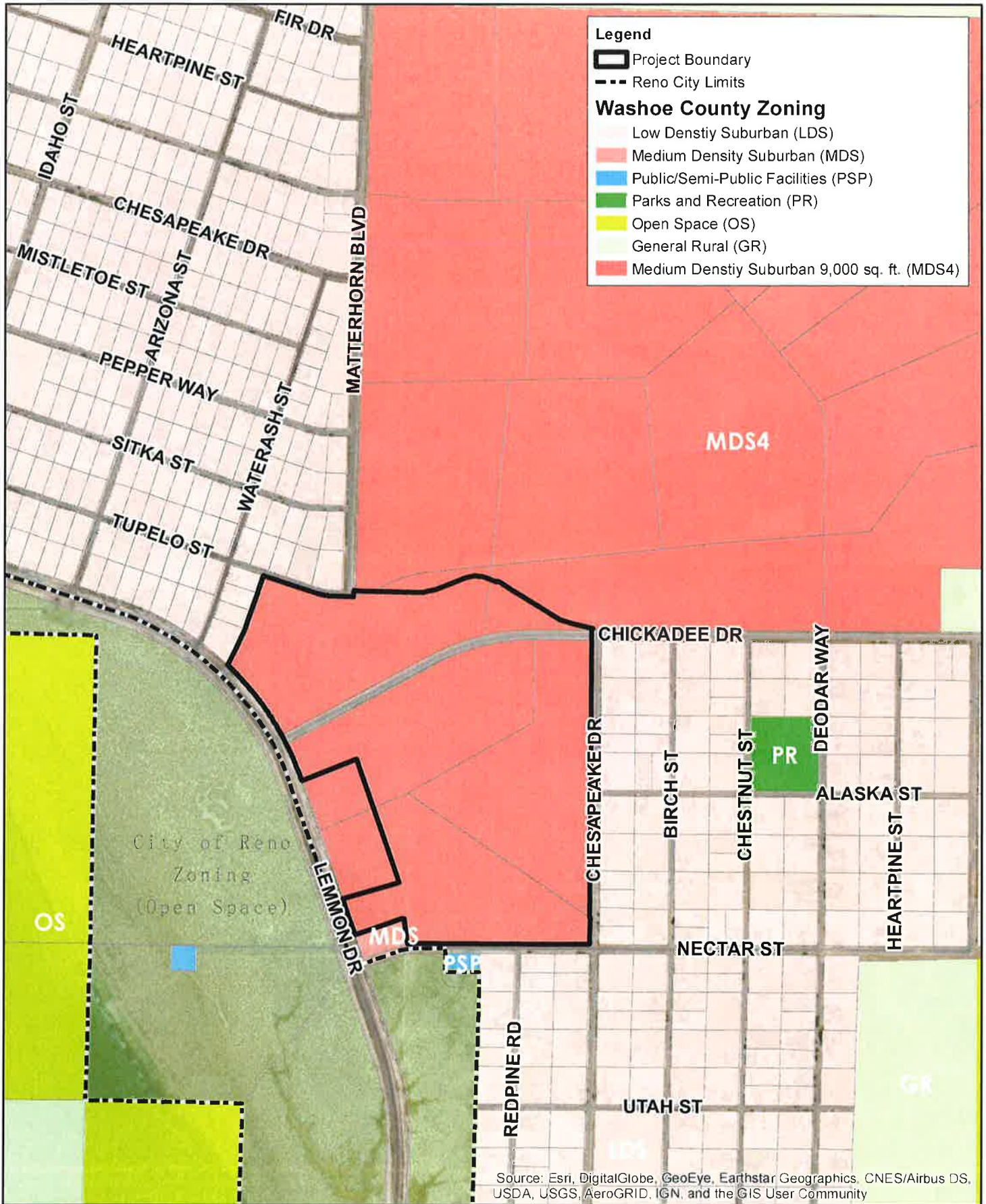


# Existing Master Plan

## Prado Ranch North

April, 2018

**WOOD RODGERS**  
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME  
1361 Corporate Boulevard Reno, NV 89502  
Tel: 775.823.4068 Fax: 775.823.4066



## Zoning Map

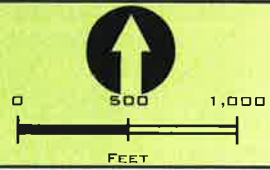
### Prado Ranch North

April, 2018

**WOOD RODGERS**  
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME  
1361 Corporate Boulevard  
1 Reno, NV 89502  
Tel: 775.823.4068  
Fax: 775.823.4066



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



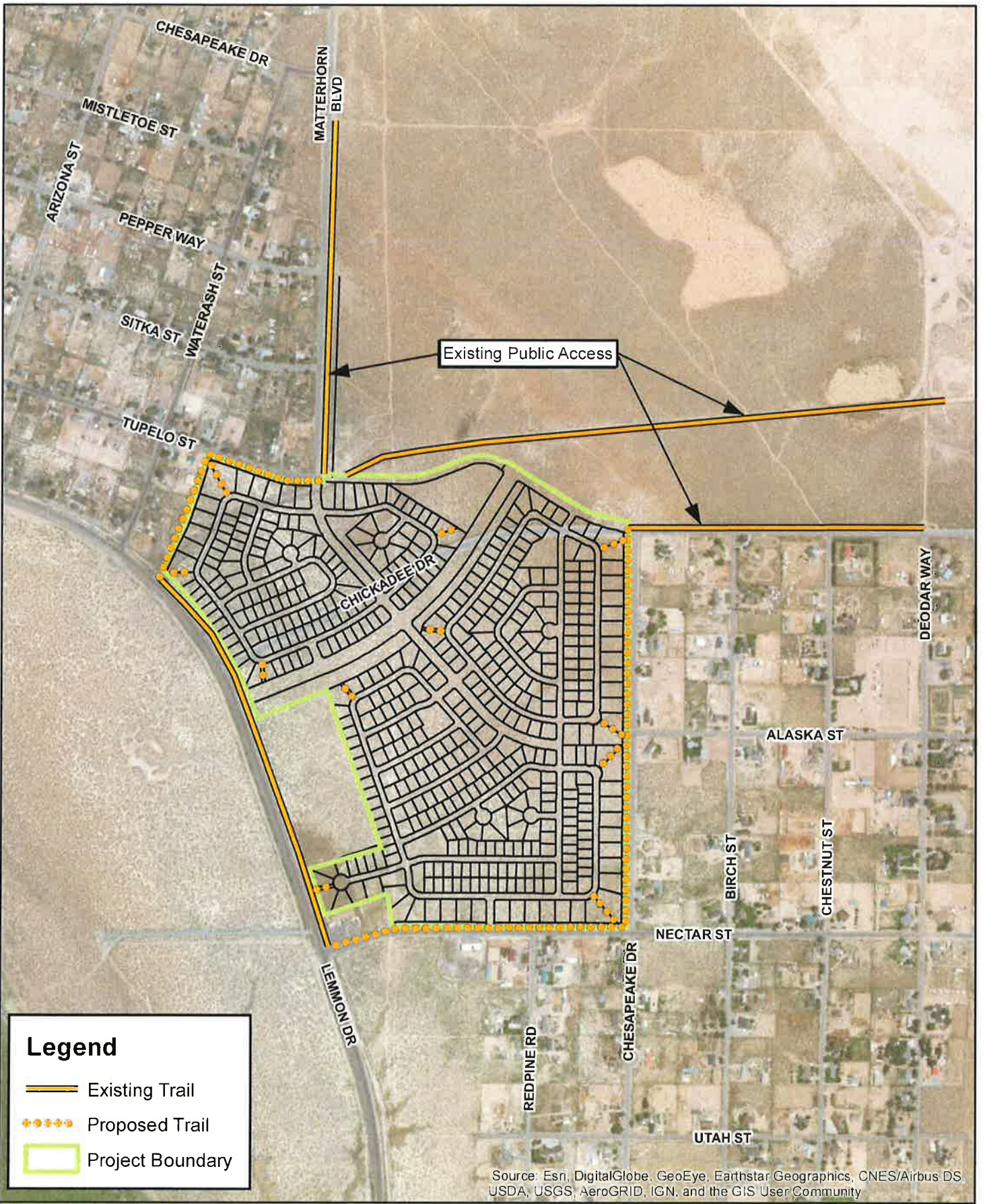
# Aerial Map

## Prado Ranch North

April, 2018



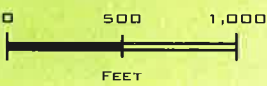
**WOOD RODGERS**  
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 1361 Corporate Boulevard Tel: 775.823.4069  
 Reno, NV 89502 Fax: 775.023.4066



**Legend**

-  Existing Trail
-  Proposed Trail
-  Project Boundary

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



# Trails Map

## Prado Ranch North

April, 2018

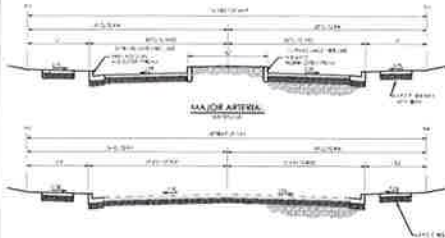


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 1361 Corporate Boulevard Tel: 775.823.4068  
 Reno, NV 89502 Fax: 775.023.4066

# OVERALL SITE PLAN

## PRADO RANCH NORTH

WASHOE COUNTY, NEVADA  
APRIL, 2018



### LEGEND

COMMON OPENSOURCE

### DEVELOPMENT STATS

VILLAGE 1 (7,000 SF - 70x100) = 477 LOTS (0-15,000 SF LOTS)

VILLAGE 2 (6,000 SF - 60x100) = 417 LOTS (22-15,000 SF LOTS)

VILLAGE 3 (7,000 SF - 70x100) = 431 LOTS (14-15,000 SF LOTS)

VILLAGE 4 (6,000 SF - 60x100) = 451 LOTS (12-15,000 SF LOTS)









TOTAL LOTS = 856  
#154.5 ACRES = 3.3 DU/AC



# PHASING PLAN PRADO RANCH NORTH

WASHOE COUNTY, NEVADA  
APRIL, 2018

## LEGENDS

	PHASE 1A (7,000 SF + 70x100) = 32 LOTS (0-15,000 SF LOTS)
	PHASE 1B (7,000 SF + 70x100) = 45 LOTS (0-15,000 SF LOTS)
	PHASE 2A (6,000 SF + 60x100) = 61 LOTS (6-15,000 SF LOTS)
	PHASE 2B (6,000 SF + 60x100) = 86 LOTS (6-15,000 SF LOTS)
	PHASE 3A (7,000 SF + 70x100) = 83 LOTS (0-15,000 SF LOTS)
	PHASE 3B (7,000 SF + 70x100) = 45 LOTS (14-15,000 SF LOTS)
	PHASE 4A (6,000 SF + 60x100) = 66 LOTS (2-15,000 SF LOTS)
	PHASE 4B (6,700 SF + 60x100) = 85 LOTS (10-15,000 SF LOTS)

TOTAL = 506 LOTS



# PRADO RANCH NORTH TENTATIVE MAP TITLE SHEET

**OWNER:**  
NORTH VALLEYS INVESTMENT GROUP, LLC  
C/O LENNARE  
100 NATIONAL CIRCLE, SUITE 100  
BENO, IN 46022-3100

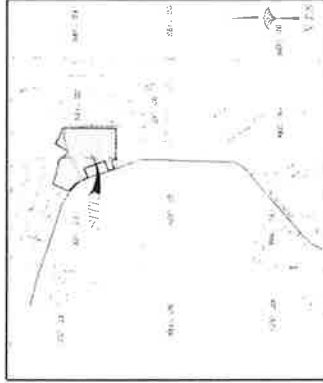
**DEVELOPER:**  
LANSHING COMPANIES  
12671 HIGH BLUFF DRIVE, SUITE 150  
SAN DIEGO, CA 92130

### BASIS OF BEARINGS

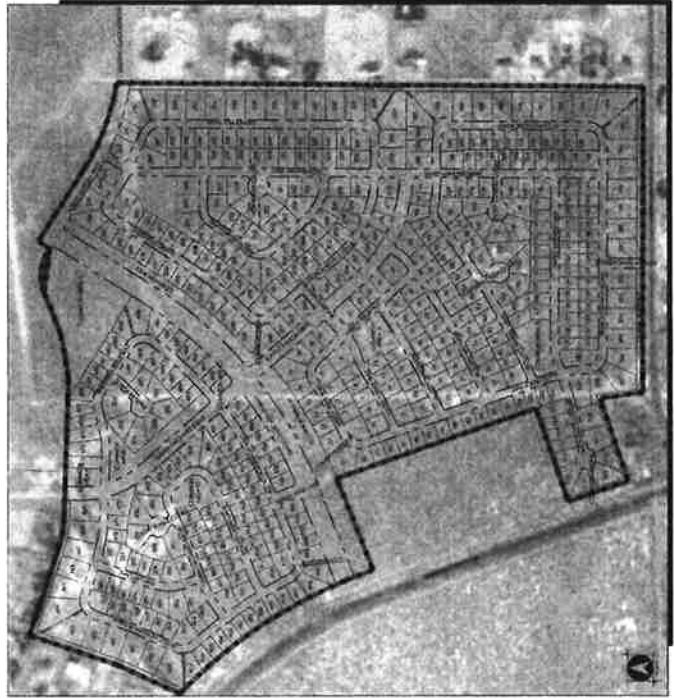
THE BEARINGS AND DISTANCES SHOWN ON THIS TENTATIVE MAP ARE BASED ON THE 1983 NAD 83 DATUM. THE BEARINGS AND DISTANCES SHOWN ON THIS TENTATIVE MAP ARE BASED ON THE 1983 NAD 83 DATUM. THE BEARINGS AND DISTANCES SHOWN ON THIS TENTATIVE MAP ARE BASED ON THE 1983 NAD 83 DATUM.

### BASIS OF ELEVATION

THE ELEVATIONS SHOWN ON THIS TENTATIVE MAP ARE BASED ON THE 1988 NAVD83 DATUM. THE ELEVATIONS SHOWN ON THIS TENTATIVE MAP ARE BASED ON THE 1988 NAVD83 DATUM. THE ELEVATIONS SHOWN ON THIS TENTATIVE MAP ARE BASED ON THE 1988 NAVD83 DATUM.



LOCATION MAP



SITE PLAN  
1:40,000

### SITE INFORMATION:

**PROJECT NAME:**  
PRADO RANCH NORTH  
**OWNER:**  
NORTH VALLEYS INVESTMENT GROUP, LLC  
**DEVELOPER:**  
LANSHING COMPANIES  
**ADDRESS:**  
12671 HIGH BLUFF DRIVE, SUITE 150  
SAN DIEGO, CA 92130  
**PHONE:**  
(619) 441-1000 / (619) 592-7700 / (619) 592-7700

### ENGINEER'S STATEMENT:

I, the undersigned, being a duly licensed Professional Engineer in the State of California, do hereby certify that I am the author of the design and content of this map, and that I am a duly licensed Professional Engineer in the State of California.



David L. Hines, P.E.  
11001 Via Santa Fe, Suite 200  
San Diego, CA 92121

### SHEET INDEX

Sheet No.	Description
1	PRADO RANCH NORTH
2	PRADO RANCH NORTH
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TITLE SHEET  
PRADO RANCH NORTH

**WOOD RODGERS**  
BUILDING RELATIONSHIPS AND PROJECTS AT A TIME  
1961 Corporate Blvd  
Beno, IN 46022  
Tel 775-933-4088  
Fax 775-933-4088

1669011 SHEET T-1 OF 19 APRIL 2018

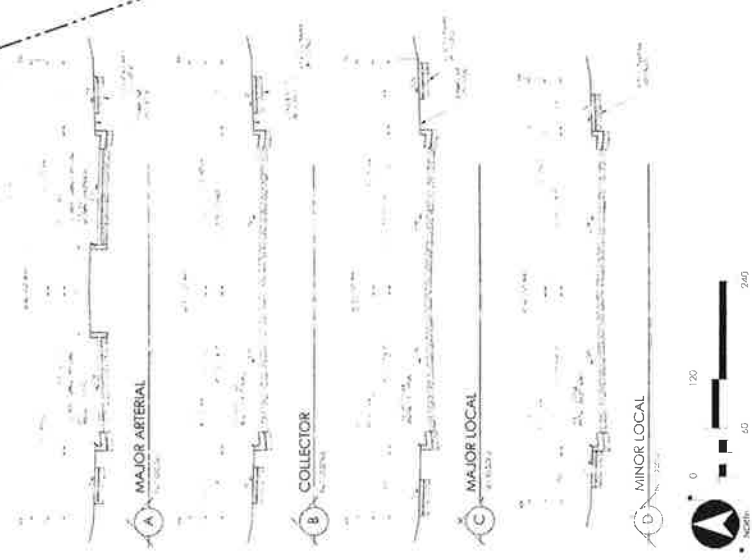
# PRADO RANCH NORTH

TENTATIVE MAP  
LOT AND BLOCK PLAN



NORTH VALLEYS INVESTMENT  
GROUP LLC

NORTH VALLEYS INVESTMENT  
GROUP LLC  
(FUTURE DEVELOPMENT)



PRADO RANCH NORTH  
LOT AND BLOCK PLAN

**WOOD RODGERS**  
SURVING REALTORS INC. PROJECT NO. 2775-023-4086  
1649011  
PRADO, NJ 08842 FAX 775-823-4086  
APRIL 2019  
SHEET LB-1 OF 19

# PRADO RANCH NORTH

TENTATIVE MAP  
LOT AND BLOCK PLAN



EXISTING CHESPAPE DR

EXISTING NECTAR ST.



PRADO RANCH NORTH  
LOT AND BLOCK PLAN

**WOOD RODGERS**  
INCORPORATED  
1881 Corporate Blvd  
Reno, NV 89502  
Tel: 775.853.4088  
Fax: 775.853.4086  
1667011

APRIL 2018  
SHEET LB-2 OF 19

# PRADO RANCH NORTH

TENTATIVE MAP  
LOT AND BLOCK PLAN

NORTH VALLEYS INVESTMENT  
GROUP LLC

NORTH VALLEYS INVESTMENT  
GROUP LLC



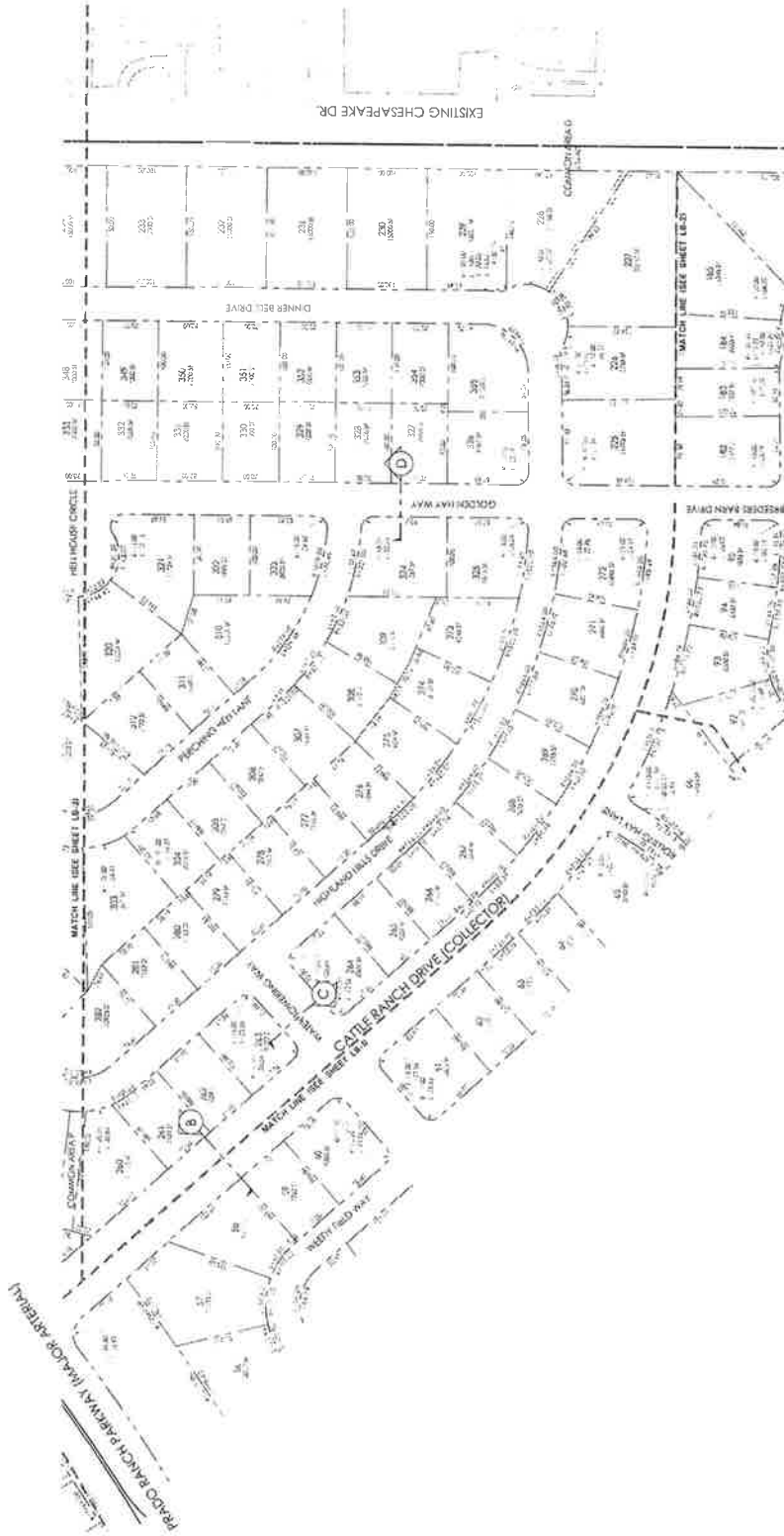
PRADO RANCH NORTH  
LOT AND BLOCK PLAN



**WOOD ROGERS**  
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Reno, NV 89502  
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Fax: 775.823.4086  
1668011  
APRIL 2016



**PRADO RANCH NORTH**  
 TENTATIVE MAP  
 LOT AND BLOCK PLAN



**PRADO RANCH NORTH**  
 LOT AND BLOCK PLAN



**WOOD ROGERS**  
 BUILDING RELATIONSHIPS ONE PROJECT AT A TIME  
 1981 Corporate Blvd  
 Raleigh, NC 27602  
 Tel: 775-823-4008  
 Fax: 775-823-4004  
 1669011

APRIL 2018  
 SHEET LB-4 OF 19



**PRADO RANCH NORTH**  
 TENTATIVE MAP  
 LOT AND BLOCK PLAN



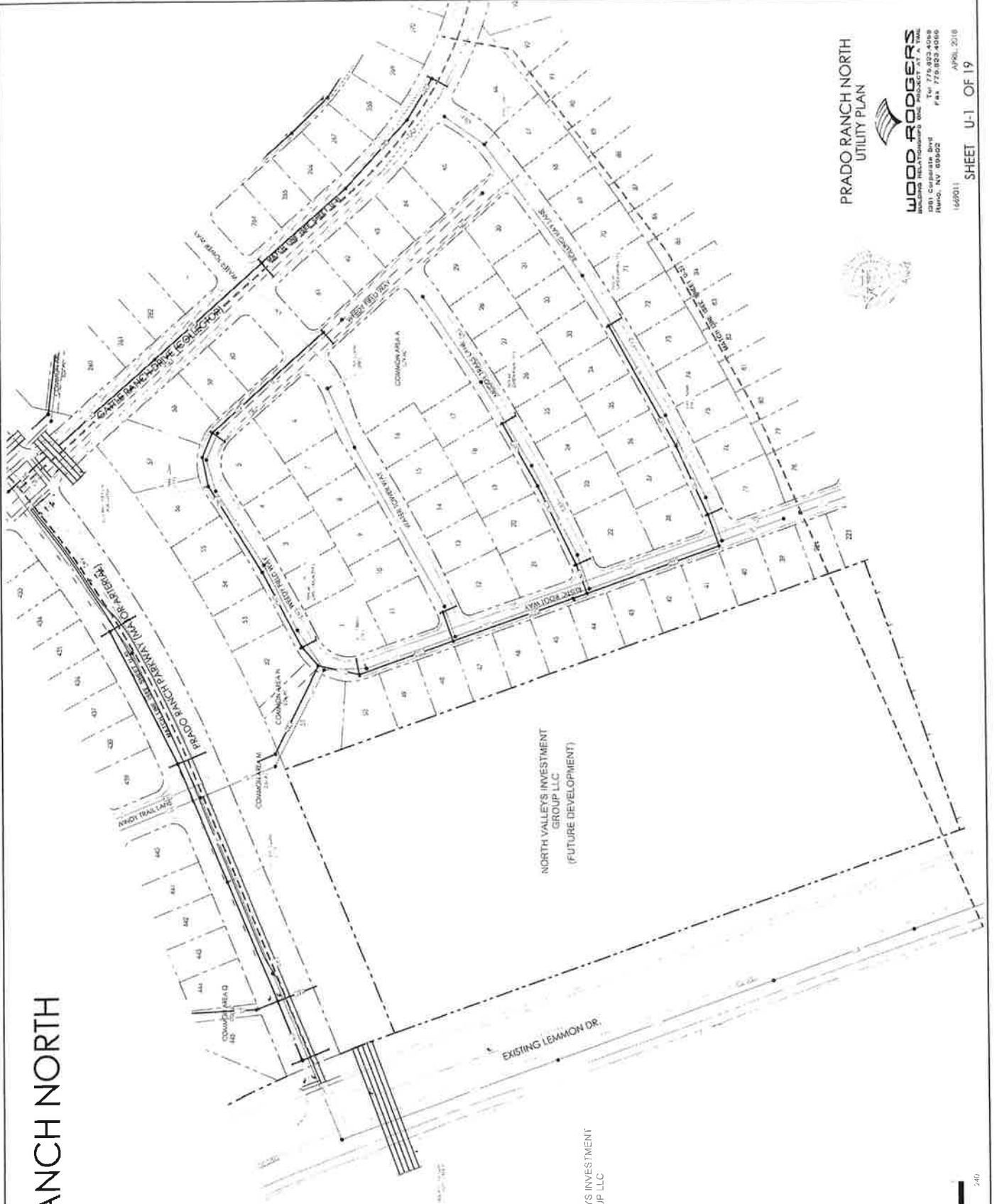
**PRADO RANCH NORTH**  
 LOT AND BLOCK PLAN

**WOOD RODGERS**  
 BUILDING RELATIONSHIPS ONE PROJECT AT A TIME  
 1881 Corporate Blvd. Tel: 775.923.4008  
 Reno, NV 89502 Fax: 775.923.4006

1669311 APRIL 2019  
 SHEET LB-5 OF 19



**PRADO RANCH NORTH**  
 TENTATIVE MAP  
 UTILITY PLAN

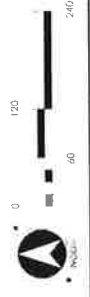


PRADO RANCH NORTH  
 UTILITY PLAN



**WOOD RODGERS**  
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 Fax: 775.853.4046  
 1669011

APRIL 2018  
 SHEET U-1 OF 19



NORTH VALLEYS INVESTMENT  
 GROUP LLC

NORTH VALLEYS INVESTMENT  
 GROUP LLC  
 (FUTURE DEVELOPMENT)

EXISTING LEMMON DR.



# PRADO RANCH NORTH

## TENTATIVE MAP

### UTILITY PLAN

EXISTING CHESAPEAKE DR.

PRADO RANCH NORTH  
UTILITY PLAN



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FAX: 775.825.4001  
1469011

APRIL 2018  
SHEET U-2 OF 19

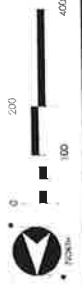


EXISTING ARKANSAS DR.

EXISTING LEMMON DR.

EXISTING NECTAR ST.

EXISTING LEMMON DR.



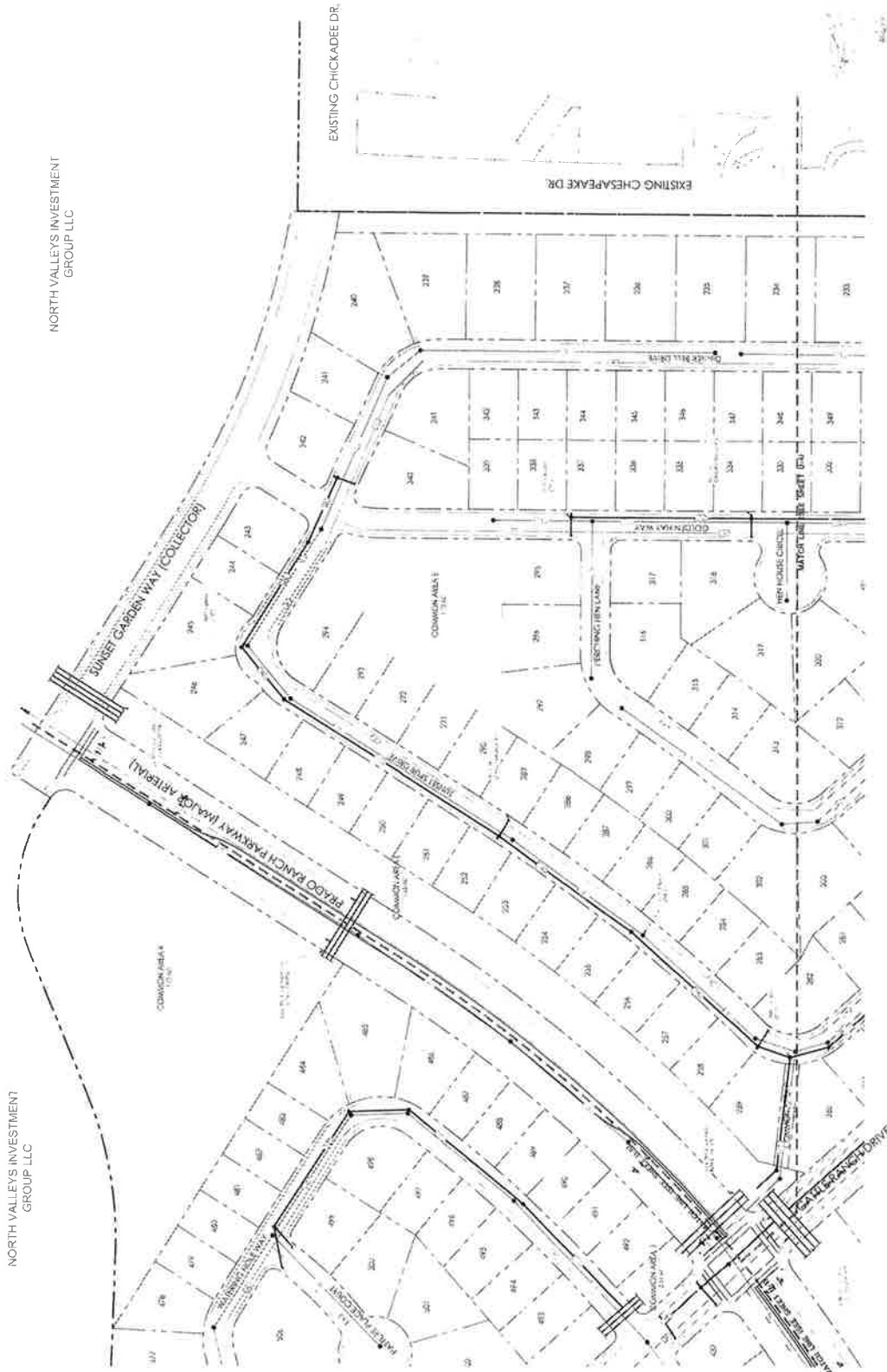
MATCH LINE (SEE SHEET LEFT)

MATCH LINE (SEE SHEET RIGHT)

**PRADO RANCH NORTH**  
 TENTATIVE MAP  
 UTILITY PLAN

NORTH VALLEYS INVESTMENT  
 GROUP, LLC

NORTH VALLEYS INVESTMENT  
 GROUP, LLC



PRADO RANCH NORTH  
 UTILITY PLAN



**WOOD RODGERS**  
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 PRADO, NV 89002  
 PH: 775-853-8000  
 FAX: 775-853-8008

1669011

APRIL 2018  
 SHEET U-3 OF 19



**PRADO RANCH NORTH**  
 TENTATIVE MAP  
 UTILITY PLAN



PRADO RANCH NORTH  
 UTILITY PLAN



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 TEL: 775.825.4048  
 FAX: 775.825.4046  
 APRIL 2016

SHEET U-4 OF 19

# PRADO RANCH NORTH TENTATIVE MAP UTILITY PLAN

NORTH VALLEYS INVESTMENT  
GROUP LLC



NORTH VALLEYS INVESTMENT  
GROUP LLC

PRADO RANCH NORTH  
UTILITY PLAN



**WOOD RODGERS**  
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1301 Corporate Blvd. TEL 773.923.4008  
MARIETTA, GA 30067 FAX 770.923.4006

16490311

APRIL 2019  
SHEET U-5 OF 19

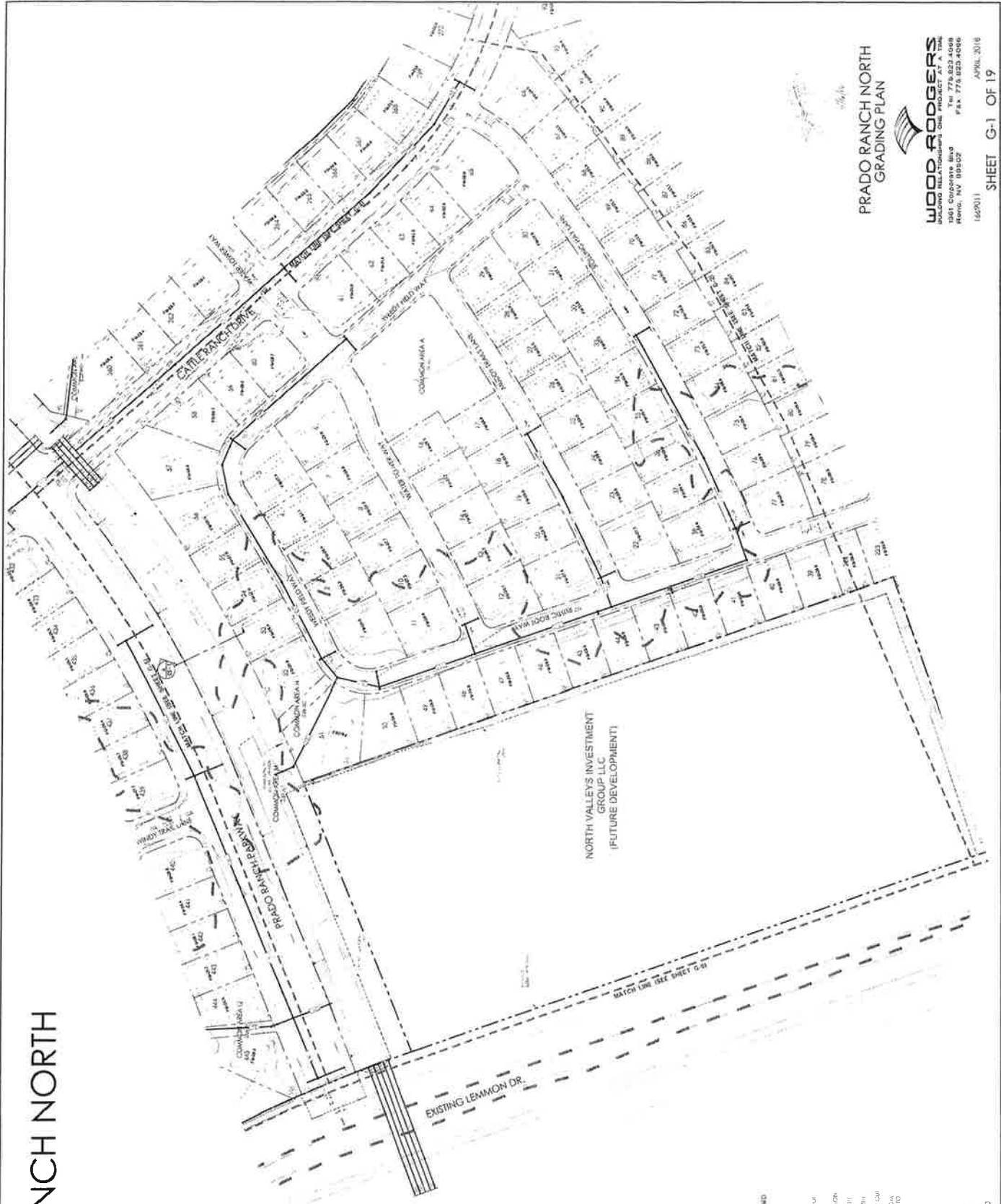


# PRADO RANCH NORTH TENTATIVE MAP GRADING PLAN

PRADO RANCH NORTH  
GRADING PLAN

**WOOD RODGERS**  
INCORPORATED  
1000 BELLEVILLE ROAD  
PRADO, WV 26002  
PHONE: 778-8223-4000  
FAX: 778-8223-4006  
APRIL 2018

1629011 SHEET G-1 OF 19



NORTH VALLEYS INVESTMENT  
GROUP LLC

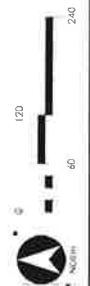
NORTH VALLEYS INVESTMENT  
GROUP LLC  
(FUTURE DEVELOPMENT)

EXISTING LEMMON DR.

MATCH LINE (SEE SHEET G-01)

LEGEND:

- GRADING NOTES:**
1. ALL AREAS WITHIN BRACKETED AREA, CHANGING TO A FINISH OF 2.000'.
  2. UNIMPAVED AREAS SHALL BE FINISHED TO THE FINISH ELEVATION SHOWN.
  3. UNIMPAVED AREAS SHALL BE FINISHED TO THE FINISH ELEVATION SHOWN.
  4. APPROXIMATE CUT AND FILL ON SHEET 164-000 CT FROM 164-000 TO 164-000.
  5. ALL AREAS WITHIN BRACKETED AREA, CHANGING TO A FINISH OF 2.000'.
  6. UNIMPAVED AREAS SHALL BE FINISHED TO THE FINISH ELEVATION SHOWN.
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# PRADO RANCH NORTH

## TENTATIVE MAP

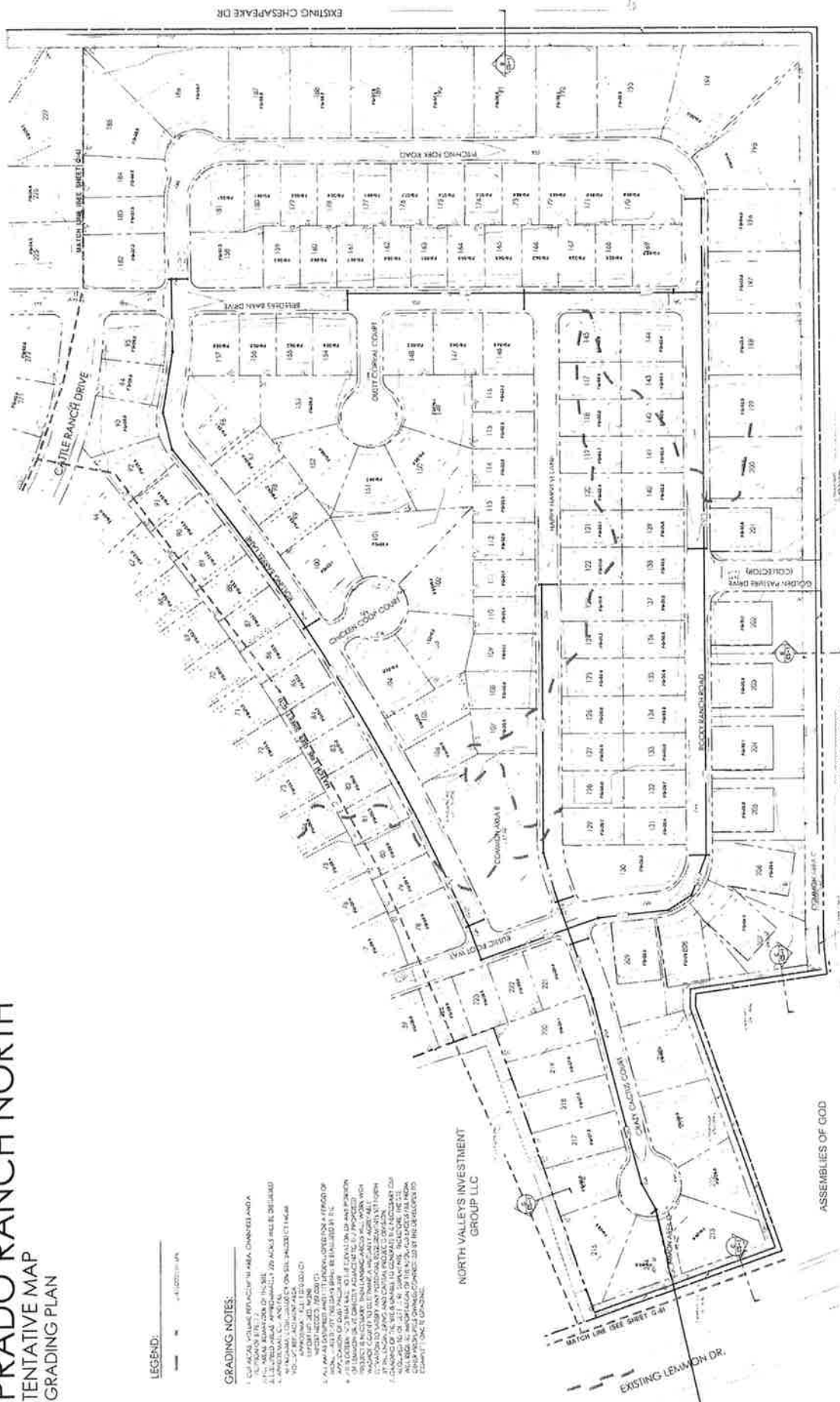
### GRADING PLAN

LEGEND:  
 --- 4'-0" CURB TO FIN

#### GRADING NOTES:

1. ALL GRADES SHOWN ARE BASED UPON THE SURVEYED DATA.
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PRADO RANCH NORTH  
 GRADING PLAN

WOOD RODGERS  
 BUILDING RELATIONSHIP ONE PROJECT AT A TIME  
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 Reno, NV 89502  
 Tel: 775.853.4088  
 Fax: 775.853.4066

16/09/11  
 APRIL 2018  
 SHEET G-2 OF 19





# PRADO RANCH NORTH

TENTATIVE MAP  
GRADING PLAN



**LEGEND:**

--- 2' VERTICAL CURVATURE

**GRADING NOTES:**

- 1. CURVING TO BE REPLACEMENT AREA, CHANNEL AND A
- 2. ALL SPACING BETWEEN LOTS IN THE SITE
- 3. APPROXIMATE GRADES AND FINISH GRADES WILL BE DETERMINED BY THE ENGINEERING AND CAPITAL PROJECTS DIVISION.
- 4. APPROXIMATE CUT AND FILL QUANTITIES WILL BE DETERMINED BY THE ENGINEERING AND CAPITAL PROJECTS DIVISION.
- 5. APPROXIMATE CUT AND FILL QUANTITIES WILL BE DETERMINED BY THE ENGINEERING AND CAPITAL PROJECTS DIVISION.
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- 8. APPROXIMATE CUT AND FILL QUANTITIES WILL BE DETERMINED BY THE ENGINEERING AND CAPITAL PROJECTS DIVISION.
- 9. APPROXIMATE CUT AND FILL QUANTITIES WILL BE DETERMINED BY THE ENGINEERING AND CAPITAL PROJECTS DIVISION.
- 10. APPROXIMATE CUT AND FILL QUANTITIES WILL BE DETERMINED BY THE ENGINEERING AND CAPITAL PROJECTS DIVISION.





# PRADO RANCH NORTH TENTATIVE MAP GRADING PLAN

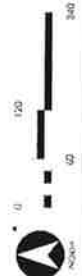


NORTH VALLEYS INVESTMENT GROUP LLC

NORTH VALLEYS INVESTMENT GROUP LLC

LEGEND:

- GRADING NOTES:**
1. LOT AREA VARIANCE SEE ATTACHED AREA CHANGE AND A
  2. TOTAL LOT AREA: 1,100,000 SQ. FT.
  3. TOTAL COMMON AREA: 1,100,000 SQ. FT.
  4. TOTAL COMMON AREA: 1,100,000 SQ. FT.
  5. TOTAL COMMON AREA: 1,100,000 SQ. FT.
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**PRADO RANCH NORTH  
GRADING PLAN**

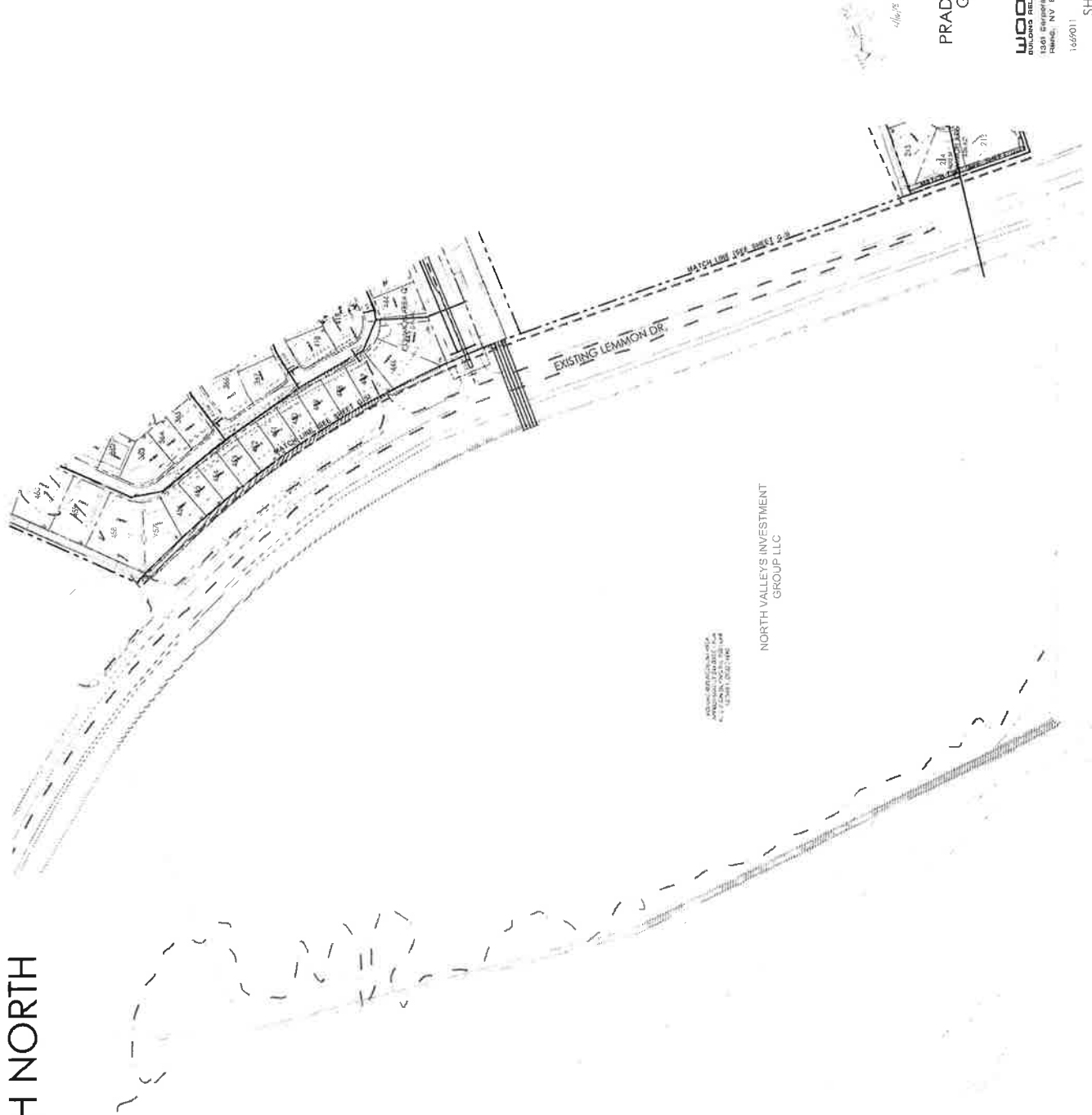
**WOOD RODGERS**  
INCORPORATED  
1061 CORPORATE BLVD  
MARTIN, TN 38402  
TEL: 773-833-8000  
FAX: 773-833-8000

1669811 APRIL 2018  
SHEET G-5 OF 19

# PRADO RANCH NORTH

## TENTATIVE MAP

### GRADING PLAN

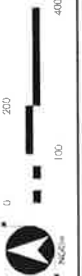


**LEGEND:**

- Proposed Grading
- Existing Grading
- Spot Height
- Elevation

**GRADING NOTES:**

1. SEE ALL VOLUMES REFERENCE TO THIS PLAN AND ALL OTHER VOLUMES OF THIS TENTATIVE MAP.
2. ALL AREAS SHOWN ON THIS SITE.
3. ALL AREAS SHOWN ON THIS SITE.
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NORTH VALLEY'S INVESTMENT GROUP LLC

PRADO RANCH NORTH  
GRADING PLAN

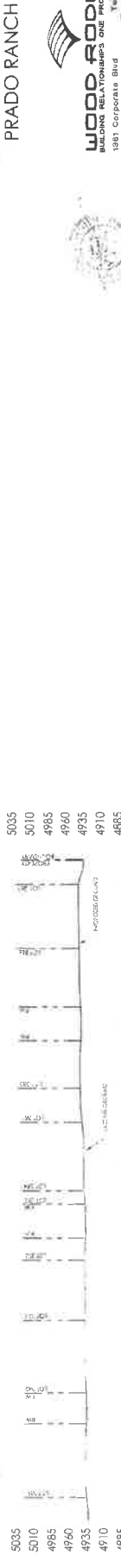
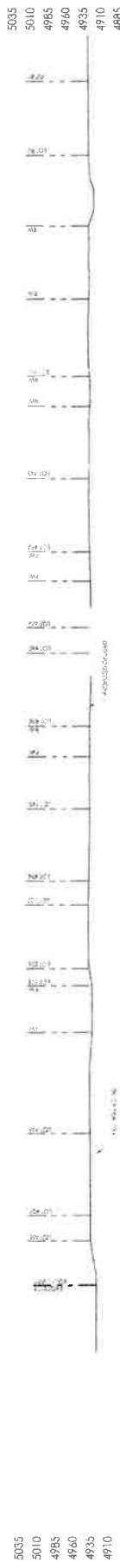
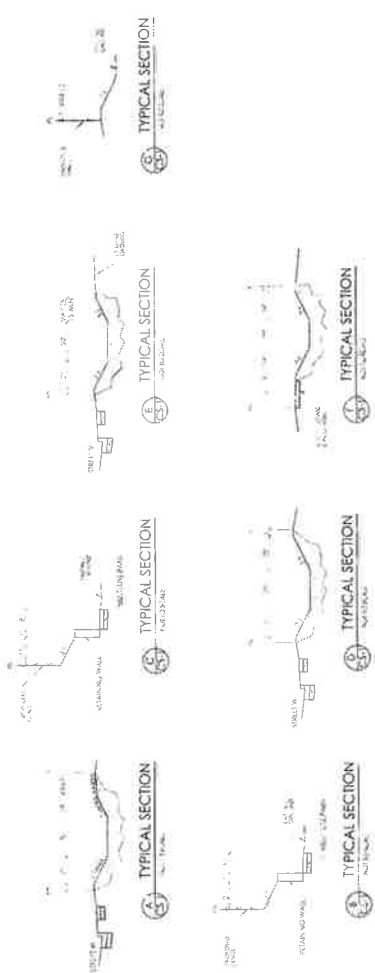
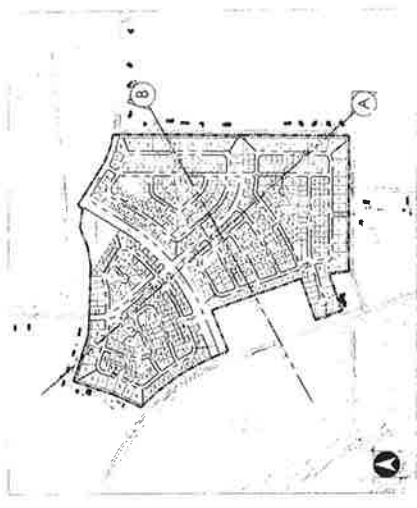
**WOOD RODGERS**  
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FAX: 775.823.4008  
APRIL 2016

1669011 SHEET G-6 OF 19

# PRADO RANCH NORTH

## TENTATIVE MAP

### PRELIMINARY CROSS SECTIONS



PRELIMINARY CROSS SECTIONS  
PRADO RANCH NORTH

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BUILDING RELATIONSHIPS ONE PROJECT AT A TIME  
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Reno, NV 89502  
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Fax. 775.823.4008  
1669011  
APRIL 2018  
SHEET CS-10F19



- ### LANDSCAPE REQUIREMENTS
- ALL LANDSCAPE INSTALLATIONS SHALL BE INSTALLED PER THE FOLLOWING REQUIREMENTS AND SPECIFICATIONS. THE LANDSCAPE SHALL BE MAINTAINED AND WATERED AS SPECIFIED IN THE PROJECT MANUAL.
- INSTALLATION OF TREES:** ALL TREES SHALL BE INSTALLED PER THE FOLLOWING REQUIREMENTS AND SPECIFICATIONS. THE LANDSCAPE SHALL BE MAINTAINED AND WATERED AS SPECIFIED IN THE PROJECT MANUAL.
  - MINIMUM TREE HEIGHTS:** ALL TREES SHALL BE AT LEAST 12 FEET TALL AT THE TIME OF PLANTING.
  - MINIMUM TREE CALIBER:** ALL TREES SHALL BE AT LEAST 2 INCHES CALIBER AT THE TIME OF PLANTING.
  - MINIMUM TREE SPACING:** ALL TREES SHALL BE AT LEAST 10 FEET APART AT THE TIME OF PLANTING.
  - MINIMUM TREE CALIBER:** ALL TREES SHALL BE AT LEAST 2 INCHES CALIBER AT THE TIME OF PLANTING.
  - MINIMUM TREE SPACING:** ALL TREES SHALL BE AT LEAST 10 FEET APART AT THE TIME OF PLANTING.
  - MINIMUM TREE CALIBER:** ALL TREES SHALL BE AT LEAST 2 INCHES CALIBER AT THE TIME OF PLANTING.
  - MINIMUM TREE SPACING:** ALL TREES SHALL BE AT LEAST 10 FEET APART AT THE TIME OF PLANTING.
  - MINIMUM TREE CALIBER:** ALL TREES SHALL BE AT LEAST 2 INCHES CALIBER AT THE TIME OF PLANTING.
  - MINIMUM TREE SPACING:** ALL TREES SHALL BE AT LEAST 10 FEET APART AT THE TIME OF PLANTING.

**PRELIMINARY DRAINAGE REPORT**

**FOR**

**PRADO RANCH AREA 4**

*Prepared for:*

**Lansing Companies  
12671 High Bluff Drive, Suite 150  
San Diego, CA 92130**

April 16, 2018

*Prepared by:*

**Wood Rodgers, Inc.  
1361 Corporate Boulevard  
Reno, Nevada 89502  
(775) 823-4068  
Todd Gammill, P.E. - Associate**



4/13/18

**WOOD RODGERS**

**BUILDING RELATIONSHIPS ONE PROJECT AT A TIME**

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Fax: 775.823.4066

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### **APPENDIX**

VICINITY MAP

FEMA FIRM Panel 3230G

PRELIMINARY STORM DRAIN SYSTEM LAYOUT

*NORTH LEMMON VALLEY PRADO RANCH DEVELOPMENT – CONCEPTUAL DRAINAGE REPORT PREPARED BY  
CARDO*



# **1 INTRODUCTION**

This report shall serve as the preliminary drainage report for the Prado Ranch Area 4 subdivision, which will consist of 506 single family lots. The proposed project site (a portion of APN's 080-723-01, 02, 03 and 04) is approximately 154.5± acres in size and is located within portions of Sections 22 and 23 of T21N, R19E, MDM, City of Reno, Washoe County, Nevada. The project site is bounded by Lemmon Drive to the west, existing single family housing to the north, undeveloped land to the east and Nectar Street to the south. A Vicinity Map is included in the **Appendix** of this report for reference. As this report is preliminary in nature, a more detailed study will need to be conducted and a final technical drainage report will need to be submitted with the final improvement plans for the project.

## **1.1 HISTORIC DRAINAGE**

The parcel is currently open rangeland with storm drainage originating from the north and east and flows via overland flow and sheet flow to the west eventually to Swan/Lemmon Lake. In addition to local storm flow north and east, the site is impacted by a regulated FEMA flood plain Swan/Lemmon Lake.

The FEMA FIRM panel 32031C2850G, revised March 16, 2009, indicates that the southwest portion of the site lies within flood zone AE, areas of 100-year flooding with an established elevation. In this case, during the 100-year, 10-day storm, Lemmon Lake fills to an elevation of 4924 (NAVD 88 datum), which impacts about a third of the lots in the lower, western portion of the project area. A copy of the map is included in the **Appendix**.

## **1.2 ADDITIONAL STUDIES**

Cardno, Inc. of Reno was commissioned by Lansing Companies to analyze the storm flows within the overall Prado Ranch and Prado Ranch Area 4 area in a report entitled *North Lemmon Valley Prado Ranch Development – Conceptual Drainage Report* dated July 7, 2016 (Cardno Report). This study is included in the **Appendix** of this report and contains analysis of offsite flows generated from the north and east, in addition to onsite flows generated by development.

## **1.3 DEVELOPMENT CONSTRAINTS DUE TO 100-YEAR STORM FLOWS**

The previously described FEMA flood zone constrains development of the site, and will be described below:



- a) Due to the flooding of Swan Lake in the 100-year, 10-day storm to an elevation of 4924 (Zone AE), per Washoe County development code and the TMRDM, every proposed home site within the extents of the flood zone is required to have a finish floor of elevation a minimum of two feet above the flood elevation, or at an elevation of 4926. As concrete slab-on-grade construction is anticipated, the required minimum finish grade of a home site is 8" lower than the 4926 finish floor elevation, or 4925.3, or 1.3 feet above the regulated flood elevation. Additionally, this will assure that storm drain catch basins and manholes will not surcharge should the 100-year, 10-day storm occur.
  
- b) Per the Truckee Meadows Regional Drainage Manual (TMRDM), new development within Swan/Lemmon Lake, which is a closed basin, is required to provide storm volume replacement for storm volume increase to the lake due to development, in addition to storm volume replacement due to encroachment within the FEMA regulated 100-year storm lake water surface. As the proposed development encroaches into the regulated water surface, both forms of volume replacement are required. Volume replacement can be obtained in one of two ways: Either by use of retention or infiltration basins, or by increasing volume within the 100-year water surface area of Swan/Lemmon Lake. As the developer has controlling interest in areas within the lake, this development contemplates volume replacement in an area west of the site, across Lemmon Drive. The Cardno Report discusses volume replacement requirements and proposed areas in detail and that detention is not required due to the outfall being Swan/Lemmon Lake. The Cardno report described the required volume replacement for Areas 3-6 (including Area 4) at 153 ac-ft. (~247,000 cubic yards) to offset the increase in volume from development and encroachment into the lake. The Tentative map plans sheet G-6 depicts the area intended to be used as volume replacement. The area can accommodate approximately 217 ac-ft. (350,000 cubic yards) of volume replacement. At final design the final requirement for the Area 4 tentative will be finalized, but the area west of Lemmon Drive will be able to accommodate.
  
- c) Channels are proposed to be constructed to handle 100-year, 24 hour storm flows from the north and east of the site and perpetuate them to Swan/Lemmon Lake as shown on the tentative map grading sheets. Channel and culvert sizes were estimated using the flow rates generated by the Cardno Report.





#### **1.4 REGULATORY PERSPECTIVE**

The Project site is located within Unincorporated Washoe County and therefore falls under its jurisdiction. The drainage facilities will be operated and maintained by the Washoe County.

## **2 PRELIMINARY DESIGN**

The proposed drainage system for the project site consists of sheet flow from the lots and streets into gutters with which storm water is conveyed into drop inlets and underground storm drain pipes, and offsite flows from south. Offsite flows will be collected via channels or storm pipes and conveyed west for discharge in historic patterns to Swan/Lemmon Lake. The storm drainage system is shown on the tentative map Grading and Utility sheets.

## **3 HYDROLOGIC ANALYSIS**

As the Cardno Report generates offsite and onsite 100-year storm flows local to the site, no other hydrologic analysis was completed. Preliminary pipe locations are shown on the tentative map Grading and Utility sheets. All pipes slope were assumed to have a minimum of 0.3% in the preliminary grading design. In final design, a StormCAD model will be generated to size finalize pipe sizes. Grading of the site will be adjusted accordingly at that time, but is not anticipated to change dramatically.

## **4 CONCLUSIONS**

The drainage facilities that will be constructed with the Prado Ranch Area 4 subdivision have been preliminarily designed to capture and perpetuate the design storm event flows from the north and east and onsite to the south and west in the natural drainage pattern to Swan/Lemmon Lake. The conveyance of flows is in conformance with the Washoe County code and the TMRDM. There will be no negative impacts to any adjacent or downstream properties as a result of development during the 5-year and 100-year, 24 hour storms due to the implementation of the proposed storm water management system. Additionally, volume replacement within Swan/Lemmon Lake is proposed to offset any encroachment into the lake's 100-year FEMA regulated water surface elevation, as well as to offset volume increase due to development. As previously stated, this report is preliminary in nature and a more detailed study will need to be conducted and a final technical drainage report will need to be submitted with the final improvement plans for the project.



## **5 REFERENCES**

Truckee Meadows Regional Drainage Manual, April 30, 2009

Washoe County Development Code, Latest Edition

*North Lemmon Valley Prado Ranch Development – Conceptual Drainage Report, July 7, 2016*



**APPENDIX**

**VICINITY MAP**

**FEMA FIRM Panel 2850G**

***NORTH LEMMON VALLEY PRADO RANCH DEVELOPMENT – CONCEPTUAL DRAINAGE REPORT***

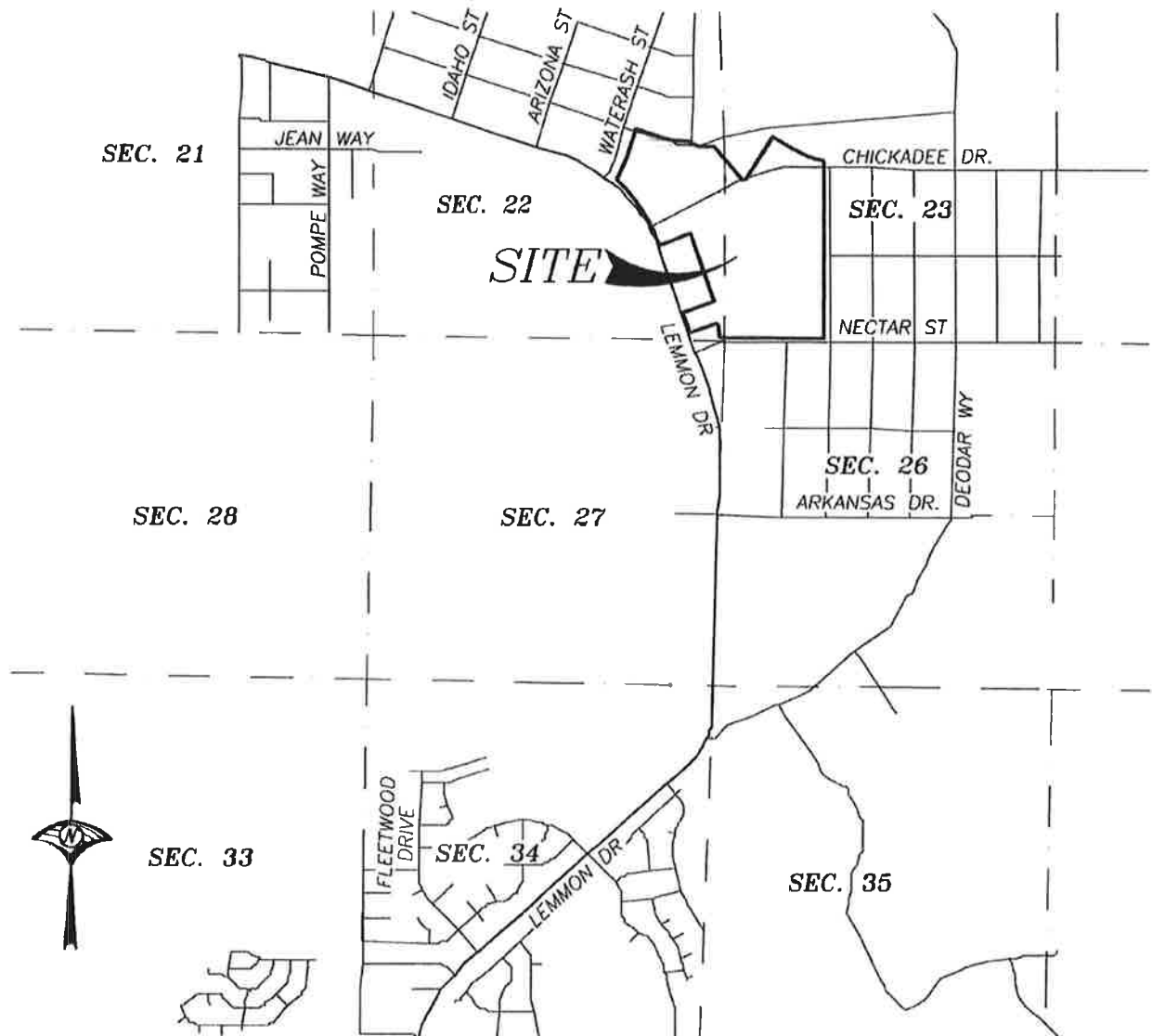
**PREPARED BY CARDO**

VICINITY MAP  
**PRADO RANCH AREA 4**

LANSING COMPANIES

WASHOE COUNTY

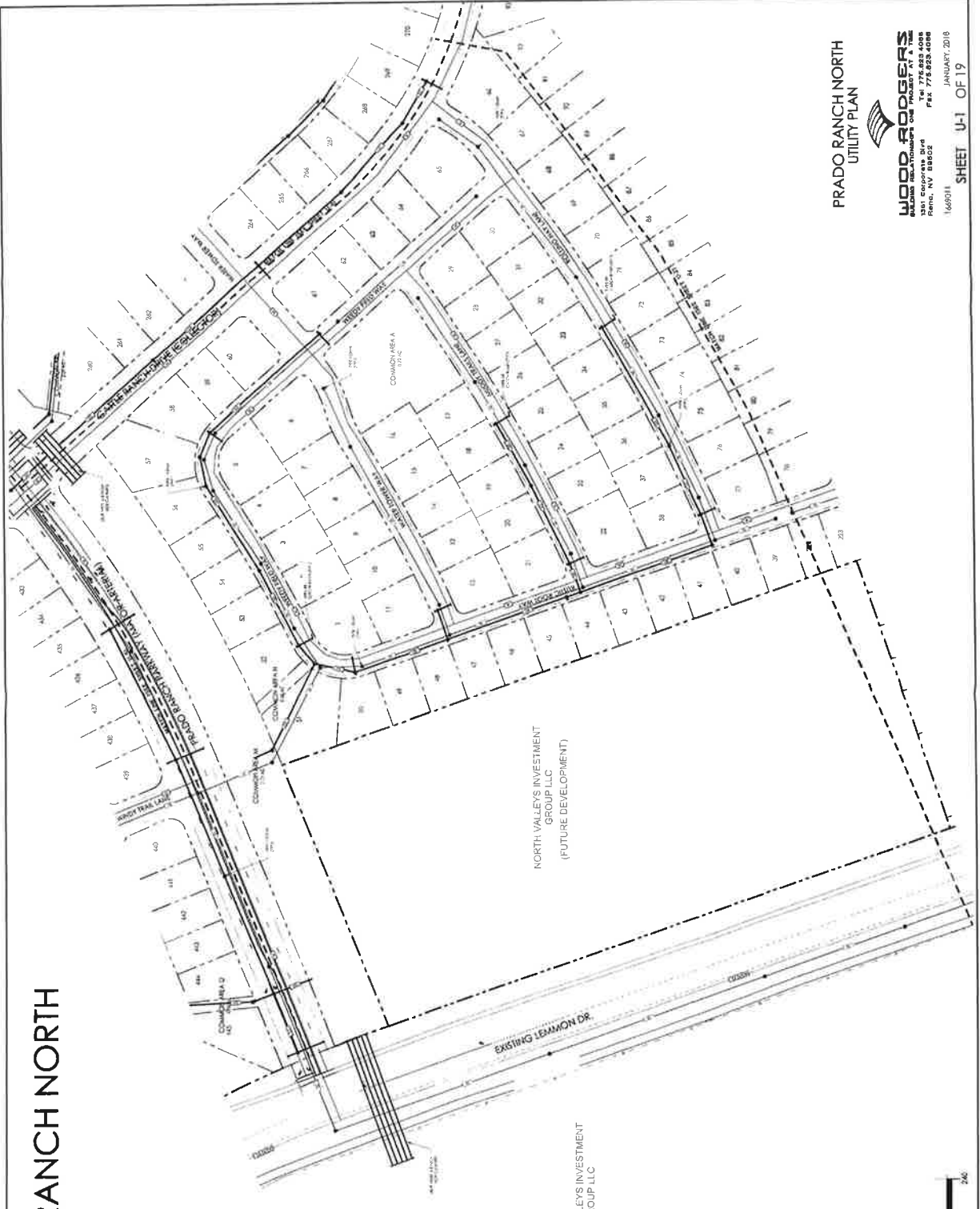
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**PRADO RANCH NORTH**  
**TENTATIVE MAP**  
**UTILITY PLAN**



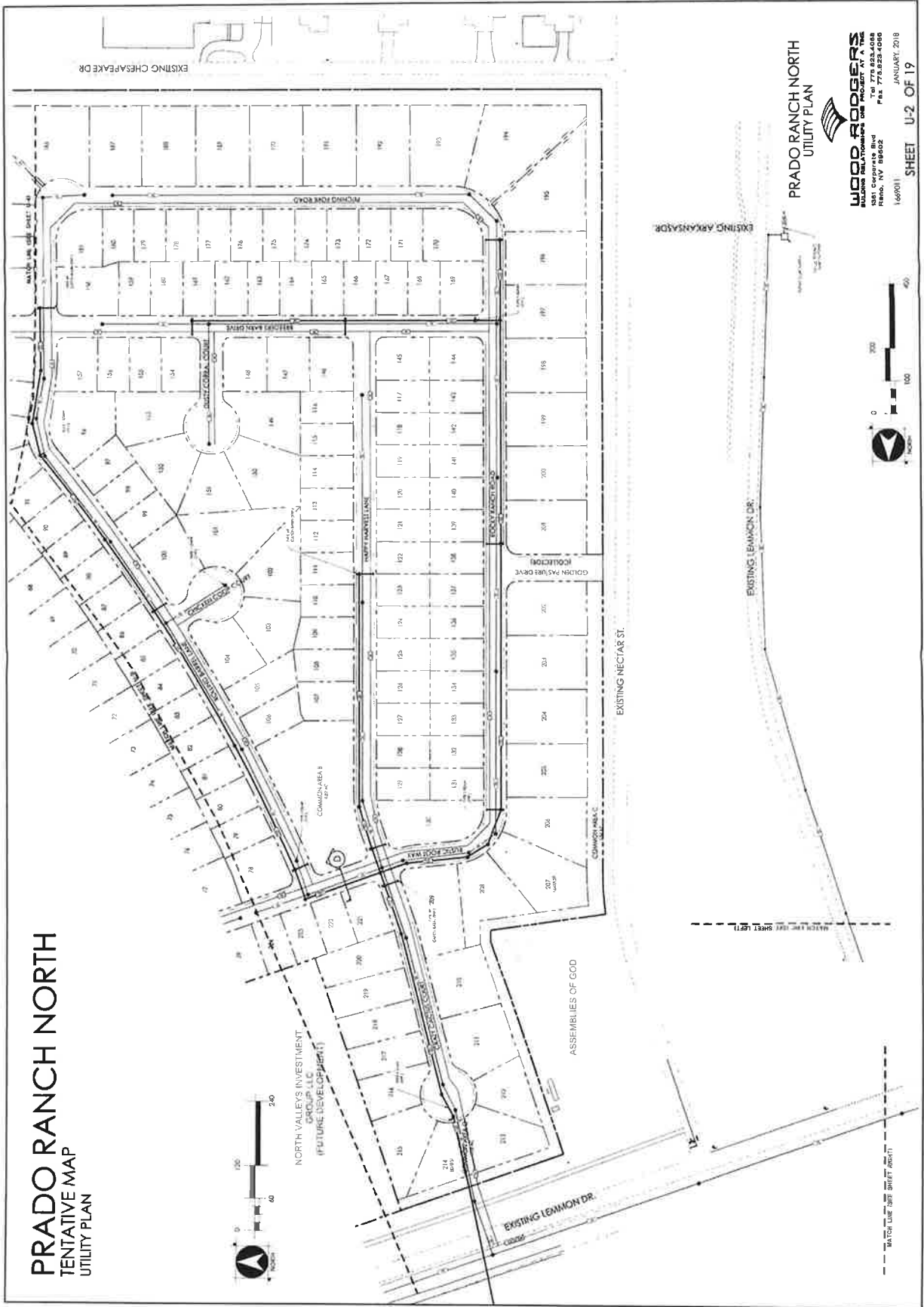
**PRADO RANCH NORTH**  
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**SHEET U-1 OF 19**



# PRADO RANCH NORTH TENTATIVE MAP UTILITY PLAN



PRADO RANCH NORTH  
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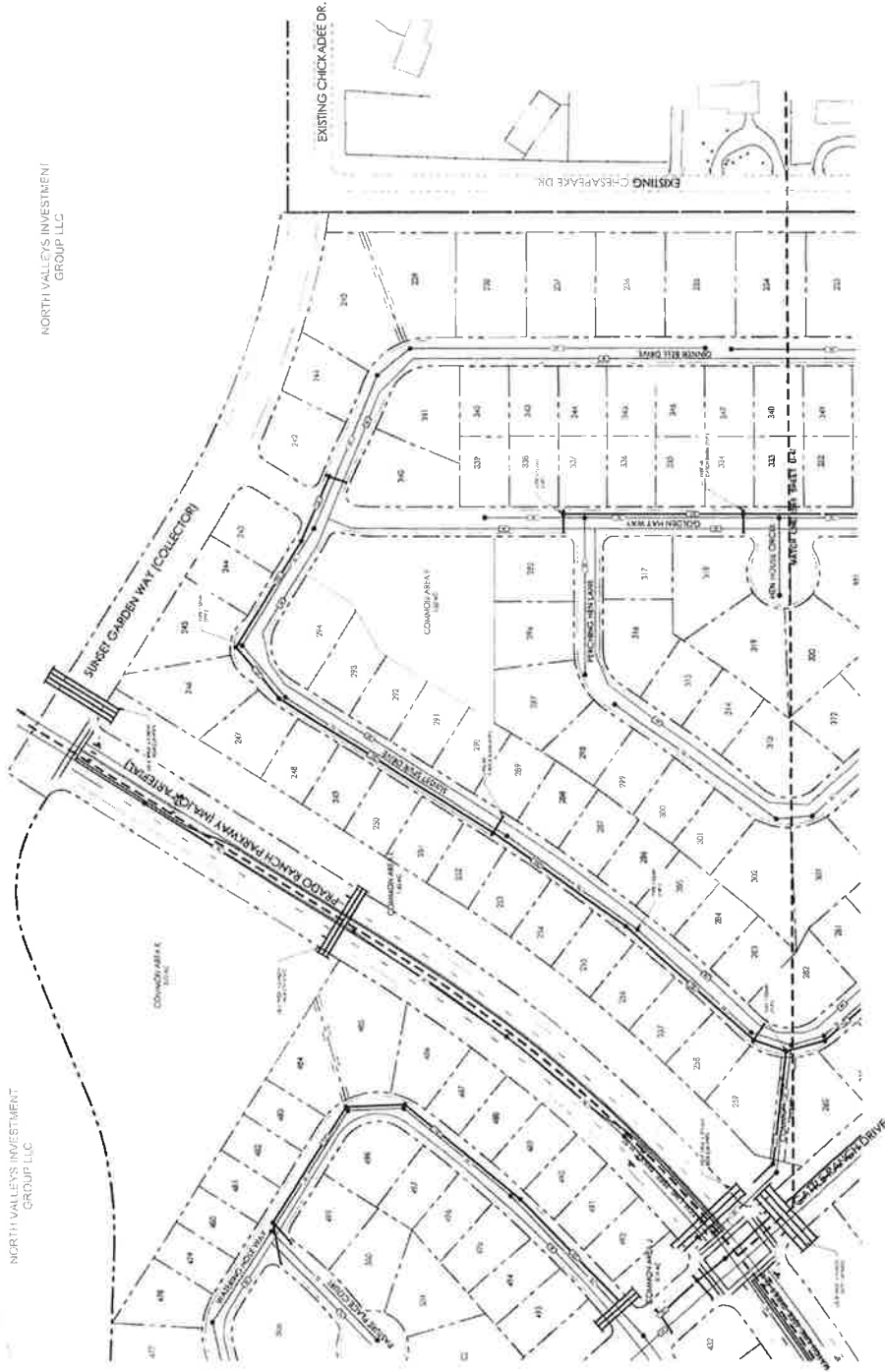
1/6/2011 SHEET U-2 OF 19  
JANUARY, 2010



# PRADO RANCH NORTH TENTATIVE MAP UTILITY PLAN

NORTH VALLEYS INVESTMENT  
GROUP, LLC

NORTH VALLEYS INVESTMENT  
GROUP, LLC



PRADO RANCH NORTH  
UTILITY PLAN



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**PRADO RANCH NORTH**  
 TENTATIVE MAP  
 UTILITY PLAN



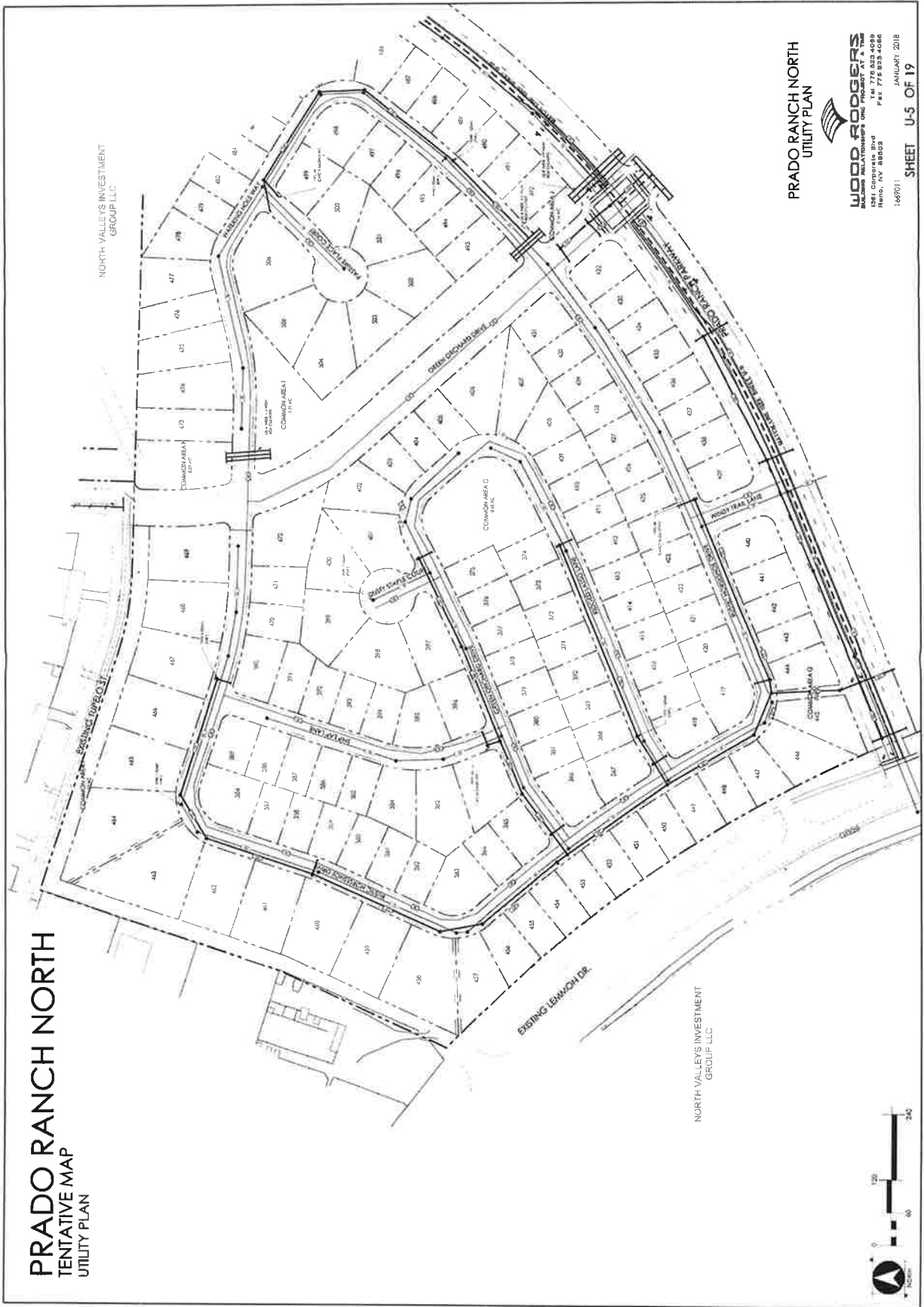
**PRADO RANCH NORTH**  
 UTILITY PLAN



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JANUARY, 2018  
 SHEET U-4 OF 19

**PRADO RANCH NORTH**  
**TENTATIVE MAP**  
**UTILITY PLAN**



NORTH VALLEYS INVESTMENT GROUP, LLC

**PRADO RANCH NORTH**  
**UTILITY PLAN**



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 1465011 JANUARY 2018

**SHEET U-5 OF 19**



**PRELIMINARY SANITARY SEWER REPORT**

**FOR**

**PRADO RANCH – AREA 4 TENTATIVE MAP**

*Prepared for:*

**Lansing-Arcus, LLC  
12671 High Bluff Drive, Suite 150  
San Diego, CA 92130**



**April 13, 2018**

*Prepared by:*

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Mark Cendagorta, PE – Principal**



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FIGURE 2-PROPOSED CONDITIONS EXHIBIT

FIGURE 3-PROPOSED FACILITIES EXHIBIT



## **1**      **INTRODUCTION**

This report shall serve as the preliminary sanitary sewer report for the Prado Ranch Area 4 subdivision, which will consist of 506 single family lots. The proposed project site (a portion of APN's 080-723-01, 02, 03 and 04) is approximately 154± acres in size and is located within portions of Sections 22 and 23 of T21N, R19E, MDM, City of Reno, Washoe County, Nevada. The project site is bounded by Lemmon Drive to the west, existing single family housing to the north, undeveloped land to the east and Nectar Street to the south. Area 4 is a portion of the larger Prado Ranch landholding, which also includes approximately 445 acres located to the south that was annexed into the City of Reno in 2015 and is currently in process for entitlements (Planned Unit Development-PUD) to develop a mix of single family, multi-family, industrial and commercial uses. As the timing of approval for the PUD entitlements through the City of Reno is unknown at this time, the PUD will be considered not a part for the purposes of this preliminary report. A Vicinity Map is included in the **Appendix** of this report for reference. As this report is preliminary in nature, a more detailed study will need to be conducted and a final technical sewer report will need to be submitted, with the final improvement plans for the project.

## **2**      **BACKGROUND**

The 154± acre site is undeveloped and surrounded by existing large lot residential to the northwest and southeast. An undeveloped area of the larger Prado Ranch landholding exists to the north of the subject site, and to the west of Lemmon Drive and adjacent to Swan Lake. The westernmost portion of the site is located within the FEMA mapped 100-year floodplain and will require placement of additional fill within the Swan Lake Floodplain. The existing topography consists of relatively flat slopes (0.2% -1%) trending generally from northeast to southwest towards Swan Lake.

The Prado Ranch Area 4 concept envisions a mix of lot sizes in multiple villages along with open space corridors and park areas to create a cohesive project. The majority of lots within each village range between 6,000 sf and 7,000 sf while perimeter lots abutting existing residential are approximately 15,000 sf. The project will be constructed in multiple phases, of which the exact sequence is yet to be determined at this time. The development plan for Prado Ranch Area 4 includes the following village breakdown and acreages:



**Table 1: Land Use Categories**

Land Use Designation	Gross Acres	Proposed Lot Count	Allowable Dwelling Units (4 du/ac max)	Density
<b>Village 1</b>				
Single Family Residential	19.3±	77 lots	77	4.0
<b>Village 2</b>				
Single Family Residential	40.3±	147 lots	161	3.65
<b>Village 3</b>				
Single Family Residential	36.4±	131 lots	145	3.60
<b>Village 4</b>				
Single Family Residential	45.3±	151 lots	181	3.33
<b>Common Area</b>				
Common Area	12.5±	-	-	-
<b>Totals</b>				
	154±	506 lots	585	3.46

The project site resides outside of existing municipal sanitary sewer service areas, and is located approximately 1.5 miles to the north of the existing Washoe County owned and operated Lemmon Valley Wastewater Treatment Plant (LVWTP). There is no sanitary sewer infrastructure in place between the LVWTP and the project site, and per recent conversations with Washoe County representatives, the LVWTP does not have sufficient treatment capacity to serve the project. As such, development of the site requires construction of sanitary sewer infrastructure to convey flows to the City of Reno owned and operated Reno Stead Water Reclamation Facility (RSWRF), where additional treatment capacity is currently available. The conveyance of flows to the RSWRF will require an inter-local agreement between the City of Reno and Washoe County for sewage treatment and disposal. It is anticipated that this infrastructure will be designed and constructed to public standard, and oversized to accommodate future growth, which will aid in the development of adjacent areas located outside of the project boundaries. (Reference Figure 1- Existing Facilities Exhibit)

In response to growth projections in the North Valleys, the City of Reno and Washoe County have jointly commissioned a sanitary sewer study and master plan for the area which analyzes the existing infrastructure in place (both conveyance and treatment), identifies existing uses and proposed developments that have or will contribute flows to the system, and provides capital expenditure recommendations to provide additional capacity for future growth. The study prepared by Stantec and entitled *North Valleys Sanitary Sewer Capacity Analysis and Master Plan, November 2017*, recommends utilizing existing treatment capacity at the regional Truckee Meadows Water Reclamation Facility (TMWRF) in the near term until the growth projections for



the North Valleys are proven and would thereby warrant the large capital costs necessary to increase treatment capacity at the RSWRF. As such, the study recommends as capital expenditures in the near term, conveyance and pumping capacity projects that would redirect flows from the LVWTP and the RSWRF to TMWRF, thereby freeing up additional capacity at both plants in the North Valleys.

Currently, the RSWRF is treating approximately 1,700,000 gpd with capacity to treat approximately 2,000,000 gpd according to information provided by representatives from the City of Reno. That equates to approximately 300,000 gpd of available treatment capacity at the plant. The NDEP permit for the RSWRF allows for up to 2,350,000 gpd of treated effluent discharge to Swan Lake.

City of Reno Staff, at a meeting held with the Applicant for the project in March of 2018, also identified a number of projects for capital expenditure that will, if implemented, redirect flows to TMWRF. The first, identified as the North Hills Lift Station Improvements project to be located near Buck Drive, will replace two aging lift stations and will redirect flows from the LVWTP to TMWRF, freeing up an additional 70,000 gpd of treatment capacity at that plant. That project is slated for near term construction. The second project, identified as the RSWRF force main project, will allow an existing force main within Military Boulevard that is currently used for treated sludge transmission to the City's interceptor main located within North Virginia Street to be converted to also transmit raw sewage within the same line to TMWRF. This project, which will free up an estimated 500,000 gpd at the RSWRF, is out to bid with construction expected to be complete by the end of 2018. The third project identified is a proposed plant expansion at the RSWRF from 2,000,000 gpd to 4,000,000 gpd. Per the City of Reno, the design for this expansion is expected to be complete by February of 2019, and the expansion is expected to be operational by the end of 2021. Expansion to 4,000,000 gpd requires a solution to dispose of the additional effluent created during treatment, which at this time is proposed to be provided with additional treatment to Class A+ effluent and injection wells to be located to the northwest of Swan Lake. The City of Reno is working with NDEP and TMWA to test and analyze the use of injection wells and expects to conclude that process by the end of 2018.

### **3 PROPOSED CONDITIONS**

As the project site is devoid of existing sanitary sewer infrastructure, new collection and conveyance networks will be required for individual villages within the overall project. These systems are anticipated to be typical gravity networks designed to Washoe County standards, and are proposed to be public as they will be located within public roadways serving each village. The project will require the construction of a lift station and associated force main to convey flows to



the RSWRF. (Reference Figure 2-Proposed Conditions Exhibit)

The following table estimates the proposed sewerage contribution from the project in relation to Washoe County’s minimum sewer system requirements.

**Table 2: Proposed Contributions**

Land Use	Quantity	Unit Rate	Peak Flow* (gpd)	Treated Flow** (gpd)
Village 1	77 Lots	270 gal/day*3.0 PF	62,370	17,325
Village 2	147 Lots	270 gal/day*3.0 PF	119,070	33,075
Village 3	131 Lots	270 gal/day*3.0 PF	106,110	29,475
Village 4	151 Lots	270 gal/day*3.0 PF	122,310	33,975
Open Space	12.5 Acres	664 gal/day/acre*3.0 PF	24,900	2,813
<b>TOTAL</b>			<b>434,760</b>	<b>116,663</b>

\*Peak flow design values per the Washoe County Design Standards

\*\*Treated flow design values taken at 225 gpd per lot or per acre for Open Space

As can be seen above, the current available treatment capacity at the RSWRF (±300,000 gpd) exceeds the estimated project contribution (116,663 gpd) at total buildout. Should the capital improvement projects detailed above be implemented, the available treatment capacity would far exceed the estimated project contribution. Note the difference between peak flow and treated flow rates in the table. Peak flow rates are used for conveyance system design, while treated flow rates are commonly much lower. A treated flow rate of 225 gpd per unit is used by the City of Reno for their analysis of plant capacity, and thus is used in this analysis as well.

It is anticipated that the proposed lift station and force main infrastructure will be designed and constructed as public facilities, and would include oversizing flexibility to accommodate future growth. The lift station is currently proposed to be constructed on property that is part of the larger Prado Ranch landholding to the south and west of the project site and adjacent to Swan Lake. The force main would be constructed from the lift station along Lemmon Drive and the within the future alignment for Lear Boulevard to the RSWRF. (Reference Figure 2-Proposed Conditions Exhibit)

Based upon recent discussions with City of Reno and Washoe County representatives, the lift station and force main may also be designed in accordance with the Lemmon Drive II Lift Station Improvements project identified in the Stantec study for years 2022 to 2023, which includes construction of a lift station at the outfall to the LVWTP and associated force main within Lear Boulevard to the RSWRF. The Lemmon Drive II Lift Station project is intended to divert flows to the RSWRF with the long range goal of decommissioning the LVWTP. The design and construction





delivery method for the lift station and force main will depend upon a number of factors including timing and implementation of public capital expenditures, but the opportunity exists for a public/private partnership to meet certain goals of the sewer master plan for the North Valleys on an accelerated schedule while also allowing for full development of the proposed project. Should the lift station and force main be constructed by the master developer, it is anticipated that any upsizing to accommodate future growth outside of the project limits would be subject to a development agreement with Washoe County and the City of Reno and eligible for cost reimbursement.

#### **4 CONCLUSION**

Prior to development of any portion of the proposed project, the developer will be required to provide a full technical sanitary sewer study that not only details the conveyance system design but verifies treatment capacity exists for the project. The technical studies will be provided in accordance with the final mapping application for the first subdivision, and will include an analysis for the project in total. As the treatment capacity at the RSWRF is limited and recognizing that other projects in the tributary area to the plant will utilize portions of the existing capacity as they come online, an analysis of the plant capacity at the time of each final map application will be necessary.

#### **5 REFERENCES**

*Washoe County Community Services Department Gravity Sewer Collection Design Standards, March 2017.*

*North Valleys Sanitary Sewer Capacity Analysis and Master Plan, Stantec, November 2017.*



**APPENDIX**

**VICINITY MAP**

**FIGURE 1-EXISTING FACILITIES EXHIBIT**

**FIGURE 2-PROPOSED CONDITIONS EXHIBIT**

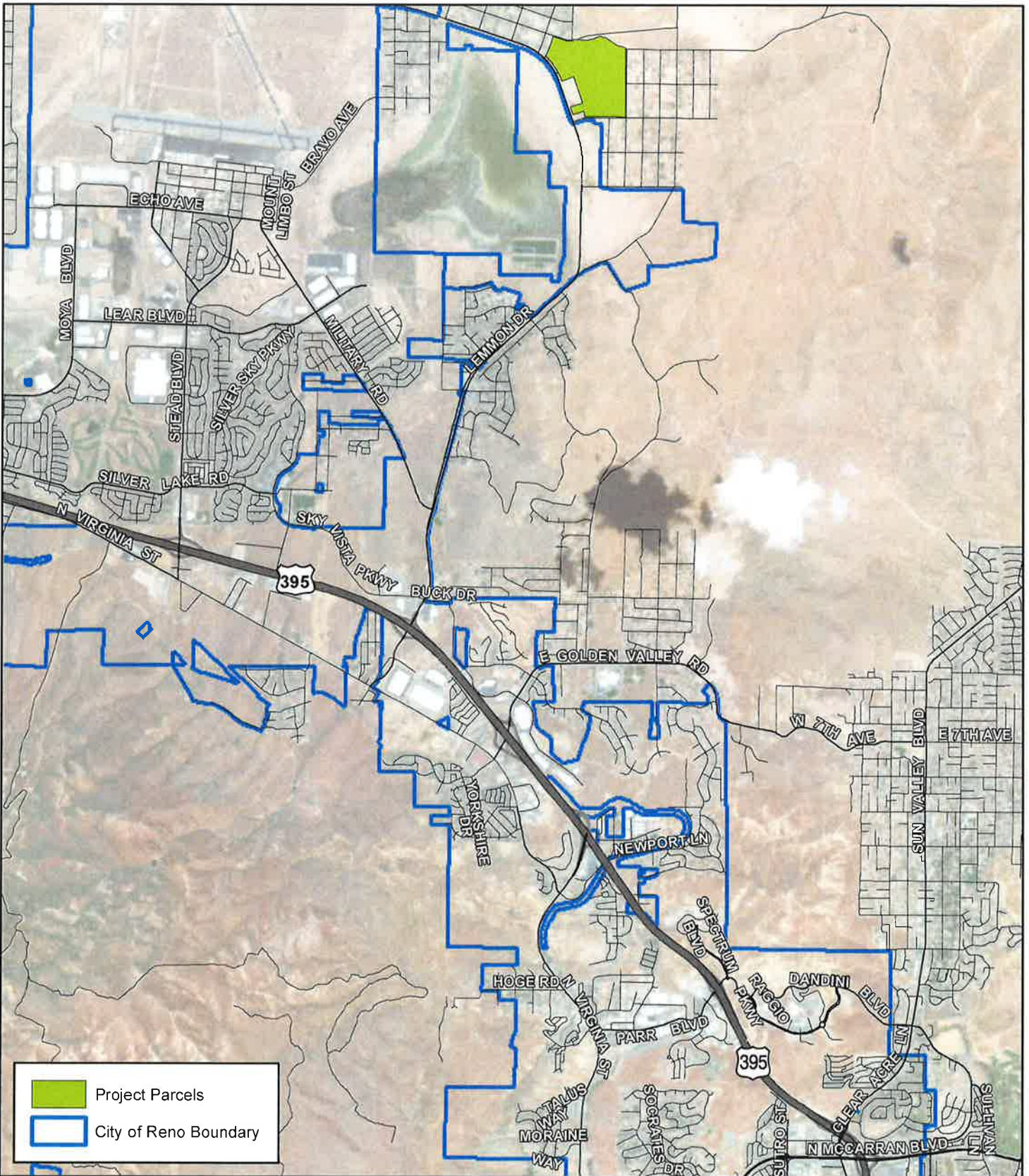
**FIGURE 3-PROPOSED FACILITIES EXHIBIT**

**APPENDIX**

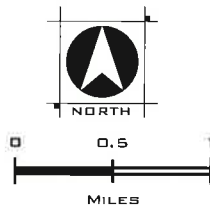
VICINITY MAP

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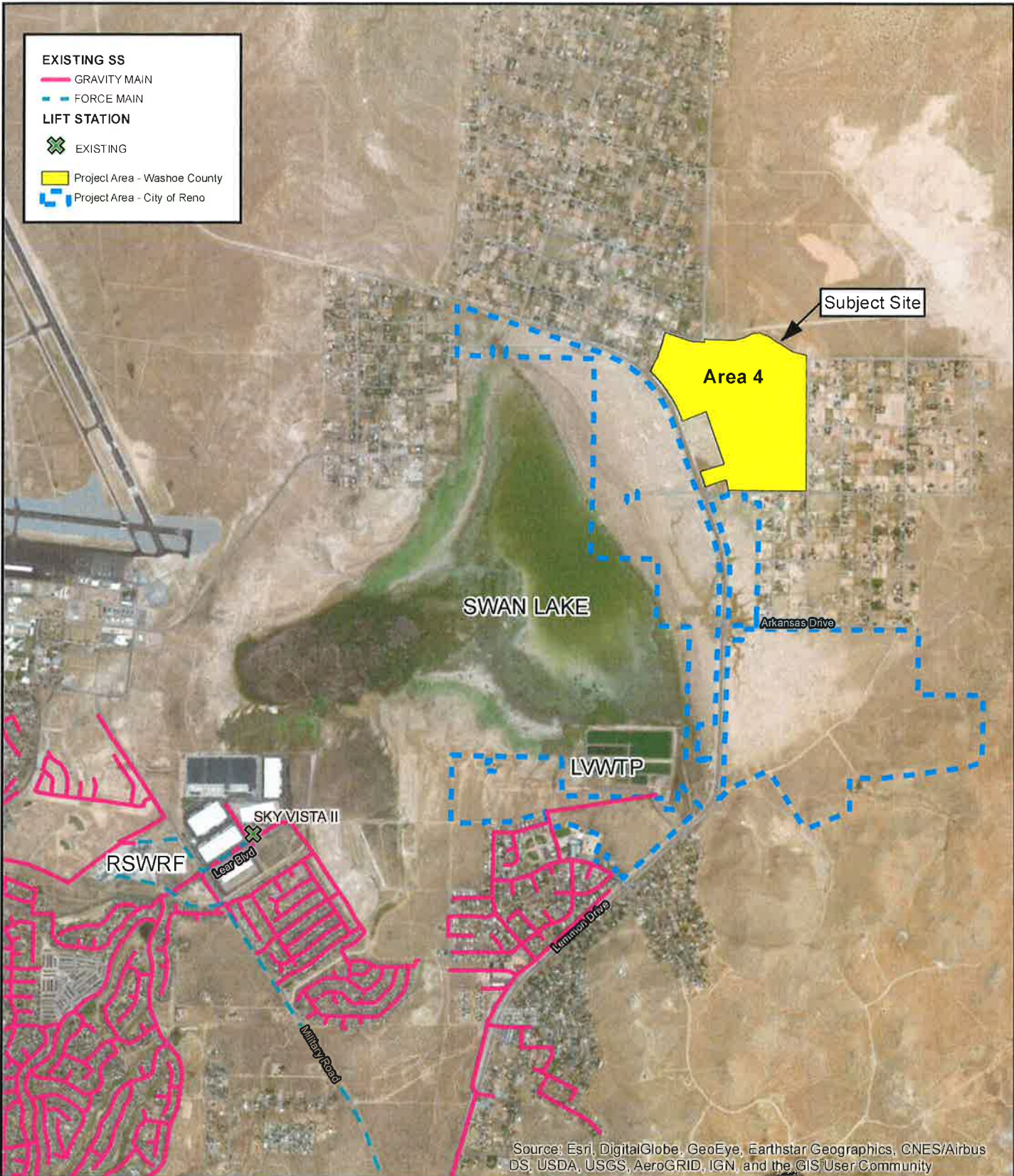
FIGURE 2-PROPOSED CONDITIONS EXHIBIT



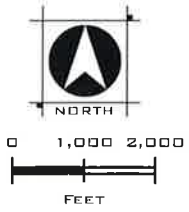
VICINITY MAP  
 PRADO RANCH AREA 4  
 RENO, NV  
 APRIL, 2018



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**EXISTING FACILITIES EXHIBIT**  
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**FIGURE 1**

**LIFT STATIONS**

-  EXISTING
-  PROPOSED - PUBLIC

**PROPOSED SS MAIN**

-  GRAVITY MAIN
-  FORCE MAIN

**Proposed Land Use**

-  OPEN SPACE
-  SINGLE FAMILY

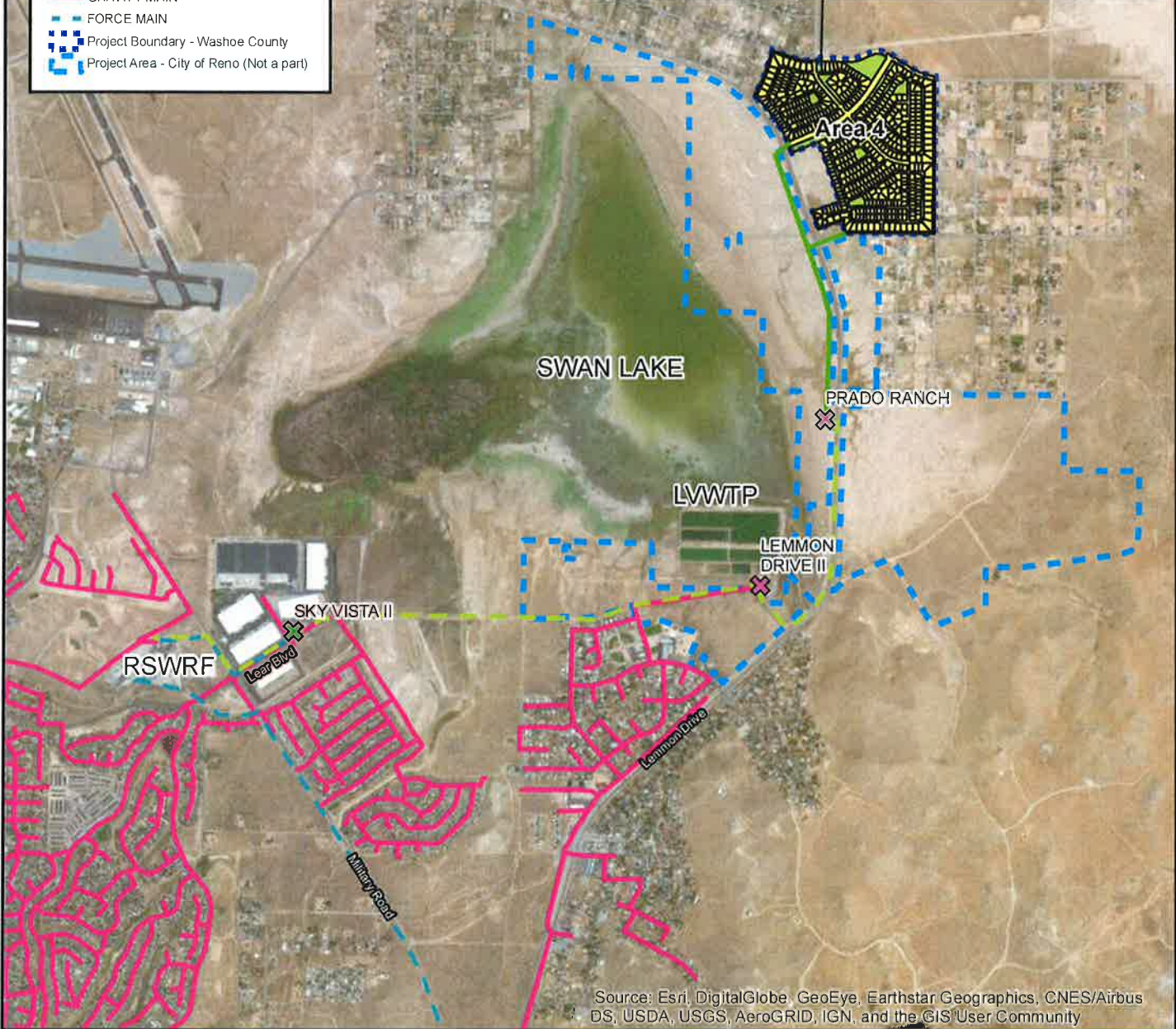
**EXISTING SS**

-  GRAVITY MAIN
-  FORCE MAIN
-  Project Boundary - Washoe County
-  Project Area - City of Reno (Not a part)

Land Use	Quantity	Unit Rate	Peak Flow* (gpd)	Treated Flow** (gpd)
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Village 2	147 Lots	270 gal/day*3.0 PF	119,070	33,075
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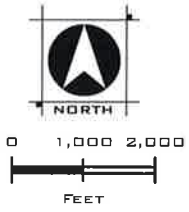
\*Peak flow design values per the Washoe County Design Standards

\*\*Treated flow design values taken at 225 gpd per lot or per acre for Open Space



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

EXISTING CONDITIONS EXHIBIT  
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FIGURE 2